



**European SeniorWatch Observatory and Inventory -**  
*A market study about the specific IST needs of older and disabled people  
to guide industry, RTD and policy*

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***Medication Aid device and  
the Parkinson Card  
A Dutch initiative.***

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## Short Title

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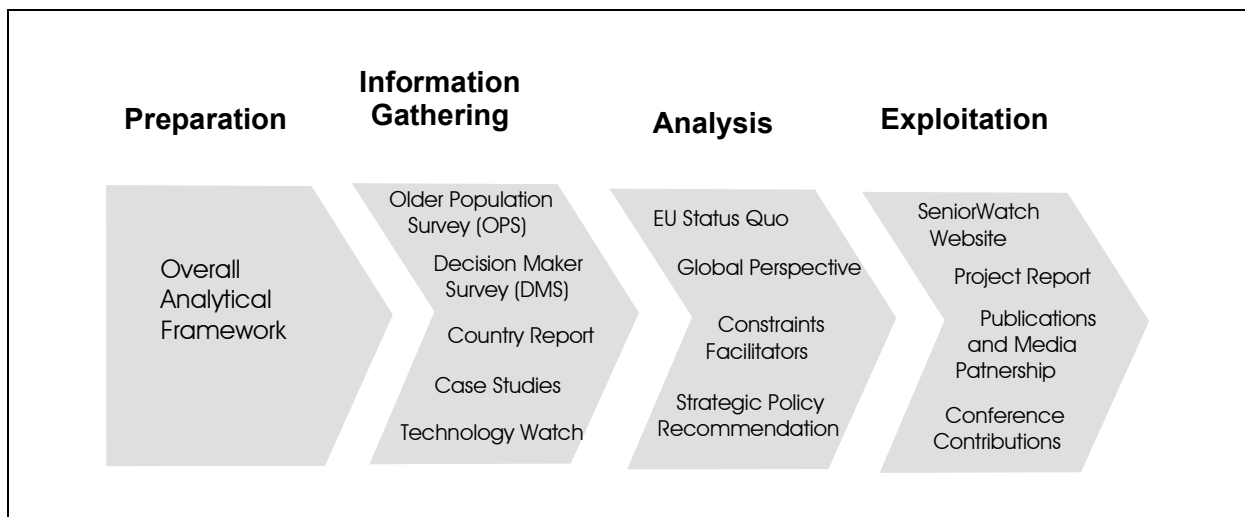
# 1 Introduction

The SeniorWatch project addresses the need to understand better and to monitor the market dynamics of Information Society Technologies (IST) applications and services targeted at older (and older disabled) citizens. Currently, there is insufficient empirical data about the needs of older citizens which could be met by IST-based applications and services, and a lack of awareness on the part of industry, users and politicians that hampers the rapid exploitation of new market opportunities arising from IST developments. In order to redress this state of affairs SeniorWatch will provide a European single source of empirical information on the market potential of IST-based products and services targeted at older people. The main objectives can be summarised as follows:

- to help and encourage European industry to address the market opportunities, and particularly challenge current competitive advantages of the US industries,
- to enable policy to really influence the current situation and to benchmark achievements between different European regions and countries and to make comparisons with competing world economies (Japan, US) most relevant to the field,
- to inform citizens about what is now possible with the support of IST and, thus, encourage them to demand IST products and services which meet their requirements.

As illustrated by Figure 1-1, these objectives require a comprehensive methodological approach to be applied. On the basis of an overall analytical framework, it integrates a set of complementary research methods such as European-wide surveys of older people and of decision makers in care services, best practice case studies, technology watch work shops and country reports. Synthesising the various types of empirical information gathered with help of these methods will finally enable the project to arrive at an holistic overview, to establish a technology and market observatory, and to derive policy recommendations to accelerate market development. Research results will be exploited by means of different measures.

**Figure 1-1: The Project Phases of SeniorWatch**



Source: © SeniorWatch, 2001

As part of the project's overall methodological approach the SeniorWatch case studies aim at providing a useful source of information on how the IST-related needs of the target groups in question can adequately be served. They are also intended to help to understand - in a qualitative manner - more deeply specific aspects of the market situation related to IST

products and services relevant for older citizens. To allow a comparative analysis of real-life examples, a common approach for selecting and describing suitable cases was developed. The main selection criteria applied in this context include:

- suitability of the case to provide input to the overall understanding and analysis of the market for IST among older people;
- suitability of the case to serve as an example of a success story (or failure) that can guide and motivate others to take actions that will support the diffusion and take-up of IST by or for older people.

In the following the SeniorWatch case study no.13 is described.

## 2 Medication Aid Device and the Parkinson Card. A Dutch initiative

### 2.1 Description

#### Memory aid for elderly people with a strict medication plan

50 % of all the medicines is used by people older than 65. Many people, mainly older people, have problems with the usage of the described medication treatment as a result of dementia or forgetfulness. Medical causes of forgetfulness are often typical affections for elderly people, such as diabetes, a lack of vitamins, usage of medicines, silent strokes, etc.

The point of time that the medicine has to be taken, has been forgotten more than once, through which the working of the medicine misses the aim. Sometimes this leads to home care or remove to a home for the elderly.

A preliminary research with 30 respondents of older than 55 years found out that 30% forget their medicines now and then. Most of this people live independently. 82% of the respondents said that a small memory aid with an alarm signal on the moment that medicines have to be take, would be useful. Another conclusion was that the product has to fit in with the daily routines of the user and that it must not obstruct freedom of movement.

The aim of the project was to develop a memory aid for elderly people with a strict medication plan and people with forgetfulness or dementia who forget to take in their medicine.

Landmark, design office in Rotterdam developed in co-operation with a software company a medical aid device, that has to support the medication plan elderly people and people with memory problems. The product, named the 'Ex Libris, takes the form of a small, thin wallet that can be folded open. It has a groove for a smart card and a display, on which the medication appears after a visual, audio or a tangible signal.

It works as follows: the prescribed medicines are be written on a smart card by the medical specialist or doctor. The patient give the card to the pharmacy. The pharmacy put the card in the card reader, which has been connected with the PC, reads the medicines and adds the prescribed medication plan to the card.

At home the patient put the card in the Ex Libris and on the moment that medicines have to taken in, the Ex Libris will give a visual, audio or tangible signal. The patient read on the display which medicine(s) he or she has to take.

The Ex Libris can be taken in a handbag or the pocket of a jacket.

In 1997 a not-working model was tested by means of a usability analysis among respondents aged 67 to 77 years. They were given the test model without an explanation of what is was. They had to work out for themselves how to use it. The responses were favourable, both regarding the design and the functionality. At the same time a test was done with different interface options by means of interactions models on a laptop.

It took two years to solve technical problems. One of the first thing that had to be solved was the safety of the system. The privacy is being watched by a biometric sensor: the fingerprint of the owner. The system has a double control. The patient as well as the medical consultant and the chemist have their own card with their own fingerprint. Only when two of them (medical expert and patient, or chemist and patient) have put their finger on the sensor of their own card, the system will be unlocked.

Not all the patients can pick up their medicines by themselves. So also an informal carer of the patient can get a care card in order to be able to pick up the medicines at the pharmacy. One of the serious technical problems to be solved was the sensor technique. The initially used sensor proved not to be able to read the biometric data. The solution was found in an extra chip, resulting in an adaptation of the reader.

The care card is an electronic card as a control system for every insured person at Z&Z. This electronic card has been expanded for Parkinson patients into a smart card to be used with the Ex Libris. Not only the present use of medicines can be stored but also in the past use. In this way the history of medication of a patient can be saved and is easily attainable for the medical consultant.

Care insurer 'Zorg en Zekerheid' (Z&Z) in Leiden adopted the system and connected it with the care-card for Parkinson patients. On this moment a pre test has been carried out with 20 Parkinson patients, their medical consultant and their pharmacy.

### Context

The target group is elderly people with forgetfulness and dementia. Another group are people who suffer and other diseases which require a strict medication plan.

The medical aid service has been developed by design office Landmark and financed by Schoonderbeek Electronic Systems BV and Landmark.

The consumer test of the not-working model has been financed within the framework of the three-year project Technology and the Elderly. This project was initiated by the Ministries of Economic Affairs, of Welfare and Cultural Affairs, and of Housing, Regional Development and the Environment, and co-ordinated by KITZ (see also case study Technology and the Elderly).

Care insurer 'Zorg en Zekerheid' adopted the medical aid service, linked this product to the Parkinson card and developed the system further. The estimation is that there are between 500 and 800 Parkinson patients in the Netherlands.

## 2.2 Analysis

### Impact

The Parkinson card won three Awards: the Golden Chip card in the Netherlands, the Chézanne Award in 1999 in France and the international Elan Award 2000.

More patients groups are interested such as Aids patients, diabetics and kidney patients.

At this moment the whole system is tested by 20 Parkinson patients, their medical specialist and their chemist's. A scientific research institute will carry out the evaluation. Internet is not used on this moment but the card has the application for it.

A temporary problem is, that this dedicated system could not use by the outdated PC's and systems used in the hospitals. This problem is solved now by the Care insurer Z&Z, who decided to deliver the proper updated PC's. This shows the commitment to introduce the cards on a structural basis in the near future. The question is, how and when other insurancecompanies will adopt the Parkinson card.

### Lessons to learn

A pitfall was the broad project group with organisations from different countries. Tuning all things in a democratic setting took many time. The solution was to minimise the meetings and to point out the made decisions to the members.

Another problem was that the technique was overcharged over and over again. The solution was to take the decision to start a test of the existing system and the technique with respondents.

### Perspectives

The vision is that the use of this system will be extended within Z&Z. Not only all chronicle patients will have a card and a Ex Libris in the near future, but the system will also expand because of the increase of the exchange of information and the use of Internet. This fits in the global trend that the use of biometric security systems (finger print, iris scan) will extend.

## 2.3 Acknowledgements and links

### Person to contact

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