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SeniorChannel

An Interactive Digital Television Channel for Promoting Entertainment and Social Interaction amongst Elderly People

D6.1 Assessment Methodology Framework

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1. Executive Summary

In this document we set out the framework we will be using to develop, launch and run the socio-economic and organisational assessment of the Senior Channel technology.

We begin with an analysis of current approaches to the assessment of technology, with a particular focus on considering existing standards and the methods of understanding technology impact in different contexts. This provides a baseline for our framework.

We then consider the scope of the assessment – what it is, specifically, we are aiming to assess and what questions we are seeking to answer. This section of the document addresses specific definitions around what we mean by 'socio-economic and organisational'.

Drawing on the baseline presented, and the delineation of the scope described, we then present our chosen methodology – that is how we propose to develop the specific indicators we need to assess, how these indicators will be implemented and how we propose to analyse the results.

Finally, in our Conclusions section, we present the relationship this document has to the other elements of WP6 and, crucially, the interface between the work in WP6 and that which is being carried out in WP5.

2. Context: Analysis of current approaches

2.1. Overview

In order to inform the development of our own methodology, we first undertook an extensive study of current approaches to the impact assessment of technology, specifically with reference to its use with seniors. This provides us with a research baseline from which we can develop a coherent and methodologically sound framework that will achieve the objectives for WP6 as set out on the Description of Work.

In this section, we first present the methods used to develop this baseline. Then we discuss the specific findings with reference to studies, primary evidence and other relevant material. Finally, we draw some conclusions that will feed into the framework described later in this document.

It is, perhaps, important to point out that during our extensive research, we uncovered very little in terms of an assessment methodology or approach that was entirely comparable to what we are proposing as part of Project Senior Channel. As there are no products currently on the market that use low-cost IPTV technology in the way that we are proposing in Senior Channel, there are subsequently no accompanying assessment approaches. Therefore, out research has focussed on a number of complimentary areas that will help in informing our approach.

2.2. Methods Used

In determining what it is we are aiming to assess we are also looking to establish how we are going to assess it, that is to say developing a methodology for capturing and interpreting the secondary user input into our impact assessment. To that end a study of relevant methodologies currently employed was made with a view to adaptation to the novel environment of Senior Channel. Given the difficulty of establishing a robust methodology for such a novel project as Senior Channel it wasn't possible to find evidence of and compare methodologies developed for carrying out socio-economic and organisational impact studies. Therefore, the research carried out in part went into developing an understanding of the socio-economic and organisational impact of ICT though analysing methodologies for how such assessments are performed within the context of an educational institution. There is a significant body of research around implementing technologies within educational institutions and this can be very useful as a context for the Senior Channel technology and its implementation within support centres for seniors.

As the usability of the SENIOR CHANNEL technology will be assessed by the methodology developed in WP5, understanding the impact of technology on chosen application environments and secondary users is considered paramount. In terms of socio-economic and organisational considerations then, the direct impact of technology on seniors was only considered in terms of the social impact the technology had – we are not concerned, in WP6, with the uptake of the technology from a usability perspective.

Approaches to constructing indicators in relation to ICT were studied, adapted and incorporated into the methodology for impact assessment explained in Part 5 of this deliverable. The

methodology outlined in the UNESCO guidance document *Developing and Using Indicators of ICT Use in Education*[1] describes a step by step process for preparing a consolidated set of ICT indicators within an educational context as well as describing the correct use of both quantitative and qualitative data in impact assessments

Our research into this baseline also focused on studies and approaches that would help us understand the socio-economic and organisational impact of technology in any setting where seniors congregate as a group. In order not to duplicate the analysis developed in WP5, we focussed on the specific requirements ICT imposes on both secondary users (support staff to seniors) and their organisations with a view to better understanding the conditions needed for effective deployment of the Senior Channel technology. In analysing these requirements we were interested in both organisational factors such as the logistical needs of senior centres when preparing to institute the technology as well as social factors such as the motivation required of those staff who would perform a secondary user role. The intention was to develop an holistic understanding of how to accurately measure these requirements.

Due to the novel nature of the Senior Channel project, it proved very difficult to find evidence of a directly related baseline, namely the socio-economic and organisational impact assessment outlined above directly related to the use of IPTV technology for addressing the social challenges faced by seniors. Therefore, an extensive literature survey was carried out on the measurement of requirements (outlined above) imposed on institutions by the use of ICT in the first instance, with the addition of a limited number of studies found into the impact of the use of such technology in an institutionalised environment.

Technology Integration Progress Gauge provided examples of key socio-economic and organisational indicators as used in institutions[2], *Academic computing at Malaysian colleges*[3] offered key objectives on measuring ICT Infrastructure and Institutional ICT Support.

Having consulted a number of the relevant impact assessment studies, tools and methodologies available to practitioners in this area, the analysis moved on to gathering evidence on how these approaches are put into practice. At this stage of the research a number of experts who are directly involved in working with groups of seniors were identified and consulted directly through the running of surveys and where possible face to face interviews.

Further to this it was also necessary to understand the effect that instituting the Senior Channel technology would have on the primary user (the senior), the test subject, by consulting experts in the field. Our study does not relate to the Senior Channel technology's usability in terms of

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[1] *Developing and Using Indicators of ICT Use in Education,* compiled and published by UNESCO Asia and Pacific Regional Bureau of Education, 2003 (IPS/03/OS/152 – 1500), http://www.unescobkk.org

[2] *Technology Integration Progress Gauge,* **SERVE – Improving learning through Research & Development website,** http://www.serve.org/

[3] Mokhtar, S., Alias, R., & Abdul Rahman, A. (2007, June 13). Academic computing at Malaysian colleges. *International Journal of Education and Development using ICT* [Online], 3(2). Available: http://ijedict.dec.uwi.edu/viewarticle.php?id=312.

motivation for the users while engaging with the technology and the possible difficulties that may arise during the testing procedure or an analysis of the social worth as these issues are addressed in WP5. Rather we focus on issues related to how participation with the Senior Channel technology would impact upon the socialisation of primary users within the context of the organisation that they are a part of. It needs to be stressed however, that this research was gathered through consultation of relevant experts and not through the involvement of seniors themselves (the primary user and test subject).

2.3. Case Studies of Assessing Technology Impact on Seniors

The following case studies give clear guidance as to the factors to be taken into account when designing protocols for the assessment of the impact technology has on seniors. In some cases, the information presented here will be more useful to the work in WP5 (and where that is the case, information has been shared). However, these examples provide a useful baseline for the development of our own methodology and our own assessment process as presented later in this deliverable:

2.3.1 Senior Technology Literacy and Access Project

Local Survey of Organizations Serving Seniors

Volunteer members of the Citizens Technology and Telecommunications Advisory Board conducted telephone and in-person interviews during February 1998 to gather information and input from organizations around the city about how and to what extent older people in Seattle were participating in, and engaging with, computer programs and services. Interviews were conducted with representatives of senior services, community and ethnic agencies, computer labs and training centers.

The project committee determined the following goals for the project:

- Build capacity in the community for use of computers by seniors (for example, training, helping connect existing resources, wiring existing sites, becoming more competitive for future resources)
- Build a dialogue about seniors and computers, including possible uses of computers and how computers affect seniors
- Encourage senior groups to work together
- Encourage seniors and those of other ages to work together
- Reach seniors who currently have little access to or knowledge about computers

The three key areas of questioning focussed on the following core issues:

- Most Important/Beneficial Ways for Seniors To Use Computers
- Factors that Most Enable or Attract Seniors To Use Computers
- Largest Challenges/Barriers to Senior Use of Computers

2.3.2 STREAM Personal TV (Hull UK)

The STREAM Personal TV - Independent Living Campaign provides vulnerable older people with access to local programmes and services through their existing television. It is a UK Flagship

project for Inclusive eGovernment.

Each person receives a digital television set top box that gives them access to the free digital television channels, and a broadband connection that provides them with access to interactive local services entirely on demand. A single button on the remote control takes the person to STREAM.

Once there, the service pulls together video and text-based information from a range of partners and targets it to particular individuals based on their needs. Services that other users have found

useful are also recommended to the user. Users also have access to email and a personalised calendar that can be integrated with third-party diary systems.

Viewers have a choice of locally produced programmes and a rapidly expanding catalogue of national content. STREAM has signed a syndication agreement with NHS Choices on all its online video material, and is currently working with other national bodies such as the Stroke Association and the Alzheimer's Society to produce more programmes, giving users a rich vein of information on a wide range of health-related topics.

The STREAM project was assessed as part of the UK local government performance framework announced in 2007. This framework is underpinned by 198 individual indicators. This national indicator set was developed as part of the UK Government's Comprehensive Spending Review 2007.

The structure of each indicator is as follows:

- First, there is a clearly defined objective
- Second, there is a named national indicator
- Third, the indicator is described in detail

Here below are two examples (relevant to Senior Channel) of indicators developed as part of the UK national indicator set, 2007:

Outcome (Objective): Adult health and wellbeing - PSA 18
National Indicator:
NI 136: People supported to live independently through social services (all adults)

This indicator will measure the number of adults all ages per 100,000 population that are assisted directly through social services assessed/care planned, funded support to live independently, plus those supported through organisations that receive social services grant funded services.

Outcome (Objective): Tackling exclusion and promoting equality - PSA 17
National Indicator:
NI 142: Percentage of vulnerable people who are supported to maintain independent living

The number of service users (i.e. people who are receiving a Supporting People Service) who have established or are maintaining independent living, as a percentage of the total number of service users who have been in receipt of Supporting People services during the period.

Independent living is defined as someone living in their home or in long stay accommodation. A

care home (both residential and nursing care), a hospice, long stay hospital or prison are not defined as independent living.

2.3.3 Looking Local/ T-Seniority

http://www.lookinglocal.gov.uk/site/news/2010-10-12-telecare.html

Looking Local is leading the UK's evaluation of eHealth and Telecare services on digital interactive TV. For nearly two years Looking Local has run separate telecare programmes; the

EU funded T-Seniority project & a project in the Borders funded by the Government's Technology Strategy Board.

T-Seniority

http://tseniority.idieikon.com/index.php/lang-en/about-t-seniority

T-Seniority is a "SaaS"(“Software as a Service”) funded under the EU ICT Policy Support Programme (PSP) and supported by the CIP programme which will be accessible in dedicated European areas via digital TV. Its main aim is to *empower Independent Living* for older people and meet their varied needs. The end game is to contribute to and improve independence for older people through a set of services that puts them as the central stakeholder. Services will be accessed via the TV, as it is the *most widely used* and in many cases the *preferred electronic channel,* needing little introduction or maintenance.

T-Seniority will be set-up in the daily living environment of elderly users for supporting their personal autonomy, using as main mean the TV channel. This daily living environment will include home environment but also will create a closer relation with carers (formal and informal) with support applications and services under the categories of: Daily Life activities, Social Integration; Protected and supported living and Mobility.

Initial evaluation of the T-Seniority results show that older people are incredibly keen on using TV as a channel to access health and related services and can now be seriously considered as a viable alternative to the web as a channel of choice and service efficiencies.

Headlines from the T-Seniority research:

- 90% felt more informed with the service
- 81% felt the service made their life easier by giving them more autonomy over their life
- 38% used it daily, 30% used it on a weekly basis, 16% monthly and the rest less frequently
- 43% felt closer to their family via the email access
- 75% felt more confident towards new technology after the trial
- 80% felt T-Seniority enriched their means of communication
- 85% wanted to continue with the service after the trial
- 88% found the information and services clear and user friendly
- 97% could navigate the service without help
- 100% of participants used email and other areas of interest were highlighted as transport and health services, news & weather
- 88% found it sufficiently useful or very useful

The evaluation of the T-Seniority project was undertaken in two parts:

- Researchers interviewed 90 people in Kent, Alston and Sefton who had been given access to the T-Seniority service for a number of months
- A questionnaire ran on the Looking Local service for several months and received 370 responses

2.3 Key Findings of the Research

The key findings for the baseline according to the research carried out above are divided between relevant methodologies for impact assessment as laid out in Section 5 and a study of broad assessment objectives to inform the preparation of the assessment handbook to be produced in D6.2 (an overview of which can be seen in Section 4).

In this section we will present a breakdown of some of the key approaches to and methodologies for preparing impact assessments, considered most relevant to the needs of the SENIOR CHANNEL project.

2.3.1 Methodology

As the basic building block for the impact assessment methodology to be carried out in this deliverable are indicators, it seems logical to begin with a clarification of what constitutes a successful indicator. Some authors insist that indicators in order to record information accurately must be something that is quantifiable, however, others take a much wider view, and cite the importance of descriptive statements within the scope of indicators. Mokhtar, Alias & Rahman cite the latter view as stated by the *International Standards Organisation* which defines a performance indicator as "a numerical, symbolic or verbal expression derived from statistics and data that characterises the performance of a service or facility" (International Standards Organisation, 1998)[4]. Indicators are refined through the use of rubrics, which “are sets of categories that define and describe the important components of the areas being assessed. Each category contains a gradation of performance levels with a score assigned to each level and a clear description of what criteria need to be met to attain the score at each level.”[5]

UNESCO has developed a methodology to develop *indicators* which help the *user* to build a clear set of assessment objectives and afterwards collect data in an accurate and faithful way as well as allowing for the measurement of different degrees of compliance with assessment objectives, set out as a *rubric.* The methodology sets out a clear step by step process concerning the formation of indicators with a particular emphasis on developing and assessing trial indicators

[4] Mokhtar, S., Alias, R., & Abdul Rahman, A. (2007, June 13). Academic computing at Malaysian colleges. *International Journal of Education and Development using ICT* [Online], 3(2). Available: http://ijedict.dec.uwi.edu/viewarticle.php?id=312.

[5] Mokhtar, S., Alias, R., & Abdul Rahman, A. (2007, June 13). Academic computing at Malaysian colleges. *International Journal of Education and Development using ICT* [Online], 3(2). Available: http://ijedict.dec.uwi.edu/viewarticle.php?id=312.

with external stakeholders to ensure *high face validity*. High face validity in ensuring that an indicator is intuitively understood, helps to ensure that assessment data sets are not the result of

end users providing different interpretations of an ambiguous indicator. The same methodology outlines a clear set of criteria based on a proper mix of quantitative and qualitative, with objectivity. Qualitative measures have value as long as the indicator is "clearly and consistently defined".[6]

UNESCO encourages the use of a variety of methods for collecting data through response to predetermined indicators. As well as the use of standard survey questionnaires and telephone interviews, the report advocates the use of internet-based surveys as an efficient way of collecting data from institutions where a number of stakeholders are to be consulted. Logically, where only one stakeholder within an institution is to be consulted this is an inefficient way of collecting indicators. Internet-based surveys can be placed internally on an institutions website, where it can easily be accessed by all relevant teaching and administrative staff and data collection coordinated by a head teacher or senior specialist. Furthermore, data entered into a web based survey can be automatically uploaded into a managed central server system. However, this process is largely dependent on the coordination efforts of certain key staff, who need to allocate time to carry out this role.

The CEO Forum on Education & Technology has developed two School Technology & Readiness (STaR) Charts, which provide an holistic assessment of an "institution's level of readiness in using technology". An understanding of this approach – the use of technology within an educational institution – could be very useful as a baseline for the development of an approach within the participating institutions in the Senior Channel project. As well as evaluating the capacity of an institution to successfully utilise technology, this report also helps institutions to develop "target areas" (p.17)[7] for making improvements and readjustments based on data sourced by a set of indicators that are sufficiently objective to be used by any institution. The Charts cover a rubric for the technological capabilities of a institution and the level of professional development in support and administrative staff.[8] Although, the indicators that will be produced in D6.2 will be more focussed in terms of the use of technology, the assessment of end users' readiness will be no less thorough and all-encompassing. The Star chart system has been tried and tested across the US and has proven a reliable and practical form of data assessment.

2.3.2 Socio-Economic and Organisational Factors

Considerations of the motivational factors around the use of technologies with any target group often focus on the need to motivate the primary user to engage effectively with the technology. However, in so doing, we forget or rather assume that support and administration staff often have

[6] *Developing and Using Indicators of ICT Use in Education,* compiled and published by UNESCO Asia and Pacific Regional Bureau of Education, 2003 (IPS/03/OS/152 – 1500), http://www.unescobkk.org

[7] *School Technology and Readiness – Year 3 Report* , Produced by CEO Forum on Education and Technology, CEO Forum website (http://www.ceoforum.org/)

[8] *CEO Forum – School Technology and Readiness Chart*, Produced by CEO Forum on Education and Technology, CEO Forum website (http://www.ceoforum.org/)

considerable difficulties in adapting to advances in technology themselves and need the requisite level of computer literacy for the implementation to be successful. Logistical barriers such as lack

of technical support are also of concern to support institutions. Newhouse, Trinidad & Clarkson[9] offer an excellent 4 part rubric for judging the "capabilities and feelings" around support staff (in this case teachers) reactions to the use of ICT. This assessment of capabilities and feelings is in turn divided into 6 key measures of a professional's preparedness for effectively utilizing ICT.[10]

The first conclusion to be drawn from the one to one interviews and surveys carried out is that concerns of socio-economic and organisational impact, as defined in this deliverable, have been largely ignored in the projects studied due to a focus on the social and experiential value of such projects in the past, or due to the fact that very few projects of this sort have actually been tried. As such it has not been possible to learn too much about the practical difficulties involved. This is largely due to the fact that the previous assessments carried out in these sorts of projects was undertaken by the designers of the technology and with a full understanding of the logistical requirements and necessary resources, motivation and commitment to the aims of the project. These advantages however, will not be shared by the secondary users in Senior Channel.

2.4. Conclusions

The main conclusion to be drawn from our research is the lack of precedents for the assessment to be carried out in this deliverable. Indeed, from those technology projects addressing social issues studied, questions of socio-economic and organisational impact of technology (as defined in this deliverable) are generally ignored or given limited importance. However, the study of other less directly related projects has proved very useful in identifying the objectives outlined in Section 4.

[9] Newhouse Paul, Trinidad Sue, Clarkson Barney, p.13 *Teacher Professional ICT Attributes A Framework,* Published by Specialist Educational Services Perth, Western Australia, 2002, Department of Education and Training website - http://www.det.wa.edu.au/

[10] Newhouse Paul, Trinidad Sue, Clarkson Barney

3. Scope of the Assessment

3.1. Overview

Before delineating the specific objectives for the assessment – which we do in Section 4 – it is important to identify the broader scope of the assessment we will run. The is particularly appropriate as the assessment objectives for WP6 need to work in close collaboration with those developed as part of the testing activities carried out under WP5.

As our methodology will be implemented alongside the WP5 work, we need to ensure that there is significant synergy between the scope of the assessment across both work packages.

To that end we will define the three specific areas of interest for our assessment in WP6 and provide some description as to the type of variables we propose to assess within each of these three areas. Throughout this process, we will refer to the scope of the assessment to be run in WP5 and make a clear link between the two.

This then provides a solid and consistent basis for the delineation of our framework methodology in the following section.

3.2. Areas of Assessment

By referring back to the description of work, we can clearly identify three particular – but inter-related – areas for the assessment work to be carried out in WP4. These are the social, the economic and the organisational.

Broadly speaking, the social refers to the impact the Senior Channel technology has on **people**; the economic refers to the way in which the technology can have **business** benefits to participating organisations; and the organisational refers to the way in which the technology impacts on the **organisation** using the Senior Channel technology.

In the scope of the activity defined in 3.4 below, we present an overview of what we will be looking to assess. Then, in Section 4, we elaborate on this overview with a series of objectives. These objectives, in many cases, address more than one of the three areas for assessment – it is the interplay between the social, the economic and the organisational that distinguishes the objectives we assess.

3.3. Relationship between WP6 and WP5

It is important at this stage to identify the relationship between WP6 and WP5, particularly in relation to the **social** aspects. If we consider **social** as referring to the impact the technology has on *people*, there is potentially considerable cross-over with the methodology developed for WP5.

During our assessment process, the methodology developed for WP5 will address issues pertaining first to the technology's impact on primary users (seniors) and its secondary users

(support staff and professionals). WP5 will also study the Senior Channel's **usability** in terms of **motivation** for the users while engaging with the technology and the possible difficulties that may arise during the testing procedure, also across the two types of user. Finally, WP5 will analyse the **quality and appropriateness of content** with a particular focus on how much the content, and functionality, built onto the Senior Channel technology is a motivating influence on the end users. As such, none of these aspects are included in the scope of our work in WP6 – detailed below – and in the subsequent methodology.

While we will, in the following section, define the three specific areas of scope for the assessment process, it is important to note that, in each instance, there are interrelationships between the three areas.

3.4. Summary: Scope of the Assessment

It is important to state that our assessment process will focus both on gathering data from the 'secondary users' (i.e. the support staff/social care workers) and, in parallel, the primary users (i.e. seniors) who are using the technology. We will also engage with potential business partners who may be able to benefit from the implementation and ongoing support of the Senior Channel technology. Primary end users will be engaged with specifically around the social impact of the technology; support staff will be engaged with around the organisational issues; and businesses will be engaged with around the economic impact of the technology.

Our assessment and analysis is focussed predominantly on issues relating to the successful *implementation* of the technology in the chosen application environment, in so doing we are checking the overall preparedness of this environment for this successful implementation, with a view to providing recommendations for take up strategies. The job of assessing the usability of the technology and the motivation of individual primary users will be assumed by the methodology developed in WP5 and described above.

4. Assessment Objectives

4.1. Overview

What follows are an initial list of the primary objectives we will seek to address during the assessment process. These objectives will form the basis for the development of specific indicators in the next deliverable (D6.2). Section 5 explains how we will turn these broad objectives into usable and relevant indicators.

4.2. Objectives relevant to the ORGANISATIONAL aspects of the project

This first set of objectives focuses on the potential challenges that organisations will face in every aspect of implementation and usage of the Senior Channel technology. This includes very practical issues as well as some of the more human factors involved. An understanding of these issues is vital for the Senior Channel technology to be considered for commercial development beyond the end of the project:

4.2.1 Identify the practical issues relating to the installation of the technology including addressing the following:

- physical space needed to install the studio and hardware (size/sound-proofing/privacy etc.)
- technology/hardware needs and set-up
- level of understanding/training required for set-up

4.2.2 Identify issues related to the recruitment of participants for the programme making activities and the effective communication with those participants prior to and during including addressing the following:

- how individuals are identified as being appropriate for being part of production activities
- how those individuals are approached and how arrangements are made with them
- how those individuals are communicated with prior to the TV production activities– how the Senior Channel proposition is explained to them

4.2.3 Identify the practical issues relating to the recording of original programming including addressing the following:

- the time required to effectively record programming elements
- the ability of the support staff to help complete recording activities with end users
- the requirement for/effectiveness of support/instructional materials

4.2.4 Identify the human resource issues pertaining to the effective completion of Senior Channel activities including addressing the following:

- the human resources (in terms of staff time) required to run Senior Channel and to complete original Senior Channel activities
- the staff training required to run Senior Channel effectively
- the level of comfort and motivation amongst support staff around running Senior Channel and completing Senior Channel activities
- the ability of the support staff to effectively deal with questions or issues related to the running of Senior Channel and the completion of Senior Channel activities

4.2.5 Identify issues related to the safe and efficient storage of the hardware including addressing the following:

- the degree of security needed
- the amount of space needed
- whether the hardware can be moved between different spaces efficiently

4.2.6 Identify the way in which the technology could/should integrate with the current activities being run in the centre or institution including addressing the following:

- the particular support role Senior Channel could play to existing activities
- the use of existing content within the centre/institution for broadcast over Senior Channel
- the allocation of human resources within the context of current activities

4.3. Objectives relevant to the SOCIAL aspects of the project

Although some work will be done in WP5 around the usability and user acceptance of the Senior Channel technology and, in line with that, the degree to which the technology has become a success amongst the target group,

4.3.1 Assess the impact of the technology on the socialisation of seniors in terms of the following:

- the extent to which the various activities, individually and collectively, run as a part of Senior Channel create engagement and facilitate better social interactions amongst seniors and their peers

4.3.2 Assess the impact of the technology on the engagement participating seniors have with other actors within the community in terms of the following:

- the extent to which the various activities, individually and collectively, run as a part of Senior Channel create engagement and facilitate better social interactions between seniors and their families, younger members of the community, businesses and other community stakeholders

4.3.3 Assess the extent to which the Senior Channel technology creates a greater sense of engagement amongst seniors in the subjects and activities available via Senior Channel in terms of the following:

- the impact that watching and engaging with Senior Channel content has on the social lives of seniors and on their likelihood to engage more widely with related activities seen or experienced though Senior Channel

4.4. Objectives relevant to the ECONOMIC aspects of the project

When we are thinking about the economic impact of the Senior Channel technology, there are principally three economic groups or actors that we are referring to. First, we are thinking about the public administration, including publically funded centres, who may be able to benefit economically from the implementation of the Senior Channel technology. Second, we are thinking about businesses and service/content providers who may be able to generate revenues through the Senior Channel platform. And finally, we are thinking about the seniors themselves who,

potentially, will be able to generate revenue to support their retirement income though being involved in Senior Channel. These three actors are reflected in the objectives listed below:

4.4.1 Assess the potential economic impact of the Senior Channel technology on partner businesses and content/service providers in terms of the following:

- the potential the Senior Channel platform offers content providers to integrate live and pre-recorded content
- the potential the Senior Channel platform offers service providers to integrate digital TV services
- the potential the Senior Channel platform offers for utilising different payment models (including pay per view and micro-payments) as a mechanism to generate revenue from Senior Channel end users
- the wider potential for the development of alternative revenue streams (including advertising and sponsorship)

4.4.2 Assess the potential economic impact of the Senior Channel technology on public institutions and social services funding in terms of the following:

- the potential the Senior Channel platform offers for generating ongoing revenue for individual elderly centres
- the potential the Senior Channel platform offers for generating ongoing revenue that can contribute to the public (local, regional or national) finances
- the potential costs, if any, of the Senior Channel platform for public institutions and social services funding

4.4.3 Assess the potential economic impact of the Senior Channel technology on individual participating seniors in terms of the following:

- the potential the Senior Channel platform offers participating individuals the opportunity to generate income
- the potential costs, if any, of the Senior Channel platform for participating individuals

4.5. Conclusions

The assessment objectives as defined in the previous section are the result of the known requirements socio-economic and organisational requirements for the Senior Channel technology as well as the investigation into current approaches to socio-economic and organisational research and technology implementation as laid out in Section 2 of this deliverable. The objectives as outlined above are to be considered as first draft and will be refined further after consultation with internal and external stakeholders as part of the work to be carried out as part of the production of Deliverable 6.2.

5. Assessment Methodology

5.1. Overview

An important precursor to the implementation of the Senior Channel impact assessment methodology is a clear understanding of the exact requirements that the Senior Channel technology will impose on the chosen application environment which will be the subject of this assessment. The establishment of these exact requirements will provide the basis for converting the objectives outlined in Section 4 into the indicators that will be developed in D6.2 for use in the impact assessment. In this way, the indicators presented in D6.2 will be a refinement, based on a methodology as set out in this section. This refinement will be subject to an internal (within the Senior Channel consortium) and external (consulted stakeholders and advisors outside the consortium) consultation process that will define each and every indicator.

Each indicator within the research will also be attached to a rubric scale. Having established a rubric within the assessment of each indicator, the project consortium will be able to analyze in-depth the socio-economic and organisational impact of technology take-up among the target group as well as identify areas of weakness to feed into the recommendations for Senior Channel take up strategies to be produced in Deliverable 6.3.

5.2. Developing & Assessing Indicators

The following methodology has been adapted from that set out in the UNESCO report *Developing and Using Indicators of ICT Use in Education*[11]. This methodology is intended to describe the process by which the assessment indicators will be chosen.

Table 1

Step	Action
Step1: Identify all requirements for implementing SENIOR CHANNEL technology and review and clarify overall objectives	➢ Identify optimal state in terms of all system, logistical, human resources, time, ethical requirements for successful implementation of SENIOR CHANNEL ➢ Check objectives as set out in D6.1 against these requirements and review and clarify these objectives as necessary ➢ Consult as broad an number of external stakeholders and relevant experts, including parents if possible

[11] *Developing and Using Indicators of ICT Use in Education*, compiled and published by UNESCO Asia and Pacific Regional Bureau of Education, 2003 (IPS/03/OS/152 – 1500), http://www.unescobkk.org

Step 2: Develop a list of trial indicators	➢ Draw up a list of possible indicators for each objective through an internal brainstorming session ➢ Consult as broad an number of external stakeholders and relevant experts, including parents if possible ➢ Adjust initial set of indicators according to external feedback
Step 3: Check each trial indicator against specified criteria	➢ Check each trial indicator against the criteria laid out in table 2 (overleaf)
Step 4: Select a final list of indicators and establish a rubric	➢ Choose indicators which best meet the criteria laid out in table 2 ➢ Ensure an adequate number of indicators to best gauge the conditions for successful implementation of each objective ➢ Select the minimum number of indicators possible ➢ Establish a rubric)(see 5.3 below) for each indicator ➢ Check each level of the rubric scale according to principles of high face validity and objectivity as laid out in table 2.
Step 5: Prioritise final list of indicators	➢ Use of a scale of 1-5 to determine the usefulness of each indicator in terms of successful implementation of SENIOR CHANNEL technology

Table 2

Criterion	Description
High face Validity	➢ Indicator is intuitively understood ➢ Indicator is a direct measurement, rather than a proxy
Objective	➢ Data collected through all surveys must be consistently comparable ➢ Indicator must avoid any ambiguity in terms of measurement
Adequate	➢ Indicator is entirely consistent with the objective it directly relates to and thus the needs of the project ➢ Indicator provides a sufficiently detailed measure of a facet of the associated objective, while still retaining high face validity and avoiding ambiguity

Quantitative	➢ Quantitative indicators should be used where possible, due to their higher objectivity. ➢ All qualitative indicators must be checked for objectivity.

5.3. Rubric

Survey participants will be asked to rate the level of a given indicator at their institution on a 4 part rubric scale, on a multiple choice basis. In this way data can be easily processed without being overly restrictive in the capturing of data.

Optimal = Chosen application environment exceeds the minimum requirements
Functional = Chosen application environment meets the minimum requirements
Semi-Functional = Chosen application environment shows evidence of a limited though not sufficient level of capacity towards meeting the minimum requirements
Inadequate = Chosen application environment has little or no capacity to meet the minimum requirements

For Qualitative statements, respondents will be presented with a Likert scale to approximate quantitative from qualitative data (see **Table 5**).

Table 3

Rubric level	**Objective**			
	Indicator 1	***Indicator 2***	***Indicator 3***	***Indicator 4***
Optimal	Evidence	Evidence	Evidence	Evidence
Functional	Evidence	Evidence	Evidence	Evidence
Developing	Evidence	Evidence	Evidence	Evidence
Undeveloped	Evidence	Evidence	Evidence	Evidence

Table 4

Rubric level	**Identify the practical issues relating to the installation of the technology**	**Please choose one option**
	Physical space available for the installation of SENIOR CHANNEL	
Optimal	A sound proofed room has been reserved for installing the technology that can only be accessed by a pin code, which will only been supplied to authorized personnel	
Functional	A sound proofed room has been reserved for installing the technology. The room can be locked.	

Developing	A large dedicated room has been reserved for installing the technology although the room is not exclusively used for this purpose.	
Undeveloped	A room has been reserved for installing the technology with no locking facility. Recording of SENIOR CHANNEL programming may be interrupted by background noise.	

Table 5

Optimal	Support staff are highly motivated and experienced in the use of ICT	1. Strongly Disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly Agree

5.4. Capturing Inputs

This section is intended as a precursor to a detailed assessment of data collection methods and techniques which will be carried out in D6.2. The following considerations will be developed in that deliverable:

- Inputs will be captured through traditional surveys and telephone conversations as well as online which will facilitate the analysis and segmentation of data.
- Any online survey data inputs logged on chosen application environment websites will be vetted for security and privacy by the SENIOR CHANNEL Consortium
- Any person charged with the coordination of capturing data at chosen application environment will receive the full support of the SENIOR CHANNEL Consortium.
- The SENIOR CHANNEL project website will be used as a tool for capturing inputs with assessment respondents able to complete a survey within a secure environment.
- Video/images will be used where possible to stimulate responses to indicators, with due consideration for the objective and adequate nature of such material.
- Respondents will be given the opportunity to highlight areas not covered by the indicators established for the assessment.
- Timing of the interviews is key

5.5. Qualitative Inputs

To support the more quantitatively based approach outlined here in section 5, we will also undertake a series of qualitative measures, mainly workshops, to explore all issues identified in the objectives in section 4 with relevant stakeholders. This will include a thorough exploration of the social impact of the technology with both primary end users (seniors) and those who care for and work with them, a detailed analysis of the organisational impact of the technology through engagement with centre staff and an analysis of the economic impact of the technology with businesses, service providers and local administration.

Qualitative inputs will be married with the outputs from the quantitative (online) process in order to generate sound conclusions for the final report in D6.3.

6. Conclusions

Work Package 6 is intended to act as a complementary measure to aid the pilot and usability testing of the Senior Channel technology to be carried out in Work Package 5. As such, it will help to ensure the system, logistical, human resource, time and economic conditions necessary to maximise the effectiveness of the assessments on usability and technology acceptance pertaining to Work Package 3. Work Package 6 will also explore the extent to which the Senior Channel technology has a measurable impact on the socialisation of the target end users, namely seniors.

The methodology used is intended as an objective measure of these conditions in so far as all data collected will be in response to a fixed set of measurement criteria based directly upon the requirements of successfully installing and running the Senior Channel technology with all end users. Furthermore, the Senior Channel consortium will leave opportunities for respondents to highlight considerations that may have been overlooked in the formation of the objectives and related indicators established in this document and in the subsequent D6.2 deliverable. The purpose of measuring the level of these conditions in chosen application environments is not intended in any way as a general assessment of the capabilities of these environments, rather purely as a measure of the specific requirements of the Senior Channel project.

The next deliverable from this work package – D6.2 Assessment Protocol And Handbook – will use the objectives as set out in Section 4 of this deliverable as the basis for providing a more specific set of assessment indicators for each objective. The consolidated indicators developed according to the methodology outlined above will provide a controlled and objective basis for the effective running of the assessment and will provide us with the basis of our inputs for the set of recommendations for take up strategies to be presented in D6.3.