Exploring the impact of digital transformation on public governance

Prevailing (public) governance models throughout Europe

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2023
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Abstract

Public governance concerns how the roles and relations of all actors are organised, structured, managed and administered, including power and competence relationships and the levers that each actor has, particularly when using digital technology. Its overall purpose is to deliver public value benefits that promote the prosperity, wellbeing and flourishing of all people and all parts of society, as enabled by nature’s life-support systems. In the work presented here, the focus is on the European Union (EU) but also with a broader international perspective. The setting is (liberal) democratic systems, with their country, regional and local variations and the EU as the overarching level of governance. The EU already has many policies to promote the public values of good governance as the means of tackling its challenges to achieve these public value benefits. As types of public governance models and paradigms change in character and increase in variety over time, this report provides a state of the art overview of prevailing public governance models throughout Europe, also including practical examples. It presents five generations of public governance models, alongside the industrial revolutions and the different generations of the World Wide Web. Among other, the report concludes that public governance paradigms accumulate layer upon layer resulting in a form of sedimentation over time. Each of the paradigms identified continue to have relevance today, although the novel and emerging paradigms tend now to be more dominant. The report also finds that we are still in an era of understanding the best ways of using digital data and technologies for the public good. The next step, building on this work is to outline potential future scenarios for new governance models supporting policy-making and the provision of innovative, people-centric and inclusive public services, and to recommend future research questions to the JRC.
Foreword

The digital revolution has transformed our working environment, our social interactions, and almost all aspects of our lives on a global scale. Alongside, digital technologies are transforming the way public services are delivered and generate new ways of interacting between governments, businesses and citizens. These technological ‘disruptions’ in the role of government and the way to manage and deliver public services are very closely linked with the rise in importance of data as a fundamental basis for decision making, and the reshaping of relationships among all actors involved in the creation of public value.

The ongoing digital transition, and related challenges to achieve the targets set for Europe’s Digital Decade to 2030, are well recognised in the European Union policies, especially by the ‘Europe Fit for the Digital Age’ priority of the European Commission and its revised Digital Strategy. The COVID-19 crisis showed – more than ever – the importance of digital technologies to enhance governance processes to ensure a path of transformation towards sustainability and shared prosperity for the future of our society. As a response, digital transformation became also a central pillar in the Recovery Plan for Europe (NextGenerationEU). The Recovery and Resilience Facility (RRF) was designed to provide financial aid to Member States to make the European economy more digital and consequently more resistant to future shocks.

The European Commission’s Joint Research Centre (JRC), the science and knowledge service of the European Commission with the mission to support EU policies with independent evidence throughout the whole policy cycle, plays a significant role in achieving all those priorities. Not alone, but by supporting and collaborating with many policy Directorate-Generals (DGs), including DIGIT, DG Connect, DG Reform, DG Grow and DG Research and Innovation.

Providing the required scientific advice to EU policy making, we see a need for more research to:

- Investigate the impacts of digital transformation on new forms of governance, including the changing power-relationships between public authorities, the commercial sector, academia and civil society;
- Explore public sector innovation in a digital society including new forms of policy-making;
- Analyse the opportunities of emerging technologies for the co-design, co-development and co-delivery of public services by public and private actors; and
- Outline and assess possible future scenarios for digital governance and framework conditions for the provision of innovative public services (to citizens and businesses).

The aim of this report is to provide scientific support to the JRC to investigate the impact of digital transformation on new forms of public governance, including the changing power-relationships amongst civil society, public authorities, businesses sector and academia. The work that is presented here provides an overview of the prevailing public governance models throughout Europe, including an outline on recent evolutions and the effects of digital transformation on policy-making and the provision of public services. It benefitted from a validation workshop with relevant stakeholders, where emerging governance models were presented and discussed, main benefits and challenges caused by digital transformation were identified, and emerging trends were explained. As a result, this report provides a solid baseline for deeper investigations of emerging governance paradigms (separate report) and the grounds for much more scientific research to follow.

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Acknowledgements

The author would like to express his gratitude to Dr Sven Schade and Marina Manzoni of the European Commission's Joint Re4search Centre (JRC) for their constant support and trust. To Lucia Errandonea for her generosity in sharing her experience, knowledge, and teamwork, and to Robin Smith for very useful feedback.

Also, to the experts that participated in the validation workshop for their contributions: Maria Alonso Roldan, Jaume Martin Bosch, Ana Colom, Maria del Mar Delgado-Serrano, Noella Edelmann, Silvina Frucella, Sabine Hielscher, Tina Jukić, Katerina Makrogamvraki, Greta Nasi, Morten Meyerhoff Nielsen, Agamemnon Otero, Goran Pastrovic, Valeria Righi, Rozalinda Stojova, Louise Thomasen, Slim Turki, Zoi Lachana Uaegean, Paul Waller, and Vishant Weerakkody. And to those who were not able to participate in the workshop but nevertheless provided feedback: Frank Bannister, Jim Kahan, Daniela Melandi, and Jacob Torfing.

Many thanks are due to all the above experts for their contributions, but the author alone takes full responsibility for the final contents of this report.

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Executive summary

Over the last decades, digital transformation has changed how our societies are governed. The abundance of information, political polarisation, and misinformation has become a legitimacy issue for governments - within and outside the European Union (EU). This report focuses on the identification of prevailing governance models in the EU, the outlining of their evolution, and the impacts of digital transformation on policy-making and the provision of public services. Given the recent turbulences, the work presented here covers the period of approximately 1945 until 2019. It will be followed by a second report that addresses the changes of the past few years.

Policy context

The overall purpose of public governance as addressed in this report is to develop and implement policies that promote the prosperity, wellbeing and flourishing of all people and all parts of society, as enabled by nature's life-support systems. The focus is on the EU but also with a broader international perspective. The setting is (liberal) democratic systems, with their country, regional and local variations and the EU as the overarching level of governance. The EU already has many policies and initiatives that promote the public values and principles of good governance as the means of tackling the challenges it faces to achieve a large range of public value benefits, both with and without the assistance of digital technology.

However, at this moment at the end of 2022, in the midst of European and global crises, there is a renewed need for two reappraisals. First, a thorough mapping and understanding of the public governance arrangements, defined as paradigms in this report that have and are being deployed across all the EU’s multi-governance levels, the role played by digital technology and the impacts these have had. Second, an analysis of the new strategic challenges the EU faces, especially since early 2020 with the start of the COVID-19 pandemic, the war in Ukraine and the dramatically escalating social, economic and environmental crises, taking account of the role that digital technology and data can play.

Key conclusions

This report shows that successive public governance paradigms appear to align, to a greater or lesser extent, with the major political and societal developments and shocks since 1945, as well as with digital technology developments, especially around a number of pivotal cleavage dates:

The early 1990s: The early beginnings of Generation 1.0, largely one-way, digital technology use in public governance, supporting the traditional Weberian public governance paradigm, boosting New Public Management and then helping to underpin the Neo-Weberian paradigm.

About 2000: It began to be accepted that government could use digital technology and data to be the prime mover in proactively delivering public value benefits to wider society and not just to improve the administrative machinery in the back-office. At this time, digital technology first began to change the shape and workings of public governance, as opposed simply to being used by it. It is probably no coincidence that the 2000 cleavage date coincided with the significant jump from Generation 1.0 to Generation 2.0 technology enabling two-way participation. This facilitated both the networked and public value governance paradigms as two different political philosophies of society arising from the same societal and technological conditions.

From 2008: The financial crisis, itself triggered by the use of Generations 1.0 and 2.0 technology in the banking and finance sectors spurring gloabalisation, gave simultaneous rise to two quite different public governance paradigms. First, lean and austerity governance and, second, a new plethora of governance paradigms and models characterised by open governance. Both were significantly enabled by new Generation 3.0 semantic-based technology but based on quite different political philosophies of society.

About 2015: Serious moves began to break down governance silos, enabled by the increasing digitisation of both government front- and back-offices. This was in the context of further increasing globalisation with its ensuing economic growth, but scarred by rising inequalities, dissatisfaction and loss of trust in government, coinciding with significant populism and ‘post-truth’ movements. Both were pushed and pulled by Generation 4.0 distributed and mobile technology. These developments are paired with a significant increase in the availability of data (including personal data) and challenges related to data gathering, capture, access and sharing.
**From 2020:** A new age of more or less continuous crisis, disruption and turbulence seems highly likely. Although the groundwork was arguably laid in the 2008 financial crisis, this was turbo-charged first by the COVID-19 pandemic commencing in 2020, then by the Russian invasion of Ukraine in 2022, as well as the even greater threats posed by the ever increasing environmental, social and economic crises. New forms of public governance are undoubtedly required to meet these existential challenges, so it is also imperative that we design and implement more appropriate digital technologies. Whether the putative Generation 5.0 technologies and the Fifth Industrial Revolution, portending dramatically new relationships between humans and machines that aim to put people in control, will suffice remains to be seen. More detailed elaborations will be presented in a separate report.

**Main findings**

It is noteworthy that the types of public governance paradigms change in character and increase in variety over time. Chronologically, they change from a small number mainly concerned with process, administration and organisation, drawing their justification from an increasing array of ‘good governance’ public values, towards a much larger number with a clear public value focus that is directly conceived to address important societal challenges. This switch around the year 2000 coincides with the big uptake by public governance of digital technology, starting with Generation 2.0 interactive technology, acting as a highly significant enabler, as well as to changing politics and policies. From 2020, a step change now seems to be taking place mainly influenced by a series of turbulences that challenge previously established relationships and have major impacts on the geopolitical landscape.

In terms of existing public governance, the main findings up to 2019 include:

— Political, policy, socio-economic, environmental, historical and cultural factors, especially societal-wide and often international shocks and crises, are the strongest influences on public governance developments.

— The public governance paradigms accumulate layer upon layer resulting in a form of sedimentation over time. Each of the nine paradigms identified between 1945 and 2019 (each with one or more models) continue to have relevance today, although the more recent novel and emerging paradigms tend now to be more dominant but perhaps only because collectively they are more numerous.

— These public governance paradigms do not form a linear progression where one replaces the other but represent a process of co-evolution. According to Aristovnik et al (2022) “Due to the constantly changing environment, public governance models have transformed many times, creating differences in public governance practices among public administration institutions, with combinations of contradictory structures and principles that coexist.” Differences can also be seen between central and local governments in the same country (e.g. Slovenia), underlining the importance of re-visiting multi-level governance, and to elaborate on possible evolutions of the original approach – especially as applied within the EU (within and across countries).

— It is the actual ‘mix that matters’ (Bevir, 2013) The mix of paradigms and models at a specific place and time depends on the context of global, national and local politics, as well as history, culture, socio-economics, environmental factors and the political choices made. This mix may or may not be a successful arrangement, so governing this mix is a crucial issue where the deployment of digital technology is necessary.

— Co-creation, and thus generative and emergent governance paradigms, seem imminent. Both tacit and codified knowledge are a powerful combination for learning, identifying good practices of successful transformations, and thereby for widespread co-creation, replication, scaling and knowledge sharing. At least up to 2020 only promising examples are seen without a truly systemic approach at EU or national levels. It is not yet clear what a balanced approach, which applies representative methodologies to some societal challenges while investing in more participatory approaches in others, might look like. Revisiting Ansell and Torfing (2021), these deliberations on co-creation might be further divided into co-initiation, co-design, co-implementation and co-evaluation, as a cyclic approach that departs from the traditional ladder analogy of Amstein (1969) that tends to imply a hierarchy of activities.

— The most desirable re-balancing of power and responsibilities for future-proof public governance still needs innovation and experimentation so is yet to be found. This will also require a cultural change within public institutions that tend to be risk averse. These risks are often seen in the short term (for example, but not only,
connected to election cycles) but without considering the longer-term risks of not rebalancing power relations, and experimenting with new approaches to public governance.

The main findings up to 2019 regarding digital technology and public governance include:

— Everything is inevitably influenced by digital technology, and it is better to explicitly account for that, than ignoring digital.

— Yet, digital technology and digital data are best seen as necessary but never as sufficient tools for public governance. Their deployment is always mediated by organisational, institutional, legal, ethical and social conditions, as well as challenges such as digital exclusion.

— Considering the many and diverse interrelationships between all actors of public governance, digital data and technologies might be considered at the only possible way to reach transparency, accountability and inclusiveness.

— The complex roles of digital technology and human-technology relations need to take account of how peoples’ quality of life, values and ethics are impacted by increasingly omnipresent machines, burgeoning surveillance by both public and private sectors, as well as the ‘post-truth’ society, ‘black-box’, impenetrable and inevitably biased AI.

— The mix of public governance paradigms in any one place and time, including across multi-governance levels, is an important contextual response to prevailing political, socio-economic and cultural differences. However, these responses and mixes may or may not be successful, so governing this mix is a crucial issue where the deployment of digital technology is necessary.

— To cope with the challenges of our times, we thus need public services that are digital-ready and interoperable by design – across borders, across sectors, and across different levels of administration.

— We are still in an era of understanding the best (context dependent) ways of using digital data and technologies for the public good, and a rich set of diverse experiments still yet to be completed or entirely conducted to complete an entire wave of digital transitions of public governance.

**Related and future work**

The 2020+ crises have already set back decades of public governance progress that had earlier, and despite much unevenness, led overall to greater prosperity, wellbeing and flourishing of most people in most parts of society, and that had begun to make some progress in addressing the vulnerability of nature’s life-support systems. At the same time, however, the 2020+ crises also provide opportunities to rethink how public governance and the role of digital technology can assist Europe in getting back on track. Whereas the report at hand provides a baseline of public governance models and emerging paradigms in the European context, the follow-up to this research will identify strategic challenges that now require urgent public governance action and research.

**Quick guide**

This report is organised into eight sections, as follows:

1. An introduction summarising the research context and scope.
2. An overview of definitions and terminology used.
3. A summary of four prevailing public governance models from 1945 to 2019
4. A detailed introduction to novel and experimental public governance paradigms with examples.
5. A discussion about the evolving roles of digital data and technology.
6. An elaboration of impacts of changing public governance paradigms on public services and public value.
7. A discussion of common features and framework conditions of prevailing public governance models.
8. Conclusions that summarise the determinants of changes in public governance, findings on digital technology and public governance, and the next steps of this work.
1 Introduction and scope

The digital revolution and its technological disruptions has transformed our working environment, our social interactions, and almost all aspects of our lives on a global scale. Emerging digital technologies and are transforming the way public services are designed and delivered, generating new ways of interacting between governments, businesses and citizens, by reshaping relationships among all actors involved in the co-creation of public value. In this context, the role of the public sector is crucial as it plays a multiple role, as enabler, as user and as regulator, all at the same time.

The European Commission’s Joint Research Centre (JRC) investigates the impact of digital transformation on new forms of public governance – including the changing power-relationships amongst related communities of stakeholders, such as public authorities the business sector, academia and civil society. The research carried out over the last year focused on identifying prevailing, and novel emerging governance models and communities, outlining their evolution, the role and the impacts of digital transformation on policy-making and the provision of public services. The outcomes from this work outline key needs to reshape public governance paradigms, in light of emerging geo-political and social challenges.

The report at hand is a fundamental contribution to this work, as it provides a review of the status quo of public governance paradigms and models up until and including 2019. A follow-up report considers the period from 2020 onwards and, in particular, looks at future scenarios for European public governance especially in light of the new age of turbulence, disruption and uncertainty we now find ourselves in. It is part of a larger research activity to outline potential future scenarios for new governance models supporting policy-making and the provision of innovative, people-centric and inclusive public services, and recommend future research questions for the JRC – considering its mandate as the science and knowledge service of the European Commission.

The specific objective of this state-of-the-art report is to provide a detailed description and analysis of developments in public governance models, taking account of the impact of digital technology, in order to provide the basis for outlining potential future scenarios as elicited above.

The approach taken in this report has not been only to select models that are impacted or enabled by digital technology or might have the potential to be so. If this was done, there is the strong possibility that many important and successful models are likely to be overlooked, although it is clear that many models have been or are already being, impacted by digital technology. Rather the approach has been to select what desk research shows are the main models since 1945, especially those which are still in use today. Further, within this potentially wide field, the intention is not to provide exhaustive portraits of each period, but to attempt to highlight archetypes of representative public governance models, and how these changes build upon each other over time, in the full knowledge that not everything can be covered. In the follow-up report, the models presented here are evaluated in relation to their impact on public services and public value, especially in relation to digital technology. Focus is on whether and, if so, how and to what extent digital technology as it evolves is likely to have an impact on the models in relation to public services and public value, and indeed whether digital technology could spawn completely new models with improved public value impacts. Where considered appropriate, the report includes boxes with detailed examples illustrating the conceptual elaborations of the main text.

2 Definitions and terminology

2.1 Public governance definitions

For the purposes of this report, public governance concerns how the roles and relations of all actors are organised, structured, managed and administered, including power and competence relationships and the levers (i.e. instruments for getting things done) that each actor has, for the overall purpose of delivering public services and public value, together with the impact of digital technology¹ in this context. Since the early 2010s, behavioural governance has also become important part of public governance related to the cognitive and

¹ The term ‘digital technology’ is used in this report as a collective noun encompassing all possible ‘digital technologies’ without implying any specific type. The term ‘digital technologies’ is used when the focus is on one or more specific types which are normally further specified. In addition, ‘digital technology’ is not to be confused with ‘digital transformation’ where the focus is on the changes in wider society or in nature that digital technology causes, enables or assists.
decision processes through which decision-makers, implementing actors and target populations both shape and react to public policies and to each other, as well as the impacts of these processes on individual and group behaviour (Tummers, 2020).

Five actor types are in focus: public institutions including their direct and indirect representatives; civil society and citizens; the private sector; educational and research institutions; and nature. Nature is added as an essential fifth actor, taking a quintuple helix approach, the requirements and contributions of which need to be taken into account (Carayannis et al, 2012 & UNESCO, 2016). It is important to directly include nature, defined here as both the living and the non-living environments in which human society functions and is dependent upon, especially given the multiple environmental crises we face including climate change and biodiversity loss. Giving nature a seat at the public governance table ensures that environmental as well as economic and social sustainability are major goals and that these three pillars are pursued together with good governance, as in the UN’s Sustainable Development Goals (United Nations, 2015b), also adopted by the EU (European Commission, 2021c).

Different public governance purposes are served by appropriate roles, arrangements and relationships between all five types of actors expressed through different public governance paradigms, defined by Torfing et al (2020) as a relatively coherent and comprehensive sets of norms and ideas about how to govern, organise and lead the public sector. This report examines the state-of-art of prevailing, novel and experimental public governance paradigms in Europe from 1945 up to the year 2019. A later report will examine developments from 2020 and into the future. Each paradigm is illustrated by one or more examples expressed as specific public governance models that demonstrate some of the main characteristics of the paradigm in question.

A focus of the report is on the role of digital technology in the paradigms and models examined, although those not currently using digital technology to a significant extent are also included given that digital technology is likely to have an impact in the future. All paradigms are normally also relevant across multi-governance levels which, in Europe, typically operate at three country-specific levels, i.e. national, regional and local, although other and/or additional or fewer levels may be appropriate in different administrative regimes. On top of these three levels is the overarching public governance level of the European Union. Example public governance models are often taken from one or more specific governance levels.

Two specific concepts need unpicking. First, ‘beneficiaries’ refers to four of the quintuple helix actors, i.e. excluding the public sector, which might be interpreted as a government-centric paradigm rather than a more participatory one. The term ‘beneficiary’ may also be confusing given that in some contexts the public sector can also be a beneficiary in that it can benefit by functioning more efficiently and effectively. However, ‘beneficiaries’ as used here has the advantage of highlighting that the public sector’s specific role is to provide benefits in the form of public services and public value to the other four type of actors, but not the other way round, so that the relationship is basically one-way. Thus, the term is used as distinct from ‘actors’ which also includes the public sector itself. Alternative descriptors might be ‘stakeholders’ or ‘agents’, though ‘actors’ is to be preferred as it is the most neutral term, given that ‘stakeholders’ implies a benefit and ‘agents’ implies some form of conscious free will which nature does not have. Second, this report deploys the term ‘people’ or ‘humans’ instead of the commonly used term ‘citizens’, given that the latter sensu-stricto implies a formal relationship between the individual and the state which would exclude resident non-nationals, refugees and undocumented migrants. All these groups can receive public services and enjoy the benefits of public value, as well as being part of social movements that change the power relations with authorities.

Thus, in summary, the types of actors involved in public governance are:

- Quadruple helix actors, all have agency but only the latter three are beneficiaries: public; private; educational and research institutions; and civil society (communities and individual citizens).2

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2 A common definition of “community” is a social group whose members have something in common, such as a shared government, geographic location, culture, heritage, or a sense of identity (https://www.dictionary.com/browse/community). However, many scholars have established various perspectives on what a community is. This is something that Taylor Aiken (2016) has explored, proposing different meanings and understanding of the concept—for example, a community of place is the one that emerges from a shared location such as a town, street or neighbourhood. A community of communion is born from a feeling of belonging, for example, those who have been through a similar experience. A community of interest shares the same interests, for instance, reducing waste or traffic in cities. In the same line, Wenger-
- Quintuple helix actors: quadruple helix actors plus nature as a non-human actor that is a potential beneficiary but does not have its own conscious agency.

- Importantly, all quintuple helix actors are prime sources of innovation where nature as at least as important as the quadruple helix actors, if not more important given it has been innovating for over 4 billion years and which can inspire human actors along new innovation paths through, for example, biomimicry.

On this basis, the figure below provides a generalised overview of our understanding of public governance models.

![Figure 1: Generalised view of public governance models](image)

Given that the focus of this report is on paradigms and models of public governance, the public sector is the pivotal actor. However, this does not always mean that it will take the leading or most important role in terms of resources invested or decision-making powers, but it does mean its role is essential by leading or contributing to the provision of public services and public value. There are many types of institution covered by the umbrella term ‘public sector’: the public administration itself (the government actor), as well as institutions in education, health, care, libraries, trade bodies, standards agencies, police, prisons, defence, security, etc. These other institutions are normally publicly owned in Europe, but even if they are not, they are intended to provide public services and create public value, as defined below.

This report involves identifying prevailing, novel and experimental public governance paradigms and models that are better able to deliver efficient and effective public services and, through these, provide much enhanced public value, in particular but not only (as described above) when supported or enabled by digital technology. The focus is on democratic public governance, especially the different forms found in Europe where democracy can be thought of as the ‘power of the people’ as a way of governing which depends on the will of the people and a strong grounding in human rights. “The idea of democracy derives its moral strength – and popular appeal – from two key principles: 1) Individual autonomy as the idea that no-one should be subject to rules which have been imposed by others, so people should be able to control their own lives (within reason); and 2) Equality as the idea that everyone should have the same opportunity to influence the decisions that affect people in society.” (Council of Europe, 2022).

In a follow-up to this report, ‘new and emerging’ public governance paradigms and models that meet Europe’s present and future needs as these are now being transformed will be presented, although the outlines of possible candidates are already suggested in Figure 2 and sketched in Section 8. These ‘new’ paradigms and models will be

Trayner, (2015) describe a community of practice as groups of people ‘who share a concern or a passion for something they do and learn how to do it better as they interact regularly’. Considering the diversity of definitions of communities and the scope of this work, communities are conceptualised here as a group of actors at the local level unified by a purpose to enact collective action to benefit the community and contribute to overall societal value, especially but not only by leveraging digital technology.
examined in the context of the new ‘age of turbulence’ that Europe and the world have now entered, most dramatically since 2020. In contrast to the 2007-2008 financial crisis characterized by a massive demand slump due to dramatically reduced consumer spending power, COVID-19 hitting Europe in early 2020 has caused a severe supply-side recession. This is itself being turbo-charged by the invasion of Ukraine in February 2022, depositing a thick layer of geo-political tectonic change on top. Underlying all this is the ‘mother-of-all’ crises that sees our natural environment stretched to near collapse, thereby putting the very survival of our species in peril. All this has disrupted both global and local supply chains as many in the workforce become used to virtual, remote and hybrid working, limitations on the movement of people and goods with transport and logistics put under severe pressure, at the same time as demand for many goods and services mushrooms. The World Economic Forum WEF (2022) sketches the large variety of high risks, ongoing system shocks and emergencies which are now expected to continue for the foreseeable future, one of the main enablers of which is digital technology-enabled ‘zoom-shock’ (Economics Observatory, 2021 & Millard, 2021). Even if these risks, shocks and emergencies can be significantly reduced, the world in which Europe will then find itself will be significantly different than the period prior to 2020.

2.2 Public services definitions

A working definition of public services is services that are designed and delivered for the sole purpose of creating various types of public value, as defined in Section 2.3 below. Public services can be designed and delivered by the public sector on its own, or via the other actors mentioned above operating within different government paradigms and models, particularly but not only in this report when using a variety of digital technologies. This report proposes examining public services as either or both ‘individual’ and ‘collective’ public services, for example:

- ‘Individual’/’direct’ public services: include traditional public services aimed primarily at individual citizens in areas like education and training, health, care, social services, libraries, employment, tax, etc. These are individual services as they normally operate at the individual level by establishing a direct interaction between individual service providers and individual service users, thereby providing individual public value as only the individual gains direct benefit. However, wider society is also clearly an indirect beneficiary when the individual citizen is well served.

- ‘Collective’/’indirect’ public services: created particularly by the collective impact of laws, regulations and the overall actions of the public sector in areas like planning, policy- and decision-making, institutional frameworks, legal and regulatory frameworks, administration, standard-setting and monitoring, participation and democracy, public procurement, services benefiting the environment, trade, defence, security (both cyber and non-cyber), investments in infrastructures, research and development (R&D), etc. In addition, public utilities like energy and water, police and prisons, although these also clearly have impact at the individual/direct level. These are all examples of collective services as their benefits are used or enjoyed by everybody at the same time, mainly continuously and often ‘out-of-sight’. They normally operate at societal level as part of a public value framework/structure within which all actors operate, thereby providing collective public value, as everybody gains benefit.

2.3 Distinctions between public values and public value

European public values are ultimately derived from the European Union’s overarching values as defined in Article 2 of the EU Treaty: “The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities.” In addition, the 2001 European Governance White Paper highlighted five principles that underpin European good governance: openness, participation, accountability, effectiveness and coherence. “Each principle is important for

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3 This is similar in intent to earlier definitions of public services as services of ‘general public interest’, i.e. as services of interest/relevance to everyone in society, where ‘everyone’ refers to both the individual and the collective levels and is denoted by the word ‘general’.

4 Collective public value can also be defined as ‘societal value’.

5 In general, public values are to be distinguished from (social) norms. According to Scharfbillig and others (2021) ‘Norms are rules or standards for behaviour of a member of a group or society. Examples are: Is it acceptable to jaywalk? How much money should be spent on a gift to a colleague or friend? Should I save more energy at home? There are a number of different types of norms, depending on the specificity and group that sets the norm, whether it is society at large or the specific social group one identifies with. The difference between values and norms is that norms are about specific behaviours, while values are trans-situational and therefore do not define exactly what to do.’

establishing more democratic governance. They underpin democracy and the rule of law in the Member States, but they apply to all levels of government global, European, national, regional and local.” (European Commission, 2001), see also Scharfbillig and others (2021).

These European public values can be related to the role of the public sector in which public administrations are unique actors operating within highly diversified and complex political, cultural and socio-economic ecosystems (Halmos et al, 2019). Public administrations differ from private sector organisations in a number of fundamental characteristics underpinning their values, determining their objectives, instruments, roles and relationships with other actors. The public sector is driven by the rule of law and aims to achieve the public good for its diverse communities, its mandate being the protection of citizens and promotion of well-being at large. Under the rule of law, public agencies and their administrators may exercise only those functions that have been granted to them through legislation. The ultimate aim of administrative law is good government according to law. While the administrative law developed over many centuries is essentially principles-based, it is nevertheless interlinked with the evolution of key socio-economic phenomena, such as, the industrial and technological revolutions, as well as including ethical and human rights perspectives (Manzoni et al, 2022).

The overall basis of the EU and its public values is its governance system which designates the body of rules, procedures and practices that relate to the way powers are exercised in the EU. The objective is to strengthen democracy at the EU level and to bring citizens closer to the EU institutions. To this end, European governance is based on the following principles (European Union Law, 2022):

- opening up and transparency of the EU institutions;
- involving civil society in decision-making;
- framing and implementing consistent and well-managed policies;
- ensuring a clear, stable and predictable regulatory framework supporting growth and jobs;
- respecting the principles of proportionality and subsidiarity;
- ensuring that each of the EU institutions and EU Member States explains and takes responsibility for what it does in the EU; and
- contributing to the global governance debate to improve the operation of international institutions.

The EU’s concrete approach to its public values used in this report is reflected in its good governance framework based on an amalgam of both principles and values defined as (European Commission, 2017):

- “Good governance starts with an agreed set of principles and values widely shared. There is no ‘right’ or ‘wrong’ formulation: each administration has its own typology and terminology, but there are recurring themes.”
- “Principles should be fundamental and enduring. An example is honesty, which should apply to all public officials, irrespective of time or place. In some cases, principles are adopted in laws or regulations, as rights or obligations on the administration, including in the form of civil service acts.”
- “Values may also be constant, but equally can emerge and evolve over time as conditions change. They might appear to be timeless, but can arise as a product of circumstance, such as transparency which is a relatively recently phenomenon.”

A consensus view of current European good governance can be summarised in the following nine public values of good governance (European Commission, 2017), which also directly align with the UN approach to good governance (United Nations, 2009) underlying the Sustainable Development Goals (United Nations, 2015b). In addition, for the purposes of this report, a tenth value is added derived from Kelly et al (2002) as described below:

1) Accountable
2) Transparent
3) Responsive
4) Equitable and inclusive
5) Efficient
6) Effective
7) Follow the rule of law
8) Participatory
9) Consensus oriented
10) Trust, legitimacy and confidence in the government itself.

In distinction to public values, Moore (1995) first articulated the role of government in creating public value, but it was Stoker (2006) and O’Flynn (2007) who demonstrated how it could create a post-bureaucratic and post-competitive view that allows us to move beyond the narrow market versus government failure approaches dominant in the New Public Management (NPM) era (see Section 3.2). However, Kelly et al (2002) were the first to go further than Moore in specifying three levels of public value of special relevance for European public governance:

1) “Services that provide the vehicle for delivering public value through actual service encounters for users or clients and the distribution of fairness, equity and associated values for citizens.”
2) “Outcomes that commonly overlap with services but should be considered separately as they encompass much higher order aspirations such as national security, poverty reduction, public health, etc.”
3) “Trust, legitimacy and confidence in government at an even higher level which are critical to public value creation: even if formal service and outcome targets are met, a failure of trust will effectively destroy public value”. As trust is today also seen as an essential value in good governance, it thereby provides an overlap with the European good governance public values listed above.

It can be seen from the above that 1) approximates to the benefits created for individuals by individual/direct services, and 2) approximates to the benefits created by collective/indirect services, as defined in Section 2.2 above. Not necessarily created by public services, however, is Kelly et al (2002)’s 3), although 1) and 2) together can, of course, help create or destroy trust, legitimacy and confidence in government.

These three components of public value creation provided the basis for a new way of thinking about government activity and a means of guiding decision-makers in considering the value, or the benefit, they create for the public. An important part of the public value approach is the distinction between the purely individualist focus of the NPM (cf. individual public services in Section 2.2) and the concept of collective preferences expressed through outcomes (cf. collective public services in Section 2.2). This directly contradicts the idea that individual preferences on their own can be aggregated to reflect what it is that the ‘public’ wants (or expects) from government, as has been the tendency in the NPM paradigm (Kelly et al, 2002). In addition, Kelly et al (2002) as noted above, propose a higher level of public value, i.e. trust, legitimacy and confidence in government. There is also a semantic as well as a difference in practice between what the public ‘wants’ compared to what the public ‘needs’. ‘Wants’ clearly reflect the consciously expressed preferences of the public, whether as individuals or collectively, which may be contradictory, unethical or illegal, and tend to be derived bottom-up. In contrast, ‘needs’ require some more objective definition of what is necessary for an acceptable standard of living or a good fulfilling life, which implies some externally imposed decision-making or assessment process that may or may not be democratically driven. A good example of such a needs-based approach are the definitions and distinctions between ‘absolute’ and ‘relative’ poverty and how to escape from them (endPoverty, 2023). This might be a future focus of research.

In the particular context of this report, the public sector can be seen as unique because it is the only actor in the quadruple helix whose mandate and role is to provide benefits for all actors and everyone in society and to make decisions and policies to this end whilst ‘leaving no-one behind’. This includes the challenges involved in balancing trade-offs between the invariably different interests of diverse actors. In contrast, the mandate of the other three quadruple helix actors (the private, educational/research and civil sector actors) is usually only to promote their own or their members’ interests and, although some may well strive to promote a wider public value, this is not inherent in their role (Millard, 2015a).

Leading on from the above, it is useful to clarify the following distinction used in this report between the public values of good governance and public value benefits:

- **The public values of good governance** (taking the definition used by the European Commission, 2017) refer to how public value is created – thus public values can be seen as the ‘means’ of creating public value, as sketched in Figure 1.
• **Public value** (taking the definition proposed by Kelly et al, 2002) refers to the actual benefits derived from public governance that accrue to all quintuple helix actors – thus public value can be seen as the ‘ends’ composed of both outcomes and impacts, as sketched in Figure 1.

It is important to note that this report, its analysis and conclusions, is prepared from the perspective of European public values of good governance and an understanding of European public value derived from democratic public governance systems, especially the different forms found in Europe.

### 2.4 Digital technology definitions and developments

In the context of this report, examining the evolution and future development of public governance paradigms and models, the impacts of both ‘specific’ and ‘general’ digital technology lenses are examined. The ‘specific digital technology’ lens looks at individual technologies or groups of technologies and how they evolve over time. This is outlined in Table 1, and briefly summarised at the bottom of Figure 2, showing how each of the five generations of both government and of the web found in the literature tend to be aligned, despite some contrasting definitions and timelines depending on the particular purpose and perspective of each source. Specific generations of government and the web tend to develop together, although web advances often precede government advances by several years as the technology is typically a facilitating factor. However, it is also clear that the government-digital technology relationship is not uni-directional from the latter to the former, given that governance independently also shapes digital technology through economic and technology policy, regulation, investment, procurement, etc. (Misuraca et al. 2020). It is also clear that many of the basic digital technologies of the past 30 years that have subsequently been used for commercial development were, in fact, first developed by government thereby providing important evidence of successful public-private partnerships in practice, whether or not via formal collaboration (Mazzucato, 2013).

The ‘general’ digital technology lens sees today’s digital technology as the latest stage in the evolution of ‘general purpose’ technologies through successive industrial revolutions each of which builds on previous stages like steam and electricity that were already in place prior to 1945. Thus, digital technology underlies and supports virtually all other technologies and everything in a modern society. For example, today digital technology enables robotics, additive manufacturing and 3D printing, data processing, social media, environmentally-sustainable technologies, food production, health care, etc. According to the World Economic Forum (WEF, 2016): “The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.”

This WEF definition, in effect, splits the era of digital technology as a general-purpose technology into two parts, i.e. the Third Industrial Revolution (3IR) and the Fourth (4IR). One justification for this is the 2017 statement by Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, in which he widens the economic focus of the 4IR to incorporate both societal and environmental issues as compared to 3IR: “We are witnessing profound shifts across all industries, marked by the emergence of new business models, the disruption of incumbents and the reshaping of production, consumption, transportation and delivery systems. On the societal front, a paradigm shift is underway in how we work and communicate, as well as how we express, inform and entertain ourselves. Equally, governments and institutions are being reshaped, as are systems of education, healthcare and transportation, among many others. New ways of using technology to change behavior and our systems of production and consumption also offer the potential for supporting the regeneration and preservation of natural environments, rather than creating hidden costs in the form of externalities.” (Schwab, 2017) The present-day pace, scale and scope of change under 4IR is unprecedented, far reaching and is having a profound impact on public governance paradigms and models.

When looking at 4IR in the context of current and likely future societal challenges, the need for a Fifth Industrial Revolution (5IR) is now beginning to be identified that will have profound implications for new paradigms and models. 5IR should ideally enable the evolution of the modern manufacturing process in order to allow humans and machines to perform work hand-in-hand, combining the unique cognitive abilities of workers and the accurate technical expertise of robots to ensure an innovative culture in the workforce. “This vision recognises the power of..."
industry to achieve societal goals beyond jobs and growth, to become a resilient provider of prosperity, by making production respect the boundaries of our planet and placing the wellbeing of the industry worker at the centre of the production process. It complements the existing Industry 4.0 paradigm by having research and innovation drive the transition to a sustainable, human-centric and resilient European industry. It moves focus from solely shareholder value to stakeholder value, for all concerned” (European Commission, 2021a). The second to fifth industrial revolutions (2IR to 5IR) are also briefly summarised with approximate timelines at the bottom of Fig. 2.

Table 1. Indicative cumulative developments in government and web generations

<table>
<thead>
<tr>
<th>Generation</th>
<th>Government generation 7</th>
<th>Web generation 8</th>
<th>Example digital technology 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Online access to service information; standalone services and automation of some traditional back-office procedures but without re-engineering.</td>
<td>‘Read-only’ using htmlStatic web-pages and web-pages to display directories, search engines (e.g. information and deliver Netscape, early Google)</td>
<td></td>
</tr>
<tr>
<td>c. 1993</td>
<td>Interactive ‘socialised’ user-centred services; user generated content; collaborative tools for more social and interactive podcasts, blogs, images, videos; open, accountable, responsive and efficient government; recognition of digital divide; start of re-engineering both front-office services and back-office procedures to better fit societal demands.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>Semantic web-based government that can start to personalise &amp; proactively deliver services; balancing efficiency and effectiveness; open &amp; platform government, open government data.</td>
<td>Semantic ‘intelligent’ Data integration, automation and web processing; web ontology; intelligent machine-language (OWL); 3D graphics and machine interaction; spatial 3D; connectively and early data ubiquity; gamification; cloud computing; IoT; open data; early online-only; digital-by-default; policy modelling; services; traceable &amp; transparent interactions.</td>
<td></td>
</tr>
<tr>
<td>c. 2000</td>
<td>From e-gov to digital gov; optimising work processes and systems; operational efficiencies regardless of location; between physical and virtual and increased productivity through agile self-learning systems; worlds; big, linked &amp; interactive approaches using big data; full user-control; advanced personalised &amp; proactive government; breaking down silos, joined-up and whole-of-government; one-stop-shop; predictive government, i.e. no-stop-shop (through AI and machine learning).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>Decentralised web apps Emotional intelligence; full digital &amp; real peoples’ lives; services fitting peoples’ lives, platform &amp; APIs to wallets; full social personas; full human is as important as the digital; governing not for but with people; people expect more ‘human touch’ through digital sanitisation; balancing efficiency with both effectiveness &amp; ‘affectiveness’ of own data and identity; nodes; decentralised identifiers; but opposite dangers of digital sovereignty; cryptographic and/or private security.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 2008</td>
<td>From user- to human-centric; focus on real people &amp; real peoples’ lives; services fitting peoples’ lives, platform &amp; APIs to wallets; full social personas; full not the reverse, using a ‘whole-of-life’ mindset; the empower people to digital twinning; full VR human is as important as the digital; governing not for but with people; people expect more ‘human touch’ through digital sanitisation; balancing efficiency with both effectiveness &amp; ‘affectiveness’ of own data and identity; nodes; decentralised identifiers; but opposite dangers of digital sovereignty; cryptographic and/or private security.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>From e-gov to digital gov; optimising work Distributed data Voice and symbiotic interaction processes and systems; operational efficiencies regardless of location; between physical and virtual and increased productivity through agile self-learning systems; worlds; big, linked &amp; interactive approaches using big data; full user-control; advanced personalised &amp; proactive government; breaking down silos, joined-up and whole-of-government; one-stop-shop; predictive government, i.e. no-stop-shop (through AI and machine learning).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 2015</td>
<td>From user- to human-centric; focus on real people &amp; real peoples’ lives; services fitting peoples’ lives, platform &amp; APIs to wallets; full social personas; full not the reverse, using a ‘whole-of-life’ mindset; the empower people to digital twinning; full VR human is as important as the digital; governing not for but with people; people expect more ‘human touch’ through digital sanitisation; balancing efficiency with both effectiveness &amp; ‘affectiveness’ of own data and identity; nodes; decentralised identifiers; but opposite dangers of digital sovereignty; cryptographic and/or private security.</td>
<td></td>
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</tr>
<tr>
<td>5.0</td>
<td>From e-gov to digital gov; optimising work Distributed data Voice and symbiotic interaction processes and systems; operational efficiencies regardless of location; between physical and virtual and increased productivity through agile self-learning systems; worlds; big, linked &amp; interactive approaches using big data; full user-control; advanced personalised &amp; proactive government; breaking down silos, joined-up and whole-of-government; one-stop-shop; predictive government, i.e. no-stop-shop (through AI and machine learning).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 2020</td>
<td>From user- to human-centric; focus on real people &amp; real peoples’ lives; services fitting peoples’ lives, platform &amp; APIs to wallets; full social personas; full not the reverse, using a ‘whole-of-life’ mindset; the empower people to digital twinning; full VR human is as important as the digital; governing not for but with people; people expect more ‘human touch’ through digital sanitisation; balancing efficiency with both effectiveness &amp; ‘affectiveness’ of own data and identity; nodes; decentralised identifiers; but opposite dangers of digital sovereignty; cryptographic and/or private security.</td>
<td></td>
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</tr>
</tbody>
</table>

7 Governments 1.0, 2.0 and 3.0 are largely derived from GOV 3.0 (2021); Government 4.0 is largely derived from Telecom Review (2022), Long et al. (2021) and European Commission (2021b); Government 5.0 is largely derived from PwC Consulting (2019) and European Commission (2021b).

8 Web 1.0, 2.0 and 3.0 are largely derived from Mosinegutu (2022) and Hackeroon (2001); Web 4.0 is largely derived from Hackeroon (2021); Web 5.0 is largely derived from Weston (2022). Being aware that other categorisations exist, we decided using this categorisation from Web 1.0 to Web 5.0 because of its direct fit with the evolution of public governance models and industrial revolutions.

9 Sources include those shown for government and web generations.
Overall, digital technology should be seen as a ‘tool’ for public governance paradigms and models, i.e. a means to an end, not the end itself. The other main tool depicted in Figure 1 is people, so it useful to conceptualise three tool archetypes: digital technology on its own, a hybrid of digital technology and people, and people without digital technology. This seems to fit in many contexts, e.g. in work and employment where COVID-19 has dramatically increased hybrid working that combines in-person presence some of the time with remote virtual working the rest of the time (Millard, 2021). The hybrid of, and reciprocal relationships between, digital technology and people is what 5IR is all about.

2.5 Overview of European public governance paradigms

Figure 2 provides a synopsis of the main developments since 1945 of European public governance paradigms, each of which gives rise to one or more public governance models in three main groups: A) prevailing, B) novel and experimental, and C) new and emerging. Only A) and B) are considered in this report, whilst a detailed consideration of C) will be added in a follow-up report. The intention is not to provide exhaustive portraits of each group, but to attempt to highlight archetypes of representative public governance paradigms and their constituent models rather than attempting to cover everything.

Detailed definitions and examination of groups A) and B) in the development of public governance paradigms are provided in Sections 3 and 4, but all three groups are introduced in the following:

A. Prevailing: illustrated by four representative governance paradigms (numbered 1), 2), 3) and 6) in Figure 2).

To a greater or lesser extent, these provide the basic foundation of public governance today in all European countries, depending on their different historical, political and cultural conditions. The heyday of 1) and 2) long predated any significant relevance of digital technology for public governance, which first started to have an impact in the early-1990s. On the other hand, 3) coincides with the early impact of digital technology and 6) arose as a heightened version of 2) in the wake of the 2008 financial crisis. All four are, however, less prominent today, if only because there is now a large number of more recent governance paradigms that crowd the field (as covered in B below):

1) Traditional Public (Weberian) Administration: from about 1945 with digital technology only relevant from the early-1990s.

2) New Public Management (NPM); market-based: from about 1980 with digital technology only relevant from the early-1990s.

3) The Neo-Weberian State: from the late 1990s: a reaction against NPM and some reversion to Weberian Administration but with a more external orientation.


These four paradigms arise from a long-established combination of more or less top-down and market-driven policies, and their influence is still prevailing today in the form of underlying structures and principles. However, their dominance is now weakening as more recent governance paradigms, largely enabled by digital technology, are taken up.

B. Novel & experimental: illustrated by at least five governance paradigms, forming two chronologically defined clusters in Figure 2:

6) Networked and 5) Public value management: these generally coincide with the significant impact of Generation 2.0 digital technology on public governance from about 2000.

7) Open: begins to have a significant impact on public governance in the wake of the 2007-8 financial crisis coinciding with Generation 3.0 digital technology.

8) Sustainability and 9) Locality and community: these begin to have a significant impact on public governance from about 2015 coinciding with Generation 4.0 digital technology.
These group B) five novel and experimental governance paradigms give rise to a large number of distinct models that are today more important collectively in most countries than the prevailing models in group A). However, their variety and relatively recent provenance mean their individual adoption is, to date, not as ubiquitously widespread as Group A). Their developmental speed and sophistication is necessarily based on digital technology to varying degrees, although the technology is never itself a sufficient condition. Indeed, all of the paradigms illustrated in Figure 2 are primarily driven by contemporaneous influencing factors and framework conditions in different European countries, as outlined below in Section 4.

C. **New & emerging**: the number and type of governance paradigms from about 2020 is as yet unclear as they are largely in the future and thus highly speculative. However, tracing very recent developments and commentary suggests some illustrative possibilities which are likely to be strongly interrelated and that arise

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10 Note that the twelve paradigms are numbered chronologically, but positioned in Figure 2 according to which of the three groups (A, B or C) the paradigm is allocated.
from, or at least are significantly accelerated by, turbulence and uncertainty. Although these societal challenges initially kicked off in the aftermath of the 2007-8 economic and financial crisis, they become acute and much more visible in early 2020 with the onset of the COVID-19 pandemic, now reinforced by the invasion of Ukraine as well as the dramatically worsening climate crisis and other ongoing shocks (for an overview of shocks, see WEF, 2022):


During the whole time span examined from 1945 to the present, each public governance paradigm, once established, and retains real influence to the present day, although this often declines in relative terms as new paradigms are created. Thus, commencing in about 2000, paradigms run in parallel, building upon each other in distinctive ways related to each countries’, as well as to Europe’s, key influencing factors and framework conditions. In these different contexts, different paradigms are likely to both complement as well as contradict each other.

The following example exemplifies the typical complexity of developments in public governance paradigms and models with many likely to show the co-existence of various combinations of parallelism, complementarity, contradiction and even conflict. Thus, new models rarely replace existing ones, but accumulate layers resulting in a form of public governance sedimentation over time.

**Box 1. State and local level public governance in Slovenia**

Complementary and contradictory relationships are currently seen in Slovenia where the state level is still very much ‘Neo-Weberian’ whilst the local level is a mix of NPM coupled with ‘digital-era governance’. The state administration is characterised by centralisation with a top-down organisational design because its institutions place greater emphasis on internal control and strictly follow internal rules/guidelines/policies for employee development. In contrast, managerial public governance practices and, as termed by Aristovnik et al (2022), ‘digital era’ governance from about 2005, are more prominent in institutions at the municipal level. In the Local Self-Government Act of 1994, the functions of municipalities (local self-government) were strictly separated from those of the state administration, where elements of ‘good governance’ are implemented in service-oriented authorities with less conflict between public and private interests. Local self-government pays more attention to individual elements as well as to good administration as a whole. In addition to compliance with regulations, they develop a partnership approach to the parties, especially in terms of openness and thus higher ultimate performance. This is because of the clear division of responsibilities between state administration and local self-government embedded in the 1994 Act which limits the state rather than the municipality. In other words, it prevents the state from interfering in the municipalities’ governing sphere and allows the latter to obtain the functions, under authentic competence, that are crucial for the life and work of inhabitants of the municipality. Following this approach, the functions can be exercised in a more effective and rational way within the local community rather than through state administration (Aristovnik et al, 2022).

In Section 3, although the prevailing governance paradigms are examined relatively briefly, their continued importance needs to be highlighted as they still provide a foundation for all subsequent paradigms. The main focus of this report is instead on the novel and experimental paradigms and models in Section 4. These are where we see the big impacts of digital technology and are the ones which collectively have the most significance for Europe today and provide a springboard for exploring future scenarios.

### 3 Prevailing European public governance models

#### 3.1 Traditional Public (Weberian) Administration paradigm from late 19th Century

The traditional Weberian model of administration and bureaucracy (Weber 1946) arose in Europe during the late 19th and early 20th centuries and remained dominant paradigm until the late 1970s. It is based on hierarchal control, the rule of law and clear rules, standardised procedures together with professionalism, political neutrality and objectivity based on clear divisions of labour. (Aristovnik et al, 2022) In principle, this enables rational decision-
making, improves accountability and reduces the potential for corruption. Koppenjan (2015) makes similar points but also articulates some of the drawbacks of this traditional Weberian model. These include its relatively high implementation and monitoring costs related to limited financial resources and, given its top-down nature, lack of knowledge inputs. This leads to uniform, one-size-fits-all, solutions based on rigid rules with complicated incentive systems that in complex settings lead to poor solutions which feed back into higher costs invoking dissatisfaction and even resistance.

3.2 New Public Management (NPM) and market-based paradigms from about 1980

In partial reaction to the perceived bureaucratic drawbacks of the traditional Weberian public governance paradigm, but also in response to the 1970s’ oil shocks and runaway inflation, a New Public Management (NPM) paradigm was introduced into public governance about 1980: This encompassed inter alia a strong emphasis on the large-scale adoption of private sector management disciplines and a strong focus on attempts to calibrate both processes and results (Hood 1991). This typically involved detailed measurement, target setting and the outsourcing of an increasing number of government functions to the private sector which was deemed to be more efficient in fulfilling them. According to Torfing et al (2020), there was a preference for contractualism, agentification and strict budget discipline. This involved economics and management moving into the centre of both the theoretical debate and the actual reorganisation of public administration through the co-option of entrepreneurial and managerial methods from the private sector and applying them in public institutions. Citizens were treated as ‘customers’ who deserved to be offered ‘choices’ mainly from commercial providers, with priorities shifting towards the productivity of public bureaucracies and management (Aristovnik et al, 2022). This resulted in so-called ‘managerialism’ and ‘Total Quality Management’ approaches (Pollitt 1990).

The prioritised focus of NPM is the use of market-like competition to drive public sector efficiencies, including through the strict control of finances and public spending. The 1980s were also the period when politics in both North America and Europe (particularly the UK) were strongly anchored to money-supply economics and the idea of the relatively ‘small state’ championed by Milton Friedman’s Chicago School philosophy that largely replaced the more Keynesian interventionist and ‘big government’ approach prominent until the late 1970s (De Vroey, 2015). NPM and market-based models are one example of how each of the periods and public governance paradigms sketched in Figure 2 tends to align with longer-term political, societal and technological developments.

Although NPM is able to bring some necessary rigour, cost-consciousness and modern methods of good management to public governance by learning from the best in the private sector, Aristovnik et al (2022) also outline some of its drawbacks, including its short-term perspective and a primary focus on budget reduction at the expense of quality standards in public services. Furthermore, corruption, democratic accountability, and questionable ethics in the public sector were also a concern (Dunleavy and Hood 1994). The perverse effects of an over-reliance on performance measures and making these the main objective, instead of the actual improvement of public services and public value, has often seen to be the result of NPM in practice. If NPM leads to the specification of overly rigid outputs and outcomes up front, which are hard to achieve in complex settings, a reversion to some of the negative features of strong top-down Weberian control can come about with the subsequent loss of trust.

According to Arthur (2014), “there is a general rule in social and economic life that in any system, people will find a way to exploit it. Or to say this more succinctly: all systems will be gamed”. Metrics, measures and monitors can create behaviour that conforms to the target but runs counter to the policy’s original intention. Of course, not all metrics cause such behaviour, but when they do this tends to be because the performance metric is designed around strict but simple evaluation criteria that do not take account of the complexity of the issues and the myriad of contextual conditions.

Box 2. New Public Management (NPM): UK’s National Health Service

In 2020 the UK’s National Health Service withdrew its four-hour accident and emergency (A&E) waiting time target, in part because it led to the wrong behaviour from staff. The target was for 95% of patients to be treated, discharged, admitted or transferred within four hours. A laudable goal in theory, but as the clock ticked ever closer to the metric’s red-line, A&E staff changed their treatment sequencing away from those who’d been triaged as having the most urgent need, towards those who would help achieve the target’s metric (Nuffield Trust, 2020).
Such a mismatch between a poorly thought-out target and reality creates the perfect conditions for those involved to game the system; it meets the letter, but not the spirit of what was intended. There are many solutions to this challenge taken up by later models, such as shifting the focus away from strict performance measurement to designing metrics and the data they generate to guide rather than define improvements in performance. In this way, the data becomes a useful tool in helping teams determine where to make improvements and this is typically best done by transferring data design, collection and ownership to the operational team itself (Muller, 2018), as exemplified in the Netherlands’ Buurtzorg example in Section 4.3.4.

Box 3. New Public Management (NPM): Danish tax system

The Danish tax system was for many years driven by an NPM approach leading to downsizing of in-house specialist staff, outsourcing to private companies and the introduction of IT systems seen as able to take over most tasks previously done by these specialists. In 2016, it became clear that this policy contributed strongly to losses amounting to billions of Euros of tax revenue, both internationally and domestically. In August 2016, the tax minister announced a reversal of these policies with massive re-investment in the tax system, the re-employment of dismissed tax personnel, the employment of thousands of new personnel, and in much better IT. This is a clear example where political decisions leading to cutting specialist human resources alongside blind over-optimistic faith in untested IT can lead to massive inefficiencies and losses (Millard, 2017a).

3.3 Neo-Weberian paradigms from the late 1990s

According to (Aristovnik et al, 2022), although most elements of the traditional Weberian model continue to this day, many aspects have been renewed and new ones incorporated over time as part of a continuous modernisation and adaptation process that the authors’ term the ‘Neo-Weberian State’ from the late 1990s. Partly in reaction against the perceived disadvantages of the NPM paradigm with its largely internal managerial orientation, the ‘neo’ elements denoted a shift towards a more external one and meeting citizens’ needs, strengthening representative democracy with mechanisms for consultation and stressing the achievement of public value results. For example, in the early 2000s a Public Value Management (PVM) mindset and practices, and increasingly a good governance philosophy focusing on new ideas around public value, were incorporated. In fact, according to Pollitt and Bouckaert (2011), the Neo-Weberian model was mainly developed in countries reluctant to implement full NPM reforms. This phase is seen as consisting of a plethora of hybrid models that include these approaches, as well as many of the others explored below, within the overarching European tradition that Figure 2 represents.

Box 4. Neo-Weberian governance: the French ‘Mode of Regulation’

As well as many significant commonalities across Europe, each country has developed its own unique approach to public governance. For example, the French ‘Mode of Regulation’ is a combination of institutional, normative, cultural and regulatory components that ensure the functioning of both the economy and society. Complex modern systems incorporate forces that keep these components together, despite the evolution of industrial structures, social relations, and techniques of production, as well as patterns of consumption. By its nature, any transformation will alter the equilibrium of these components, which may have profound implications on individual and collective rights, e.g. in relation to social relations, and in terms of income accumulation and distribution (Misuraca et al, 2020).

Box 5. Neo-Weberian governance: SIGMA Principles of Public Administration Reform (PAR)

A well-functioning public administration requires a professional civil service, efficient procedures for policy and legislative development, well-defined accountability arrangements between institutions and citizens as well as among institutions, the ability of the administration to efficiently deliver services to citizens and businesses, and a sound financial management system. Since 2014, the European Commission and the OECD have together defined the scope of public administration reform for a well-functioning public administration in each of six core areas, all of which need to be increasingly supported by ICT (OECD, 2014a).
Priority 1: Strategic framework of public administration reform: the provision of up-to-date, accurate information as evidence upon which to base strategic decisions, the ability to interrogate data and undertake *ex ante* and *ex post* impact assessments of different policy options, and to undertake widespread consultations and awareness raising, including increasing trust in the process.

Priority 2: Policy development and coordination: as for Priority 1, plus mechanisms, tools, data for content and knowledge management and decision-making at policy level.

Priority 3: Public service and human resources management: mechanisms, tools, data for content and knowledge management, decision-making on public service and human resources level, service monitoring and feedback, and human resources monitoring and feedback.

Priority 4: Accountability: transparency, publishing data and information, and tracing and assessing processes and decision-making for future improvements and refinements.

Priority 5: Service delivery: interoperability and base registries to enable well-functioning services, both online and traditional as well as both push and pull, portals, user-centricity and empowerment, and service co-creation and refinement.

Priority 6: Public financial management: allocating, managing, tracking, monitoring, auditing, open data (based on legal framework), and public procurement.

**Box 6. Neo-Weberian governance: Administrative Burden Reduction**

Administrative Burden Reduction (ABR) was a key priority for achieving the EU’s eGovernment Action Plan, 2011-2015, on Efficient and Effective Government. Administrative burdens are the costs to businesses and citizens of complying with the information obligations resulting from government-imposed legislation and regulation. ABR can be attained through the integration of eGovernment tools, the smart use of the information that citizens and businesses must provide to public authorities and making electronic procedures the dominant channel for delivering eGovernment services. A solution would be to implement the principle of the ‘once only’ registration of relevant data. This ensures that citizens and businesses supply certain standard information only once, because public administration offices take action to internally share this data, so that no additional burden falls on citizens and businesses. Another effective strategy is to produce default digital services that are so compelling and easy to use that all those who can use them will choose to do so whilst those who cannot are not excluded, typically through the provision of specialist non-digital support. Although the concepts of the ‘once only’ principle, ‘digital by default’ and making electronic procedures the dominant channel for delivering eGovernment services can be easily understood, their practical implementation encounters many obstacles, such as policy, legal and technological issues as well as data and protection requirements. Thus, a roadmap was developed with Phase 1 implementing ‘once only’ strategies, Phase 2 simplifying and personalising services, and Phase 3 pursuing digital-by-default strategies (European Commission, 2014).

**Box 7. Neo-Weberian governance: phenomenon-based public administration**

The Finnish Innovation Fund, SITRA, is proposing that the national government and ministries reform their operations in a more strategic, consistent and longer-term direction. Functional reforms are proposed and, to a limited extent, structural changes, which provide political leaders, ministries and public officials with tools that support them in strategic decision-making and effective implementation. Particular attention is paid to identifying phenomena that are of importance for the future of Finland and require cross-sectoral policy solutions. The strengths of the Finnish administration are often characterised as stability and predictability. In the future, the maintenance of these traditional strengths and the development of new ones will require an active, future-oriented approach and a strong collaborative culture.
Many societal problems, such as climate change and increasing social inequality, are complex and interdependent phenomena which should be examined in a more comprehensive and systemic manner than is presently done. The current siloed administration and the level of detail and microscale nature of legislation and budgeting, however, make it significantly harder to apply a cross-administrative, comprehensive approach. In today’s complex and constantly changing operating environment, the decision-making capabilities of the executive and legislative bodies of government, and the whole public administration’s capacity to implement different reforms, in a judicially, economically and socially sustainable manner, does indeed need strengthening. For example, a societal phenomenon, such as, the social exclusion of young people has complex cause-and-effect relationships that span many ministries. Instead of attempting to address this phenomenon separately in each ministry, risking loss of impact and even negative impacts through contradictory initiatives, work is centralised across ministries to enable the effective targeting of the money across the administration as a whole. This results in beyond-siloed decision-making and a cross-sectoral and phenomenon-based approach (SITRA, 2018).

3.4 Lean and austerity paradigms from about 2008

The lean and austerity paradigm is, in essence, a continuing variety of the NPM tradition, but is separately labelled as it was given a remarkable twist through an even greater emphasis on finding cost savings and efficiencies in public administration, public services and public governance generally in response to the global economic and financial crisis in 2007-8. However, an important difference between early NPM and lean governance is that the latter was enabled by a step-change in digital technology from Generation 2.0’s read-write technology to Generation 3.0’s semantic intelligence. Paradoxically, the financial crisis was itself caused, alongside poor public policies, inadequate risk assessment and lack of regulation, by technology Generations 1.0 and 2.0, the early machine-machine interactivity of which enabled financial transactions to take place in the absence of any human oversight. This ‘Big Bang’ automation of financial markets enabled large amounts of stocks and shares – and derivatives of them – to be traded automatically by computers rather than by humans (Dodson, 2008). Treating early NPM and lean governance separately, is also justified because the latter’s Government 3.0 technology was also being used in parallel by some of the early novel and experimental paradigms, in particular networked and public value governance (see Sections 4.1 and 4.2).

Janssen and Estevez (2013) define lean government as ‘doing more with less’ leading to the changing role of government in responding to complex political, economic, managerial, cohesion and democratic challenges, especially in the aftermath of 2008. Responding to the financial crisis, most governments attempted to reduce both their spending and the size of their administration even more rapidly than before. The footprint of many governments was getting smaller whilst imposing austerity conditions on society and, in attempts to compensate to some extent for this, they deployed Generation 3.0 technologies for innovative networking and outsourcing with both the private and civil sectors which were encouraged to take over some government public service responsibilities at much lower cost. In this lean governance paradigm, responsibilities and accountability are in principle assigned to a specific government agency for delivering services themselves, but are typically outsourced through partnerships and collaboration with multiple actors.

The move to leaness and austerity also helped to highlight the benefits of developing open and platform governance (see Section 4.3). It became clear that the lean ‘small state’ is even less able to solve wicked societal problems on its own than a ‘large state’, given that these problems pay little or no attention to organisational boundaries. As argued by both Janssen & Estevez (2013) and Millard (2015a), public and private organisations began to realise the need to form multi-actor ecosystems in which the various actors play particular roles in solving societal problems. This requires orchestration by governments deploying Generation 3.0 and later technologies, including social media, to support collaboration beyond the boundaries of the public sector.

Box 8. Lean governance: Standard Business Reporting (SBR) in the Netherlands

Drawing on the best practice of Standard Business Reporting (SBR), an example of lean government is the eXtensible Business Reporting Language (XBRL)-based business-to-government reporting in the Netherlands in which both companies and businesses collaborate on a public platform for mutual benefit whilst doing
more with less. Lean government is all about doing better with less through the use of ICT and the realisation of process improvements. XBRL showed initial success in realising lean government. Once data is stored in XBRL format, businesses can transmit it electronically to government for reporting purposes. For businesses, XBRL increases both corporate accountability and transparency by reducing the time needed to collect, structure and share corporate data within the company, as well as with supply chain partners, investors and government agencies. Government agencies benefit from higher information quality (no data rekeying in the reporting chain) and new forms of compliance monitoring requiring fewer resources (Bharosa et al, 2012).

**Box 9. Lean governance: ‘Big Society’, UK**

The UK’s new 2010 Coalition Government launched its flagship policy as ‘Big Society not Big Government’ of which Prime Minister Cameron said “…a different way of governing, a different way of trying to change our country for the better.” The idea was to equate “Big Society with ‘liberalism’, and simultaneously, with ‘empowerment’ with ‘responsibility’. The latter is key to the Big Society idea: Cameron claims to empower, that is to make us responsible as individuals, communities and, ultimately, as a population, so that we might become actively involved in community control and self-management. The Big Society thus aimed to be a ‘big advance for people power’”, although many have argued it was simply a ‘mask for austerity’ and a partial retreat of the state (Bulley et al, 2014). A central plank of this “different way of governing” was to build a stronger culture amongst the population at large of giving time and money with the help of online technology, and to start a national debate on society’s attitude to giving. It proposed a new role for the government as a facilitator of giving, making it easier for philanthropists, volunteers and charities to form partnerships with the help of online technology (British Library, 2010).

4 **Novel and experimental public governance paradigms from about 2000**

As mentioned above, from about 2000, public governance paradigms and models began for the first time to be directly enabled by, and crafted around the potential of, digital technology. In the 7-8 years before this date, public governance was starting to use digital technologies, but these were not yet changing its basic characteristics, instead they tended simply to replicate existing government functions and services by putting them largely unchanged online. As can be seen from Figure 2, another important change around the year 2000 sees paradigms and models switch from being mainly process and organisationally focused, and labelled as such by the actors involved as well as by academics, to having a specific public value and societal focus. Post-2000, labelling began to be directly conceived to address important societal challenges, enabled and driven by the fact that digital technologies had become powerful enough for public governance to exploit them in a myriad of significant ways. Before about the year 2000, there were only a few standard paradigms and models, but in the years since there has been a mushrooming of novel and experimental trends and possibilities enabled by the technology but driven by changes in society. However as noted above in Section 3.4, the adoption of these same digital technologies by financial markets also led directly to the 2007-8 financial crisis that ushered in the lean and austerity paradigm as a particular form of NPM. From this example, it is important to note that digital technology is not neutral as sometimes suggested, given it is designed, rolled out and deployed to serve specific societal interests, whether public, private or civil, so how this takes place is of crucial interest. (See also Section 5 below.)

Many of the post-2000 public governance paradigms and models can, of course, trace many antecedents back to earlier manifestations, especially from the Neo-Weberian tradition which was the first to attempt to take actual user needs into account. Also, as mentioned above, later paradigms and models rarely fully replace existing ones, but accumulate layer upon layer resulting in a form of public governance sedimentation over time. In the early 2000s, critics of the NPM approach included Dunleavy & Margetts (2006) heralding instead a new digital-era governance, and Stoker (2006) in his proposals for Public Value Management which linked the changes seen or required in the public sector to networked governance now beginning to be enabled by technology and, with this, the need for open systems to support public value creation. Public value also starts to be seen arising from technology-enabled public sector reforms (Cordella & Bonina 2012) and as contributing to making government
processes more transparent and accountable through ‘transformational’ t-governance and business process reengineering (Weerakkody & Dhillon 2008 and Van Veenstra & Janssen 2012).

4.1 Networked public governance paradigms: from about 2000

The idea of networked governance started to gain attention as part of the Neo-Weberian paradigm, but at that stage largely in the absence of enabling technology. Thus, it only began to be put into widespread practice once the technology was available to effectively link actors together with the start of Generation 2.0 around 2000. This enabled the re-engineering of both back- and front-offices in the public sector, interactive and collaborative networking using social media, and content generated and exchanged by all actors. In 2001, the EU’s White Paper on European Governance (European Commission, 2001) highlighted the need for much greater citizen involvement and public and private collaboration in and through networks and partnerships, and this was followed in 2009 by the EU’s Committee of Regions White Paper on Multi-level Governance (Committee of the Regions, 2009). Börzel & Heard-Lauréote (2009) noted that the 2001 White Paper showed “while there is broad scholarly agreement that policy-making in the EU involves a multitude of public and private actors at different levels of government, there is less agreement whether the EU should be conceptualised as a form of governance by networks or governance in networks.”

The purpose of networked governance is to achieve a balance between the needs of centralisation and decentralisation (across the EU) at specific times, places and contexts in order to meet the principles of proportionality and subsidiarity. “From the conception of policy to its implementation, the choice of the level at which action is taken (from EU to local) and the selection of the instruments used must be in proportion to the objectives pursued” (European Commission, 2001). Cisco (2007) describes this as a the ‘connected republic’, a distributed network of small pieces loosely joined. The evidence strongly points to the need for local and regional integration, interoperability and coordination, as illustrated in Figure 3, including sharing data, resources, services and control but with local adaptation, through networking before fully joined-up services can be rolled out (OECD 2005, Scholl 2005, Millard & Kubieck 2004).

It was thus clear that prior to about 2000 there were very few well-functioning governance networks, at least formally, as arrangements were either top-down and hierarchical as in the Weberian tradition or operating as a marketplace in the NPM tradition. However, there was recognition that there were many informal networks especially amongst decision-makers and administrators, but that other actors were barely involved, although some of course also had their own informal networks but that few of these were interconnected, certainly not by digital technology. Thus, at best, these were largely isolated and disconnected networks and mainly informal, and even when connected, this was consultative more than collaborative, so the power relationships were highly skewed. Post-2000 networked governance recognised and attempted to address these challenges using the new technology to construct more formal, joined-up and systemic relationship networks.
One of the critical factors in such networks are open standards as specification frameworks for interoperability, particularly in terms of functionality. Different coordinating mechanisms need to be used depending on which level actually has responsibility for policy action, whether the centre, amongst different departments, at regional level, etc. At the lowest level, networking between tasks and services can usually be achieved by cooperation and agreements between the parties involved. Another situation arises when the networking of services is to be achieved which are offered nationwide by different agencies with different geographical jurisdictions. Frequently, there is coordination for legal and organisational issues which the technology needs to support.

It is clear that jurisdictional issues across the public sector within each Member State as well as at EU level are critical. These issues involve the various institutional and organisational structures, the distribution of competencies, the actual legal framework, and relative power and decision-making. In practice, coordination and networking tend to start through the sharing of services and applications between agencies and regions, for example organised through middle offices, service centres and localised front-end services built on shared back-end architectures.

Koppenjan (2015) characterises European public governance as shifting variations between three basic models: hierarchical (Weberian), market (NPM) and networked as the new paradigm enabled by the technology to exploit the benefits and avoid the drawbacks of the first two models. He defined networked governance as a conscious attempt at designing and guiding interaction processes through the structures of networks with the intention to further collaboration. It was enabled by the rise of the ‘network society’ and the societal changes this wrought driven by individualisation, horizontalisation and digital technology (new www, social media and ‘mediatisation’), especially in the context of changes in the nature of the policy challenges, such as an increase in ‘wicked problems’ and more cross-boundary problems, i.e. focusing more on flows instead of places (Castells, 2005). This was also related to changes in the nature of government and its relationships with society attempting to find new forms of public governance, given that NPM was now widely seen as leading to the fragmentation of government and putting coordination under strain as it was becoming more dependent on other actors. Networked governance was seen as tackling these challenges, for example by enabling new forms of integrated service delivery, complex decision-making processes at local, regional or state level, new forms of cooperation between public and private actors, and new forms of citizens engagement and stakeholder participation (Koppenjan, 2015). Overall, it was clear that decision-making processes were shifting towards inter-institutional cooperation involving several actors and that this required building mutual trust based on empathy, understanding interdependency, and creating consensus (Aristovnik et al, 2022). Notably, these needs lead to complex interactions and challenges transparency in the sense of being able to follow (and participate in) decision making processes.

Box 10. Networked governance: decision-making on a rail tunnel in Delft, the Netherlands

This is an example of a governance network linking numerous actors, including the Ministries of Transport and Physical Planning, Dutch railways, the Municipality of Delft, regional governments, architects, private developers and constructors. There was not one single central decision-maker but many actors, including multi-level governance actors, each with many interests and many perceptions which traditionally played power games over the actual problem, the solution needed and the allocation of money. However, the networked governance partnership was able to clarify all interdependencies and provide a transparent overview of the otherwise complex step-by-step interaction process using an integral approach that was able to adjust the scope of the project flexibly in real time in order to find win-win solutions despite the constantly changing context (Koppenjan, 2015).

Box 11. Networked governance: innovation and modernisation of public service policies and strategy in Portugal

The modernization of public services in Portugal since the late 1990s has had a policy focused both on efficiency and cost reduction, on the one hand, and high-quality services and their multi-channel delivery on the other. Portuguese policies and strategies for public service modernisation in the 2000s emphasised three issues: how to reach every citizen; focusing on the core public sector functions; and rationalizing costs and the use of resources, including civil servants, given that technology cannot replace the need for people to deal with people in complex or highly personal situations. The re-engineering of both back- and front-offices are part of an innovative concept of public service delivery bringing together in the same space several
public and private entities. This involves the local public administration collaborating with local partners and citizens who best know the needs of the population and the area. There are now more than 100 such physical multi-service centres as part of a national network utilizing ICT to set up citizen spaces for the provision of digitally delivered services, with in-person assistance if required. This addresses the digital divide and the fact that digital literacy is not at the same level everywhere in the country. Portugal is also moving towards shared services as a means to improve public service delivery through better use of resources involving five action areas: financial shared services integrating budget, property and logistics; human resources management and the integrated system of management and performance appraisal in the public administration; public procurement; management of the state’s car fleet; and sharing the means and resources for developing information systems and the rationalisation of ICT infrastructures. Shared services provide a win-win: for citizens who can access public entities more simply and solve minor problems faster; and for the public administration that will be able to dedicate its own resources to its core functions whilst benefitting from the common shared resources which all entities need (Millard, 2017b).

4.2 Public Value Management (PVM) governance from about 2000

As mentioned above, Moore (1995) led the way to the idea that government could be the prime mover in establishing public value, but it was Stoker (2006) and O’Flynn (2007) who demonstrated how it could create both a post-Weberian and post-market paradigm that enables a decisive move beyond the recognised failures of these two paradigms. The move to networked governance, and especially to public value management governance, marks the break between the idea that government is only about ensuring that the administration is efficient and effective in providing specific (individual) services but, additionally, also concerns broader notions of (collective) public value, as discussed in Section 2.3.

Section 2.3 also describes how Kelly et al (2002) identified three key components of public value of special relevance for public governance, interpreted as a combination of individual/direct public services, collective/indirect public services and using these to build the trust, legitimacy and confidence in government necessary for public value. Stoker (2006), in particular, argued that a new Public Value Management (PVM) paradigm bases its practice in the systems of dialogue and exchange that characterise networked governance. Ultimately, public value needs to be a motivational force that does not solely rely on rules or incentives to drive public service practice and reform. Stoker suggests that “people are motivated by their involvement in networks and partnerships, that is, their relationships with others formed in the context of mutual respect and shared learning. Building successful relationships is the key to networked governance and the core objective of the management needed to support it.”

The core of this model is to serve citizens’ needs, with the most important features being public consultation, political legitimisation, and placing the social perspective in administrative actions. Public value can be achieved with the “strategic triangle of organisational capacity, results, and stakeholders from the public, private, and third sectors” (Benington & Moore 2011).

Torfing et al (2020) argues that the PVM paradigm shares some of its core ideas with the Neo-Weberian paradigm, but with much greater emphasis on stakeholder involvement in public governance. "The public sector is not merely a parasite feeding off the value produced by the competitive and innovative private sector and validated by consumers in private markets. The public sector is unique in its production of tax-financed public value that is validated through political and democratic debate and processed by public bureaucracy." Originally Moore (1995) conceived public value as being created solely by public managers, whilst Stoker (2006) and Bryson et al (2014) extended this to include the involvement of large numbers of public and private actors in collaborative governance taking place in networks and partnerships. PVM can thus be interpreted in different ways, i.e. its inherent managerialism points towards NPM while its potential support for network governance aligns it with Osborne's (2006) New Public Governance (NPG). These different labels highlight the plethora of the post-2000 period’s public governance paradigms and models as many sources use different labels for the same or similar ideas and/or focus on small nuances. NPG focuses on collaborative horizontal forms of governance based on networked partnerships

11 Although there is some overlap between the terms ‘value’ and ‘values’, their differences are important in this report, as discussed in Section 2.3. ‘Value’ is a benefit that one or more actors enjoy or gain, whereas ‘values’ are the normally conscious guiding principles, motivating behaviours, evaluations, identities and attitudes possessed by individuals, groups or organisations that are used to deliver these benefits. (See also Scharffblig et al, 2021) ‘Values’ are also linked to cultures, though these can often be unconsciously expressed, as in Hofstede’s six cultural traits of power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term versus short-term orientation and indulgence versus restraint (Hofstede Insights, 2022).
with even greater emphasis on "cultivating an active and engaged citizenship as the only way to counteract organisational fragmentation, solve wicked problems and mobilise resources and ideas capable of spurring public innovation" (Osborne, 2006). Aristovnik et al (2022) prefers to use the label ‘good governance’ covering many of the same issues and ideas, as outlined in Section 2.3, above.

Compared to earlier paradigms, these various PVM approaches put considerable strain upon leadership and management to provide more trust-based facilitation and empowerment than traditional control-based performance management. This is also a problem for networked governance but even more so in the case of PVM governance. Public managers need to be able to “manage through networks, to be open to learning in different ways, and to draw in resources from a range of sources” (Stoker, 2006), while Smith (2003) mentions the need for increased emphasis on consultation, communication and deliberation that ultimately defines public value. Another challenge is how to map and measure public value. Nesta (2019a) notes that public value consists of the “outcomes, institutions and services that are valued by the public but not easy to count in the way that the monetary value of cars or computers can be. Within most governments there are still far more developed means for measuring investment in physical things – railways, roads, airports – than in intangibles like reducing social isolation, improving health or the arts. This almost certainly continues to skew public spending.” As an example of how such measurement might successfully take place, Nesta (2019a) refers to the following case of measuring happiness using digital technology as a public value derived from environment quality.

**Box 12. PVM governance: happiness**

Subjective wellbeing — happiness — is of increasing interest to economists, including environmental economists. There are several reasons for thinking that environmental quality (EQ), defined as high levels of environmental goods and low levels of environmental ‘bads’, will be positively related to happiness. Quantitative evidence on this remains limited, however. Some papers use cross-sectional data aggregated at country level, but it is open to doubt whether these aggregated measures reflect individuals’ real EQ exposures. Other papers use individual-level data, but in general have spatial data at very coarse resolution, and consider a limited range of EQ variables, excluding those around individuals’ homes. This example consists of two related strands. The first designs, implements and analyses data from two cross-sectional surveys. It builds on earlier work by using spatial data at very high resolution, and advanced Geographical Information Systems (GIS) techniques, by simultaneously considering multiple EQ characteristics, around both homes and workplaces, and by investigating the sensitivity of results to the choice of happiness indicator. The second strand develops and implements a methodology focused on individuals’ momentary experiences of the environment. It extends a protocol known by psychologists as the Experience Sampling Method (ESM) to incorporate satellite (GPS) location data. Using an app for participants’ own smartphones, called Mappiness, it collects a panel data set comprising millions of geo-located responses from thousands of volunteers. EQ indicators are again joined to this data set using GIS. Results of the first strand of work are mixed but support some links between happiness and the accessibility of natural environments, providing quantitative (including monetary) estimates of their strength. The second strand demonstrates that individuals are significantly and substantially happier outdoors in natural environments than in continuous urban ones. It introduces a valuable new line of evidence on this question, which has great potential for future development (MacKerron, 2012).

**Box 13. PVM governance: making government rules machine-consumable for tracking public value impacts (New Zealand)**

The traditional models of creating, managing, using and improving the ‘rules’ of government (policy, legislation, regulation and business rules) were developed for use in a non-digital environment, and can result in a mismatch between policy intent and implementation. New digital technologies and the effective use of government data present opportunities to better deliver people’s needs. To fully realise these opportunities, however, policy and rules need to be developed in a manner that recognises the context in which people and systems actually operate, and enables digital service delivery where appropriate. Making government rules machine-consumable so they can be used by service delivery systems is a key component in the digital transformation of governments, particularly as we seek to integrate service delivery, automate
information exchange and some decision-making, while also ensuring government transparency, responsiveness and accountability.

This enables predictions of how a given policy will affect the total constellation of different laws and thus create public value in society at large at very low cost so governments can avoid implementing policies that subsequently will be shown to be either counter-productive and/or overall more damaging than beneficial. This involves breaking down the law into its component parts using digital code to show as accurately as possible what is likely to happen to whom under which conditions. Thus, law-making proposals can be queried before being finalised at much greater speed and at much lower cost. For example, if a proposed law in one entity involves some people losing their jobs they will need to receive benefits from another entity and this in turn is likely to have other knock-on effects elsewhere. Thus, different policy scenarios and their overall public value impacts can be examined in advance in terms of their benefits and downsides for the public sector as a whole, as well as for wider society, and the proposed law adjusted accordingly. In addition, making machine-consumable government rules available to other actors, such as citizens and businesses, will also greatly increase transparency, responsiveness, accountability and overall public value (New Zealand Government, 2018).

For many public governance paradigms and models, there is change over time in how they operate. In the years after 2000, both networked and PVM governance paradigms were benefitting from the collaborative potential of Generation 2.0 digital technology in at least recognising but also starting to address society’s many ‘wicked problems’ 12. Much success is being achieved, as in the examples above, but limitations are also seen because, although different public entities are collaborating in both the networked and PVM paradigms, they still operate in practice largely as ‘silos’ ultimately following their own interests. Attempts to address this, as in the New Zealand example above, are not widespread. Many public governance arrangements remain siloed and inward-looking so typically fail to learn from each other’s good governance practices (Scott & Witter, 2017). Other examples of siloed practices and thinking reported by these and other authors 13 include the common practice that a public entity’s budget for one fiscal year is often automatically allocated unchanged to the following year provided it is all spent, leading to entity heads spending money ineffectively just to use it up and retain their status. Another siloed governance problem is that a given public entity is typically not rewarded or recognised for the benefits it might create in a separate entity, thereby reducing the incentives for generating joint cross-government value. For example, if the health entity improves the health of children which also reduces education costs through better school attendance and pupil’s attention and concentration, no credit typically accrues to the health entity. There are also issues in many governments’ poor information management and institutional memory around what has worked, what has not and why within the same organisation or organisational system. In these examples, joined-up evidence-based learning is curtailed by still often rigid silo structures and mindsets.

In addition to sharing and learning between the silos within a given public sector, research by McKinsey (2017) shows that, if governments globally just did what was already demonstrably working successfully in other governments as status quo good practice, there would be savings of 3.5 trillion US dollars each year. This is equivalent to the entire global public sector fiscal gap. The money saved could greatly boost the quantity and quality of public value benefits created in key areas like health care, schools and universities, policing, transport, and tax.

The necessary shift in breaking down the silos as part of a joined-up whole-of-government approach to public value governance is illustrated in Figure 4. It underlines also the need for interoperability, not only across territorial borders, but also across sectors. However, this shift first starts to be possible and taken seriously after about 2008 with the open governance paradigm in the context of digital technology Generation 3.0 and then Generation 4.0.

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12 A ‘wicked problem’ can be defined as a highly complex problem often intertwined and entangled with other ‘problems’ and spanning numerous actors, organisations and institutions which typically require long-term solutions that, in European democracies and their relative short election cycles, can be highly challenging to address successfully. Typically, any beneficial solution in one context has spill over effects in other contexts that may both be deleterious or advantageous, so finding suitable win-win-wins is very hard. A ‘wicked problem’ also often suffers from incomplete, contradictory and changing evidence and requirements that can be difficult to recognise.

13 From podcast on improving the performance of government with Steven Pinker, Robyn Scott and Daniel Kahneman: https://www.bbc.co.uk/sounds/play/m0013930n.
4.3 Open governance paradigms: from about 2008

The 2007-8 global financial crisis led to complex political, economic, managerial, cohesion, democratic and environmentally challenges, most accurately characterised individually and collectively as ‘wicked’ problems. As a result, there were two types of responses: first a move to leanness and austerity (see Section 3.4, above); and second a myriad of significant new public governance paradigms and models. This was also enabled by new digital technology Generation 3.0 innovations based around the semantic ‘intelligent’ web, increasingly smart mobile devices and open data able to support policy modelling, early AI and blockchain, etc., as summarised in Table 1.

The whole period after 2008 up to 2019 was also itself characterised by uneven technological and political upheaval including, as mentioned above, the appearance of digital technology Generation 4.0 around 2015 that began to enable advanced personalised and predictive pro-active services through increasingly big and linked data as well as strong advances in AI, blockchain, digital twinning, etc. (see Sections 4.4 and 4.5 below). Politically, the period starting about 2015 also saw the rapid rise of ‘post-truth’ and ‘populism’ gaining considerable strength in a number of countries, particularly as a reaction against globalisation and dramatically increasing inequality within European and other countries (Vesnic Alujevic and Scapolo, 2019). These relatively dramatic changes in both digital technology and in the surrounding framework conditions and influencing factors spawned an increasing number of novel and experimental public governance paradigms and models for the reasons expounded in Section 2.5. Also as mentioned in Section 2.5, an attempt is made in the following to highlight archetypes of representative paradigms and their constituent models, and how these change and build upon each other over the 2008-2019 period, in the full knowledge that not everything can be covered:

- Open governance, also covering platform governance, participatory governance, inclusive governance, co-creative governance as well as behavioural and cultural governance.
- Sustainability governance, also covering circularity governance and nature-based governance.
- Locality and community development governance, also covering civil society involvement, and community governance.

4.3.1 Open governance

- Aftermath of the 2008 global financial crisis

As mentioned, as a direct response to the 2007-8 global financial crisis two governance responses were triggered. First, the move to lean and austerity governance as a doubling down of NPM (see Section 3.3), and second an opening up of governance by inviting other actors into governance processes and decision-making in attempts to dramatically improve both its efficiency and effectiveness by providing as many resources, supports and incentives...
as possible. This was initiated in the USA by President Obama’s first term in early 2009 with his ‘open government directive’\(^{14}\) and the launch of the global Open Government Partnership\(^{15}\) aimed to establish a tripartite system of transparency, public engagement (participation) and collaboration, thereby supporting the widespread take-up of the open governance paradigm.

Building on Obama’s directive, Lee and Kwak (2012) proposed a five-level open government maturity model for social media-based public engagement, while Harrison, Pardo and Cook (2012) examined the concept of open government from an ecosystem perspective as interdependent social systems of actors, organisations, material infrastructures and symbolic resources, and suggested that policy makers need to engage in such strategic ecosystem thinking. Later, Gascó-Hernández (2014) edited a wide-ranging collection of papers on open government and the opportunities and challenges for public governance. These included papers proposing open government models, their contextual and cultural underpinnings, the development and dynamics of open data and big data for public governance, open government collaboration, and how open government is developing in different countries and in smart cities. Open governance was also seen as necessary for facilitating the EU’s Digital Single Market (PwC, 2016).

These successive developments reflect changing perceptions and uses of digital data and technology by government. As shown in Figure 5, whereas e-government simply took the technology, largely from the private sector, into an existing system making it more efficient but without much change to its structures and modus operandi, the subsequent notion of transformational (t-) government (Weerakkody & Dhillon, 2008 and Van Veenstra & Janssen 2012) stressed how it could be used alongside other drivers to transform these characteristics of government so that it became not only more efficient but also more effective. In turn, lean (l-) government (Janssen & Estevez, 2013) was a dramatic response to the financial and economic crisis in the aftermath of 2007-8, whilst open (o-) government attempted instead to form a cohesive conceptual framework, body of evidence and policy programme to return the attention of government to the wicked, long-term global challenges the world is facing in close collaboration with non-public actors. Indeed, some of these challenges have resulted directly from the financial crisis itself and many governments’ immediate response to it.

![Image](image.png)

**Figure 5.** Four waves of e-government evolution (Millard, 2015a)

The global financial crisis of 2007-8 was indeed a turning point both in governance and politics, but it tended to mask the fact that there were longer term and deeper rooted global societal challenges which preceded it, many of which subsequently become even more acute. These include climate change, increasing inequalities within countries, poverty, corruption, energy and job shortages, health and education under pressure, rapidly changing demographics (ageing, migration, urbanisation), and governance deficits at all levels. As a result, public services were put under severe strain and trust was being lost in governments’ ability to collect taxes and provide good regulation. Indeed, Klein (2014) argued that the financial crisis was both caused by underlying societal system failures alongside these other global challenges but that it is also itself a cause of exacerbating them.

--- **Open and social innovation**

Many of the proposed solutions to these challenges were now being influenced by new bottom-up forms of open innovation and new open business models (Chesbrough 2003). They focus on societal goals and societal as well as technological means in which new actors directly participate, especially the direct beneficiaries of such innovations themselves. In Europe, as elsewhere, these new trends are often also termed ‘social innovation’ which can be understood, first, as a means to provide beneficial outcomes for citizens and other actors in new ways which are


\(^{15}\) [http://www.opengovpartnership.org](http://www.opengovpartnership.org)
more effective, efficient and sustainable than existing ones. Second, social innovation aims to empower citizens and other actors, particularly those that have little to begin with, by increasing their agency and capability through improving access to power and resources, rather than only relying on others to act on their behalf (Millard et al, 2014, and Passini et al, 2016). Social innovation ultimately aims to develop and embed new social practices by which groups or communities of people, whether organised formally or informally, learn, invent, construct new rules and act in new ways in order to achieve various social ends (Howaldt et al, 2014). In other words, social innovations are social both in their ends and in their means (BEPA, 2010) as they create these new social practices and at the same time transform social relationships among social actors. They are new ideas that meet social needs, create social relationships and form new collaborations. These innovations can be products, services or models addressing unmet needs more effectively. Critical to approaches, such as, open and social innovation is the need for innovations to actually meet real social needs and to do so in a way that involves the whole value chain, and specifically the beneficiaries of the innovation. This provides both challenges and opportunities for the public sector in its role of creating public value by addressing societal needs, as well as how it relates to other societal actors in meeting these.

New roles for government and revival of ‘big’ versus ‘small’ debate

Millard (2015a) attempted to summarise how open governance could address these ‘wicked’ problems by arguing that, in contrast to the lean governance mantra of doing ‘more with less’, by opening up governance and making its assets and know-how widely available, as well as inviting other actors to contribute their assets and know-how, it is possible to do ‘more by leveraging more’ (see also Figure 5). The model of open governance systems is one that encompassing all of society’s actors. In this context, the public sector needs to adapt its roles and relationships with these other actors, but these adaptations do not insist that the public sector necessarily reduces in size or becomes ‘lean’, although indeed that may happen in some manifestations of the open governance system. Downsizing the public sector is not a given nor is it always efficacious, but where it happens it is a politico-economic response to ‘lean’, although indeed that may happen in some manifestations of the open governance system. Downsizing the public sector is not a given nor is it always efficacious, but where it happens it is a politico-economic response to specific situations and may not always be relevant, although of course it can be so. Assuming that a particular size of government is always the answer to every challenge or context is a very fundamentalist approach.

The open governance system, just as in lean government, orchestrates networks of actors to tackle society’s needs, but without necessarily becoming smaller. It leverages, catalyses and coordinates unrealised and untapped assets and resources which otherwise lie dormant and are thus in effect ‘wasted’. The public sector does this both internally and across society, so it may need to remain the same size or in some instances even grow larger depending on the context and the challenge. The public sector might flexibly and nimbly decrease or increase or otherwise transform in size, influence and role in different sectors and localities at different times for different purposes in a constant ‘dance’ with other actors to maximise public as well as private and civil value across the whole of society. Becoming a lean government is just one option along this continuum, even though the driving feature of lean as efficiency is always paramount. Instead, such features need to be seen as interlinked between actors across the whole of society and not just confined to the government. Thus, efficiency improvements need to be conceptualised at the societal level over at least the medium-term where trade-offs and interactions are present between actors, not only at the individual actor level. For example, an individual actor may become ‘inefficient’, depending how efficiency is defined in a given context, in order to maximise societal level ‘efficiency’ in the creation of public value. This also relates back to the observation at the end of Section 4.2 above that a given entity, in this case the government vis-à-vis other actors, is often not rewarded or recognised for the benefits it might create in another actor leading to sub-optimal public value creation overall.

This is a very important observation. A lean government might indeed save some money in a narrow context over the short-term, but this could lead to overall loss of public value and thus additional costs on society, especially in the longer term, if other actors or actor configurations are not able to produce the value needed in the context of a shrunken public sector. Examples include environmental degradation, social and economic inequalities and in mainstream services like health, care and education, and these would be false economies indeed. This is not an argument against lean government which may be relevant in some circumstances, but an argument for flexibility in the context of open governance systems made possible for the first time by Generation 3.0 digital technology. Open governance was also the sine qua non for digital technology enabled public sector innovation which was, and remains, one of the main policy agendas in Europe and elsewhere (for example European Commission 2013a)
deriving from European Commission 2010 and 2016, as well as the OECD’s Observatory of public sector innovation17).

The European Commission encapsulated its approach to the open governance paradigm in 2013 with its ‘vision for public services’ (European Commission, 2013b), as well as subsequently in 2018 (European Commission, 2018), through an ‘open governance framework’ consisting of open data, open service and open process where each of these three interlocking components is open by default, as illustrated in Figure 6:

- **Open data**, both from government itself as well as other actors where appropriate (e.g. crowd-sourced data), suitably aggregated so individuals and organisations cannot be identified and making this readily available in machine-readable formats, is essential for facilitating collaboration, co-creation and policy making. A barrier is that for many users this requires new capacities, skills and incentives, so government needs to provide much more support and many more incentives.
- **Open service**, through co-creation with service users, for example to design and deliver highly personalised services rather than one-size-fits-all common services. The use of alerts, invitations, prompts, as well as typical life events, user profiles and locations, are all steps towards full personalisation.
- **Open process** ensures that all legitimate actors are able to participate in the policies, decisions and arrangements of the public sector as long as this participation is itself open and enhances public value.

This open governance model recognises that, given government does not have a monopoly of knowledge, wisdom or assets, it cannot address societal problems on its own but needs to engage with other actors transparently, participatively and collaboratively (acknowledging the Open Government Partnership approach) at the intersection of the three components that collectively ensure ‘joined-up’ governance. This can now only be adequately accomplished deploying Generation 3.0 digital technologies, both within and across the public sector and with all legitimate external actors. This implies sharing services (across government and with non-government actors) through co-creation and rolling these out in order to improve take-up, personalisation and impact. Standards are required for this, open by default, not only in technical terms such as semantic interoperability, but also to support quality of service standards to ensure universality and cross-border applicability where appropriate, for example through procurement, planning and decision-making, as well as ensuring that privacy and security issues are adequately taken into account.

Despite the huge potential benefits of open governance, at least five main types of weakness have arisen (Millard, 2015a):

17  [https://oecd-opsi.org](https://oecd-opsi.org)
• Lack of adequate technical, semantic and organisational interoperability between government organisations, so that it is not always possible operationally to share or exchange data.
• Management tends to be reluctant to share data and other resources as this may be considered as risky and giving up own control, and where the necessary individual as well as organisational skills, awareness and attitudes are not in place.
• The need to balance sharing, openness and transparency with privacy, data protection and security where there are potentially huge threats.
• In changing and adapting the roles of government, there are also real concerns that such changes will result in new types of risk, for example related to loss of control, blurred accountability and dis-integration of services. For example, who is responsible, including who is providing this service? With many providers and many personalised needs to be met, systems can become highly complex, and quality standards are more difficult to determine and maintain.
• New digital and related socio-economic divides can become more acute, as the already better endowed and more competent segments of society are able to reap the benefits of openness and of digital technology more readily than the more vulnerable at risk of exclusion. However, government as the only institution backed by democratic accountability, is best placed to address these risks and will need to retain basic roles including setting overall quality standards, providing mechanisms for resource sharing, and determining legal frameworks.

Box 14. Open governance: the Basque Government’s open government portal

The Irekia Open-Government portal provides citizens with an open window to learn, comment and express opinion on the initiatives of the Basque Government, through two collaboration spaces. First, for citizen petitions where they can take the initiative in formulating a petition to the government as well as to other citizens to argue and vote in favour or against each petition. Second, for the government and government agencies to initiate proposals and draft laws by providing supporting information, and for citizens to express their comments and debate the issues. The portal provides a direct channel for two-way communication between citizens and government. This enables citizens to request services they think government should deliver, as well as to express their opinion on government decision-making processes, so the government can respond directly to citizens’ needs (Millard, 2017b).

Box 15. Open governance: FixMyStreet developed by civil society using open government data and support

The FixMyStreet service18 in the UK is designed and run by the mySociety19 civil society organisation and the Open Knowledge Foundation staffed originally by volunteers and still partially dependent on donations. This service allows any citizen to report any problems in their street or neighbourhood ranging from broken street lights or paving, abandoned vehicles or rubbish, graffiti, etc. The citizen does not need to know which authority is responsible as the site automatically passes the complaint to the correct department and then traces and tracks its progress on behalf of the citizen until the problem is solved. The technology also makes it possible to send additional authenticating information, such as photos or sound recordings, enabling swift and effective action to be taken, all of which allows the authority to save considerable resources through data analytics and reducing its routine inspection budgets, as well as provide the basis for local community activism. To do this, mySociety had to obtain relevant public sector information and data about authorities’ roles and procedures, contact points, etc. Many of these data were already in the public domain, although not all, but were widely scattered and not easily accessible digitally. The service now also provides free statistics for local governments. The value added which mySociety brought was to gather dispersed data, ‘mash’ them together in appropriate ways, and to visualise and map them in an easy-to-use format for citizens. They had to reach across administrative silos, something perhaps difficult for the public sector to do itself given internal rules and procedures. There is now a standardised ‘FixMyStreet’ type model which provides free software and assistance for anyone to “run a website like FixMyStreet in your country or city,

18 FixMyStreet, “built by mySociety using some clever code”: http://www.fixmystreet.com
19 http://www.mysociety.org
for free...the FixMyStreet Platform is for citizens who want to run their own sites.”) (Millard & Carpenter, 2014).

Box 16. Open governance: Business Square open government portal developed by businesses in collaboration with government

The Netherlands Chamber of Commerce (KVK), in collaboration with the Dutch Government, operates the Ondernemersplein (the Business Square: one face to the government) as the point of contact for businesses and entrepreneurs in areas such as legislation, subsidies and permits. The information provided covers all levels of government. It is made available through various channels (websites, email, telephone and chat) and focuses on the issues and needs of the business community. As a one-stop-shop, the portal provides the full range of necessary information, services and data in a fully integrated manner with easy and user-friendly navigation. It covers, using for example fold-out menus: starting a business; staff and human resources; financing including grants, debt, fraud and security; taxes, freelancing and self-employment; business operations including administration and accounting; all legal matters and forms; innovation and product development; business accommodation; international business; sustainable entrepreneurship; stopping or selling a business.

The portal also provides the Higher Level Business Forum administered by the Ministry of Interior and Kingdom Relations where small businesses and entrepreneurs can discuss matters of direct concern, such as feedback on business plans, offering or receiving advice from others by sharing individual experiences. The service is free and available 24/7, draws upon over 65,000 registered members, attracts more than 100,000 visitors per month and responses are provided within less than 6 hours. The main topic areas include innovation, business plans, financing, legal, tax matters, international leadership and government affairs.

4.3.2 Platform governance

Open governance became a major European public governance paradigm after 2008 and specifically enabled both the idea of, and resources and tools for many other specific public governance models, especially platform governance, so that the two are very closely related. Indeed, Tim O’Reilly, the so-called ‘father of the Internet’ wrote in 2010 that ‘government as platform’ was part of Obama’s open government agenda. Government as a platform constitutes a new compact on the horizon: information produced by and on behalf of citizens is the lifeblood of the economy and the nation, government has a responsibility to treat that information as a national asset. Citizens are connected like never before and have the skill sets and passion to solve problems affecting them locally as well as nationally. Government information and services can be provided to citizens where and when they need them. Citizens are empowered to spark the innovation that will result in an improved approach to governance. In this model, government is a convener and an enabler rather than the first mover of civic action” (O’Reilly, 2010).

Open is also the sine qua non for participation, inclusion, co-creation, etc. ‘Open’ means the public sector opening up its assets, data and decision- and policy-making which are typically made available on a ‘platform’ and that invite other actors to join and contribute to the platform to pursue certain functions. Conceiving of government as a platform arises directly out of the open governance approach. In one manifestation, this might be an open-source service platform in the cloud providing government services, data and enablers as building blocks which promise significant increases in both efficiency and effectiveness. There is a need to examine both digital and non-digital platforms, as well as their inter-relationships, to support the creation of public value through co-creation with other actors, so governments need to adapt their roles as facilitator and orchestrator, to provide appropriate tools and supports including big open and linked data, to better manage assets, and to ensure sustainability and balanced public value.

20 https://ondernemersplein.kvk.nl
21 https://ondernemersplein.kvk.nl/bedrijfsvoering
22 https://www.higherlevel.nl
The public sector as a platform facilitating public value creation

Government as a platform can support a range of actors to collaborate with each other, as well as with government itself, to generate public value. Using digital technology, citizens, communities, civil groups, as well as businesses, are no longer simply passive consumers of data and knowledge but increasingly become active producers. For example, citizens share more and more with each other on social media platforms and tend to consult other citizens, rather than the government for advice – they increasingly use the ‘social signal’ and ‘social search’ to organise and improve their lives. A similar trend is also seen in the physical world, where the rapidly growing ‘makers movement’ sees people exchanging, adapting and personalising digital designs for the fabrication of physical objects, often as unique bespoke products for highly specialised purposes, using 3D-printers and related equipment (Anderson 2012). In addition to mobilising its own resources and talents for widespread use, government should recognise the value of collaboration and crowdsourcing so citizens and others can contribute as ‘co-creators’ and ‘prosumers’. In principle, there is always more relevant talent and resources outside any organisation (including government) than inside.

A platform thus facilitates both communication and action, including the flow of information or any other assets between any members of the network. In this sense, therefore, platform governance has its antecedent in networked governance. Indeed, Torfing et al (2020) use the label ‘interactive governance’ to denote something similar which encompasses “the complex interaction process between social and political actors with diverging interests, promoting and achieving shared objectives by exchanging, and deploying a range of ideas, rules, and resources”. The public sector as a platform facilitating public value creation is an efficient and effective way to support an ecosystem of actors with changing roles and relationships. There are numerous examples, including where other actors have ‘usurped’ the erstwhile role of government using digital technology.

Janssen and Estevez (2013) also see platforms as the basis for lean governance given that government’s role can be reduced to the coordination of information flows, mobilising other actors to stimulate collaboration and innovation and monitoring what is happening. In this way, governments aim to deliver the same public value or more to its constituencies with less staff and other resources. Thus, governments can provide platforms which can be used by application developers, users, citizens and others to deliver added value to government constituencies. In addition, such platforms provide governments the opportunity to monitor the collaborative actors and the interactions among them. Platforms can be viewed as a kind of regulated environment that enable developers, users and others to interact with each other, share data, services and applications, enable governments to more easily monitor what is happening and facilitate the development of innovative solutions. Using the platform’s data, APIs, and available services, all kinds of applications can be developed by third parties and provided to the public who can make use of advanced functionalities and services. Yet platforms are not isolated islands, integrating them with other platforms and systems and ensuring their interoperability can be challenging Janssen and Estevez (2013).

Box 17. Platform governance examples

- Noise measurement around Amsterdam Airport in the Netherlands undertaken by residents in the flight path.\(^23\)
- Microsoft’s ‘health vault’ storing citizens’ health records in the cloud.
- Patients know best which is a platform provided by a social enterprise enabling patients to control their own medical data when negotiating with public health authorities about their treatment.\(^24\)
- An example from the ‘makers’ world uses digital technologies to open new perspectives for locally manufactured and very cheap products for people who otherwise have no chance of being helped. For example, in the health sector, using the Internet to send algorithms for 3D printed prosthetic limbs designed for war victims for local production and use.\(^25\)

These are examples where ordinary citizens, civil organisations and many other actors have seen gaps in what government is doing to create public value and stepped in without always being invited to do so.

\(^23\) [http://www.sensornet.nl/english](http://www.sensornet.nl/english)
\(^24\) [https://www.patientsknowbest.com](https://www.patientsknowbest.com)
Platform role and relationship changes

For a successful governance as a platform model, Millard (2015a) recognised that at least four types of role and relationship changes are needed:

1. Facilitate and orchestrate: arbitrate, coordinate, regulate, mediate, partner, support, etc., noting that government is not just another actor as it does have a special set of roles, and often needs to lead because of its democratic mandate, it takes account of and balances all interests in society, it cannot choose its ‘customers’, it needs to ensure the quality of provisions and decisions, and it may need to be the supplier of last resort.

2. Provide tools for collaboration and co-creation: government is often seen as ‘outsourcing’ its responsibilities to users, e.g. through online ‘self-services’, so it needs to mitigate the ‘burden’ on users to (co) create, and to provide users with guidelines, incentives, supports, advice, networks, ecosystems, etc.

3. Manage assets: Identify legitimate and available assets across society and help to orchestrate and deploy these (often in collaboration with asset owners) to create public value. Unused assets may be considered as ‘wasted’ assets assuming their use does not damage social, economic and/or environmental sustainability.

4. Ensure sustainability and balanced public value. Only government can ensure sustainable and balanced public value where all segments of society benefit and where trade-offs are seen as fair and proportionate. Only government provides longer term stability and continuity which other actors cannot do, and this is necessary to enable people and communities to live stable lives, as well as for the market to have confidence that unpredictable governance changes will not upset their own innovation and investment decisions.

Important issues arising from open and platform governance centre on the notion of ‘balanced public value’, given that, although government does not have a monopoly on public value creation, it does have the prime role in ensuring that public value is created, and that the relevant public services are reaching those that actually need them. All actors are potentially seen as a resource with assets to contribute in creating public value but their interests may need to be balanced, or traded-off, where these are incompatible with others, and this is primarily the role of government, both in the short and long term. Thus, there is a public governance requirement not to sacrifice the long for the short term, and to be transparent about this perhaps with the help of ‘quick wins’ exploiting ‘low-hanging fruit’ in the short-term. There are also a number of risks when implementing open and platform governance, including:

- Loss of control and blurred accountability of services: Who is providing a public service on a platform? Who owns this service? Who is responsible and accountable of the service and for its provision for the platform? Who benefits from the service? Does it reach those in need? Etc.

- Quality standards more difficult to determine and maintain with many active designers and suppliers of services: Who defines the quality standards for the services and for the platforms? Who needs to assess the quality? When does the quality of a service or platform have to be (re-)assessed? Who is responsible to react in case of a service or platform not meeting the quality criteria? How? Etc.

- Putting too much faith in using open government data and big data generally: How representative is a given data set? What are the known and the potential biases? How to avoid misuse through lack of competence? How to prevent deliberate misuse (i.e. corruption)? Etc. (See also Section 4.3.6.)

- Need common sense test for algorithm-driven decisions and policies: How to avoid the ‘black box’ syndrome? How to assess transparency of algorithms and their use? How to ensure ethical use of existing algorithms? Etc.

- Put ‘hard data’ in the context of ‘soft data’ like values, ethics and responsibility, necessary to build trust through transparency: How to set ‘hard data’ into cultural context? How to communicate about the findings and embedded uncertainties? How to take account of reactions from citizens? Etc.

Digital platforms as society’s dominant institutional form?

These are, and continue to be, important issues given that there are signs that, enabled by digital technology and especially Generations 3.0 and 4.0, the platform is becoming the prototype for any organisation today. According to Plunkett (2022) the ‘corporation’ is being replaced by the digital platform as society’s dominant institutional form given that this is an innovation that makes the most of today’s frontier technology, just as the managerial corporation did for mass production. Both public and civil sector entities are adopting elements of the platform model, though quite some way behind private companies. The question is, given that public and civil organisations
do not have the same goals and concerns as do private companies, what aspects of the platform as applied by
businesses are not appropriate for them? Indeed, are the other platform aspects not yet developed that are
appropriate for them? In a partial answer to these questions, Plunkett (2022) posits three aspects of the platform
model that public entities should probably customise or discard. First, the tone and texture of relationships, e.g. not
to reduce service users to customers, but rather see and treat them as human beings and remember that quality
matters as much as quantity. Second, there are limits to data optimisation so there is a need to remember that not
all things that matter can be easily measured. Hard to measure issues like compassion, agency and esteem are
often what makes public and civil entities valuable. Third, the importance of place which is often downplayed by
the platform logic of scalability and abstraction. Lots of the joy of life comes from specificity, familiarity, physicality,
privacy and community. This probably means that new platform ‘species’ are required for non-commercial entities,
and that the business prototype can only take us so far.

4.3.3 Participatory governance

Transparency, engagement and collaboration

Participation is about fostering civic engagement and open, participatory governance and this has been enhanced
and quite often transformed by digital technology since the mid-2000s. It is a tool for engagement and
strengthened collaboration between governments and citizens, both for the empowerment of individual citizens and
for the benefit of society as a whole. In addition to promoting participation in policy-making, the overall objective
of participation in governance is to improve access to information and public services, as well as the understanding
of, and engagement in, administrative and other processes (Sucha & Sienkiewicz, 2020).

Participation, including e-participation, is very important given that, although governments in democratic countries
are not omnipotent, their actions affect millions of citizens’ lives. As citizens we have a right to know how our
institutions are making decisions, who participates in preparing them, who receives funding, and what information
is produced or underlies the preparation or adoption of legal acts. Without this, there is increased danger that high
levels of corruption (including perceived corruption) and lack of trust in governments will undermine their ability to
act effectively. If governance takes place in the absence of possibilities for participation, it may result in the actors
in society (citizens, businesses, public bodies, etc.) not trusting each other and lead to an increase in transaction
costs across society as a whole. Such costs place a burden on all of society, making it less effective and less
coherent.

Achieving healthy and successful participatory governance often involves three steps, equivalent to the tripartite
system of transparency, public engagement and collaboration of open governance (see Section 4.3.1) (Millard et al,
2018):

1. Transparency promotes accountability by providing the public with information about what the government is
doing – this is mainly the one-way flow of information from government to other actors.
2. Engagement allows members of the public to contribute ideas and expertise so that their government can
make policies with the benefit of information that is widely dispersed in society – this is mainly the two-way
exchange of information, knowledge and opinion between government to other actors.
3. Collaboration improves the effectiveness of government by encouraging partnerships and cooperation across
all levels of government, and between government and other actors – this is mainly multi-way flow of
information, knowledge and opinion from governments to citizens and to other non-government actors, vice
versa and involving in principle many other actors, so that each actor -- not only government -- can become
proactive in initiating and implementing collaboration.

The overall context of the digitisation of society shows that people are connecting with each other by social and
other digital media on a massive scale which cannot be ignored by governments. This presents governments with
both opportunities and threats, given that some e-participation tools are government controlled and owned, though
most are not and arguably should not be in order to increase diversity of information and opinion. This means that
in an open manner government will also have to follow the users of public services (citizens, civil society
organisations and businesses) and be where they are when this is relevant to its roles and functions. Government
needs to join in, monitor and contribute to any relevant on-line community in order to reap the full benefits – while
remaining cautious that not everyone (or every community) that is entitled to or in need of public services will be
able or willing to access public services (only) online.
E-participation is thus about 24/7 communication, not about the technology, although a good understanding of how this functions and what it can and cannot do is required. Digital technology has both high and wide reach (huge mass audiences) but can also be targeted, one-to-one and be very personal and customised. It tends to be interactive and is not as top-down, uni-directional or authoritative compared to traditionally broadcast media. (Cyber) security in the digital context is increasingly important, in relation to technical, personal and reputational (trust) issues. There are numerous and ever expanding technical tools available, such as networks (e.g. Facebook), platforms (e.g. wikis), publication tools (e.g. YouTube) and feedback facilities (e.g. rating, surveys, etc.).

Overall, therefore, e-participation and open government can in principle (and often in practice) help to connect ordinary people with the political, decision- and policy-making processes, and allow citizens to interact with politicians and decision-makers and vice versa. In this sense, they enable people to be heard and included when decisions are made, and to make people feel that they are engaged. Both e-participation and open government contribute to the trust-based facilitation and empowerment of people, to ensure that citizens can directly engage with and influence (i) government policies and decisions; (ii) public services, including e-government services; (iii) governance arrangements, including administration and procedures of government and the public sector; and (iv) express their comments and complaints about any aspect of government and the public sector, and have these addressed in a timely, professional and effective manner that satisfies the citizen and/or explains why their needs cannot be met or input used. Ultimately this makes it possible for governments to tap into the collective knowledge of society quickly and directly. However, both e-participation and open government (as the other governance paradigms presented below) also unwrap power relations, and introduce possible changes that might have far reaching implications.

— **Big data**

In addition, with the latest digital tools, e-participation using big data for evidence-based intelligent government is able to use, for example, data analytics and AI (artificial intelligence) for decision simulation and policy modelling based on:

- the huge unexploited data reservoirs (‘big data’);
- distributed data, seamless ‘cloud computing’;
- data mining, pattern recognition, visualisation, gaming;
- co-design, co-creation, co-evaluation; and
- greater precision on policy choices and trade-offs.

In the EU context, Pillar 3 of the EU eGovernment Action Plan for 2016-2020 (European Commission, 2016) is concerned with facilitating digital interaction between administrations and citizens / businesses for high-quality public services, for example consisting of re-usable modules for user-friendly and personalised as well as better policies. Such initiatives should be based on: inclusiveness and accessibility; openness and transparency; and trustworthiness and security. Also relevant, are the OECD principles of digital government (OECD, 2014b) which point out that, although government was once seen purely as a provider, it is now also seen as a convener and enabler, and no longer as a silo separated from the rest of society. The three main OECD pillars of digital government are concerned not with the technology per se but with how the technology can be used: engaging citizens and opening up government to maintain public trust; adopting joined-up approaches to deliver public value; and strengthening capacities to ensure a fair return on digital technology investment.

To account for some of these challenges the JRC’s Centre for Advanced Studies (CAS) has addressed the fields of artificial intelligence, demography, big data and digital transformation to improve the connections between science and policy and help inform better the regulatory frameworks needed in these thematic areas. (Craglia et al, 2021). Among others, this work included the development of synthetic population models facilitate application of novel methods for data-driven policy formulation and evaluation (Hradec et al, 2022). It is currently investigating the best use of computational social science for policy (Alonso Raposo et al, 2022).

— **Technology out of control?**

There are also many current challenges and threats which need to be addressed, partially arising from the digitisation of government, such as the development of the so-called ‘post-truth’ society when data and information are misused, manipulated or distorted without any factual or objective basis. In this context, vigilance as well as new forms of security are needed to address questions such as how do we know the data is correct, and are 'black-
box’ algorithms dangerous when it is not clear how they function? To address parts of these challenges, the European Commission developed the European Centre for Algorithmic Transparency (ECAT)\(^\text{26}\) that was launched on 18 April 2023. There are also potentially bigger challenges with big data, such as cybercrime and warfare as well as the creation of the so-called ‘dark web’ and other subversive developments (see, for example, Annoni et al. (2018), De Nigris et al. (2020), and also Section 5).

These and related issues are relevant to a re-appraisal of the way our societies are governed. According to Mair et al. (2019), complexity, wicked problems, the abundance of information, the pace of change, uncertainty, misinformation, populism, polarisation as well as new governance models and digital technologies are creating the need to change how policy is made. Major issues to confront include (Mair et al, 2019):

- Misperception and disinformation: our thinking skills are challenged by today’s information environment and make us vulnerable to disinformation. We need to think more about how we think.
- Collective intelligence: science can help us re-design the way policymakers work together to take better decisions and prevent policy mistakes (see also Section 4.3.5).
- Emotions: we cannot separate emotion from reason. Better information about citizens’ emotions and greater emotional literacy could improve policymaking.
- Values and identities: these drive political behaviour but are not properly understood or debated (see also Scharfbillig et al (2021) and Section 2.3).
- Framing, metaphor and narrative: facts do not speak for themselves. Framing, metaphors and narratives need to be used responsibly if evidence is to be heard and understood.
- Trust and openness: the erosion of trust in experts and in government can only be addressed by greater honesty and public deliberation about interests and values.
- Evidence-informed policy-making: the principle that policy should be informed by evidence is under serious attack. Politicians, scientists and civil society need to defend this cornerstone of liberal democracy.

There is a huge number of different but related and complementary models of participatory governance, just a few of which are mentioned here.

**Box 18. Participatory Governance Toolkit\(^\text{27}\)**

The CIVICUS 2020 Participatory Toolkit aims to empower citizens to participate in public decision-making as an effective means to tackle ‘democracy deficits’ and improve public accountability. A growing number of governments and their partners in civil society are experimenting with innovative practices that seek to expand the space and mechanisms for citizen participation in governance processes beyond elections. There is evidence that participatory governance practices are contributing to stronger government transparency, accountability and responsiveness, and improved public policies and services. The toolkit is based on nine categories of participatory governance practices:

A. Public information
B. Education and deliberation
C. Advocacy and citizen voice
D. Public dialogue
E. Electoral transparency and accountability
F. Policy and planning
G. Public budgets and expenditures
H. Monitoring and evaluating public services
I. Public oversight

\(^{27}\) [https://www.civicus.org/index.php/es/centro-de-medios/recursos/manuales/611-participatory-governance-toolkit](https://www.civicus.org/index.php/es/centro-de-medios/recursos/manuales/611-participatory-governance-toolkit)
Box 19. Participatory governance: the participatory budgeting movement

Participatory budgeting is a type of citizen sourcing in which ordinary citizens in a particular locality decide how to allocate part of a municipal or public budget through a process of democratic deliberation and decision-making. All local residents are able to deliberate, negotiate and often also decide about the distribution of public finance made available by the city or other local authority across a number of competing projects. These might include a children’s playground, a new road, traffic control or diversion measures, a swimming pool or park, or any number of locally relevant projects that the inhabitants who are directly affected decide upon, see also (Errandoner, 2023).

The purpose is to identify, discuss, and prioritise public spending projects, normally within a pre-allocated budget, by giving local residents the power to make real decisions about how money is spent and especially those left out of traditional methods of public engagement, such as low-income residents, non-citizens, and youth. Since its original invention in Porto Alegre, Brazil in 1988, participatory budgeting has manifested itself in a myriad of designs, with variations in methodology, form, and technology, and often results in more equitable public spending, greater government transparency and accountability, increased levels of public participation (especially by marginalized or poorer residents), and democratic and citizenship learning. In Europe, the participatory budgeting model was initially widespread in the Iberian Peninsula and Italy, but has also spread recently to Netherlands, Denmark, Sweden, Switzerland, Germany, Austria, Portugal, Latvia and Estonia have embraced the model (Sintomer et al, 2008, and 2016).

Some observed weaknesses of participatory budgeting include the lack of representation of extremely poor people, although comparing with the membership of the City Council of Porto Alegre and local elections, it has been substantially more effective in mobilizing women and citizens from disadvantaged socio-economic backgrounds (Smith, 2009). There is also some evidence of clientelism (client politics), i.e. the exchange of goods and services for political support, often involving an implicit or explicit quid-pro-quo, and that participatory budgeting could lead to the allocation of resources away from important services due to finite resources (Gilman, 2016).

Box 20. Participatory governance: participatory budgeting in Cologne, Germany

Cologne’s Participatory Budget (Bürgerhaushalt) initiative gives citizens a say in how a part of the municipal budget of the City of Cologne will be spent. Allowing citizens to participate in budget planning contributes to the design and development of the city, its districts and its community. In 2016, 854 proposals, 1,334 comments and 39,359 evaluations from 6,058 participants were received in the one-month period from 24 October to 27 November, almost all of which were online. This is an increase of about 30 percent compared to 2015. Each of Cologne’s nine districts was assigned 100,000 Euro to implement proposals from residents, enabling citizens to focus on problems and issues specific to their own districts, in addition to those that are relevant to all districts or the whole city. Proposals are evaluated by the City’s specialists for their feasibility and financial implications, and then sent to the respective districts’ representatives. Finally, the financial committee of the City and the City Council of Cologne decide which proposals are to be implemented, the results of which are published on the Participatory Budget portal. One of the main conclusions of Cologne’s and other German cities’ participatory budgeting initiatives is that the consultative model adopted has been able to institutionalize greater openness of decision-making and administration and establish transparency and dialogue on the budget as a whole. Although participatory budgeting is starting to become widespread, it does not currently help cities overcome the fiscal constraints of scarce taxes coupled with increased demands for public goods and services, possibly unlike local crowdfunding. Its main benefit appears to be greater participation and the increased sense of ownership local inhabitants have over their own city neighborhoods and districts.

Box 21. Participatory governance: citizens’ assemblies

Citizens’ assemblies are a form of deliberative democracy: processes through which citizens can engage in open, respectful and informed discussion and debate with their peers on a given issue, informed by expert evidence, facts, and possible solutions. A typical citizens’ assembly is made up of a representative group of around 50 to 200 citizens, who are chosen at random from the general public, like a jury. The selection of members is normally stratified to ensure that participants are as representative as possible of the general population according to certain criteria – usually gender, age, ethnicity, geographical location, and social background. Members of the assembly normally meet over a number of weekends – from two weekends to twelve or more – to learn about, deliberate upon, and make recommendations in relation to a particular issue or set of issues. This is typically supplemented by online digital material and discussion. The topics debated by an assembly are generally set by government or parliament, though members can sometimes choose their own agenda (Electoral Reform Society, 2019).

Some examples implement only those recommendations approved in a subsequent referendum, as has been the case in Ireland. Two citizens’ assemblies, in contradiction to long-held views and customs, especially from the powerful Catholic Church, recommended, first in 2015 making same sex marriage legal and, second in 2017, making abortion legal. Subsequent referenda voted by significant majorities to accept these recommendations, thereby formally changing the Irish Constitution. These citizens’ assemblies were critical parts of both processes, established by the Irish parliament in response to calls for constitutional and political change. Other issues considered included climate change, the challenges and opportunities of an aging population and most recently fixed term parliaments (Involve Foundation, 2018).

Box 22. Participatory governance: mass involvement in shaping the future – moving beyond citizens’ assemblies

There are currently two damaging trends hindering mass involvement in solving current and future societal challenges: first fatalism which assumes that ordinary people are powerless in shaping their future and, second, so-called ‘elite futurism’ usually emanating from business, big government and ‘experts’. Although experts are definitely needed, these barriers can be countered by “opening up and democratising the future”. There are many tools available which can make it easier to forge a consensus on actions now that may have a big impact in the long run. There are many methods for mobilising far larger numbers of people in thinking about the future – rather than relying just on professionals and experts, though the latter are absolutely still necessary, but not with a monopoly on power and voice. For a long time, participatory futures methods relied on group workshops, interviews, and in-person discussions – in much the same way that many public engagement exercises still do. In recent years, however, this has begun to change. Although these remain useful, a start is also being made in thinking about the future that engages many more people and helps to move away from purely short-termism that leads to poor decisions. Participatory futures help people diagnose change and develop collective images of the future they want. This involves moving beyond purely citizens’ assemblies and traditional public engagement.

A growing movement of artists and designers is creating new immersive experiences of the future in today’s physical world. At the same time, digital technologies are expanding the reach of futures exercises enabling more and diverse citizens to play, create and participate virtually in future worlds. This is generating ideas and sharing information involving new players such as artists, designers, game makers, writers and psychologists. Over the last decade, this has led to an explosion of new ways of thinking about or experiencing the future, a phenomena that can be described as ‘mutant futures’ because of the combination of approaches involved that can currently be grouped into five categories: play, immerse, sense, create and deliberate. (Nesta, 2019b).
Box 23. Participatory governance: POLIS software that promotes policy consensus rather than division, Taiwan

The occupation of parliament and a standoff between protesters and the Government of Taiwan in 2014 around trade policy with China led to the latter to co-opt a group of civic hackers organised in a leaderless collective called gØv. GØv believes in ‘radical transparency’, in throwing opaque processes open to the light, and in the idea that everyone who is affected by a decision should have a say in it. They prefer establishing consensus to running numerous majority-rule votes in an attempt to create a new way of making political decisions. As gØv saw it, the problem of politics is essentially one of information. Elections are too infrequent to give lawmakers much of an idea of what the public wants. Votes, referenda, run-offs and debates often split the public down the middle. What is needed is a way, not to measure division, but to construct consensus using the internet. However, the internet is normally part of the problem as the kinds of online spaces where political debate happens are engineered for an entirely different purpose: to capture attention. Most social media platforms serve up information that is shocking, horrifying or crazy enough to keep people glued to their screens. And that often means amplifying the raucus politics of division and outrage rather than the subtle complexities of compromise.

The hackers’ answer was to create a mixed-reality, scaled listening exercise as an entirely new way to make decisions using the POLIS platform created in Seattle, USA. This invites citizens into an online space for debate that Polis uses to draws maps showing all the different knots of agreement and dissent as they emerge. As people express their views, rather than serving up the comments that were the most divisive, POLIS gives most visibility to those finding consensus. “People spend far more time discovering their commonalities rather than going down a rabbit hole on a particular issue.” “Invariably, within three weeks or four, we always find a shape where most people agree on most of the statements”, says Audrey Tang a member of gØv who became the country’s digital minister (Harvey, 2020). GØv found that re-engineering the online space had exposed a deeper human truth. In politics, humans spend most of their time concentrating on what they disagree upon. However, if you gamify consensus, you expose points of unity that were previously hidden. By clearing away the noise and divisiveness, outcomes are created that the government could actually act on. POLIS has formed the core of around a dozen pieces of laws and regulations now implemented in Taiwan, on everything from revenge porn to fintech regulation. Many other countries are now using POLIS software (Miller, 2019).

4.3.4 Inclusive governance

Governance is inclusive when it effectively serves and engages all people, takes into account gender and other facets of personal identity, and when institutions, policies, processes and services are accessible, accountable and responsive to all members of society. According to the OECD (2020a), inclusion should be seen in terms of both process (how decisions are made and who is included in that process and how and why) and outcomes (how we achieve and prosperity are distributed and shared across a population and why). “As the evidence overwhelmingly shows, over the long term, more open and inclusive states and societies tend to be more prosperous, effective and resilient. And yet, it is far less clear how countries that today can be considered more inclusive in terms of both process and outcome got to where they are” (OECD, 2020a). In a European context, inclusive governance is not only about government acting inclusively but also about governance promoting inclusion for everyone in society and reducing excessive inequality. This has been and continues to be an important EU policy goal for 2021-27, focusing on four main actions: inclusive education and training from early childhood to higher education; improving employment opportunities and skills recognition; promoting access to health services; and access to adequate and affordable housing (European Commission, 2021e). In the following, three aspects of inclusive governance are examined to exemplify some of the issues: work and employment, poverty and vulnerability, and intersectionality.

The governance of work and employment

Globally and to an important extent also in Europe, the period since the 1980s up until 2019, exacerbated by the 2017-8 financial crisis, has seen taxation become less progressive and much of politics has increasingly been
dominated by money and special interests. Side by side with this, welfare states in most countries, whether developed, middle-income or developing, have become less generous with a labour market that has become much more volatile. Many people now work in informal, precarious or ‘gig’ economy jobs, typically based on new digital technology, leading to increasing numbers of the ‘working poor’. Numerous governments, including some in Europe, have hailed their low unemployment rates as major achievements but have sidestepped the issue of the poor remuneration, quality and security of many of the jobs existing today. It is an interesting observation that many of these low paid and insecure workers, typically obliged to work in poor, crowded and often unhealthy conditions prone to COVID-19 infection, are precisely those that many employers and governments were applauding as ‘essential workers’ keeping the economy and society functioning during COVID-19. For example, people working in the health and care sectors, in transport and maintenance, cleaners and caterers, in retail, food and agricultural workers, as well as drivers and delivery workers. It remains to be seen whether the wages, status and conditions of such workers will be raised after the crisis of COVID-19 is over.

Prior to the COVID-19 pandemic, there was widespread unease about the predicted staggering impacts of digital technology during the Fourth Industrial Revolution on work and employment. These include (WEF 2016):

- 47% of US jobs at risk from automation (Frey & Osborne 2013)
- Robots threatening between 40 million and 75 million jobs worldwide by 2025.
- 65% of children entering school today will end up in jobs that currently do not exist.
- Fewer jobs for people to do despite similar market values compared to 1990: for example, in Detroit in 1990 the three biggest firms had a market value of $36bn, revenues of $250bn and 1.2 million workers. The three biggest firms in Silicon Valley in 2014 had higher or similar market values and revenues, respectively of $1.09tn and $247bn) but only 137,000 workers.
- Automation is replacing not just no and low skilled workers but now also managers and professionals.

The so-called ‘gig’ economy, in which workers only work and get paid when a customer places an order, is increasingly seen as a poverty trap associated with zero hours contracts.

These issues ask for urgent policy action as governments have to shoulder the social and fiscal costs of long-term unemployment and job insecurity (Misuraca et al, 2018). What to do with a work force in excess and under threat of chronic unemployment? The temporarily employed also run a higher risk of poverty than permanent workers, mainly due to lower wages. AI and robotics can threaten the quality and remuneration of work, as well as work itself. For example, from the perspective of embracing and promoting gig jobs, outsourcing work and highly flexible labour markets as this maximises efficiencies and reduces costs, websites and artificial intelligence ‘chat bots’ could replace up to 90% of the UK’s central government’s administrators, as well as tens of thousands in the health service and doctors’ surgeries by 2030 – saving as much as £4bn a year. Even nurses and doctors could fall victim to machines which can outperform humans at some diagnoses, routine surgical procedures, and data collection.

The Reform Think Tank argues that public services should become more flexible by embracing a gig economy where workers support themselves through a variety of flexible jobs using online platforms. For “twenty percent of public-sector workers” who “hold strategic, ‘cognitive’ roles”, they will “use data analytics to identify patterns – improving decision-making and allocating workers most efficiently”. Such ‘contingent labour’ platforms, according to Reform, could suit hospitals and schools as an alternative to traditional agency models, as well as organisations which experience seasonal peaks in demand such as the tax agencies at the end of the tax year.

The employment consequences of some technologies, in particular of artificial intelligence were reviewed in much detail in several UK governmental documents (House of Commons Science and Technology Committee, 2016). Although much of this remains speculation, whatever happens will have significant impacts on welfare, jobs and the organisation of work. The more transactional the job is, the more likely is there to be automation and greater inequality, as automation is fundamentally the substitution of capital for labour. A ‘race to the bottom’ may create a growing ‘precariat’ as an emerging global class with no financial security, job stability or prospect of career progression.

33 The 2020 COVID-19 pandemic and 2022 Russian invasion of Ukraine appear, at time of writing, to have significantly changed some, but probably not all, of the assumptions behind these ideas. This will be addressed in a follow-up to this report.
Any type of innovation can create ‘winners’ and ‘losers’, and public governance needs to engineer balanced trade-offs between these and different interests within society. For example, sharing platforms supported by digital technology provide many people with a chance to find the flexible work they want, thereby improving their incomes and social contacts. However, for others, where work in the corresponding sectors is the only source of income, it can force them down a road of low pay and poor working conditions, with unpredictable and thus unstable financial prospects. The jobs most at risk are those which require a medium level of qualification. This has been apparent in wage statistics: salaries for medium qualifications are stagnating or growing more slowly than those of low or high qualifications (Frey & Osborne 2013). The middle class feels neglected by politicians and looks increasingly to the political extremes for help. The questions are: where can the new jobs be created? Can they be created as fast as jobs will be destroyed? And, even if they are created sufficiently rapidly, the transition from one job to another without a loss of income and an increase in structural unemployment is difficult.

The governance of poverty and vulnerability

Many of these issues are also reflected globally in the UN’s Sustainable Development Goals (United Nations, 2015b) showing that inclusive governance has tended to be an issue central to international development and less prominent in Europe, although the EU has been active in its promotion through internal partnership initiatives (e.g. European Commission, 2021e). Even though global absolute poverty fell between 2000 and 2019, relative poverty has become more important and has risen in nearly all countries. This is challenging because “the relative measure of poverty is naturally less responsive to economic growth and puts a somewhat higher weight on inequality.” (IMF 2012). The world has now become so unequal that Oxfam reported in 2016 that “the richest 1% has more wealth than the rest of the world combined”. “Growing economic inequality is bad for everyone, including the rich as it undermines growth and social cohesion, yet the consequences for the poorest people are particularly severe.” Inequality damages the economy and thereby the prospects for development.

While the Sustainable Development Goals have achieved a great deal, they are failing in relation to key goals such as poverty eradication, economic equality, gender equality, and climate change. According to Alston (2020), poverty is a political choice and its elimination requires: (i) reconceiving the relationship between growth and poverty elimination; (ii) tackling inequality and embracing redistribution; (iii) promoting tax justice; (iv) implementing universal social protection; (v) centering the role of government; (vi) embracing participatory governance; and (vii) adapting international poverty measurement.

The huge inequalities within as well as between countries illustrate the pernicious effects on societies: eroding trust, increasing anxiety and illness and encouraging excessive consumption. It is clear that across a wide range of health and social problems (physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust and community life, violence, teenage pregnancies, and child well-being) that outcomes are significantly worse in more unequal countries, whether rich or poor (Wilkinson & Pickett, 2009). Other research has shown conclusively that the global economy has developed to such a point that greater income is being derived simply through the continuing increase in the value of already accumulated wealth assets rather than through income derived from work in the labor market where this wealth is actually produced. Trickle-down economics has been entirely discredited both as a theory and as a real phenomenon (Piketty, 2014).

Poverty and inequality have also been growing dramatically in Europe, especially since the 2007-8 financial crisis. In 2020, 96.5 million people in the EU were at risk of relative poverty or social exclusion; this was equivalent to 219 % of the EU population. The risk of poverty or social exclusion in the EU was higher in 2020 for women than for men (22.9% compared with 20.9%). Neither is poverty evenly distributed. Romania has Europe’s highest risk of in-work poverty with a rate of 18.9%. Spain and Greece follow with 13.1% and 14.1%, respectively. Additionally, the in-work poverty risk has increased from 8.3% in 2010 to 9.6 percent in 2016. (Eurostat, 2021a)

Issues related to women and girls, as well as other groups who are often excluded (whether in terms of ethnicity, disability, language, education, sexual orientation, etc.) cut across all of society during the Fourth Industrial Revolution. Research shows that precarious work is much more prevalent in female employment. (McDowell 2016)

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34 Both absolute and relative poverty have dramatically increased since 2019 due to the COVID-19 pandemic and the war in Ukraine, leading to a cost-of-living crisis globally as well as in Europe, as the prices of especially food and energy have hugely increased. The consequences of this will be dealt with in the next report.

35 Extreme poverty is defined as less than $1.25 per day (i.e. simple survival) and is now below 10% of the global population. Relative poverty is defined in relation to the economic status of other members of the society: people are poor if they fall below prevailing standards of living in a given societal context (in Europe this normally below 40%-60% of median income).
This contrasts sharply with the contemporary relatively stable framework of male employment in both blue-collar and white-collar occupations. This, coupled with much of women’s work traditionally being unpaid, for example in the home, casts a new light on gendered differences in employment which require a policy response. There are also other societal issues to address, for instance care work is currently largely feminised, badly paid and often emotionally demanding. On the other hand, there may be potential benefits for traditionally female oriented jobs arising from the increasing importance of such emotional intelligence in the Fourth Industrial Revolution, given that this is something machines are unlikely to be able to do, at least in the short-term.

Digital divides are directly related to existing socio-economic divides, so that both reinforce each other (Millard 2015b), and the uneven roll-out and use of digital technology can exacerbate these inequalities (Oxfam 2016). This is not a given or natural outcome of the technology, but instead derives from the governance, institutional framework, regulatory, labour market and wider economic system. Europe is also struggling to keep up with the digital revolution with a 2019 survey showing that 43% of the adult population in Europe had limited digital skills, and 37% had no digital skills at all. Meanwhile, young refugees and asylum seekers are experiencing a crisis of their own in Europe, finding it very difficult to integrate socially and in the workplace (European Commission, 2019a).

One of the most influential recent studies recognises that everyone has limited cognitive capacity and time, but the unique disadvantage of the poor and vulnerable is that they are typically pushed to and beyond these limits more than any other group. Mullainathan and Shafir (2013) show that the poor in any society have precarious structures within which to live and work. They literally expend all their effort simply surviving from day to day or week to week, and do not have sufficient time, energy or cognitive capacity to plan for and invest in their own, their family’s or their community’s future. Being poor is literally a full-time and stressful occupation purely directed to survival. This empirical research shows that, when richer people are put in the same constrained conditions, they react in the same way as the poor and often a lot worse. When any individual’s cognitive capacity is strained in the way experienced by most poor people struggling to cope, it is equivalent to driving a car whilst drunk or reducing their IQ by 14%. Most poor people coping with these conditions are, in fact, performing extremely well just by surviving. They are far from being lazy, stupid or scroungers. This is not the traditional ‘poverty trap’, normally thought of as a self-reinforcing mechanism which sees the individual sink further into hopelessness through their own lack of effort to change their lives because of laziness or low intelligence. Instead, it recognises that poor people, more than others in society, typically have to contend with a much more highly complex and unpredictable social and economic environment.

Mullainathan and Shafir (2013) undertook their research in the USA and India, respectively examining relative and absolute poverty but reaching similar conclusions in both regarding cognitive capacity and how individuals behave. McGarvey (2022) looked at relative poverty in the UK and recognized a “proximity gap between the powerful and the powerless as the root cause of many of society’s ills.” In education, health, housing and benefits there is a fundamental and maintained distance between those who make policies and the people at the bottom of society who are on the receiving end of them. This is a gap in experience, understanding, culture and, above all, in empathy. McGarvey shows through his analysis of why and how most politicians as a select group of people with very limited experience of social inequality has been charged with discussing and debating it and making the rules and structures that surround the poor and vulnerable. The gap from those at the bottom of society, who live with the ramifications of these structures, policy and decisions, has been both revealed and turbo-charged during COVID-19.

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**Governance that recognises intersectionality**

From a governance perspective, a useful framework for promoting both inclusion and diversity in society is the ‘intersectionality’ framework for understanding how, in principle, all aspects of a person’s social, economic, cultural, physical and political identities (e.g., gender, race, class, sexuality, ability, height, etc.) might combine to create unique modes of both identity and discrimination. Although Intersectionality has been critiqued as being inherently ambiguous, it is not simply an issue requiring a snapshot analysis, but should be seen as a fundamental public governance approach, embedded throughout the work of institutions, organisations and policies as the study of intersections between different identity profiles. As humans we all carry a series of identities that make our individual experiences of identity unique, especially where such identities are in a minority position in a given society.

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36 Some of this is adapted from this Luther College toolkit as a practical guide for both individual activists and organisations to learn more about Intersectionality and its principles, and to provide a selection of activities to explore practice around inclusiveness: https://www.luthercollege.edu/public/images/Intersectionality_Toolkit_and_other_resou rces.pdf

and thus liable to various forms of both informal and formal discrimination. We can be lesbians who have minority ethnic backgrounds. We can be gay and living in poverty. We can be transgender with a (dis)ability. We can be bisexual and Muslim, all at the same time.

The intersections are endless and cannot be considered independently from one another, since they constantly interact and often reinforce the identity and possible discrimination each brings. Social, cultural and biological categories such as gender, age, sex, race, ability, sexual orientation, socio-economic status, etc., interact on multiple and simultaneous levels and it is this interaction that contributes to social inequality, injustice and discrimination, thereby requiring appropriate forms of inclusive governance (see Figure 7). The constant interaction of intersections, however, is complex and does not always end up with a predictable result. In some cases one intersection might cancel out another, while in other cases, one leads to discrimination while another results in privilege. This complexity is important to take into consideration when working with intersectionality and we need to recognise that we – in all our diversity – should enjoy respect, and celebrate all the intersections of our identity.

An intersectional approach recognises that these multiple intersections exist in endless combinations, and that they can sometimes lead to privilege and sometimes to discrimination. We must continually question where the power lies in different societies, organisations and groups to understand why some individuals are treated better than others, find it easier to be successful, or are more readily included. Only by doing this can we start to see who is excluded or discriminated against. Understanding intersectionality, therefore, encourages solidarity, highlighting that all struggles for freedom from discrimination are interlinked and that they can all benefit by interacting with each other. Focusing on one area or another (gender, age, race and ethnic identity, (dis)ability, socio-economic status, etc.) allows us to examine how specific identities affect people in different ways. This focus also helps us to understand which elements contribute most to discrimination on one level. While doing so, however, we must keep in mind that the intersections of identities are indeed endless and should be considered in terms of each other (see also Scharfbillig et al (2021)).

The overall purpose of deploying inclusion, diversity, co-creation and engagement methods and tools in any policy area, is that, if designed and implemented well, they simultaneously serve three goals:

1. They demonstrably achieve greater increased impacts for all actors over the medium- and longer term, as well as often in the short-term. In effect, they maximise win-win benefits for a given set of costs across all metrics and assist in reducing zero-sum outcomes. (This was also demonstrated by Wilkinson & Pickett, 2009.)
2. In the process, they improve the awareness, motivation, competence, skills, knowledge and power of all actors, especially of those typically excluded, thereby multiplying beneficial impacts both in the given policy area but also across all other policy areas in which the actors are involved. This is especially important in

![Figure 7. Some dimensions of intersectionality](image-url)
learning from ‘mistakes’ and ‘failures’, being able to develop and draw upon ‘crowd intelligence’ and maximising innovation and long-term resilience.

3. They rely on and enhance high ethical standards at the community/social level as well as moral standards at the individual level. This directly supports democracy, for example through increasing the transparency of goals, processes and impacts in a given area and thereby also enhancing actor ownership and responsibility.

**Box 24. Inclusive governance: self-leading teams – Buurtzorg, the Netherlands: “humanity over bureaucracy”**

Buurtzorg is the Biggest home care organisation in the Netherlands, growing about from 10 to 9,000 staff in 7 years, but has a miniscule administration of about 30 staff. It is composed instead of a large number of self-leading teams of about 10-12 staff, each with ad hoc roles as staff decide everything themselves for their team (including what coffee to drink) in terms of the tasks to be performed and how to organise them. This is an example of ‘mass customisation’ (personalisation) as all patients are individually unique and need individually unique care that is in constant flux to maximise their welfare. This also works out cheaper and better than any alternative. Overall, Buurtzorg has a simple, flat organisational structure providing and accessing all necessary services with intimate involvement of patients’ family and community. Its evolutionary goals are diversity and the innovative search for promising ideas – if something works it will find a way to flower. Digital technology is an essential enabling tool, including collective intelligence, communication, fast decisions, e.g. facilitating ‘real time’ information that is directly connected to the care process and reduces administrative overhead (see also Box 36).

**Box 25. Inclusive governance: digital welfare – empowerment, flexibility and efficiency in Denmark**

With digital welfare services it is possible to make everyday life easier for citizens – at less cost. At the same time, the public sector can be shaped to be more productive and innovative while providing services of high quality. In upcoming years, with an ageing population, a greater number of people with chronic diseases, and with limited financial latitude, the public sector will be under pressure to find new, efficient ways of providing services. Technological development holds some of the answers to these challenges; with digital solutions welfare services can be provided in new, more efficient and effective ways. For example, new technology and digital welfare solutions have already empowered many elderly people to live more autonomously and with greater quality of life. However, digitisation in itself is not enough, as work routines and organisational structures also need to be transformed. This is a great challenge, which also means changing competences, culture and habits of both the public employees and citizens. The Danish government has two central objectives: the public sector as a more active partner and more efficient and cohesive welfare. This implies both an active approach and digital by default interactions between citizens and the public sector, although with special human and other supports for those not able or willing to go online. In particular, this involves improving mobile services and secure online identification, well-functioning broadband and upgrading the competencies of professionals (Danish Agency for Digitisation, 2013).

**Box 26. Inclusive governance: governing the ‘gig’ economy on behalf of vulnerable workers in the UK**

Structural readjustments, laws, regulations, cross-agency and non-government collaborations, institutional adaptation and innovation, etc., are all needed to ensure vulnerable workers can achieve fair remuneration and working conditions. These should be designed to make the lives of the poor and vulnerable as easy and as simple as possible so they can focus on helping to solve their own actual problems of poverty and vulnerability rather than grappling with a complex system that is often irrelevant to their particular context. In 2021 the UK supreme court dismissed Uber’s appeal against a landmark employment tribunal ruling that its drivers should be classed as workers with access to the minimum wage and paid holidays, which will lead to better terms for millions of workers in the gig economy.

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38  https://www.buurtzorg.com
Uber, like many delivery and courier companies, has argued that its drivers are independent self-employed “partners” not entitled to basic rights enjoyed by workers, which include the legally enforceable minimum hourly wage and a workplace pension. However, the supreme court said any attempt by organisations to draft artificial contracts intended to side-step basic employment protections were void and unenforceable. The court ruled that Uber must consider drivers as workers from the time they log on to the app, until they log off. Workers have more rights than independent contractors but fewer than employees, who are entitled, for example, to maternity pay and can challenge unfair dismissal (Butler, 2021).

Box 27. Inclusive governance: governing the labour market and addressing the ‘conditionality’ problem for employment support, Scandinavia

A good governance model that has successfully increased the benefits for both sides of the labour market, is the Scandinavian ‘flexi-curity’ structure. Here, the focus shifts from having and keeping a particular job, to being employable and relatively easily able to obtain a good job if the existing one is lost. On the one hand, this gives significant flexibility for employers by allowing them to hire and fire relatively easily. On the other hand, it also provides good security for employees by strong labor market support through relatively high unemployment and re-training benefits, as well as proactive interventions from government, employers and trades unions working together.

Current social policy experimentation is also addressing the issue of ‘conditionality’. For example, in the labor market context to obtain unemployment benefit, the unemployed need to prove they are actively seeking work, thereby requiring significant form filling, costly administration and time. The debate about the effectiveness of conditionality feeds into the debate about the value and effectiveness of the so-called ‘universal basic income’ (UBI) as an unconditional payment, sufficient for a very basic but still comfortable living, made to all adults regardless of whom they are or their labour market status. (See also Section 4.5.2) Results in 2020 from a two-year Finnish study show that UBI under certain conditions can improve the mental wellbeing, confidence, life satisfaction and the civil engagement of citizens, as well as have a mild positive effect on employment by those of working age who were not initially working (Millard, 2020; Henley, 2020).

Box 28. Inclusive governance: universal basic income schemes and the Finnish experiment

Universal basic income (UBI) is an unconditional financial transfer, or negative income tax, paid by the government without a means test. A basic income can be implemented nationally, regionally, or locally. Almost all empirical evidence shows that universal basic income (UBI) does not make people lazy, decrease labour participation or increase unemployment. It has multifarious, invariably positive effects on wellbeing, self-confidence, community participation, skills, and sometimes also on social enterprise with secondary positive effects on employment. A 2020 synthesised review of UBI around the world, including randomised controlled trials, showed overall that positive impacts are generally observed, depending on the type of UBI scheme and the country. In general, the evidence consistently demonstrates that unconditional cash in low- and middle-income, as well as in some high income countries leads to a measurable decrease in poverty, positive impacts on work, employment and education, health and well-being (Hasdell, 2020).

A comprehensive analysis has been conducted of the nationwide randomised Finnish basic income experiment, 2017 to 2018, from planning and implementation through to the end results. It presents the background of the social policy system in which the experiment was implemented and details the narratives of the planning process alongside its constraints, as well as a final evaluation of the results. The results show that the employment effects of the experiment were small, but the recipients of the basic income were more satisfied with their lives and experienced less mental strain than those in the control group. They also perceived their economic welfare as being better. In addition, they said that they experienced less bureaucracy and had more confidence in their future than those in the control group, and that their overall trust, capabilities and confidence increased (Kangas, et al, 2021).
Box 29. Inclusive governance: Europe's Welcome Programme for third-country nationals

Europe is struggling to keep up with the digital revolution. A 2019 European Commission survey revealed that 43% of the adult population in Europe had limited digital skills, and 37% had no digital skills at all. Meanwhile, young refugees and asylum seekers are experiencing a crisis of their own in Europe, finding it very difficult to integrate socially and in the workplace. The Welcome Programme was set up to address both of these issues. The 2-year project developed an innovative way to better include third-country nationals in educational and social activities, cultural life and volunteering, by offering digital skills and language training. Project partners, including digital training organisations and social non-governmental organisations (NGOs) in six European countries, first researched other successful IT and integration programmes across the continent in order to develop their own bespoke curriculum. The result comes in four modules: first is, basic coding using a software called Scratch; second, digital storytelling involving youngsters creating a video based on their own personal experiences; third, ‘digital journalism’ supports students in recording video interviews among themselves and the local community, enhancing social integration. The final phase is more focused on developing soft skills through conflict resolution and team-building exercises. The young participants are then expected to work as volunteers, each teaching other groups of migrants and European nationals such skills as how to use a computer or create and edit a video (European Commission, 2019a).

Box 30. Inclusive governance: Mobile-Age Project using open government data to support the elderly

Public services across the EU are increasingly online only. However, with less internet access than their younger counterparts and higher levels of computer-illiteracy, older citizens’ needs are not always taken into account. The Mobile-Age project helped public administrators develop services to better suit their specific needs. Senior citizens are predicted to make up 28% of Europe’s population by 2020. However, when it comes to technological innovation, Europe’s senior citizens are often marginalised and thus have a higher risk of isolation from society, both physically and socially. The Mobile-Age project sought to tackle this growing issue by providing a basis for the development of digital services focused on Europe’s elderly residents and designed with their help, too. The app platform lets public service providers understand and create innovative new experiences for elder members of society, and third-party software developers design new information services and integrate them into the local communities. Feedback has been positive from the case studies, and the Mobile-Age team hopes the results will feed into respective national policies regarding public services and the elderly. Based on pilots across four European cities, the end goal was to develop a transferable model that could be easily implemented and built upon in other cities. (Mobile-Age Project, 2019).

4.3.5 Co-creative governance

— Improving policies and strengthening democracy

Co-creative public governance models are required to help improve public policies and services, solve complex societal problems, strengthen social communities and reinvigorate democracy. “By changing how government engages with citizens and stakeholders, co-creation provides an attractive and feasible approach to governance that goes beyond the triptych of public bureaucracy, private markets and self-organized communities.” By constructing platforms and arenas to facilitate co-creation, a co-creative governance strategy “can empower local communities, enhance broad-based participation, mobilize societal resources and spur public innovation while building ownership for bold solutions to pressing problems and challenges” (Ansell & Torfing, 2021). “Co-creative governance expands scope for action. It is always important where solutions to complex problems need to be supported by many different actors. These are often (international) partners from different disciplines and academic traditions, but also participants from public administration, industry and civil society. Each of them is involved in structures and decision-making logics whose goals are often very different and seem incompatible.

Co-creative governance involves the iterative exchange of heterogeneous knowledge from different perspectives, motives and interests of the actors involved, beyond hierarchies. New interfaces and common visions emerge. It is
not uncommon for the scope for action and solutions to be significantly expanded through co-creative governance” (University of Hamburg, 2022).

COSIE (2021) is an e-learning course (MOOC) on co-creation in public services focusing on how to shift towards co-creative governance. It defines co-creative governance as “involving individuals in co-creative roles and orchestrating achievement of commonly agreed outputs (services, improvements, application of new methodologies) and outcomes (such as empowerment, integration, well-being) requiring both wise service management and governance that differs from authoritative governance by rules and new public management governance based on predefined goals. Indeed, co-creating new services or service improvements requires a new perspective to service system governance.” Co-creative governance as a tool needs to be “conversational, collaborative and co-creative rather than heavily relying on management based on predefined goals (outputs), and measuring their achievement based on statistics and objective data. Such governance goes beyond reorganizing structures, issuing regulations or new financial measures and becomes rather an orchestration of conversations between stakeholders where they try to make sense about service intentions, roles and relations as well as their value. Co-creation requires governance that is reflective and open to learning” (COSIE, 2021). Rather than relying only on ‘objective’ measurements, sense making conversations with stakeholders and especially individuals supported by the service are needed to better understand their perceptions of generated service value. Such governance sees that service value or desirable outcomes are instead deliberatively arrived or agreed in sense making conversations. Revisiting Ansell and Torfing (2021), these deliberations on co-creation might be further divided into co-initiation, co-design, co-implementation and co-evaluation.

Co-creation is also expressed through Communities of Practice (CoPs) consisting of a group of actors who share a common concern or problem (Wenger 1998 & 2012, Millard et al, 2014). CoPs tend to be local, hands-on and often, if not mainly, in-person, so retain the power of tacit knowledge in which individuals can intimately show what they do as well talk about or describe it within a conducive environment and atmosphere. Networks of Practice (NoPs), on the other hand, augment and marry this tacit knowledge with the explicit knowledge that is the basis of networking, particularly digital networking at a distance using a digital platform, so has very wide reach and exploits the potential of knowledge codified through more formal systems including digital technology. Both tacit and explicit/codified knowledge are together powerful combinations for learning, identifying good practices of successful transformations, and thereby for widespread co-creation, replication, scaling and knowledge sharing.

--- Steps, obstacles and principles

From an international perspective, Gouillart & Hallett (2015) outlined a series of five steps for co-creation in government in order to open up the public sector value chain to citizens, frontline employees, and other stakeholders:

1. **Identify target communities.** Select communities and sub-communities whose members will take part in that effort.
2. **Build engagement arenas.** Provide targeted communities with physical spaces, virtual platforms or a combination of both, where community members can engage with each other.
3. **Foster interactions among stakeholders.** Participants use the new engagement platform (or platforms) to enable new kinds of relationships.
4. **Enable new experiences.** Ensure that new interactions lead to valuable experiences for all stakeholders—experiences that intrinsically improve the quality of their lives.
5. **Assess new value.** Verify that the sponsoring organisation has generated new value—measurable economic value, in particular—as a result of its effort. (The idea here is that an organisation should be able to compute a return on the investment made in its co-creation project.)

Gouillart & Hallett (2015) also outlined a number of obstacles that need to be overcome:

- **The rigidity of government.** Public sector entities have a duty to ensure compliance with laws and regulations, which are by definition non-negotiable.
- **The problem of politics.** In any attempt to bring innovation to government through multi-stakeholder collaboration, the reality of partisanship and ideological division looms as a potential barrier. However, there is evidence that co-creation initiatives can bring politicians and citizens together around common goals.
- **The matter of scale.** Pursuing co-creation in, say, a single employment agency office is one thing. However, doing so in a city- or even larger scale in a way that involves stakeholders as a whole, is
something else. Many people are understandably suspicious of any government's ability to engage large groups of citizens in co-creation projects. In that context, it's useful to consider that there are two types of engagement arenas that come into play in public sector co-creation. The first one involves town meetings, workshops, and other forms of in-person discussion. The second involves deploying technology to accommodate civic participation on a large scale.

Given that co-creative governance initiatives and projects, by necessity, will vary hugely, there are arguably five principles for co-creative governance that can be seen in most if not all: (i) take a broad view around the immediate objective, i.e. take account of the context by considering, for example, a broad economic, social or environmental agenda; (ii) work from the bottom-up, given that transformation takes place mostly at the frontline interface between public official and the public; (iii) trust the process, i.e. public officials should not try to control every step, even though the process should not be random but it's important to recognise that fixating on a pre-determined result defeats the purpose; (iv) put people first, i.e. co-creation should be people-centric not process-centric; and (v) leverage technology, although in the early stages live in-person engagement is useful, but later when people know each other better and when the number of people, issues and volume of interactions increases, a digital platform is indispensable. The sequencing is important: human engagement should precede digital engagement (Gouillart & Hallett, 2015).

— Collective intelligence and citizen science

As is clear from the above, co-creative governance can take many forms, two of which follow. First ‘collective intelligence’ can be used by governments to engage citizens and others outside government to improve planning and policymaking. “Collective intelligence is a new term to describe something which is in some respects old, but in other respects changing dramatically thanks to advances in digital technologies. It refers to the ability of large groups – a community, region, city or nation – to think and act intelligently in a way that amounts to more than the sum of their parts. It encompasses other movements – from open data to civic tech – but links them to the broader question of how governments make decisions on our behalf.” “A new generation of digital platforms is making it easier than ever for governments to make use of the collective intelligence of citizens, employees and external experts, involving them in everything from policymaking to budgeting” by working in new ways to: better understand facts and experiences; better develop options and ideas; make better, more inclusive decisions; and get better oversight of what is done. This is enabled by “the explosion of new digital tools to gather data from many more sources, some generated proactively by citizens (crowdsourcing data on everything from air quality to poverty via smartphone apps), some deriving from businesses (e.g. mobile phone networks revealing travel patterns or economic activity) and some generated automatically, e.g. by sensors” (Nesta, 2017). This can involve the best combination of one or more humans, and one or more machines to address an issue at hand. Boxes 12 and 14 above provide examples.

Second, ‘citizen science’ is co-creating science between citizens (the general public) and scientists deploying bona fide scientific processes through an open and inclusive approach. The aim is to empower and enable citizens to support and be part of the exploration, shaping and development of the different aspects of scientific activities that use scientific methods and results to meet societal challenges (ECSA, 2021). Citizen science can range from the short-term collection of data to the intensive use of leisure time to delve deeper into a research topic together with scientists and/or other volunteers, to ask questions, and to get involved in some or all phases of the research process (ECSA, 2020). It can both accelerate and produce new scientific knowledge; it can help decision-makers monitor the implementation and regulatory compliance of their policies; it can increase public involvement and understanding of science and help citizens feel that they also own these policies; and it can enable faster evidence-informed reactions to events and the exploitation of new opportunities through new sources of both quantitative and qualitative knowledge (Shanley et al, 2019; Schade et al, 2020). Citizens can often reach parts of the real-world evidence base that are otherwise very difficult to reach, for example with better territorial and fine-grained data coverage. A useful typology of citizen science is presented in Figure 8 that illustrates the progressive engagement of citizens in science activities. This will simultaneously increase their own scientific awareness and capabilities as well as improve the science and its contribution to better evidence-based outcomes and impacts.
Box 31. Co-creative governance: changing public welfare service delivery: learning in co-creation

Co-creation – where citizens and public organizations work together to deal with societal issues – is increasingly considered as a fertile solution for various public service delivery problems. During co-creation, citizens are not mere consumers, but are actively engaged in building resilient societies. Examining comparative case studies of co-creation examples within the welfare domain in childcare (Estonia), education (Germany) and community work (the Netherlands), shows that state and governance traditions (authority sharing and governance culture) may form an explanation for whether co-creation, learning and policy change occurs. This seems to be related to whether there is a tradition of working together with citizens and a focus on rule following or not. The cases also showed that co-creation does lead to frame adaptation and policy change. The Estonian and Dutch cases indicated, that once prognostic frames (i.e. the identification of possible and relevant solutions and approaches for a problem) were changed, policy was also changed in favour of co-creation.

In Germany, policy change occurred to a lesser extent, and the prognostic frames of German public officials were also changed to a lesser extent. However, where learning is observed it is too simplistic just to relate this to policy change as this is also affected by the macro context of state and governance traditions in which actors and policy are embedded. The Estonian case showed that due to an authoritarian state tradition, policy change in favour of co-creation was relatively easy. This was strengthened by the fact that in Estonian welfare policy, the rule of law has a less prominent role than in the Rechtstaat cultures (Netherlands and Germany). Policy change is not ‘obstructed’ by regulative frameworks, which was the case in the other two countries. Here, the consultative state tradition and the shared responsibility over many actors meant that the prognostic frames of many more actors needed to change in order to create policy change. In sum, to create a more comprehensive understanding of how and whether policy is changing accordingly, we need to take the context of state and governance traditions into consideration. Doing so offers a plausible explanation for contrasting relations between learning and policy change (Voorberg et al, 2017).

Box 32. Co-creative governance: co-creating innovative public services for citizens and businesses

Delivering innovative eGovernment solutions and applying principles such as ‘digital-by-default’, ‘user-centricity’ – in particular ‘citizen engagement’ – and ‘once-only’ were some of the goals of the co-creation
projects supported by the EU’s H2020 R&I Programme. This included smart urbanisation and the sensors involved, the devices in our pockets, connectivity and cloud services that power open, innovative governance that enables people to access the services when they need them and how they need them. However, the notion of the public as ‘clients’ is also shifting. By harnessing digital tools to their full capacity, the public can become a true partner and, in cooperation with public administrations, can co-create the services that suit them. These experiments with new technologies also takes into account privacy, security and ethical concerns (European Commission, 2019b).

**Box 33. Co-creative governance: co-creation frameworks, methodologies and templates to give people control of their personal data**

The DECODE Project developed and tested new tools to give people control of their personal data. Pilots in Barcelona and Amsterdam have built an active, diverse community of people who are interested in using tools which give them control of their data. Different tested co-creation methods have been developed that can be used with DECODE to create the best possible adoption by citizens, business models for companies that give the best performance and the most vital ecosystem for policy makers. An overall conclusion is that ecosystems will ultimately be the competitive unit in the digital transition but building an IoT ecosystem is a complex undertaking that requires many interconnected factors to be balanced (DECODE, 2017).

In terms of project impact, DECODE’s pilot projects and the involvement of policy makers have shown how novel technologies and methods for community governance can help support different types of data commons involving personal data. A number of key factors or components which are both important and unique to creating a commons-based approach for governing data have also been identified (DECODE, 2020):

- Open, trustworthy digital infrastructure.
- Sensitivity to power imbalances between beneficiaries, contributors, data subjects, and those participating in governance.
- Governance needs to be open and actively work to upskill those members of the community who cannot participate.
- Commons-based approaches need to align incentives to allow the commons to grow and be self-sustaining.

**Box 34. Co-creative governance: governing with collective intelligence**

New tools and techniques are making it easier than ever for governments to draw on the knowledge and expertise of those outside of government to improve planning, policymaking and implementation of government programmes. Collective intelligence is a new term to describe something which is in some respects old, but in other respects changing dramatically thanks to advances in digital technology. It refers to the ability of large groups – a community, region, city or nation – to think and act intelligently in a way that amounts to more than the sum of their parts. It encompasses other movements – from open data to civic tech – but links them to the broader question of how governments make decisions on our behalf. An analysis of Collective Intelligence initiatives around the world finds that activities fall into four broad categories: better understanding facts and experiences: The explosion of new digital tools enables; better development of options and ideas: better, more inclusive decision-making: and better oversight of what is done: From monitoring corruption to scrutinising budgets. Based on this research, cities and national governments are offered eight recommendations on how to use digital tools to make the most of collective intelligence (Nesta (2017):

1. Ensure Collective Intelligence methods are applied ethically.
2. Start with a problem, not a technology project.
3. Reuse and build on existing knowledge and networks of expertise.
4. Choose the right crowd for your problem.
5. Keep it simple: start with the basics and build the support, skills and momentum for more ambitious initiatives in the future.
6. Integrate collective intelligence into existing government processes.
7. Do not forget skills: governing with collective intelligence will require policymakers to become familiar with new types of information, tools and processes.
8. Remember that there is a world beyond the internet.

Box 35. Co-creative governance: Better Reykjavik, Iceland

Deliberation and debate often lead to much better ideas than simply setting up a digital suggestion box. Better Reykjavik is a platform that helps the city council in Reykjavik, Iceland crowdsource ideas for the development of the city. Since 2011, over 100 ideas have been accepted by the city council. The platform, developed by the non-profit Citizens Foundation in Reykjavik, enables groups to collaboratively develop ideas for improving the city and its services. Individuals propose ideas on the site, which are then debated and voted on. The most popular ideas, 10 to 15 each month, are evaluated by the city council and the ones that are deemed feasible are then put to a vote on the platform, with the winning ideas executed by the city council. The city funds these ideas using its Better Neighbourhoods programme, which allocated €2 million per year between 2012 and 2016 to projects based on ideas from citizens (Nesta 2017)\(^39\). Projects funded by the initiative include everything from children’s parks to community gym equipment\(^40\).

Box 36. Co-creative governance: Self-leading teams, Buurtzorg, the Netherlands

Buurtzorg is a pioneering healthcare organisation established in 2006 with a nurse-led model of holistic care that has revolutionised community care in the Netherlands. It is the biggest home care organisation in the country increasing from 10 to over 10,000 staff today, has a miniscule administration of about 30 staff and each self-leading team has 10-12 staff with ad hoc roles who decide everything for their team (including what coffee to drink). Client satisfaction rates are the highest of any healthcare organisation and staff commitment and contentedness is reflected in Buurtzorg’s title of Best Employer (4 out of the last 5 years). Impressive financial savings of 40% have also been made. It is an example of ‘mass customisation’ where all patients are individually unique and need individually unique care to maximise their welfare. It also demonstrates collective intelligence through a simple, flat organisational structure providing and accessing all necessary services with the intimate involvement of family and the community. ICT is rarely mentioned but is an essential enabling tool for collective intelligence, communication and fast decisions which facilitates ‘real time’ information that is directly connected to the care process and reduces administrative overhead. Buurtzorg scaled very quickly across the Netherlands from 1 to 850 teams, during which time it also grew in other areas of care such as mental health, children and families and also supported other Dutch international care organisations to take on the Buurtzorg model of care, so is now represented in 25 countries\(^41\) (see also Box 24).

Box 37. Co-creative governance: sustainable energy planning as a co-creative governance challenge. Lessons from the Zero Village, Bergen, Norway

Sustainable energy transition implies different, but interlinked strategies, technologies and policies, implying a complex array of overlapping systems that are shaped by diverse actors’ interventions. The formal mechanisms of sustainable transition are ill equipped to address and conform with the political-power dimensions. Furthermore, there is no determined blueprint for sustainability transitions and the existing governance systems hitherto have been inefficient and implicated in unsustainability. In this context, energy transition requires conceptualisation of co-creative governance, and the dynamic interplays between power

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\(^39\) [https://citizens.is/portfolio_page/better_reykjavik](https://citizens.is/portfolio_page/better_reykjavik)

\(^40\) [https://docs.google.com/presentation/d/12RZZG2M3sCYP7-uBhpyl7MytzwLsumXgPwPewrY/edit#slide=id.g12cd39b7f_037](https://docs.google.com/presentation/d/12RZZG2M3sCYP7-uBhpyl7MytzwLsumXgPwPewrY/edit#slide=id.g12cd39b7f_037)

\(^41\) [https://www.buurtzorg.com](https://www.buurtzorg.com)
relations in the face of conflict of interests. It is necessary to go beyond the traditional division of governance network between private, public and academia to investigate the political structure underpinning the functionality of governance. To assess how sustainable energy transitions can be materialised, the aim is to understand how different multi-level governance systems deal with the competing interests, asymmetrical power and the mobilisation of resources for goal achievement in the case of Zero Village Bergen. The purpose is to shed light on political and institutional challenges that are common to other sustainable transition initiatives. The method used is semi-structured interviews with private and public actors.

The findings show that, in the governance transition to sustainability, the different actors have needed to exercise power in the context of (shifting) power relations in an interesting illustration of a quadruple helix innovation system in which the knowledge community plays an active part. In the current wave of smart city initiatives, municipalities and universities are increasingly taking part in cross-sectoral partnerships and platforms. This example demonstrates that there is a substantial potential for role conflict here, between public authorities as guardians of the common interest, and the formal and informal bindings that occur when they form alliances with commercial actors who will also seek to pursue their self-interest. It is here important to strike the balance between securing democracy and legitimacy of planning through ‘due process’ and the need for new forms of governance with respect to dealing with pressing energy and climate concerns.

It is, however, also clear that the knowledge community holds the potential of reducing conflict between private and public actors by creating arenas where common narratives can be developed across diverse societal interests over time. In pursuing this role, it is crucial to combine insights into the paradoxes and dilemmas of real-life cases, being aware that preconceived expectations about the role of the knowledge sector in unfolding governance processes may be challenged. As a result, instead of considering decisions as resulting from the intention and interests of independent actors, attention should be paid to the interaction patterns and the ways in which individual actors and organisations evolve over time. Reflecting on the multi-actor model (Avelino & Wittmayer, 2016), we see that the temporal dimension of the role of actors is not given the focus it deserves. In this regard, we stress the need for developing governance models that better capture the iterative nature of real-life planning processes (Gohari & Larssæther, 2019).

4.3.6 Behavioural and cultural governance

- **Cognitive and decision processes**

Behavioural governance is a new public governance paradigm that addresses how public administrations can use behavioural economics in variety of implementations, from boosting public service motivation to improving policy compliance. This can enable practitioners to employ alternative approaches to policy design and implementation. Using concepts of behavioural economics that describe individual decision-making with alternative objectives to traditional utility maximisation, behavioural public administration shifts the reliance on traditional causal models away from rational ideals and toward actual behaviours that inhabit empirically evident biases (Kasdan, 2018). Behavioural governance concerns the cognitive and decision processes through which decision-makers, implementing actors and target populations both shape and react to public policies and to each other, as well as the impacts of these processes on individual and group behaviour. It can assist in reducing policy alienation and administrative burden issues, as well as help in tackling practical public problems. Insights from behavioral public administration have been used to increase diversity within public organisations and reduce burnout. Also, it should not only focus on causal inference questions but also on questions concerning the description of societal problems (e.g. via representative surveys) or concerning prediction (e.g. by using machine learning) (Tummers, 2021).

- **(National) cultures**

Tummers (2021) also notes that cultural factors influence economic behaviour, political participation, social solidarity and value formation and evolution, which are closely linked to how and why public policies are developed in different ways in different countries – and in general, territories and communities. Culture provides boundless resources in responding and adapting to development challenges by playing a transversal and effective role in all areas of public policy. The United Nations 2030 Agenda for Sustainable Development sets out precisely a shared vision for a more just, inclusive, and sustainable world. (United Nations, 2015b). Thus ‘administrative culture’ can be characterised as shared norms, values, attitudes, perceptions, interpretation, and behavior of public bureaucrats.
or government officials. It influences the relationship between bureaucrats and other members of society. The culture in any given organisation sets expectations for how people behave and work together, and how well they function as a team. In this way, considering culture can break down the boundaries between siloed teams, guide decision-making, and improve workflow overall.

There are also well-embedded (mostly national-level) cultural traits that administrators, policy- and decision-makers need to take into account. For example, research suggests that national culture may exert an independent influence on individuals’ public service motivation, which is an attribute of government and non-governmental organisations that explains why individuals have a desire to serve the public and link their personal actions with the overall public interest. Using Hofstede’s six dimensions of national culture (Hofstede, 2022) one study found that an individual’s public service motivation is positively related to the dimensions of masculinity, indulgence and collectivism, whereas individualism is negatively associated whilst power distance and uncertainty avoidance are not-significant. This research suggests that national culture influences certain types of behavior both directly and indirectly, and that organisational education and socialisation enhancing these cultural values are likely to foster individual’s public service motivation (Kim, 2015). (See also the wider debate on values and identities in Scharfbillig et al (2021).)

Other results from survey data in Jordan, show that three cultural dimensions: individualism, masculinity, and long-term orientation had no discernible impacts in e-government service take-up, while the two cultural dimensions of power distance and uncertainty avoidance are the most significant cultural factors by which some of the differences in ICT adoption rates among countries can be explained (Al-Hujra et al, 2011). Countries with high scores in uncertainty avoidance and power distance, such as the Arab countries, have a lower rate of ICT adoption than countries with low uncertainty avoidance and power distance scores (Erumban and Jong, 2006). Similarly, Leidner & Kayworth (2006) stated that uncertainty avoidance plays a significant role in determining how groups will potentially adopt and diffuse ICT. Countries high in uncertainty avoidance are less likely to adopt frame relay technology (Leidner & Kayworth, 2006). Since ICT is inherently risky, those less comfortable with uncertainty will be less likely to adopt new technologies. Results from the Al-Hujra et al (2011) study also indicate that perceived usefulness, perceived ease of use, attitude are significant indicators of citizens’ intention to use state government services online.

— Choice architectures and nudges

A pragmatic approach to changing individual behaviours is, first, to recognise that all behaviour and decisions are, to a large extent, framed by the existing choice architecture in a given context and the psychological responses that are triggered. This choice architecture creates the environment that influences decision-making and includes, for example, visibility, awareness, communication, costs (price, effort), ease of use, transparency, prompts and incentives, feedback and reinforcement, appealing to social norms, rules and regulations, etc. Once this is recognised, changes to the choice architecture can be implemented to ‘nudge’ people towards personally and socially desirable behaviours like saving for retirement, choosing healthier foods, or registering as an organ donor. (Thaler & Sunstein, 2008) This is likely also to involve removing, or at least reducing, ‘sludges’ as the opposite of nudges as existing built-in barriers to making good decisions (Thaler & Sunstein, 2021).

Nudging also recognises that a very powerful influence on an individual’s behaviour is linking this to what other people are doing, for example through social networks, both offline and online. Thus, a focus on peer relationships can be important as individuals often wish to confirm with the behaviours of people close to them or whom they admire. Here the differentiation between individual and community values (Scharfbillig et al 2021) comes to play. Experience also shows that people will make better decisions, like purchasing an electric car, not only because of concern for air pollution but as this also gives them a better quality of life and lifestyle, reduces stress and improves health and wellbeing as part of an overall value-set. Nudges towards good decisions should also include making it as easy as possible to do by reducing complexity and the number of steps, by highlighting the disadvantages of the status quo, and by making the benefits very concrete and clear even if they may only materialise over the medium-to long-term. Thus, there is a need to look for win-win-wins in terms of behavioural change across multi-facetted but related issues. The danger of nudging behavioural change is that it can become manipulative, but this can be largely mitigated through full honesty, transparency and dialogue about changes to the choice architecture, as well as accurately and fully reporting the benefits and any downsides.
According to Kahneman et al (2021), individual behaviour and national culture also significantly affect how public officials make decisions, so it is important for public governance to understand this and how decisions can be improved. Everybody makes systematic errors in decision-making through the variability of their aggregated judgements. For example, empirical evidence shows that an individual judge on a Friday afternoon, if they are feeling hungry or in a bad mood, can give vastly harsher sentences to defendants who committed the same crime, compared to other times when the judge is feeling better or less stressed. This is called ‘noise’ which is different from bias where most attention has been focused. In a biased system, an individual judge might consistently give sentences that are too high for certain types of crimes compared to other judges. This might be because of the specific individual bias of the judge or if s/he uses an AI algorithm that has been created or operated using biased data. For example, the data might be unrepresentative, inappropriate for task in hand, out of date or too limited, such as a health algorithm developed using overwhelming male data when applied to a female. Bias is difficult to eradicate in individuals and normally needs training and awareness as well as ensuring a large diverse set of individuals so that group bias is reduced. Biased algorithms can be improved by ensuring there is sufficient, accurate and up-to-date data to develop and operate it and if they are designed to be opened-up and not remain as a ‘black-box’, although all this can be expensive and never perfect. Noise is in principle easier to address by systemic analysis and by designing algorithms or other tools to assist the individual decision-maker. “Algorithmic judgment is more efficient than the human variety” when applied to noise but probably not to bias (Kahneman et al, 2021). More examples can be found in (Fernandez Llorca & Gomez Gutierrez, 2022) and (Miron et al, 2021).

However, several drawbacks or caveats to behavioural insights can also be observed. The popular standard models of applying behavioural insights propagated through the book Nudge Thaler & Sunstein, 2008 and the behavioural insights team in the UK do not consider all relevant aspects of integrating behavioural insights into public policy, specifically an overreliance on randomised control trials, a limited understanding of context, threats to good scientific practice, and bounded rationality of individuals applying behavioural insights. Therefore, Dewies et al (2022) developed a comprehensive framework that deviates from current models to overcome important challenges associated with integrating behavioural insights into public policy, contributing to a recent phase of diversification in behavioural insights integration (Strassheim, 2021). The framework offers more freedom for methodological choices, encourages and strengthens good scientific practice, incorporates a broad understanding of context, and improves the potential for rational decision-making (Dewies et al, 2022).

**Box 38. Behavioural and cultural governance: comparing the impact of positive, negative, and graded sustainability labels on purchase decisions**

Behavioural Insights is an inductive approach to policy making that combines insights from psychology, cognitive science, and social science with empirically-tested results to discover how humans actually make choices. Over 200 institutions around the world now apply behavioural insights to public policy. (OECD, 2020b). Sustainability labels on products can convey information about different attributes, such as environmental impact, lifespan, or ethical performance and can be either positive (only identifying the most sustainable products), negative (only identifying the least sustainable products), or graded (ranking all products on their relative sustainability). The goal is to assess the relative impact of these three labelling approaches on purchase decisions with more than 1,200 consumers in three EU Member States participating in an online experiment. Results show that, compared with positive and negative labels, graded labels lead to higher market shares of the most sustainable products, to lower market shares of the least sustainable products, and to higher sustainability scores. These findings support policy interventions that convey product sustainability with graded labels as the most effective to nudge consumer toward more sustainable purchase decisions (Dessart et al, 2021).

**Box 39. Behavioural and cultural governance: a behavioural approach to building public consent for more sustainable food diets**

It is tempting to assume that our food choices reflect an indelible, immutable, and sovereign set of tastes that are our ‘own’. Any attempt to influence those choices is therefore meddling. However, behavioural science reveals this simply is not the case. Our tastes are manifest within, and continually shaped by, incumbent economic, material and socio-cultural forces of influence. We enjoy eating meat and dairy in part because they are cheap (relative to their true cost to us and to society), their consumption is normalised in
our culture (but has not always been so); they are heavily marketed; and nudged upon us (deliberately or otherwise) through myriad aspects of the choice environment in supermarkets and restaurants. It’s an illusion to think our food choices originated wholly from within, and it therefore makes little sense to object to influence, per se. A more pertinent question is what type of influence, by whom, and in which direction, is most acceptable? There are many relatively successful examples (Behavioural Insights Team, 2020):

- Segregating non-meat foodstuffs from meat foodstuffs does not work: (1) in cafés, Prêt (the global café chain) tried introducing ‘veggie only’ refrigerators in their sandwich shops, in an attempt to promote vegetarian foods. However, they found it reduced sales compared to integrating the produce across all refrigerators; (2) in restaurants, research by the World Resource Institute found that putting vegetarian options in a separate box on a menu reduced ordering rates of veggie options by 56%; and (3) in supermarkets, putting vegetarian sandwich fillings adjacent to the meat options roughly doubled sales compared to having them in a separate ‘vegetarian’ section of the shop.
- Some optimism for Eco-labels. Though robust evidence on eco-labels is minimal (there is more evidence on calorie labels), a number of recent studies suggest eco-labelling of food may have an impact on consumer choice. For instance, Swedish burger chain Max introduced carbon labels on all their burgers and witnessed a 16% increase in the sale of burgers with a lower than average footprint. Another study trialled carbon labelling on soup and found it to cause a reduction in the purchase of beef soup (the option with the highest carbon footprint). However, the precise design of food eco-labels, and their impact across different products, under ‘real world’ conditions, needs much more research.
- Would you prefer a ‘field grown breakfast’ or a ‘meat-free breakfast’? The Behavioural Insights Team worked with The World Resource Institute (WRI) to test the impact of different language on meat-eaters’ tendency to order a vegetarian dish. Across many dish types, experientia and indulgent language (‘mild and sweet’, ‘comforting’ etc.) and terms highlighting providence (‘field grown’, ‘garden’) boosted sales. In contrast, ‘meat-free’ was consistently unpopular. The WRI have since replicated these findings in field experiments within UK and US cafes, witnessing sales of vegetarian options increase by up to 70%.
- Fancy a meat-free ‘disc’ or ‘tube’? Recent EU proposals have sparked a debate about the naming of meat-free burgers and sausages, with these conventional terms potentially being reserved for meat products to ‘avoid consumer confusion’. The unappealing-sounding terms ‘discs’ and ‘tubes’ have been proposed as alternatives, and though these may be the most media-grabbing options (rather than the most likely to be used), such proposals do highlight the importance of language distributed governance (Boffey, 2019).

4.4 Sustainability governance paradigms: from about 2015

For many years after 1945, the development community adopted a market and technology-driven approach through practices based on ideas around so-called modernisation, growth, structuralism and dependency (Millard 2014). However, since the 1980s, alternative frameworks also emerged, most notably so-called post-development and human development theories, and in particular the idea of sustainable development itself. This started by examining how human development could avoid despoiling the physical environment, an approach adopted by the United Nations in defining SD as ‘meeting the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland 1987). The UN has since developed frameworks for global sustainable development starting in 2000 with the UN Millennium Declaration Goals (MDGs) (United Nations 2000), committing nations to a new global partnership to reduce extreme poverty and setting out eight overall targets. Although impressive gains were achieved, such as some reduction in extreme poverty, serious shortfalls continued and hunger remained a global challenge (United Nations 2015c).

In the period since the 2008 global financial crisis and the UN’s launch in 2015 of the 2030 Sustainable Development Goals (SDGs) for 2030 (United Nations, 2015b), there have been increasing concerns about global development crises. Poverty, inequality, political instability, deteriorating security and mushrooming environmental threats have all risen to the top of the global agenda. Many of these societal challenges arise from so-called ‘wicked’ problems, i.e. very complex and intertwined challenges which require the combination of highly differentiated types of knowledge and expertise, collaboration between multiple actors and an openness to new ideas and approaches. Whilst the MDGs were aimed primarily at the developing and emerging economies, the 17 SDGs apply to, and have been signed by, virtually all countries. They are seen as the guiding principle for balanced long-term global
development consisting of the three dimensions of economic, social and environmental development, so that if any one dimension is weak then the system as a whole is unsustainable.

Figure 9 shows the architecture of the 2030 Agenda launched in 2015, comprising the 17 SDGs positioned across the three overlapping dimensions of sustainable development, plus for the first time a sustainability governance dimension, termed the means of implementation and partnerships, designed to support the delivery of the substantive SDGs 1-15. The year 2015 was thus a turning point as it placed governance for the first time as a critical pillar of sustainable development, especially given that a major shortfall of the MDGs was the lack of consideration or support in how to actually achieve the goals. Critical governance aspects include technology banks, in particular information and communication technology, technology facilitation, data monitoring and online platforms, capacity building using science, technology and innovation, and knowledge sharing. Thus, the governance pillar consists of the two SDGs, 16 and 17, so that overall there are five principles of critical importance to the 2030 Agenda, respectively: prosperity, people, planet, peace and partnership, with the latter two comprising the governance pillar, as indicated in Figure 9.

![Figure 9. The overlapping architecture of the UN’s 2030 Agenda and the 17 SDGs launched in 2015](image)

The SDGs are also a major pillar of EU policy, for example in 2021 they were noted as a compass for Europe’s recovery. It is recognised that the EU and the United Nations share common goals for a sustainable future and are natural partners in the efforts to shape a safer and better world for all. “To that end, the EU supports effective multilateralism and a rules-based international order with the UN at its core. As a major negotiating success of the EU, the SDGs are a useful vehicle to project globally the EU’s values and objectives, and provide a shared framework, useful for international partnerships. Consequently, it is in the EU’s interest to play a leading role in the implementation of the 2030 Agenda globally through its external action.” (European Commission, 2021c).

4.4.1 Sustainability governance

- Frameworks, tools and measures

With the aim of ‘meeting the needs of the present without compromising the needs of the ability of future generations to meet their own needs’ (Brundtland, 1987), sustainability governance puts the timeline beyond the present generation and means that, when undertaking any type of action, at the very least there is a need to consider whether what takes place will have a negative impact on subsequent generations. This is the main aim of sustainability governance. A key question which arises is how public organisations can coordinate and steer their actions toward sustainable transformation. This question of sustainability governance has been addressed from
different perspectives. While some try to integrate sustainability governance into existing management approaches, others emphasize its complexity and provide more abstract frameworks. Issues of governance also feature in sustainability assessment tools. Such tools appear promising in that they potentially provide a bridge between abstract models and concrete strategies. However, the existing tools have been criticized for addressing only those aspects of governance that lend themselves to quantitative measurement, while other important aspects have been neglected.

According to Triple Sustainability (2020), sustainability governance is a system by which entities are both managed through their internal regulations as well as held accountable for their actions from the sustainability perspective. Sustainability governance sets a system of:

- Policies and goals;
- Identification of risks and opportunities;
- Organisational structure;
- Management plans;
- Stakeholder engagement and communication system;
- Monitoring;
- Reporting; and
- Sustainability governance implements the above through the behaviours of the entity members at all levels.

While the quantity of sustainability governance initiatives and systems has increased dramatically in recent years, it is unclear whether specific governance systems can be trusted as legitimate regulators of the sustainability of economic, social and/or environmental activities. Using bioenergy as an example, Stupak et al (2021) focus on conceptual tools to improve understanding of these issues as well as the facilitating factors and barriers for sustainability governance to play a role in transitioning to profoundly more sustainable societies than those that currently exist. In this context, they propose eight premises:

1. Human choices significantly impact life on Earth and there is a duty of care;
2. Sustainability is worthy even as an aspirational goal;
3. Trust among decision makers and other citizens or stakeholders is a critical prerequisite;
4. Sustainability governance is a tool to build societal trust through collaboration;
5. The ability of a governance system to build legitimacy and trust is affected by its design features;
6. Willingness to cooperate is needed when sustainability governance is shaped;
7. A clear distinction between fact- and value-related disagreement is a prerequisite for constructive dialogue and reaching consensus; and
8. Efficient communication requires agreement around definitions and terminology.

Based upon these premises, precise definitions also need to be made of the specific type of sustainability involved, of the sustainability transition, and of legitimacy and trust as a premise for obtaining effectiveness in communication and minimising risks associated with misunderstanding key terms. In this context, a ‘good governance’ approach is used to define ‘good sustainability governance’ and what makes governance systems successful in achieving their goals. Input, output, and throughput legitimacy are used as three principles constituting ‘good sustainability governance’ as well as associated open-ended criteria as a basis for developing operational standards for assessing the quality of a sustainability governance system or complex (Stupak et al, 2021).

As sustainability governance systems must develop to remain relevant, an ‘adaptive governance model’ is used in which continuous re-evaluation of the sustainability governance system design supports the system in remaining ‘good’ in conditions that are complex and dynamic. This leads to a conceptual ‘sustainability governance research framework’ that aims to facilitate an integrated understanding of how the design of sustainability governance systems influences the legitimacy and trust granted to them by relevant actors. The framework is used to enhance the adaptive features of sustainability governance systems to allow the identification of the causes of existing and emerging sustainability governance crises and finding solutions to them. Knowledge generated from its use may form a basis for providing policy recommendations on how to practically solve complex legitimacy and trust crises related to sustainability governance (Stupak et al, 2021).
Actors and relationships

In this context, understanding the actors involved and their relationships is crucial, here labelled as ‘agents’, given they have agency, operating in ‘agent systems’. In the early days of environmental governance, the agent was typically synonymous with government. Today, governmental control over sustainability governance is increasingly being shared with other actors. A typology for the governance system agent, where the agent is classified as various combinations of three major types of agent, including the state, firms and civil society actors such as NGOs is sketched in Figure 10. Seven categories are defined by the degree to which each of three main types of agents are involved, ranging from the state as the single agent, with traditional law as the social contract, to newer systems that involve two or all three types of agents. These systems are also known as hybrid systems. There has been a growing number of various hybrid systems where the different types of actors co-regulate (Stupak et al 2021; Abbott and Snidal, 2009).

Figure 10 depicts the ‘sustainability governance triangle” showing seven categories of governance systems based on the main types of involved actors. The associated types of regulatory activities can be described as (1) traditional top-down legal standards, typically laws, (2) self-regulation, (3) third-party private regulation, (4) standards of firms influenced by states (co-regulation), (5) standards of NGOs influenced by states (co-regulation), (6) joint efforts between firms and NGOs, (7) joint efforts between firms, NGOs, and states (transnational regulation).

Schraad-Tischler & Seelkopf (2016)’s ‘sustainable governance indicators’ are designed to address one of “the central socio-political questions facing the highly developed states of the OECD and the European Union at the outset of the 21st century, i.e. how can we achieve sustainable policy outcomes and imbue political decision-making with a longer-term focus? Challenges such as economic globalisation, social inequality, resource scarcity, and demographic change, each of which cut across policy sectors and extend beyond national boundaries, require policymakers to adapt rapidly and learn from the examples of others. Ideally, governments should act with long-term consequences in mind. This involves generating policy outcomes that maintain or improve the quality of life for present and future generations without placing an unfair burden on future generations.” Three pillars are proposed for sustainable governance indicators, each with a number of examples:

1. Policy performance: policy outcomes in 16 policy areas; aligned with the three substantive SDG pillars: economic, environmental and social development; domestic action taken by governments sensitive to international responsibilities.
2. Democracy: state of democracy and rule of law; criteria to address the substance and procedures of democracy; focus on institutional and procedural quality.
3. Governance: executive capacity (steering capability, implementation, institutional learning); executive accountability (participatory competencies of social actors).
Sustainability governance in higher education institutions can be supported by examining the role of sustainability assessment and introducing an assessment tool inspired by systemic thinking and centered on a ‘governance equalizer’. The complexity inherent in sustainability governance remains to be addressed adequately and, while a number of models and frameworks have been proposed, most of them remain caught between narrow, management-oriented approaches on the one hand, and rather abstract approaches that provide little guidance for improving the field on the other. Sustainability assessment tools represent a potential way to bridge this gap. While there are existing tools which include issues of sustainability governance, these are often limited to aspects that are easily quantifiable and neglect more complex aspects. Against this background, the tool is based on a multi-case study in Germany that has been tested in a series of workshops. Drawing on the concept of a ‘governance equalizer’, it focuses on the functional requirements of sustainability governance in five dimensions—politics, profession, organisation, knowledge, and the public—and how they are addressed by the higher education institutions. The tool raises the level of abstraction in order to capture complexity, but at the same time keeps sight of governance structures, processes, instruments, and practices. It combines clearly defined criteria that are assessed using carefully developed maturity scales with a focus on stakeholder participation and knowledge (Niedlich et al, 2020).

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**The doughnut**

Another recent approach to sustainability governance is Kate Raworth’s ‘doughnut economy’. Approaching the topic from an economic perspective, this approach suggests a visual framework for sustainable development, shaped like a doughnut or lifebelt, combining the concept of planetary boundaries (Steffen et al, 2015) with the complementary concept of social boundaries and the associated essential human needs (see Figure 11).

![Figure 11. The classic doughnut model (Raworth, 2017)](image_url)

The model provides an overall framework and strategy for evaluation derived from all the UN’s sustainable development goals, plus integrated tools, methods and models showing where basic needs are not being met and where ‘planetary boundaries’ overshoot. It displays how the issues are interlinked and encourages city policymakers to lift their eyes to the horizon and think differently. The central hole of the model describes and evaluates the proportion of people that lack access to life’s essentials (food, health, education, income and work, peace and justice, political voice, social equity, gender equality, housing, networks, energy and water). The outer crust evaluates ecological ceilings as planetary boundaries that life depends on and must not be overshot (climate change, ocean acidification, chemical pollution, nitrogen and phosphorous loading, freshwater withdrawals, land conversion,
biodiversity loss, air pollution and ozone layer depletion). The ‘dough’ of the doughnut itself indicates the “safe and just space for humanity to develop a regenerative and distributive economy” (Raworth, 2017).

Doughnut economics has, to date, mainly been implemented at city level, including Amsterdam, Berlin, Brussels, Copenhagen and Melbourne, where the basic doughnut economy model is scaled down to city level. At this scale it provides an holistic, integrated approach, similar to nexus thinking, that offers an overall framework for evaluation, design and implementation based on a city portrait.

**Box 41. Sustainability governance: the Amsterdam City doughnut – a tool for transformative action**

In April 2020, during the depths of the first COVID-19 lockdowns, the City of Amsterdam provided a much-needed surge of hope worldwide by publicly embracing the ‘doughnut’ as a tool to guide their social and economic recovery from the pandemic. Amsterdam’s vision to be ‘a thriving, regenerative and inclusive city for all citizens, while respecting the planetary boundaries’ makes the city a pioneer of the doughnut systemic transformation. In this spirit, the City of Amsterdam has joined the Thriving Cities Initiative (TCI), a collaboration between C40, Circle Economy, and Doughnut Economics Action Lab, which works with cities pursuing such a transformation. A key tool of the TCI is a City Portrait based on the doughnut of social and planetary boundaries. It is a holistic snapshot of the city and one that serves as a starting point for big-picture thinking, co-creative innovation, and systemic transformation. This presents city life and its impacts through four ‘lenses’ – social, ecological, local, and global – which together provide a new perspective on what it means for a city to thrive. (See Figure 12) In essence, it invites city stakeholders to ask themselves a very 21st century question: how can Amsterdam be a home to thriving people, in a thriving place, while respecting the wellbeing of all people, and the health of the whole planet?

The Amsterdam City Doughnut is intended as a stimulus for cross-departmental collaboration within the City, and for connecting a wide network of city actors in an iterative process of change. This takes place by creating a city ‘self-portrait’, and deepening engagement with key city initiatives like Amsterdam’s Circular Roadmap 2020–25 and the Roadmap to Climate Neutrality 2050. Amsterdam is ideally positioned to use the portrait as a tool for transformative action. The city has been recognised for its ‘Amsterdam Approach’ to collaborative innovation, which connects neighbourhood initiatives, start-ups and civil society with the established institutions of government, business and knowledge institutions. Furthermore, the city is home to a dynamic network of changemakers who are already using doughnut-inspired thinking to drive systemic change (Doughnut Economics Action Lab, 2020a).

![Four lenses of the city doughnut portrait](image-url)

**Figure 12.** Four lenses of the city doughnut portrait (Doughnut Economics Action Lab 2020b)
4.4.2 Circularity governance

Circular systems

In their approach to sustainability governance, the Ellen MacArthur Foundation (2013) envisions the circular economy to understand how to build and recirculate economic, natural and social capital, based on three principles: design any type of waste out of the system; keep products, materials and knowledge in use; and regenerate and restore living and non-living systems. The model regenerates biological nutrients like biomass, food waste, wood, soil, plants, animals, natural ecosystems and other living materials, as well as restores technical nutrients like plastics, synthetics, metals, rubber, ceramics and other non-living materials. Both circuits ensure that energy and materials are never 'used up' or disposed of but deployed again and again through cycles of renewal and reuse, as illustrated in Figure 13.

Figure 13. The circular economy: regenerative by design (Ellen MacArthur Foundation, 2013)

A circular economy thus depends on systems thinking to provide interlinked economic, social and environmental services for its citizens, businesses and institutions. Most circular economy progress up until now has been made by a small number of multinational corporations on a continental or global scale by dint of their huge size and reach. Such multinationals span a large number of diverse sectors spread around the globe, and this enables them to have direct and detailed visibility of all the inputs and outputs of each sector whilst, crucially, having visibility and control of all coordination levers needed to match and link them. Under traditional governance arrangements, smaller, single sector, national- or city-based companies have trouble in overcoming the huge visibility, coordination and interaction costs of realising the benefits of the circular economy as they need to link with other organisations. Instead, they tend to be restricted simply to rationalising logistics and other efficiencies within a single sector, or even a single product line, within a small geographic area. The challenge is, therefore, to provide appropriate governance systems, strategies and tools with organisations that need to link with each other in real time in order to realise the benefits of circularity and the inter-exchange of assets and resources.

Frameworks, tools and measures

To develop circularity governance it is necessary to look beyond the current 'take-make-waste' extractive industrial model towards a circular economy that aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. The Ellen MacArthur Foundation (2017a), a leading institution whose mission is to accelerate the transition to a circular economy, working with business, academia, policymakers, and institutions, has identified four essential building blocks of a circular economy:
1. Circular economy design: competencies in circular design are required to facilitate product reuse, recycling and cascading.
2. New business models: are needed that either replace existing ones or seize new opportunities.
3. Reverse cycles: new skills for cascades and the final return of materials to the soil or back into industrial production systems are needed.
4. Enablers and favourable system conditions: collaboration mechanisms, rethinking incentives, a suitable set of international environmental rules and access to financing are needed for widespread reuse of materials and higher resource productivity.

A circular design toolkit, also developed by the Ellen MacArthur Foundation (2017b) in collaboration with its partner networks, is organised in four parts: explore the fundamentals; apply the principles; connect with others; and contribute and be part of the transition. It provides users with video tutorials, a case study library, MOOCs, sheets and facilitator notes.

Life Cycle Sustainability Assessment (LCSA) is an essential building block and methodology for analysing and assessing all environmental, social and economic negative impacts and benefits in decision-making processes towards more sustainable products, services and processes throughout their life cycle. For evaluation purposes, the LCSA consists potentially of four components (UNEP, 2011):

- E-LCA (Environmental Life Cycle Assessment) of performance throughout the life cycle of a product or from performing a service, and looks at the potential environmental impacts of extracting and consuming resources like energy, air, water, soil, transportation, production, use, recycling and product discard.
- LCC (Life Cycle Costing) assesses economic outcomes and impacts of this life cycle, including on investments.
- S-LCA (Social Life Cycle assessment) examines the social consequences, including health and safety, education and skills, community, social inclusion and cohesion, employment effects, gender aspects and impacts on skills.
- EC-LCA (economic consequences) includes jobs, assets, investments, wealth creation and (green) growth.

As part of the process for developing a European circularity governance framework, the EU’s Circular Economy Action Plan lays out a future-oriented agenda for achieving a cleaner and more competitive Europe in co-creation with economic actors, consumers, citizens and civil society organisations. It aims at accelerating the transformational change required by the European Green Deal, while building on circular economy actions implemented since 2015. The plan ensures that the regulatory framework is streamlined and presents a set of interrelated initiatives to establish a strong and coherent product policy framework that will make sustainable products, services and business models the norm and transform consumption patterns so that no waste is produced in the first place (European Commission, 2020a).

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**Circular business models**

A circularity governance framework needs to collaborate closely with business and work together to develop appropriate business models alongside business rationales, incentives and supports to implement them successfully, for example as outlined in Figure 14. Two basic types of technology lie at the heart of the circular economy, first manufacturing and processing technologies, especially in the 4IR context (see also Section 2.4), as well as for transport, distribution, logistics, etc. Second, digital technologies, for example, to identify, track, trace and facilitate the five Rs in Figure 14. This includes Life Cycle Sustainability Assessment and end-to-end data in order to maximise and retain the value of materials circulating in the economy and minimise waste, given that any waste equals loss of value.

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42 Notably, when speaking about business models, the Ellen MacArthur Foundation concentrates on companies, i.e. the private sector. The role of public institutions in the processes that shape, deliver and manage public services it not particularly investigated.

Figure 14. Circular economy strategies and business models based on the five Rs of recover, recycle, reuse, reduce and regenerate (adapted from Bauwens et al 2020)

Box 42. Sustainability governance: re-circulating building materials in Bremen and Zürich: rethinking the construction industry from the foundations up

Both city examples focus on building cities by re-using as many materials, components and fittings as possible:

**Bremen:** Components Exchange Platform (Bauteilbörse) Bremen is a brokerage market for connecting demolishers with builders/renovators in an accurate and timely manner, as well as for private individuals, craft businesses, demolition companies, construction companies, planning offices and public authorities.

**Zürich:** Construction office (Baubüro): “We use components again. From material that is no longer needed in one place, something new is created elsewhere. This circulation saves energy and pays tribute to the beauty of what is there.”

Both examples rely on shifting mind sets, behaviours, integrated governance across stakeholders and value chains, plus deep local knowledge and ‘local treasure hunters’ in the sense that:

- The development of much better real-time documentation, e.g. a ‘materials passport’ that is trusted in terms of detailed accuracy, availability, location, quality, etc., bridging the gap between demand and support.

- Re-circulating cannot cost more than building with new materials and must be no reduction in quality or maintenance costs.

- The projects in Zürich “cut CO2 emissions by half, compared to the huge effort needed to shave a few percent off the carbon footprint of a standard construction project” (Zürich City Authorities).


45  [https://www.insitu.ch/themen](https://www.insitu.ch/themen)
4.4.3 Nature-based governance

— Working with and learning from nature

Climate change, biodiversity loss and other stresses on nature are having profound impacts on the functions of societies around the world and on the lives of their inhabitants. These functions and lives are all too often, in turn, increasing environmental stresses in a downward mutually damaging spiral that can run out of control. This is leading to numerous challenges, like poor air quality, heat island effects, increased flood risks, increased frequency and severity of extreme events, as well as rises in crime, social exclusion, inequality and a degraded urban fabric. All these have deleterious impacts on human health, quality of life, wellbeing and security, and hit the least privileged and marginalised people the hardest of all. To address these serious challenges, there is increasing evidence that nature-based solutions can significantly enhance our ability to chart a successful course towards healthier, more prosperous and liveable communities. There is also significant and credible evidence that by working with and learning from the nature of living systems – rather than working against it and ignoring its 3.8 billion year innovation history – a whole range of economic, social and environmental gains can be realized that benefit all of humanity as well as nature itself (Millard et al, 2019a).

All populations, companies and authorities around the world face the consequences of climate change so they have to adapt. For example, it is becoming a reality to millions of urban citizens worldwide as cities face the challenge of planning for sustainable development and managing the growing climate risks threatening urban livelihoods. The need for adaptation of these urban areas to changing conditions is widely recognised. Floods, drought, heat stress and problems related to water quality, water supply and land subsidence increasingly threaten livelihoods in urban areas and the social and economic urban systems (Albers et al, 2015). Risks are further increased by constantly growing urban areas and intensified urban land use. As the climate changes, the results and causes (such as greenhouse gases) that need to be overcome, particularly in urban areas, can include: too much or too little water; both over- and underground; coastal erosion and lake shrinkage; reduced bio-diversity and species migration; increasing temperatures and more frequent and much greater temperature fluctuations; increasing extreme weather incidents; increasing pollution and reduced air quality; public health, safety and disease threats; increasingly unstable food supplies; and rising migration and conflict. In addition to environmental impact, all these can, in turn, have profound social, economic and political consequences both in the short and long term.

— Multiple societal co-benefits

There is increasing evidence that nature-based solutions can significantly enhance the ability of society to successfully respond to these challenges. By reshaping the built environment, it is already clear that nature-based solutions can enhance the livability, prosperity and inclusiveness of places, revitalise deprived districts, and improve the mental and physical health and quality of life of citizens. Furthermore, evidence also shows decreases in urban violence and reductions in the social tensions and stresses experienced by urban inhabitants, and particularly amongst the most vulnerable groups like those in poverty, children and the elderly. In this context, a nature-based initiatives programme for inclusive urban regeneration was launched by the European Commission in 2015. This arises from the growing awareness that nature can help develop viable solutions which use and deploy the properties of natural ecosystems and the services that they provide in a smart, ‘engineered’ way in any type of development. Working with nature, rather than against it, can pave the way towards a more resource efficient, competitive and greener economy. It can also help to create new jobs and economic growth, through the manufacture and delivery of new products and services, which enhance the natural capital rather than deplete it (Stern, 2007).

Nature-based solutions (also NBS, in short) are “solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions”. European Commission 2015) Some nature-based solutions involve using and enhancing existing natural solutions to the whole range of societal challenges like climate change, water and temperature extremes, pollution, food and nutrition security, congestion, social and economic exclusion, as well as run-down neighborhoods and old industrial sites. Others explore and innovate entirely new solutions, for example by mimicking how non-human organisms and communities cope with environmental extremes and provide ecological services. Nature-based solutions use the features and complex
system processes of nature, such as its ability to generate energy, store carbon and regulate water flow, in order to achieve desired outcomes like reduced disaster risk, improved human well-being and socially inclusive green growth. Maintaining and enhancing natural capital, therefore, is of crucial importance, as it forms the basis for implementing solutions. These nature-based solutions ideally are energy and resource-efficient, and resilient to climate and other natural and human-induced change, but to be successful they must be adapted to local conditions (European Commission, 2015).

Four principal goals have been identified that can be addressed by nature-based solutions (European Commission 2015):

- Enhancing sustainable urbanisation through nature-based solutions can stimulate economic growth as well as improve the environment, making cities more attractive, and enhance human well-being.
- Restoring degraded ecosystems using nature-based solutions can improve the resilience of city ecosystems, enabling them to deliver vital ecosystem services and also meet other societal challenges.
- Developing climate change adaptation and mitigation using nature-based solutions in cities can provide more resilient responses and enhance the storage of carbon.
- Improving risk management and resilience using nature-based solutions in cities can lead to greater benefits than conventional methods and offer synergies in reducing multiple risks.

Box 43. Sustainability governance: the Nordic model for urban development – Copenhagen, Denmark

The 'Nordic scalable model for city development' uses nature to solve some of today's hardest urban challenges while increasing the life quality of city residents. Designed to solve physical, social and cultural challenges, it is based on co-creation, dialogue and a humanistic and nature-based design approach to the shared public space in cities. According to the City of Copenhagen (2016), the Nordic model is based on two underlying principles that mirror the two major types of impact resulting from deploying nature-based solutions for city development identified by the European Commission (2015):

- The utility value of nature – the city needs nature. Urban nature has a practical function that helps create a better basis for city life. With the help of nature's ecosystem services, the city can alleviate climate and environmental challenges while improving the city's economic and social sustainability. Urban nature's overall growth condition is an important prerequisite for the ecosystems services that also include biodiversity for regulating these services.
- The amenity value of nature – people need nature. Nature makes us physically healthy, it cleanses the soul and makes us happier. It provides sensory experiences that enhance our creativity and gives us the desire to create something together with others. Nature gives us a strong sense of belonging to particular places and to the city as a whole. It stimulates our ability to learn, and reminds us that nature is the very basis of our existence and that we are a part of a greater context.

The Nordic model is always founded on local and site-specific circumstances, building on local social and cultural life as well as the specific physical challenges of the area as starting point for solutions. However, because of its strong foundation in the principles and processes of nature, the method is also highly scalable and can be applied in a wide array of settings and conditions around the world. The City of Copenhagen is, just like almost every other big city, facing critical climate changes and a growing population. To mention just a few, Copenhagen's challenges range from heavy cloudbursts, urban heat islands and an increased carbon footprint, to waste management, water pollution and an increasing social and cultural segregation in the inner city. SLA Architects' project 'the soul of Nørrebro' aims to address all of these challenges by seeing water not as a problem, but as a resource. The project is a flagship example of how the Nordic approach can solve urban challenges and make life in cities much better. The project is deeply rooted in the local circumstances of the Nørrebro neighborhood. Specifically, the approach:

- Attempts to move away from tackling climate change issues, such as water by using bigger sewers, harder surfaces and technological 'fixes', but instead focuses on the intricate design of topography, soil, trees, flowers, vegetation, natural seepage and drainage woven into the urban fabric.
- Focuses on the local Nørrebro context by inter-linking three extremely site-specific circuits: the hydrological, the biological and the social.
Deploys social innovation approaches and methods through continuous collaboration with residents, school children and local civil organisations, where the results are claimed to be greener, happier, as well as more sensuous and varied local cultures that promote neighbourhood identity and empower inhabitants (Millard et al, 2019a).

--- Both bottom-up as well as top-down governance

Nature-based solutions for addressing climate change and other stresses on the natural environment provide a set of underlying governance principles and frameworks to protect cities and communities from the likely disruption and damage that result. Governance, regulatory and institutional changes need to be designed, directly or indirectly, to cope with climate change, for example by focusing both on bottom-up initiatives, for example through local communities, as well top-down initiatives through policies, the planning system, governance and regulation. This requires a judicious and flexible balance between the bottom-up agency of localities and the more top-down structures of national and EU governance. As indicated above, nature-based solutions are not only useful for improving built environments and physical infrastructures in cities, but also have value for social and economic development, so this also needs to be incorporated. Further, they can also be a source of innovation for how many other organisational types are structured and operate, as well as for re-thinking city governance and urban planning. This can be done, for example, by developing concepts learned from nature like self-leading teams, relying on structure and process rather than control, and emphasising strong internal communication and evolutionary principles, as exemplified in the Buurtzorg case in Box 34. For more examples, see also Maes et al (2021).

In this context, Noring (2016) has highlighted the ability of nature-based solutions in cities to promote innovation in new business, finance and governance and in social innovation, through the mobilization of new public and private investments, as sketched in Figure 15. This is starting to create a global market for nature-based solutions for green growth, as well as international cooperation. What is needed from the policy side is to improve the framework conditions by removing policy barriers, including in regulation and administration, whilst developing and upholding scientifically-based standards and monitoring regimes, building communities of innovators, providing a solid knowledge and evidence base, and developing upscaling and up-taking solutions.

![Figure 15. The range of long-term environmental, economic and social benefits (Noring, 2016)](image)

The evidence base needs to be built on widely accepted and shared impact evaluation frameworks, for which the European Commission (2021f) has prepared a handbook for practitioners to serve as a reference for relevant EU policies and activities, for orienting urban practitioners in developing robust impact evaluation frameworks for nature-based solutions at different scales, and to provide a comprehensive set of indicators and methodologies. The handbook focuses on robust monitoring and evaluation frameworks to assess NBS impacts that can enable cities and regions to assess the strengths and weaknesses of specific interventions in achieving strategic goals,
understand the realised benefits and trade-offs, and sustainably manage NBS in the long term. Impacts can be assessed quantitatively and/or qualitatively by adopting indicators, a set of variables providing the means to assess particular attributes to meet an explicit objective. The following 12 societal challenge areas are identified each with specific data types, sources and techniques for the generation of data to monitor and assess the impacts of NBS:

1. Climate resilience;
2. Water management;
3. Natural and climate hazards;
4. Green space management;
5. Biodiversity;
6. Air quality;
7. Place regeneration;
8. Knowledge and social capacity building for sustainable urban transformation;
9. Participatory planning and governance;
10. Social justice and social cohesion;
11. Health and well-being; and
12. New economic opportunities and green jobs.

Data and digital technology have vital roles in designing, collecting and sharing data, and in analysing results as well as, for example, for digital participatory platforms; digital imaging and mapping; manipulation, storage, and visualization of digital spatial and nonspatial datasets using GIS; and digital elevation and surface modelling.

**Box 44. Sustainability governance: urban GreenUP Tool, Valladolid, Spain**

As part of the monitoring strategy of the city of Valladolid, a smartphone application has been developed by GMV, within the Urban GreenUP Project. This is an example of an innovative technology-supported data collection platform, conceived to act as another sensor for the monitoring program of the city, and track both the interest generated by the NBS in citizens, as well as to assess the use of the city’s Green Corridor. The application allows the collection of various interrelated data, scoreboards and gamification relating to a specific user (with an identified profile). Some of these data are collected automatically, by leveraging the smartphone sensor (positioning by GPS/BT; position and time spent in an NBS), and others will be actively filled in by the user (surveys, ratings). All the information provided by the users is treated anonymously. The smartphone application is also designed to raise awareness and increase nature-based solutions engagement, showing a notification if it detects that the user is near a relevant location, and providing information regarding the purpose of the deployed or planned NBS. It can contribute to data collection for the following challenges:

- green space management (sustainability of green areas)
- quality of life for elderly people
- perceptions of connectivity and mobility
- recreational cultural value
- participatory planning and governance (perceptions of citizens on urban nature)
- social justice and social cohesion (green intelligence awareness)
- public health and well-being increase in walking and cycling in and around areas of interventions.

The use of these technologies encourages the interaction of citizens and their participation in the design of their own town, although the population sample studied is only that which handles these technologies so is unlikely itself to be a representative sample of the whole city population (European Commission (2021f).

**Box 45. BiodiverCities project**

Between January 2020 and April 2023, the BiodiverCities project\textsuperscript{46} “collected practices on how to engage citizens in co-creating visions around urban nature, monitoring, and solutions to improve urban biodiversity in the fields of planning and policy-making. It also contributed to the mapping of ecosystem services and

\textsuperscript{46} https://knowledge4policy.ec.europa.eu/projects-activities/biodiverscities-project_en
assessment of how urban green infrastructure can be used to provide local benefits for people and nature, by contributing to enhance regional biodiversity. [...] BiodiverCities is centered on co-creation as a pivotal element in urban planning and policymaking for biodiversity. In this spirit, ten participatory and innovative experiments are taking shape, with different focuses: from mapping of trees to establishing a new culture of biodiversity, reframing the relationship between humans and nature. Yet, they share the aim to empower citizens to co-create policies that are fit-for-purpose: designed with citizens and for citizens.”

During the project the following 10 cities experimented with participatory and innovative approaches to enhance biodiversity in urban areas: Leiden (Netherlands), Palma de Mallorca (Spain), Valongo (Portugal), Vilnius (Lithuania), Maribor (Slovenia), Novi Sad (Serbia), Palermo (Italy), Regalbuto (Italy), Varese (Italy) and Lisbon (Portugal). In addition, the city of Sofia (Bulgaria) was involved into the second part of this project, dedicated to the mapping of urban biodiversity and ecosystem services.

Planned for Spring 2023, the main public output of BiodiverCities will be an Atlas about "Engaged Communities for Greener Cities", presenting the different case-studies and sharing highlights, challenges, including institutional, and lessons learnt of the local engagement processes.

— Global learning standard

The International Union for the Conservation of Nature (IUCN, 2020) has also developed a Global Standard for Nature-based Solutions in order to meet the “pressing need for greater clarity and precision of what the concept entails and what is required for it to be deployed successfully. Without this, the application of NBS could result in inconsistent and ungrounded applications. The standard, therefore, also provides a systematic learning framework so that lessons can improve and evolve the applications, leading to greater confidence in NBS among decision makers.” “IUCN envisions that national governments, city and local governments, planners, businesses, donors, financial institutions including development banks and non-profit organisations will all be primary users of the Standard. The Standard can be used by stakeholders working in a range of settings from protected areas to productive landscapes to urban areas, and across different regions and in modified or intact ecosystems. Users can apply the Standard to both large-scale and small-scale interventions.” The Standard consists of 8 Criteria and 28 Indicators (Figure 16).

Figure 16. The eight criteria that make up the IUCN Global Standard for NBS are all interconnected (IUCN, 2020)

The most central criterion (Criterion 1 in the figure above) focuses on identifying the societal challenge to which the NBS is a response. While the scope of societal challenges currently includes climate change (adaptation and mitigation), disaster risk reduction, ecosystem degradation and biodiversity loss, food security, human health, social
and economic development and water security, as NBS evolve in their scope, there may be other specific challenges recognised within this scope.

4.5 Locality and community governance paradigms: from about 2015

In the years since the economic and financial crisis of 2007–2008, most European countries have experienced a resurgence in ‘localism’, what some have termed a ‘new localism’. According to Katz & Nowak (2018): “power is shifting in the world: downward from national governments and states to cities and metropolitan communities; horizontally from the public sector to networks of public, private and civic actors; and globally along circuits of capital, trade, and innovation.” As noted by Millard (2017c), cities, in particular, are at the ‘sweet spot’ being, in general, sufficiently large to possess significant political power, financial and other resources, whilst at the same being sufficiently small and close to their populations to understand their needs, collaborate meaningfully with them and take and implement appropriate decisions on the ground. Cities constitute the new locus of power in the ‘new localism’ “that is needed to solve the critical challenges of modern societies: economic competitiveness, social inclusion and opportunity; a renewed public life; the challenge of diversity; and the imperative of environmental sustainability”. New localism is not a replacement for the vital roles of national governments, but instead is the ideal complement to an effective overall governance (Katz & Nowak, 2018) but the urban dimension does deserve particular attention, see also (Alberti et al, 2019). However, following the slogan “leaving no one behind” and considering also the important functions of rural areas, the interconnectivity between all municipalities and communities has to be accounted for – independent of the density of human population.

There has been a clear return to an understanding that social, economic and cultural structures and competences at local level have huge value and are crucial to building wider concepts of socio-economic and environmental development in general (Millard, 2014). This understanding is, however, not a return to earlier notions of localism based on hierarchical structures, but instead closely mirrors the objectives and desired impacts of open and social innovation in meeting real social needs in new ways. This approach is increasingly focused on the daily social needs of people in their communities for work, education, health and prosperity in local contexts and in ways they themselves have some control over and so they can also contribute to strengthening how their localities work. This illustrates the dialectic between, on the one hand, a more macro, top-down and sometimes rigid structural one-size-fits-all approach, with, on the other hand, a more locally-embedded, nuanced as well as socially- and culturally-aware agency approach which, however, adds complexity to governance, multiplies the numbers of actors and relationships and potentially adds to the ‘silo’ problem. Whilst the locality has become more important in recent years, it has not yet seriously threatened the continued dominance of statism. Into this mix of systemic societal change, new conglomerations of this structure-agency dialectic approach are emerging. Many are attempting to build new economic models based on shared value and social value often derived from and embedded in localities (for example, as described by Porter & Kramer (2011), alongside an increased concerned for inequality, poverty and social distress (Millard, 2014).

However, this is not only a simple model of top versus bottom as there are many layers and levels dependent upon the particular national, historical and cultural context. There can be hierarchies within hierarchies. For example, taking a ‘new localism’ approach also means recognising that the largely top-down structures and policies of many smart city initiatives, in which the city authorities and other organisations deploy sensors, networks, data and data analytics to improve the efficiency of urban systems, such as, transport, utilities, and services, important as these are, is only half the story (Batty et al, 2012; Craglia and Granell Canut, 2014; Silva et al. 2018). From this perspective on its own, there is the danger of a one-size fits all, top-down view of local development. The diverse needs of the inhabitants as individuals, households, neighbourhoods, communities, organisations and businesses, that bring a locality to life, are just as important. Thus, any adequate governance model for the locality/city must also focus on the engagement and knowledge of its citizens and encourage the processes, and especially social and cultural processes, that make these places important: those that sustain very different, sometimes conflicting, activities. Cities, in particular, are in their nature engines of diversity, so focusing solely on efficiently streamlining utilities, transport, construction and unseen city administration processes can be massively counter-productive. This is in much the same way that the 1960’s penchant for social-housing in city tower blocks, based on their apparent economic efficiency in Le Corbusier style, was ultimately found to be socially and culturally unsustainable if not highly damaging socially and psychologically. Instead, localities will be successful, innovative and smart because their citizens have found new ways to craft, interlink and make sense of their own and each other’s assets, data and other resources (Millard, 2017c).
4.5.1 Locality investment, privatisation and who benefits

Collaborating with multiple actors

Local governance and financing are typically missing pieces of the national development jigsaw puzzle that stand between the state’s grand visions and plans, however necessary and laudable these are, and actual realisation on the ground. Making the right decisions is only halfway toward achieving success with the other half being in situ implementation. In this context in European countries, it is imperative to unravel the varying, sometimes complementary and sometimes conflicting, roles and relationships of the public, private and civil sectors in local development. The question is how the interests of the different actors are best aligned and marshalled to achieve successful results, which is ultimately down to governance and finance. On the one hand, collaboration brings many benefits, not least in terms of additional finance and other assets, as well as through the consideration of a wider set of competences, ideas and experience, whilst, on the other hand, many local actors can slow decision-making, increase bureaucracy and organisational inertia, and thereby degrade efficiency. Importantly, public and private interests do not always align, as public sector actors must serve the public, while private sector actors must consider return on investment and profits (Noring et al, 2019).

A balance thus needs to be found between the potential benefits and drawbacks when negotiating and collaborating with multiple actors, as well as between the efficiency and effectiveness of the outcomes. The battle is often about the rights different actors have over the value appreciation created by cities. Value is co-created through the collective efforts of both public and private investment, as well as through local governments re-zoning and repurposing land, regulation and other governance initiatives. It is thus also important to understand the different cultures of local governance and financing and how they deliver public value to all who live and work in the locality. Whereas this item will be revisited below (in Section 8.1), it should already be noted that all these trends are reinforced at local scale where all the actors tend to have much greater leverage over each other than at national level, given their mutual proximity and shared understanding of local opportunities and challenges, as well as their abilities to quickly mobilise local assets (Katz et al, 2017).

Privatisation and outsourcing

Since the 1970s and 1980s the privatisation and outsourcing of public sector functions in Western countries has become increasingly pronounced, although this varies greatly depending on the governance culture of each jurisdiction. Without deep knowledge of local, regional and national level governance structure and cultures, it is not possible to understand how to engage private and civil sectors in this way (Katz et al, 2017). For example, the ability of local government to take a leading role in public service delivery relies on deeply ingrained cultural characteristics. Mainland European cities collect and allocate on average 50% of all taxes. In contrast, in the UK, ‘City Deals’ have been implemented since 2012 with the deliberate intent to increase devolution to cities. Yet, UK cities collect just 5% of all taxes. Expenditure extending beyond this 5% stems from national government and usually comes with strings attached. In this way, devolution to local government of political and fiscal power is closely linked to the long-standing traditions of self-governance in mainland European cities. This, in turn, enables these cities to drive local and urban development (Noring et al, 2019).

With the extensive privatisation of public goods and services, especially whilst NPM and lean governance models were prominent, the question of who will care for the most vulnerable in society became paramount, as this segment of the population may not offer a good investment proposition for private investors and developers. Similarly, the question remains of who will invest in necessary social, economic and environmental solutions that do not offer convincing returns on investment. The solution could be that local governments legislate themselves out of these dilemmas by, for instance, mandating private investors and developers to reserve a certain percentage of their developments for social housing, or obliging energy providers to offer a certain percentage of their energy from renewable sources. However, by intervening with the private market, interference and distortion of free markets occurs hampering these businesses’ ability to compete internationally. In contrast, by privatising public goods and services, the risk is that investment only takes place in solid business propositions with high returns on investment (McGreal et al, 2000). Thereby, there is the risk that the vulnerable population segments in society will be neglected. At the same time, the public sector is starved of competences and resources that it needs for servicing segments of the population that do not offer solid investment propositions. Through extensive privatisation of public goods and services, the public sector’s ability to define and pursue future visions and solutions is reduced, such as climate resilience where the return of investment is uncertain (Noring, 2018). Also companies that are either fully or partially
owned by public sector institutions have a role to play. A historic overview of the legitimacy and business models of publicly owned companies has been recently provided by Lauesen and Bjerre (2020). The authors underline dilemmas between the quality of the services and products that those services provide and price setting policies. Whereas the provision of clean water is used as an example, findings might equally be projected, for example, to the provision of collective (public) transport.

Advocates of the private ownership and management of public service delivery argue that market competition leads to price equilibrium and that more prosperity will thereby be generated. However, this assumes that legislation and regulation do not distort markets which in practice is rarely the case. For example, Jerche al (2016) contend that full privatisation of local government transit services in the US “could result in cost savings of $5.7 billion and that the gain in economic efficiency from, for example, more closely aligning bus fares with production costs would be worth at least half a billion dollars. This is ultimately a political question and, in many ways, the jury is still out. Others point out that there is a need to take a broader view of results, including societal impact, operational effectiveness, as well as resource savings when measuring success. Without sufficient redistributive mechanisms, such wealth would remain in private hands rather than serve public value (Noring, 2018). According to Stone (2013), politicians most often address the issue of privatisation with “promises of sweeping cuts, but what do they actually mean when they say ‘efficiency’?” “If we do not want services to run down, there is a need to expose errors that can actually lead to waste resulting from so-called ‘efficiency’ reforms”. Instead of focusing only on the efficiency side of the equation, it is important to examine the direct relationships between government effectiveness and the population’s wellbeing to Garcia-Sanchez et al (2013).

—who benefits from public investment and rising asset values?

In a local development context, the privatisation of ownership often leads to the privatisation of ‘profits’, primarily reflected in land value appreciation, with corresponding public ownership of ‘losses’ (Noring, 2018; McGreal et al, 2000). This prevents the public from accessing and reinvesting the revenue stemming from public asset value appreciation that local government helps to create through measures such as land use, zoning, and localised infrastructure investments. Ingram and Hong (2012) explain that private land and property owners tend to believe that they are entitled to the entirety of the future gains from their assets, including the value appreciation generated from re-zoning or public infrastructure investments. Hence, they warn that attempts to make private owners pay for increased development rights could create political opposition. However, this should be seen in relation to the original productivity of the land combined with the bargaining power of public authorities vis-à-vis private owners. Whereas this is an issue emerging from the ownership of physical assets, the challenges also effect the recent discussions on the providers of digital technologies for innovating public services and the public sector, i.e., the recent debates on GovTech (Mergel et al, 2022; Kuziemski et al, 2022).

The above reflects the many challenges for local governance, which are particularly acute in cities, but also at least as many opportunities for localities going forward. They are often highly constrained by national legislative frameworks, block grants and tax systems, all of which are in most cases inadequate, and they struggle with governing the needs and interests of highly diverse actors that tend to be more intense at the local level given that communication channels are shorter and expectations higher than at national level. Nevertheless, these important discussions about the centralisation-decentralisation of governance power and resources often remain rhetoric, so localities are likely to struggle with the lack of political and fiscal devolution necessary to fulfil both their statutory and desired roles. Some exceptions are, however, derived from northern European examples where significant success has been achieved resulting in relatively high standards of urban regeneration. In general, however, there are clearly many pitfalls between the potential, the obligations and the capacities of localities (Noring et al, 2019). On the positive side, research on smart specialization strategies is steadily progressing and (in the EU) dedicated funding is available to boost this place-based approach to innovation policy (Marques Santos et al, 2021; Nakicenovic et al, 2021).
Another important consideration is the nature of the political economy of each locality and to what extent this contributes directly or not to the local economy and to wider social and environmental development. The argument still rages between the market adherents of NPM with its focus on the primacy of economic ends and means and on efficiency, on the one hand, and a more political interventionist approach which wishes to intertwine social, economic and environment policy objectives in a local context in order to achieve a more inclusive and sustainable place that will also prosper economically. It is also contended that this market-political dichotomy approach may only be valid in terms of short-term thinking, even though such short-termism tends to be paramount in most countries and localities. In terms of both local and national politics, the main target is the next election, and for the private sector short-termism shows in their obsession with short-term return on investments, quarterly results or the next shareholder meeting (Porter & Kramer, 2011). In the longer-term, if both politicians and private investors can re-orientate their priorities and mindsets, there is strong evidence that economic, social and environmental outcomes are mutually reinforcing and can all be positively achieved within the context and scope of the locality. For this is needed strong public sectors and public governance that can direct and support progress towards inclusive and sustainable localities that prosper economically (Noring et al, 2019).

Enabling governance arrangements

Across Europe, there is an inspiring array of experimentation with local governance arrangements for sustainable and just cities. Enabling governance arrangements (EGAs) are combinations of actor constellations and institutional settings that have proven a potential to support urban governance towards sustainable and just cities in several real-world initiatives, or governance interventions. Six EGAs have been identified that map out some of the essential elements that are essentially patterns identified as enabling positive change in multiple governance interventions for moving towards a sustainable and just city. Each of the following contain examples, critical reflections, and connections to the Covid-19 pandemic:

1. Create a comprehensive vision of change
2. Make space for adaptation and experimentation
3. Build bridges between separate stakeholder groups
4. Commit to a meaningful participation process
5. Tap into existing community networks

The six EGAs were developed at the virtual “Berlin” Arena on Governance for Sustainable and Just Cities in March 2021. Ten examples of specific governance interventions are used to illustrate how these work in practice, although it is stressed they will not necessarily produce positive outcomes in all settings. Nor are they the sole factors for bringing interventions to fruition. Rather, they need to be applied cautiously and adapted to local conditions47.

4.5.2 The role of civil society

Traditionally, local governance and financing have been in the competence and power of both the public sector and the private sector, each playing various roles, sometimes cooperating, sometimes competing, as exemplified above. In recent years, however, there has been an increasing involvement of civil society in this mix, often in cooperation with these two actors, but also sometimes taking place without reference to them and even under their perception radar. Civil society is composed of a very large number of diverse organisations and institutions, ranging from very informal to formal, including individual citizens, families, neighbourhood groups, communities, NGOs, social entrepreneurs and the alike and where the concept of community is important48, which means their roles and impact are highly diverse and dependent on the local context. Their activities encompass both direct monetary as well as in-kind initiatives, so measurement and impact assessment can be challenging. It is clear, that local public value is co-created both through the collective efforts of public and private investment as well as through the myriad socio-economic and cultural activities of civil society.

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47 https://wiki.sustainablejustcities.eu/Just_Sustainability_Governance_Arrangements
48 See Section 2.1 for the definition of ‘community’ used in this report.
There is strong evidence that the involvement of the civil sector can increase inclusion, trust, the quality of decisions and overall effectiveness, through the consideration of a wider set of ideas and access to additional assets (Millard, 2014). In some instances, this can include extra revenue for local development, as well as retaining finance and revenue within the locality rather than seeing this seep away. To date, however, these effects are relatively small compared to the impact the public and private sectors make, although their effect can be significant on the ground and in highly specific contexts. It might be argued that one reason why civil activities flourish and new localism has spread so widely, especially in the USA and the UK, is that there is a gap between a relatively small public sector and a relatively large private sector that the civil sector is able to address and fill, particularly by providing for the most vulnerable in society. In contrast, in most European countries, such as in Germany and Denmark, the role of civil society in addressing this gap and fulfilling such roles is relatively smaller given that the public sector tends to be larger, is often more responsive and, to some extent, more capable of providing comprehensive public services in these and similar countries (Millard et al, 2019b).

— Transition towns

An important example of community self-governance in which civil society plays the dominant role and which has scaled massively since its foundation in the UK in 2006 to 50 other countries, is the Transition Town Network as a socio-economic movement based on fiscal localism. It has become a “movement of communities coming together to reimagine and rebuild our world”.49 The Transition Town Network describes itself as a bottom-up charity “whose role is to inspire, encourage, connect, support and train communities as they self-organize around the transition model.” “Ultimately it’s about creating a healthy human culture, one that meets our needs for community, livelihoods and fun”. The transition town philosophy is based on eight principles:

- We respect resource limits and create resilience;
- We promote inclusivity and social justice;
- We adopt subsidiarity (self-organisation and decision making at the appropriate level);
- We pay attention to balance by creating space for reflection, celebration and rest, as well as activity;
- We are part of an experimental, learning network;
- We freely share ideas and power;
- We collaborate and look for synergies; and
- We foster positive visioning and creativity.

Box 46. Locality and community governance: transition town, Butroi Bizirik- en Transición, Spain

Butroi Bizirik -en Transición (BBT) arose from the local social capital that already existed in 2012, when over 100 inhabitants met to discuss the future they wanted and the abilities available to achieve it through three working groups: operational (food, energy, jobs), communication and coordination. Local capacities are diverse and mutually-enriching: ecological agriculture, purchasing groups, bio-construction, eco-gardening, health product retailing, free software, computer hardware recycling, teachers, yoga/reiki/meditation, communication, economists, engineers, gerontologists, lawyers, doctors, biologists and others. Local organisations were quickly founded, including: GoiEner (energy cooperative), Bizilore (autochthonous eco-gardening) and Reciclanet (recovery of hardware and promotion of free software); with other organisations showing their support (such as Alimentaccion—promotion of healthy local food at schools). Several town councillors and the town major began participating in meetings which resulted in permission to use two pieces of cultivable land as well as a suitable office to serve as the HQ. All activities focus on growing cohesion and the shared vision about a future rooted in the community, in its relationships and dedication to a better future which is socially and environmentally desirable as well as economically viable.

The movement’s vision is based on a communitarian process of personal and social transformation linked to the locality and oriented to the common good as well as on sustainability- and resilience-building. It is a permanent process, open to everyone and all organisations that share these values. Although the group is locally-focused the ambition is also to serve as a reference for other communities that might wish to follow a similar approach. “The mission is that BBT promotes, though its not-for-profit organisation and according to its values, the activation of personal and territorial abilities; fosters awareness and individual and

49  https://www.transitionnetwork.org
collective learning, as well as relations with other communities that are similar or in need; and manages the production, use and exchange of the resources that are available to reach our vision.”

Activities include the reinvigoration of the local economy and day-to-day living (focused on food, energy and digital sovereignty), on resilience, on personal integrity, health and balance, harmony with nature, equity and social cohesion, plus intergenerational responsibility and justice as well as on solidarity with those in need. The movement aims for prosperity without growth through economic viability. The methods deployed are based on political autonomy and freedom of decision-making, self-management, transparency, responsibility and personal compromise, creativity and tolerance. To make the movement economically viable, the plan is to create a new cooperative as a social business that incorporates consumers as the main group, plus workers and producers as additional collectives

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**The sharing and collaborative economy**

The current market system is extremely good at ‘sweating’ assets on the supply side, so that commercial producers are incentivized to squeeze to maximum extent their financial, human and other assets, and thereby increase productivity and performance. However, on the consumption and demand side, there is huge economic waste resulting from the widespread practice of exclusive asset ownership. In the last decade this is starting to be challenged by a new sharing economy growing from a small base, in which mainly individuals and families share with others in their localities an increasing range of their assets, such as time, skills, competences, tools, buildings, clothes, vehicles, spaces, facilities of all types, organisational capacities and even financial resources. Much of this sharing is enabled by digital tools, especially the internet and mobile devices that can very efficiently match idle assets with new forms of demand, not otherwise possible, thereby increasing the efficiency of asset use. The sharing economy is starting to supplement exclusive ownership with new forms of common, collective and collaborative ownership that typically results in non-monetized, in-kind, transactions at the small scale (Sundararajan, 2014; Hatzopoulos and Roma, 2017).

The issue is how to create (new) value especially at the local level and how to measure it, especially around existing assets, many of which are physical and anchored in localities. Does the sharing economy not only hijack and destroy parts of the existing urban market, but also create new forms of demand and thus new market value around these existing assets? Whatever the balance between centralising and decentralisation tendencies, and of cannibalizing existing demand and creating new demand, there is no doubt that radically new business models based on new forms of value creation, and new ways for people to interact around economic and social goods/services are being created, especially in localities and cities. Any new business model comes under attack from incumbents and also hits governance, legal, regulatory and insurance barriers designed for the ownership rather than the access economy. The sharing economy is currently at the stage where this is a critical issue. The sharing economy thus seems, to date, to be having the most profound implications for local governance and financing, as well as new ushering in business models. However many, such as Uber and Airbnb, have become global commoditised private companies that are starting to undermine and transform many of the traditional tenets of governance, regulation and taxation, especially at local level. There is a tension between the more traditional, locally-grounded and bottom-up social innovation approaches to the sharing economy curated by civil society that is largely non-monetized and has its main focus on participation and community building, on the one hand, and the more recent large scale highly monetized and profit-seeking ‘sharing economy’ companies, on the other. Perhaps both types will continue to thrive side by side, although there is evidence for a shift towards the predominance of the latter. Thus, the emerging sharing economy is not only a phenomenon with positive economic effects but also a set of public problems (e.g., on the labour market and for existing economic structures) that require intervention at the level of national governments as well as at international level (Koczetkow et al, 2022).

At its core, the more traditional sharing economy is social innovation aimed at transforming how some of the fundamentals of our political economy are practiced (Selloni and Selloni, 2017). At present, property ownership rights, while including the right to use and consume, are configured around the right to exclude. The sharing economy is characterised by the organised practice of exercising the rights to include and to share. The common realisation driving these initiatives was one of under-utilised assets. While the traditional problem of the commons was depletion of assets because of the ‘free-rider’ effect, the problem of private property ownership as the right to

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50  https://transitiongroups.org/group/butoi-bizirk-en-transicion
exclude is the systematic under-utilisation of assets. In the early days of the sharing economy movement, and this still remains true today, phrases such as “under-utilised assets equals waste” and “waste can be turned into value” helped to build its active following and to scale the sharing economy.

Trust and community are at the heart of the sharing economy. It promotes personal and long-term relations in new ways creating loyalty and community around the shared economy service that is resilient to commoditisation. The shift from selling a product once in a market transaction, to selling access when needed, already leads to a relationship. There seem to be two main impacts of this. First, on human empowerment by giving people access to goods and services in ways and on a scale not possible before, and second on economic and social value creation by exploiting the ‘idling capacity’ of unused assets which can now be unlocked through shared access. There are also very important impacts on sustainability, given that when scarce assets become shared assets they become less scarce, so more value can be obtained from fewer assets.

**Box 47. Locality and community governance: the sharing economy, Streetbank platform, UK**

*Streetbank* is a non-monetised, sharing, in-kind asset-exchange scheme, started in a number of UK cities in 2012, but which has since gone global. The *Streetbank* platform was created primarily to address unused household assets, which when under-used or unused can be considered as wasted assets from an economic perspective. It aims both to boost local communities by encouraging people to get to know their neighbours, so has a social dimension, as well as to ensure people can get just as much use out of their household assets by sharing them when not using them, as the economic dimension. In this way, it addresses an array of problems such as the accumulation of under-utilised household assets, the financial distress of households forced to afford funds for these assets because of low-income, poverty and social break-up, dissociation and estrangement. At the same time, *Streetbank* also addresses the environmental dimension by maximizing the use of existing assets as well as reducing the long logistical chains required to ship goods around the world (i.e. carbon footprint reduction). The *Streetbank* platform requires participants to pledge an item or service upon sign-up, declare their exact geographical location so it can associate them with a neighborhood (i.e. other participants in their immediate vicinity) and offers a convenient message-board for local announcements and other messages.

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**Local crowdfunding**

Crowdfunding is a process whereby a local project or venture is funded by raising small amounts of money from many individuals, typically via the internet. In this sense, crowdfunding is a form of crowdsourcing and alternative financing that in 2021 raised over $13.64 billion globally. There are generally two primary types of crowdfunding. First, ‘rewards crowdfunding’ where a project, product or service is pre-sold, such as when floating and testing a project idea, or launching a business concept without incurring debt or sacrificing equity/shares. Second, ‘equity crowdfunding’ (also known as crowinvesting) where the backer receives shares of a company, usually in its early stages, in exchange for the money pledged. Crowdfunding can be a fast way to raise finance with no upfront fees, and pitching a project or business through an online platform can be a valuable form of awareness-raising and marketing, leading to media attention. Sharing an idea can also provide feedback and expert guidance on how to improve it. However, there may be drawbacks in the form of reputation and commitment once finance is secured, uncertainty over legal and ethical issues (although these can be addressed), uncertainty over the target audience, as well as risks in spreading ideas too widely which may result in unauthorised copying or plagiarism.

There are today huge numbers of crowdfunding websites, most initiated and run by non-profits and some of which have large reach like Kickstarter that has reportedly received more than $3.925 billion in pledges from 15.3 million backers for 151,504 successfully funded projects, like films, music, stage shows, comics, journalism, video games, technology and food-related projects. Other crowdfunding platforms include Kiva that facilitates the crowdfunding of loans managed by microcredit organizations in developing countries. However, the majority of crowdfunding sites are highly local and city-based for specific initiatives, or highly specialized for particular niche markets. City examples include Mate eBike in Copenhagen, that in October 2016 raised more than $2.6 million to develop and

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53 [https://www.kickstarter.com/help/stats](https://www.kickstarter.com/help/stats)
launch Mate as a fully featured foldable eBike. Mate has a 250W or 350W motor with a range of up to 80 kilometers on a single charge up to the maximum legal speed limit of 25 km/h in Europe. The purpose is to provide a high-quality Danish designed and built bike for both inner city living and suburban areas. Local crowdfunding appears to be on the way to becoming a significant source of new finance for local and city projects. In this sense, therefore, it does appear able to increase the revenues and financial flows within a given community.

4.5.3 Examples of locality and community governance

- Smart cities and settlements

The concept of smart cities, using digital technology to provide, interconnect and improve the efficiency and effectiveness of basic urban infrastructures and human settlements more generally, is increasingly important in most developed countries, and increasingly in the developing economies, the integration of digital solutions to govern, support and manage a city’s assets, buildings, institutions, utilities, organisations and people, is emerging (Alberti et al, 2019; Valayer et al, 2022). For example, smart cities aim to coordinate and thus optimise transportation systems, hospitals, power plants, water supply networks, waste management, law enforcement, and other city services to increase both the efficiency and effectiveness of services. Digital technology enables city officials to interact directly with each other as well as with citizens and businesses, link these to city infrastructures to improve the management of urban flows and enable real time responses to problems. For example, through the use of sensors integrated with real-time monitoring systems, data is collected from both people and things through the IoT. The data is then processed and analyzed to enhance the quality, performance and interactivity of urban services, which thereby reduces both costs and resource consumption (Millard 2017b).

The idea of a smart city governed by a city-as-a-platform concept has developed over recent years. These are used for identifying and addressing various urban problems with the assistance of open data, participatory innovation opportunities, and collective knowledge (Repette et al, 2021). The introduction of technological tools that enable open and massive collaboration in the urban ecosystem at a low cost with the objective of solving complex problems in cities with the contribution of collective knowledge is known as smart cities open governance (Meijer et al, 2019). "Traditional governance paradigms, with government as the protagonist, are no longer applicable to collective initiatives enabled by technology, in which complex problems can be more effectively solved by the digitally-connected actors in the urban ecosystem, in more horizontal and collaborative partnerships with the government. In this context, the network connections provided by technology can change government roles as that solely responsible for decisions about the future of cities, transforming citizens into co-creators and co-responsible for urban development, as a third driving force in addition to the public and private sectors" (Repette et al, 2021). "Urban governance through platforms is characterised by being open, collaborative, intelligent, and electronic. This can be evolutionary depending on the desire and the need for transformation and government opening. Different levels of governance are directly related to the levels of government opening, which can range from e-government as a simple information channel and online service provision, through enabling social participation via crowdsourcing, reaching a radical public data opening for the development of innovative applications that improve the quality of life in cities" (Repette et al, 2021).

An example of the smart city as a platform is the www.decidim.barcelona city platform allowing the production of software and applications from a link to open data made available by the city governments, via APIs (Application Programming Interfaces), see also (Errandonea, 2023). This goes far beyond crowdsourcing or living labs and includes hackathons and the possibility of creating software and applications for web or mobile through the combination of data from government and non-government sources, which can lead to services for citizens with high public value (Repette et al, 2021). At time of writing there are participatory budgeting and citizens’ climate assemblies taking place, as well as proposals and debates for numerous city projects.

Smart cities can also be controversial, perhaps reflecting the wider debate and often anxiety about digital technology ‘getting out of control’. Smart cities started out as wishing to exploit the power of new digital technology to improve the efficiency and effectiveness of city performance and wellbeing, and has done so with notable success. Like many other movements, however, it was soon realised that technology is not a panacea and can have negative consequences, even sometimes with dystopian overtones, both for the environment as well as the conditions of human life, if the human dimension does not become an integral part of any urban strategy -- indeed it should be the driving force of such strategies. "Whether smart cities descend into a dystopian fantasy or forge a

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http://arcticstartup.com/ebike-funding-success-denmark
new cooperative relationship between the human and the non-human world” is a critical issue going forward (March & Ribera-Fumaz, 2016). Indeed there is much research already which demonstrates, empirically as well as conceptually, that much better results are achieved when people and technology work together, than when operating on their own (McAfee & Brynjolfsson, 2017; Craglia et al, 2021). This applies as much to so-called smart cities as in every other aspect of human life.

Local food governance

The concept of local, and particularly city-region, food systems as the most suitable scale is gaining attention due to the need to improve food availability, quality and environmental benefits, for example through sustainable agriculture strategies (Millard et al, 2022). Moragues-Faus and Battersby (2021) identify three core perspectives in urban food governance: a shift towards systemic focus on local food systems; increased engagement with the complexity of governing the different geographic scales; and a growing focus on the relation urban food governance with the broader urban policy agenda. The authors see the need for a stronger conceptualisation of the urban context for food; a clearer definition and articulation of the nature of governance and policy at this level; and a more engaged focus on issues of power and inequities in the urban governance system. Cohen and Ilieva (2021) show how local, as well as national and European level policy makers are starting to acknowledge that the food system is multidimensional, that social determinants affect diet-related health outcomes, and the need to move away from focusing food programmes and policies narrowly only on food access and nutritional health. Thus, the boundaries of food governance are spatially narrowing to the city-region scale but simultaneously broadening to encompass a much wider range of issues and domains not previously considered within the purview of food policy, such as local labour, housing, and education policies.

In relation to urban food policy governance, Parsons et al (2021) point to the importance of institutions as policy-structuring forces, the need to rebalance national-local powers and to develop cross-cutting food plans. Clark et al (2021) emphasise the role of community food infrastructures and the importance of critical middle infrastructures to connect production with consumption and larger markets, thereby building resilience through intermediate markets. The overall thrust of this focus is about the importance of linking urban food policies with other urban policies, new types of place leadership for example through the anchor institutions and middle infrastructures of community-wealth building and ‘new localism’ initiatives.

The importance of the sustainability of city-region food systems is inevitably linked to the topic of short food supply chains, which are associated with extensive good practice evidence related, for example, to the re-connection of food producers with consumers (Grando et al 2017), social sustainability (Vittersø et al 2019), or building transparent food supply chains with the fair distribution of power among actors (Kessari et al., 2020). In addition, short food supply chains are associated with the production of quality and safe food when consumers buy products from local trusted suppliers who are able to guarantee genuine and safe products (Baldi et al 2019). These developments highlight the vulnerability of the present largely globalised agri-food systems as well as societies in the relatively developed world, and Matacena et al (2021) see this situation as an opportunity to strengthen the sustainability agenda, e.g. by pursuing the EU’s Farm to Fork strategy (European Commission, 2020b) and thus, enhancing the resilience of regional and local food systems and empowering consumers to make informed food choices. Murphy et al (2021) mention the importance of local food supply chains for supplementing the global market and ensuring normal product flow during emergencies, whilst Vidal-Mones et al (2021) propose strengthening independence in the form of support for local and seasonal consumption.

McEachern et al (2021) point out that while the focus has been “predominantly focused on larger retail multiples, more attention should be paid to “small, independent retailers as they possess a broader, more diffuse spatiality and societal impact than that of the immediate locale. Moreover, their local embeddedness and understanding of the needs of the local customer base provide a key source of potentially sustainable competitive advantage” and thus help underpin both urban and community resilience. Vittuari et al (2021) document how recent crises have exposed the fragility of food sovereignty in cities and confirmed the close connection urban dwellers have with food and suggest how citizens would accept and indeed support a transition toward more localised food production systems. They propose the reconstruction and upscaling of such connections using a ‘think globally act locally’ mindset, engaging local communities, and making existing and future citizen-led food system initiatives more sustainable to cope with the growing global population. Additional information, especially considering the impacts of digital transformation on communities challenged with food governance were carried out in a parallel activity to this work (Errandonea, 2023).
Box 48. Locality and community governance: Milan Urban Food Policy Pact (MUFPP) and the New Urban Agenda

The MUFPP is an international agreement among cities committed to develop urban food systems that are sustainable, inclusive, resilient, safe and climate friendly, that provide healthy and affordable food for all, thereby improving food security and nutrition as core requirements for sustainable urbanisation. MUFPP was signed on October 2015 by more than 100 cities from all over the world representing 450 million people. MUFPP cities believe that urban food systems are at the core of sustainable development and a crucial part of the nexus of climate, energy, water and other natural resources, together with social inclusion and equity. The Pact and its framework for action represent a unique platform to support coordinated food policies and foster urban-rural linkages (MUFPP, 2015).

In terms of governance, the MUFPP Monitoring Framework (MUFPP, 2018) encourages interdepartmental and cross-sector coordination internal to city governments working to integrate urban food policy considerations into social, economic and environment policies, programmes and initiatives, such as, inter alia, food supply and distribution, social protection, nutrition, equity, food production, education, food safety and waste reduction. Such inter-departmental and cross-sector institutional mechanisms or bodies (food bodies, units or teams), will enhance dialogue and coordination, policy integration, impacts, and efficiency gains by ‘breaking down institutional silos’.

Analysis of various successful examples of such coordination mechanisms shows that key government actors include authorities that are responsible for: agriculture, health/nutrition, social protection, economic development, markets, planning, transport, and climate change. It is clear that the mere presence of an inter-departmental / sectoral coordination body will not provide sufficient indications on actual levels of coordination, results-impacts and gains. It is therefore also important to assess the functioning and effectiveness of the coordination body (e.g. is it having regular meetings; does it have sufficient human and financial resources to make sure that the coordination body/mechanism functions; does the coordination mechanism actually result in concrete collaboration initiatives and city policies; are the functioning of the coordination body, its activities, results and impacts monitored to drive analysis of lessons learned and impacts as a basis for further planning and improvements?) Successful examples also highlight that clear and strong institutionalisation of the coordination body/mechanism in the local government structures and budgets reduces the risks that changes in city administration can bring, e.g. shifts in allocation of budgets, and is key to mainstreaming food in municipal policies. Securing the food body and programmes through legislation also makes them more resilient to government changes. In order to gain broader political and public support, transparent information sharing on the roles, activities and achievements of the coordinating body/mechanism is also crucial.

—— Local energy governance

There has long been agreement in Europe that the transition to a low carbon economy and society requires much more local energy generation and use, and that to this end many different levels of government need to work closely together and involve a variety of actors (Wade et al, 2008). According to Dobravec et al (2021), “a sustainable energy system based on renewables, energy-efficiency, decentralisation of energy generation and synergies between different sectors requires new energy planning methods and policies. Energy transition and climate change mitigation achievement can no longer be seen only through top-down activities from a national government.” Local and regional governments thus have a crucial role in delivering relevant public policies within a multilevel governance system.

According to the European Commission (2022b)55, “energy communities are citizen-driven energy actions that contribute to the clean energy transition, advancing energy efficiency within local communities. Energy communities organise collective and citizen-driven energy actions that help pave the way for a clean energy transition, while moving citizens to the fore. They contribute to increasing public acceptance of renewable energy projects and make

55 Scientific support to the design of energy communities is provided by the JRC Living Lab on digital energy solutions (https://joint-research-centre.ec.europa.eu/pilot-living-labs-jrc_en).
it easier to attract private investments in the clean energy transition. At the same time, they have the potential to provide direct benefits to citizens by increasing energy efficiency, lowering their electricity bills and creating local job opportunities. By supporting citizen participation, energy communities can help providing flexibility to the electricity system through demand-response and storage. Energy communities offer a means to re-structure our energy systems by harnessing energy and allowing citizens to participate actively in the energy transition and thereby enjoy greater benefits. “Energy communities can take any form of legal entity, for instance that of an association, a cooperative, a partnership, a non-profit organisation or a small/medium-sized enterprise. It makes it easier for its citizens, together with other market players, to team up and jointly invest in energy assets. This in turn, helps contribute to a more decarbonised and flexible energy system, as the energy communities can act as one entity and access all suitable energy markets, on a level-playing field with other market actors.”

Schmid et al. (2020) define community energy as “formal or informal citizen-led initiatives which propose collaborative solutions on a local basis to facilitate the development of sustainable energy technologies”. There are many advantages, such as enhancing local acceptance of renewable energy, regional value creation and energy democracy and justice. As a legally constituted form of corporation with democratic membership control, constrained profit distribution, and open membership, energy cooperatives are one of the main governance forms, defined as an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically-controlled enterprise. However, such cooperatives do not function in an institutional void but also require interaction with and the support of governments, especially at the local level, although this itself also takes place in a multi-level governance system. Important issues include the decision-making processes, the implementation of policies, the involvement and participation of public and private actors in the problem-solving process and the ways (local) governments respond to community energy initiatives (Schmid et al, 2020; Schwalb & Walk, 2007).

A key challenge of such (new) types of governance is to balance between the enabling and authoritative modes of governing, and there are calls for a shift in the local governments’ roles and responses to the emergence of community energy and claims that new civil initiatives ought to be recognized as “opportunities for co-creating new formal arrangements that serve the public interest, rather than being merely viewed as ‘difficult’” (Avelino et al, 2014). An important balance needs to be struck between, on the one hand, the public authority’s need to engage and to create space for private and community actors that contribute to public value and, on the other hand, preserving the public interest of all citizens given that an energy cooperative is first and foremost accountable to its members and not to the entire community.

In terms of how close the relationship should be between the local authority and the energy co-operative, Hoppe et al. (2015) demonstrate that close interaction and a high degree of trust are preconditions for success. In contrast, Frantzeskaki et al. (2013) found a case where the community energy organisation deliberately held back from close contact with the authority as they doubted the benefits of so doing. In start-up initiatives, however, it seems that partnering with the local authority is likely to be crucial for success (Hufen and Koppenjan, 2015), although, at the same time, the authority also needs to be considerate of the energy cooperative’s independence, and that a “too pro-active a role [of the state] could produce dependency relations and crowd out civil society activism” (Healey, 2015).

Schmid et al. (2020) report on an interesting feature of multi-level governance systems, at least in the context of local energy cooperatives. For example, in the vertical dimension of federalist systems as in Germany and Switzerland, local governments need to adapt to such top-down structures when considering the local context and the space for bottom-up developments by compensating for weaknesses or shortcomings at other levels of government (Ehnert et al, 2018). Schmid et al. (2020) “suggest that local governments should be given sufficient financial capacities and autonomy to strengthen implementation of a decentralised energy transition that involves citizens. However, they also recognize that municipal structures alone are often insufficient and that superordinate policies, especially national subsidies, remain essential. Hence, policies at the municipal and national levels should take greater account of citizen initiatives, such as energy cooperatives, which exhibit various non-commodifiable advantages relevant to the energy transition.” “Federalism works when governments at one level of the system are able to compensate for weaknesses or defects at another level” (Derthick, 2010). However, how this compensation takes place is not pre-determined but depends both on the scope of action provided to them by the federalist system but also on their willingness to act. Schmid et al (2020) note that “national and state governments can incentivise action by entrusting local governments with certain tasks or by supporting and motivating them to pursue
their own energy policy”, and they can directly shape the activities of civil society organisations, such as community energy cooperatives. In this context, Markantoni (2016) notes that national-level energy policy and regulation directly impact and probably motivate community energy initiatives, for example through incentives for renewal energy development like feed-in tariffs and electricity market regulation.

Again, additional information, especially considering the impacts of digital transformation on communities challenged with energy governance were carried out in a parallel activity to this work (Errandonea, 2023).

**Box 49.** Locality and community governance: Edinburgh Community Solar Cooperative

In 2016, Edinburgh Community Solar Co-operative (ECSC) developed a community project that saw solar PV arrays installed across 24 public buildings owned by the City of Edinburgh Council. The project has been a huge success, with each site producing more than their initial estimated generation in the first year of operation. The electricity generated also provides an income to the cooperative, a proportion of which is allocated to its Community Benefit Fund, which is focused on sustainability and alleviating fuel poverty. Since 2016, ECSC has added an additional six sites.

At the outset, ESCS aimed to maximise the solar generated electricity at a selection of sites by installing battery storage. The batteries would ensure that more solar generated electricity is used, improving the efficiency of each site, as well as reducing their carbon footprint. The project would also provide grid services to assist the development of a smart local energy system. ECSC has an agreement with the City of Edinburgh for the purchase of any solar generation electricity used on site. The additional storage will generate further income in sales, as well as from the additional supply it will provide to the grid. All of the additional income generated will go into its community benefit fund. ECSC received funding from the Scottish Government’s Community and Renewable Energy Scheme (CARES) to part pay for the battery installation.

In terms of outcomes and achievements, three sites were chosen and a total of 156kWh of battery storage was installed. A full monitoring and evaluation process is currently taking place with expected benefits including more locally generated electricity which will also reduce the electricity imported from grid, thereby lowering carbon footprints and improving energy efficiency. The batteries will be able to be aggregated with other storage sites to be remotely controlled and could provide services to the national grid that will increase ECSC’s revenues. These additional monies will be allocated to the community benefit fund.

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**Fabrication city and the local circular economy**

In line with increasing focus on place-based development, attention is now shifting to city circular economy approaches that embed and integrate circular principles in a nexus of all economic, social and environmental components. This also requires a circular approach to governance, policy, strategy and implementation within a specific place and context, where the ‘sweet spot’ scale is the city and its region. This shift is being enabled by technological innovation, especially in transport, logistics, coordination and collaboration, as well as by innovative market/business models and improved governance mechanisms. See the Fabrication City example below. However, it is also being propelled by a renewed focus on the dynamics of cultural and creative forces which take place in the physical space of vibrant places and that depend on direct access to political leaders and professional expertise, as well as on being diverse, inclusive and cohesive.

**Box 50.** Locality and community governance: Fabrication City and additive technologies

The rapid urbanisation of the 20th century was possible thanks to the assembly lines of the 2IR and then the 3IR, which allowed the rapid reproduction and replication of standardised and mass-produced infrastructure, products and repetitive urban patterns around the world. This urban landscape and structure need reviewing in the 21st Century as we cannot follow the same principles as before by moving materials over long distances (hence the creation of infrastructure like ports, airports and railways), and pursuing efficiency (less investment of capital, energy, resources) for the maximization of outputs. Instead, we must radically re-define urbanism by changing how we produce, consume and live in cities so they can digest locally the waste they produce.

[56](https://localenergy.scot/casestudy/edinburgh-community-solar-cooperative)
At the same time, new digital technologies are revolutionising both content creation and physical fabrication, as well as communication. Everyone with access both to the Internet and to additive technology tools like 3D printers are able to design objects as virtual ‘bits’ which can be shared globally, and then fabricate these as physical things (‘atoms’) which manifest themselves locally. On the basis of these developments, an innovative and disruptive urban model called the ‘fabrication city’ – or Fab City – emerged in 2014, first in Barcelona, Spain, and now across a global network of 38 members. This was initially structured around single Fab Labs as new forms of local workshops where people obtain training in 3D printing production to make an increasing range of things themselves for both hobby and employment purposes. Today, they are now starting to form neighbourhood and even city-wide clusters for the growing maker and digital fabrication movement. Linking such clusters together nationally, regionally and internationally, as well as with complementary activities in the creative, knowledge, flexible and mainstream industries, provides the basis for locally-productive and globally-connected fabrication cities. These draw on circular economy approaches using both restorative and regenerative principles for sustainable and resilient urban development, through the deployment of distributed manufacturing and other Fourth Industrial Revolution technologies (Diez et al, 2019).

— Living labs for locality and community governance

In essence the ‘living lab’ process is an example of agile community self-governance, i.e. how to instigate bottom-up change in the roles and relationships of community actors and in the public and community value they wish to create. Living Labs are user-centred, open innovation ecosystems based on multi-stakeholder and multi-method approaches, including co-creation, integrating research and innovation processes in real life communities and settings with the following common elements (ENoLL, 2022):

- Co-creation;
- Multi-method approach;
- Active user involvement;
- Real-life setting; and
- Multi-stakeholder participation.

Living labs differ from many other co-creation environments (such as customer feedback) in terms of:

- Principles: continuity (not one-off), openness, realism, spontaneity and honesty and stakeholder empowerment.
- Activities that can both: (i) sensitise and empower stakeholders, especially citizens who may have low skills and expectations but whom may also be vulnerable in some way, thereby also addressing issues like exclusion, poverty and marginalisation effective, and (ii) likely to achieve the policy goals set and maximise impact because of the principles above.

In terms of formats, living labs can be much more than only fixed physical assets, good practice templates and top-down models with an office and perhaps a secretariat in the townhall for coordination purposes (see also Alonso Raposo et al, 2021). They are just as likely to be dynamically bottom-up, flexible and customisable based on both individual and collective needs. They can be physically movable and often temporary, such as ‘pop-ups’ at bus stops, on the forecourts of petrol/re-charging stations, in bike shops and car showrooms, on railway station platforms. They can also ‘pop-up’ on street corners, in community centres, in the middle of green spaces, in shopping centre malls, on the premises of local SMEs. Anywhere, in fact, where people and things congregate and move around.

A typical living lab process with three steps:

1. Step 1 – Plunge (have guts): risk as a means to the cutting edge. This can include topics like the power and risks of stimulating vast number of people; the power of open and transparent experimentation, how do we protect the integrity and security of people? How do we know we are on the right track? What can we as a community do together? And what could be the next steps and how will we continue the discussion?

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57 https://atlasofthefuture.org/project/fab-city
58 See also https://fab.city/ and https://www.fablabs.io/organizations/fab-city-global-initiative
2. Step 2 - How can we inspire a new meaning of life? – How do we create togetherness being authentic, transparent, inclusive, working on a shared agenda and common vision? Where can we experience new meanings of life and how do we strengthen a togetherness around these new meanings of life? For example, linked to the SDGs, with pressures and enablers from urbanisation and digitalisation, who are at the frontiers for the development of a common vision, what can we as a community do together to deliver a shared agenda?

3. Step 3 - We need to go local to be able to scale up. However, how can we do it sustainably? What kinds of local initiatives will go global and how do we stimulate this scale-up sustainably? Which local community examples do we know of as good practice examples? Which good local examples have not been scaled and why? What can we as a community do together to develop successful local initiatives and help them scale sustainably?

**Box 51. Locality and community governance: the Normandy Living Lab and collective intelligence, France**

The core mission of Normandy Living Lab (NLL) is to put collective intelligence at the service of concrete projects beneficial for the Normandy Region. NLL became a member of ENoLL for the first time in 2007, and took the opportunity to join the network again in 2021. Thanks to its wide variety of members and its continuous work with local authorities and communities, NLL is building a life-size testing environment covering all of Normandy. That way, it aims at being a vector for the co-creation of digital innovations, between designers and end-users, for a wide number of economic sectors. NLL’s focus is on the efficient development of innovative products and services in the fields of digital agriculture, industry, health, smart territories and creative digital content, by systematically placing the product or service user at the heart of the innovation process.

Through its network of partners, NLL has the capacity to quickly source missing skills/technologies, while its proximity with local authorities and applicative sectors ensures the needs of the end-users are considered from the very beginning of each project thanks to their involvement. NLL is supported by Pôle TES, a competitiveness cluster with over fifteen years of experience in the field of high digital technologies. TES’s mission is to imagine and co-design future ways of using technology by identifying key needs and challenges in order to develop innovation programmes that lead to improvements in its fields of action. This vocation of TES makes it the privileged leader of NLL and ensures that together open innovation and user innovation processes can be facilitated, tested and developed.

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**Community wealth building**

Community wealth building (CWB) is a system-changing approach to community governance that works to produce broadly shared economic prosperity, racial equity, and ecological sustainability through the reconfiguration of institutions and local economies on the basis of greater democratic ownership, participation, and control. It aims to link the different governance levels to support local community development by attempting to retain as much as possible of the value generated locally within the locality. The goal is to create a new model of economic development for cities and communities that offers real, on-the-ground solutions to localities and regions battered by successive waves of extraction, disinvestment, displacement, and disempowerment. CWB is based on a new configuration of economic institutions and approaches capable of producing more sustainable, lasting, and equitable economic outcomes. Rooted in place-based economics, with democratic participation and ownership, and mobilising the largely untapped power of the local public sector and other anchor institutions (CLES, 2022).

This is done, for example, by designating local anchor institutions (public, private and civil) that invest and procure locally where possible, and by increasing local, employee and citizen ownership and control. An anchor institution is a place-based organisation that that is invested in its local area and cannot relocate to another part of the country. Examples include local councils, universities, colleges, local housing associations, and local emergency services. By their very nature, these organisations also spend substantial amounts of money that is retained within the local area. While most of their employees are likely to live within the local area, and spend their wages there, they also have significant procurement and investment spend which can also be spent locally. They have a collective interest

59  [https://enoll.org/network/living-labs/?livinglab=normandy-living-lab#description](https://enoll.org/network/living-labs/?livinglab=normandy-living-lab#description)
in seeing their local area improve and we are always looking for more opportunities to advance collaboration with them.

Emerging trends related to globalisation—such as the decline of manufacturing, the rise of the service sector, and mounting government fiscal crises—suggest the growing importance of anchor institutions to local economies. Indeed, in many places, these anchor institutions have surpassed traditional manufacturing corporations to become their region’s leading employers. If the economic power of these anchor institutions were more effectively harnessed, they could contribute greatly to community wealth building. The largest and most numerous of such non-profit anchors are universities and non-profit hospitals (often called “eds and meds”). Anchor institutions—with the proper incentives and motivation—have the economic potential to leverage their assets and revenues to promote local private sector development through such means as:

- Directing a greater percentage of their purchasing power toward local vendors based in the community.
- Hiring a greater percentage of their workforce locally.
- Providing workforce training for people needing assistance in the community.
- Incubating the development of new businesses, including social enterprise among non-profits.
- Serving as an advisor or network builder.
- Leveraging real estate development to promote local retail, employer-assisted housing, and community land trusts.
- Using pension and endowment funds to invest in local job creation strategies and to provide community venture capital for non-profits, entrepreneurs, and employee-owned firms.

For example, Figure 17 depicts the six elements or pillars to CWB as used by the Ayrshire & Arran regions in Scotland. These pillars focus on ensuring that wealth is locally owned and benefits the local community.

![Figure 17. Community Wealth Building in Ayrshire & Arran, Scotland](https://www.nhsaaa.net/services-a-z/community-wealth-building)

The CWB approach stands in opposition to the prevailing model of economic development that puts the accumulation of private wealth and profit above the basic needs of people—entrenching and exacerbating racial, economic, and geographic disparities. There is no one-size-fits-all model of CWB building. Rather, it is a bottom-up approach that centres democratic ownership of the economy and community self-determination. This means that each local experiment with CWB might be different, based on the local context, ecosystem, resources, and politics. What all CWB strategies have in common, however, is that they aim at improving the ability of communities and individuals to increase broad-based asset ownership, anchor jobs and resources locally, create broadly shared
prosperity, and ensure local community economic stability and democratic control. Importantly, true CWB must be reparative and inclusive by design so that it delivers for those who have historically been the most excluded, marginalised and exploited. CWB is about moving in the direction of a different political-economic system, linking new bottom-up forms of development with economic and political interventions at a variety of scales to create an economy in which all can flourish.

The Democracy Collaborative (2022) uses eight basic principles for CWB:

1. Labour matters more than capital;
2. Local, broad-based ownership matters;
3. Active democratic ownership and participation matter;
4. Multipliers matter;
5. Localising investment matters;
6. Collaboration matters;
7. Place really matters; and
8. Community wealth is where the next system begins.

**Box 52. Locality and community governance: Preston Community Wealth Building, UK**

One of the most prominent European examples of CWB in action is Preston, UK, where the purpose is to provide value for the city’s communities. While the CWB principles cut across the entire organisation, Preston City Council’s key areas of work that aim to achieve the most value and benefit for the local area, whilst working closely with local anchor organisations and local partners, are: progressive procurement focusing on how money is spent; social value concerned with benefits for the local area, such as employment, skills, real living wage, environmental impact, and greater wellbeing; democratising the economy through cooperatives, economic inclusion, greater opportunities for all; and the Preston Real Living Wage for paying all employees a fair and reasonable wage. To achieve the most value and benefit for the local area, Preston CWB works closely and collaborate with Preston’s anchor organisations and local partners wherever possible centred on four basic principles:

1. Wealth that’s there: harnessing the power of the money that anchor institutions are spending on procuring goods and services. Aiming to localise as much of that spend as possible, securing investment in local supply chains and improving local economic competitiveness.
2. Workforce: maximising the benefits of investment in staff by building a skilled and committed workforce and providing an exemplar to local businesses. Paying at least the Living Wage to all employees and encouraging staff to spend local and save local, including through Credit Unions.
3. Land, property and investments: using anchor institution assets to lever in additional investment, to encourage the development of new businesses and support new methods of financial intermediation. To consider asset transfer to community or private sector interests where this best serves the interests of the wider community.
4. Economic democracy: supporting the growth of alternative models of economic governance which give citizens greater investment in and control over their economic future. This can mean the development of new co-operatives as well as other ways of helping people feel ownership of assets and decision-making processes.

(Preston City Council, 2022)

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**Local currencies, informal governance and role of food sector in localisation**

Local currencies and local credit vouchers, that are not in competition with national or regional monetary systems, are designed to keep as much value as possible generated locally within the locality. This is the same rationale, but at a lower scale, as attempts by the EU, the OECD and others to design tax regimes that oblige multinational companies to pay fair taxes on the turnovers and profits made in each national jurisdiction. At both scales, the focus is on the retention of as much of the value as possible created by in a given country for its own use and further investment, rather than seeing this value seep away, for example, to a multinational with no local commitment and
often to a tax haven (OECD, 2022). This does not mean that local areas should become ‘independent’ or isolated from the outside world, but that they are given every incentive and opportunity to self-help in addition to any needed external help, for example, because of poverty or vulnerability. An important policy objective is also to ensure that such efforts are not wasted, degraded or captured by free-riders (which is what too many multinationals often can be in practice, such as Uber and Airbnb), whether operating in the market or other contexts. Also important for the new localism are local research, engagement and evaluation, good governance and management (Millard et al, 2019b).

Box 53. Locality and community governance: the Bristol Pound, UK

The Bristol Pound (£B) paper and electronic community currency encourages citizens to spend their money with local independent businesses. Reported results show no clear immediate monetary benefits but have revealed the importance of ‘informal governance’ in delivering better, open, bottom-up and less bureaucratic city governance, and improved inclusive growth coupled with economic democracy policies. Informal governance is defined as “as a means of decision-making that is uncodified, non-institutional and where social relationships and webs of influence play crucial roles” (Harsh, 2013). In this context, there have been benefits in Bristol for small local businesses as the majority of £B income comes through services they provide, thereby both helping them to thrive and providing a boost for a fairer and more inclusive local economy by changing how individuals and organisations behave financially (University of Bristol, 2020). Other evaluations tend to support these conclusions by suggesting that the £B is itself not driving economic localisation per se. Many of the key barriers to this were found to be political/institutional in nature, including support for free trade, the free movement of capital, the power of global corporations, and the “expansionary logic of capitalism” (Marshall et al, 2018). It is suggested that such barriers are unlikely to be influenced by a local currency, but instead that localisation efforts should engage in a more active agenda that aims to change government policy and institutions to support an equitable, sustainable economy.

The shift from purely financial objectives at the outset of the Bristol Pound (£B) initiative, which have been shown to be difficult to achieve convincingly, to a recognition of broader localisation benefits is shown by the importance of the food sector in the £B’s economic ecosystem. Food wholesalers and retailers were some of the first to sign up to the £B and it is striking that, despite the recent relative overall decline of the currency, the circulation loops that have persisted are those centred on food businesses, suggesting that the £B has a long-term viability in this economic sector. There may be many reasons for this: individual consumers may be more inclined to purchase food and drink in local businesses using the £B and a significant proportion of the food sector is already predominantly localised in nature, without the need to interact with regional and national businesses who do not subscribe to the £B. Future endeavours by the £B might consider focusing even more on the food sector, which is both business to business (B2B) and civil to business (C2B) in character, as a suitable candidate for the reinvigoration of a local currency system (Geofutures 2020).

Employee-owned enterprises

Employee-owned enterprises, including ‘worker cooperatives’ and ‘mutuals’, are owned by their members who share the profits, and are typically democratically controlled, have a small gap between pay levels, and have a wide social purpose. Most are local or regional and can take many forms, ranging from simple grants of shares to highly structured plans. Employee ownership in the US narrows gender and racial wealth gaps and gives employees significantly more wealth than the average worker. Employee-owned companies perform better commercially, but are resisted by banks, lawyers and governments (Rutgers, 2019). Countries with many employee cooperative workers rank low on inequality, high on happiness and high on the UN Social Progress Index (SPI) measuring “accessibility of basic needs, opportunity, and access to knowledge” e.g. New Zealand, France, Norway, Sweden, Denmark, Finland (ILO, 2021).
Box 54. Locality and community governance: Mondragon Cooperative, Spain

A good example of a regional worker cooperative is the Mondragon Co-operative in the Basque Region of Spain with a mission encapsulated in its Corporate Values: inter-cooperation, grassroots management, corporate social responsibility, innovation, democratic organisation, education and social transformation, etc. Mondragon’s activities are divided into four areas: finance, industry, retail and knowledge. It currently consists of 95 separate, self-governing cooperatives, around 80,000 people and 14 R&D centres, occupying first place in the Basque business ranking and tenth in Spain. Mondragon is overall highly successful in living up to its principles and competing regionally, nationally and internationally. It has been successful in creating a democratic, sustainable, and secure living environment for its members and, although it may not be the perfect utopia many envision (e.g. there is a lack of emphasis on environmental impacts), there is room for growth and change (Tang, 2019). Its governance strikes an important balance between the need for democratic decision-making and managerial discretion, otherwise the critical difference to a private corporation is that the purpose of the firm is to benefit its members rather than its shareholders (Bamburg, 2017).

5 The evolving roles of data and digital technology

5.1 Tracing the relationship between digital technology and public services

Section 2.4 above has already described both the specific roles of data and digital technology for public services and public governance, as well as its more general role. In the former, digital technology is used to design, develop and especially deliver specific types of public services, thereby facilitating specific types of public governance. How this has developed since the early 1990s is summarised in Table 1. The general role of digital technology has a wider societal and public value remit as it has become the ‘general purpose technology’ since about 1950, first with the introduction of electronic technologies, and then since the early 1990s with the launch of the World Wide Web and the internet. Digital technology as the general purpose technology today underlies and supports virtually all other technologies and everything in a modern society, including political behaviour and decision-making (Lewandowsky et al, 2020).

The use of data and information is crucial for digital technology, especially in terms of how they are acquired, stored, re-accessed, shared and analysed to create an ‘information regime’ for the rational or efficient conduct of governance, as well as of business. In all pre-digital public governance models, data compression has been used to reduce complex realities to data and information in formats and quantities that can be easily classified, indexed, filed and re-found when needed, mainly by physical means. With the advent of New Public Management from about 1980 and then the Government 1.0 and Web 1.0 technologies from about 1993 in Table 1, hybrid forms of machine/professional bureaucracy developed, focusing on metrics-based compression using pre-fixed statistics, key performance indicators and similar data in a central governance role. From about 2008 onwards with Government 3.0 and Web 3.0, the importance of data and data governance become increasingly important as one of the prime assets of the public sector (OECD, 2019). Technologies facilitating big data, artificial intelligence and data science approaches have made feasible a new information regime of ‘lossless’ uncompressed data and expanded data science, opening a potential for bureaucratic operations to alter in fundamental ways fostering new forms of post hoc knowledge development, e.g., via machine learning and algorithmic governance (Dunleavy, 2022; Micheli et al, 2022).

In this context, the European Strategy for Data and the European Data Governance Act, fully in line with EU values and principles, will bring significant benefits to EU citizens and companies by increasing trust in data sharing, strengthening mechanisms to increase data availability and overcoming technical obstacles to the reuse of data. Common European data spaces will be established in strategic domains, involving both private and public players, in sectors like health, environment, energy, agriculture, mobility, finance, manufacturing, public administration and skills. This will be a powerful engine for innovation, prosperity and new jobs allowing the EU to ensure that it is at the forefront of the ‘second wave of innovation based on data’ (Galasso et al, 2022). Society as a whole will benefit from more evidence-based policies and better solutions to societal challenges, such as climate change and the COVID-19 pandemic (European Commission, 2022a; Minghini et al, 2022). Several related challenges are still under
debate (Micheli et al, 2020), especially on the establishment of data sharing regimes, data altruism, and the creation and use of personal data spaces, to name a few.

Drawing on Table 1, and examining the evidence presented in this report, Table 2 provides a summary overview of how the specific types of digital technology aligned with each public governance paradigm have impacted public services since the early 1990s. The table has been adapted, clarified and updated from the European Digital Forum (2015) and aligns remarkably well with the four government and web generations used in Table 1, themselves derived directly from the literature. The fifth generation has been added in this report to bring the schema fully up-to-date. Table 2 thus shows how each of the digital technology generations impacts public services, changing cumulatively from providing support in Generation 1.0, through enabling, then driving followed by digital-only services in Generation 4.0. Each generation reveals a specific relationship between humans and digital technology in how the services are delivered and operate and, in turn, each generation offers its own specific array of public services linked to the cumulative development of public governance paradigms. It must be stressed that, like Table 1 and the public governance paradigms of Figure 2, Table 2 is cumulative. Thus, it is not a question of one generation of human-technology relationships and types of service replacing those of a previous generation, but rather complementing and building on what already exists.

The human-digital technology relationship in Table 2 is of particular interest as through the generations it changes sequentially from being the main agent of the public services provided in Generation 1.0 to being, in a sense, the arms-length planner and supervisor in Generation 4.0 whilst the technology does all the work. The next step, to the future Generation 5.0, is crucial as this involves profound human, societal and philosophical issues about what we want technology to do. This is also about whether humans or algorithms will be ‘in control’ and the many fears, on the one hand, that ‘black-box’ AI will take over and that humans will lose control, or on the other hand that AI and other advanced technologies will continue to be under full human control and provide an increasingly bright technology-enhanced future. Thoughts about Generation 5.0, summarised in Table 1, directly reflect this discussion with some sources stressing the need for ‘digital sanitisation’, the need for more ‘human touch’, full human control, the importance of ‘affectiveness’ (human emotions) and a focus on emotional intelligence. This will result in ‘hybrid’ services, with various combinations of digital and human depending on the need, especially individual need, and context. None of this is straightforward, however, as Section 5.3 below attempts to outline. According to Chantillon (2021) “…the effect that the disruptive digital technologies can have on a particular policy domain can differ, depending on factors related to the public administration and the context in which a public administration functions. Instead of considering it as a dichotomy, it is therefore more useful to consider this relation between digital and non-digital as a scale: In some instances the transformation will be more digital then in others, and it is most likely not a yes-or-no situation.”

### 5.2 Actor roles in developing and deploying digital technology

Digital technology development, deployment and use by the public sector, and the roles and relationships of the different actors involved, is a crucial aspect of public governance. The research, development and then exploitation by private sector industry is the most visible and typically the most important aspect. However, in practice, the situation is often more complex with all of the quadruple helix actors (private, public, education and research, and the civil sector) sometimes having significant roles with their respective relationships often changing.

In terms of technology development, the private sector almost always has the widest range of specialist expertise and incentives, especially in terms of commercialisation, but it also has its fair share of ‘failures’, which is natural considering that innovation is always risky although this is often not reported by the private sector because of ‘commercial confidentiality’. In terms of digital technology use in practice by the private sector the situation is highly varied. McAfee and Brynjolfsson (2017) point to a few ‘superstars’ who are the absolute leaders in innovative, experimental and successful deployment, especially in the digital tech industry itself but also in finance and by international companies. Many of these have seen their role as to ‘disrupt’ society, at least the economy, for example with the Silicon Valley’s mantra of ‘move fast and break things’. However, most companies they classify as ‘zombies’, i.e. generally poor and not able to get the most out of the digital technology they are using, not even for the specific purposes for which it was purchased. This is particularly the case, but far from being exclusively so, for SMEs especially in service activities and not otherwise using any technology.
Table 2. Tracing the cumulative relationship between digital technology and public services since the early 1990s (Source: adapted and updated from European Digital Forum, 2015)

<table>
<thead>
<tr>
<th>Description</th>
<th>Digitally-supported public services (from early 1990s)</th>
<th>Digitally-enabled public services (from 2000)</th>
<th>Digitally-driven public services (from 2008)</th>
<th>Digital-only public services (from 2015)</th>
<th>New hybrid public services (mainly in future)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital technology role &amp; generation</strong></td>
<td>Humans provide service but back-office processes are digitised. Typically, these services rely on physical work and/or tangible assets.</td>
<td>The potential for digitising public services is huge, but these services are only partly digitised, so digital technology can only play an enabling role.</td>
<td>Public services can be largely digitised, hidden &amp; operate semantically &amp; intelligently in the background, providing personalised &amp; proactive services. They do not normally produce physical deliverables.</td>
<td>Artificial intelligence (AI) will analyse available relevant data to deliver insights &amp; automatically intervene to achieve best outcomes via fully joined-up &amp; predictive services.</td>
<td>Decentralised web apps platform &amp; APIs, advanced AI &amp; blockchain, etc., to empower people to regain and retain control of digital life &amp; how it mixes with physical life.</td>
</tr>
<tr>
<td><strong>Human role</strong></td>
<td>Provide the service, supported by the digital technology</td>
<td>Provide all evidence-, value- and judgement-based decisions</td>
<td>Only intervene where necessary</td>
<td>Define &amp; design framework conditions and determine what are 'best' and/or acceptable outcomes</td>
<td>'Whole-of-life' physical &amp; digital control; hybrid of emotional, human &amp; digital interactions.</td>
</tr>
<tr>
<td><strong>Public service examples</strong></td>
<td>Supports humans in providing the service.</td>
<td>Enables the service.</td>
<td>Both generates &amp; delivers the service.</td>
<td>Find &amp; analyse data, make &amp; implement decisions within framework.</td>
<td>All tasks, but under full conscious human control and/or predictive &amp; benign intervention.</td>
</tr>
<tr>
<td><strong>Public governance paradigms</strong></td>
<td>Law making &amp; enforcement, defence, utilities, emergency services, transport, social housing, healthcare, social care, education, etc.</td>
<td>e-Healthcare, e-Medicine, e-Learning, e-Town planning, e-Mapping, e-Property data etc.</td>
<td>Payment of social security, pensions &amp; other benefits &amp; taxes; purchase of services; administrative services; obtaining licenses, permits, permissions, etc.</td>
<td>Full life / business events / other event services (e.g. for education, health prevention, running a company); early warning systems to identify, diagnose &amp; prevent known &amp; unknown risks, etc.</td>
<td>Fully hybrid services of all kinds; optimise interaction between physical &amp; virtual life with human in full control also of own data &amp; identity, full virtual assistance, digital twinning, personas, etc.</td>
</tr>
</tbody>
</table>

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60 For definitions of government and web generations, see Table 1, in Section 2.4.
The least successful users of digital technologies tend to be very small local SMEs and micros plus well-established civil organisations. On the other hand, start-ups in these two categories are often much better at using the technology and, indeed, many are launched aiming to use a particular (digital) technology, for example social entrepreneurs like FixMyStreet (see Box 15). The main advantage of small, especially local, firms and civil organisations is that they typically know their clientele extremely well and many of these are often not themselves competent digital technology users. Educational and research institutes often do possess a lot of technical expertise and tend to be prolific users of digital technology, but are typically constrained by lack of financial resources.

Like the private sector, the public sector has also many ‘failed’ deployments but, unlike the private sector, their legal transparency means that these often become widely publicised. The main advantage of the public sector is that it tends to have larger budgets, although in recent years these have been tightly squeezed, and can often enjoy economies of both scale and scope, for example through joint public procurement. This also applies, at least to some extent, to relatively small local authorities which do not have large budgets but are likely to be able to share and pool technical expertise and resources with other local authorities, especially in the same region or country. The private sector normally finds such cooperation more difficult, given market and competitive pressures, although there are examples where this does happen especially along a supply chain or network. However, even here this might be difficult as the different companies involved will normally have different specialist roles so that their digital technology requirements are not the same.

The main disadvantages the public sector faces is their lack of internal competence, perhaps sometimes traditional behaviours and cultures about how ‘things have always been done this way’. The public sector also, although with many exceptions, tends as a result to lack innovative stimulus, because they cannot, unlike private companies, choose their users as they have in most cases to provide services to the whole population, including the most vulnerable, so cannot leave these behind regardless of their level of technical sophistication. In addition to being innovative and agile when necessary, they also have a duty to provide relatively stable, continuous, predictable, dependable and reliable services which is necessary for both citizens and businesses to thrive and prosper on an everyday basis (Martinho Guimaraes Pires Pereira et al, 2015; Tangi et al, 2022; Manzoni et al, 2022).

The leading public sector users of digital technology are almost certainly the smart cities, which often themselves act almost as private companies as well as having long-term partnerships with tech industry and other commercial actors, see, for example Valayer et al, 2022. Public, private as well as increasingly people, partnerships (PPPPs) are becoming increasingly common. However, even amongst so-called smart cities, the deployment of digital technologies is highly variable and often inadequate even by their own standards. According to Smart Cities World (2019) about half of the populations of self-proclaimed smart cities think that not enough is done to engage them when introducing new digital technology, only 25% think they have been informed adequately and just 17% have been involved in any form of participatory budgeting, although half have been involved in physical events and workshops. Only 21% of the population have been involved in web-based engagement and 4% have used social media for proactive engagement with the city. Only a quarter of smart cities themselves use data proactively to drive some services, and one third think the biggest obstacles to them engaging with citizens was the fear that citizens will demand things they cannot deliver. This was followed by the concern that not enough people will participate (22%) as well as a perception that involving citizens can be costly and overcomplicate things (17%). These are telling insights into the experiences of the self-proclaimed public sector leaders of digital technology deployment.

Especially since NPM, the outsourcing of public sector functions has been significant and this continues today, including in relation to procuring as well as deploying digital technology to deliver public services and carry out back-office administrative tasks. This is a double-sided issue as, on the one hand, it means that the public sector loses competence, insight and the ability to understand what technology they need and how to use it. This can lead to public sector organisations entering into weak and inadequate legal and financial contracts by, especially large, private digital technology providers and are thus open to significant exploitation. On the other hand, outsourcing can lead to expertise and other resources being imported into the public sector, so a lot depends on the precise nature of the relationship and the contract underpinning it.

It is also clear that especially state or federal governments can and do play a significant role in digital technology development through their research and development programmes by funding their own labs or by providing grants
and supports to private industry and to education and research institutions. For example, this was the case in the US when public labs undertook all the basic research that enabled the iPhone to be developed, including GPS, the internet, www, touch screen, etc. (Mazzucato, 2013). At best, this clearly exemplifies a highly beneficial win-win situation in which the public sector funds, and often also carries out basic research, whilst the private, and sometimes the civil, sector undertakes scaling-up, commercial exploitation and marketing. This represents a successful public-private partnership in practice, whether or not via formal collaboration. The governance of digital technology, within the scope of overall societal governance, is also where the public sector has huge leverage. Public governance shapes digital technology through economic and technology policy, regulation, investment, procurement, etc. Furthermore, Mazzucato (2013) also notes that the ‘entrepreneurial state’ needs to be pro-active and risk-taking to innovate public service management and provision.

5.3 The complex roles of digital technology

5.3.1 The human-technology relationship in focus

It is already clear that digital technology, as the 21st Century’s general purpose technology that underlines most if not all other technologies and innovations, needs to be seen as complementing and supporting human activity rather than completely replacing it. Not least, there is increasing insecurity regarding the relationship between people and advanced technology, where individuals need to learn to cope with the consequences of omnipresent machines and networks of a completely new kind. How are human values, ethics and wellbeing protected and promoted in such a context? What are the philosophical implications of blurring boundaries between the physical, biological and digital spheres, as already apparent on the 4IR (WEF, 2016)? An ethical dimension needs to be introduced in the exploitation, for example, of big data, artificial intelligence, bio-technologies, as well as the tensions between the citizen’s right to privacy and to security systems that can deal with huge threats from massive data collection and analysis as well as routine penetrating surveillance by both tech companies and governments (Zuboff, 2019).

For example, there are numerous examples where AI algorithms can accentuate biased decision-making after being trained on biased or incomplete data, and that this is confounded by the fact that how the algorithm actually reaches its decisions which affect the lives of ordinary people are typically hidden as if in a ‘black box’ (see also De Nigris et al (2020), Miron et al (2021) and Fernandez Llorca and Gomez Gutierrez (2022)). For this purpose, a useful policy innovation would be to create some form of independent intermediary between those who develop and use AI, on the one hand, and the people who are subject to decisions taken by AI on the other. For example, this might be some sort of digital ombudsman, independent of the market and government, with the legal power, technical expertise and the resources to investigate complaints about unclear or unfair decisions taken by AI, breaches of data privacy or of data misuse on behalf of those affected. In addition, when AI is being developed it might be useful to include a legal requirement to facilitate opening up the code to scrutiny (Millard, 2020). The EU’s 2018 launch of its GDPR (General Data Protection Regulation) is the only major attempt to date by a public authority to address data protection, data privacy and the transfer of personal data outside the regulation’s jurisdictional area61. Promising work to advance on the secure handling of personal data spaces is still underway62.

With such caveats and given that the ITU estimates that over half the total global female population (52%) is still not using digital technology, compared to 42% of all men (ITU, 2019), it is important to undertake pro-active and gender-sensitive national high-quality infrastructure rollout, and adequate funding for more general initiatives, such as the promotion of digital literacy. For example, it is reported that the higher the level of internet and broadband coverage, the higher is internet use even for less educated and less skilled individuals. In addition, household internet access increases the educational attainment of individuals in a given area, even when internet coverage and GDP per capita are relatively low (Millard, 2015b). Ensuring internet, mobile and broadband infrastructure availability is necessary, but not sufficient, for more adoption and beneficial use of digital technology. It is also necessary to create appropriate incentives, awareness, reward systems, as well as support provider and user ecosystems, driven by high levels of cooperation and co-creation, in addition to market

61 The GDPR’s primary aim is to give control to individuals over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU, https://gdpr.eu

62 Under the SEMIC Action of the Digital Europe Program, a series of three workshops were held to specify a community roadmap to catalyse the development of Personal Data Spaces, https://joinup.ec.europa.eu/collection/semic-support-centre/personal-data-spaces
competition. In the case of digital technology design, there is a strong trend in some developed countries to move away from technology designed purely for specific disadvantaged groups towards ‘inclusion by design’.

Technology for social development works best when technology does not set the whole agenda, and policy and procedures do not try to play catch-up for technology’s sake (Benessia and Martinho Guimaraes Pires Pereira, 2015; Calzada et al, 2021).

5.3.2 The misleading notion of ‘technological neutrality’

It is often presumed that technology is ‘neutral’, neither good nor bad, because its impacts are determined by how it is used. For example, social media has had huge positive impacts on the lives of many, bringing people together globally, extending an individual’s horizons beyond the local and even national, enabling communities, campaigns and democratic movements to form, making both governments and large companies more transparent, and enabling families to keep in touch wherever its members live. Conversely, so too has social media’s misuse mushroomed, from trolling and bullying the vulnerable online, allowing pedophiles to share child pornography, to the so-called dark web where illegal and dangerous anti-social transactions take place. The democratic and mind-broadening potential of the web has also come under scrutiny, as more and more people only access material they choose to follow. They increasingly ignore, and even more worryingly, are excluded from, other content, leading to so-called filter-bubbles: the more we use search engines, the more they adapt to only feed us what they deduce we like through sophisticated algorithms (Pariser, 2011).

However, closer scrutiny shows that technology is far from neutral, given it is designed, rolled out and deployed to serve specific societal interests, whether public, private or civil, so how this takes place is of crucial interest. There are numerous examples where technical advances have been driven by social needs, such as the Linux free open-source operating system for computers, the M-PESA mobile phone money transfer app in Kenya which allows poor people with no bank account to make secure commercial and family transactions over long distances, and the FixMyStreet platform used in many more developed economies. Most technical advances are however market-driven, aimed to increase their profits rather than serve the public good. Much new digital technology is designed to extract market value from individuals and communities rather than increase it. The big Silicon Valley tech companies are flooding the market with their own content, crowding out local content and languages which could help develop local communities, culture, and companies. This is resulting in much local income being sent out of the locality, and even country, rather than supporting local content and enterprise. Neither does international finance often invest in local content and language, so the local context is increasingly neither supported nor even recognised as legitimate. This is coupled with the fact that every time we go online we leave digital traces and footprints, which are scooped up by tech companies and sold to advertisers who use their knowledge about our personal lives to personalise advertising. Each of us, individually, is thus the digital ‘product’ to be sold to the highest bidder rather than simply the consumer of online services, in a quite bizarre flip of traditional economic relationships (Zuboff, 2019).

Governments and regulators are challenged to understand the pace of change, let alone formulate relevant policies. This prompts the question of what technology companies are accountable for and to whom. As technology companies advance, current legal and regulatory frameworks may not address their increasing concentration of power. The rise of digital connectivity also prompts increased cyber-security concerns, for example with the hacking of critical infrastructures such as electricity and transport networks, and the security, ownership and usage of the massive amount of personal data created and shared (Baldini et al, 2020).

Although the idea of the ‘post-truth society’, ‘fake news’ and ‘fact-free’ (political) discourse are not new, their significance enabled by digital technology has reached vastly new heights since 2015. Although all sides of the debate are guilty of misusing facts, those who attack ‘experts’ do this much more, for example in the climate change debate (Martens et al, 2018). Social media plays a significant role: Facebook, Twitter, Google, etc., are working together to try to develop algorithms to filter out false news, ‘hate speech’ and terrorist propaganda. International organisations have a massive role to play in reinstating the position of facts, evidence and experts in policy debates, but also ensuring they reach a balance between free speech and freedom on the net, on the one hand, and

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63 Two key European policies to help regulate issues related to digital platforms have been adopted recently, the Digital Market Act (DMA) and the Digital Services Act (DSA). The before mentioned ECAT is established as a tool to foster algorithmic transparency, and to help holding the providers and users of algorithms accountable.
promoting cyber security and tackling hate speech and deliberate falsification on the other. Politicians do of course need passion, commitment and vision, but they cannot succeed if divorced from the facts.

6 Impacts of changing public governance paradigms on public services and public value

The accumulated impacts of public governance paradigms 1-9 in Figure 1, from 1956 up to 2019 are revisited in this section in relation to public services and public value. Whereas digital data and technology are considered as an important factor, this section provides the overarching picture — embedding aspects of digital transitions. As all elaborations before, the focus remains on democratic forms of public governance, and especially on the prevailing governance models in the EU.

6.1 Impact on public services

6.1.1 Status quo impacts

The impacts on public services arising from the cumulative implementation of the prevailing and novel/experimental public governance paradigms and models outlined in this report have been succinctly summarised in Section 5.1 above and in the accompanying Table 3. It is very clear that the types and quality of public services have been directly impacted by digital technology since they were first adopted from the early 1990s. This impact has increased in line with the interplay between digital technology developments and the access to data, on the one hand, and the changing framework conditions as outlined in Section 7, on the other hand. On the digital data and technology side, this interplay derives from the progression of successive government and web generations summarised in Table 1: from providing support to humans in Generation 1.0, through enabling, then driving followed by digital-only services in Generation 4.0. Each generation reveals a specific relationship between humans and digital technology in how the services are delivered and operate and, in turn, each generation offers its own specific array of public services.

Examining other sources, shows that the most recently agreed EU principles for digital public services are user centricity, trustworthiness and security, inclusion and accessibility, interoperability, openness and transparency and innovative culture (European Commission, 2016). Barcevičius et al (2019) find that the public services most impacted by digital technology include the application of physical robots (a very specific digital technology) in elderly care (a very specific service), healthcare and long-term care more generally, public safety and security, and smart city services. In terms of quantified impact, the European eGovernment Benchmark 2021 (European Commission, 2021g) shows that in terms of multi-level e-government services, central government services outperform local and regional services, and focuses on four critical issues for European public service use of digital technology:

- User Centricity – indicates the extent to which a service is provided online, its mobile friendliness, and usability in terms of available online support and feedback mechanisms: 81% of government services in Europe are now available online with 6% delivered proactively, broken down into 91% of business services and 77% of citizen services being now digital.
- Transparency – indicates the extent to which governments are transparent about the process of delivery, the responsibilities and performance of public organisations and the personal data processed in public services: 61% of government portals and personal spaces now inform users whether or not their personal data has been used to verify identity and eligibility.
- Cross-Border Mobility – indicates the extent to which users of public services from another European country can use the online services: 43% of services can now be obtained by non-domestic users, key barriers are linguistic and lack of acceptance of foreign eIDs.
- Key Enablers – indicates the extent to which technical and organisational pre-conditions for eGovernment service provision are in place, such as electronic identification and authentic sources: 64% of services now users to self-identify using official eID.

These digital public service achievements are, of course, enabled by a very significant rollout and use of digital technology infrastructures and services more generally over the last ten and more years, for example in 2021 (Eurostat, 2021b):
The share of EU households with internet access had risen to 92%, 20% higher than in 2011. Broadband internet access was used by 90% of EU households, 25% higher than in 2011. The proportion of individuals aged 16 to 74 in the EU who ordered or bought goods or services over the internet for private use was 66% in 2021, 15% higher than in 2016. Individuals using the internet for interaction with public authorities in EU27 was 58%, 10% higher than in 2016 (Eurostat, 2021c).

More details are available from the latest versions of the eGovernment Benchmark, Digital Economy and Society Index (DESI) and the Berlin Declaration monitoring and factsheets. The importance of interoperability to enable seamless provision of (digital) public services to all European citizens is highlighted by the work surrounding the European interoperability Framework (EIF) and the recently proposed Interoperable Europe Policy Package. Digital government became one of the central topics of the Digital Decade (2030), including ambitious goals in the areas of eHealth, electronic identifiers (eID), and the online access to key public services. Also recently, particular attention was given to the use of Artificial Intelligence (AI), see, for example, Tangi and others (2022).

6.1.2 Policy and strategic framework lessons for digital public services

The overall policy and strategic framework, and its contextual specificity, provides the overall setting, direction and importance given to public services generally as well as digital public services specifically, given that the two cannot be seen in isolation. Given its nature, public governance needs to be considered within a specific legal and regulatory jurisdiction, whether this is local, municipal, regional, national as well as (in the case of the EU) at European level. The national level tends to be dominant, but there are also strong trends towards the decentralisation of public service responsibility and design to lower tier entities and especially to cities. Trans-national jurisdictions are also important in the EU, where there is a long history of cooperation and agreement on public services, especially related to digital government, but many countries today have also entered into formal and informal learning and peer exchange relationships with neighbouring, similar or lead nations, given that many of the challenges are the same although contexts vary widely. Public services delivery is one of the most expensive aspects of any government’s budget, so it is extremely important to have the right governance and policies for the specific context a jurisdiction finds itself in. The main lessons and recommendations concerning the governance, policy and strategic framework, arising from this report, are summarised in the following.

— Political will and resources

Political will is needed to provide strong incentives and financial and other resources, as well as to ensure policy coherence and collaboration. This needs to be at cabinet level or above, or be provided by a cross government entity receiving its authority from such a level, permeating every government ministry or entity providing services or responsible for them. As far as possible, it is also important that investing in public services has support across all main political parties, so that continuity is maintained over the medium and long term even with a change of government. Governments need to provide the legal and regulatory frameworks for service provision which are grounded in the basic principles of public value including good governance, peace, security, anti-corruption, transparency and accountability. This should also include an enabling environment for service equity and inclusion, given that public services are, by definition and in distinction to purely commercial services, universally available to everyone within the target group. Effective and inclusive public services reflect the social and political consensus regarding which services are made available to target groups.

There are important political and governance challenges that need to be addressed, including the need for fiscal appraisal and budgetary probity, which tackle the crisis of confidence in government’s ability to provide and prioritise appropriate and effective public services. It is also important to match demands for these with often incomplete and poor quality evidence concerning the best way to ensure concrete results without focusing purely on organisational issues. There is also the challenge of governing without boundaries given that no jurisdiction is

68 https://joinup.ec.europa.eu/interoperable-europe/policy
isolated, for example, in relation to climate change, trade, security and crime and migration. These aspects especially become important in times of international shocks and crises. Assessing technology risks, particularly around the security and privacy of data needed to design and delivery public services, is also a high priority. The huge potential impact of digital technology on governance and public services needs to be understood and exploited, especially in relation to new disruptive technologies like social media, cloud computing, mobile, big data, AI and blockchain. An important issue is how can governments effectively deploy these to engage in technology-enabled innovation, like the reuse of public information, citizen-centric practices and seamless mobile services. However, the recognition that the digital revolution can enable a new vision and provide better tools for service delivery should go hand-in-hand with understanding that the human element remains essential.

— Policy and strategic coherence

The coherence of policies within the overall economic, social and environmental development framework is necessary to maximise synergies and ensure both that the impact of individual policies will not be reduced or countermined, nor that resources are wasted. Collaboration and mutual support between entities at all levels is useful to share knowledge and experience to ensure coherence and improve evidence-based decisions and policy-making. A key goal is to ensure public service policies and strategies contribute collectively to national policy goals, and improved quality of life for citizens. There is also a need for priorities in relation to public services and their coherence and to ensure that the individual user has an holistic public service experience. This is especially important because people use a range of public services, so need as far as possible to experience integrated and mutually reinforcing services. Prioritisation decisions need to take this into account as resources can be saved by eliminating service overlaps, but also to be open and transparent to ensure fairness and inclusion. Lessons learned should contribute knowledge, resources or co-created solutions.

— The policy and strategy context

All public policies, strategies and responsibilities need to be context-specific, reflecting both the jurisdictional level as well as unique circumstances, but without leading to policy conflict or negative externalities, and as far as possible be decentralised to ensure responsiveness, subsidiarity and direct accountability to service users in their everyday lives. Three cross-cutting and strategic issues are particularly important at the present time. First, poverty eradication is not relevant only in developing countries but is also of major concern in much of the developed world, including Europe. Second, gender equality is a mainstream issue across all public services, given that women tend to be the primary users of such services in many countries, but with generally lower skills and more difficult access. Third, the state is the only actor which can address large scale shocks and disasters efficiently, effectively and humanely, by employing risk management strategies. Addressing cross-border issues like climate change, natural disasters, migration, peace, security and crime require responsible governments to cooperate both domestically and internationally.

— Governance and policy design

Public service delivery innovation comprises four main stages. First, identifying the need or problem and creating the ideas for addressing it; second, prioritisation for example through investment appraisal leading to a decision, i.e. deciding what is to be done; third implementing the decision in practice and the project management needed to do that; and fourth evaluation and assessment if there is any need for revision. Each of these stages requires evidence, research, the use of data and technology, and user engagement, but these may be different for each stage. It is important that governments recognize these four stages and manage the policy process to take them into account. There needs to be both an engagement and research process when designing appropriate governance and policy. The governance components in policy design are of three main types: the policy goals themselves, i.e. what they aim to achieve; the policy means, i.e. how these goals can be achieved; and the public governance arrangements, roles and relationships needed. Each of these can also be envisaged as operating on three levels: high level abstractions and preferences at the macro level related directly to a government’s overall governance and policy framework; the meso level of programme formulation which operationalizes the overall policy; and specific on-the-ground implementation initiatives at the micro level. All these settings require some form of monitoring in order to allow for the required evaluations and assessments for possible revision.

6.1.3 Governance, structure and capabilities for digital public services

The public sector is, in the vast majority of countries, the largest organisation both in terms of financial and other resources and the largest employer. It also has sovereign decision- and policy-making and legal powers and is typically the prime provider of public services or the institution which sanctions or controls public services. The way the public sector is governed, structured, and operated, as well as the competencies it possesses or controls, is thus of vital importance to public service delivery and ensuring that this contributes to meeting national policies and goals. The main lessons and recommendations concerning the governance, structure and capabilities of the public sector, derived largely from this report and its sources, are summarised in the following.

— Governance, structure and back-office cooperation

There is a strong need to move towards whole-of-government structures, operations and governance to break down the silos which the separate public sector entities have often developed over many years, and to develop a sharing culture across all entities in the public sector. There are two critical reasons for this. First, in order to save money and resources, sharing across the public sector is needed of good practices, of common service modules and functionalities, as well as in terms of human, organisational and physical resources. Second, users and other beneficiaries should not have to know how the public sector is structured in order to access and use public services, whether digital or in person, so a common single government interface needs to be presented, such as in a one-stop-shop or via personalised services integrated around specific users. A whole-of-government strategy requires both horizontal and vertical coordination across the public sector, and often actual integration as well, through for example strategies on business process reengineering, and the building of base data registries which all entities can share and which enable data exchange. End-to-end service design principles can be built on this enabling considerable reductions of the administrative burden both on users and on government as the service provider, and simultaneously cut costs and improve service quality. This also allows departments across different entities to cooperate around analysing emerging challenges and to determine how best to tackle evidence-based policies and public service delivery requirements. One strategy to promote this rather than silo-based activity is to allocate resources to overarching strategic goals rather than to individual ministries or departments.

— Institutional and organisational transformation

To meet the challenges of our times, institutional development in the public sector needs to be multi-dimensional (sometimes also called cross-sectorial), i.e. recognising individual, organisational and institutional levels and how they are interrelated. This requires strong public sector leadership at all levels across government structures. Leadership is an important aspect of change, as leaders are de facto change agents and need to implement change programmes, especially by building organisational capacity. Capacity building can also take place through international cooperation and technology and knowledge transfer, as well as between the public, private and civil sectors. Public sector transformation strategies need to be cross cutting requiring an open mind set and innovative ‘out of box’ approaches to public sector delivery.

An important focus should be recognising that different skills are needed by civil servants to manage and support policy design and institutional changes processes, on the one hand, compared to the delivery of services on the other. Whereas digital and other technology innovations are necessary enablers and can be game changers, organisational, human resource and process innovations are also necessary, the best and most suitable of which might in some circumstances be emulated from outside, including from commercial companies. Sometimes, operating like companies to address complex public service dynamics in a systematic manner can be aligned with re-investing profits ethically and accountably in order to scale impact. However, the transformatory change needed is not only dependent on technology but also on the public sector being prepared to innovate its service regimes through workplace and organisational transformation, flexibility, de-centralisation and new forms of regulation.

Amongst other strategies which need to be considered are identifying champions of change, creating institutional capacities that nurture change agents, and giving incentives to potential agents of change. Creative solutions should be rewarded, as should calculated risk taking. Priority should also be given to institutions fulfilling core state functions as this will have a cascade effect on public services elsewhere in the public sector. In order to improve service delivery, there is a need to bridge the gap between the top-down, macro governance approach and the bottom-up, micro management approach. For example, through global and national norms, standards, policies and institutions, on the one hand, and the use of local champions, service charters, diagnostic and monitoring tools and enhanced participation, on the other.
— **Human resources and skills**

Development of capable cadre of civil servants is key to effective digital public service delivery. Traditionally, a focus on middle management has been key, but this layer is tending to reduce in size under budgetary pressure so focus should also be on the quality of mainstream public servants, especially those in frontline service-interface positions. They need to be empowered, just as much as the users of public services, through appropriate training, applications and processes. This will also serve to promote creativity, experimentation and innovation in a continuous search for improvement. In this context, digital is becoming an increasingly essential tool in service provision, so public servant skills training and the attraction of new talent in this area is also critical (Schwendinger et al, 2022).

— **Behaviour, values, principles and culture**

It is important to build behaviours and cultures across the whole public sector conducive to responsible leadership, professionalism and the values of integrity, transparency and accountability. In turn, these principles need to rest on the rule of law, justice, respect for human rights, and the security of both persons and property. Ethical behaviours can be promoted through a code of ethics incorporating principles like transparency, non-violence, resilience, participation, solidarity, identity and innovation. This should help to create values of commitment to serve the public and to counter adversarial attitudes by public servants to citizens. Corruption and lack of accountability lead to bad governance and typically contribute to a vicious circle involving de-motivated public administrations, and a lack of willingness and of capacity to innovate and modernise public services.

One of the biggest obstacles to successful digital public service design and delivery is legacy and the resistance to change and this applies both to the technological and human dimensions. The entrenchment of a ‘risk adverse culture’ and ‘business as usual procedures’ remains strong within government at all levels, creating an inherent barrier to the introduction of new processes, products, services and methods. A culture of ‘open innovation’ amongst civil servants should be encouraged, ensuring a cultural mindset that is flexible, adaptable and responsive to user feedback. Although some ‘bureaucracy’ is necessary, for example to ensure decisions are made according to statutory and other rules, greater discretion is also needed. This should be based on big data, user feedback, open engagement, common sense, as well as ethical principles, and should take place transparently and openly to allow scrutiny by society at large.

— **Transparency, accountability and trust**

Underlying the ethical cultures needed in the public sector to design and deliver quality public services is transparency which itself gives rise to accountability. Transparency involves the right and access to information, for example in relation to budgets and procurement; and accountability refers to checks and balances such as answerability, responsiveness and integrity. Transparency also leads to accountability through mechanisms and tools that make it clear what a government should do and how well it is doing it at all levels. Both can be promoted by ‘freedom of information’ legislation that also allows questions to be asked and responses provided within a specified time period. Although such freedoms can be mis-used, they contribute directly to trust in government as well as to better governance in the longer term. There is a need to achieve a balance between transparency and privacy not just for users but also for politicians and civil servants who need adequate private space for decision-making before decisions once made are publicised together with full transparent disclosure of the decision logic and the sources used in making the decision.

There is much evidence from around the world that legislation providing for both the access and the right to information has created innovative approaches to addressing participation, transparency and accountability for improving governance, and that such legal frameworks should be adopted more widely. However, a rights-based approach although essential may not be enough on its own as ‘rights’ also need to be implemented in practice. Mechanisms are therefore needed to allow for such access and rights, such as internet access, appropriate social media, public campaigns for the most vulnerable and public perception surveys.

**6.1.4 Collaboration and innovation for public services**

In most countries the public sector is normally the biggest and most powerful actor, but does not have a monopoly on resources, the ability to innovate or on delivering public services, although it does often have the prime role in ensuring that such services are made available. On the other hand, civil society and the commercial sector possess

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71 If the provision of solutions includes digital technology, related partnerships are often referred to as GovTech (Mergel et al, 2022).
increased capacities, tools and willingness to participate alongside the public sector in addressing societal challenges ranging from the local to the global. This is enabling the emergence of open and collaborative governance systems promoting transparency, participation and collaboration. Public service outcomes are thus determined by the interplay between decision makers in the public sector, often cooperating with civil society and private companies, as well as closely listening to, and co-creating with, users. Such collaboration rests on the notion that the ‘government’s core is the people’ and the ethos of ‘government for and by the people’. An emerging imperative is thus to co-create value in public service delivery with users and other actors. The main lessons and recommendations concerning collaboration and innovation for public services, derived largely from previous sections, are summarised in the following.

— Public-private partnerships

Public-private partnerships (PPPs) have long been a cornerstone of public service design and delivery, and remain so today. Typically, the public sector provides the setting, the service need and the resources, whilst the private sector provides technical and organisational skills, resulting in joint cooperation around a public service delivery innovation. If successful, PPPs are particularly important in digital service delivery, for example in education and health where services can be personalised as well as made available on a massive scale to anyone with Internet access. This can significantly reduce the investments needed and can have large impacts on a country’s socio-economic development. Partnering with private companies, which are attracted by the opportunity to develop new solutions as well as by potential commercial profit and spin-offs, can be both cost effective for the public sector and help deliver public services, although this needs to be done within a framework of standards, transparency, accountability as well as tight legal contracting and certainty. For this matter, different business models can be further explored, including also the partial or complete ownership of companies by the public sector.

— Public-civil and public-citizen partnerships

Partnerships between the public sector, on the one hand, and civil society organisations and service users, on the other, are increasing in importance and demonstrating their innovative potential on public service delivery. Typically, the public sector provides the framework and expertise and civil society organisations like NGOs provide bottom-up community activism, knowledge and sometimes resources, with joint cooperation around a service delivery innovation which is often simple but also highly effective. This can be very successful when such organisations represent and/or act as digital intermediaries for public services delivered to vulnerable groups who often do not have digital access or skills, for example, women, youth, the poor and/or older people, given that these intermediaries are close to, and understand the needs of the service users.

Active but informal participation of individual users in service design and delivery is also extremely important, through their feedback on, and complaints about, current services but also in decision-making concerning future service configurations. Digital tools are increasingly being used for this purpose, especially social media, but also email and online feedback tools offered as part of the service itself. Some countries also encourage users and citizens to participate in creating a bank of ideas, which may not just cover public services, but also have relevance for public policy and public budgets more widely. In this context, however, it is important to make sure that all voices are heard and not just those that are loud or technologically capable, so there are important digital divide issues to address. Public participation in design and delivering public services, as well as more widely, also contributes to building the social contract between government and people. However, it is also important that users can engage directly with the specific service provider, especially when not part of the public sector and thus less likely to be subject to the same principles of transparency and accountability as a public provider normally is. In such cases, the public sector needs to exercise supervision to ensure minimum standards of public service quality and responsiveness.

— Advocacy for public services

Governments at all levels should create mechanisms through which public service-related advocacy by civil society is encouraged, nurtured, and accommodated by policy makers as an integral component of the policy making process. Especially for income poor and marginalised groups, advocacy can raise awareness within the group, improve their own capabilities, self-awareness and confidence, as well as apply appropriate pressure on service providers to live up to their responsibilities. Awareness raising and advocacy campaigns are often initiated by civil organisations, both local and external, which can act as advocates for a vulnerable group and promote its interests with a voice that can be difficult for the individual members of the group to do effectively themselves, at least at
the outset. However, the advocacy role also needs to be taken up as soon as possible by local spokespeople and champions who are members of the group itself. This helps to build a mass social movement, especially in the context of an easily understood but serious problem, and where the public service solution is relatively simple and achievable within a specific geographic context. The goal is to change behaviour and awareness through mobilising all public, private and civil resources by clear demonstration of the benefits for all, thereby creating a momentum which is difficult to ignore by the service provider.

— **Open governance and government as a collaboration platform**

The concept of government-as-a-platform, providing clear frameworks, guidelines, support, competences, knowledge, data, tools, and other resources, can help orchestrate many of the types of collaboration needed to facilitate the design and development of public services. Government in this role helps to build an open environment and ecosystem which sees everyone, every community and every organisation potentially as a resource with assets to innovate and create public services, which are in effect wasted if not put to productive use. This enables government to supplement the challenge of itself having sometimes to do more for less by being able to orchestrate doing much more by leveraging more from across society. Within this context, the public sector needs to be able to orchestrate and support public service design and delivery through for example regulation, arbitration, coordination, mediation and partnering. However, government still has unique roles to play to ensure public service quality and reach and that no users are excluded, regardless of who is actually providing the service. The public sector must also balance being innovative and flexible with its role in providing longer term stability and continuity for society as a whole which other actors cannot do.

— **New innovation frameworks**

Collaboration, diversity and a range of voices, skills, competencies and resources, form the basics of successful innovation. In order to meet the challenge of the EU's 2021-27 policy and mission programmes and the UN's 2030 Agenda for Sustainable Development, new forms of innovation, beyond but building on digital technology and top-down driven innovation, are required. These new types of open innovation are designed to ensure that all can be involved, where there are no supposed monopolies of innovation talent and potential, and where the solutions become owned by as many people as possible which results in greater acceptance, trust and impact, such as through co-creation. The New European Innovation Agenda does provide part of the required framing, particularly related to (digital) public services it initiated the establishment of the Innovation-Friendly Regulatory Advisory Group (IFRAG), and tasks it to investigate regulatory berries and gaps. Results are expected in early 2024. Parts of these results might address possibilities for experimentation, for example, via regulatory sandboxes, testbeds or living labs (Kert et al, 2022).

**6.1.5 Public service design, delivery and evaluation**

The processes of public service design, delivery and user experience depends significantly on the foregoing issues of governance, policy, public sector structures and collaboration with other actors, but also on many decisions requiring a deep understanding of these processes. In most situations and countries, the first task is simply to provide good quality public services across the main areas of social, economic and environmental need in order to provide at least basic welfare and prosperity across the whole of society. Although the design and delivery of any service needs to be highly context dependent, much experience has shown that user-centricity is becoming increasingly important and, even in a growing number of cases, this principle is being complemented by the notion of user-driven services where the user determines precisely the service she or he requires and wishes to use. This also lays the basis for developments in so-called open services and the co-creation of services in cooperation with other actors, as well as in an increasing number of cases in some competition with them which, if undertaken in an open and transparent manner, can further drive innovation. The main lessons and recommendations concerning public service design and delivery, derived largely from this report, are summarised in the following.

— **Access, affordability and usability**

Digital public services should be as easy to access as possible by increasing awareness and making them visible and easy to find. This might involve advertising or promotion campaigns. If services are not free-of-charge to the


user, they should be affordable in relation to the user target group’s disposable income as well as the costs of purchasing and/or using any necessary digital tools. The services should also be highly usable and user-friendly, through attractive simple procedures, structures and instructions. It is often beneficial to provide simple advice and help functions, especially when services do not involve physical contact with public servants, and there should be facilities for providing feedback and making complaints. Services should ideally use standardised semantics and design-for-all techniques enabling users with different handicaps or weaknesses (whether visual, dextral, hearing, or other) to personalise service delivery to precisely match their requirements. Much of this could be covered by a published charter in an accessible format setting out the rights and responsibilities of users, how to comment and complain and what the service quality and performance parameters are.

— **Process simplification**

Interactions between the service provider and the user should be as simple and as short (and therefore as easy, quick, efficient and effective) as possible for users, which clearly reduces their costs and increases their benefits. One important strategy in this context is the simplification of processes, forms, legal requirements, and other features, and ultimately trying to get rid of processes and forms completely if possible. This is a strategy of ‘reducing unnecessary contact’, i.e. ensuring that only when absolutely necessary a user must contact the service provider or vice versa, which means that as much as possible should be automated in the back office (regardless of whether or not the service is digitized at the user interface) or even not required, as long as service and quality standards are maintained. The goal is to simplify interactions and improve service usability, for example through initiatives to identify how procedures can be simplified, or eliminated altogether whilst not degrading the service. This includes analysing processes and proposing simplifications, as well as looking at how legal requirements and reporting frequencies can be simplified or reduced. All of this decreases the costs and the administrative burden for users, but also requires that the legal base must enable and support it. Integrating different services into one service should be undertaken by the service provider where possible, so that the service provider does the hard work to make it as simple and easy for the user as possible. The simplification process might also include a complete-redesign in light of the requirements gathered early in the process.

— **Service personalisation**

Ultimately simplification means personalisation, as everything which is not relevant to a given user group (community of a common need for a distinct public service) or even individual at a particular time and place, is removed. An important aim is to move towards the public service provider becoming increasingly like a ‘personal assistant’ (and perhaps an ‘intelligent agent’ for digital services) in a manner corresponding to the strategies adopted by the best commercial companies through a process of ‘mass customisation’. In public services delivered directly by humans, this often already happens as the public servant customises the service via real time dialogue and negotiation. However, this typically only results in small adjustments of a one-size-fits-all service package, taken directly ‘off-the-shelf. Mass customization of public service delivery on a large scale and down to the individual level is only really possible using digital technology, for example using ‘big data’ which gives the service provider insight into who the user is and what they might need, as well as enabling the service user to personalise the public service themselves. It also implies the collection and sharing of user data (see also below).

The focus should be on improving people’s quality of life as a service outcome, rather than the service mechanics or even immediate service outputs themselves. This means that services should not be one-size-fits-all but rather context-specific, tailored to indigenous circumstances, and to enable several pathways to reach desired outcomes. Part of this includes the better exploitation of multiple channels, including web, social media, mobile, kiosks, call centres, face-to-face service centres, etc., as services are honed to individual needs using the most suitable means (see below).

— **Once-only principle**

An important strategy for both saving the resources of service providers and the time, expense and frustration of service users is the now common once-only registration of user information that ensures that a service user only needs to digitally identify themselves once (not just in a given session but also between sessions) and to provide data to the public service providers only once (if the user agrees that the data can be re-used by other providers,

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74 Notably, benefits might not only be monetary, and individual benefits should be distinguished from wider societal benefits (e.g. to a community that shares a common need for a dedicated public service).
are now becoming systematised and implemented through so-called ‘design thinking’ programmes which exploit and usability, and to ensure that procedures are supported by fully integrated services. Many of these approaches (such as leaving school, changing employment, starting a business), to understand and design precisely what a user ethnographic and anthropological methods, as well as the analysis of personas, service pathways and life events in place. Within the context of the EU, the once-only principle is, for example, promoted by the Once Only Technical System in the context of the Single Digital Gateway Regulation.

— Service design and user behaviour

An important component of service personalisation is moving towards fully human-centred design whereby a service and its delivery is fully dependent on what the user needs or wants, rather than reflecting the needs of the service provider. There are many examples of this, including designing services that enhance both user experience and usability, and to ensure that procedures are supported by fully integrated services. Many of these approaches are now becoming systematised and implemented through so-called ‘design thinking’ programmes which exploit ethnographic and anthropological methods, as well as the analysis of personas, service pathways and life events (such as leaving school, changing employment, starting a business), to understand and design precisely what a user needs and how best to deliver it.

‘Design thinking’ in public and especially digital public services, although still in its early days, is already having significant impact. It represents a paradigm shift away from traditional top-down, expert- and often technology-driven service design traditions. Two of the main techniques employed are building ‘personas’ as rich archetypal descriptions of specific users which enable a deep understanding of the service demand side, and developing ‘service journeys’ as a visual map of the individual’s actual service interactions over time allowing a clear understanding of the supply side. Matching relevant personas with the corresponding service journey can be a powerful basis for analysing what actually happens and for designing better public services. To be effective, design thinking should come in at the very beginning of the service design phase and continue all the way through, rather than the end as an afterthought (Bason, 2010). A complementary service design approach is ‘scarcity’ design which develops customised systems especially for people who are vulnerable or resource-poor in order to make their lives as easy and as simple as possible so they can focus on solving their own problems rather than grappling with a complex system (Mullainathan & Shafir, 2013). This approach often involves creating a customized digital ‘cockpit’ of simple coordinated information and tools providing a supporting platform for the individual when juggling the whole range of public and other services they need, whether education, health, care, childcare, employment support or paying bills.

Service design aims to understand the actual behaviour of service users and that they tend to respond more positively and use services well when it is easy for them to do so, and are provided with a framework which is designed so that good decisions are easier to take than less good decisions. This leads to win-win situations in which the service user, the service provider and society at large all benefit. The recently developed so-called ‘nudge’ approach to public service delivery recognises that, although traditional attempts to change behaviour by regulation are of course important, they just as often fail and may even provoke opposite responses. Nudge theory focuses on changing peoples’ behaviour through small and typically very inexpensive ‘nudges’ to push them into making good decisions for both themselves and for society, but without binding regulation, and has done so with significant success. A good example implemented by the Obama administration in 2008, was making enrolment into a pension plan the default position for new employees, but clearly showing them how to opt out. This resulted in a massive increase in on-going subscriptions to such plans, explained by the fact that the vast majority of people do wish to save for a pension but that for many it is either too complex to enroll or because it appears so far into the future that it keeps getting postponed (Thaler & Sunstein, 2008 & 2021), see also Section 4.3.6.

77 Notably, there is still a shift to be made between user-centricity (still focussing on the explicit use of a public service), as compared to human-centricity (where the actual need is in the focus and might also be addressed pro-actively and transparent). In light of the concept of the quintuple helix it might be even appropriate to speak about humanity-centricity (thus including also the wealth of the planet we live on).
78 For example, the UK’s service design principles which became mandatory in April 2014 include the proviso that no service will be launched unless the responsible minister can successfully complete it unaided and in a timely manner. Working groups have been set up with stakeholders to develop style guides and similar; the UK’s Behavioural Insights Team: http://www.behaviouralinsights.co.uk, and the Danish ‘MindLab’ which undertakes such studies mainly for the Danish government: http://mindlab.dk.
Multi-channel and blended service delivery

A very significant new trend in digital public service delivery is to optimise the available digital channels to fit the needs of the specific group or individual, whether by mobile, website, portal, video link, chatbot or electronic kiosks located in accessible places. Also physical spaces (kiosks) are used to provide an access point to people that are not digital literate or prefer other ways of service delivery. If this multi-choice offering entices the user away from the human interface, assuming this does not degrade the service, this approach is very powerful and can save the service provider huge investment and running costs, as well as giving the service user large benefits in terms of convenience through 24/7 availability, savings in time and the cost of travel to physical premises. However, non-digital service delivery channels, such as traditional post, call centres and over the counter face-to-face services in citizen centres, remain very important, even though these can sometimes be significantly improved by digitising and joining-up the back-offices of service providers. Thus, in many countries over the counter face-to-face delivery of public services will continue to remain an important, perhaps the most important, component of many if not all services and for other contacts between provider and user, especially when they are the only channels accessible to users. These can also build trust and reassurance in ways not always possible digitally, especially if service needs are of a personal nature, as well as ensure that service providers know their locality and the people who live there. Call centres have also become established in many countries as an effective channel to reach a very large number of citizens and businesses especially now that the use of cheap mobile smart devices is becoming ubiquitous. Video, call centres and chatbots attempt to mimic face-to-face over the counter services in that they provide real time interaction for information, requests and dialogue, and also avoid the disadvantage of long physical distances to a service centre, for example in rural or remote areas.

Many service components, however, still require direct human interaction, such as in health, care, education and building personal and trusting relationships through dialogue and empathy. In comparison, digital can be better at handling and analysing large amounts of data in more standard, routine and rule-governed processes and transactions, as well as communicating instantly regardless of time or location over large areas and distances. Where these features are present, a digital-by-default strategy might be followed so that a given service is only available digitally, thereby significantly reducing overall services costs. However, there are almost certainly users who are unable or do not wish to use a digital channel, so that some of the monies saved should be invested in tailored human-interface service support for such groups. Digital is also very good at reducing overall transaction costs and increasing process efficiency, and can, when this is rationally planned, enable the re-deployment of staff and other resources away from routine processes to personal human interactions with users in hands-on mode where this adds most value. It can thus be ironic that digitising many public services, or appropriate aspects of these can result in greater human contact through the shifting cost structures. Recognising that the digital revolution can enable a new vision and provide better tools for service delivery should go hand-in-hand with understanding that the human element remains essential, and indeed this is now beginning to be discussed as the next Generation 5.0 for government. Clearly, many services have components of both, thus underlining the importance of the integration and channel blending of public service delivery. Good strategies being adopted include one-stop-shops, both in physical service centres where the user only needs to consult with one staff member, even though the latter may need to consult more widely or refer the user on, as well as via one-stop online portals which provide convenient and easy navigational links to all services available. Considering pro-active public service provisions, these might even turn into non-stop shops – in cases where consent is previously given or citizens (or business) are asked for their approval.

Other good channel strategies include physically mobile digital services, for example offered by vehicles carrying municipal services and staff to remote areas or to vulnerable groups based on published timetables or on an on-demand basis, in a similar manner to mobile libraries have done for many years. There are also examples of pop-up digital services hubs in crowded places. This is difficult to do remotely or by the representative of just one of the services offered, but can be achieved by regular and structured personal attention from a single professional, even when not specialised in each service component, who provides advice, encouragement, emotional support, and who builds trust and often friendship. Recruiting local people as agents in service provision, even when not professionals, as long as they receive basic training to become ‘barefoot’ representatives, helps to exploit local knowledge and acceptance. It also provides steppingstones to improved skills, capacity and employment prospects for the individuals themselves. This can be especially valuable when such barefoot agents are themselves members of the service target group, given they themselves know and understand the needs and problems first hand.
Monitoring public service impacts on sustainable development

An essential on-going component of ensuring that appropriate public services make significant contributions to achieving governance and policy goals is monitoring and measuring their design, implementation and use, but most important of all their actual impact in benefitting users’ lives. The public sector, as well as other providers of public services, must collect as much relevant evidence and data as possible and not just accept opinion. It is advisable to use standardised approaches to monitoring, evaluating and analysing progress and outcomes, including for example recognised project management tools, Key Performance Indicators (KPIs) and/or balanced score-card approaches. Specific studies on costs, benefits and other impacts, and to compare these with relevant international studies to learn from good practice, can be useful. However, comparisons between different technologies, services, entities or jurisdictions are not always easy given that processes, outputs, outcomes and operational logics vary and are often not transparent. Every service design and delivery initiative should, in principle, also have a solid ‘business’ case before starting that focuses on its sustainability in governance, political, legal, financial, organisational and technological terms, as well as providing real positive benefits to the user, and ideally also for the service provider and for society as a whole. However, it should be remembered that some services rely on outputs and outcomes from other services, so it can be difficult to measure in isolation, such as when cross-entity initiatives are implemented to achieve whole-of-government public service delivery.

If the cost of measurement gets too high in relation to the benefits planned or actually realised, then measurement should be curtailed, but the public service might be continued anyway if there are sound qualitative and perhaps also anecdotal evidence that it is useful. It is also important to recognise that public services typically reflect the governance, political, social and cultural consensus in a locality, and these grounds alone might be sufficient to continue to deliver the service unless there is good evidence not to do so. In terms of assessing actual and long-term service outcomes on users and broader impacts on society, it is advisable to use scientifically robust methods where feasible, such as randomised control trials, before-and-after and comparison studies, as well as regular monitoring and data collection – using automated approaches (e.g. by using APIs) where possible. This can ensure that highly reliable evidence is obtained and assessments made about a service and its costs and benefits, leading to sound judgements about the future of the service and the design of similar services in order to maximise their impacts and reduce their costs.

There are also other measurement frameworks that are relatively robust, including rigorous quality measurement, and certification such as ISO 9000 and 14000. Some countries deploy so-called SMART frameworks using indicators which are specific, measurable, assignable, relevant and time-related, to track the implementation of services and other initiatives. So-called ‘big data’ is also a huge source of potentially valuable evidence, both for assessing service impacts but also more generally for understanding a large variety of public service characteristics and trends. It is also used for policy modelling exercises as ‘what if’ scenarios predicting the likely outcomes of different governance, policy or decision options. However, big data is only really useful if it is statistically representative of the situation being analysed and if the data itself has been robustly collected and analysed. Without detracting from the well documented value of big data and its undoubted on-going potential, it is always useful to run a ‘sanity check’ on its results and predictions, and this of course applies to all measurements of whatever provenance. Are the results sensible and above all understandable, in the sense that it is clear how and why they have been produced, or do they represent an algorithmic ‘black box’? It is also important to recognise that any type of evidence, whether statistical or not, and however robust, is just an input to a decision-making process. It remains up to the political decision-making process to determine and apply its overall vision of public services, as long as these, alongside any deviations from the evidence, are transparently and accountably explained and that public discussion is possible.

6.2 Impact on public values and public value

The basic distinction between European public values and European public value used in this report are introduced in Section 2.3 with the following summary distinction between them:

- **The public values of good governance** (taking the definition used by the European Commission, 2017) refer to how public value is created – thus public values can be seen as the ‘means’ of creating public value, as sketched in Figure 1.

- **Public value** (taking the definition proposed by Kelly et al, 2002) refers to the actual benefits derived from public governance that accrue to all quintuple helix actors – thus public value can be seen as the ‘ends’ composed of both outcomes and impacts, as sketched in Figure 1.
6.2.1 Overall impact on European public values

The basic European public values of good governance derived from the European Commission (2017) and used in this report are, as introduced in Section 2.3, as follows:

1) Accountable;
2) Transparent;
3) Responsive;
4) Equitable and inclusive;
5) Efficient;
6) Effective;
7) Follow the rule of law;
8) Participatory;
9) Consensus oriented; and
10) Trust, legitimacy and confidence in the government itself (taken from Kelly et al, 2002).

Comparing these ten public values from 2017 with the five principles articulated in the 2001 European Governance White Paper of openness, participation, accountability, effectiveness and coherence (European Commission, 2001) shows important changes between about 2001 and 2017, including:

- The virtual doubling of the number of public values as the role of European governance becomes better articulated after the intervening 16 years which saw the 2008 financial and other crises, as well as the increasing possibilities that digital technology bestows.
- Openness as a label has been refined by three of its main components, i.e. transparent, responsive and consensus oriented.
- Efficiency has been added as a core public value in response to the financial crisis.
- Equitable and inclusive have been added as refinements of coherence, in response to the huge rise in poverty and inequalities in the aftermath of the financial crisis.
- Rule of law has been added specifically, although this has, like democracy, been embedded in the EU Treaty since its first inception.
- Trust, legitimacy and confidence in the government itself has been added as a critical component of achieving public value.

In the context of European democracy, it is also important to link these ten European public values with identities using an interdisciplinary perspective. Values are said to be the dominating forces in life and identities represent who we are and to whom we belong, i.e. personal identity and social identity. Both shape the political landscape in democracies, but due to their abstract nature, public and other values still need to be contextualised. In many cases, there is a broad, common understanding of such values, but the connection can vary through an individual’s personal expectations and experience with media and culture (Scharfbillig et al, 2021). This also relates back to the European Union’s overarching values as defined in Article 2 of the EU Treaty outlined in Section 2.3.

The European Quality of Government Index (EQI) captures average respondents’ perceptions and experiences of European public values at the sub-national level of government across three dimensions of quality, impartiality and corruption in relation to three essential public services – health, education and policing - in their region of residence. Representative samples of about 130,000 respondents are surveyed on the concept of quality of government as a broad, multi-dimensional concept consisting of high impartiality and quality of public service delivery, along with low corruption which signifies good adherence to the rule of law. The concept also refers to how power is actually exercised, not necessarily the de jure formal rules but rather the de facto rules as perceived and experienced by residents. In other words, the EQI can be said to describe the informal practices of formal institutions. The latest 2021 EQI report compares results with previous measurements and highlights some of the most important changes to the data and key results (European Commission, 2021h):

1) There are some improvements in citizens’ perceptions of the quality of government between 2017 and 2021. Citizens rate the quality of public service delivery higher and report lower levels of bribing and other forms of corruption.
2) Citizens in regions with higher quality of government are less worried about the economic and health consequences of the COVID-19 pandemic, and are more likely to perceive that their authorities have handled the crises well. In particular, past levels of corruption perceptions are strongly related to economic worries due to the pandemic.

3) The geography of regional quality of government is slowly shifting. While several Eastern European regions seem to be on a rise, although a few others are falling, several southern European regions see a marked decline.

4) There is a remarkable convergence between regions in some countries, while a divergence is seen within others, i.e. many countries improving across all regions, whilst some are regressing.

5) Looking at just the capital region scores compared to their country mean, there is also a stark and noticeable variation in the scores of EU’s capital regions, with some capital regions being way below their country mean, while others are significantly higher – capital’s score tends to decrease when whole country’s score decreases.

Although the four years 2017–2021 of EQI measurement also include the period of the COVID-19 pandemic, so might therefore show an unrepresentative trend, the overall quality of government experienced by citizens has risen a little. However, there are significant within- and between-country variations, so it is important not just in which country a respondent resides but also in which region, thereby underlining the importance of considering multi-level governance as well as the locality and community governance dimension.

6.2.2 Overall impact on European public value

Taking the definition proposed by Kelly et al (2002), the three basic levels of European public value used in this report are:

1) Services that provide the vehicle for delivering public value through actual service encounters for users or clients and the distribution of fairness, equity and associated values for citizens.” As shown by the examples given in Sections 2.2 and 2.3, this level 1 public value is created by services directly beneficial to the individual user.

2) “Outcomes that commonly overlap with services but should be considered separately as they encompass much higher order aspirations such as national security, poverty reduction, public health, etc.” As shown by the examples given in Sections 2.2 and 2.3, this level 2 public value is created by services indirectly beneficial to society on a collective basis.

3) “Trust, legitimacy and confidence in government at an even higher level which are critical to public value creation: even if formal service and outcome targets are met, a failure of trust will effectively destroy public value”. As trust is today also seen as an essential value in good governance, this level 3 public value thereby provides an overlap with the European good governance public values listed above.

Digital technology is used to contribute to the design, development and especially the delivery of these three levels of public value. How this has developed since the early 1990s, when digital technology had its first direct influence on public services and hence public value, is summarised in Table 2 and explained in Section 5.1. The general role of digital technology gives it a wide societal and public value remit as it has become the ‘general purpose technology’ since about 1950, first with the introduction of electronic technologies, and then since the early 1990s with the launch of the www and the internet. Digital technology as the general purpose technology today underlies and supports virtually all other technologies and everything in a modern society.

Summarising the evidence presented in this report and drawing on Table 2 and column D of Table 3 in Section 6.2.3 below, it is clear that specific types of digital technology, represented by Generations 1.0 to 4.0, have created public value through public services since the early 1990s. This changes cumulatively from providing support in Generation 1.0, through enabling, then driving followed by some digital-only services in Generation 4.0. Each generation reveals a specific relationship between humans and digital technology in how the services are delivered and operated and, in turn, each generation offers its own specific array of public services at level 1 of Kelly et al’s (2002) three public value levels.

Level 2 public value requires user-centric and personalised services that are networked, joined-up and integrated, which presupposes at least Generation 2.0 interactive technology from about 2000. However, the breaking down of silos needed to be successful in creating significant level 2 public value was first seen, though only to a very limited extent, with Generation 3.0 semantic technology after 2008 and mainly only in the context of the policies
and mindsets of the open governance paradigm. The combination of these open governance policies and mindsets with those of the sustainability and especially the locality-community paradigms, in the context of Generation 4.0 distributed technologies from about 2015, saw the first signs of real success in breaking down silos and providing the joined-up services and user-centric focus necessary for level 2 public value. The silo problem remains today, however, one of the biggest challenges to public value creation and is not directly related to further advances in digital technology, which can indeed also pose severe problems, depending on how it is used, as well as provide opportunities, as outlined in Sections 4.3.3 and 5. The policies and mindsets needed to move towards the human-centric focus on real people’s lives, and on the ‘emotional intelligence’ promised by the current speculation around Generation 5.0 technology in the context of the ‘digital sanitisation’ involved in people and machines working together, will possibly be more decisive in realising significant levels 2 and 3 public value.

6.2.3 Aligning public values and public value with changing public governance paradigms

As argued above, changes in the public values of good governance and in public value can, at least in part, be aligned with changes in digital technology as well as the cumulative impacts of the European public governance paradigms identified in this report. The latter also clearly derive from changing framework conditions and especially international, national and local politics and policies, as summarised in column I in Table 3. Table 3 is constructed directly from the evidence and sources cited in the whole of this report. It shows the nine public governance paradigms in rows arranged chronologically, plus summaries in columns A to I of important characteristics of each. Column C summarises which of the ten European public values are addressed by each paradigm and column D the changes in public value.

It is very clear from column C in Table 3 that the number of European public values incorporated increases over time but with two important exceptions against this trend that show significant reductions in the numbers. First, the introduction of NPM from about 1980 reduces the focus to just two dominant public values, i.e. being efficient and the rule of law. Although the rule of law is clearly present in NPM in a European context, one of NPM’s weaknesses is that it can sometimes be difficult for other actors to see this given the paradigm’s opaqueness, for example when outsourcing and partnership contracts are typically hidden because of ‘commercial confidentiality’. The primacy of efficiency in NPM is related to its raison d’être that market principles are the best way to operate more or less any organisation or institution and that public service users should be viewed as customers with a purely transactional relationship with the public sector. NPM’s highly focused entrepreneurial culture views outsourcing, a focus on cost-cutting efficiencies and ‘value for money’ principles, as the most important for good governance. Second, the lean and austerity public governance paradigm was rapidly introduced in the aftermath of the financial crisis of 2007-8. However, rather than just two dominant public values of being efficient and the rule of law as in NPM, leanness also includes being accountable and transparent. This more nuanced public values portfolio is likely due to the fact that the Neo-Weberian governance paradigm appears after NPM but before leanness and adds additional public values. In addition, it is almost certainly also related to the introduction of Generation 2.0 and 3.0 modes of government and web technologies which have opened up governance to a considerable extent immediately before and after 2008.

In terms of public value, the Weberian, NPM and Neo-Weberian public governance paradigms establish the basic building blocks of welfare state services at level 1 public value. They do so in different ways, however, related to the changing framework conditions, first of post-war austerity, followed by the 1970s financial crisis and then Neo-Weberian attempts to find a balanced ‘third way’ between ‘small’ and ‘big’ government. The immediate post-2008 lean governance paradigm undoes this attempt to find balance and reverts to ‘small’ government policies.

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79 In recent years, there has been a push for value-based governance (e.g. the Berlin Declaration of ministers in the EU) and digital rights and principles (esp. in relation to the Digital Decade 2030). These developments are not in the scope of this document, but of the follow-up report.
<table>
<thead>
<tr>
<th>Public governance model (dates)</th>
<th>A) Purpose</th>
<th>B) Governance structures, norms &amp; cultures</th>
<th>C) Good governance public values for delivering public value</th>
<th>D) Public services contributing to public value</th>
<th>E) Digital technologies (ref Table 1 &amp; Figure 2)</th>
<th>F) Role of public sector in public governance</th>
<th>G) Role of other actors in public governance</th>
<th>H) Weaknesses</th>
<th>I) Framework conditions &amp; influencing factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Traditional public (Weberian) administration (from before 1945)</td>
<td>Authority &amp; control; rule of law; professional; politically neutral; objective: central role of the state</td>
<td>Top-down hierarchy; centralised; internal orientation; clear rules; functional specialisation; standardised procedures; culture of civil service ethics</td>
<td>Increasing provision of all basic European welfare state services, incl. health, education, transport &amp; housing</td>
<td>Only from mid-1990s, G1.0</td>
<td>Industrial Rs: 2IR &amp; 3IR</td>
<td>Monopoly on policy design &amp; implementation, on service design &amp; delivery &amp; on public value creation</td>
<td></td>
<td>High implementation &amp; monitoring costs; lack of useful knowledge; rigid one-size-fits-all solutions so many not served leading to dissatisfaction</td>
<td>Post-1945 initial austerity, &amp; later very strong growth; Keynesian interventionist 'big' government; welfare state starts but baby boom increases service pressure.</td>
</tr>
<tr>
<td>2) New Public Management (NPM) &amp; market-based (from about 1980)</td>
<td>Operate as a business; market focus; treat users as 'customers' with private sector management who get 'choice'; cost reduction; targets &amp; measurement</td>
<td>Decentralised &amp; competitive; 'small government'; moves to privatise, reduction of government control; outsourcing &amp; competition; culture of entrepreneurialism.</td>
<td>Increasing role of non-public actors for all basic European welfare state services. From mid 1990s online service access.</td>
<td>Mainly G1.0, later G2.0</td>
<td>Industrial Rs: 2IR &amp; 3IR</td>
<td>Significant outsourcing, 'arms-length' oversight &amp; financing of governance functions &amp; public services for implementation by private sector</td>
<td>Huge role for private sector in competing for and implementing many governance functions &amp; public services.</td>
<td>Short-termism; budget rigidity put before service quality; opaque ethics; possible corruption; less democratic accountability due to 'commercial confidence'; over reliance on KPIs</td>
<td>In wake of supply-side energy shocks of 1970s, Milton Friedman Chicago School supply-side economics; hands-off 'small' government; privatisation &amp; market competitiveness</td>
</tr>
<tr>
<td>3) Neo-Weberian State (from late 1990s)</td>
<td>As Weberian but more professional, responsive, open &amp; results</td>
<td>Some reversion to Weberian towards more external orientation &amp; focus on meeting user</td>
<td>Greater state service provision; start of digital interactive</td>
<td>Mainly G1.0 &amp; later G2.0</td>
<td></td>
<td>Dominant actor for policy design &amp; implementation, for service design &amp; delivery &amp; for less dominant as service providers cf. to NPM; but start of feedback</td>
<td>Danger of some reversion to Weberian weaknesses, and emergence of</td>
<td>Reaction against NPM in many countries with some retention / reintroduction of public</td>
<td></td>
</tr>
</tbody>
</table>
### 4) Networked governance (from about 2000)

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<thead>
<tr>
<th>Focus</th>
<th>Networking technology improves efficient &amp; effective interconnection of public entities &amp; multi-levels, &amp; with non-public actors; culture of collaborative decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs</td>
<td>Increased service coordination &amp; targeting between public entities &amp; with other actors</td>
</tr>
<tr>
<td>Industrial Rs:</td>
<td>Mainly G2.0. Industrial Rs: 2IR &amp; 3IR</td>
</tr>
<tr>
<td>Facilitating network actor for coordinating different public entities, &amp; with other actors, in service design &amp; delivery &amp; for public value creation</td>
<td></td>
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<tr>
<td>All other actors better able to find niche roles for different public services at different governance levels</td>
<td></td>
</tr>
<tr>
<td>Huge digital &amp; managerial competence challenges amongst all actors; not addressing 'wicked problems' sufficiently; start of digital divide; some technology hype</td>
<td></td>
</tr>
<tr>
<td>Relatively 'big' government creating public value for all actors seen as necessary to address 'wicked' societal problems; accelerating economic growth &amp; globalisation</td>
<td></td>
</tr>
</tbody>
</table>

### 5) Public value governance (from about 2000)

| Government recognises itself as the prime mover in creating public value through its unique role as supporting interests of all actors |
| Systems of dialogue & exchange of multiple actors led by government through its organisational & managerial capacity, combining culture of all actors creating value together. |
| Start of service focus on maximising value for users via consultation and joint value creation between all actors. |
| Managing & orchestrating all actors through consultation & collaboration to create value for each based on political legitimacy |
| Big strain on public leaders & managers; how to measure; actor consultation not direct involvement; silos try to cooperate but still follow own interests |
| Relatively 'big' government creating public value for all actors seen as necessary to address 'wicked' societal problems; accelerating economic growth & globalisation |
### Table 3 continued: Cumulative chronological overview and summary of public governance paradigm characteristics

<table>
<thead>
<tr>
<th>Public governance model (dates)</th>
<th>A) Purpose</th>
<th>B) Governance structures, norms &amp; cultures</th>
<th>C) Good governance public values for delivering public value</th>
<th>D) Public services contributing to public value</th>
<th>E) Digital technologies (ref Table 1 &amp; Figure 2)</th>
<th>F) Role of public sector in public governance</th>
<th>G) Role of other actors in public governance</th>
<th>H) Weaknesses</th>
<th>I) Framework conditions &amp; influencing factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>6) Lean and austerity (from 2008)</td>
<td>Continue basic NPM tradition but even greater focus on cost savings &amp; service cuts; doing 'more with less'</td>
<td>As NPM but even stronger emphasis on outsourcing &amp; 'arms-length' oversight of civil &amp; private sector actors taking public tasks via networking; some collaborative culture</td>
<td>Austerity scales down provision of basic welfare state services with some slack taken by other actors, especially civil society</td>
<td>1) Accountable 2) Transparent 5) Efficient 7) Rule of law</td>
<td>Mainly G1.0, G2.0 &amp; G3.0 Industrial Rs: 2IR &amp; 3IR</td>
<td>Reversion to NPM with, even greater efforts to outsource but also collaborate with, &amp; orchestrate roles of, other actors to create public value</td>
<td>Esp. civil society pushed to takeover more responsibility for social public services that private sector unwilling to do, whilst still outsourcing more lucrative services to private sector</td>
<td>Even less ability to directly address 'wicked' societal challenges than NPM as attempt to out-source much of this responsibility despite private sector often unwilling &amp; civil sector often not able</td>
<td>2007-8 global financial crisis creating complex political, economic, managerial, cohesion &amp; democratic challenges leading to a period of austerity, small gov &amp; growing inequality &amp; poverty</td>
</tr>
<tr>
<td>7) Open governance (from 2008)</td>
<td>Gov opens its processes, services &amp; data, incl. decision &amp; policy making inviting all other actors to do the same to create societal level public value for all; doing more by leveraging more.</td>
<td>Networking &amp; platform structures become dominant fostering multiple governance structures &amp; cultures, through transparent, participatory, inclusive, co-creative &amp; behaviour- al/cultural gov.</td>
<td>Semantic platform based personalised &amp; co-creative services via participation &amp; max inclusion; e-Signature &amp; e-Identity; gamification; once-only; digital-by-default; policy modelling; life events &amp; one-stop-shop attempting to break down silos; joined-up,</td>
<td>1) Accountable 2) Transparent 3) Responsive 4) Inclusive 5) Efficient 6) Effective 7) Rule of law 8) Participatory 9) Consensus 10) Trust focus</td>
<td>Mainly G3.0 &amp; then G4.0 with G2.0 still present Industrial Rs: 2IR, 3IR &amp; then 4IR</td>
<td>As public value (&amp; some lean) governance, with public sector becoming responsible for orchestrating public value but recognising it does not have monopoly on assets, knowhow &amp; wisdom to do so.</td>
<td>Critical role of private, civil &amp; education actors to contribute their assets &amp; knowhow to create their own value within the overall public value context.</td>
<td>Lack of interoperability; reluctance to share data; lack skills &amp; competences; openness risks data security; blurring of accountability &amp; of how quality is ensured; new digital &amp; socio-economic divides</td>
<td>Obama’s 2007-8 crisis response different to lean; leading to strong economic growth but also contributing to the increase in inequality &amp; poverty as globalisation, outsourcing &amp; long supply-chains accelerate in importance.</td>
</tr>
</tbody>
</table>
### 8) Sustainability governance (from about 2015)

Society needs to make all its activities sustainable, socially, economically & environmentally in an integrated & nexus manner to meet needs of society both today & tomorrow.

Public sector is pivotal whilst working with all actors at all levels through networks & platforms in sustainability culture including for circularity & nature-based approaches.

As open governance, plus focus on nature monitoring, resilience & regeneration services with attempts to break-down silos only partially successful.

**Add 'open' & proactive & predictive.**

As open governance, plus sustainability governance, with attempt to break-down silos.

As open governance.

Variable roles; still seen just as source of eco-services & natural resources, with focus on these functions rather than nature's own interest; problems of shifting baseline syndrome.

### 9) Local & community governance (from about 2015)

‘New localism’ aims to retain as much value generated locally within the locality, not in isolation but based on networking, interconnectivity, local participation & democracy.

Interacting multi-level structures where local & community authorities exercise subsidiarity power & access resources relevant for their function; culture of local responsibility in national, historical & cultural context.

As open & sustainability governance, but mainly focused on local and city levels where joining up silos easier than at national level.

As open & sustainability governance.

Variable roles; often community, some-times firms, taking lead roles as they have extra resources, know-how & energy to innovate; e.g., smart cities & transition towns.

As open governance, & national public sector providing open structures & frameworks for localities to thrive & local public sector often taking lead role locally & a strong enabling role to maximise & retain local public value.

As open governance & new devolved powers in many countries; new urban & city-region agendas; new focus on rural areas & rural-urban relationships; especially cities & neighbourhoods gaining more power & recognition; many city cooperation networks.

Nature not given big enough voice; still seen just as source of eco-services & natural resources, with focus on these functions.

As open governance, plus especially after 2015 UN SDGs & climate change agreement, & corresponding EU initiatives.
After about 2000 the networked and public value governance paradigms both come to the fore, again as reactions to NPM as well as the Neo-Weberian lack of innovation, but also enabled by the arrival of Generation 2.0 government and web technologies. This digital technology revolution was clearly a major turning point as it enabled interactive rather than one-way governance, social media and completely new types of public services as shown also in Table 2 in Section 5.1. It is noteworthy that the networked and public value governance paradigms appear at about the same time with the same technological opportunities and societal challenges, but represent somewhat different political, policy and cultural responses to these conditions, showing the paramount importance of the type of political and policy responses enacted. After 2008’s financial crisis, but also again driven by further digital technology revolutions (Generation 3.0), both lean and open governance emerge as two very distinctively different, and in many ways contradictory, responses to the same societal challenges and technological opportunities. Similarly, from about 2015 in the context of Generation 4.0 technology, the sustainable and locality-community paradigms emerge as distinctively different responses but, this time, as largely complementary.

These changing public values of good governance are also reflected in the types of services delivering public value. From about 2000, the network and public value governance paradigms in the context of Generation 2.0 interactive technologies start attempts to join-up and coordinate services. However, it is only with the introduction of the open governance paradigm and Generation 3.0 semantic technology that such joining-up attempts through a life-event and one-stop-shop focus become more mainstream, although still have only very limited success in breaking down silos. From about 2015, however, further political and policy changes, alongside technology Generation 4.0 with possibilities to better link distributed data, that the breaking down of silos starts to have some real success in the context of the sustainability and locality-community paradigms that can deliver public value level 2.

A noteworthy observation of changing public values as new public governance paradigms appear is that being efficient and the rule of law are the only public values for good governance that run through the whole period from 1945, clearly reflecting the main underlying principle of Weberian administrative governance which has remained the bedrock of European governance since. As mentioned, apart from the significant reduction in the variance of public values in NPM and the smaller regression during the lean and austerity period, the number and diversity of public values addressed by successive public governance paradigms increases chronologically.

It is also noteworthy that from about 2000 and Generation 2.0 technology, a very large number of new public governance paradigms and models was enabled that are clearly interdependent, often mutually reinforcing but sometimes also contradictory. Apart from the technology, these were also enabled by significant changes in the framework conditions, as summarised in column I of Table 3 and explored in Section 7, below. Based on the evidence in this report, these post-2000 paradigms were able, at least in principle but often in practice depending on the specific focus of each, to start addressing many more public values.

As mentioned, apart from the lean and austerity retrenchment, all of the post-2008 public governance paradigms, covering openness, sustainability and locality/community, ostensibly address all ten public values (as introduced above), clearly also related to the increasing effectiveness of digital technology based on Generation 3.0 and then 4.0. It can thus be deduced that this period saw the fulfilment of all European good governance objectives. However, these were consolidated in the period up to 2017 and it is clear from the evidence of the open, sustainability and locality/community paradigms that there is a need for agreeing additional European public values that reflect these paradigms. Indeed, the 2017 consolidation of public values (European Commission, 2017) does hint that sustainability, both in terms of making government itself more sustainable but also related to problems in the use of finite resources, impacts on the natural environment and climate change, could be a relevant public value. However, neither locality nor community are promoted as possible public values in this document.
7 Common features and framework conditions

7.1 It is the mix that matters

Some important issues arise from examining the progression of public governance paradigms, their use of digital technology and their impacts on public services and public value. First, it is the mix that matters; any given system of governance will have varying effects depending on its context, so the need for diverse inputs is paramount while acknowledging that institutions are not a panacea for societal challenges. Second, participation and dialogue need to be given much greater priority in a governance approach, i.e., even when experts are setting policy, dialogue needs to take place with all actors, especially those who are the direct targets of the policy. Participation is not just a normative goal but is also a means to greater efficiency and more effective outcomes, and will help to overcome overly simplistic and normative thinking. Third, developing the parameters of governance is often limited by formalised approaches; in reality, social terms and categories (such as, elections, class, democracy) are inherently ‘fuzzy’ without natural boundaries, and this makes analysis complex and difficult (Bevir, 2013).

Public governance usually refers to one or both of two related topics: state institutions and service delivery. Since ‘governance’ became a policy agenda, the main approaches to it have been dominated by formal theories derived from economics and sociology: (a) economic theories generally focus on micro-level and suggest markets are efficient ways of securing equilibrium; and (b) sociological theories generally stress mid-level contexts, describe new times, and promote networks and partnerships as responses to those times.

Today, sociological approaches to governance dominate policy agendas concerned with both state institutions (for example, of the use of governance, in the literature on development, to signal the embedded nature of markets) and service delivery (for example, of the rise of joined-up and whole-of-government agendas). The danger, however, is that much of the discourse has become overly descriptive as well as too keen to see cause and effect relationships. It is important to beware of so-called ‘causes’ as these are often in direct conflict with concrete human activity and experience. For example, the sociological theories that currently dominate scholarly work on governance sometimes encourage essentialist views of organisations, markets and networks, for example that networks are always innovative and that markets are always efficient. Such positivists may not always hold as they are only contingent generalisations at best, as well as being over simplistic and often lull policy makers into thinking in terms of certainties of outcomes that are far from guaranteed. Concepts like markets and networks are only heuristic ideal types, not found in reality in pure form. Instead, governance paradigms should recognise the importance of ‘concrete human activity’ and ‘human lives’ (Bevir, 2013).

There are a number of themes common to the public governance paradigms examined in this report, even though this is not always explicit brought out or obvious. These are examined in the following sub-sections.

7.2 Balancing mechanisms and structures

Much of the evidence presented in this report, including the sources cited, show that an important common feature of the public governance paradigms analysed, apart from the roles of technology, public services and public value addressed above, is the importance of balancing public governance structures and the mechanisms that they implement.

7.2.1 Centralisation and de-centralisation

In terms of EU governance, centralisation and decentralisation relate to the subsidiarity principle that serves to regulate the exercise of the Union’s non-exclusive powers. It rules out Union intervention when an issue can be dealt with effectively by Member States themselves at central, regional or local level. The Union is justified in exercising its powers only when Member States are unable to achieve the objectives of a proposed action satisfactorily and added value can be provided if the action is carried out at Union level.80 Subsidiarity, thus determines the level at which particular governance powers and levers should be exercised which might be decided on a case-by-case basis. To simplify to some extent this can be seen in the pull and shove between centralisation and de-centralisation (also within countries, i.e. between national, regional and local levels).

Balancing centralisation and de-centralisation

One aspect is determining the extent of centralisation to achieve minimum standards, simplicity and efficiency. Centralised government will typically focus all control in one central institution81, which means that information

81 For clarification, this refers to the governing institution as a whole, i.e. within the institution sectoral policies are likely to be distributed across different departments.
is readily at hand to those who have access to the central system. It also means that citizens will have to deal with only one institution. Fully centralised governance is characterised by the one-way, top-down, hierarchical linking of different systems, agencies, sectors, jurisdictions and levels. There is one single powerful centre, and although sub-centres may exist these by and large only exercise power on behalf or discretion of the centre. There is little or no diversity and pluralism in such a system, for example in the Weberian and Neo-Weberian administrations.

The very essence of a centralised and uniform public governance paradigm is one that is proactive to the extent it deems necessary, and rarely ‘reactive’ in the sense of responding to inputs from elsewhere or below. Public governance that concentrates on developing top-down frameworks which it intends to use itself cannot be considered reactive. In a centralised system, actors outside of the public administration take the passenger’s seat when it comes to design, production, and delivery of services. Consultation and public participation is not considered important, as the public sector clearly knows what its needs are for delivering services to citizens. In classical political theory, bureaucrats and politicians who adhere to the centralised state idea feel that democracy is a particular event which only happens once every four or five years, and after this, governments and public administrations feel that they should be ‘left to get on’ with business. Flexibility is not a characteristic of such systems, as hierarchies do not easily enable multi-way communication.

Centralisation in public governance can provide many benefits for service delivery, particularly from the perspective of public administrations. First and foremost, it can generate a high level of efficiency and consistency. It can also provide equality of service, as everyone everywhere will be entitled to the same level of service in a centralised system. Centralisation can also provide very clear and precise rules and frameworks for public services, which enables clarity in understanding the roles of government and citizens. However, transparency is an issue for a closed, centralised public administration, whose internal communication methods do not easily facilitate openness within, or outside, the administration. Privacy can also be issue in highly centralised public governance structures.

A single centralised government vision heads is completely at odds with the model of good governance suggested by the European Commission in the 2001 White Paper on European Governance (European Commission, 2001), which outlined five key principles: openness, participation, accountability, effectiveness, and coherence. All of these, perhaps barring effectiveness (in the context of efficiency gains) and coherence, are difficult to achieve in a centralised public administration. The strategy of a centralised governance system implies that digital government could become a powerful tool for efficiency, but the real governance objective and impact could become obscure. Efficiency alongside the rule of law and are paramount, but for purposes which are unclear, obscure and perhaps unknowable for many, thus accountability except via the rule of law tends to be absent. Thus, this strategy avoids a full consideration of public value, what it is, how it can be achieved, and how digital technology can support it. In other words, effectiveness in terms of public value becomes side lined by the search for efficiency.

In the centralisation strategy there is a danger that the public sector retreats into itself and only concerns itself with the maintenance of its own (state) power and interests, for example with a heavy focus on legal issues, law enforcement, and security aspects, plus overall bureaucratic control. A de-centralised and diverse public sector, on the other hand, would focus on a specific set of benefits for one group, location or interests, and, in effect, ignore the benefits or dis-benefits which may accrue to others as a results. Thus, it might be very good at meeting the precise needs of particular jurisdictions and actors (for example, at the local or regional level, or of business), but it can be quite bad at reconciling such needs across all jurisdictions and stakeholders. This implies stronger needs for interoperability from technical and semantic to organisational and legal aspects.

Decisions about decentralisation or de-centralisation and the appropriate balance them often revolve around the extent to which the public sector wishes to strive for efficiency and effectiveness, rather than the idea of having a public sector which also aims to provide other types of public value. Many of these issues are summarised in Table 4 showing that, in principle, governance is all about finding the balance between the centralisation and decentralisation of powers, and what the resulting allocation of ‘benefits’ and ‘disbenefits’ should be as a result.

### Determining the extent of de-centralisation

Fully de-centralised public governance refers to a system where departments work independently and autonomously. It means that the different systems, agencies, sectors, jurisdictions and levels function more or less independently, often without one central authority in overall control, although weak controlling may be in place. Thus, each system yields high levels of power across one or more specific areas of competence and finds

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82 This does not only hold for services within a territory (e.g. country) but also for the provision and management cross-border services.
few if any challenges to that power. As a result, users have to interact with various organs as and when necessary. It might also mean in a highly decentralised and siloed governance system that public administrations often do not have access to a coherent and complete set of records as they are distributed across various institutions, ministries or departments.

**Table 4. Balancing centralisation and de-centralisation**

<table>
<thead>
<tr>
<th>CENTRALISED / LARGE SCALE</th>
<th>'Benefits'</th>
<th>'Dis-benefits'</th>
</tr>
</thead>
</table>
| Command analogy / top-down / 'order' | • Ensures minimum standards  
• Level playing field  
• Framework of laws, norms and appeals  
• Democracy on large scale, more inclusive  
• Ensures cohesion and inclusion across large scale  
• Promotes linkages and positive externalities  
• 'Joined-up'  
• Provides simplicity and certainty  
• Promotes continuity and stability  
• Provides coordination  
• Provides efficiency and sharing  
• Long term planning, strategic, broad impact  
• Reciprocity  
• Equity and equality of service  
• Promotes auditability and due-process  
• Low coordination costs  
• Mitigates against 'chaos' | • Bureaucratic, standardised, homogeneous  
• Remote and difficult to reach  
• Unresponsive and insensitive  
• One size fits all  
• Rigidity and control  
• Excludes small scale and local needs  
• Too simplistic and generic to be effective |

<table>
<thead>
<tr>
<th>DECENTRALISED / DISTRIBUTED / SMALL SCALE</th>
<th>'Benefits'</th>
<th>'Dis-benefits'</th>
</tr>
</thead>
</table>
| Market & networked analogy / bottom-up / 'chaos' | • Takes account of local needs and choices  
• Promotes autonomy and empowerment  
• Diversity and pluralism  
• Promotes innovation and creativity  
• Democracy at a community scale  
• Ensures cohesion and inclusion at local level  
• Short term planning, tactical, focused impact  
• Subsidiarity  
• Flexible, high reactivity  
• Accountable  
• Responsible | • Local fiefdoms  
• Variable minimum standards and levels of service  
• Can produce negative externalities affecting other areas or groups  
• Isolationist  
• Tending to chaotic  
• Can be complex and create uncertainty  
• Can be excluding because of variable standards  
• Power-biased  
• Opaque |

A de-centralised and diverse public governance system is one in which all actors interact with different levels of public administration in a separated manner, and where the public administration is siloed, distributed rather than joined-up. Therefore, duplication can occur, but this may be one of the prices of security of information and de-centralised and distributed power. The danger of the decentralised and diverse public sector is that then use of digital technology and the design and delivery of public services can easily wither into inter-jurisdictional strife in which each agency and interest only strives to maximise its own efficiency, whilst larger scale effectiveness is sacrificed and forgotten.
7.2.2 Balancing simplicity with complexity

According to Vibert (2001), coherence is about identifying the qualities that make a system of government a good one. Coherence is basically concerned with achieving a series of balances between competing interests and requirements: between simplicity and complexity, between stability and change, and between rights and responsibilities. Because the public sector is unavoidably complex (it confronts a range of complex dilemmas, and needs to fulfil complex tasks in a myriad of complex circumstances in relation to many different actors, and it has to steer towards complex and often contradictory policy goals) it can often become obtuse and unintelligible to citizens, as well as to civil servants themselves. Despite this complexity, simplicity is also necessary, particularly in the ‘front-office’, i.e. the (public) user interface. An ideal balance may be to allow complexity in the ‘back-office’ whilst building simplicity in the ‘front-office’, but in other situations such a balance may not be possible. According to Vibert (2001) simple government structures are needed to ensure the political and market choice systems properly complement each other. Simplicity makes it easier to identify what is important and what is not important, and also makes government more understandable to people.

There are both benefits and dis-benefits of simplicity and complexity. Can people trust something they cannot understand? Simplicity can be seen as part of the ethos of open, transparent and accessible government, particularly if this helps to ensure that the legislation, rules and regulation governing a given public service or value is sufficiently simple and understandable for most actors to appreciate and exploit. A society governed fully or mainly by a legal and regulatory framework which is obtuse, hidden or can only be understood and wielded by experts, could be argued to be profoundly undemocratic, arguably as represented by NPM. Conversely, simplicity may compromise quality and effectiveness. In the UK, the tax system has become much more complex since 1997 but as part of an attempt to make it fairer by targeting the poorest through means-testing and tax credits. Without this complexity, precise targeting could not easily take place so that both rich and poor citizens would, for example, receive tax breaks. Fairness and efficiency seem to mitigate against simplicity. A similar problem bedevils the Danish tax system, where for many years most citizens and businesses have received pre-completed tax returns from government, based on a standardised ID number and government access to relevant personal data from employers and banks, so that complexity has been side-stepped. The tax system is complex, but this does not matter for most citizens and businesses because the government, in effect, calculates their tax for them. Clearly, high trust in government is necessary for acceptance of such a system.

7.2.3 Balancing stability with change

The need for public governance to transform, change, be flexible, innovative and dynamic, and be adaptable, is uncontested. However, governance has a critical role as the only formal institution which can provide much needed continuity, predictability, dependability and stability. This is absolutely necessary for individuals, families and communities to lead meaningful and peaceful lives. It is also necessary for business in order to give them a level playing field, and some longer-term certainty about investment and future developments. The stabilising and continuity functions of government need to be preserved and further developed, even within a strategy of a dynamic and transforming public sector. In other words, main questions are “What needs to be the stable frame” and “What has to remain agile and flexible?”.

In balancing stability with change, Agre (2000) distinguishes between institutions and organisations. An institution is a persistent form of relationships among people so is often strongly related to culture and behaviour. Examples include horseracing, the medical system, greeting rituals, the university, the stock market, management consulting, Christmas, the family, the common law, and the nation-state. Institutions can vary across history and between different societies, but they are remarkable for their ability to remain relatively unchanged for hundreds of years at a time. Institutional persistence is a dis-benefit when the institutions are unjust or inefficient, but it is a benefit when it enables people to predict the future, focus their attention, and compel others to keep their promises. Institutions generally change slowly and perhaps relatively fast during a profound period of societal change or shock. In contrast, organisations (such as government agencies, non-profits, and civic associations, as well as private companies) tend to be ephemeral and can change very quickly, often without any significant or even obvious cause. For example, there is a distinction between the institution of the university and particular universities as organisations, or between the institution of broadcast journalism and particular news organisations. It is necessary to distinguish between institutions and organisations when unravelling public governance, especially in the context of digital technology.

7.2.4 Finding the appropriate role for market mechanisms and choice

To what extent is there a place for market mechanisms, competition and choice in public governance. It is important to recognise the strong need for driving forward efficiency and raising standards in the public sector
(not least to minimise wasting tax-payers’ money and to maximise service quality), and the lessons which the
private sector can provide in this context can be useful. Second, it’s also important to understand the real and
important differences between the public and private sectors, not least that the public sector cannot choose its
clients (unlike the private sector), that it has a responsibility to serve everyone, and the fact that the weakest
and poorest members of society (which the private sector need not address) tend to be those most in need of
public sector services.

According to Vibert (2000), there are two inter-connected choice systems in society: individual market choice,
and social, political choice, and the way in which these two interact and connect is critical for public governance.
It is important to ensure that this connectivity enables both systems of choice to function and work together.
Vibert’s thesis is that the political choice system should fully adopt the mores and rules of the market choice
system, as almost wholeheartedly adopted by NPM. This implies a fundamental re-think of the relationship
between the state and the market. To date, the market has adapted much more quickly and successfully to new
trends (perhaps for obvious reasons, as the market only has one set of values and only simple needs to satisfy,
i.e. the bottom-line and shareholders). This shows how responsive the private market system is, compared to
the relatively un-responsive political (public governance) system. Thus, governments, when compared to
markets, look unresponsive, disconnected and leaden-footed. The question is, should government become like
a marketplace as a result?

The superiority of the market in the private sector depends on two preconditions (Lipsey, 2005). The first is that
the market is embedded in a wider social system that does not generate a set of morally or socially
unacceptable inequalities. In our present society, it is acceptable for the better-off to own many more cars or
TV sets but it is not acceptable for them to consume much more education or health. Even more important is
the second precondition that consumers in the private sector face, on a personal and direct level, a set of prices
and budgetary constraints which determine what they can consume. This is typically not the situation in the
public sector where budgetary constraints are determined by the ability to raise taxes, not by individual income.

Given that services like health and education are for the most part free in Europe to individual users, the price
mechanism does not easily apply at the individual citizen level.

Despite the superiority of the market mechanism in the private sector, it does not always function perfectly
even there (i.e. ‘market failure’ sets in) and, when it does provide greater benefits than dis-benefits, this normally
depends on near-perfect or at least high quality information. In terms of agency, it is also dependent on those
actors who make choices being those most effected by them, especially in budgetary terms, as well as the
ability to avoid externalities such as dis-benefits imposed on others or the environment. In the latter case there
is, of course, an on-going discourse on the extent to which the private sector should be released from the
responsibility for taking account of the externalities it imposes, whilst in the public sector it is a sine qua non
that any externalities must be directly addressed and dealt with. In fact, if the public sector does not do this, or
does not do it well, ‘state failure’ can be said to exist.

According to Lipsey (2005), extending the market and choice too far into the public sector can conflict with both
efficiency and inclusion. In terms of efficiency, this is because choice assumes a range of different high quality
options to choose between, which requires over-provision of capacity which is expensive and will increase the
total cost of the service. The question is, whether or not the extra efficiencies obtained from competition and
choice in the public sector are greater than the inefficiencies required by having plenty of slack in the system?
This is not, of course, an issue in the private sector because here the things chosen are priced, and because
individuals buying them have themselves to pay prices which directly reflects the costs of supply, so they face
individual budgetary constraints. In the public sector most things are not priced at the user interface, so the
budgetary constraint is collective not individual. Given this, it could make sense to run a market in the public
sector (often called an ‘internal market’) linking the main public sector agencies, but not extending this to
individual consumers, given that it is the agencies and not individuals who have to balance budgetary
constraints against choice of quality provision. It is also the agencies who have to make decisions and choices
on behalf of the community they service, rather than ultimately on their own behalf, whilst in the private sector
individual consumers only make choices on their own behalf, and have (normally) sufficient information
including prices to do so.

Choice extended to the individual user in the public sector can also increase inequality, given that better-off
users tend to have better access to relevant information and that they can afford the choice. Account needs to
be taken of the burden and cost of choosing, which is higher in the public compared to the private sector given
that information is often complex and difficult to interpret, and is not-mediated by price information. Unless
choice drags up the standards experienced by all, including the worst-off, there is a high risk of increasing
inequality. However, where the dis-benefits of choice are low (e.g. there are low information costs), where the
costs are relatively low (e.g. not too much spare capacity is required), and where the benefits demonstrably outweigh these costs, then choice may have an important role to play in the public sector.

According to the Electronic Data Systems Corporation (EDS, 2005), choice is a key theme of public governance transformation and the role of digital technology in this, but that it is also important not to see choice as limitless and not to see it as providing a fully personalised service for everyone. In this context, it is useful to think in terms of mass-personalisation, which, in terms of the service mix, often requires meeting individual preferences at the front end by limiting choice or, more properly, unnecessary variation at the back end of operations. For example, there is huge choice in car models and colours but this is achieved only because the total number of parts beneath the surface have been dramatically reduced. Counter intuitively choice is made possible by strict standardisation elsewhere in the design where the consumer cares far less about choice. Government could learn lessons here around standardisation and enterprise-wide design of business process and digital technology.

There is thus some argument that market-type choice in the public sector can achieve greater benefits than dis-benefits but only when carefully regulated and operated between public sector agencies each having collective responsibility, under certain conditions, and is not normally extended to individual consumers. For example, in the English health service a so-called primary care trust is responsible for commissioning care for its area, and seeks quotes from a variety of hospitals and other providers for treatments or operations that do not exceed a nationally set maximum. This type of competition between agencies can drive down costs and constrain producer power when well regulated, so that the disruptive monopoly conditions, often seen in unregulated private sector markets, do not arise. Without this market mechanism, badly-run inefficient hospitals that run up large deficits would be rewarded whilst those that produce surpluses would be punished. This also has important regional development implications as the absence of such an internal health market in England would mean that the extra health resources invested in the more deprived northern regions, designed to combat social class inequalities, would flow back southwards. The health services in the UK region of Wales, now run by the devolved Welsh Assembly, has not instituted such an internal market, with the result that its health services are now performing far less well than in England.

Overall, it seems that the market in the public sector can, under certain strict conditions, assist in maximising efficiencies and raising quality and availability, as it often does in the private sector. However, the public sector and private sector are different. The private sector caters for individual supply and demand, which is individually paid for and consumed, whilst the public sector caters for collective supply and demand which is collectively paid for and collectively as well as individually consumed.

**7.2.5 Promoting the public service ethic**

Relations between moral and political systems are not straightforward (and they are very much also culture dependent, see also the discourse on (national) cultures in Section 4.3.6). So it is incumbent on public governance to maintain and enhance the ‘public service ethic’. It is important to maintain and further develop the robust European public service ethic of impartial and fair service based on notions of the public and collective good, into one suitable for the digital society and economy. This would include recognising that government is not the same as business, even though it may be able to learn a lot from business (in fact, the learning should work both ways), and that there is a unique European way of public governance which combines both economic efficiency, as well as social cohesion and access for all. Is it possible to balance a modern public service management approach (behaving like a business in certain contexts) with a public service ethic in the best sense of that term? This will include treating users not simply and only as customers (where customer relations management systems are appropriate) but also as citizens and individual human beings, so they also need to be seen tax-payers, voters, recipients of assistance, societal stakeholders, etc. The notion of the ‘civil servant’ also needs careful incorporation into good public governance especially for the digital age. Improving back-office administration, front-office public services and overall public value goes hand in hand with improving the working lives of staff, in both cases supported by digital technology. Offering attractive physical and remunerative conditions, and family friendly policies, is essential to recruiting and retaining talented civil servants.

**7.2.6 Structure and agency**

The evidence presented in this report, including the sources cited, show the need to govern the balance between agency and structure simultaneously and to recognise and address the duality and interrelationships between:

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83 Again this is closely linked to the push for value-based governance (e.g. the Berlin Declaration) and digital rights and principles (esp. Digital Decade 2030). These developments are touched upon in the follow-up to this report.
• The governance and framework structures within which people, families and communities operate that are largely beyond their own immediate control; and
• The governance support and degrees of freedom for people to both develop and meaningfully deploy their own agency to function successfully within these structures and over which they have, at least partially, a good measure of own control (Millard et al., 2017).

This is sketched in Figure 18 illustrating the hypothetical choice area that individuals and groups have through their own agency within the constraints of prevailing structures (see also again Scharfbillig and others (2021)). The ideal public governance goal should be that the two circles increase their mutual overlap, so they coincide as closely as possible. However, it is recognised that in practice public governance and other structures (both formal and informal) take longer to adapt and reform than agency demands in response to, for example, crises, shocks, inertia, ingrained cultural practices, vested interests, and even of course corruption, cronyism and paternalism.

Figure 18. Structure versus agency

Thus, public governance needs to address both structure and agency. For example, changing the system to reduce homelessness and unemployment should go hand in hand with helping the homeless or unemployed themselves find accommodation or work. Too many social and economic policies tackle poverty and inequality by only attempting to improve the ‘agency’ of the poor through training and so-called ‘empowerment’, instead of also tackling the root causes embedded in societal structures that prevent the poor from making the most of their own efforts (Millard et al., 2017). Legal and regulatory frameworks need to be conducive to maximising individual and group agency whilst also maximises the creation of public value. These frameworks need to be re-cast to ensure fair distribution of social, economic and environmental rights and benefits that are all too often undermined. Labour market issues are paramount, for example in relation to the burgeoning gig economy, the problems of zero-hours contracts, and ensuring people have stable, simple and predictable structures so they can thrive in both their working and private lives. Policymakers should aim at specific outcomes and impacts and open up for process innovation as long as these processes remain ethical, transparent and legal (Mullainathan & Shafir, 2013).

7.3 Multi-level governance and new types of actors

Especially but not only within the EU, there is a need to develop public governance models, methods and structures to build between, and link, multiple levels and actors, ensuring that the critical local and community levels are fully incorporated which has not always been the case. For example, in an analysis of transformative social innovation for sustainable rural community development, Castro-Arceab and Vanclay (2020) formulated the concept of ‘bottom-linked governance’ as a multi-level middle ground linking bottom-up community initiatives and top-down structures. This is where actors from various political levels, geographical scales and industry sectors come together to share decision-making. Community initiatives have the potential to be more widely transformative, but to do this, they need to scale-up from the local social demand level and provoke changes in the governance system at the systemic change level. The authors identify bridging-role functions like network enabler, knowledge broker, resource broker, transparency and conflict resolution agent, and shared vision champion.

Similar approaches are being seen in local food and energy governance (see Section 4.5.3 above), both of which point to the importance of institutions as policy-structuring forces, the need to rebalance national-local powers and to develop cross-cutting plans. The role of community food and energy infrastructures is critical, but so too are middle infrastructures to reconnect production with consumption and larger markets, thereby building resilience through intermediate markets. The overall thrust of this focus is about the importance of linking local and community policies across all sectors and providing new types of place leadership, for example through the anchor institutions and middle infrastructures of community-wealth building and ‘new localism’ initiatives. (See Section 4.5.3) The growing importance of the sustainability of local and city-region systems is inevitably linked to the topic of shortening supply chains and re-shoring, especially in the context of some de-globalisation which was already evident prior to the COVID-19 pandemic of 2020-21 but also strongly accelerated by it and the

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84 See again the EU’s White Paper on European Governance (European Commission, 2001), the EU’s Committee of Regions White Paper on Multi-level Governance (Committee of the Regions, 2009) and the example on energy governance by Schmid et al (2020).
2022 Russian invasion of Ukraine. There is starting to be a movement to more directly reconnect producers with consumers, both physically in the locality from local trusted suppliers who are able to guarantee genuine and safe products, as well as virtually using digital technology. This involves building more transparent supply chains with the fair distribution of power among actors. These and similar developments help to strengthen the sustainability agenda and enhance resilience, especially during shocks and emergencies, such as the pandemic.

Accordingly, new and emerging public governance paradigms and models need to be built going forward into the future, including rebalancing the reciprocal dynamics of centralisation-decentralisation and of structure-agency, plus new/adapted legal and regulatory frameworks, cross-agency and non-government collaborations, institutional adaptation and innovation, etc. These should be designed to make the lives of local people as easy and as simple as possible so they can focus on helping to solve their own actual problems rather than grappling with a complex system that is often irrelevant to their particular context. Also as noted by Mazzucato (2013), the ‘entrepreneurial state’ needs to be pro-active and risk-taking, and not just correctors of market failure when this occurs. Governments are prime actors in tackling poverty and vulnerability, even when not being the most active or providing the most resources. They alone have the duty and the means to represent the interests of everyone in society and have the power and resources to determine the structures within which the society and economy functions. They need to work alongside and enable local actors and innovators, and often many others, through public, private, people partnerships. However, governments alone also have the responsibility for ensuring governance stability, coherence, continuity and dependability so that people, organisations and companies have a framework of relatively long-term certainties to live their lives. Balancing this requirement with the need for governance flexibility, agility and innovation is, perhaps, the most difficult public governance task (Millard, 2015a).

Policy orientations for governments in this respect have been identified by the OECD (Bulakovskiy, 2021). Policy-makers should promote the creation of enabling environments and frameworks that foster the emergence and the development of local as well as national development through both demand and supply-side measures. On the demand side, the main goal would be creating local markets which do not leak wealth (as outlined in Section 4.5) through a series of measures, including awareness campaigns, public procurement to prompt the integration of small enterprises, impact measurement tools to assess the relevance of such activities, and fiscal policies, namely tax incentives and subsidies. On the supply-side, these measures need to expand the number of actors and enhance the quality of their activities. These would include direct or indirect financing of local initiatives, the provision of infrastructures allowing local socio-economic ecosystems to flourish, such as incubators, the promotion of a process of skills development in accordance with the know-how required in a given sector, as well as the provision of the suitable tools and means needed to foster effective cooperation between all relevant actors.

It is often at the local level that it’s easier to break down governance silos and link across actors and sectors, given their smaller and shorter interaction and transaction chains and much more fine-grained knowledge, both implicit and explicit, about local conditions and contexts. This also allows the development of new ‘nexus’ combinations of sectors and issues to address local ‘wicked’ problems that are more relevant to real conditions on the ground than traditional approaches. Deploying a nexus approach is a recognition that any solution for a given problem must equally consider other issues in the nexus, for example in the water-food-energy nexus already formally established (United Nations Water 2020). Nexus thinking has two key assumptions: a systems approach, where the interactions between different nexus components are taken fully into account, not just in the short-term but critically also over the longer-term; and a decision-making approach where policies, strategies and actions are based on these interactions within the nexus as a whole. For example, a new more formalised nexus combination should be formed around poverty and economic and gender equality. There is a need to focus on ‘all-round’ approaches which treat people as whole individuals with their own dignities and identities. A poverty-vulnerability-exclusion nexus-thinking approach could be adopted to avoid focusing only on one part of the nexus without considering interconnections, risks and unintended consequences. Nexus thinking coupled with other approaches like social innovation and community wealth building focuses on real life on-the-ground linkages, synergies and trade-offs to balance different interests and outcomes. Possible roles of stakeholders from larger territories (e.g. regional, national, EU and international administrative units) remain to be investigated in such local set ups - so that the players of the embedding regimes participate in co-creation in the most sensible way.

7.4 Breaking down silos

A recurring theme as public governance paradigms change chronologically is the attempt to break-down the silos (and to ensure interoperability) between governance levels, between different actors and within a given governance jurisdiction. As outlined in Section 6, this is necessary both to increase the number of the public
values of good governance and move the services that create public value from level 1, which focus largely on only individual benefits, to level 2 outcomes focusing on collective societal benefits that can more successfully address societal challenges. The latter requires user-centric and personalised services that are networked, joined-up and integrated, first possible from about 2000, although success was extremely limited until some benefits were achieved in the context of the politics and policies underpinning the open governance paradigm. More significant success in breaking down silos and achieving level 2 more societal-wide public value first began, however, in the context of the changed politics and policies from about 2015 of the sustainability and especially the locality-community paradigms. Although digital technology innovations play a necessary role in these changes, the sufficient conditions are only forthcoming as the politics and policies change. Thus, the silo problem remains today as one of the biggest challenges to public value creation and is not directly related to further advances in digital technology. The policies and mindsets needed to move towards the human-centric focus on real people's lives, and on the 'emotional intelligence' promised by the current speculation around Generation 5.0 technology in the context of the 'digital sanitisation' involved in people and machines working together, will possibly be more decisive in realising significant levels 2 and 3 public value.

7.5 Framework conditions

As mentioned in Section 6.2.3 above, Table 4 is constructed directly from the evidence in this report. It shows the nine public governance paradigms in rows arranged chronologically, plus summarises in columns A to I of important characteristics of each. This allows comparisons, both between paradigms and chronologically, to be made. Column I summaries each public governance paradigm’s framework conditions and influencing factors based on the evidence in this report. Unpicking the narrative tells the following story:

1. **Traditional public (Weberian) administrative governance (from before 1945):** The Weberian administrative governance paradigm continued from the pre-war tradition, coupled with initial austerity caused by wartime destruction and debt. However, many Western European countries were receiving US Marshall Aid and experiencing increasing welfare state demands from their population after the privatisations of the war. Reconstruction coupled with a massive baby-boom, together with Keynesian expansionist, interventionist and 'big' government policies, led to the start of a long period of economic growth until the 1970s. This changed the Weberian paradigm towards more avowedly social policies but without changing the fundamentals of governance orthodoxy. However, new multi-lateral institutions were being established, including the United Nations (UN) in 1945 and the European Economic Community (EEC, as one of the initial communities that later were integrated as a pillar into the EU) in 1957 with 6 founding member countries, to be followed by 3 more in 1973 and another 3 by 1986. Digital technology, although progressing with factory and consumer electronics sectors, hardly touched the public sector at this time.

2. **New Public Management (NPM) and market-based governance (from about 1980):** The massive supply-side energy shocks and the soaring inflation of the 1970s caused by the formation of the Organization of the Petroleum Exporting Countries (OPEC) and other global realignments such as large scale decolonisation, opened the door to new monetarist economic thinking, led by Milton Friedman's Chicago School supply-side economics (see also Section 3.2), and enthusiastically implemented by a strong right-of-centre Reagan- Thatcher political alliance. Public governance orthodoxy changed dramatically in response moving towards a largely hands-off 'small' government approach with significant privatisation, outsourcing and attempts to bring the fundamentals of market competition into the public sector with a very strong focus on individualism and even negations that there was such a thing as 'society'. The breakup of the Soviet Union in 1989-90 and the formation of many new countries in Eastern Europe added to the notion that market capitalism was the only way forward and that the 'end of history' had taken place. The EEC transformed into the EU 1993 after which 10 new Eastern European countries became members in 2004. During the 1980s and early 1990s digital technology continued its steady impacts on society but remained largely untouched by the public sector apart from its increasing encroachment into both public and private offices, including large scale mainframe computers and very early personal computers, though these were not widespread. Although NPM is still an important approach to public governance today which quite regularly continues to have influence and a role to play, its design around strict but simple premises and criteria that do not take account of the complexity of the issues and the myriad of contextual conditions involved in society and the governance of it, has seen its influence gradually fade.
3. **Neo-Weberian State governance (from the late 1990s):** In spite of efficiency achievements, the tensions resulting from NPM’s narrow market focus spurred reaction and some return to ‘big’ government and traditional Weberian approaches in many countries, but with even greater, though still cautious, public interventionism. A new left-of-centre Clinton-Blair political alliance promulgated Anthony Giddens’ ‘third-way’ social democratic politics attempting to find a ‘sweet-spot’ between the ‘big’ and ‘small’ state by reconciling right-wing and left-wing public governance that synthesised centre-right economic policies with centre-left social policies (Giddens, 1998). This was soon accelerated in the early 2000s by Generation 2.0 government and digital technologies, especially early social media, the start of large-scale data sharing and ‘business process re-engineering’ in back-offices, mirrored by an explosion of widespread multi-user and multi-contributor activity on the new internet and the World Wide Web.

4. **Networked governance (from about 2000):** Generation 2.0 government and digital technology optimism gave rise to ideas about the ‘network society’ in which all actors are interconnected and power and authority starts to be shared more widely, all of which was thought to contribute significantly to solving newly recognised ‘wicked’ and cross-boundary problems, recently documented in the UN’s Millennium Development Goals (2000-2015) as a predecessor to today’s Sustainable Development Goals (see also below). Techno-optimism, by no means all unfounded, started to move politics a little to the right, also spurred by the 10 new EU members from Eastern Europe. This resulted in some renewed societal individualism alongside ‘horizontalism’ that was again somewhat anti-hierarchy but not outright competitive, so the ‘third-way’ lived on a bit longer as networking became fully enabled by Generation 2.0. Economies boomed, typically led by ‘big-bang’ financial markets coupled with very strong globalisation and very long supply chains looking for the cheapest locations to do business around the globe increasingly enabled by the technology. The 2000 ‘millennium bug’ and ‘dotcom crash’ were only minor aberrations soon forgotten, whilst the 2001 9/11 terror attacks on New York spurred even greater technology innovation. In particular, it dramatically changed the discussion away from the rights of individuals and companies to keep their online activities away from any government scrutiny, ostensibly to uphold democracy and free-speech, towards intensive government surveillance that aimed to gather enough intelligence to counter further terror threats (Zuboff, 2019).

5. **Public value governance (from about 2000):** Networked governance developed in parallel alongside public value governance, both as further reactions against NPM but also against the relative timidity of Neo-Weberianism. The two strands were not incompatible and were to some extent mutually supportive as both relied on Generation 2.0 technology and the huge possibilities this and later generations offered. However, networked governance followed a more economic-technocratic mindset whilst public value governance used these opportunities to focus more on social and societal problem-solving through a better understanding of public value. Thus, public value governance leads to relatively ‘big’ government attempting to create and manage public value for all actors seen as necessary to address ‘wicked’ societal problems in the context of accelerating economic growth and globalisation. The networked-public value duopoly is a good example where both the technical opportunities and the wider contextual framework conditions were similar but which were taken in different directions by alternative views of society and the consequent governance philosophies the two views entailed. After 2000, such divergence and multiplications of public governance paradigms became the norm, largely enabled by successive technology generations as well as by an increasingly multi-polar world and accelerating globalisation. Both Europe and the world become more politically complex. Also, from about 2000, the idea that government could be the prime mover in establishing public value came to the fore. The move to networked governance, and especially to public value governance, at this time marks the break between the idea that government is only about ensuring that the administration is efficient and effective in providing specific (individual) services but, additionally, also concerns broader notions of (collective) public value. It is probably no coincidence that the 2000 cleavage date coincided with the significant jump from Generation 1.0 to Generation 2.0 (digital) technology.

6. **Lean and austerity governance (from 2008):** The 2007-8 global financial crisis created a massive shock that led to highly complex political, economic, managerial, cohesion and democratic challenges, both in Europe and globally, leading to a period of governance leaniness and austerity in which monetarist and Friedmanite values and policies returned. However, the important difference between early NPM and lean governance was that the latter was simultaneously enabled by another
significant step-change in digital technology from Generation 2.0 to Generation 3.0 as well as in being a reaction to the massive global financial crisis of 2007-8, neither of which affected early NPM. Paradoxically, the financial crisis (2007-8) was itself caused, alongside poor public policies, inadequate risk assessment and lack of regulation, by technology Generations 1.0 and 2.0, the early machine-machine interactivity of which enabled financial transactions to take place in the absence of any human oversight. This ‘Big Bang’ digital automation of markets enabled a huge increase in financial transactions and increasing amounts of stocks, shares — and derivatives of them — to be traded virtually and instantaneously by computers rather than by humans.

7. **Open governance (from about 2008)**: The lean and austerity measures post 2008 initially constrained the opening up of governance but its opportunities relatively quickly led to a resumption of strong economic growth. However, this also saw dramatically increasing inequalities as globalisation, outsourcing and long supply-chains continued to accelerate in importance, although this was often thought of as a price worth paying to come out of austerity and get ‘economies back on track’. A pivotal moment was the new President Obama’s ‘open government directive’ in early 2009 and his launch of the highly successful and still active international Open Government Partnership based on the tripartite system of transparency, public engagement (participation) and collaboration. At the same time, however, these opportunities and surging economic growth had another downside in galloping climate change and bio-diversity loss, which alongside increases in corruption, energy price fluctuation, job shortages, health and education systems under pressure, rapidly changing demographics (ageing, migration, urbanisation), and governance deficits at all levels, led to growing dissatisfaction and political polarisation in many countries. As a result, public services were put under severe strain and trust was being lost in governments’ ability to collect taxes and provide good regulation. Again, this led to new roles for government and a revival of the ‘big’ versus ‘small’ government debate. This is another example where the same technological – in this case Generation 3.0 technologies and even more important Generation 4.0 technologies from about 2015 – and the same wider contextual framework conditions, simultaneously give rise both to lean governance and to open governance as two radically different philosophical and thereby political views of society, each leading in different public governance directions.

8. **Sustainability governance (from about 2015)**: Sustainability governance is part of the overall open governance movement that included numerous enabling public governance models related to platforms, participation, inclusion and co-creation, as well as behavioural and cultural change. It was massively propelled in 2015 (to follow-up on the Millennium Development Goals) by the twin UN agreements related to climate change and the Sustainable Development Goals (SDGs) that launched the global 2030 Agenda, both of which had corresponding and closely aligned EU initiatives. For the first time in any almost complete global agreement, the SDGs recognised that sustainability is about sustainable societies and economies as well as sustainable environments, and that also necessary is a strong and visible public governance pillar to address how to actually deliver the goals. Sustainability governance is about “meeting the needs of the present without compromising the needs of the ability of future generations to meet their own needs” (Brundtland Commission Report, 1987), and in particular gives rise to various circular economy and nature-based solution public governance models.

9. **Locality and community governance (from about 2015)**: Locality and community governance is also enabled by the overall open governance movement. It both relates to, and advocates for, a new localism agenda which recognises that most if not all societal challenges and ‘wicked problems can only be successfully addressed at local level close to real peoples’ real everyday lives and where they are centrally involved in designing, implementing and monitoring initiatives. New localism also recognises the necessity of close collaboration with both national and international governance levels in a strengthening of multi-level governance networks and relationships. As with sustainability governance, locality and community governance relies on the numerous enabling open public governance models related to platforms, participation, inclusion and co-creation, as well as behavioural and cultural change but with the sub-national level in focus. This public governance paradigm is also spurred by new devolved powers in many countries, the massive rise in smart city initiatives, new urban and city-region agendas, a new focus on rural areas and rural-urban relationships, cities and neighbourhoods gaining more power and recognition both formally and
informally, and a large increase in city cooperation networks. Closely related to digital transformation, with the ‘Living in EU’ initiative providing a leading European example.

About the year 2015, within and boosting the open, sustainability and locality/community public governance paradigms, there was another significant shift focused on breaking down silos as part of a joined-up whole-of-government approach to public governance. This is illustrated in Figure 4, but only first starts to be possible and taken seriously after about 2015 in the context of digital technology Generation 4.0. Added pressure and incentives for joined-up governance was likely also due to the rise of ‘post-truth’ and ‘populism’ in the mid-2010s in a number of countries, particularly as a reaction to globalisation and dramatically increasing inequality within European and other countries. The need for governance to become both more nimble as well as stable and reliable in tackling these new ‘wicked’ problems was even more acute, but the jury is still out as to whether or not it will succeed.

From the above narrative, supplemented by the evidence presented above and especially in Sections 5 and 6, it is clear that political, policy, socio-economic cultural conditions, especially including societal-wide shocks and crises, are the strongest determinants of public governance developments, whilst digital technology is best seen as a necessary but not always sufficient tool in this process. Nonetheless, it is certainly clear that most of the developments in public governance are dependent on digital data and technology in one way or another, and indeed its role changes and magnifies from merely supportive during Generation 1.0, to enabling during Generation 2.0, then to driving in Generation 3.0 and finally to decisive in Generation 4.0. However, the generation, sharing and use of digital data and technology itself is largely dependent on these same political and socio-economic conditions with which it has a mutually supportive, reciprocal and complex relationship so that it is not always possible, or indeed wise, to ascribe clear cause and effect roles to one or the other. This is also, of course, the case with the relationship between public governance, and digital data and technology.

According to the literature review carried out by Barcevičius et al (2019), economic drivers on the demand side feature prominently for successful digital government transformation as the potential efficiency gains are of high importance to the public sector and to the taxpayers. On the supply side, the rapid technological developments and diffusion of electronic devices are identified as important drivers, even though they are not considered sufficient to transform governments on their own. Political, social and cultural factors receive a lot of attention, with a particular focus on the expectations of citizens for more transparency and participation in policy-making. Barcevičius et al (2019) also found that the barriers and preconditions for successful digital government transformation are complex and often not related to digital technology. In fact, the introduction of new technologies by governments is always mediated by organisational, institutional, legal, ethical and social barriers. Digital technologies may transform virtually every process, system and structure of government, resulting in redefinition of responsibilities and work routines of public officials. Nevertheless, they also create issues and trade-offs that merit careful consideration and preparation before a full-blown change is introduced.

Overall, it is evident that all the successive public governance paradigms align to a greater or lesser extent with longer-term political and societal developments and shocks, as well as with digital technology developments, especially around pivotal cleavage dates:

- **The early 1990s**: the early beginnings of digital Generation 1.0 technology use in public governance, boosting NPM and then helping to enable Neo-Weberian approaches.
- **About 2000**: the idea that government could be the prime mover in proactively establishing public value in wider society and not just use digital technology to improve the administrative machinery in the back-office. It is the moment when digital technology first began to change the shape and workings of public governance, as opposed simply to being used by it. And, it is probably no coincidence that the 2000 cleavage date coincided with the significant jump from Generation 1.0 to Generation 2.0 technology enabling both networked and public value governance as two different philosophies of society arising from the same opportunities.
- **From 2008**: the financial crisis, itself triggered by Generations 1.0 and 2.0 technology, gave simultaneous rise to two quite different public governance paths: lean governance on the one hand and, on the other hand, a new plethora of governance paradigms and models characterised by open governance, sustainability governance and locality/community governance. Both of these paths were significantly enabled by new Generation 3.0 technology but based on quite different philosophies of society.

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85  https://living-in.eu
86  The scenery from 2020 onward, including an elaboration on COVID-related changes, geopolitical dynamics, etc. is will be analysed in more detail in the follow-up report.
8 Conclusions

It is noteworthy that the types of public governance models and paradigms change in character and increase in variety over time. Chronologically, they progress from being mainly process and organisationally focused to a clear public value focus that is directly conceived in order to address important societal challenges. This switch around the year 2000 coincides exactly with the big uptake by public governance of digital technology, starting with Generation 2.0 interactive technology, acting as a highly significant enabler and driver. This seems also to be due to the huge variety of ways different countries and authorities react to their churning political, socio-economic, cultural and historical situations – even in a Europe that has had great success over at least the 15 years in coordinating and learning across countries, for example through the EU’s eGovernment Action Plans. The public governance paradigms sketched in Figure 2 build on each other, layer by layer, so this is not a linear progression where one replaces the other but a sedimentation and co-evolution. According to Aristovnik et al (2022) “Due to the constantly changing environment, public governance models have transformed many times, creating differences in public governance practices among public administration institutions, with combinations of contradictory structures and principles that coexist.” Differences are also often seen between central and local governments in the same country, underlining the importance of looking at multi-level governance – while remaining conscious of cultural differences.

8.1 Summary conclusions on public governance

- Political, policy, socio-economic, environmental, historical and cultural factors, especially societal-wide and often international shocks and crises, are the strongest influences on public governance developments.
- Public governance paradigms accumulate layer upon layer resulting in a form of sedimentation over time. Each of the nine paradigms identified (each with one or more models) continue to have relevance today, although the novel and emerging paradigms tend now to be more dominant but perhaps only because collectively they are more numerous.
- There is not a linear progression where one paradigm replaces the other. According to Aristovnik et al (2022) “Due to the constantly changing environment, public governance models have transformed many times, creating differences in public governance practices among public administration institutions, with combinations of contradictory structures and principles that coexist.” Differences can also be seen between central and local governments in the same country (e.g. Slovenia), underlining the importance of re-visiting multi-level governance, and the elaborate on possible evolutions of the original approach – especially as applied in the EU (within and across countries).
- It’s the actual ‘mix that matters’ (Bevir, 2013) The mix of paradigms and models at a specific place and time depends on the context of global, national and local politics, as well as history, culture, socio-economics, environmental factors and the political choices made. This mix may or may not be a successful arrangement, so governing this mix is a crucial issue where the deployment of digital technology is necessary.
- Co-creation, and thus generative governance paradigms, seem imminent. Both tacit and codified knowledge are a powerful combination for learning, identifying good practices of successful transformations, and thereby for widespread co-creation, replication, scaling and knowledge sharing. At least up to 2020 we only see promising examples without a truly systemic approach at EU or national levels. It is not yet clear now a balanced approach, which applies representative
methodologies to some societal challenges while investing in more participatory approaches in others, might look like.

- The most desirable re-balancing of power and responsibilities for future-proof public governance is yet to be found. This will also require a cultural change within public institutions that tend to be risk averse. These risks are often seen in the short term (for example, but not only, connected to election cycles) but without considering the longer-term risks of not rebalancing power relations, and experimenting with new approaches to public governance.

8.2 Summary conclusions on digital technology and public governance

- Everything is inevitably influenced by digital technology, and it is better to explicitly account for that, than ignoring digital.
- Yet, digital technology is best seen as a necessary but not always sufficient tool: its deployment is always mediated by organisational, institutional, legal, ethical and social conditions, as well as challenges, such as digital exclusion.
- Considering the many and diverse interrelationships between all actors of public governance (going all the way back to the complexities as opened in the argument about networked governance), digital data and technologies might be considered at the only possible way to reach transparency, accountability and inclusiveness.
- The complex roles and challenges of digital technology and human-technology relations: how are peoples’ quality of life, values and ethics impacted by increasingly omnipresent machines, burgeoning surveillance by both public and private sectors (see, for example, Zuboff (2019)), the ‘post-truth’ society, ‘black-box’, impenetrable and inevitably biased AI, etc.
- Chronologically, the types of public governance paradigm and public value addressed change in character and increase in variety over time. Up to 2000 – a small number: mainly focused on administration and governance processes. 2000-2019 – a larger number: mainly focused on specific societal challenges. This seems to coincide with Generation 2.0 interactive technology acting as a highly significant enabler as well as changing politics and policies. From 2020 – a step change: mainly influenced by a series of turbulences that challenged previously established relationships and had major impacts on the geo-political landscape.
- These changes seem to be due to (i) the huge variety of ways different countries and authorities react to their churning socio-economic, environmental, cultural and historical situations and the influence of external factors and crises; and (ii) increasingly diverse possibilities enabled by innovative digital technology.
- To cope with the challenges of our times, we thus need public services that are digital-ready and interoperable by design – across borders, across sectors, and across different levels of administration.
- We are still in an era of understanding the best (context dependent) ways of using digital data and technologies for the public good, and a rich set of diverse experiments still yet to be completed or entirely conducted to complete an entire wave of digital transitions of public governance.

8.3 Next steps

As mentioned in Section 1 above, the objective of this report is to provide a detailed description and analysis of developments in public governance models and paradigms, taking account of the impact of digital technology. In this sense, the document at hand should already provide the baseline and some inspirations for desirable futures. The next step, building on this report and an open workshop of experts and interested individuals, is to outline potential future scenarios for new governance models supporting policy-making and the provision of innovative, people-centric and inclusive public services, and to recommend future research questions for the JRC as the science and knowledge service of the European Commission.

This is daunting but highly important task given the circumstances. In contrast to the 2007-2008 financial crisis characterised by a massive demand slump due to dramatically reduced consumer spending power, COVID-19 hitting Europe in early 2020 has caused a severe supply-side recession. This is itself being turbo-charged by the invasion of Ukraine during 2022, depositing a thick layer of geo-political tectonic change on top. Underlying all this is the ‘mother-of-all’ crises that sees our natural environment stretched to near collapse, thereby putting the very survival of our species in peril. All this has disrupted both global and local supply chains as much of

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87 This work did not elaborate the roles of negotiation theory, especially in multi-lateral contexts. Follow-up activities might take this as one starting point.
the workforce becomes used to virtual, remote and hybrid working, restrictions on the movement of people and goods with transport and logistics put under severe pressure, at the same time as demand for many goods and services mushrooms.

The economic contraction caused by the COVID-19 pandemic in 2020-21 left a heavy health and human toll, shrank the Eurozone economy by a record 12.1% and wiped out more than decade of expansion during the largest economic shock the world has experienced in decades (Elliot, 2022). A further sharp tightening of the economic screw began in early 2022 with the Russian invasion of Ukraine. The International Monetary Fund (IMF) drastically downgraded its growth forecasts, predicting further global economic fragmentation, rising debt and social unrest (IMF, 2002). The World Bank stated a “human catastrophe loomed” with an estimated unprecedented 37% rise in food prices, caused by war-related disruption to supplies, pushing millions into poverty, increasing malnutrition, and reducing funding for education and healthcare for the least well-off (BBC, 2022). By April 2022, more than five million people had fled Ukraine in two months, with more likely to follow, exacerbating an international migration emergency that extends from Afghanistan to the Sahel (Aljazeera, 2022). In drought-hit east Africa, the World Food Programme says 20 million people face starvation during 2022. The war in Ukraine did not create the drought, but the UN warns it could hurt efforts to reduce global heating, thereby triggering further displacement and forced migration (Miller, 2022).

It is clear that the 21st Century has ushered in a new age of more or less continuous crisis and disruption and that these are not times for business-as-usual. It is time for rethinking many of our shibboleths, both sustainable development and resilience, how we re-structure our economies and politics, as well as how we work, play and live on the earth’s surface. These are huge issues, intimately inter-related, and in which digital data and technology clearly play essential roles.

Referring to Figure 2, a number of new and emerging public governance paradigms are suggested in this context. However, being mainly in the future this is tentative and speculative, but tracing very recent developments and commentary it is possible to suggest for testing some illustrative possibilities which are likely to be strongly interrelated and that arise from, or at least are significantly accelerated by, turbulence and uncertainty. Although these acute societal challenges initially kickoff in the aftermath of the 2007-8 economic and financial crisis, they are post-2019 now much more acute so give rise to three suggested public governance paradigms: governing turbulence, changing geographies and people-planet systems.
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**List of key abbreviations**

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<tr>
<td>OFN</td>
<td>Open Food Network</td>
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<tr>
<td>PA</td>
<td>Public Administration</td>
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<td>PM</td>
<td>Participatory Model</td>
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<td>EC</td>
<td>European Commission</td>
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<td>EU</td>
<td>European Union</td>
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<td>AI</td>
<td>Artificial intelligence</td>
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<td>IoT</td>
<td>Internet of Things</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>CSA</td>
<td>Community-supported agriculture</td>
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<td>MYC</td>
<td>Measure your City</td>
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<td>CDG</td>
<td>Citizen Generated Data</td>
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<td>DT</td>
<td>Digital Transformation</td>
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<td>ICT</td>
<td>Information and communication technologies</td>
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<td>SCIC</td>
<td>Société coopérative d'intérêt collectif</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OG</td>
<td>Open Government</td>
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<td>DGT</td>
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