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Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3)

*ACTION (Sweden)
Case Study Report*

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Abstract

ACTION (Assisting Carers using Telematics Interventions to meet Older Person's Needs) is a self-care and family care support service provided through ICT installed at patients' homes. The main target of the service are older carers living with aged spouses who require help with the activities of daily living as a consequence of chronic illness. The ACTION service consists of 4 integrated components: multimedia educational programmes, a call centre with video-telephony, a computer with videophone placed in the older person's home and training and supervision programmes. ACTION is currently running as a mainstream service in the Borås municipality in Western Sweden, where it was first piloted and implemented in 1997, with around 100 users (status July 2014). Back in 2011, around 350 people were using the service as there were pilot projects in twenty municipalities across Sweden.

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Preface

The Strategic Intelligence Monitor on Personal Health Systems (SIMPHS) research started in 2009 with the analysis of the market for Remote Patient Monitoring and Treatment (RMT) within Personal Health Systems (PHS). This approach was complemented in a second phase (SIMPHS2) with the analysis of the demand side, focusing on needs, demands and experiences made with PHS by healthcare producing units (e.g. hospitals, primary care centres), healthcare professionals, healthcare authorities and patients amongst others.

Building on the lessons learnt from SIMPHS2 as well as on the European Innovation Partnership on Active and Healthy Ageing initiative, SIMPHS3 aims to explore the factors that lead to successful deployment of integrated care and independent living, and define best operational practices and guidelines for further deployment in Europe. This case study report is one of a series of case studies developed to achieve these objectives.

The outcomes of SIMPHS2 are presented in a series of public reports discussing the role of governance, innovation and impact assessment in enabling integrated care deployment. In addition, through the qualitative analysis of 27 Telehealth, Telecare and Integrated Care projects implemented across 20 regions in eight European countries investigated in SIMPHS2, eight facilitators have been identified, based on Suter's ten key principles for successful health systems integration.

The eight main facilitators identified among these as necessary for successful deployment and adoption of telehealth, telecare and integrated care in European regions are:

- Reorganisation of services
- Patient focus
- Governance mechanisms
- Interoperable information systems
- Policy commitment,
- Engaged professionals
- National investments and funding programmes, and
- Incentives and financing.

These eight facilitators have guided the analysis of the cases studied in SIMPHS3 and a graphical representation with arrows whose length represents the relative importance of each facilitator is presented in each case study.

In addition to the above facilitators analysed in each case report, a specific section is dedicated to the analysis of care integration. It should be noted that the definition of vertical and horizontal integration used in this research is taken from the scientific literature in the field of integrated care¹ and differs from the one mentioned in the European Innovation Partnership on Active and Healthy Ageing Strategic Implementation Plan². We define horizontal integration as the situation where similar organisations/units at the same level join together (e.g. two hospitals) and vertical integration as the combination of different organizations/units at different level (e.g. hospital, primary care and social care).

¹ Kodner, D. (2009). All together now A conceptual Exploration of Integrated Care.

² http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/steering-group/operational_plan.pdf (page 27)

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CASE OUTLOOK

ACTION (Assisting Carers using Telematics Interventions to meet Older Persons' Needs) is a self-care and family care support service provided through ICT installed at patients' homes. The main target of the service are older carers living with aged spouses who require help with the activities of daily living as a consequence of chronic illness. The ACTION service consists of 4 integrated components: multimedia educational programmes, a call centre with video-telephony, a computer with videophone placed in the older person's home and training and supervision programmes. ACTION is currently running as a mainstream service in the Borås municipality in Western Sweden, where it was first piloted and implemented in 1997, with around 100 users (status July 2014). Back in 2011 around 350 people were using the service as there were pilot projects in twenty municipalities across Sweden.

The key actor in the ACTION service is ACTION Caring Sweden, a spin-off research and development company set up by the University College of Borås, the coordinator of the three-year EU-funded project within the EC Fourth Framework Programme (FP4) that started the research and development of ACTION in 1997.

The ACTION service does not seem to have any component or dimension that can be defined as fostering or allowing integrated care. Although the service is currently offered within the existing support services for older people in the municipality of Borås, no clear arrangements for care coordination seems to be in place. Nonetheless, there is evidence of the positive impact of the service on informal and formal carers and on the cost of providing care and health services. This positive evidence, together with other positive aspects of the service such as the experience of the team behind it, the focus on users and their involvement in its design or the innovative appeal of the use of technology, has not been sufficient to overcome challenges and barriers that the service has encountered in its further deployment and scaling up. These are mostly of two types, financial and organisational. Of the latter, the existence of a cheaper alternative and weaknesses in the business plan of the ACTION service seems to be the most relevant. Of the former, the ACTION service is mostly isolated from the other care services provided by the municipalities, and therefore running "on its own". This reduced its chances of continuation in municipalities where the service was being piloted once its assigned funds, which came from specific Swedish national programmes, dried up.



1. BACKGROUND

1.1 Sweden Social welfare and health care services

The Swedish health care system provides universal coverage, though around 4% of the Swedish population have supplementary private voluntary health insurance (PHI). The basic rationale underlying the contracting of a private health insurance is faster access to specialised ambulatory serviced and elective treatment.

In terms of service provision, the publicly-financed health system covers public health and preventive service, primary care, in-patient and out-patient specialised care, prescription of drugs, emergency, mental health, home and long-term care, rehabilitation services and disability support, dental care for children and part of adult dental care. The responsibility for service organisation and financing rests with 21 county councils and the responsibility for elderly and disabled care lies with the 290 Swedish municipalities.

The Health and Medical Services Act sets out the respective responsibilities of county councils and municipalities for health and medical care in Sweden. The Act is designed to give county councils and municipalities considerable freedom with regard to the organisation of their health and medical services.

Social services in each municipality have the main responsibility for providing care for the elderly. This is their duty under the Social Services Act. Municipalities are entitled to design health and social care services that are adapted to local conditions. This Act states that elderly people must be able to live and lead independent lives in safe conditions and have an active and meaningful existence in the company of others. Municipalities are required to establish special forms of housing for service and care of elderly people in need of special support.

The fact that responsibility for social services lies with the Municipalities means that the support offered to elderly people may vary across the country. What is common to service provision across the 21 counties and 290 municipalities, however, is the fulfilment of the principles of human dignity, need and solidarity, and the cost-effectiveness of care provision.

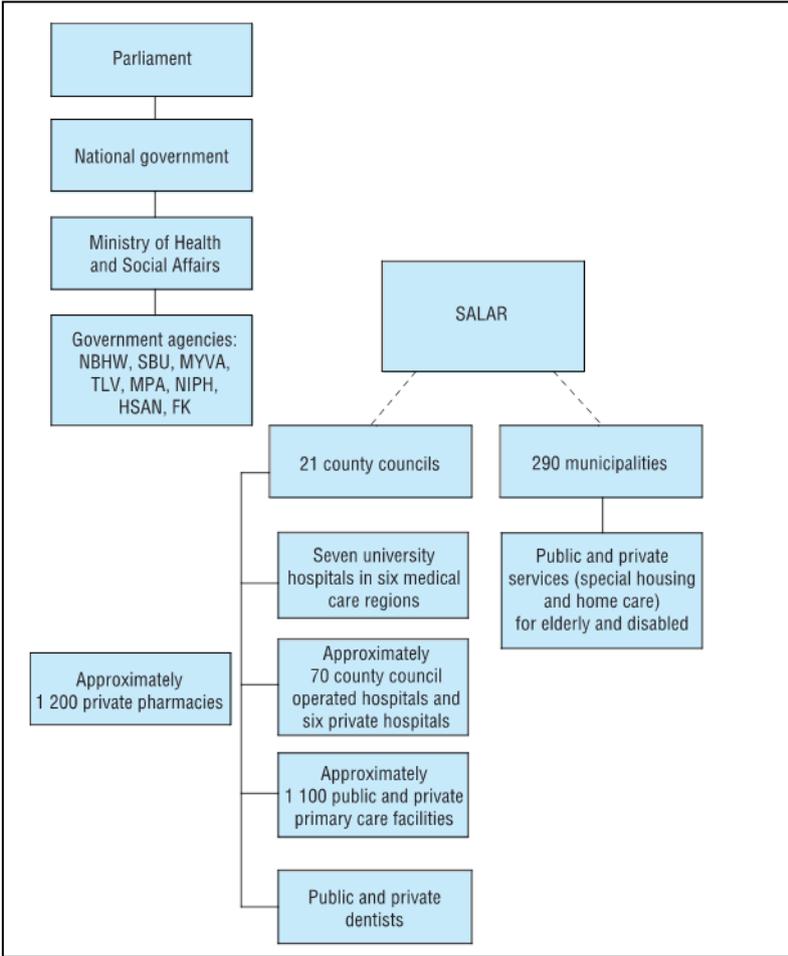
Next to the wide remit of the county councils in terms of organisation and service provision, and of the municipalities in the area of care for the elderly and disabled, the Ministry of Health and Social Affairs is responsible for overall health and health policy at the state level. The Ministry works closely with eight national government agencies that are directly involved in the areas of health, health care and public health in support of the strong local self-government. The National Board of Health and Welfare is the most important government agency in this respect, supervising all health care staff, developing norms and standards for medical care and ensuring that these are respected. It is also in charge of dissemination of information, data collection and analysis. Other agencies comprise the Health and Social Care Inspectorate that handles complaints and potential malpractice and the Swedish Agency for Health and Care Services Analysis that makes health care-related information available to citizens. The quality of health care is ensured by the National Board of Health and Social Welfare, together with the Public Health Agency of Sweden and the Dental and Pharmaceuticals Benefits Agency through the setting up of systematic reviews on evidence and guidance for priority setting, which in turn serve as support for the programmes implemented at county level.

The individual county councils and the municipalities determine the level of cost-sharing for each health visit and bed-day, but a ceiling for out-of-pocket spending is determined nationally to ensure that individuals do not have to pay more than a fixed annual amount. A separate maximum ceiling is also determined for pharmaceuticals. About 82% of all expenditures on health in Sweden are publicly financed: 72% is borne by county councils, 8% by municipalities and 2% by the central state government. The county councils and municipalities levy proportional income taxes that serve

to cover most of the health care service expenses, together with subsidies and state grants financed by national income taxes and indirect taxes.

GPs are often the first point of contact for adults, but primary care has no formal gatekeeper role. Instead, team-based primary care is the most common practice in which GPs, nurses, midwives, physiotherapists, psychologists and gynaecologists provide treatment and prevention services. Sweden has more than 1,100 primary care practices spread around the country, of which two thirds are publicly owned. For both private and public practices a combination of fixed payment (capitation), fee-for-service and performance-based payments related to the achievement of targets apply.

Figure 1- Overview of the Swedish health system



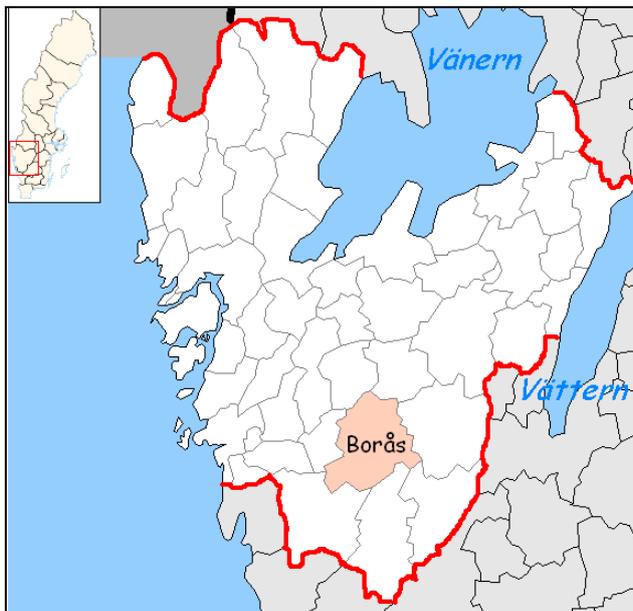
Source: Anell et al. (2012)

1.2 Borås Municipality

Currently, the ACTION service is only deployed in the Borås Municipality, which belongs to the Västra Götaland County in western Sweden³ and comprises 22 localities. Borås is the largest municipality with around 67,000 inhabitants. It has a population of almost 106,000 inhabitants and a population density of 110 inhabitants per km², a figure significantly higher than the Swedish average of 21.5 inhabitants/km².

³ Since the 1990s the whole municipality, including rural areas, use the name of Borås stad or City of Borås whenever possible.

Figure 2- Map of Borås Municipality



1.3 The ACTION case

ACTION (Assisting Carers using Telematics Interventions to meet Older Person's Needs) is a self-care and family care support service provided through ICT installed at patients' homes. The main aim of the service is to maintain or enhance the autonomy, independence and quality of life of frail older people and their family carers through two complementary paths and actions:

- The joint involvement of the carer and the frail older people's relatives in learning the technology-based system, together with the building of informal support networks with other people in similar situations.
- By increasing the level of knowledge and skills of the carers in relation to their carer situation through the provision of adequate and accessible information and multimedia educational programmes.

The ACTION service pursues the following objectives:

For the frail older people, it helps them:

- to improve their knowledge and feel better prepared to manage their own care
- to increase their control over their own situation
- to reduce their risk of being isolated

For carers, it helps them:

- To gain more knowledge and feel better prepared to care,
- to have more control over their caring situation,
- to maintain or improve their relationship with the one they care for
- to reduce the risk of being lonely and isolated

The main target of the service are older carers living with aged spouses who require help with the activities of daily living as a consequence of chronic illness. In addition, it also targets carers of working age (mostly daughters) who provide help and regular support to an elderly frail individual.

ACTION is run by the company ACTION Caring, a spin-off research and development company of the University College of Borås (Sweden), which was the coordinator of the three-year EU-funded project within the EC Fourth Framework that started the research and development of ACTION in 1997. EVRY Healthcare Solutions is the business partner for the service delivery.

The ACTION service consists of 4 integrated components:

1. **Multimedia educational programmes.** These programmes have been developed with a user-centred and participatory approach. They are based on the existing literature complemented with the views and opinions of elderly people and their carers, and they are continuously refined with feedback from the relevant stakeholders. Some examples are: caring skills in daily life; planning ahead; respite care and online games for leisure.
2. **ACTION call centre with video-telephony.** It is used to inform, educate and support older people and their family carers. Staff at this centre help to create informal support networks amongst ACTION users.
3. **ACTION computer with videophone** (placed in the older person's home). It has 3 main functions; first it allows users to access the multimedia educational programmes. Second, families can visually contact other participant families. And finally, users can contact the care practitioners at the ACTION call centre.
4. **Training and supervision.** There are two types of training integrated in the ACTION service; training directed at the staff at the ACTION centre and training focused on the end-users (older people and their carers) of the service.
 - Training for staff: consists of a week-long introduction with two follow-up sessions each lasting two days, the first one taking place after six months and the second one 18 months after the start of the service. It is complemented with non-face-to-face (via videophone) monthly tutorials. This training has two objectives: first, to provide the staff with the skills to inform, train and support older people and their carers and second, to make these staff members able to train other staff and end-users.
 - Training for end-users: Families are invited to take part in an initial education programme to learn how to use the ACTION service, as the majority of users are predominantly computer novices.

ACTION is currently running as a mainstream service in the Borås municipality in Western Sweden with around 100 users (status July 2014). Back in 2011 around 350 people were using the service as there were pilot projects in twenty municipalities across Sweden. However, once the projects finished and no more project funding was available, municipalities decided not to continue with the service.

2. ANALYSIS

2.1 Dimensions of integrated care

The ACTION service does not seem to have any component or dimension that can be defined as fostering or allowing integrated care. The service is offered within the existing support services for older people in the municipality of Borås but no clear arrangements for care coordination seems to be in place. Indeed, each municipality where the service was piloted decided which professionals would access the ACTION system. For instance, the access of needs assessors, key professionals in coordinating the care of individuals, to the ACTION system has not been a standard practice. Therefore it seems that the service is offered to individuals and their families in an isolated way, not really as part of a social care package.

In the early deployment phases of the service, when the concept was developed and evaluated in two municipalities in the west of Sweden, the ACTION call centre in each municipality was located in a central office that was regularly accessed by other members of the care team. In the evaluation of these experiences, these (non-ACTION staff) members highlighted the fact that the ACTION service improved communication with colleagues working at different care settings in the municipality and could save them travelling time as care-planning meetings and educational sessions could be conducted through videophone. There is no clear indication as to whether this type of informal communication between care team members is taking place in the current deployment of the ACTION service in the city of Borås.

The promoters of the service intend to apply for grants to further develop and adapt the service for use in other environments such as care homes and hospitals. If these developments go ahead, the issue of how the ACTION care services will be coordinated with other types of care (social and health) will arise. Indeed, the promoters acknowledged that the service would need to evolve by integrating access to health care professionals via the phone system and allowing the remote monitoring and treatment of the old person.

2.2 Impact

Information on the impact of the ACTION service was obtained from four different studies that evaluated its implementation in three different contexts and time periods:

- Magnusson et al (2002) analysed results from the first implementation of the service under the EU project over the period 1997-2000, relying on data from family carers (n=767), cared-for persons (n=249) and professional carers (n=786).
- Magnusson and Hanson (2000) and Magnusson et al (2005) evaluated the ACTION experience in two Swedish municipalities over the period 2000-2002 in a sample of 34 cared-for individuals and their corresponding 34 carers. Their information was complemented with interviews involving ACTION call centre staff (n=3) and focus-group interviews with care staff (n=13) who worked in several care settings where ACTION was installed.
- Torp et al (2008) relied on data from 19 older spousal carers from two Norwegian municipalities where the ACTION service was piloted during 2004.

Several aspects were evaluated in these studies. A summary of the main results and conclusions that the authors extracted is presented below. These findings should be interpreted with caution, given the methodology used in most of the cases (qualitative interviews and quantitative analysis without control group) and the small samples on which they are based.

Impact on informal carers: in relation to their quality of life, ACTION reduced the sense of isolation, created a sense of presence, and provided them easier access to care professionals (Magnusson et al., 2002). A positive and significant change in scores with regards to contact with

family and friends and a sense of social support from other people was found (Torp et al., 2008). Increases in their productivity were also highlighted as a consequence of easier and direct access to information, i.e. without the intermediation of a professional (Magnusson et al., 2002).

Impact on formal carers (municipal care staff and ACTION staff): Care staff highlighted the fact that the ACTION service could save them travelling time if they follow-up consultations were done via the videophone and that these online consultations could free resources that could be dedicated to patients with more intensive nursing care needs (Magnusson et al., 2002). ACTION call centre practitioners reported experiencing improved job satisfaction as a result of working in partnership with families to help empower them in their situation (Magnusson et al., 2005). These professionals also recognised the positive effects of the service on their understanding of the situation of family carers, of interdependencies in caring relationships and of the expertise of the carers (Magnusson et al., 2005).

Impact on quality of care: informal carers highlighted the fact that, as a consequence of the service, their care competence increased so they were able to care more effectively for their relative (Magnusson et al., 2002) and that they needed less information about the cared-for person's illness and caring (Torp et al., 2008).

Impact on costs: the authors stated that the ACTION service saved €10,300 (exchange rate as of 28 June, 2002, 1 EUR=9.08 SEK) per family per year for the municipality as a result of reduced use of home help services and delayed entry into a nursing home (Magnusson and Hanson, 2005). However, this figure should be taken with special caution, given the method used to obtain it. First, it was based on subjective assessments of the use of resources avoided as a consequence of the implementation of the ACTION service. Second, the sample on which the figure is based is quite limited, with a detailed assessment of the resources saved for only 5 families. Indeed, cost-evidence from the implementation of the ACTION service in two other settings (Linköping municipality and Nøtterøy and Tønsberg municipality) did not confirm this result (Magnusson & Hanson, 2012).

2.3 Drivers and Barriers

The key drivers of the ACTION case that have been highlighted by those involved are:

- **Team experience:** The various experiences of the team (ACTION Caring) in deploying the service in various contexts and systems, mostly in Sweden but in Norway as well, enable them to offer full support to municipalities wanting to implement the service, with flexibility in terms of how the services may be deployed (for example, whether they should outsource the call centre).
- **User-centred:** In the design of the service, feedback from all stakeholders, especially users, was incorporated from the beginning. Furthermore, in the iterative cycles of service refinement and development, this feedback has been continuously incorporated. This user-centred, participatory approach combined with its research-based characteristic is highlighted as a critical factor for the successful experiences in the implementation of the ACTION service.
- **Beneficiaries:** This service could offer benefits to a diverse range of stakeholders as described in the impact section of this document: older people and their family carers, care staff and the municipality management.
- **Support to Stakeholders:** The support received by all key stakeholders has been highlighted as a key factor for success. Besides those already mentioned, the support of business partners facilitated the commercialisation of the service and therefore its implementation in a variety of contexts. Support from the University has been acknowledged as relevant as well.
- **Innovative Appeal:** The service can have innovative appeal for users as its ICT component, could make it appear different from traditional assistive devices. Older people usually

attach a negative value to these devices as symbols of their failing capacities. Nevertheless, the assistive component of the service still needs to be highlighted to avoid the perception that it is just a computer programme and thus prevent potential negative attitudes of users towards the service.

The main barriers of the ACTION service are:

- **Financial Sustainability:** The main barrier that has prevented its implementation in other Swedish municipalities is its financial sustainability. Many municipalities established the service on a temporary basis, relying on Swedish national funds. However, once these funds dried up, they stopped the service as they could not or did not want to finance it from their own budgets. Therefore, there is a need for funding schemes with long-term vision to provide the necessary financial stability for the service.
- **Business Plan:** In view of the above financial barrier, there is a need for a flexible and solid business plan that reduces funding requirements for service implementation. This flexibility is required to adapt the service and its implementation to changing circumstances and technologies and to respond better to future societal needs. As an example, given that some users already owned a computer and possessed broadband connection, the ACTION service was also offered without the municipality providing these resources as part of the service.
- **Training Demands:** The significant amount of training required to implement the service has been a challenge that may have affected its sustainability and scaling up.
- **Integration:** At organisational level, the ACTION service can be isolated from the other care services provided by the municipality, and therefore run “on its own”, reducing its chances of continuation once funding ceases. In addition, there is a tension between the short-term vision imposed by annual budgets at municipality level and the significant investments that ACTION requires, which requires a long-term view. This time horizon inadequacy is reinforced by the focus of Municipalities on “crisis solving” services rather than more preventive services such as the ACTION one.
- **Political and Policy priorities:** The lack of strong support among local politicians was highlighted as a barrier. This support would have allowed the implementation of ACTION to break the status quo in local caring provision. In addition to this issue at the local level, national Swedish policies continue to give more emphasis to hospital care and telemedicine than to telecare services like ACTION.
- **Staff Attitudes:** Another aspect that has been highlighted was the negative attitude towards the service of some of the caring staff. They felt that technology-based services were not adequate for elderly sick individuals, and they were more in favour of purely human interventions. In addition, the relatively high level of turnover of senior caring managers posed a challenge when new managers were not convinced of the benefits of the ACTION service. Finally, some of the caring staff were not regular computer users themselves and as a result, they transferred their doubts about the service to their elderly clients.
- **Competitor:** Finally, but equally important, the existence of a cheaper alternative which provided similar services affected negatively the continuation and scaling-up of the ACTION services.

2.4 Organisation, health and care professionals and patients

The two key partners in the ACTION service are the University College of Borås and ACTION Caring Sweden. The former was the coordinator of the three-year EU-funded project within the EC Fourth Framework Programme (FP4) that started the research and development of ACTION in 1997. In 2003, this University set up ACTION Caring as a spin-off research and development company, together with Telia Sonera, the largest telecommunication operator in Sweden, as a business

partner. The objective was to make the ACTION service more widely available. Telia Sonera was replaced by EVRY Healthcare Solutions in 2009.

EVRY Healthcare Solutions provides the technical skills and the services connected to the maintenance of the technical platform and the connectivity of the ACTION service. As monetary compensation, it receives a fixed part of the customer fee. In addition, EVRY has acquired expertise and knowledge in the home care field, a useful asset as it is a provider of software and services to the healthcare market. ACTION Caring is in charge of the promotion of the service together with the arrangement of the contract with the municipalities to provide the ACTION service. It is also responsible for providing the initial non-technical support for the deployment of the services and for the training.

Other key stakeholders are the municipalities where the service has been or is deployed. This service is provided under a contract with ACTION Caring and the municipality is in charge of receiving the co-payment from the end-users of the services. Each municipality could choose to start an ACTION centre of their own or to buy this specific service (call centre) from ACTION Caring. At the time of writing this report, the service is deployed only in the Borås municipality, where it is running as part of the mainstream care system.

Older people and their carers are also key actors of the ACTION service, not only because they enjoy the benefits of using the service but because they were and are involved in all the stages of the design process.

Finally, it is worth mentioning the institutions and organisation that have provided funding to support the different pilots and deployment experiences of the ACTION service: the EU's Fourth Framework Programme of funding, the Swedish Ministry of Health and Social Affairs, the Knowledge Foundation, the Vårdal Foundation, the Curamus Foundation, the Handicap Institute, Mark and Härnösand municipalities, and the West Sweden region.

2.5 Information and Communication Technologies

Families access the multimedia caring programmes via their personal computers or ACTION computers with videophone which are placed in the older person's home. In cases where personal computers are used to provide the service, no specific requirements are needed other than a videophone and a microphone, together with the availability of a broadband connection. The only technical specification required is the availability of a Windows platform (Windows 7 is recommended) as ACTION software and the services only runs on this type of operative system. In addition, an anti-virus programme and a firewall are installed together with the use of VPN (Virtual Private Network) to guarantee security and privacy.

The multimedia educational programmes include access to an extensive information database with illustrations such as drawings, pictures and videoclips on the issues of caring in daily life, services available and coping strategies. Physical and cognitive interactive training programmes and relaxation programmes are also available online for users. These programmes are designed as normal webpages, where text and colour can be adjusted to give as high level of readability as possible for users with special needs.

The videophone software is specially designed to be user-friendly. It enables families to establish visual and oral contact with other participant families, and with care practitioners at the dedicated ACTION call centre. In turn, staff members at this centre use the videophone software to inform, educate and support older people and their family carers.

There are plans to make the service available on a number of mobile platforms, tablets and smartphones with a view to exploiting new market possibilities. At the same time, the possibility of using a non-platform-specific video client is being explored. This would mean that the requirement for the service to be run on a Windows platform would no longer apply.

2.6 Governance

No specific governance structure between care organisations or levels was established to provide the ACTION service in the context where it is currently deployed (Municipality of Borås). Indeed, a specific governance mechanism might not be necessary, given that the ACTION service is provided in a stand-alone way, despite being part of the Municipality's social services package. Instead, a contract is signed between the ACTION Caring company and the municipality for the provision of the service, while the business partner of the former (EVRY Healthcare Solutions) is in charge of providing the technical services and support. The contracts between ACTION Caring and municipalities usually last a year, in line with municipal budgetary requirements. Nevertheless, in cases where the service was piloted as part of an implementation project, the contracts lasted 2 or 3 years.

As part of the contract, regular network meetings (twice per year) are offered to all staff working with implementing the ACTION service in the municipality. The objectives of these meetings are to highlight ongoing research results in the field and to carry out brainstorming sessions to further improve the service. Besides these face-to-face meetings, online supervision sessions by ACTION staff take place as part of the education and certification system for the caring staff.

2.7 Organisational processes

The referral process of the ACTION service is initiated by a municipality needs assessor when it is considered that the service is an adequate option to address the care needs of an older person and her/his family. For their evaluation, the assessors at the Municipality of Borås check that the ACTION service meets at least one of the following objectives:

- Enables the person to stay in their own home for longer.
- Self-care is facilitated / made possible.
- Formal care services are reduced.
- Promotes social contacts and breaks social isolation and loneliness.
- Carer's input is facilitated / made possible.

In addition, the end-users of the service could be aware of the existence of the service through other channels than the needs assessors:

- Care advocates who are working directly with the family carers.
- Call centre practitioners via the municipality's website and via informing older citizens and carers at local meetings and gatherings which take place at a meeting centre for carers or the elderly.
- Their local carer association or pensioners' organisation. These organisations are the target of information and awareness-raising campaigns by ACTION Caring.

Once it has been decided that the ACTION service will be provided to an individual and his or her family, broadband and equipment are installed in the user's home where they are not already in place or the user does not want to use his or her own. This is done by the ACTION centre or its contact person, together with the required technical support. The call centre that is part of the ACTION service is usually established by each municipality and it is manned by trained assistant nurses and district nurses. As mentioned previously, in cases when a municipality or municipal district choose not to start an ACTION centre of their own, the ACTION service can be purchased from ACTION Caring.

The decision to stop providing the services, and thus the removal of the equipment, is often discussed between the front-line practitioner and the manager. The most frequent reason behind the removal of equipment, besides the termination of the service at municipality level, would be the death of the older – cared for – person. Nevertheless, in the Municipality of Borås the current practice is not to remove automatically the equipment in these situations. Instead, it is assessed whether the service can provide benefits to the bereaved carer in his or her grieving process.

2.8 Reimbursement model and economic flow

Each municipality interested in providing the ACTION service establishes a contract with ACTION Caring and a (monthly) price is fixed per user. The services included are the ACTION application, comprising the dedicated call centre, and the technical support. The costs of hardware (computer, webcam, loudspeaker) and other software (antivirus) are not covered by this contract and they could be funded by the municipality or by the user. The costs of the necessary broadband connection are paid by the users. In addition, there is a user fee or co-payment for the ACTION service that users pay to the municipality. The difference between this revenue and the fees paid by the municipality to ACTION Caring could be funded through different sources. Municipalities could use their own resources or apply for specific governmental funds to cover these costs. Table 1 below provides the latest figures (June 2014) for the cost and fee components detailed above.

Table 1- ACTION service Components and related costs

	Costs⁴	Payer
ACTION application	890 SEK (€100) /month/user	The municipality
Technical support	Remote support included in the monthly cost for the ACTION-application	N.a.
Computer, webcam, loudspeaker, antivirus program	Varies, approximately 400 SEK (€45) /month/user	Varies, depending on local decisions in the municipalities. Either the user or the municipality
User fee	150 SEK (€17) month/user	The user

Source: Carretero and Kucsera, 2014.

The most significant cost of providing the service is the call centre, which covers mainly the salary of the care staff (nurse) manning the centre (89%). This cost is supported by the municipality, if it decides to start an ACTION centre of its own. In cases where the municipality decides to buy this service from ACTION Caring, an additional fee of 990SEK per user/month is paid by the municipality to the company. Table 2 provides the details of all the costs of the ACTION call centre.

Table 2- Costs of the ACTION call centre

Components	Yearly cost in SEK (€)²
Salary for one full time practitioner, including social insurance and annual leave	584,000 (65,742)
Housing costs	25,000 (2,814)
Equipment (based on writing off within 36 months)	8,000 (901)
Telecommunication and Internet	5,000 (563)
Additional travel, education and social activities with the users	30,000 (3,377)
Total	653,000 (73,510)

Source: Carretero and Kucsera, 2014.

One nurse working full-time could support approximately 50-80 families which is why the monthly cost per user varies between 680 and 1,090 SEK or €77 – €123.

Finally, research, development and evaluation of ACTION projects have been funded by different research and/or development grants. Staff working for the company are partly employed by the university and partly by ACTION Caring.

⁴ The prices were given in Swedish krona (SEK), and we used the exchange rate of the ECB as of 2nd of January, 2014 to convert them into EUR (1 EUR = 8.8832 SEK).

3. TRANSFERABILITY

The ACTION service has been deployed, as a mainstream service or as a project, in several Swedish municipalities and in two municipalities in Eastern Norway. The promoters of the service estimated that 80,000 people could benefit from the service in Sweden. Currently, however, only 100 users from Borås Municipality receive the service as none of the other Swedish municipalities where the service was piloted decided to adopt it. The section on barriers in this document gives some insights into the small-scale deployment of the ACTION service.

In relation to possible implementation of the service in other countries, the fact that the original ACTION prototype was developed collaboratively between five European countries in the context of an EU-funded project has been highlighted as a positive element. Furthermore, ACTION was piloted with positive results in these five countries, although further implementation beyond the EU project was explored only in one of these, the UK.

As regards providing the service in other local contexts across Europe, the promoters pointed out the following relevant aspects to be considered:

- **Business plan:** a solid but at the same time flexible business plan would be required, focussing on the financial sustainability of the service as this was a key factor that prevented the further implementation of the service across Sweden.
- **Adaptations:** the educational programmes would require some translation work and cultural adaptations to ensure the specificity of the service to each new context in which it is deployed.
- **Collaboration:** ACTION Caring would need to have a partner with whom to cooperate in each country/context where the service would be implemented in order to effectively deliver the service.

Finally, the role of the ACTION service in fostering the development of similar user-based ICT services was highlighted. There is a perception that the ACTION service smoothed the path for the deployment of this type of services in Sweden and was a source of inspiration for similar experiences in Canada (Marziala and Donahue, 2006; Ducharme et al 2011).

4. CONCLUSIONS

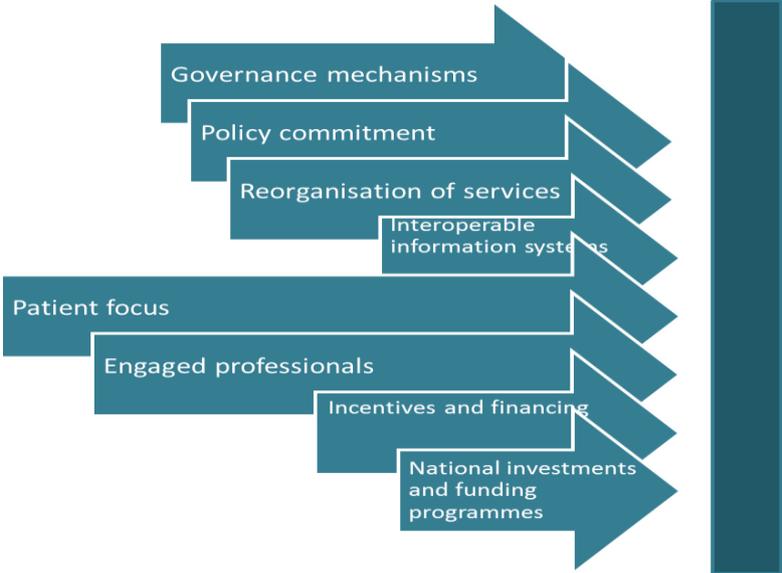
ACTION (Assisting Carers using Telematics Interventions to meet Older Person's Needs) is a self-care and family care support service provided through ICT installed at patients' homes. It aims to maintain or enhance the autonomy, independence and quality of life of frail older people and their family carers. It has quite a long trajectory as it started as a multisite international project in 1997, with funding from the European Commission's Fourth Framework Programme. Currently, however, the ACTION service is deployed in only one municipality in Sweden with a user base of around 100 individuals. It was piloted in other municipalities in Sweden and Norway but it was not integrated into the standard package of services offered to users.

The failure of the service to be further deployed or continued in contexts where it was piloted happened despite evidence of the positive impact of the service on informal and formal carers. Studies have also highlighted a positive impact on the cost of providing care and health services. However, these findings should be interpreted with caution, given the methodology and the small samples used in most of the studies. Two of the main barriers highlighted as hindering further deployment are the financial sustainability contexts that the pilots had to deal with and, as a related issue, some weaknesses in the business plan of the ACTION service. Indeed, the existence of a cheaper alternative to provide similar services seems to have affected negatively the continuation and scaling-up of ACTION services.

Positive aspects of the service such as the experience of the team behind it, the focus on users and their involvement in its design or the innovative appeal of the use of technology have not been sufficient to counteract the financial and economic challenge mentioned. Furthermore, other factors

have affected negatively the scaling up of ACTION; first, not all the professionals and decision makers were convinced of the usefulness of the service. And second, at organisational level, the ACTION service is mostly isolated from the other care services provided by the municipality, and therefore running “on its own”, reducing its chances of continuation once its assigned funds dry up. This “isolation” characteristic is reinforced by, and at the same time a consequence of, the fact that the ACTION service does not seem to have any component or dimension that facilitates integrated care. In other words, no clear arrangements for care coordination seem to be in place as part of, or as a consequence of, the service. In an extreme example of this “isolation”, a municipality can choose to “externalise” the ACTION call centre services, and just pay a fee for the users attended.

Figure 3- Case facilitators



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