



SCOTTISH EXECUTIVE

# Review of Interactive Digital Television Pilot

Local Government



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# **REVIEW OF INTERACTIVE DIGITAL TELEVISION PILOT**

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# CONTENTS

<b>LIST OF ABBREVIATIONS</b>	7
<b>GLOSSARY OF TERMS</b>	8
<b>1. EXECUTIVE SUMMARY</b>	10
<b>2. INTRODUCTION AND METHODOLOGY</b>	14
2.1 Overview	14
2.2 Background to the Pilot	14
2.3 The Scottish iDTV Pilot	14
2.4 Research Aims and Objectives	15
2.5 Research Design and Methods	15
2.6 Background and Project Documentation	16
2.7 System Usage Data	17
2.8 Project Partner Interviews	17
2.9 Focus groups with Service Users	17
2.10 Service User Interviews	19
<b>3. iDTV IN THE UK: POLICY AND PRACTICE</b>	22
3.1 Overview	22
3.2 Background	22
3.3 iDTV: The Technology	22
3.4 iDTV: The Vision	24
3.5 iDTV: The Policy Context	25
3.6 The Pilots	26
3.7 The Evidence Base	27
<b>4. THE SCOTTISH iDTV PILOT</b>	30
4.1 Overview	30
4.2 Technological Aspects of the Pilot Service	30

4.3 Managerial Aspects of the Pilot Service	32
4.4 Origins of the Pilot	33
<b>5. RANGE AND PATTERNS OF USE</b>	<b>36</b>
5.1 Overview	36
5.2 Usage Data	36
5.3 Trends in Use	38
5.4 Comparisons with Other iDTV Pilots	38
<b>6. PROJECT PARTNERS: EXPERIENCES AND PERCEPTIONS</b>	<b>40</b>
6.1 Overview	40
6.2 Contributions to the Pilot	40
6.3 Details of the Scottish iDTV Pilot Project	41
6.4 Project Origins	43
6.5 Organisation and Management	45
6.6 System Configuration and Organisational Integration	46
6.7 System Content	46
6.8 Service Users	48
6.9 Conclusions	51
<b>7. SERVICE USERS: EXPERIENCES AND PERCEPTIONS</b>	<b>54</b>
7.1 Overview	54
7.2 Interviewee Details	54
7.3 Experience of iDTV	54
7.4 Using the Pilot	55
7.5 Motivators and Inhibitors	56
7.6 Comparisons with Other iDTV Service Users	56
<b>8. CONCLUSIONS AND RECOMMENDATIONS</b>	<b>58</b>
9.1 Overview	58
9.2 Conclusions	58
9.3 Recommendations	60
<b>9. BIBLIOGRAPHY</b>	<b>62</b>

## **APPENDICES**

Appendix A.	Project Documentation Supplied by the Project Partners	64
Appendix B.	Project Partner and Service User Interviews	66
Appendix C.	Project Partner Interview Topic Schedule	68
Appendix D.	Service User Recruitment: Newsletter Article, Dumfries and Galloway Elderly Forum	70
Appendix E.	Service User Recruitment: Sample Email, Citizens' Panel West Lothian Council	72
Appendix F.	Service User Interview Topic Schedule	74

## LIST OF TABLES

Exhibit 1.	How to Access the Scottish iDTV Pilot Service	30
Table 1.	Potential iDTV Services	23
Table 2.	The Scottish iDTV Pilot: Information and Interactive Content	31
Table 3.	Chronology of Key Events: The Scottish iDTV Pilot	34

## **ABBREVIATIONS**

CITU	Central Information Technology Unit
DCMS	Department of Culture, Media and Sport
DTI	Department of Trade and Industry
DTV	Digital Television
EPG	Electronic Programme Guides
ESD	Electronic Service Delivery
ICT	Information and Communication Technology
iDTV	Interactive Digital Television
PAG	Project Advisory Group
PIU	Performance and Innovation Unit
ODPM	Office of the Deputy Prime Minister
SSSL	Sky Subscriber Services Limited
TV	Television
UK	United Kingdom

## GLOSSARY OF TERMS

<b>Back-End Integration</b>	The linking of a technology or information service, for example an iDTV or Web based service, to existing information systems, such as databases or a content management system.
<b>Bandwidth</b>	The capacity of a communications medium to carry data. Generally speaking, the greater the bandwidth, the greater the amount of data that the channel can carry. Typically, a channel used to transmit one analogue television signal can, with digital transmission, carry at least four digital services.
<b>Content Management System</b>	A type of computing system that allows data and information to be stored as 'content' in a standardised format. This content can then be made available to users via a number of delivery technologies, most often via the Internet.
<b>Convergence</b>	The process by which many information and communications technologies are adopting the same digital technologies and communications standards and the extent to which these separate technologies are merging.
<b>Digital Cable (DC)</b>	Digital signals delivered to households via networks of fibre-optic cables, which are decoded by a set-top box supplied by the service provider as part of a subscription package.
<b>Digital Inclusion</b>	A policy term which argues that access to information and communication technologies has become increasingly important for employment, access to services and community integration. Digital inclusion policies seek to ensure that everyone have access to the opportunities offered by ICT's.
<b>Digital Satellite (D-Sat)</b>	Digital satellite signals are received by a dish mounted on the outside of a building, and are decoded using either a set-top box or a satellite-compatible integrated digital television set.
<b>Digital Switchover</b>	The move by government and the television industry to switch off analogue terrestrial television transmission and rely wholly on digital transmission. Switchover is likely to occur by 2012.
<b>DigiTV</b>	The project examining iDTV on behalf of local authorities and funded by the Office of the Deputy Prime Minister.
<b>Digital Terrestrial Television (DTT)</b>	Digital signals broadcast through an upgraded transmitter network and received through a normal TV aerial. Signals are decoded by a set-top box and viewed on an analogue television, or viewed directly using a digital television set.
<b>Electronic Programme Guides (EPG)</b>	The means by which users can access and select particular digital television services.
<b>Interactive Digital</b>	Television which receives and displays a digital signal and which uses a 'return path' to allow the user's equipment to communicate with the

<b>Television (iDTV)</b>	service provider. iDTV therefore allows for greater service interactivity.
<b>Internet</b>	The world-wide open network of computer networks to which home computers can be connected, allowing access to the world-wide-web, the graphical aspect of the Internet where information is displayed as a page, and to electronic mail.
<b>Navigation</b>	The process of selecting specific data, information or services, to move around a particular service. Typically this is done by selecting options from a menu or else by following navigation prompts such as arrows.
<b>Pathfinder Projects</b>	Projects funded by the Office of the Deputy Prime Minister with a remit to investigate the role of specific technological or organisation innovation in local government, and to disseminate their findings.
<b>Red Button Services</b>	iDTV services which are typically associated with broadcast programme content and are accessible by pressing the 'red button' on the digital handset. Certain broadcast programmes show onscreen prompts to indicate to viewers that such content is available through the 'red button'.
<b>Return Path</b>	Means by which a viewer's equipment can communicate with the service provider. On digital satellite, the return path is via a telephone line connected to the set-top box. On digital cable, the return path uses the same cable that provides the digital signal to the set-top box. Digital terrestrial television providers can also use a telephone line as a return path, though only one provider offers such a service at the present time.
<b>Set-Top Box</b>	A device that allows a standard analogue digital television set to receive and decode digital television signals.
<b>SSSL Testing</b>	Sky Subscribers Services Limited Testing. A strict mandatory test that is undertaken before the launch of any Sky digital television service, to ensure that the content is displayed on screen in the correct way.
<b>Template</b>	A framework that sets out the layout and style of the content to be provided on a service. Templates can be used to ensure a consistent look and feel, or to avoid the production of content that is unsuited to the medium used.



## 1. EXECUTIVE SUMMARY

1. This report presents an evaluation of the Scottish iDTV (interactive Digital Television) pilot. The research reported here was commissioned by the Scottish Executive in May 2005, undertaken by Dr Colin Smith, Napier University and Dr William Webster, University of Stirling, and coordinated by the Project Advisory Group (PAG).
2. The Scottish iDTV pilot service, led by the Scottish Executive in collaboration with Dumfries and Galloway Council, NHS Scotland (Health Scotland) StartHere, West Lothian Council and Young Scot, provided electronic public services and information via digital television. The pilot was available on the Sky Digital platform and ran for six months after being officially launched on 7 September 2004. It was intended to test the feasibility of delivering public services through iDTV. More detailed information about the pilot is contained in chapter 4.
3. The overarching aim of the research reported here was to produce a study of the experiences and views of both service providers and iDTV users in order to assess the effectiveness of the Scottish iDTV pilot, and to identify lessons on the potential of iDTV as a medium for improving access to information and services. Further specific research objectives are listed in chapter 2.
4. The research methodology utilised in this study used multiple methods to capture data from project stakeholders, including: a review and analysis of project and policy documentation, a review and analysis of usage data, interviews with representatives of the main project partners, and interviews with service users. All research activities were completed between 7 June 2005 and 11 July 2005. Chapter 2 presents a full account of the research methodology.
5. Initially the intention was to conduct a number of focus groups with a representative sample of service users. However, the unavailability of sufficient numbers of service users led the research team, in agreement with the PAG, to undertake interviews with a small number of identified service users. Chapter 2 presents a full account of the mechanisms used to recruit service users as research participants.
6. Chapter 3 presents an overview of iDTV policy and practice in the UK, with specific reference to the use of iDTV for the provision of electronic public services. This chapter finds that although digital television is a relatively new technology, it has rapidly diffused across society, and therefore represents a unique opportunity to deliver electronic services directly into citizens and service users' homes. The take up of digital television, the forthcoming digital switchover, the development of government policy and services in this area, and the emerging evidence base from a number of iDTV initiatives, points to iDTV being an important complimentary medium for the future delivery of electronic government and public services.
7. Chapter 3 also finds that the evidence base emerging around existing iDTV initiatives suggests that citizens and service users are interested in using iDTV to access e-government services, in particular, when there is a clear reason, or purpose, for using iDTV, and where content is relevant and up to date. The emergent evidence base also suggests that the most popular iDTV content is local and community information and

the ability to undertake certain transactions, particularly, making appointments, submitting applications, requesting information, making payments and voting.

8. Chapter 4 presents a description of the main features of the Scottish iDTV pilot, including both technological and managerial aspects. The main features of the pilot were: an iDTV service available via the Sky Digital platform, a range of informational and interactive content from each the main project partners, a service officially available for six months from 7 September 2004, and a partnership approach to project management.
9. Chapter 5 comments on the range and patters of use of the pilot in the period being evaluated and is based on 'service reports' provided by the PAG. It finds that although all sections of the pilot were viewed or used there was actually very limited use of the service. The lack of service use may be explained by a number of factors, including: difficulty in accessing the service, the slow speed of the service, the cost of accessing the service, the scope of content and the limited extent of service user recruitment. The lack of service use makes discerning reliable trends in use difficult, however, it is apparent that service use was highest in the late morning and early evening and that service use declined over time.
10. Chapter 6 presents an account of project partners' experiences and perceptions of the project processes and outcomes. Data for this chapter derives from semi-structured interviews with nine project partner representatives. In general, the project partners found being involved with the pilot a rewarding and valuable experience, which provided significant learning about a relatively immature technology. Project partners agreed that the realisation of a 'live' iDTV service had been a considerable achievement, demonstrating the feasibility of delivering public services via iDTV. However, all agreed that this achievement was tempered by the lack of service use and the inability to integrate the service with their existing content management systems.
11. Chapter 7 presents service users' experiences and perceptions of the iDTV pilot service. Data for this chapter derives from semi-structured interviews with two service users. In general, service users were already familiar with iDTV and found the service to be interesting, useful and easy to use. Respondents also reported that the service had a narrow scope, when compared to the Internet, but that it was potentially an important addition to the provision of electronic services.
12. Conclusions drawn from the research discussed in this report are presented in chapter 8 and include general conclusions about the role iDTV has to play in the delivery of public services and specific conclusions about the Scottish iDTV Pilot. In general, it is apparent that iDTV is likely to become an important complimentary platform for delivering electronic public services and that the evidence base suggests citizens and service users are interested in accessing information and making transactions over the iDTV platform. However, the provision of public services via iDTV is still in its infancy and is not yet sufficiently advanced to support widespread provision and use. More specifically, the main achievement of the Scottish Pilot was designing and delivering a 'live' iDTV service, at a time when relatively little was known about the technology and how it could be used for delivering public services. Consequently,

the pilot involved extensive organisational and individual learning amongst the project partners. The full list of conclusions can be found in chapter 8.

13. Chapter 8 also presents a series of recommendations. Two key recommendations presented are, firstly, that the Scottish Executive develop a position on the future provision of public iDTV services in Scotland, and secondly, that the Scottish Executive captures, for future reference the key learning experiences and outcomes from the iDTV pilot. Furthermore, now the Scottish pilot has finished it is important that the Scottish Executive makes reasoned decisions about the immediate provision of iDTV services in Scotland. Possible options include, reinstating the pilot service, developing an enhanced service, developing a portal presence and rolling out the service to other service providers on a cost-recovery basis, establishing a presence on DigiTV, or withdrawing from the iDTV area altogether. A thorough review of these options should take place and should inform the development of iDTV provision in Scotland. The full list of recommendations can be found in chapter 8



## 2. INTRODUCTION AND METHODOLOGY

### 2.1 Overview

This report presents a review of the Scottish Interactive Digital Television (iDTV) pilot. The research reported here was commissioned by the Scottish Executive Finance and Central Services Department in May 2005. The report is organised around nine main chapters. Following the Executive Summary, this chapter introduces the report and sets out the research methodology. Chapters 3 and 4 then go on to describe the iDTV UK policy context and the Scottish iDTV pilot. Chapter 5 explores the range and patterns of system use. Chapters 6 and 7 examine project partners' and service users' experiences and perceptions of the iDTV pilot. Chapter 8 presents key conclusions and recommendations. Chapter 9 is the bibliography, which is followed by the appendices.

### 2.2 Background to the Pilot

Across the UK, public service providers are committed to delivering public services through a range of channels, including new channels based on the capabilities of new information and communication technologies (ICTs). iDTV represents a novel and distinctive ICT platform in that it offers the potential for delivering services directly into users' and citizens' homes via the familiar technology of television. With digital television penetration rates in the UK reaching over 60% of households<sup>1</sup>, iDTV could make services widely accessible and more socially inclusive. Significantly, penetration is particularly high in client groups which lack easy access to other delivery platforms, and also in those socio-economic groups that are traditionally intensive users of public services.

However, iDTV is a relatively new technological platform, and one which service providers and users have limited experience of. In order to test the suitability of the platform for the delivery of public services a number of service providers have undertaken iDTV initiatives, including: 'INtouch kirklees'<sup>2</sup>, 'Somerset Online'<sup>3</sup> and the Scottish Executive led 'Interactive Digital Television Pilot'. Each of these pilots are intended to assess the feasibility of delivering services over the platform, to identify which services are wanted and used, and to identify the technological and organisational implications of using iDTV for their delivery.

In Scotland, the Scottish Executive is committed to delivering public services through a range of channels, potentially including iDTV. The Scottish Executive's 'Partnership for a Better Scotland'<sup>4</sup>, 'Customer First'<sup>5</sup> programme, 'Digital Inclusion'<sup>6</sup> strategy, and 'Reaching the Citizen' (Scottish Executive, 2003) review sets out its commitment to expanding the range of government services delivered electronically and to examining the potential contribution of iDTV.

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<sup>1</sup> [http://www.ofcom.org.uk/media/news/2005/06/nr\\_20050623\\_20050610#content](http://www.ofcom.org.uk/media/news/2005/06/nr_20050623_20050610#content)

<sup>2</sup> <http://www.kirklees.gov.uk/community/intouch/intouch.shtml>

<sup>3</sup> [http://www.digitv.org.uk/content\\_images/case\\_study\\_somerset\\_tcm2-441.doc](http://www.digitv.org.uk/content_images/case_study_somerset_tcm2-441.doc)

<sup>4</sup> <http://www.scotland.gov.uk/library5/government/pfbs.pdf>

<sup>5</sup> <http://www.scotland.gov.uk/Resource/Doc/1067/0006391.pdf>

<sup>6</sup> <http://www.scotland.gov.uk/library3/enterprise/dics.pdf>

## **2.3 The Scottish iDTV Pilot**

The Scottish iDTV Pilot was an initiative, led by the Scottish Executive, to test the feasibility of delivering electronic public services and information via digital television. The pilot ran for six months, from 7 September 2004, on the Sky Digital platform, and involved collaboration between a range of partner agencies, including: Dumfries and Galloway Council, NHS Scotland (Health Scotland), the Scottish Executive, StartHere, West Lothian Council and Young Scot. The pilot service provided information about a range of public services, including information about health, youth and local and community services. The review presented in this report represents the main evaluation of this pilot system.

## **2.4 Research Aim and Objectives**

The aim of the research was to produce a study of the experiences and views of both service providers and iDTV users in order to assess the effectiveness of the Scottish iDTV pilot, and identify lessons on the potential of iDTV as a medium for improving access to information and services.

Specific research objectives were to:

- Analyse the views and experiences of representatives of the Scottish Executive and five partner organisations involved in the research in relation to both the operational processes involved and the outcomes of the pilot
- Analyse the views and experiences of those who have accessed and used the system in Dumfries and Galloway and West Lothian
- Compare findings from these studies to those of the research undertaken at the outset of the pilot for the then Scottish Executive 21<sup>st</sup> Century Government Unit in 2003
- Locate these findings in the context of existing knowledge of and research about interactive digital television in the UK, including information on national coverage and usage, users' characteristics, interests and preferences, and the principal recent developments in iDTV technology and public policy
- Offer recommendations based on these findings and on the key issues for the Scottish Executive and its partners to consider regarding the future development of iDTV as a means of providing more accessible public information and services

## **2.5 Research Design and Methods**

The research methodology was designed to address the research aim and objectives set out above. The methodology utilised multiple methods to capture data from project stakeholders, with data collection occurring through four main inter-related components. The first component comprised a review and analysis of policy and project documentation,

together with an analysis of the research undertaken at the outset of the pilot in 2003<sup>7</sup>. The second component consisted of a review and analysis of system usage data. The third component consisted of interviews with representatives of the project partners, and the fourth, interviews with service users. All research activities were completed between 7 June 2005 and 11 July 2005 after the pilot ceased transmission in April 2005. The fact that the service was not 'live' when the research was conducted may have impacted upon efforts to identify and recruit service users.

### ***The Research Team***

The research presented in this report was conducted and analysed by the research team, Dr Colin Smith and Dr William Webster.

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## **2.6 Background and Project Documentation**

The research team collected a range of practitioner and academic documentation associated with iDTV. Materials collected include UK Government and Scottish Executive policy documents relating to iDTV and e-government, and materials relating to other UK iDTV pilots. The Project Advisory Group (PAG) supplied various documents relating to the Scottish pilot, these are listed in Appendix A. The bibliography contains a broader list of sources used. An analysis of these materials locates the pilot in existing knowledge about iDTV and the UK iDTV policy environment. The research team also compared research findings with those from previous research undertaken at the outset of the project for the Scottish Executive 21<sup>st</sup> Century Government Unit by Lambda Research and Consultancy Ltd (Gilliatt and Brogden, 2004); these are discussed in section 4.4. Additionally, the research team were able to draw on unpublished research into this project that they had undertaken in Autumn 2004. This research consisted of semi-structured interviews with the main project partners and analysis of service design and project documentation.

The research team were provided with all available project documents, however, these did not include documentation setting out the pilot's aims and objectives, detailed project costs, nor 'screen dumps' or a demonstration of the service that went live.

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<sup>7</sup> <http://www.scotland.gov.uk/Publications/2005/05/19132826/28274>

## **2.7 System Usage Data**

The research team undertook a brief analysis of usage data generated by the pilot. This data provided insights into actual use of the service and was compared with usage patterns for other iDTV pilots. Usage data, in the form of monthly and weekly ‘service reports’ produced by Fernhart New Media (Griffiths, 2005; Fernhart New Media, 2004) was supplied to the research team by the PAG.

## **2.8 Project Partner Interviews**

Interviews with nine representatives from the partner organisations explored experiences and perceptions of processes and outcomes of the pilot. Interviews were semi-structured and were conducted either in person or by telephone. Interviews were noted, recorded and transcribed. Appendix B provides full details of the project partners interviewed.

The interview topic schedule used in the project partner interviews was designed by the research team and agreed with the PAG. A list of indicative content areas to be addressed in interviews with the project partners was initially included in the original research proposal. This list was further developed into a full interview topic schedule with eight discrete areas covering: interviewee details, basic details of the project, origins of the project, organisation and management, system configuration and organisational integration, system content, service users and conclusions. The full topic schedule can be found at Appendix C. The schedule was circulated to the PAG on the 9 June 2005, no revisions were requested.

## **2.9 Focus Groups with Service Users**

The original research proposal proposed undertaking a series of focus groups with service users in Dumfries and Galloway and West Lothian to explore users’ perceptions and experiences of iDTV. However, the research team were unable to recruit a satisfactory sample of potential focus group participants making this approach inappropriate. The failure to recruit enough focus group participants was not unexpected and was raised as an issue in the original research proposal and in the Inception Meeting on 7 June 2005. Instead, the research team and PAG agreed that the research team undertake service user interviews with those users who had been identified as possible focus group participants. The decision to undertake interviews as opposed to focus group was made following submission and discussion of the Initial Report.

The research team initiated a range of activities in order to recruit potential focus group participants who had used or seen the pilot. These activities are discussed below.

### ***The Lambda Research***

The research team and PAG agreed that a potential source of users of the service were those individuals who took part in the 2003 Lambda research (Gilliatt and Brogden, 2004) for the Scottish Executive’s 21<sup>st</sup> Century Government Unit. It was anticipated that having been involved in this research users would have heightened awareness of iDTV and were therefore more likely to revisit the service once it was live. The Scottish Executive

contacted Lambda to ascertain whether those people who took part in the original research indicated whether they were willing to be contacted again. Unfortunately, Lambda were unable to provide any contact information in time to recruit participants for this evaluation.

### ***Service Users in Dumfries and Galloway***

Potential service users in Dumfries and Galloway were targeted in a number of ways:

#### Email, Dumfries and Galloway Council

The research team supplied text to Dumfries and Galloway Council to be sent as an internal email to all council staff. The email was circulated to approximately 2,500 staff in the week beginning Monday 13 June. No service users were identified.

#### iDTV Pilot Competition Entrants

Dumfries and Galloway Council contacted the iDTV Pilot Competition entrants to see if they would participate in further research. Four service users were identified.

#### Dumfries High School

The research team contacted Colin Mitchell, the Headmaster of Dumfries High School, to assist with the identification of pupils who had used the pilot service. A general appeal was made over the school public address system. Three pupils who took part in the Lambda research in December 2003 came forward. The research team wrote to each of these to ascertain whether they went on to use the pilot system and would agree to participate in further research. No service users were identified.

#### Dumfries and Galloway Elderly Forum

The research team contacted Hector Campbell at the Dumfries and Galloway Elderly Forum and supplied text to go in the Forum's Newsletter appealing for service users to come forward. A copy of the text published in the Newsletter can be found at Appendix D. No service users were identified.

### ***Service Users in West Lothian***

Potential service users in West Lothian were targeted in a number of ways:

#### Opinion Taker, West Lothian Council

West Lothian Council suggested that the 'Opinion Taker' would be a more effective recruitment mechanism than the distribution an internal email. However the backlog of content for the Opinion Taker meant the research team and West Lothian Council reverted to circulating an internal email.

#### Email, West Lothian Council

The research team supplied the text for an email circulated to all West Lothian Council staff. The email was distributed in the week beginning 27 June 2005. No service users were identified.

#### Citizens' Panel, West Lothian Council

At the start of week beginning Monday 13 June 2005, members of West Lothian Council's Citizens' Panel who had previously indicated that they had digital television (approximately 60% of the Panel) were contacted by the research team to ascertain whether or not they had seen or used the iDTV pilot whilst it was live. 743 Panel members were contacted, 340 by letter and 403 by email. Of the emails sent out, 75 were 'undeliverable' and there were 144 replies. Of the replies, one person

indicated that they had seen or used the pilot. As a result of receiving letters, five panel members contacted the research team by telephone, but none had actually seen the pilot. A copy of the email can be found at Appendix E.

#### Youth Congress, West Lothian Council

In week beginning Monday 13 June 2005 the research team supplied text to West Lothian Council to be circulated as an email to members of their Youth Congress. The email was circulated by West Lothian Council to 15 'core group members'. No service users were identified.

#### Inveralmond Community High School

Bill Tevendale, the Headmaster of Inveralmond Community High School, was contacted by the research team and agreed to assist in identifying pupils who had used the pilot service. A general appeal to students was made over the school's public address system, but no service users were identified.

#### Older Group Network, West Lothian

The research team contacted the Older Group Network in order to circulate a general appeal for service users. The delay in the provision of these details made an appeal unworkable, given the project timescales.

### ***Applicants for a Young Scot Card***

While undertaking the review of system feedback the research team discovered the contact details of six service users who applied, via the iDTV pilot, for Young Scot cards. To meet Data Protection requirements, Young Scot were requested to contact each of these service users to ascertain whether they would participate in service user interviews. Young Scot wrote to each of these service users asking them to contact the research team, but no service users were forthcoming.

Appendix E presents a sample of email correspondence sent out by the research team in order to recruit potential focus group participants. Similar correspondence was sent out to staff at Dumfries and Galloway Council, staff at West Lothian Council, pupils at Dumfries High School, members of West Lothian Council's Citizens' Panel, and members of the West Lothian Youth Congress.

## **2.10 Service User Interviews**

Interviews with service users were undertaken in order to explore their views, perceptions and experiences of the iDTV pilot. Interviews were semi-structured, conducted by telephone, and lasted approximately 20 minutes. They were noted and recorded. Two service users were interviewed, full details of the interviews conducted are contained in Appendix B. Service users were identified through the process of trying to identify focus group participants.

The interview topic schedule used in the service user interviews was designed by the research team and agreed with the PAG. The topic schedule covered seven main areas: interviewee details, experience of iDTV, using the pilot, usability, usefulness, interactions, and motivations and inhibitors. The topic schedule was circulated to the PAG on 4 July 2005 and was revised on 5 July 2005. The full schedule is attached at Appendix F.

In total, eleven service users were identified by the research team; four competition entrants, one citizens' panel member, and six Young Scot card applicants. Of these, only two agreed to take part in the research, the remainder did not respond to requests for participation.

The small number of service users identified and interviewed may be explained by a number of factors, possibly including: the relatively small number of total service users, the inability to identify past service users, the shut down of the service before the service user interviews were conducted, the failure to recruit service users and evaluation participants while the service was live, the limited promotion of the service, and the unavailability of service users who participated in the 2003 Lambda research.



### **3. iDTV in the UK: Policy and Practice**

#### **3.1 Overview**

This chapter presents an overview of iDTV policy and practice in the UK, with specific reference to the use of iDTV for the provision of public services and citizenship. Included in this chapter is a brief outline of iDTV technology, current UK Government policy on iDTV and e-government, and of the main UK iDTV initiatives.

The chapter concludes, that although digital television is a relatively new technology, it has rapidly diffused across society, and therefore represents a unique opportunity to deliver electronic services directly into citizens' and service users' homes. The significance of the digital television platform, the diffusion of digital television, the imminent digital switchover, the development of UK policy and services in this area, and the evidence base arising from iDTV initiatives, points to the emergence of iDTV as an important complementary platform for the future delivery of electronic government and public services. It is not unreasonable to predict that all the main public service providers are likely to have a growing interest in digital television.

#### **3.2 Background**

The background to the emergence of iDTV is the development of new ICT's and the subsequent convergence of different technologies, including: telephony, computing, photography and television. Developments in new ICT's have transformed the way government, public and democratic services are delivered and received, they have enhanced existing services, and led to the provision of innovative new electronic services (Bellamy and Taylor, 1998). Such services are perceived to be faster, cheaper and more accessible. Central to the emergence of information age services has been the rapid spread of the Internet, and today all key service providers have a presence on 'the Web'. However, the ability to deliver electronic services directly to citizens' homes is an ambition that has been constrained by the absence of a suitable platform in the majority of households. Significantly, by using television, iDTV utilises a medium that is ubiquitous, popular and convenient, and therefore represents the main opportunity for delivering electronic services directly to all homes (Smith and Webster, 2002).

#### **3.3 iDTV: The Technology**

Although the terms 'iDTV' and 'digital television' are often used interchangeably they refer to different aspects of the digitisation of television services. Digital television, or DTV, refers simply to the digital broadcast and reception of digital television signals, as opposed to traditional analogue signals. Digital signals are more efficient than analogue signals because more services can be broadcast using less bandwidth capacity and because digital broadcasts offer improvements in terms of picture and sound quality. Interactive digital television (iDTV) on the other hand involves the transmission of television signals using digital rather than conventional analogues methods *and* interaction with 'viewers' through the existence of a 'return path', or two-way signal. So where DTV involves the

broadcast of digital programmes, iDTV also allows for the transmission of interactive two-way information and services.

There are three main digital television platforms in the UK - satellite, terrestrial and cable - with each platform providing access to digital television services. The main digital television broadcasters are: Sky Digital, providing digital satellite services, FreeView, providing digital terrestrial services, and NTL and Telewest, both providing digital cable services. Each platform employs different broadcasting infrastructure, and consequently different equipment requirements for receiving services. Digital satellite services are received through a satellite dish, digital terrestrial services through a conventional television aerial and set top box, and digital cable services through the network operator's fibre optic cable network. None offer total UK coverage.

### ***Types of Service that can be Delivered via iDTV***

A range of public services can be provided electronically using iDTV, they can be either 'information', 'interaction' or 'transaction' services (Smith and Webster, 2002). Each offers a different level of interactivity and is determined by available bandwidth and whether a return path exists. Information services repackage and broadcast in an electronic format information that is already available elsewhere. This type of iDTV service is typified by digital Teletext. Interaction services allow users/viewers to shape information provision (broadcasts) to their specific circumstances or requirements, and to communicate with public service providers. Unlike information services that only allow for the one-way provision of information, from service provider to user/viewer, interaction services allow for a more qualitative two-way communication. Interaction services include Electronic Programme Guides (EPG), 'Red Button' services, post-code searches and the ability to send email. Transaction services allow the user to exchange information and in doing so complete a transaction. Transaction services include: online banking, gambling and shopping. Table 1 presents a categorisation of potential iDTV applications and services.

**Table 1. Potential iDTV services**

<b>Category</b>	<b>Activity</b>	<b>Example Service</b>
<b>Information services</b>	Provision of information	Publishing the opening times of local facilities
<b>Interaction services</b>	Searching for information Email communication	Searching for local facilities or representatives by postcode To request information or make a complaint
<b>Transaction services</b>	Completing and transmitting forms Making and receiving payments	Planning applications, online booking of facilities Paying Council Tax, receiving benefits

(Source: Adapted from Smith and Webster, 2000, p21)

### ***Take-up of Digital Television***

The UK is considered to be the world leader in the diffusion of digital television. In just over five years since the launch of the technology, over 50% of all UK homes are using digital television services<sup>8</sup>. Recent data published by Ofcom estimates that by the end of March 2005, 61.9% of households, or 15.4 million households, were accessing digital television<sup>9</sup>.

### ***The Digital Switchover***

It is the Government's intention to cease all analogue terrestrial TV broadcasting at some point between 2006 and 2012. The switch to digital would be subject to: everyone who currently receives free-to-view analogue TV channels, BBC1, BBC2, ITV1, Channel 4 and Channel 5, having access to these channels digitally, and switching to digital being affordable for the vast majority of people (DTI, 2000<sup>10</sup>).

Progress towards digital switchover is being carefully monitored by the Digital Television Project under the joint stewardship of the Department for Culture, Media and Sport (DCMS) and the Department of Trade and Industry (DTI). This project resulted in the development of a detailed Digital Television Action Plan setting out the various tasks that needed to be completed to enable the Government to make decisions about the timescale for switchover. The Final Action Plan<sup>11</sup> was published in October 2004 and informed 'The Report of the Digital Television Project'<sup>12</sup> published by DCMS on 23 March 2005. In June 2005 the project published 'A Guide to Digital Television and Digital Switchover'<sup>13</sup>.

### **3.4 iDTV: The Vision**

It is "the Government's vision that DTV becomes a means to provide all citizens with access to e-government services" (Cabinet Office, 2003, p3). More than 97% of households possess at least one television set (CITU, 2000), making it one of the most pervasive, familiar and accepted technologies in the home. iDTV therefore provides the potential for government and public service providers to reach virtually the whole population, giving people a new way to access and consume public services. Furthermore, when the 'digital switchover' takes place all televisions will be digital, making iDTV the most pervasive government-to-citizen channel.

An important driving force behind the emergence of the iDTV platform is the belief it can help overcome social inclusion, by bringing e-government services to people who currently may be reluctant or unable to use them via personal computers. At the moment digital television has a higher household penetration rate than the Internet, especially in

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<sup>8</sup> [http://www.ofcom.org.uk/media/news/2005/06/nr\\_20050623\\_20050610#content](http://www.ofcom.org.uk/media/news/2005/06/nr_20050623_20050610#content)

<sup>9</sup> [http://www.ofcom.org.uk/media/news/2005/06/nr\\_20050623\\_20050610#content](http://www.ofcom.org.uk/media/news/2005/06/nr_20050623_20050610#content)

<sup>10</sup> [http://www.communicationswhitepaper.gov.uk/pdf/ex\\_summ.pdf](http://www.communicationswhitepaper.gov.uk/pdf/ex_summ.pdf)

<sup>11</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/publications/ActionPlanvs12\\_oct04.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/publications/ActionPlanvs12_oct04.pdf)

<sup>12</sup> [http://www.digitaltelevision.gov.uk/publications/pub\\_dtv\\_project\\_report.html](http://www.digitaltelevision.gov.uk/publications/pub_dtv_project_report.html)

<sup>13</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/publications/guide\\_dtvswitchover\\_june\\_05.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/publications/guide_dtvswitchover_june_05.pdf)

the homes of lower income groups, groups who traditionally are intensive public service users.

Central to the Executive's vision for iDTV is increasing the take-up of e-government services. iDTV is not intended to achieve this alone, but is one of a several channels designed to deliver complimentary e-services. These channels include, the Internet, mobile telephony, call centres and electronic kiosks. iDTV therefore also contributes to the objective of making all services available electronically by 2005 and to offer multiple access routes to all services.

### **3.5 iDTV: The Policy Context**

In the White Paper, 'Modernising Government' (Cabinet Office, 1999), the Government identified Electronic Service Delivery (ESD) as a key feature for the 'renewal' and 'reform' of public services. Modernising Government also goes on to state that all dealings with government should be capable of being delivered 'electronically' by 2008 - since revised to 2005. The vision for information age services is further expanded upon in the Performance and Innovation Unit's report 'e-Gov: Electronic Government Services for the 21<sup>st</sup> Century' (PIU, 2000). This report argues that ESD will transform the way public services are provided, by allowing service users to choose when and where they interact with government, by delivering services through multiple channels, and by reorganising government to deliver services that are customer focussed. e-Gov goes on to state that digital television will play an increasingly important part in realising the Government's vision for information age services.

In 2000, the Central Information Technology Unit (CITU) published the 'Digital TV: Framework for Information Age Government' consultation document, and in 2002, iDTV was identified as a key channel for ESD in the Office of the e-Envoy's, 'Channel Strategies' Framework, (Cabinet Office, 2002). In December 2003, the Office of the e-Envoy published a policy framework setting out the potential future for iDTV and e-government services (Cabinet Office, 2003). The framework outlined the government's vision for iDTV and sets out a range of policies for a coordinated way forward. Key developments included: establishing a central iDTV presence, in the form of UK Online Interactive (now Directgov), setting up the Digital Television Project to manage the digital switchover, and encouraging service providers to experiment with iDTV technology.

#### ***iDTV in Scotland***

In Scotland, the development of iDTV policy has emerged from the 21st Century Government Unit under the banner of 'Digital Inclusion'. In 2002, the Scottish Executive initiated the Scottish iDTV pilot to examine the feasibility of delivering public services and information via iDTV. This review represents the main evaluation of this pilot service. In February 2003, the Executive published 'Reaching the Citizen: A Guide to Providing Public Service Information on Interactive Digital Television' (Scottish Executive, 2003). This guide offered an introduction to public service providers in Scotland considering developing and using digital television as a medium for providing information and services.

### 3.6 The Pilots

Over the last five years there have been a number of iDTV initiatives involving a range of public service providers designed to experiment with and test iDTV technology, and to identify optimum delivery arrangements. Some of the most significant iDTV initiatives are discussed briefly below. This is not an exhaustive list.

#### *UK Online Interactive*

UK Online Interactive<sup>14</sup>, was launched by the Office of the e-Envoy in April 2002. It is the key central government presence on digital television. Currently delivered on the Sky satellite platform the service provides a central location, a portal, through which all government iDTV services can be accessed. UK Online provides information based on key topics and themes. Content is regularly updated, there is a searchable database where users can find their nearest internet access point, and a feedback facility. A number of the initiatives discussed below, including the Scottish iDTV Pilot, are accessed via this portal. In 2004 'Directgov'<sup>15</sup>, the Government's flagship digital service, was extended to digital television, through the rebranding of the UK Online digital television portal.

#### *ODPM: The Pathfinders*

The Office of the Deputy Prime Minister (ODPM) has funded a number of pilots as 'Pathfinder' projects<sup>16</sup>, with each intended to explore different aspects of iDTV service provision. Somerset Online<sup>17</sup> and the Suffolk Pathfinder Project<sup>18</sup> used iDTV to provide information about a wide range of local services, as well as a means for service users to contact relevant public service providers. Both were aimed at tackling social inclusion and both sought to link iDTV with existing electronic delivery mechanisms.

#### *ODPM: The National Project - DigiTV*

The ODPM has sought to help local authorities get a presence on digital television by making iDTV one of its ten key 'national projects' in its Local Government Online Strategy<sup>19</sup>. The ODPM National Project on iDTV, known as 'DigiTV'<sup>20</sup>, is using the knowledge gained from previous initiatives to disseminate best practice through the creation and diffusion of an iDTV 'starter kit'. The starter kit allows public sector agencies to upload their content onto digital television through a series of generic templates, including one that can be used to create forms. The use of general templates reduces the need for multiple SSSL (Sky Subscriber Services Ltd) testing. There is also a DigiTV 'plug-in' which allows service providers to integrate the service with their back-office systems. Currently DigiTV is actively recruiting content providers.

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<sup>14</sup> [http://archive.cabinetoffice.gov.uk/e-envoy/mediacentre-pressreleases-2002/\\$file/10sep02.htm](http://archive.cabinetoffice.gov.uk/e-envoy/mediacentre-pressreleases-2002/$file/10sep02.htm)

<sup>15</sup> <http://www.direct.gov.uk/Homepage/fs/en>

<sup>16</sup> [http://www.odpm.gov.uk/stellent/groups/odpm\\_localgov/documents/page/odpm\\_locgov\\_605195-05.hcsp#P171\\_40632](http://www.odpm.gov.uk/stellent/groups/odpm_localgov/documents/page/odpm_locgov_605195-05.hcsp#P171_40632)

<sup>17</sup> [http://www.digitv.org.uk/content\\_images/case\\_study\\_somerset\\_tcm2-441.doc](http://www.digitv.org.uk/content_images/case_study_somerset_tcm2-441.doc)

<sup>18</sup> [http://www.digitv.org.uk/content\\_images/suffolk\\_case\\_study\\_tcm2-446.doc](http://www.digitv.org.uk/content_images/suffolk_case_study_tcm2-446.doc)

<sup>19</sup> [http://www.odpm.gov.uk/stellent/groups/odpm\\_localgov/documents/page/odpm\\_locgov\\_605129.hcsp](http://www.odpm.gov.uk/stellent/groups/odpm_localgov/documents/page/odpm_locgov_605129.hcsp)

<sup>20</sup> <http://www.digitv.org.uk/>

### ***Local Government iDTV Initiatives***

In addition to those local authorities already mentioned a number of others are delivering innovative iDTV services. Prominent here are Knowsley Council, Newcastle City Council, Kirklees Council, Plymouth Council, the London Borough of Newham and Hertfordshire County Council. Typically these authorities are using digital television to provide information about council services and perceive iDTV as a useful mechanism for enhancing citizen engagement and social inclusion. The more innovative services provide opportunities to: make payments, submit online application forms, book facilities and services, vote, and send email. Arguably the most ambitious service is INtouch kirlees<sup>21</sup>, which in addition to providing a range of services electronically also gives service users a degree of influence and control over service content.

### ***Department of Work and Pensions***

The Department of Work and Pensions has delivered an iDTV service since 2002<sup>22</sup>. In addition to the provision of information, service users can request pension related leaflets, complete online surveys, submit questions, report changes in their circumstances and calculate their state pension age.

### ***Department of Health: NHS Direct Interactive***

The Department of Health has been involved in a number of iDTV initiatives, including some of those discussed above. It has also conducted a number of its own pilots, including: the Living Health, Channel Health and Communicopia projects. These have informed the development of the NHS Direct Interactive<sup>23</sup> digital television service, which offers a comprehensive range of informational and transactional services over all digital television platforms. Launched in 2004 this service provides viewers with access to over 3,000 pages of health information and is integrated with NHS call centre and Internet services.

## **3.7 The Evidence Base**

The iDTV initiatives discussed above have led to a growing evidence base of service providers' and users' views and experiences of using iDTV. Usually in the form of public attitude surveys and in-depth evaluations, this evidence base is being used to inform the development of iDTV in the UK. Some of the most important evidence derives from: research into public attitudes to digital television conducted for the DTI (DTI, 2004), the detailed evaluation of INtouch kirlees (Smith and Webster, 2003a; 2003b), case studies and public attitude surveys conducted by the DigiTV National Project<sup>24</sup>, public attitude research into the diffusion of digital television conducted for the DCMS (DCMS, 2001), and qualitative research into public attitudes towards digital interactive services conducted by the Suffolk Pathfinder Project (Suffolk County Council, 2002), Lambda Research (Gilliatt and Brogden, 2004) and West Lothian Council (2001).

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<sup>21</sup> <http://www.kirklees.gov.uk/community/intouch/intouch.shtml>

<sup>22</sup> <http://www.dwp.gov.uk/asd/asd5/rport176/Main.pdf>

<sup>23</sup> <http://www.nhsdirect.nhs.uk/innerpage.asp?Area=53&Topic=588&Title=NHS%20Direct%20Interactive>

<sup>24</sup> <http://www.digitv.org.uk/>

Some of the main findings from this emergent evidence base are, that:

- Access to iDTV services is growing as digital television rapidly diffuses across society
- Citizens and service users are interested in using iDTV to access e-government services
- iDTV will be an important platform for the future delivery of electronic public services
- The iDTV platform is significantly different to the Internet, in terms of technological capability, content and patterns of use
- Content should be tailored to the television medium, in terms of format, quantity and levels and types of interaction
- Currently there is low awareness and low use of public iDTV services
- The most popular iDTV content is local and community information and the ability to undertake certain transactions, particularly: making appointments, submitting applications, requesting information, making payments and voting
- Service use is highest where service users have a clear reason, or purpose, for using iDTV, and where content is relevant to their lives and up to date
- iDTV can be integrated with existing content management systems and other electronic service delivery platforms, including the Internet, call centres, mobile telephony and public information kiosks

Research conducted for the DiTV National Project Board in 2004<sup>25</sup> found that there was low awareness of iDTV amongst service users and providers, but that there was a substantiated business case for delivering services via iDTV. Moreover, this research suggests that public iDTV services are ‘inevitable’ despite the current low use of iDTV services. Despite this growing evidence base, iDTV is still a relatively new technology and current iDTV services are likely to be very different to the comprehensive and interactive services likely to be provided in the future. For this reason service providers need to be flexible in the way they approach iDTV.

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<sup>25</sup> [http://www.digitv.org.uk/content\\_images/DigiTV%20Research%20Paper-%20Phase%202\\_tcm2-652.doc](http://www.digitv.org.uk/content_images/DigiTV%20Research%20Paper-%20Phase%202_tcm2-652.doc)



## 4. THE SCOTTISH iDTV PILOT

### 4.1 Overview

This chapter briefly describes the main features of the Scottish iDTV Pilot. It covers technological and managerial aspects of the pilot, including system content, project costs and a brief chronology of the main events associated with the pilot.

The main features of the Scottish iDTV pilot were:

- An iDTV service accessible to all Sky customers via the Sky Digital platform
- A six-month service, from 7 September 2004 to 2 April 2005
- A service that incorporated a range of informational and interactive content from a number of different public service providers
- Relatively static content over the duration of the pilot
- A charge for using the service
- A partnership approach to project management coordinated by the Scottish Executive
- A series of changes to personnel and contributing agencies prior to the pilot going live

### 4.2 Technological Aspects of the Pilot Service

#### *Accessing the Pilot Service*

The Scottish iDTV pilot service was available on the Sky Digital platform to all UK Sky customers between May 2004, before its official launch on 7 September, and April 2005. Exhibit 1 lists the steps service users had to follow to access the service.

#### **Exhibit 1. How to access the Scottish iDTV pilot service**

1. Switch on television and press 'interactive' button on remote control
2. Scroll down and select number 8 – 'Directgov'
3. Select 'local information' from menu
4. Select option 3, 'Scotland'

At the official launch of the pilot, project partners distributed leaflets explaining how to access the pilot service. The cost of using the service was equivalent to a local rate telephone call plus one pence. The research team were not able to verify the process of accessing the service or the costs incurred, as the pilot was not live when they undertook their evaluation.

## ***Information and Interactive Content***

Each of the project partners contributed content for the pilot, including the provision of information and interactive content. Each of the main content providers were given approximately six pages of content and were required to meet the template design requirements imposed by Sky, as interpreted by Fernhart New Media. Table 2 presents the main content areas of the service and its key interactive features. The majority of service content did not change during the period in which the pilot was live. The research team were unable to verify the content of the service as it was not live when they undertook their evaluation.

**Table 2. The Scottish iDTV pilot: information and interactive content**

<b>Partner Organisation</b>	<b>Information Content</b>	<b>Interactive Content</b>
<b>The Scottish Executive</b>	Information about Open Scotland	Submit feedback about the pilot
<b>West Lothian Council</b>	Information about neighbourhood issues and the new Neighbourhood Response Team in West Lothian	Opportunity to vote on local environmental issues  Request a call back from the Neighbourhood Response Team
<b>Dumfries and Galloway Council</b>	Tourist information about Dumfries and Galloway, and local 'What's On' information	Enter a competition
<b>Young Scot</b>	Information about how young people can save money with Young Scot	Request an application pack for a Young Scot card  Identify the nearest Young Scot savings - via a post code search
<b>NHS Scotland (Health Scotland)</b>	Information about the health risks associated with smoking and how to stop smoking	Smoking calculator: to estimate annual cost of smoking  Request a brochure or call back from NHS Scotland's Club Smoking Advisors
<b>Start Here</b>	Information about the services offered by StartHere and where to find more information	

The project partners were able to update content by emailing new content pages, in Microsoft Word format, to Fernhart New Media. There was no charge for this service.

## ***Design and Navigation***

Service content had been designed on a series of templates by Fernhart New Media and put through a rigorous testing process, known as 'SSSL Testing'. The templates determine the layout and extent of the content, as well as the size of font and colour schemes. Navigation of the pilot by service users was via a series of menus activated by

the TV remote control. The research team were unable to verify the design and navigation of the pilot service as it is no longer live and ‘screen dumps’ or a demonstration were not available.

### **4.3 Managerial Aspects of the Pilot Service**

#### ***The Project Partners***

The pilot involved a partnership between six main partner organisations. They were: Dumfries and Galloway Council, NHS Scotland (Health Scotland), the Scottish Executive, StartHere, West Lothian Council and Young Scot. Each of the partners provided content for the service and participated in the management of the project. The pilot was initiated and led by the Scottish Executive as part of its Digital Inclusion programme. The Scottish Executive was responsible for liaising with Sky, UK Online, the Cabinet Office, and the Office of the e-Envoy, and for commissioning research into the pilot. Thunderchief Pictures Ltd were charged with the provision of project management services, and subcontracted Fernhart New Media to provide content management, design and technical advice.

#### ***Project Management***

The pilot was initiated and coordinated by the Scottish Executive 21<sup>st</sup> Century Government Unit. The six main project partners participated in project management through a series of project team meetings in which key decisions about the pilot were made. Attendance at these meetings varied and decisions about the progress of the pilot were made in a collegiate manner.

#### ***Promoting the Pilot***

During the period in which it was live, the main promotion of the service was at its official launch. This took place in Bathgate on 7 September 2004 and was attended by Tavish Scott, the Deputy Minister for Finance and Public Services, and Councillor Willie Dunn, Convener of the Enterprise and Development Committee, West Lothian Council. An advertising leaflet and a press release (Scottish Executive, 2004) were produced for the launch, with the launch reported in the local press (Herald and Post, 2004). Additionally, the pilot was promoted in the West Lothian Council Bulletin (West Lothian Council, 2004) and electronically to staff at West Lothian Council, Dumfries and Galloway Council and Young Scot. No further promotional activities were undertaken.

#### ***Project Costs***

Information published on the Scottish Executive Internet site<sup>26</sup> sets out the costs of the pilot for the period 7 September 2004 to 2 April 2005.

The total cost of £375,000 included the following;

- £78,000 to the Cabinet Office, covering broadcast bandwidth and platform access.

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<sup>26</sup> <http://www.scotland.gov.uk/Topic/Government/Open-scotland/178200/idtvpilot>

- £29,882 to Lambda Research, for a research study to examine the potential of iDTV (Gilliatt and Brogden, 2004).
- £20,000 contingency for further research.

Also included in this cost is the design and construction of the pilot template and the design and operation of a content management system.

There are two notable features of the costs involved with the pilot. Firstly, the Scottish Executive incurred the vast majority of financial expenditure associated with the pilot. Secondly, the project partners contributed financially to the pilot by meeting the travel costs associated with attending meetings, providing administrative support, and contributing their time. Exceptionally, project partners incurred unexpected expenditure, for example, Dumfries and Galloway Council purchased computing equipment to enable the Lambda Research evaluation to take place and West Lothian Council produced the draft leaflet for the launch of the pilot.

#### **4.4 Origins of the Pilot**

The pilot being evaluated by the research team is the final version of the pilot that was live between 7 September 2004 and 2 April 2005. Prior to this the pilot had a long gestation period stretching back to the autumn of 2002. Initially the pilot was expected to be live between March 2003 and December 2003, but a number of unforeseen circumstances led to delays in its launch. Initially Faulds Advertising Agency provided the project management and Carlton Interactive were to be responsible for programming and template design. However, both companies withdrew from the project in 2003 and were replaced by Thunderchief Pictures Ltd and Fernhart New Media. Although this evaluation covers the period from when Thunderchief Pictures Ltd and Fernhart New Media became involved in the project, events before their involvement had a considerable bearing on the nature of the service delivered.

##### ***The Lambda Research***

An initial piece of research was conducted by Lambda Research and Consultancy Ltd in December 2003, in order to identify user views on the pilot system (Gilliatt and Brogden, 2004). However, delays in the system going live meant that this research proceeded using a demonstration which aimed to simulate the system eventually produced. The methodology included: questions in a national omnibus survey, a local survey in the two participating local authority areas using a self-completed questionnaire, follow-up telephone calls with a selection of questionnaire respondents, and a series of workshops and sessions to examine the ease-of-use of the simulation. Findings identified that respondents liked the concept of information being available over iDTV and the design of the simulation. However, respondents raised concerns about a number of issues, including: user costs, speed of access, range and depth of content, accuracy and timeliness of information, and security.

### ***Project History***

The history of the pilot goes back to 2002, during which time the personnel and agencies involved in the pilot changed a number of times. During this period, there were three different project managers at the Scottish Executive, and two system developers. The key events in the history of the pilot are presented in Table 3 over page.

**Table 3. Chronology of key events: the Scottish iDTV pilot**

<b>Date</b>	<b>Event</b>
Spring 2002	Pilot Initiated by project manager at the Scottish Executive 21 <sup>st</sup> Century Government Unit. Inter-agency working group established
August 2002	First meeting of project partners
December 2002	Second project manager assumes Scottish Executive responsibilities for the iDTV pilot
February 2003	'Reaching the Citizen' guide to iDTV published by the Scottish Executive Modernising Government Unit
Spring 2003	Carlton Interactive Build 'Directors Model' demonstration of pilot service produced
September 2003	Faulds Advertising Agency goes into liquidation
January 2003 to May 2003	Pilot service repeatedly fails SSSL testing
June 2003	Carlton Interactive withdraws from project, Thunderchief Pictures Ltd assumes responsibility for service design and content management
December 2003	Lambda Research undertake service user evaluation of demonstration service
Spring 2004	Pilot passes SSSL testing
12 May 2004	Pilot goes live
7 September 2004	Official launch of pilot service in Bathgate
February 2005	Third project manager assumes Scottish Executive responsibilities for the iDTV pilot
2 April 2005	Pilot service shut down
May 2005	Review of pilot commissioned by Scottish Executive



## **5. RANGE AND PATTERNS OF USE**

### **5.1 Overview**

This section of the report comments on the range and patterns of use of the pilot in the period being evaluated, September 2004 to April 2005. It presents an assessment of actual use of the service, particularly, the frequency and duration of use. It also compares, briefly, use of the Scottish iDTV Pilot with other UK iDTV pilots.

The main findings for this part of the report are:

- That service users viewed or used all sections of the pilot
- That the iDTV pilot had limited use during the period it was live
- That service use suggests highest use in the late morning and early evening and least use early morning
- That use of the pilot declined over time, both in terms of the number of visits and the duration of each visit
- That the limited use of the service may be explained by: ease of access, speed of access, cost of access, scope of content and lack of service users recruitment
- That the analysis of usage data supplied by Fernhart New Media limits a thorough assessment of system use

### **5.2 Usage Data**

The usage data examined in this section of the report has been supplied by the project partners in the form of weekly or monthly 'service reports' written by Fernhart New Media. Monthly service reports (Griffiths, 2005) have been provided for the period May 2004 to October 2004, and weekly service reports (Fernhart New Media, 2004) for the period Sunday 7 November 2004 to Saturday 12 March 2005. The monthly service reports provide data on the following: the most/least active days of the week, the most/least active hour of the day, the total number of visits, the average visits per day and the average visit length. In addition to this information the weekly service reports provide the following: a list of the 'most active sections' and details of 'service responses' (electronic interactions with service users).

The analysis contained in this section of the report is limited by a number of factors. Firstly, the analysis is based on the data contained in the Fernhart New Media service reports and is therefore an assessment of secondary data and not primary usage data. This limits the scope of analysis to merely reporting upon the data presented by Fernhart. Secondly, the data represents household use, as opposed to individual use, so there is no way of knowing how many service users in a household were using the system at any given time. Thirdly, access to the pilot was not restricted to service users in Scotland, as all households with access to Sky Interactive had access to the service, so there is no way of assessing whether the relevance of content deterred service use. And fourthly, the lack of individual or household identifiers makes it impossible to determine the extent to which

there were repeat visitors, making it very difficult to determine the total numbers of service users who visited the pilot.

### ***Monthly Service Reports***

The monthly service reports for the period May 2004 to October 2004 provide an overview of system usage. During this period the most active day of the week was typically Tuesday and the least active day typically Saturday. The most active hours of the day were typically, 10.00 to 10.59 and 18.00 to 18.59, whilst the least active hours were typically 03.00 to 03.59 and 04.00 to 04.59.

During this period the total number of visits to the pilot was 2,289. On average the total number of visits per month was 381.5 visits, ranging from 532 visits in May 2004 to 141 visits in June 2004. The average visitors per day was 12 visitors, ranging from 17 visitors per day in May 2004 to 4 visitors per day in June 2004. The average visit length was 11 minutes and 15 seconds, ranging from, 13 minutes and 24 seconds in May 2004 to 9 minutes and 9 seconds in June 2004.

### ***Weekly Service Reports***

The weekly service reports cover the period Sunday 7 November 2004 to Saturday 12 March 2005. They provide an overview of system usage during this period. In total there are 17 weekly service reports. No report has been made available for the week Sunday 28 November 2004 to Saturday 4 December 2004 or from Sunday 13 March 2005 to the close of the pilot. Also, there is incomplete data for weeks Sunday 14 November 2004 to Saturday 20 November 2004, and Sunday 7 November 2004 to Saturday 13 November.

During this period the most active day of the week was typically Saturday and the least active day typically Monday, although it is difficult to discern any significant trend. The most active hour of the day was typically, 20.00 to 20.59, whilst the least active hours were typically 01.00 to 01.59, 02.00 to 02.59 and 03.00 to 03.59. This data suggests that service use was heaviest in the evening and lightest in the early morning.

During this period the total number of visits to the pilot was 732. On average the total number of visits per week was 43 visits, ranging from 101 visits in week beginning 7 November 2004, to 25 visits in week beginning 19 December 2004. The average number of visitors per day was 5.82, ranging from 14 visitors per day in week beginning 7 November 2004, to 3 visitors per day in week beginning 19 December 2004. The average visit length was 4 minutes and 45 seconds, ranging from, 21 minutes and 24 seconds in week beginning Sunday 27 February 2005 to 37 seconds in the week beginning Sunday 6 February 2005.

According to the service reports provided by Fernhart the most visited section of the service was 'Open Scotland' followed by the 'Start Here' section. The least visited section was the 'Dumfries and Galloway' section followed by the 'Young Scot' and 'West Lothian' sections. This pattern of use may be partly explained by the design of the menu. The research team understand that the pilot automatically started with the 'Open Scotland' section and that service users had to scroll down a number of menus to reach the 'West Lothian' and 'Young Scot' sections. The research team suspect that these navigational arrangements affected the extent to which these two sections were visited.

During the period for which weekly data is reported 82 ‘Service Responses’, or electronic interactions with service users were recorded. Of these: 54 were ‘Feedback’ reports submitted through the ‘Open Scotland’ section, 17 were ‘Feedback’ reports submitted through the ‘Start Here’ section, 6 were completed ‘Applications’ submitted to the ‘Young Scot’ section, 1 was a ‘Request’ to the ‘NHS Health Scotland’ section, 3 were ‘Votes’ submitted to the ‘West Lothian’ section, 1 was a ‘Competition Entry’ submitted to the Dumfries and Galloway’ section, 1 was ‘Feedback’ submitted to the Dumfries and Galloway’ section, and 2 were ‘Votes’ submitted to the ‘Young Scot’ section. A more thorough review of the ‘feedback’ submitted via the pilot points to the majority of service users testing or experimenting with the system as opposed to providing genuine feedback. Of the genuine feedback received some was positive, some negative and some requests for further information. It should be noted that the ‘Service Responses’ data covers the period covered by the weekly service reports and is in places repetitive, inconsistent and contradictory, and hence may be unreliable.

### **5.3 Trends in Use**

The lack of detailed primary usage data makes discerning reliable trends difficult. However, from the data supplied by Fernhart a few trends are apparent:

- Firstly, that the iDTV pilot had limited use during the period in which it was live. This may be explained by a number of factors deterring users, possibly including: the cost of access, the speed of access, difficulty in finding the service, limited awareness of the pilot, deriving from limited advertising and service user recruitment, and the scope of service content
- Secondly, it is apparent that the use of the pilot gradually declined over the pilot period. This may be explained by an initial surge in interest when the pilot went live. Also, repeat visits may have been discouraged if the service users felt the service content was not being updated or was irrelevant to their needs, or if they perceived the costs of access to be too high
- A third discernable trend is that service use was highest in the late morning and early evening and lightest in the early morning
- Fourthly, from the usage data supplied it is evident that all sections of the service were used, though it is difficult to determine whether any particular content areas or interactive functions were used more than others. All were viewed or used, but in too smaller numbers to offer conclusive trends

### **5.4 Comparisons with Other iDTV Pilots**

The range and patterns of use of the Scottish iDTV pilot are not dissimilar to other iDTV pilots in the UK. Although total usage of the service was very low and may be accounted for by a number of factors, some of which are discussed above, anecdotal evidence and comparative data suggests other UK iDTV pilots have also had disappointing use. Direct comparisons are difficult to make because other pilots used different platforms, different recruitment and publicity arrangements and because they contained different levels of content and interaction. For example, the INtouch kirklees service (Smith and Webster,

2003, p27) had on average 222 visits per week and 32 per day, compared to 43 visits per week and 5.8 visitors per day for the Scottish iDTV pilot, but incorporated a far wider range of service content and activities, and actively recruited service users. As with the Scottish pilot, usage data for INtouch kirklees also pointed to a gradual decline in use whilst the service was live. Evaluations of other UK iDTV pilots also suggest service use is highest in the evening with typical visits lasting under 30 minutes. This was the case for both INtouch kirklees (Smith and Webster, 2003b) and the Suffolk iDTV Pathfinder Initiative (Suffolk County Council, 2002).

## **6. PROJECT PARTNERS: EXPERIENCES AND PERCEPTIONS**

### **6.1 Overview**

This chapter of the report presents an analysis of the results of a programme of interviews with nine representatives from the partner organisations involved in the Scottish iDTV pilot. The interviews explored project partners' experiences and perceptions of the project processes and outcomes. The presentation of project partner interview findings is organised around the indicative topics used in the interview topic schedule and agreed by the PAG. The project partner interview topic schedule is presented at Appendix C. More detailed information about the process of completing the project partner interviews is contained in chapter 2.

The main findings for this part of the report are that:

- Project partners had well-defined roles as content providers and brought a range of additional expertise to the project
- Partners had a shared understanding of the aims and objectives of the pilot
- Partners were able to tailor their content towards key client groups and service areas.
- Measures of success were established to identify the extent to which supplier and user usability had been achieved
- Partners perceived a number of potential barriers to project success at the outset
- The pilot did not sufficiently explore opportunities for back-end integration with content providers' existing systems and processes
- The pilot did not attract and engage a significant user base with which to test reactions to the service
- While the project was a significant learning opportunity around an immature technology, significant problems in development meant that the pilot does not constitute a definitive evaluation of iDTV

### **6.2 Contributions to the Pilot**

Interviews established that:

- The Scottish Executive was the lead partner in this project, and that other partners brought a range of skills and activities to bear
- The main role of the Scottish Executive was as project leader, managing the development of the pilot, bringing project partners together, liaising with technology/infrastructure providers and facilitating the contribution of all project partners
- The main role of Dumfries and Galloway and West Lothian Councils was to provide, review and maintain content related to the service priorities of those authorities, in the context of user feedback

- The main role of Health Scotland and Young Scot was to provide, review and maintain content appropriate to their particular client groups, in the context of user feedback
- The main role of StartHere was to deliver content suitable to showcase their information delivery system to a new audience

### **6.3 Details of the Scottish iDTV Pilot Project**

#### ***Original Aims and Objectives***

Partners agree on the aims and objectives of the pilot, although these were not formalised in a planning document at the outset. Partners commented that:

- The pilot was conceived as a way of testing an emergent technology with clear potential for allowing home access to electronic public services, especially for those without access to the Internet
- The pilot had a wide scope in that it set out to test the suitability of the technology for the delivery of services from the point of view of both the service provider and the service user, with emphasis on the user
- The pilot aimed to arrive at a definitive answer on the extent to which the capabilities of the technology could be utilised for public services
- In Dumfries and Galloway, there was a particular opportunity to test public reaction to the technology in an authority area where the public had expressed a preference for traditional face-to-face or telephone communication
- The project was initiated in 2002, had a long gestation period and was available on the Sky interactive digital platform between September 2004 and April 2005

#### ***Pilot Costs***

The budget for the project was £375,000. The Executive funded the project, and partner agencies did not provide resources other than staff time. One exception is Dumfries & Galloway Council, who contributed £5000 towards the purchase of hardware for the evaluation of the earlier Carlton model of the system.

#### ***Target Audience***

While the pilot overall was not targeted at a specific audience, partners had a number of factors in mind when considering and selecting appropriate content:

- There was a concern to focus content on those social groups less likely than others to have access to the Internet through a personal computer
- Young people were thought to be more likely users of an iDTV service through familiarity with interactive technologies including iDTV
- It was thought likely that user migration to digital television would increase in the run up to digital switchover, resulting in a large 'general audience' for the pilot

Individual project partners were able to target their content to key client groups in order to address particular strategic priorities:

- Dumfries and Galloway Council were encouraged to develop content with two main content elements, one focussed on a UK-wide target audience promoting the area as a tourist destination in the wake of the foot & mouth disaster, the other focussed on local events for people living in the area
- West Lothian Council were able to relate their content to an ongoing neighbourhood renewal strategy
- Health Scotland were able to focus on a strategic priority by relating their content to an ongoing anti-smoking campaign
- Young Scot were able to highlight and provide access to a number of their youth services
- StartHere were able to demonstrate a portion of their established information service
- The Scottish Executive were able to give access to ‘Open Scotland’

### ***Initial Measures / Benchmarks for Success***

Measures of project success were shared by the project partners, but were not formalised in a planning document. One set of measures focused upon usability for the service providers:

- Service providers wished to be able to identify suitable service areas for testing the capabilities of iDTV
- Providers wished to be able to provide an additional access route to selected service areas through the pilot
- Providers wished to have direct access to the mechanism by which content was updated on the service
- Providers wished to be able to update their content without incurring additional costs

Another set of measures focused upon end users. Project partners wanted to:

- See high levels of usage
- See evidence of repeat usage
- Capture feedback from transactions and interactions that users made with service providers via the pilot
- Deliver a service that was perceived as useful alternative to other channels for service access

### ***Anticipated Obstacles to Success***

Project partners perceived the following barriers to success at the outset of the project:

- Lack of knowledge on iDTV technology within the project partners
- Reliance upon advice from commercial providers

- The need to develop and maintain content that could attract and engage users and encourage repeated use
- Cost to the user when accessing the service
- Users' perception of the television as an entertainment medium rather than as a source of public service information

### ***Initial Discussion on Extent of Achievement of Aims and Objectives***

Partners comment that the project was a success in that:

- It provided extensive experience of problems, issues, opportunities and costs around iDTV service development and delivery
- Huge technical difficulties were overcome in order to roll out a live service

However it is also apparent that:

- Usage figures show that the service failed to attract a significant user base
- Feedback from user interactions and transactions with service providers via the system show that there were few active users

The following issues are pertinent in the lack of a user base:

- Little effort was made to 'recruit' users
- No concerted marketing effort was put in place
- Service content was largely static over the duration of the pilot

## **6.4 Project Origins**

### ***Experience in Terms of Partners' Own e-Policies***

Partners agree that the pilot had clear relevance to organisational policies and strategies:

- iDTV fits in with Dumfries and Galloway Council's 21<sup>st</sup> Century Government strategy which identifies the need for a multi-channel approach in dealing with the public
- The pilot was seen by West Lothian Council as a component of its strategy to provide alternative and complementary ways of accessing information services
- iDTV is an appropriate technology for the Start Here information service designed for those who may not have Internet access
- The pilot was an appropriate vehicle for Young Scot to extend their services to young people
- The pilot was a suitable way for Health Scotland to advance their social inclusion agenda

### ***iDTV Fit with Existing Policies / Strategies***

Partners comment that the project addresses the social inclusion agenda by providing an access point to users who may not have access to Internet-based services, and also the digital inclusion agenda ensuring that citizens have access to electronic public services.

### ***Perspectives on Project Origins***

The Scottish Executive played a key role in assembling the project partners through a combination of initial enquiries from and building upon established working relations with partners. The two local authority areas were chosen as they represented urban and rural localities and had a mix of experience with electronic service delivery. iDTV was thought to be a suitable channel for delivering information from Start Here easily and cost effectively. Health Scotland (HEBS) were included since research indicated that health information was particularly attractive to and valued by service users. Young Scot's participation grew out of an established working relationship around the National Youth Portal and Smartcards.

Partners commented that:

- An early era in the pilot attempted to produce an iDTV service in association with Carlton Interactive and Faulds advertising agency. The aims and objectives, partners, and content of the pilot were put in place during that attempt
- Individuals and organisations involved in the gestation of the pilot were not all associated with the live service
- It is helpful to define two distinct eras in the pilot. The present era (covered in this evaluation) can be dated from the participation of both Fernhart (system developer) and Thunderchief (project manager for Fernhart) from June 2003. The previous era is associated with the participation of Carlton Interactive as developer
- The Carlton era was focussed on the development of a service that met partner expectations but was not ultimately fit for purpose, in that it was unsuited to the technical limitations of digital television set-top boxes
- The latter part of the Carlton era was focussed upon attempts to make the pilot pass Sky SSSL testing
- The participation of Thunderchief and Fernhart resulted in the development of a re-scoped and less graphic-intensive service which passed SSSL testing and went live

### ***Project History and Milestones***

Project partners identified a number of key stages/milestones in the project:

- The design stage in association with Carlton
- The production of a demonstrable product
- The failure of this product to pass SSL testing
- The production of a re-designed product with Thunderchief and Fernhart using the full set of content already provided

- Switch on of this product
- The subsequent launch at Bathgate
- Receiving system-generated and user-inputted feedback
- Receipt of the Lambda research report
- Pilot switch-off

## **6.5 Organisation and Management**

### ***Project Organisation***

Project Partners made the following comments on organisation:

- The Scottish Executive was the lead partner and funder of the project, and took the lead on the basic technical decisions with contracts, on negotiations
- Regular group meetings were held between project partners in the early part of the project
- Project meetings were generally constructive
- Project meetings generally assigned specific tasks to partners
- Partner organisations assigned appropriate personnel to the pilot
- Start Here's participation in project meetings ceased after the loss of their Scottish manager
- Start Here's London location inhibited their input to the pilot
- Partners remained enthusiastic despite the setback when the Carlton model failed to pass SSSL testing and the pilot had to be redesigned

Project partners made the following comments on project costs:

- While the Executive funded the project, partner organisations bore costs including time costs of personnel involved, travel to meetings, subsistence etc
- The local authorities bore additional costs associated with facilitating the Lambda research, including hardware, room hire and participant transportation costs

### ***Relative Contributions***

Partners commented that:

- It was decided at early stage that each authority would select their own content for the pilot
- The Scottish Executive had a role to play in ensuring the cohesiveness and coherence of the content of the pilot

Partners brought significant attributes to the pilot:

- Young Scot had strengths in innovative ideas and publicity
- West Lothian Council had extensive experience in content management systems
- Dumfries and Galloway were interested how to make material engaging and how to market it to the needs of the very diverse community
- The Scottish Executive provided an overview to ensure that the project was developing in relation to its aims and objectives on time

## **6.6 System Configuration and Organisational Integration**

Partners commented that:

- Partners would have liked the pilot to be integrated with their own organisational content management systems
- This integration was not possible with the platform that was developed
- Content would have been more dynamic in terms of updates if partners had direct responsibility for this

## **6.7 System Content**

### ***Content Provided by Partner Organisations***

Partners commented that:

- Cost restrictions meant that each partner's content was limited to a certain number of pages
- There was a perception that users expect their TV to be entertaining, and that this pilot should also have an element of entertainment
- There was a shared need to select interesting material that would attract and engage users
- There was a need to ensure that authority partners did not duplicate content
- Space restrictions encouraged the selection of topics and services that would test the functionality of iDTV
- It was felt important that partners ensured that content focussed on certain outputs in order to test the aims and objectives. No set criteria were established for this
- Content choices were not formalised in documentation
- While the other content providers were able to 'cherry pick' certain service areas for the pilot, the Start Here system is a product in its entirety and it was difficult for them to showcase that product in a restricted number of pages
- Dumfries and Galloway focussed on tourist information and competitions to win various sort of holiday/leisure based prizes, as well as information on local events

- West Lothian focused on environmental issues that they believed were of interest to residents in particular areas, and had a mechanism to allow users to request a phone call from an environmental adviser and opportunities to provide other feedback
- Young Scot had a variety of information: how to join Young Scot and benefits of membership, postcode search to identify discounts available locally, votes on topics of interest, information on particular issues
- Start Here initially decided to put up their module on back pain, but instead presented a digest of their information service
- NHS Scotland (Health Scotland) decided to focus entirely on giving up smoking. Users could find out what giving up smoking would benefit them, request a magazine and request a call back from an anti-smoking adviser. They also featured a calculator to let users find out how much they had spent on cigarettes since starting smoking

### ***Process of Maintenance, Updating and Review***

Project partners commented that:

- Some content on the pilot was updated during the period that the pilot was live
- Dumfries and Galloway Council made some changes to their content in the live period
- Young Scot updated their content once in the live period, to change the topic of a vote
- The content supplied by Health Education Scotland (HEBS) was defined at the outset of the pilot and focussed on promotion of their ongoing anti-smoking campaign. This content was not updated during the live period
- West Lothian Council did not update their content
- Start Here did not update their content
- The process for updating content involved emailing Fernhart, copying this to the Executive
- Contractual issues made the Scottish Executive responsible for all material on the pilot
- Content providers were required to show the Executive materials and updates before going live
- Partners were generally aware of the process for updating content
- There was some confusion amongst partners concerning costs incurred in updating content through Fernhart. This confusion may have been left over from the Carlton era when it was suggested that this cost would be significant
- The process by which material could be updated was perceived as cumbersome by project partners

Partners agreed that:

- Content could have been more dynamic, and could have been further developed during the time that the pilot was live
- The need to go through Fernhart to update content was a disincentive to doing so
- Fundamentally, project priorities became focussed upon ensuring that the service would pass SSSL testing and go live, rather than developing procedures for updating content and a strategy for content refreshment

### ***Assessment of Form of Content***

Partners commented that the service supported interactions and transactions rather than just the provision of information, and that in their assessment the range of content tested the range of functionality supported by iDTV, in that allowed users to:

- Use online forms
- Use a ‘cost of smoking’ calculator
- Vote on an issue
- Answer a quiz
- Enter a competition
- Request a call back from a stop smoking advisor
- Provide feedback
- Request an application pack for Young Scot
- Identify Young Scot discounts in the user’s locality

Partners also commented that the pilot also helped meet the needs of people who wish to access information and services twenty-four hours a day, seven days a week.

## **6.8 Service Users**

### ***Process of Selection, Targeting and Recruitment***

Partner targeted users in a number of ways:

- The pilot was launched in Bathgate on 7 September 2004 by the Deputy Finance and Public Services Minister and the Convenor of the Enterprise and Development Committee, West Lothian Council
- A press release accompanied the launch of the pilot
- An Information card detailing how to access the service was designed by West Lothian Council and printed by the Scottish Executive. It was distributed at the launch in Bathgate and via Dumfries and Galloway Council staff and Elected Members
- West Lothian Council advertised the pilot in their bulletin delivered to all households in the area

- Young Scot sign-posted the pilot on their website and in their newsletter

Partners commented that commissioned research that took place in December 2003 was originally intended to identify actual users of a live system, and that:

- Delays to the service going live due to the failure to pass SSSL testing meant that the Lambda research proceeded with an ‘off-line’ demonstration of the pilot to a number of focus groups/workshops comprised of people drawn from West Lothian and Dumfries and Galloway
- While this research produced interesting outcomes around the perceived need for a service, it was ‘artificial’ in that it demonstrated a product which did not go live, and which differed significantly in form from the live version. The utility of the data was therefore limited in that it does not capture actual user experiences
- There was an opportunity to maintain contact with participants in this research and possibly to record their experience of a live system, but this was not taken
- Many of the focus group participants did not have access to Sky Digital in their houses and were not therefore potential users

### *Accessibility Issues*

Partners made the following comments on user navigation to the pilot via the handset:

- Interactive services are accessible on the Sky Digital platform via two routes: the ‘red’ button, which gives access to interactive services associated with television programmes, and the ‘interactive’ button, which gives access to services not associated with a particular television programme
- The pilot was sited under the ‘interactive’ button, while many users may associate the ‘red’ button with interactive services
- The route which users had to navigate to find the service was neither obvious nor well-signposted (‘interactive button’, scroll to number 8 - Directgov, select ‘local information’ from the menu, select option 3 - Scotland)

Partners made the following comments on navigation within the pilot:

- Navigation standards were forced on the pilot by Sky, in that certain keys had to be used for particular navigation
- There was an early suggestion that different partners could adopt different forms of navigation for their portion, but that this was not acceptable to Sky
- The templates used by the pilot are of good quality with a clear design, presenting an amount of content on each page appropriate for iDTV
- The templates supported clear navigation for the user

### *Efforts to Capture User Feedback*

Partners were provided with system usage data:

- Fernhart initially provided reports on a regular (weekly) basis to project partners showing user navigation within the system
- There were interruptions in the supply of the data from Fernhart towards the end of the project
- Usage data showed a limited level of use
- Partners have mixed recollections on the length of an average visit, estimates ranging from two minutes to fifteen
- Initial figures showed some repeat usage, but partners believe that this quickly declined
- Usage data did not have sufficient granularity to show which areas of the service were most popular – e.g. data could not show how many people had used Young Scot's postcode-based discount finder
- Partners suspect that low usage was linked to content that was largely perceived to be static
- Partners suspect that users became bored with or frustrated by the static content

### *Efforts to Capture User Views and Experiences*

Partners commented that:

- Feedback was also gained from transactions users had made via the system
- This feedback showed low levels of use
- Dumfries and Galloway's competition was entered by five individuals, three of whom had specific knowledge of or interest in the pilot which would not be available to general iDTV users
- Young Scot received eleven applications for a Young Scot card via the service, but no entrants to their competition
- No-one requested a call back from an anti-smoking adviser via the pilot

Partners suggest that the following issues are associated with the lack of a significant user base:

- Little effort was made to actively recruit users
- No local launch was held in Dumfries and Galloway
- Information cards distributed by the partners to show users how to access the system erroneously highlighted the 'red button' whereas the service was accessible via the 'interactive' button
- There was no budget for marketing assigned to the service by the Scottish Executive
- There was no co-ordinated media or publicity strategy put in place

The December 2003 research was also designed to capture user feedback but was unable to do so since the pilot did not go live until September 2004.

## 6.9 Conclusions

### *Project Specific Outcomes*

Partners identified a number of specific outcomes:

- A live service was put in place after significant technical difficulties were overcome
- Templates were produced which were of a good quality and loaded quickly
- Data was collected suggesting that an iDTV service could meet specific user needs for electronic public services
- The limitations of the technology became apparent during the pilot and impacted on the level of development of the product that was provided

The pilot also demonstrated the importance of the following issues:

- A quick load time for pages is of critical importance to secure user interest in the product
- The characteristics of iDTV use imply that page design should be well thought through and should support usability
- Services must be selected according to a clear analysis of user needs
- Functionality offered within specific services should be clearly based on the capabilities of the technology and should prioritise interactions and transactions over information provision

Partners also commented that:

- While the pilot has demonstrated the feasibility of using iDTV to deliver public services, the potential of iDTV was not tested in full
- User expectations of electronic access to services have been shaped by the internet, and iDTV cannot meet these expectations at present
- Fresher, more locally-driven content would have been perceived as useful to users.
- Cost was the main limiting factor in the pilot
- The business model under which the service was developed with the assistance of Thunderchief and Fernhart is not sustainable due to the costs of Thunderchief and Fernhart's participation

### *Organisational Learning Outcomes*

Partners believe that significant organisational learning has occurred through the pilot. Partners commented that:

- The 'supplier discourse' of key players in the iDTV industry emphasises opportunities available with iDTV and minimises the specific technical difficulties of using the technology

- Integration with service providers' existing content management systems is a prerequisite for the success of any initiative to deliver electronic public services
- The costs for providers in updating information should be minimal

### ***Obstacles to Success***

The project partners identify a number of obstacles that impacted upon project outcomes:

- iDTV is an immature and costly technology
- Expertise is scarce and concentrated in a small number of providers
- There was an ongoing difficulty in obtaining impartial advice on the technical nature of what the project was trying to achieve
- SSSL testing and the need for pages of the pilot service to meet minimum load times imposed significant strictures on what could be delivered
- Technical difficulties meant that project focus was upon getting the service 'live' rather than on further developing the content or priming a user base
- User expectations may have been raised during the Lambda research which demonstrated a version of the pilot which bore little relation to the version which went live
- The cost from the users point of view was a disincentive to them using the pilot
- The siting of the pilot under 'Directgov' did not ease user access

### ***Futures – for Pilot and iDTV***

Partners commented that:

- Every public agency could potentially benefit from having an iDTV presence.
- There is scope for further partnership working to deliver a Scottish iDTV option for local authorities and public agencies
- The templates designed and utilised in the pilot are of good quality and could be re-used with an improved back-end arrangement
- There is scope for a future iDTV service to support cross-over between broadcast television and interactive content, e.g. so that a televised Health Education Scotland campaign could lead users to interactive content through the 'red button'
- Future work should emphasise integration of iDTV services with service delivery across a range of electronic channels e.g. web, mobile phones
- It is possible that iDTV may have more scope as a local information network based upon a hardwired infrastructure than as a national service



## **7. SERVICE USERS: EXPERIENCES AND PERCEPTIONS**

### **7.1 Overview**

This chapter of the report presents an analysis of data derived from telephone interviews with service users of the Scottish iDTV Pilot. The interviews explored service users' experiences and perceptions of the pilot service. Two service users were interviewed. The presentation of service user research findings under topic headings reflects the structure of the topic schedule agreed with the PAG. The service user interview topic schedule is presented at Appendix F. More detailed information about the process of completing the service user interviews is contained in chapter 2.

The main findings for this part of the report are that:

- Despite efforts to recruit users to participate in the research (documented in chapter 2), the data discussed is derived from just two service users who cannot be taken as representative of the wider user base
- Both respondents have a high level of familiarity with and use of iDTV services generally
- Both can only recall that information hosted in the pilot which was pertinent to their own local area - Dumfries and Galloway
- Only one made a return visit
- While content was judged to be useful, it was perceived as incomplete when compared to information available from alternative sources, such as, the Internet
- Respondents felt that iDTV is best suited to interactive services rather than for information provision
- Both viewed iDTV as a potentially important addition to complement other electronic services channels

### **7.2 Interviewee Details**

The individuals who agreed to take part in the service user interviews were identified as users through being entrants in the competition included in Dumfries and Galloway Council's section of the pilot. Interviews took place on Thursday 7 July 2005. One interviewee was male and one female. Both were in their early forties. Respondent opinion is attributed to 'respondent A' or 'respondent B'.

### **7.3 Experience of iDTV**

Both interviewees reported that they were early adopters of iDTV, having subscribed to Sky Digital when the service was first offered to them. Neither could recall when this was. Their motivation for adopting iDTV was that it would provide them access to a wider range of broadcast channels at no greater expense. Neither interviewee identified a wish to use interactive services as motivation for adoption.

Both interviewees were clear about the distinction between services available through the 'red button', which are associated with programme content, and services available through the interactive button, which are not generally associated with programme content, but related to interactive services.

Both users found navigation through menus using the handset to be easy. Neither had considered purchasing a keyboard, or knew the cost of a keyboard. Both also had access to the Internet. Neither used Teletext based services. Both preferred the Internet as an information channel, and both found interactions and transactions on the Internet to be simpler and more convenient than iDTV.

#### **7.4 Using the Pilot**

Neither interviewee can recall precisely when they looked at the pilot. Respondent A reported that their first visit occurred before the service was officially launched in September 2004. Respondent A came to look at the service as a result of being employed by a company that provides digital television services. This respondent had been involved with discussions on behalf of his company with the 21<sup>st</sup> Century Government Unit around possible participation in an iDTV project. Respondent B had moved to Dumfries and Galloway during the pilot period, and found the service while browsing for local information.

##### ***Accessibility and Duration***

Both found it quite easy to find the pilot. Respondent A made one visit which lasted around ten minutes. Respondent B made two visits of 'a few' minutes duration each. Both visited the pilot during the daytime. Respondents only recalled looking at the information from Dumfries and Galloway Council. Neither recall any information from any other content provider.

##### ***Usability***

Neither respondent could remember the content in sufficient detail to report their opinion on usability. Neither remembers being particularly impressed or frustrated by navigation, page design, lack of specific information required, or speed of page upload. They had no recollection of font colours or sizes or template design.

##### ***Usefulness***

Respondent B recalls being pleased at having seen content relevant to the local area, and commented that the content appeared to be useful. The respondent remembered information on local events. The respondent did not write any information down, discuss it with anyone else, or use it in any way, and commented that s/he knew where it was if s/he needed it.

Respondent A was less sure on what the content had been about, other than that it was based on events in the area and had featured a competition which s/he had entered. The respondent recalls that s/he felt the information was scant in detail and not likely to be a complete representation of what was going on in the area. S/he commented that iDTV

was a far poorer source of information than the Internet. S/he commented that iDTV information often highlighted small bits of information rather than giving access to a wide range, and was typically lacking in depth and detail.

### ***Interactivity***

Both users felt that the main benefit of iDTV was being able to access locally-based interactive services rather than in providing access to public information. Neither felt that iDTV was a suitable platform for just providing information. Neither was able to make any comment about the extent of interaction provided by the service, other than that they were glad to be able to participate in a competition.

## **7.5 Motivators and Inhibitors**

Both respondents reported that additional costs for accessing iDTV services were a disincentive to their use of these services. Neither reported that they remember whether there was a charge involved in using the Scottish pilot system.

Both described the use of interactive services via iDTV as a solitary activity which was unsuited to family or group use because such use reflected the preferences of an individual rather than a group. Respondent A commented that s/he was the only member of the family who would consider pressing the interactive button as the other members valued television programmes over interactive services. Respondent B reported that other members of the family used interactive services separately, for example, for playing games or entering the lottery.

Both thought that iDTV would be a good medium for certain transactions. Both felt that certain transactions would be more valued than others, for example, the ability to book an appointment with a doctor was valued over being able to make online council tax payments. Both viewed iDTV as a potential supplementary channel to other ways of accessing public services. Both preferred face-to-face or telephone communication, but have communicated with public agencies by email in the past and would do so again in the future.

## **7.6 Comparisons with Other iDTV Service Users**

The limited evidence of service users' experiences and perceptions of the iDTV pilot make a detailed comparison with other iDTV pilots and the 2003 Lambda research inappropriate. The evidence base presented in chapter 3, section 3.7, provides a general overview of service user attitudes towards iDTV.

The views expressed by the two service users interviewed are not dissimilar to those recorded in the broader emergent evidence base. In particular, evidence suggests that service users with previous iDTV experience are comfortable with the technology and find it easy to use. Also, it is evident that service users are typically interested in local information and in being able to undertake transactions, such as booking appointments and making payments. This was the case for both the INtouch kirklees evaluation (Smith and Webster, 2003a, 2003b) and the research conducted for the National iDTV Project Board

(RBA-Research, 2004). Also, in line with other research, the service users recognised the potential importance of being able to access services through iDTV and recognised that iDTV will complement other service delivery mechanisms.

## 8. CONCLUSIONS AND RECOMMENDATIONS

### 8.1 Overview

The conclusions and recommendations presented in this chapter derive from the research findings presented in the body of this report.

### 8.2 Conclusions

A number of conclusions can be drawn from the research presented in this report, both general conclusions about iDTV technology and the provision of services, and specific conclusions about the Scottish iDTV Pilot.

#### *iDTV and Public Services*

Some general conclusions about the role iDTV has to play in the delivery of public services are:

- That the significance of the digital television platform, increasing access to digital television, the forthcoming digital switchover, the development of UK policy and services in this area, and the evidence base arising from iDTV initiatives, points to the emergence of iDTV as an important complementary platform for the future delivery of electronic government and public services
- That iDTV offers the potential to deliver services directly to citizens and service users homes, and thereby offer more socially inclusive and efficient services
- That emerging evidence suggests citizens and service users are interested in accessing information and making transactions over the iDTV platform
- That the current provision of iDTV is not yet sufficiently advanced to support widespread provision and use
- That the provision of public services via iDTV is still in its infancy, but can reasonably be expected to expand rapidly over the next decade as more service users have access to and experience of digital services
- That iDTV services are likely to be most effective when integrated with existing, policies, technologies and activities
- That iDTV use is determined by the appropriateness of content, with service use highest where service users have a clear purpose, or reason, for using the service, and where content is up to date and relevant to their lives
- That the iDTV platform is significantly different to the Internet, in terms of technological capability, content and patterns of use, and therefore iDTV services should not seek to replicate Internet provision, but should tailor content specifically for the medium of television

## *The Scottish iDTV Pilot*

Specific conclusions about the Scottish iDTV pilot are:

- That the main achievement of the project was designing and delivering a ‘live’ iDTV service, at a time when relatively little was known about the technology and how it could be used for delivering public services
- That the Scottish iDTV pilot service was perceived to be relatively fast and easy to use when compared to other iDTV initiatives
- That a number of unforeseen events, such as changes in key personnel at the Scottish Executive, the withdrawal of Carlton Interactive and difficulties encountered with Sky SSSL testing, jeopardised the future of the pilot and led to the launch of a service that was less well developed than initially anticipated
- That project partners found being involved in the pilot a rewarding experience and remained enthusiastic about the technology and its potential throughout the duration of the project
- That the project underpinned extensive organisational and individual learning about the utilisation and management of iDTV technology for delivering public services
- That delivering the pilot identified a number of key features - or lessons learnt - that are important for the future delivery of iDTV services, including: the importance of a user friendly design, the significance of a service design that meets the requirements of Sky SSSL testing, the importance of ease of access to the service, the importance of being able to map and account for service use, the importance of recruiting a user base, and the importance of being able to link iDTV to other e-government platforms and back office facilities
- That there was a low level of service use, possibly due to a number of factors, including: difficulties in accessing the service, the slow speed of the service, service charges, limited service user recruitment and the limited extent of service content. Although all sections of the service were used, the small number of users made it difficult to discern any concrete trends in the way it was used
- That service content remained relatively static throughout the duration of the pilot, this may have contributed to low service use
- That the main mechanism to recruit service users was through publicity at the time of the official launch, with project partners asked by the Scottish Executive not to market or otherwise publicise the project until this launch
- That the failure to establish a user base meant it was inherently difficult for the research team to gauge service users’ views and experiences about the service
- That the pilot did not sufficiently assess the potential for content providers to integrate content with their other existing delivery channels
- That the pilot was not perceived to be value for money and that it is difficult to estimate the full costs
- That certain aspects of project management compromised the success of the pilot and its evaluation, for example: the failure to minute all project meetings and key decisions, the apparent lack of recorded project aims and objectives, the absence of a

service user recruitment strategy and the apparent lack of a project budget. Additionally, leadership of the pilot was compromised by frequent changes in project managers at the Scottish Executive, and poor communication, highlighted by misunderstandings amongst project partners about the extent of service use and charges associated with updating content, compromised effective partnership working

- That knowledge acquired by partners through involvement in the pilot provides a justification for the costs involved

### **8.3 Recommendations**

From these conclusions a series of recommendations can be made:

- That the Scottish Executive should develop a position on the future provision of iDTV in Scotland. This may take the form of a national iDTV strategy or policy
- That any emergent strategy is fully integrated with existing e-government policies, such as the Digital Inclusion and Multi-Channel Strategies and complements broader government initiatives, such as, Customer First and the Efficient Government Initiative
- That any emergent strategy draws on the knowledge of iDTV accumulated through the Scottish pilot and wider knowledge in the broader policy community arising from other iDTV initiatives and evaluations of provider and user experiences to date
- That the Scottish Executive should seek to capture and codify, for future reference, the key learning experiences and outcomes from the iDTV pilot, including the processes involved in template design, Sky SSSL testing and content management
- That because iDTV is a new and complex service area, in which government expertise is still developing, a key role for the Scottish Executive will be to promote awareness about the technology amongst service providers and users
- That because iDTV technology and its policy environment is moving fast the Scottish Executive must ensure that it remains flexible and open to innovation, whilst coordinating and developing service provision
- That the Scottish Executive considers establishing a Scottish iDTV presence, possibly a portal presence on DirectGov
- That the Scottish Executive considers providing some sort of mechanism, be it an iDTV portal or policy advice and guidance, so that public service providers in Scotland can achieve an iDTV presence
- That the Scottish Executive considers developing and testing a more integrated and dynamic iDTV service, possibly including 'Red Button' services which integrate broadcast programme content with information services
- That the Scottish Executive should seek to ensure that any future provision of iDTV is flexible, so that it can be delivered in conjunction with other electronic services and back office functions and can accommodate multiple iDTV platforms. A flexible approach is essential if future services are not to be 'locked-in' to any one service provider, design style or broadcast platform

- That any future iDTV service is user friendly, easy to access, and contains appropriate content
- That any future iDTV service provision is managed according to established and recognised project management practices, such as Prince 2
- That the Scottish Executive establishes mechanisms by which policy-makers and service providers can keep abreast of changing technological developments, standards and best practice
- That the Scottish Executive considers undertaking further research into iDTV, including, a comprehensive review of other iDTV initiatives, of service user and provider experiences to date, and of the costs and benefits associated with iDTV service provision
- That now the Scottish pilot has finished, the Scottish Executive make reasoned decisions about the immediate provision of iDTV services in Scotland. Possible options include: reinstating the pilot service, developing an enhanced service, developing a portal presence and rolling out the service to other service providers on a cost-recovery basis, establishing a presence on DigiTV, or withdrawing from the iDTV area. A thorough review of these options should take place and should inform the national iDTV strategy discussed above

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## APPENDIX B. PROJECT PARTNER AND SERVICE USER INTERVIEWS

### Project Partner Interviews

Name	Organisation	Position	Date	Time
Alison Morris	Scottish Executive	Digital Inclusion Manager	14 June 2005	14.00
Sanjin Kaharevic	Scottish Executive	Project Manager	15 June 2005	11.00
Keith Percival *	Dumfries and Galloway Council	Modernising Government Principle Officer	20 June 2005	15.30
Linda Cunningham	West Lothian Council	Community Planning Manager	22 June 2005	10.00
Alastair Colquhoun	West Lothian Council	Community Education Service Team Manager	22 June 2005	10.00
Justine Hampton	NHS Scotland (Health Scotland)	Communications Manager	22 June 2005	12.00
Alison Hardy	Young Scot	Information Manager	23 June 2005	11.00
Val Farmer *	StartHere	Project Manager	23 June 2005	13.30
Louise MacDonald	Young Scot	Deputy Chief Executive	8 July 2005	15.30

### Service User Interviews

Name	Location	Date	Time
Interviewee 1. (male) *	Glasgow	7 July 2005	11.00
Interviewee 2. (female) *	Dumfries	7 July 2005	19.00

\* Indicates those interviews conducted by telephone.



## **APPENDIX C. PROJECT PARTNER INTERVIEW TOPIC SCHEDULE**

### **Interviewee Details**

Confirmation of job title.

Nature of role/involvement in the SE iDTV pilot.

Awareness of, or involvement in, other iDTV initiatives.

### **Basic Details of the Project**

Original aims and objectives of the pilot.

Pertinent features of the pilot – duration, cost, target audience/market.

Initial measures/benchmarks for gauging success.

Obstacles to success: anticipated.

Initial discussion of extent to which aims and objectives have been achieved.

### **Origins of the Project**

Project partner organisation's;

- experience in terms of broad e-govt policy framework in Scotland
- experience in terms of organisation's own 'e' policies
- sense of how iDTV fits into both of the above [channel strategies, ESD etc]
- perspective on project origins
- perspective on project history & key milestones

### **Organisation and Management**

Project partner organisation's perspective on:

- project organisation [structure, roles and responsibilities etc]
- relative contributions [actual scope and relevance of contributions in terms of aims and objectives]
- project management process & effectiveness

### **System Configuration and Organisational Integration**

System configuration, platforms used, opportunities and limitations etc.

Scope of:

- technical and procedural integration achieved with partner organisation's information systems [CRM/content management system]
- functional integration achieved around the system [information sharing across depts/units, extent to which other units of the organisation have responded to the initiative]

Extent to which the pilot has tested the feasibility of using iDTV as a service delivery platform.

### **System Content**

Partner's description of:

- content provided by partner organisation
- process of content maintenance/updating/review

Partner's Assessment of:

- form of content – information provision or transactional

- services being supported
- design of content/service
- appropriateness of content for the platform

### **Service Users**

Process of selection, targeting and recruitment of users.

Accessibility issues [navigation, advertising, advice].

Levels and types of service use to date [usage data].

Efforts to capture user views and experiences [user feedback].

### **Conclusions**

Project specific outcomes.

Organisational learning outcomes.

Wider learning outcomes on issues relevant to the development of iDTV as a platform for public service delivery – funding, accessibility, technical issues (etc)

Evaluation of initial measures of success.

Obstacles to success: actual.

Partner organisation's opinion on pilot success.

Futures – for pilot and iDTV.

## **APPENDIX D. SERVICE USER RECRUITMENT: NEWSLETTER ARTICLE, DUMFRIES AND GALLOWAY ELDERLY FORUM \***

### **Interactive Digital Television Pilot - Can You Help?**

**In September 2004 the Scottish Executive launched a pilot interactive digital television service, available on Sky Digital, to allow people to access information and public services from their armchairs. The pilot ran until April this year, and gave access to a host of local and national information. Now the pilot has finished, and it's time to find out whether it was well received!**

Researchers at Napier University in Edinburgh are hoping to talk to anyone who remembers using the service between September 2004 and April 2005. Please get in touch with Colin Smith on [cf.smith@napier.ac.uk](mailto:cf.smith@napier.ac.uk), or else by leaving your contact details with Leanne McNab on 0131 455 2701, and we will call you back.

\* Published in the Dumfries and Galloway Elderly Forum Newsletter on 1 July 2005.



## **APPENDIX E. SERVICE USER RECRUITMENT: SAMPLE EMAIL, CITIZENS' PANEL WEST LoTHIAN COUNCIL \***

Dear Member of the West Lothian Citizens' Panel

### **iDTV Pilot**

In a recent Quality of Life survey many citizens' panel members in West Lothian indicated that they had access to digital television. Between September 2004 and April 2005 West Lothian Council took part in iDTV (interactive Digital Television) pilot through which they provided information and services digitally through the Sky platform. The pilot was organised in partnership with the Scottish Executive and five other public agencies. The West Lothian pages featured information about a new Neighbourhood Response Team that has been set up to tackle neighbourhood nuisance issues.

I have, with Dr Colin Smith (Napier University), been commissioned by the Scottish Executive to undertake an independent evaluation of the pilot, including an assessment of service users' views about the system. As West Lothian Council were one of the main content providers for the system they have agreed to allow us to contact citizens' panel members to ask you if you have used the service and if so what you thought of it.

At this stage we would be very grateful if you could return this email indicating whether or not you saw the iDTV pilot whilst it was 'live' (September 2004 to April 2005). All responses will be treated as confidential.

Thank you for taking the time to read this email.

Regards

Dr William Webster

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\* Email sent by William Webster to members of West Lothian Council's Citizens' Panel on 13 June 2005. Similar correspondence was sent out to staff at Dumfries and Galloway Council, staff at West Lothian Council, pupils at Dumfries High School, members of West Lothian Council's Citizens' Panel, and members of the West Lothian Youth Congress.



## **APPENDIX F. SERVICE USER INTERVIEW TOPIC SCHEDULE**

### **Introduction**

Introductions and outline of purpose of research

Recap on the route by which they came to be identified as service users

### **Interviewee Details**

Name

Age

Gender

Locality

### **Experience of iDTV**

Access to iDTV at home? How long?

Motivation(s) for adopting iDTV.

Extent to which the interactive services available through iDTV are utilised:

- Interactive services associated with programme content (red button)
- Interactive services available via the Interactive button

General usability of iDTV interactive services:

- Navigation through menus
- Handset usability
- Comparison of iDTV with other media (web & teletext)

### **Using the Pilot - General**

When did you first see the pilot service?

How and why did you first come to look at it?

- Pointers/prompts/links from project partners
- Colleagues/Friends
- Browsing

How easy was it to find the pilot?

What particular content areas do you remember?

Do you remember looking at content from any of the following?

Dumfries and Galloway Council, HEBS, Start Here, West Lothian Council, Young Scot

How many separate visits made?

What time of day did you typically use the pilot?

How long was a typical visit?

### **Usability**

How easy was it to navigate through the pilot?

- Links between pages – obvious?
- Easy to find specific information & also to return to start?
- Comparison of navigation using pilot service and other iDTV interactive services
- Convenience of remote control compared to keyboard
- Speed of page upload

How well was information displayed?

- Font colours, font sizes

- Amount of text on-screen
- Template design, background colours etc

Reactions to the design?

### **Usefulness**

Content (assuming this is recalled in the answer to ‘Using the Pilot’)

Views on range of content provided (selection of partners, number of partners, selection of specific content areas/issues by partners)

Views on depth (how detailed was information provided by partners on each of the content areas)

Views on relevance to that user (and user priorities for other services they would like to be able to access)

### **Interaction**

Views on the extent of interaction anticipated by user

Views on interaction actually supported by the pilot

Specific features identified as useful by users (what are the characteristics of these features)

Views on further development of other features – email etc

### **Motivators and Inhibitors**

General issues for iDTV

- Costs and charges involved
- Viewing and use habits: collective or individual, and whether this is a positive or negative feature of iDTV

Specific issues for IDTV as a source of public information

- Whether iDTV is considered a suitable medium for undertaking transactions as well as accessing information - what would you like to be able to use iDTV for? What content would you like to see provided? (voting, booking GP appointments, paying Council Tax etc)
- Comparisons with other media and service access channels: other interactive services (internet, telephone), traditional media (leaflets, libraries, advice centres, etc.)

Preferences regarding future developments and likely uses: recommendations & suggestions for improvements

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