



MC-eGov Study on Multi-channel Delivery Strategies and Sustainable Business Models for Public Services addressing Socially Disadvantaged Groups

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Think Paper 1: Visualising the business models of inclusive eGovernment

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1.0 INTRODUCTION

This initial Think Paper sets out the initial project structure by unpacking the key terms of 'sustainable business models', 'multi-channel service delivery', and the target sector of 'socially excluded groups'.

The Paper starts by setting the policy context, and then looks at the issues of sustainability and the working broad understanding of 'business models'. Then there is a consideration of social exclusion, followed by a review of case studies of policy and project interventions grouped under Public sector strategies; Conceptual contexts; and Business strategies.

2.0 THE POLICY AND STAKEHOLDER CONTEXT

The policy context for multi-channel eGovernment was set by the 2010 Action Plan which specified “*no citizen left behind: advancing inclusion through eGovernment so that by 2010 all citizens benefit from trusted, innovative services and easy access for all*”¹. Within the context of this project inclusive eGovernment will involve going beyond the delivery of innovative (relevant) services² through multiple channels and making access easy, to understanding how the service portfolios can be sustained when targeted at socially disadvantaged groups – and such groups often place a high demand on services..

The 2005 Manchester Ministerial eGovernment Conference agreed to confirm the action plan, stating that “*By 2010 all citizens, including socially disadvantaged groups, will have become major beneficiaries of eGovernment*”³, and the Riga eInclusion declaration stated:

*“Designing and delivering key services and public service policies in a user-centric and inclusive way, using channels, incentives and intermediaries that maximise benefits and convenience for all so that no one is left behind.”*⁴.

The Ministerial eGovernment Declaration from the Lisbon Conference in September 2007 asked Member States: “*by the end of 2008 Member States shall identify and exchange information on their flagship eGovernment initiatives addressing the needs of disadvantaged and potentially excluded*”⁵.

The research report produced for that Conference further underlined the challenges relating to inclusive eGovernment, noting that:

*“Much effort is still highly fragmented in terms of both policy and practice, resulting in a failure to benefit from critical mass and mutual learning, and there is still too much focus on silo-specific solutions which are not joined up”*⁶.

¹ EUROPE. (2006 a). *i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All*. Brussels: European Commission. April 25, Report COM(2006) 173 final, 12 p.

http://europa.eu.int/information_society/activities/egovernment_research/doc/highlights/egov_action_plan_en.pdf, EUROPE. (2005a). *i2010 – A European Information Society for growth and employment*. Brussels:

European Commission. June 1, Report COM(2005) 229 final, 12 p.

http://europa.eu.int/information_society/eeurope/i2010/docs/com_229_i2010_310505_fv_en.doc

² And we note that we need to consider “Availability of e-services for all and identification of accessibility barriers, which hinder the use of these services by disadvantaged groups”, which requires a sensitive understanding of the complex barriers that exist.

³ EUROPE. (2005b). *Ministerial Declaration: approved unanimously on 24 November 2005, Manchester, United Kingdom*. (November 24) European Commission, [cited November 25 2005].

<http://www.egov2005conference.gov.uk/documents/proceedings/pdf/051124declaration.pdf>

⁴ EUROPE. (2006b). *Internet for all: EU ministers commit to an inclusive and barrier-free information society*. (June 12) European Commission, [cited June 13 2006].

<http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/06/769&format=HTML&aged=0&language=EN&guiLanguage=en>

⁵ EUROPE. (2007d). *Ministerial Declaration: Interoperability and Reduction of administrative Costs are the Objectives*. (September 20) European Commission, [cited September 20 2007].

<http://www.epractice.eu/document/3928>

⁶ MILLARD, J. (2007a). *European eGovernment 2005-2007: Taking stock of good practice and progress towards implementation of the i2010 eGovernment Action Plan (2007)*. (September 20) European Commission, [cited September 20 2007]. <http://www.epractice.eu/files/download/awards/ResearchReport2007.pdf>

The Inclusive eGovernment Stakeholders Working Group has been specifically tasked to identify flagship eGovernment projects, to understand the complex policy and practice landscape, and to identify policies options, for example in the context of the context of the Roadmap established by the Inclusive eGovernment Survey⁷

Their report of November 2006⁸ identified a series of interventions ranging from understanding the behaviours and segmentation of disadvantaged groups, through regulatory interventions such as universal access, the targeted design of services, through to digital literacy and subsidies for equipment to access services. The outcomes of the Group's work in December 2007 noted first the actions underway by member state in inclusive eGovernment, observing also that some member states had yet to develop a strategy. The Group set out the criteria by which a range of flagship projects (and we will engage with these once identified, and a key action for us will be to use the flagships to identify business models that can be replicated) can be selected:

- *Contribute to the achievement of a better social environment; higher cohesion, greater effectiveness and impact of eGovernment services targeted towards groups in need of social support and those who do not themselves directly use ICT.*
- *Make available targeted, combined, flexible and accessible multi-channel services, including face-to-face delivery support and advanced ICT tools, whilst preserving and assuring traditional channels.*
- *Facilitate combined delivery of services and better coordination between the different stakeholders engaged in service delivery at all levels, with special focus given to intermediaries who need to be trained and be legally enabled to act, if required, on behalf of the citizen⁹.*

We therefore consider citizens/customers (the end-users of the services) in a social context, rather than specific groups of citizens who have some form of disability. People who are disadvantaged by their social context may have a complex set of challenges that include disabilities, or their may be a range of social issues including homelessness, joblessness and discrimination. Consequently one of our focusing phrases is 'the cost-effective and sustainable delivery of public services that maximise the social inclusion of citizens'.

Two important components arise from that phrase: first the cost-effective and sustainable business models; second, the ways in which the business models allow service delivery to be constructed in a way that delivers value that is sustainable (for example beyond initial project funding, or through the integration of services) for the end users, and the consideration of value chains therefore takes us well beyond the simple delivery of government services (conventional eGovernment) to the delivery of portfolios of services that create social value. Value-chains will be one mechanism for us to visualise the processes from service creation through to service consumption, and the resulting social benefits.

⁷ Published in February 2008: http://ec.europa.eu/information_society/activities/egovernment/index_en.htm

⁸ MILLARD, J. (2006). *Options for administrative actions towards the i2010 inclusive eGovernment goal: Final findings of the inclusive eGovernment ad hoc group*. Brussels: European Commission. November 27, 24 p.

⁹ MILLARD, J. (2007b). *Inclusive eGovernment Expert Group meeting: (Draft) Summary of main points*. Brussels: European Commission. December 11.

At the outset we differentiate this project from an eInclusion approach, which is more about the use of products, standards and related interventions that embrace accessibility in general. So, if everyone has access to the Internet, to a digital television, and to the necessary skill-set, then public service delivery will be facilitated for all. eInclusion therefore is more aspirational by setting goals for the future. It targets particular segmented groups (for example blindness, age, or literacy) with electronic technologies.

An inclusive eGovernment service takes a service need (for example providing counselling and psychotherapy to young people) and constructs channels around their needs and behaviours. Using the counselling and psychotherapy example eInclusion may target this group with electronic channels such as SMS, online messaging, WebCams, or email. Inclusive eGovernment would use these channels according to social and behavioural needs of the young people. For example, a Webcam or online messaging exchange with a counsellor may overcome some of the power relationship problems of an initial face-to-face meeting at the location of a counsellor – instead, the young person is allowed equal power in the exchange since either party can terminate it. If that in itself increases the levels of engagement between young people and counsellors then there is a strong possibility that more public value is created.

Moreover, inclusive eGovernment works very much on the basis of taking the existing reality (the bricolage of various exclusions that exist now in society, and especially social exclusion) and constructing public service delivery which includes new technologies, and the third sector, in the supply chain so that the excluded groups can consume the services efficiently and effectively. It may be as simple as adding new channels to an existing service portfolio. The actual process of inclusive eGovernment therefore is focused on political and policy social goals involving a particular set of electronic channels that can work with other channels (multi-channel) in delivering public services. However, the landscape of social inclusion across the EU member states is noted above as being variable, and without a policy context it will be difficult for multi-channel projects to be undertaken other than on an ad-hoc basis.

A further consideration for inclusive eGovernment relates to the ways in which the financial flows for the business models operate (and we are taking the term 'sustainable business model' to mean 'sustainable operating model' in the public service context). The top-down, Exchequer-led models that have dominated in the past enforced a vertical supply chain, with decision-making becoming ever more diluted the nearer the process came towards the local dimension. Even where there has been recent delegation to the local level, the centre often has locked the local back into the centre through the imposition of performance targets, thus making the service deliverers focus on two core client sets – citizens and central government. The financial landscapes of member state governance will also contribute to a diversity of practice in sustainability.

3.0 BUSINESS MODELS, VALUE-CHAINS, AND SUSTAINABILITY

This project aims to identify, categorise, and share business models. It is not about business cases that justify a service creation, but models whereby services can be sustained in a way that delivers value to citizens, and in particular to those who are socially excluded. From our early study of the literature we also acknowledge that no single business model may underpin the complex of service needs that are experienced by socially excluded citizens, and we are visualising an 'ecosystem' of models that sustain service delivery.

There will be a need to identify projects where a service has been put in place on a sustainable basis, and have embraced multiple channels as they have developed. This may also mean that we examine eInclusion projects that have delivered public value in a sustainable way.

For example, Gencat.cat¹⁰, the Internet website of the Catalan Regional Government uses open-source software in a Web 2.0 philosophy and includes social interaction software platform. The eCatalunya component (part of Gencat) provides an inclusive platform for knowledge interchange and community growth for all professional communities that, at one moment or another, deal with the Catalan Autonomous Government. A total number of 274 Communities of Practice (CoP) are empowered by the use of the provided enabling tools, like blogs generation, wiki Web services, RSS feeds, forums, document repositories calendars, etc. It was been identified as one of the three most relevant experiences for www.ePractice.eu Good Practice Exchange and Web 2.0

A successful inclusion project in Glasgow (Scotland) is the Gorbals Library¹¹, which was redesigned as a social space using ICTs and where "*swapping experiences is an invaluable part of learning. Providing a supportive learning environment performed an integral element in the success of the project and contributes to social inclusion*". However, the initial material about the Library noted "*over the three-year life of the project*", thus indicating that there was not an exit strategy planned at the beginning. We could investigate the outcome of the three years, seeing if it generated greater social value (citizens are not included just because they are using a channel, but because there is demonstrable value to them and to society) and whether there was an assessment of increased social exclusion that justified more stable funding for the future. Consequently we will need also to assess why projects have failed, or have not continued in a sustainable fashion, to see if there are systemic reasons that can help future projects avoid failure.

For example, an attempt to establish online identities for homeless people in Paris noted "*homeless people in Paris, who frequently have their possessions stolen, now have access to a secure location where they can store their important documents – cyberspace*"¹². This was a very specific technological intervention supported by Microsoft, which if sustained could have given the homeless much greater access to services they needed. However, this particular intervention started from the premise that technology in itself would contribute to social inclusion. It is more

¹⁰ <http://www.epractice.eu/cases/gencat20>

¹¹ [http://www.slainte.org.uk/publications/serials/infoscot/vol3\(2\)/vol3\(2\)article3.html](http://www.slainte.org.uk/publications/serials/infoscot/vol3(2)/vol3(2)article3.html)

¹² REUTERS. (2003). *Homeless Gain Access on the Internet*. (November 14) Reuters, [cited November 18 2003]. <http://www.reuters.com/newsArticle.jhtml?type=internetNews&storyID=3824243>

likely that the technology, and the role of trusted intermediaries. We will take a strong emphasis on trust in this study, because sustainability of a service depends not just on a financial model, but also on the basis that the end-users trust the service to deliver according to their needs. A similar technological approach been promoted at a national level in the UK¹³. A specific example of the value chain that can be built using, but noting the social intervention rather than the technology intervention, is from a similar initiative in California:

“Hellerich slept on benches but she frequented a women's shelter with a cluster of internet-connected computers used mostly by the children who arrived at the safe house with their mothers. She started blogging and conducting a business. As an independent internet marketer, she was able to maintain bank accounts, nurse existing client connections and forge new business relationships. The business brought in only about \$100 a month, but that was enough to help get her life back on track”¹⁴.

We will explore and understand the value chains associated with inclusive public service delivery. Esteves and Joseph summarise value chains as involving the creation of value through product differentiation, increasing revenue and/or decreasing costs¹⁵, noting that Government often cannot focus on increasing revenue, and therefore *“Governments usually attempt to limit deficit and operate within a particular budget to provide goods and services for citizens”*. It is not surprising, therefore, that the innovative use of information technologies through eGovernment has been a major focus of Government, and *“eGovernment, by definition, is an innovation because it redefines and improves transaction processing via an IT platform”¹⁶*. Holden and Fletcher also write of the value that can be created through the better use of information (sharing and integration for example) within the IT systems¹⁷, or through the use of personae¹⁸ that show what could be done if services were joined up for a range of citizen types¹⁹. A structured methodology for value chains and eGovernment is provided by Richard Heeks as:

Precursors: *Data systems; Legal; Institutional; Human; Technological; Leadership; Drivers/Demand.*

Which through strategy become

Inputs: *Money; Labour; Technology; Political support; Targets.*

Which are implemented through

¹³ BBC. (2005). *Call to give homeless broadband*. (November 2) BBC, [cited November 3 2005]. http://news.bbc.co.uk/1/hi/uk_politics/4396372.stm

¹⁴ OGLES, J. (2006). *Laptops Give Hope to the Homeless*. (June 22) Wired.com, [cited June 23 2006]. <http://www.wired.com/news/technology/0,71153-0.html>

¹⁵ ESTEVES, J. & JOSEPH, R. C. (2008) A comprehensive framework for the assessment of eGovernment projects. *Government Information Quarterly*, 25, 118-132.

¹⁶ Ibid.

¹⁷ HOLDEN, S. H. & FLETCHER, P. D. (2005) The Virtual Value Chain and E-Government Partnership: Non-Monetary Agreements in the IRS E-File Program *International Journal of Public Administration*, 28, 643-664.

¹⁸ For example the City of Aarhus, Denmark, uses a range of personae to model service needs, and this informs them in the construction of service delivery. ECOTEC. (2007). *Handbook for Citizen-Centric eGovernment*. (December) Ecotec Research and Consulting Ltd, [cited December 12 2007]. http://www.ccegov.eu/downloads/Handbook_Final_031207.pdf

¹⁹ The UK Digital Inclusion Team have done this with “Peter’s Story ... The simple story telling technique demonstrates how if all the best elements of existing projects in the UK were introduced in one administration or for one citizen they could be helped by ICT, both in the back office and at the interface with a socially excluded person to become more included in society” DIGITEAM. (2008). *Peter’s Story - a vision of social inclusion through the use of ICT*. Digital Inclusion Team, Department of Communities and Local Government, [cited February 26 2008]. <http://digitalinclusion.pbwiki.com/Peter's+Story>

Intermediates: Web channels; Other e-channels; Back office systems.

And through adoption and use become

Outputs: Information & Decisions; Actions & Service Transactions; Impacts; Financial benefits; Non-financial benefits.

And through exogenous factors outputs translate into

Outcomes: Public goals.²⁰

Jeremy Millard has also recommended that:

“It is useful to think of the delivery value chain as a story board, for example when producing a video or film, by literally drawing a series of pictures with the user at one end and the other actors operating along the value chain. This will make it easier both to understand how each picture can be created and how one picture can lead to the next in a sustainable and operationally viable manner”²¹.

In addition, **over 70% of services are delivered locally and regionally**, often in partnership with the Third Sector, and it will be important to consider business models for Third Sector involvement. The local aspect is therefore critical and might for example include looking at the concept of **horizontal subsidiarity**, (where initiatives grow from a very local need). Again there may be economic models for how such initiatives are funded, including sponsorship. Overall, the study should benefit from having an independent, local focus as well as a pan-European one, and to focus on the actors and the beneficiaries of socially-inclusive services rather than just the technologies, for as Richard Heeks notes:

“Our actor-network perspective suggests that no single actor can control the trajectory of an e-Government project; neither local actors nor global actors. But to make recommendations, we have to fall back on the idea of a leader if not a champion, advising that leadership in e-Government projects means a number of things. It means firstly focusing less on the technology than on the combination of technology and people; and less on the design than on the implications of design”²².

So, we reiterate a goal to develop a **framework or ecosystem for inclusive eGovernance**, underpinned by technology. The actors involved and dynamics of the eco-system are critical in the sense that ICTs are the enablers that improve the dynamics of the system. Within the framework we should have different models applicable to different national contexts. Again, we stress that we are making a clear distinction to be made between eInclusion and inclusive eGovernment (or eGovernance). The former largely concerns accessibility for different groups, and can involve benchmarking country policies against objectives such as universal access to

²⁰ HEEKS, R. (2006). *Understanding and Measuring eGovernment: International Benchmarking Studies*. United Nations Division for Public Economics and Public Administration, [cited January 20 2008]. <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN023686.pdf>

²¹ MILLARD, J. (2007c). *Inclusive eGovernment Stakeholders Workshop. How to make public service delivery to socially excluded groups more efficient and effective*. (June 19) European Commission, [cited January 22 2008]. http://ec.europa.eu/information_society/activities/egovernment/docs/inclus_workshop07.pdf

²² HEEKS, R. & STANFORTH, C. (2007) Understanding e-Government project trajectories from an actor-network perspective. *European Journal of Information Systems*, 16.

telecoms, ICTs, in promoting inclusive design and targeting particular groups such as the disabled, the elderly, or minority groups²³.

Inclusive eGovernment aims to ensure that every citizen benefits from the exploitation of ICTs in service delivery, regardless of whether or not they use online services. For us, the key difference is that inclusion strategies are often focused on targeted groups – ‘here is another disadvantaged group, so let us prioritise something for them’, and these strategies may be accompanied by generic production goals such as ‘design for all’. Another common manifestation of this mind-set is where a subsidiary action is put in place to ensure disadvantaged groups are not forgotten, but after the mainstream initiative is already agreed (tackling an inequality caused by the original initiative itself). The targeting of socially excluded groups can lead to a form of ‘intervention fatigue’, such as the hardening of attitudes reported in the UK towards poor people: “*Most still say society is too unequal and that ordinary people get too little of the nation's wealth. But increasingly they feel that poverty is not the government's problem—or theirs*”²⁴.

Consequently, service delivery business models that are inclusive are even more important. What this project will emphasise is the identification of generic ‘business models’ that cut across types of disadvantaged people, which go beyond subsidy approaches, and which are, above all, sustainable in the medium to long-term. Previous research into eGovernment business models in the Netherlands has identified the following range:

1. *Content Provider: Provides content (information, digital products and services) via intermediaries;*
2. *Direct to Consumer: Provides good or services directly to the customer, often bypassing traditional channel members;*
3. *Full Service Provider: Provides a full range of services in one domain (e.g., financial, health, industrial chemicals) directly and via allies, attempting to own the primary consumer relationship;*
4. *Intermediary: Brings together buyers and sellers by concentrating information;*
5. *Shared Infrastructure: Brings together multiple competitors to cooperate by sharing common IT infrastructure;*
6. *Value Net Integrator: Coordinates activities across the value net by gathering, synthesizing and distributing information;*

²³ CULLEN, J., HADJIVASSILIOU, K., JUNGE, K. & FISCHER, T. (2007). *Status of e-Inclusion measurement, analysis and approaches for improvement. e-Inclusion Handbook Version 2*. London: Tavistock Institute. February, 88 p. <http://www.epractice.eu/document/4106>, EUROPE. (2007b). *i2010 e-Inclusion Subgroup: National Reports*. (December) European Commission, [cited January 28 2008]. http://www.epractice.eu/files/download/i2010_eInclusion_Reports.pdf, EINCLUSION@EU. (2007). *Strengthening eInclusion & eAccessibility across Europe. D6.3 Final report. IST-502553*. (June) einclusion-eu.org, [cited January 28 2008]. http://www.einclusion-eu.org/files/D6_3_final.pdf, EUROPE. (2007a). *European i2010 initiative on e-Inclusion: "To be part of the information society"*. (COM(2007) 694 final, November 8) European Commission, [cited January 28 2008]. http://ec.europa.eu/information_society/activities/einclusion/docs/i2010_initiative/comm_native_com_2007_06_94_f_en_acte.doc, EUROPE. (2007f). *Report on the Public Consultation on e-Inclusion strategy*. (November) European Commission, [cited January 28 2008]. http://ec.europa.eu/information_society/activities/einclusion/docs/i2010_initiative/eIncl_consultation_report.doc, EUROPE. (2007c). *Measuring progress in e-Inclusion Riga Dashboard 2007*. European Commission, [cited January 28 2008]. http://ec.europa.eu/information_society/activities/einclusion/docs/i2010_initiative/rigadashboard.doc

²⁴ ECONOMIST. (2008). *Undeserving*. (January 24) Economist, [cited January 25 2008]. http://www.economist.com/world/britain/displaystory.cfm?story_id=10567199

7. *Virtual Community: Creates and facilitates an online community of people with a common interest, enabling interaction and service provision;*
8. *Whole of Enterprise: Provides a firm wide single point of contact, consolidating all services provided by a large multiunit organization²⁵.*
9. {and we could also add here} Communities of Practice.

However, these models represent possible conduits through which services can be delivered, and emphasise more the business cases that can be made for eGovernment service delivery. For this study the focus on business models for public services addressing socially disadvantaged groups is a focus not on short-term, profit-focused business models, but on **business models that will enable sustainable public services that deliver value to the target groups**. A key priority is continuity of services and value, although we will study wider business models that have delivered services to excluded groups, since they can provide innovative approaches that can be considered by the public sector.

²⁵ JANSSEN, M., KUK, G. & WAGENAAR, R. W. (2005) A survey of e-government business models in the Netherlands. *ACM International Conference Proceeding Series*, 113, 496 - 504.

4.0 SOCIALLY EXCLUDED GROUPS AND RELATED INTERVENTIONS

In the context of initial terms and segmentations of who are socially excluded from eGovernment, we acknowledge previous research that provides a framework that we can build on. For example, Paul Foley and colleagues identified key words and parameters for seven social inclusion problems, and key words and parameters relating to inclusive eGovernment are:

- **Unemployment and worklessness:** *Low skills, Literacy/language skills, Long term illness/disability, Ethnic penalty/discrimination, Social capital.*
- **Early years disadvantage:** *Child poverty, Lack of social capital, Access to benefits. Families or individuals with complex and multiple needs; Information sharing, Access to services, Intermediaries.*
- **Educational underachievement:** *Low parental expectation/involvement, Deprived neighbourhoods, Access to home computer.*
- **Homelessness:** *Social isolation; Frequent moving.*
- **Health inequalities:** *Mental health stigma, Disability and independent living, Access to services.*²⁶

While the study by Foley and colleagues identifies that many socially excluded citizens have complex needs, these citizens often suffer from a 'friction' effect caused by their needs being the responsibilities of many sections of government, who often act in an uncoordinated manner; for example at different levels of Public Administration at national, regional, local and supra-territorial levels. This is of particular importance in many countries, like Spain (composed of seventeen autonomous communities plus two autonomous cities), where the 'competencies' are not always evenly distributed. What is the responsibility of whom varies in political terms, and budgeting is a sustained area of negotiation and discussion. This has significant consequences in the deployment of e-Government services, where the 'business models' are severely affected by the referred geo-political structuring, as well as policy-making and execution potential.

We also can build on the typology of policy interventions devised by Jeremy Millard:

- **Policy area:** Health; Employment; Education; Schools; Poverty; Housing.
- **Target group:** Disabled; Older people; Rural & remote areas; Special needs/disadvantaged; Children/young people; Families; Communities; Immigrants/minorities; Students.
- **Intervention:** Access (incl. PIAPs); Skills & competencies; Broadband; Content²⁷.

Such a framework provides a context for the various approaches to overcome exclusions in the information society, and through the analytical framework we will select successful projects and interventions from Europe and beyond, noting in particular the ways in which they indicate potentially fruitful business models.

²⁶ FOLEY, P., KATHY, ALFONSO, X., FISHER, J. & BRADBROOK, G. (2005). *e-Government: reaching socially excluded groups?* (September) Improvement and Development Agency, [cited June 1 2006]. <http://www.idea.gov.uk/idk/core/page.do?pagelid=1074872>

²⁷ MILLARD, J. (2007d). *Inclusive eGovernment: Survey of status and baseline activities*: Danish Technology Institute December, 51 p.

The material that follows shows the diversity of technology interventions (often single channel, or single target user grouping) that have been used in all sectors to challenge exclusions, whether they be social, disability, or cultural. As such it can read more as a landscape of eInclusion, but this is needed as an initial context so that we can explore the ways in which flagship and other projects have joined up channels in a sustainable manner.

Our initial survey of the research and the issues shows a considerable diversity of approaches and numerous complementary contributions to success which can be further rationalised to show how they may together contribute towards more sustainable service delivery strategies. We group these initially under three key headings which we will use initially for the collection of data and resources:

- Public sector strategies;
- Conceptual contexts; and
- Business strategies.

4.1 Public sector strategies

The public sector, from central to local government, uses a range of intervention activities, ranging from laws and regulation, through funding and subsidy, to partnership activities²⁸.

4.1.1 Regulation and Frameworks

This is the function of both European and National Governments. European Community Directives in areas such as Universal Service²⁹ work together with Framework Programmes, and pan-European Ministerial statements³⁰ to provide frameworks within which activities can be focused.

Universal Service approaches can be used both to enforce **open access to infrastructures**, and to stimulate investment so that a nation can retain competitiveness in the global economy. For example, the UK Government is aware that in the context of super-fast broadband “*France, Germany and Italy are already looking at ways of improving the so-called access or last-mile network which connects to people's homes, there is so far little investment in the UK*”³¹. The European Union sees access to ICTs as being a human right and a universal service, but also is clear that delivering the rights is not a simple matter of government subsidy:

“Member states should develop, in co-operation with the private sector and civil society, strategies which promote sustainable economic growth via competitive market structures in order to stimulate investment, particularly from local capital, into critical Internet

²⁸ HENRIKSEN, H. Z. & ANDERSEN, K. V. (2004) Diffusion of E-Commerce in Denmark: An Analysis of Institutional Intervention. *Knowledge, Technology, and Policy*, 17, 63-81.

²⁹ EUROPE. (2002). *Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive)*. Brussels: European Commission. April 24, Report L 108/51, 27 p.

³⁰ EUROPE. (2006b). *Internet for all: EU ministers commit to an inclusive and barrier-free information society*. (June 12) European Commission, [cited June 13 2006]. <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/06/769&format=HTML&aged=0&language=EN&guiLanguage=en>

³¹ BBC. (2007b). *Government mulls broadband help*. (September 19) BBC, [cited September 19 2007]. <http://news.bbc.co.uk/2/hi/technology/7001413.stm>

*resources and ICTs, especially in areas with a low communication and information infrastructure*³².

So it is sustainable business that enables local and regional capital investment.

In Canada³³ a range of regulatory intervention have been used to overcome exclusion, including **price-capping** which “*required each major local telephone company to create a deferral account. The companies were requested to place into those accounts amounts equal to the revenue reductions that would otherwise have resulted from an application of the price cap formula*”, and where the funds accrued must be targeted at access for disabled groups. Another pricing regulation is a **single-price regulation**, a one-fare policy for airlines, where they “*may not charge more than one fare for persons with disabilities who are accompanied by an attendant for their personal care or safety in flight, as required by the carriers' domestic tariffs, or require additional seating for themselves, including those determined to be functionally disabled by obesity for purposes of air travel*”. When viewed conceptually these forms of pricing regulation may be viewed as a subsidy – one that is direct, and another direct. The direct form of subsidy makes it clear where the funds are being targeted. In the indirect one it is left to the service providers to calculate the overall price that everyone should pay so that all possible groups of people can be accommodated by the service.

Another form of Universal Service obligation comes in ‘design for all principles’ so that in complex and emotional services such as health “*everyday technologies such as mobile phones and personal computers should be used more in healthcare*”³⁴. Design for all further acknowledges that almost every citizen will experience a form of inclusion at some time (financial, health, mobility, knowledge etc.), and “*the truth is that we all struggle to deal with technology at some point and the digital divide can operate in many ways - young versus old, educated versus uneducated, north versus south, east versus west and so on*”³⁵.

A subtle form of ‘design for all’ is the process of interoperating multiple channels (in effect designing the channel offerings for all). Examples of this include:

- Gleichstellung von Menschen mit Behinderungen, Austria³⁶, which is a multi-channel (phone, textual, video and sign language) information service relating to the rights of disabled people;
- Multiple channels in the Citizen Portal in Portugal, which makes use of legacy access to familiar ATMs, since these all interoperate to allow access to financial and government services and which is used regularly by over half a million citizens³⁷;

³² EUROPE. (2007e). *Recommendation CM/Rec(2007)16 of the Committee of Ministers to member states on measures to promote the public service value of the Internet*. (November 7) Council of Europe, [cited November 10 2007].

<https://wcd.coe.int/ViewDoc.jsp?id=1207291&Site=CM&BackColorInternet=9999CC&BackColorIntranet=FFB55&BackColorLogged=FFAC75>

³³ ADIO. (2008). *Accessible News #33*. (Winter 2008) Assistive Devices Industry Office, Industry Canada, [cited February 20 2008]. <http://www.at-links.gc.ca/as/as013n33e.asp>

³⁴ KABLENET. (2006). *NHS urged to use more simple ICT*. (December 13) Kable Government Computing, [cited December 13 2006].

<http://www.kablenet.com/kd.nsf/Frontpage/7510483749B09EF680257242005E8BA3?OpenDocument>

³⁵ CANE, A. (2007). *Focus on disability could enable us all to play better*. (May 30) Financial Times (London), [cited June 11 2007]. www.ft.com

³⁶ <http://www.gleichundgleich.gv.at/>

- In Switzerland “People with visual and other disabilities are among the eVoting pioneers”³⁸, indicating that socially disadvantaged groups can actually become innovators in channel developments;
- In Spain a balance of channels is available, where an information phone-line in its first year of operation “has dealt with 700 000 enquiries. The related website is getting over half a million visits a month”³⁹.

Multiple channels are important, and we need to understand the **physical and virtual channels through which particular groups of citizens wish to consume services**. For example, there is an emotional debate in the UK over closing rural and small urban post offices, centralising facilities or making some services only available via the Internet⁴⁰. Indeed in the USA the Post Office has been seen historically as a fundamental channel through which citizens had access to other channels:

“The creation of the national post office was particularly important to information access, allowing sources of information, such as newspapers, pamphlets, and letters—all protected by the freedom of expression—to be widely disseminated”⁴¹.

The desire to maximise channels can therefore be offset through channel reduction as the result of need to reduce costs, often compelling people to use online⁴²:

“The objection to compulsion is social exclusion. This is more valid. Two-fifths of the population doesn't have the internet at home; the digitally excluded tend to be the people in most need of government services and least able to transact with officialdom on their own”⁴³.

Some responses to potential closures have been to examine sustainable models that use multiple channel approaches. Some local councils in the UK are considering investing in local post offices to sustain service delivery to socially excluded groups⁴⁴.

³⁷ <http://www.epractice.eu/cases/147>

³⁸ EPRACTICE. (2006c). *People with disabilities boost eVoting*. (November 20) European Commission, [cited November 21 2006]. <http://www.epractice.eu/document/259>

³⁹ EPRACTICE. (2007a). *Big phone and web demand for civic info*. (September 7) European Commission, [cited September 12 2007]. <http://www.epractice.eu/document/3884>

⁴⁰ CABINET. (2006). *Customer insight in public services - A Primer*. London: Cabinet Office. October, 19 p. http://www.cabinetoffice.gov.uk/publications/delivery_council/word/cust_insight_primer061128.doc, CROSS, M. (2007a). *High street e-government shops could sell stamps, too*. (July 26) Guardian (London), [cited July 26 2007]. <http://www.guardian.co.uk/technology/2007/jul/26/comment.it>

⁴¹ JAEGER, P. T. (2007) Information policy, information access, and democratic participation: The national and international implications of the Bush administration's information politics. *Government Information Quarterly*, 24, 840-859.

⁴² In some countries, such as Singapore and Dubai, compulsion is imposed by government as in the case of Dubai's Project Zero which aims only to interact between citizens and government online. The political landscape of Europe is less conducive to compulsion, but these forms of central 'business model' will be investigated.

⁴³ CROSS, M. (2007a). *High street e-government shops could sell stamps, too*. (July 26) Guardian (London), [cited July 26 2007]. <http://www.guardian.co.uk/technology/2007/jul/26/comment.it>

⁴⁴ BBC. (2008a). *50 councils may run post offices*. (March 11) BBC, [cited March 11 2008]. http://news.bbc.co.uk/2/hi/uk_news/politics/7289939.stm

4.1.2 Interventions through Funding and Subsidy

This has been a major activity for the EU through the Framework Programmes and the focused activities within them, and we will review projects within eGovernment, eHealth, eTen and eInclusion that have focused on inclusive activities. Such pan-European activities are complemented by national and sub-national investments. Another source of funding can be the Structure Funds for the period 2007-2013, priority 'Information Society', especially in the EU new member states. At a national level Blakemore and Lloyd note the very different levels of taxation among member states, and the very real challenges that exist in new member states when developing infrastructures and services⁴⁵.

Public funding can include approaches such as launching city-wide WiFi⁴⁶, but it is becoming clear that there are real **sustainable investment challenges** in maintaining such networks:

Chicago planned to launch a city-wide wi-fi network, but has recently abandoned the plans because the commercial partner did not envisage a sound return on investment "municipal Wi-Fi schemes have been struggling to make ends meet. EarthLink, which runs networks in Philadelphia and New Orleans, recently admitted that 'the Wi-Fi business as currently constituted will not provide an acceptable return'⁴⁷.

This cautionary tale underlines our initial point of sustaining service availability and public value, and issue that was experienced with MINITEL in France when it experienced difficulties sustaining the service beyond the period of public subsidy⁴⁸, but subsequently adopted a strategy linked to the Internet and became commercially profitable⁴⁹. Even with the many uncertainties of sustainability, subsidy is a widely used strategy by government:

- In Africa, particularly in Kenya, socially excluded groups are benefiting from greater access to mobile telecoms through the provision first of the basic infrastructure, and this subsidy stimulates business innovation: "*Past lessons have shown that many Africans are entrepreneurial enough to develop their own services and solutions once a technology arrives*"⁵⁰.

⁴⁵ BLAKEMORE, M. & LLOYD, P. (2007). *Think Paper 10: Trust and Transparency: pre-requisites for effective eGovernment*. (August) Ccegov Project, [cited September 1 2007].
<http://www.ccegov.eu/Downloads/Paper%2010%20Trust,%20Transparency,%20Efficiency%20and%20eGovernment%20v2.3.pdf>

⁴⁶ BREITBART, J. (2006). *Digital Inclusion: Wireless Initiatives*. (December 20) Govtech.net, [cited January 3 2007]. <http://www.govtech.net/digitalcommunities/story.php?id=102997>, CONNELL, J. (2007). *WiMax is finding a home across the digital divide*. (February 14) International Herald Tribune, [cited February 16 2007]. <http://www.iht.com/articles/2007/02/14/business/wimax.php>, BBC. (2006). *Wireless boost for British cities*. (May 18) BBC, [cited May 18 2006]. <http://news.bbc.co.uk/2/hi/technology/4993038.stm>, BBC. (2007c). *London leads in city wi-fi race*. (June 15) BBC, [cited June 17 2007]. <http://news.bbc.co.uk/1/hi/technology/6755829.stm>, EPRACTICE. (2007b). *Free 'hot spots' in the Warsaw district of Bemowo*. (August 27) European Commission, [cited September 12 2007]. <http://www.epractice.eu/document/3764>

⁴⁷ ECONOMIST. (2007a). *Reality bites*. (August 30) Economist, [cited August 31 2007].
http://www.economist.com/business/displaystory.cfm?story_id=9726651

⁴⁸ HILL, R. (1997) Electronic Commerce, the World Wide Web, Minitel, and EDI. *Information Society*, 13, 33-41.

⁴⁹ SHANNON, V. (2006). *Where are they now?* (March 16) International Herald Tribune, [cited April 7 2006].
<http://www.iht.com/articles/2006/03/15/business/ptend16.php>

⁵⁰ FILDES, J. (2007b). *Mobiles for the 'world's poorest'*. (September 10) BBC, [cited September 10 2007].
<http://news.bbc.co.uk/1/hi/technology/6986804.stm>

- Besancon.clic⁵¹, is a strategy in the Besançon Community, France, "involving the financing of IT equipment for schools and hospitals, associations, and retirement homes, and the opening of public multimedia access points in every neighbourhood".
- Multi-channel Citizen Service Centers⁵² (CSC) are provided in Greece, with 1054 CSC branches, a 24x7 call centre, and a dedicated website.
- The Connect Project⁵³, Ireland, involves the use of open source software in a series of projects aiming to enable all citizens to access eGovernment services, including community and voluntary websites, a virtual learning environment, and a Website with public information such as planning applications.
- Subsidy for public access to services can be indirectly provided through business philanthropy. Businesses in Wisconsin, USA, provide subsidised and refurbished technology⁵⁴ to excluded groups: "Placing refurbished computers into the homes of families who don't have the financial means to purchase a computer will not only allow the employees to become part of the electronic world but will also enhance their children's education".
- In Romania and in Greece, the governments are involved in projects to network rural and isolated communities⁵⁵.
- In Poland the "Government is planning to offer free internet connections to disadvantaged members of society"⁵⁶.
- In Spain "The Ministry of Industry, Commerce and Tourism has announced that it will spend €6 million on projects aimed at ensuring that more women and vulnerable citizens, such as the elderly and disabled, have equal access to the information society"⁵⁷.
- In Hungary in November 2007 "an eInclusion plan was presented to the IT subcommittee of the Hungarian Parliament's Economic and IT Committee" with the aim of expanding Internet use initially targeting citizens over the age of 50⁵⁸.

4.1.3 Economic Justification for Investment

Economic justification can occur first through a formal financial justification of return on investment, for example, Newham Advanced Telecare, UK⁵⁹, where "a range of sensors in

⁵¹ <http://www.epractice.eu/cases/besaccllic>

⁵² <http://www.epractice.eu/cases/cscckep>

⁵³ <http://www.epractice.eu/cases/connect>

⁵⁴ BURKE, M. (2004). *Refurbished computers help Warren close the 'digital divide'*. (January 23) The Journal Times (Racine), [cited January 26 2004].

http://www.journaltimes.com/articles/2004/01/23/local/business/iq_2657156.txt

⁵⁵ E PRACTICE. (2007e). *Romania networks rural areas*. (January 29) European Commission, [cited February 5 2007]. <http://www.epractice.eu/document/176>, E PRACTICE. (2007d). *Remote e-Strategies*. (November 22)

European Commission, [cited January 28 2008]. <http://www.epractice.eu/cases/remotestategies>

⁵⁶ E PRACTICE. (2006b). *Government promises free internet*. (December 18) European Commission, [cited December 22 2006]. <http://www.epractice.eu/document/209>

⁵⁷ E PRACTICE. (2006d). *Spain takes steps to ensure internet use is inclusive*. (November 27) European Commission, [cited November 28 2006]. <http://www.epractice.eu/document/249>

⁵⁸ E PRACTICE. (2008). *New eInclusion initiative by NGOs*. (January 21) European Commission, [cited January 29 2008]. <http://www.epractice.eu/document/4318>, DOMBI, G., KOLLÁNYI, B. & MOLNÁR, S. (2007). *First Hungarian eInclusion Report and Action Plan*. (September 13) Inforum, Budapest, [cited January 28 2008]. <http://einclusion.hu/2007-09-13/first-hungarian-einclusion-report-and-action-plan/>

vulnerable peoples' homes sends alerts automatically to the control centre if problems are detected', and where the business model is defined in terms of cost benefits and savings – it is estimated that €6 million a year will be saved by 2010.

It can occur secondly through an **indirect cost benefit justification** where at a policy level it is deemed beneficial to provide funding in return for a wider expected package of financial, social and economic returns. For example

- Multilingual Infobank⁶⁰ (Infopankki), a website for immigrants living in Finland and authorities, which is translated into 15 languages.
- Promoting ways of overcoming social loneliness through assistive technologies, including *“automatic alerts to help elderly people detect dangerous situations, or a more complex ‘tele-presence’ system that enables them to virtually visit shops, friends or go to church”*⁶¹.

A variant of the indirect cost benefit is where **uncertain benefits accrue from an investment**. For example, debates exist about the merits of developing super-fast broadband, with critics arguing that this will benefit more games players since *“You can shoot someone so much quicker at 50 megabits”*⁶², and that it may exacerbate existing access divides for rural and remote areas⁶³. However, it is just as possible that dramatic increases in available bandwidth will facilitate the faster and cheaper provision of inclusive technologies such as real-time online speech to text, text to speech etc.

The third form of investment is even more indirect, where the investment is made in human capital and skills, with a medium to long-term expectation that this will lead to **wider engagement in the information society**. For example, once training and capacity are created⁶⁴, elderly people may become more active Web users in areas of online banking⁶⁵, and more aware of the multi-channel potential of technologies:

- The UK Online Centres are organising a *“special day to help web-phobic families embrace the internet. One in 12 households don't have access to a computer, mobile phone or internet connection, while 40% of people haven't been online in the last three months or more”*⁶⁶.

⁵⁹ <http://www.newhamhomes.com/Services/NewhamNetwork/AboutUs/newhamadvancedtelecareneat.htm>

⁶⁰ <http://www.epractice.eu/cases/infobank>

⁶¹ ANON. (2007c). *Older people may embrace 'virtual friends' to prevent loneliness, says BCS*. (March 29) Public Technology, [cited March 29 2007].

<http://www.publictechnology.net/modules.php?op=modload&name=News&file=article&sid=8343>

⁶² WAKEFIELD, J. (2007). *Push for faster net 'premature'*. (December 3) BBC, [cited December 3 2007].

<http://news.bbc.co.uk/1/hi/technology/7114642.stm>

⁶³ ELLIOTT, V. (2007). *Bad connection 'could unplug rural economy'*. (December 27) Times (London), [cited December 31 2007]. http://technology.timesonline.co.uk/tol/news/tech_and_web/article3097571.ece

⁶⁴ Acknowledging “Older people’s barriers for learning are related to learning skills, access, and motivation as well as to the suitability of the learning approaches”. ALA-MUTKA, K. & PUNIE, Y. (2007). *Ageing Societies, Learning and ICT*. (November) Institute for Prospective Technological Studies, [cited January 28 2008].

<http://www.elearningeuropa.info/files/media/media14198.pdf>

⁶⁵ BBC. (2007f). *Online banking boom for over 55s*. (August 24) BBC, [cited August 26 2007].

<http://news.bbc.co.uk/1/hi/business/6962288.stm>

⁶⁶ KABLENET. (2007a). *Dedicated web day set*. (September 19) Kable Government Computing, [cited September 19 2007].

<http://www.kablenet.com/kd.nsf/Frontpage/4FCEAFCA33804D028025735B0039BD4E?OpenDocument>

- The National Programme of Computer Literacy (NPCL), Czech Republic promotes *“courses which are affordable to the public, particularly older people who do not have easy access to computers and the Internet. There were also special projects for disadvantaged groups, e.g. handicapped people”*⁶⁷.
- Furthermore, there is some recognition that even children can be socially excluded from eGovernment through fragmented services, and in the Netherlands: *“the Dutch Interior Ministry is exploring the possibility of placing children, a traditionally neglected segment of the population, at the heart of its eGovernment services. This is part of efforts to construct an eGovernment ‘Kind Centraal’ (Children’s Centre)”*⁶⁸.
- In Ireland the Information Society Minister announced: *“I have now instigated a new Seniors Outreach Programme which will commence in 2008. It will involve talks being given to groups of older people on how computers and the internet can be relevant and useful to them – and now Mobile phones are to be encompassed in this new outreach initiative”*⁶⁹.

4.1.4 NGO/Intermediary Organisation Roles and Partnerships

This is a significant area of activity, and can be conceptualised as a form of **joint subsidy** where both hard finance and resources in kind, are provided by both parties.

- Micro-businesses are stimulated through training, and supported by, NGOs in South Africa such as the Foundation for Business Development (Febdev) which is *“a grass roots initiative that uses information and communications technology to alleviate poverty”*⁷⁰.
- Intermediaries, such as care homes, can see benefit in creating capacity and use by their residents: *“Folks in or near retirement are getting wired as never before--and not just to e-mail the grandkids and view photos of their far-flung family members. They're going online to bank, invest, search for alternative medicines, find volunteer opportunities, network with interest groups, blog, become politically active and, like Hazel Poole, start up something new--for fun or profit”*⁷¹.
- Intermediaries can work with Government in large scale initiatives to raise awareness and build capacity, for example in the UK in October 2007: *“Generation Xperience UK Older People’s Day will be taking place on Monday 1st October. The day is a chance to celebrate the achievements of older people and the huge contribution they make to society, while at the same time tackling outdated stereotypes and affirming a positive view of later life”*⁷².
- NGOs can be involved in promoting local entrepreneurship in remote and geographically excluded areas, for example where they can negotiate broadband access through grants

⁶⁷ <http://www.epractice.eu/cases/nppg>

⁶⁸ EPRACTICE. (2007c). *Putting children at the heart of eGovernment*. (August 31) European Commission, [cited September 12 2007]. <http://www.epractice.eu/document/3781>

⁶⁹ ANON. (2008). *Information Society Minister encourages Older People to maximise use of their mobile phones*. (January 2) Egovmonitor.com, [cited January 7 2008]. <http://www.egovmonitor.com/node/16492>

⁷⁰ ALLIE, M. (2004). *Poor Access ICT For Development - The Business Way*. (August 17) Panos, [cited August 20 2004]. <http://allafrica.com/stories/200408170581.html>

⁷¹ KADLEC, D. (2007). *Senior Netizens*. (February 2) Time, [cited February 7 2007]. <http://www.time.com/time/magazine/article/0,9171,1584802,00.html>

⁷² ANON. (2007d). *Turning the spotlight on experience*. (September 12) Egovmonitor.com, [cited September 12 2007]. <http://www.egovmonitor.com/node/14289>

and price negotiation with suppliers⁷³, or through low cost wireless routers such as “Meraki-based networks in 25 countries, from Slovakia to Venezuela, serving more than 15,000 users”⁷⁴.

- Providing access to ICTs for homeless people in Paris⁷⁵, and in California where: “*Helping the homeless get e-mail addresses has been a priority for years at shelters across the country. And in an age when most every public library in the nation offers internet access, the net has proven a perfect communication tool for those without a firm real-world address*”⁷⁶.
- Looking beyond Europe to other relevant examples. For example, the eJustice project in India “*will enable access to legal information provided in a simple manner, through Kiosks set up in select places in the district of Mahabubnagar*” using trained intermediaries to provide support to non-literate citizens⁷⁷.
- “*The Village Phone Programme in Bangladesh is run by a sister firm of the 2006 Nobel Peace Prize-winning Grameen Bank, it enables local women to earn an income from renting mobile phones to fellow villagers*”⁷⁸.
- Partnerships between Universities and developing countries can transfer knowledge and capacity, as well as technology devices, into communities, for example: “*Carnegie Mellon University's TechBridgeWorld, a group that partners with developing communities to create sustainable technological solutions to problems within those communities*”⁷⁹.

4.1.5 Commercial Partnership/ Joint Venture

This model seeks to **reduce the initial financial exposure of a public administration** when establishing infrastructure and service projects that have a significant initial investment requirement. For example:

- A public-private partnership has been created: “*ConnectKentucky, a public-private partnership ... is morphing into a company called Connected Nation, and is helping to wire up the neighbouring states of West Virginia and Tennessee*”⁸⁰.
- Accelerated local economic and social development is promoted through access to broadband for the Polish city of Slupsk through a “*public-private partnership model. A key challenge for the project was to clearly define the dividing line where, on the one hand, public interest justifies city engagement and direct involvement in providing Internet and*

⁷³ WAKEFIELD, J. (2003). *Broadband entrepreneurs wire the nation*. (June 16) BBC, [cited June 17 2003]. <http://news.bbc.co.uk/1/hi/technology/2988708.stm>

⁷⁴ SAVAGE, N. (2007). *Cheap, easy Internet access*. (September 11) Technology Review, [cited September 12 2007]. <http://www.technologyreview.com/TR35/Profile.aspx?Cand=T&TRID=604>

⁷⁵ REUTERS. (2003). *Homeless Gain Access on the Internet*. (November 14) Reuters, [cited November 18 2003]. <http://www.reuters.com/newsArticle.jhtml?type=internetNews&storyID=3824243>

⁷⁶ OGLES, J. (2006). *Laptops Give Hope to the Homeless*. (June 22) Wired.com, [cited June 23 2006]. <http://www.wired.com/news/technology/0,71153-0.html>

⁷⁷ CGG. (2007). *The eJustice Project*. (February) Centre for Good Governance, Hyderabad, India, [cited February 4 2007]. <http://www.ejustice.org.in/services.do>

⁷⁸ ANDERSON, T. (2007). *Mobile phone lifeline for world's poor* (February 19) BBC, [cited February 20 2007]. <http://news.bbc.co.uk/2/hi/business/6339671.stm>

⁷⁹ NAONE, E. (2007). *Empowering Technologies for the Developing World*. (September 24) Technology Review, [cited September 24 2007]. <http://www.technologyreview.com/Infotech/19417/?a=f>

⁸⁰ ECONOMIST. (2007b). *Wiring rural America*. (September 13) Economist, [cited September 16 2007]. http://www.economist.com/world/na/displaystory.cfm?story_id=9803963

*e-services for citizens and business; and on the other, where commercial business interests and competition in providing best service and Internet connection to the citizens and businesses starts*⁸¹.

4.2 Conceptual Contexts

We see the research context as being an important mechanism to add context and critique to the material we gather, and we will focus here on linking academic and applied research to the policy and business contexts.

We will examine research that aims to **understand the behaviour of 'excluded' groups**. This is being currently undertaken by British Telecom, which notes: "*for many people the biggest barrier to getting online was mental as many of those avoiding the net lived in homes with a dedicated connection*"⁸². This can be enriched by detailed research that has examined 'non-users', which finds that it is not just a lack of physical ability to use service channels, or skills that may be problems:

"Our findings demonstrate that our respondents only imagined narrow uses for computers, largely shaped by popular media. The interviewees did not consider using the Internet to contact their local authorities (actively encouraged in the UK). They did not envisage engaging in civil activities on the Internet, building or joining any 'virtual communities'"⁸³.

In earlier research Jane Fountain touched upon the problem of service-oriented e-government, leaving the disadvantaged isolated due an **inherent skew in supplier focus**, and her work challenges the issue of why governments are so eager to implement e-government⁸⁴. Furthermore, the focus on exclusion is often performed unevenly by 'reputation-based governance' that focuses on performance metrics that may lead to prioritising services and access for the majority at the expense of the minority. Picci challenges whether services will:

*"empower citizens, or will they not? Will they support an horizontal, network-shaped, organizational landscape or, to the contrary, will they tighten the bolts of traditional vertical organizations? Will they model the reputation of the actors of governance, or will they only describe the aspects of governance that are useful for societal control, with reputational information still exchanged within traditional social networks?"*⁸⁵.

⁸¹ <http://www.epractice.eu/cases/1680>

⁸² BBC. (2007a). *BT set to study internet novices*. (September 14) BBC, [cited September 16 2007]. <http://news.bbc.co.uk/1/hi/technology/6979849.stm>

⁸³ CUSHMAN, M. & KLECUN, E. (2005). *How (can) non-users perceive usefulness: bringing in the digitally excluded*. (Pencil Paper 7, November) Department of Information Systems, London School of Economics and Political Science, [cited September 20 2007]. http://pencil.lse.ac.uk/documents/07_How_can_non-users_perceive_usefulness.pdf

⁸⁴ FOUNTAIN, J. (2001) Paradoxes of Public Sector Customer Service. *International Journal of Policy and Administration*, 14, 55-73.

⁸⁵ PICCI, L. (2007). *Reputation-based governance*. (Volume 12, number 9 (September)) First Monday, [cited September 22 2007]. http://firstmonday.org/issues/issue12_9/picci/index.html

Research will also help us to understand **temporal dynamics**, since the “*unevenly changing unevenness*”⁸⁶ of exclusion over time means that we must aim to develop sound and generic guidelines, rather than just select particular groups of citizens. For example concerns over the inclusion of elderly people can be overcome through **multiple interventions**. There can be training and support offered through government⁸⁷ through process simplification in eGovernment⁸⁸, and NGO initiatives⁸⁹. However, much of the generic training has often not been sufficiently targeted to the needs of socially excluded groups, as opposed to being targeted at them as an inclusion challenge:

*“Narrative data from four United Kingdom educational sites participating in this computer network engineer training program highlight a systemic paradox: that ICT skills development initiatives designed to support lone women parents are simultaneously working in opposition to broader policy goals such as work–life balance and ironically serve to reproduce the participants’ classification as socially excluded”*⁹⁰.

Training and support initiatives therefore need to be targeted, sustainable and adequately resourced, avoiding contradictory strategies such as the UK proposal to reduce investment in UK Online, and where now “*the money being spent to help the elderly through the digital TV switchover is to be spent on set-top boxes without return buttons which could be used for communicating with government*”⁹¹, hence the announcement late in 2007 that “*The Department for Work and Pensions is piloting a website to encourage social networking and debate between senior citizens*”⁹². In this context we will review available statistics and surveys at national⁹³ and European levels. The temporal context also exists in the context of innovation (research combined with reducing costs of technology), for example “*Technology that translates spoken or written words into British Sign Language (BSL)*”⁹⁴.

⁸⁶ BLAKEMORE, M. (2005). *All things “e” with a little bit of “i”, and hopefully some “d” and “p”*: Basic Building Blocks and the Digitisation of European Public Administrations. (April 1) International Workshop: The Digitisation of European Public Administrations: What’s the Political Dimension of Electronic Governance? Maastricht (NL), [cited April 1 2005].

⁸⁷ ERACTICE. (2006d). *Spain takes steps to ensure internet use is inclusive*. (November 27) European Commission, [cited November 28 2006]. <http://www.epractice.eu/document/249>

⁸⁸ ERACTICE. (2006a). *eGovernment simplifies administrative steps for Seniors*. (October 20) European Commission, [cited October 26 2006]. <http://www.epractice.eu/document/297>

⁸⁹ GOFF, H. (2007). *Silver surfers conquer their fear*. (May 21) BBC, [cited May 21 2007]. <http://news.bbc.co.uk/1/hi/education/6635273.stm>

⁹⁰ FLORIDI, L. (2007) A Look into the Future Impact of ICT on Our Lives. *Information Society*, 23, 59-64.

⁹¹ CROSS, M. (2007b). *It’s time for inclusive e-government*. (May 3) Guardian (London), [cited May 4 2007]. <http://technology.guardian.co.uk/weekly/story/0,,2070578,00.html>

⁹² KABLENET. (2007b). *Government launches online network for seniors*. (October 29) Kable Government Computing, [cited October 31 2007]. <http://www.kablenet.com/kd.nsf/Frontpage/7B7BE1690C6379D680257383004EFACA?OpenDocument>

⁹³ For example: ANON. (2007a). *Digital divide across the UK is narrowing, says Ofcom*. (May 25) Public Technology, [cited May 30 2007].

<http://www.publictechnology.net/modules.php?op=modload&name=News&file=article&sid=9439>, BALAKRISHNAN, A. (2007). *Digital divide grows for older Britons as others connect to new media*. (March 16) Guardian (London), [cited March 19 2007]. <http://technology.guardian.co.uk/news/story/0,,2035468,00.html>

OFCOM. (2006). *What Can Be Done To Get Older People On-Line*. (July 5) Office of Communications, [cited July 5 2006]. <http://www.ofcomconsumerpanel.org.uk/nr/050706.htm>

⁹⁴ ADAMS-SPINK, G. (2007a). *Technique links words to signing*. (September 15) BBC, [cited September 17 2007]. <http://news.bbc.co.uk/1/hi/technology/6993326.stm>

We also acknowledge with sensitivity that not all policy interventions into the creation of inclusive eGovernment are the domain of 'developed' nations. Comparative research into intermediary interventions in India and Europe provides salutary lessons:

"In both cities we find groups of people with unmet statutory rights to and needs for local government services. While the magnitudes of the discrepancies are not comparable, we found more positive change taking place for the poorer people in the less affluent India than in the more affluent Sweden. The role of mediators in the two cases explains the paradox. We found substantial differences in the willingness and strategies of the mediating organisations to take action against the local government"⁹⁵.

Lastly, research into broad and general groupings such as the 'elderly', will help us to understand **the complexities that exist in segmentations and classifications of citizens:**

"'Absorbers' had learnt to use computers at work and are now part of the digital age. The diverse range of 'self-starters', who had no training at work, demonstrated that factors such as age, income, location and health did not appear to be barriers to take-up. Non-users were largely consistent in the reasons they gave for not using the Internet: many were afraid of the unknown, of their ability, of breaking the PC, or of appearing foolish. The majority of non-users are the 'disengaged', and they showed an unexpected interest in going online. The minority, the 'rejecters', from busy grandmothers to contented hobbyists, saw no benefit in using the internet"⁹⁶.

4.3 Business Strategies

We have noted earlier that commercial business models necessarily **focus on profit**, and can be short term. In many cases such models may not be suitable for the goal of sustainable services and usage. However, there are business strategies and business innovations that provide important insights for us. For example, Hewlett-Packard envisages three basic revenue streams for the business of inclusion:

"sell appropriate products, e-services and solutions for use in development programs for the poor ... creation of value-added, Internet-enabled products and services developed in league with partners ... a third possible revenue stream would come from advertising or sponsorships"⁹⁷.

Furthermore, the interaction of business, policy, and civil society produced complex and uneven outcomes, and the beneficiaries of ICT interventions to overcome 'digital divides' were analysed by Brendan Luyt:

⁹⁵ BECK, E., MADON, S. & SAHAY, S. (2004) On the Margins of the 'Information Society': A Comparative Study of Mediation. *Information Society*, 20, 279-290.

⁹⁶ OFCOM. (2006). *What Can Be Done To Get Older People On-Line*. (July 5) Office of Communications, [cited July 5 2006]. <http://www.ofcomconsumerpanel.org.uk/nr/050706.htm>

⁹⁷ HP. (2007). *What are the envisaged revenue streams for e-inclusion?* Hewlett-Packard, [cited September 17 2007]. <http://www.hp.com/e-inclusion/en/vision/faq.html#question14>

*“In this article I have described **four groups that have an interest in the promotion of the digital divide** issue. Information capital achieves a **new market for its products** as well as an educated workforce capable of producing those products in the first place. **The state in the South benefits through the legitimization** conferred through programs designed to combat the divide. Not only do these offer new accumulation opportunities for its elite, they also hold the possibility of defusing discontent over poor economic prospects for the middle class, a volatile section of the population. **The development industry ... also benefits from the digital divide**. Another gap has been opened up that requires the expertise these agencies believe they can provide. And finally, the organs of civil society are also winners, as they attempt to capture information and communication technologies for their own increasingly successful projects”⁹⁸.*

4.3.1 Business Innovation –Technologies and Foresight

Business is always looking ahead at possibilities, and it is important to understand what is coming, and to critically evaluate it within the context of inclusive eGovernment. Wilson and Blakemore have undertaken this activity within the cceGov project⁹⁹, concluding with four policy recommendations:

- *Technological innovation speed is faster than policy development cycles. It is difficult for governments to engage and promote particular devices or technologies.*
- *Focus on everyday technologies that are being (or are becoming) used routinely by citizens, where citizen engagement with government can be maximised.*
- *Focus on mechanisms and policies to maximise service accessibility and citizen engagement, through maximum communication channels.*
- *While there is a valid role for the EU to stimulate and provide leadership in technological innovation, there are risks involved in trying to embed future devices into policies related to service delivery for citizens.*

There are potentially significant innovations to consider, for example in the context of **social networks aimed at target groups**:

“Online virtual worlds could soon be accessible to blind people thanks to research by students at IBM in Ireland. Some estimates predict that 80% of active internet users will be using a virtual world in four years' time. The students have designed an audio equivalent of the virtual world using 3D sound to create a sense of space”¹⁰⁰.

The **rights and dignity of citizens/consumers** can be maintained through relevant and unobtrusive technologies, such as auto-focusing spectacles, and the Presence Lamp, which is an *“unobtrusive way for boomers to monitor their parent's well being. Motion sensors in their home and their parent's home send an alert to the corresponding lamp, which lights up as each party*

⁹⁸ LUYT, B. (2004). *Who benefits from the digital divide?* (Volume 9, number 8 (August)) First Monday, [cited August 23 2004]. http://firstmonday.org/issues/issue9_8/luyt/index.html

⁹⁹ WILSON, F. & BLAKEMORE, M. (2007). *Think Paper 8: Technology Futures - and why Government should Care*. (May) European Commission, [cited June 1 2007]. <http://www.ccegov.eu/Downloads/Paper%208%20-%20Technology%20Futures%20v2.pdf>

¹⁰⁰ ADAMS-SPINK, G. (2007b). *Virtual worlds open up to blind*. (September 18) BBC, [cited September 19 2007]. <http://news.bbc.co.uk/2/hi/technology/6993739.stm>

returns home¹⁰¹. In this context we need to understand how technologies that are targeted to social and health inclusion may interact with technologies aimed at accessing government services.

Business also has considered marketing **customised technologies**, for example customised mobile phones¹⁰². It is becoming clear also that the elderly are not averse to technology, indeed the post Second World War generation (the 'Baby Boomers'):

*"'are going to represent the first generation that has grown up around technology,' says Russell Bodoff, executive director of the Center for Aging Services Technologies (CAST, agingtech.org), a national {USA} coalition established in 2003"*¹⁰³.

Furthermore, as social networking sites have found when building virtual communities for 'seniors', *"Not only do we have a lot more money, we pay a lot more attention to advertisers"*¹⁰⁴, so many segments of a generic group of 'excluded aged' are now fully engaged. **A previously excluded market can therefore become one that becomes a driver for business development:**

*"Help The Aged notes that younger people - even in their 40s and 50s - will shun products they think are aimed at the elderly. Yet smoke alarms and reading glasses were once thought of as solely for the doddery. Society tends to absorb useful technologies in time"*¹⁰⁵.

Those observations are underpinned by new research from Europe that indicates customers are not engaging with some technologies that were expected to be popular: *"Only about 5 percent of Europeans expressed interest in watching television or video on their cellphones in the next 12 months"*¹⁰⁶. Research from Japan shows that shows elderly people are not happy with automated or robotic interventions to 'include' them in healthcare or society:

*"High production costs and difficulty of use make it hard to sell specialty electronics to seniors, according to Mieko Ohsuga, a biomedical engineer specializing in geriatrics at Osaka Institute of Technology. 'They just want simpler phones and tools,' said Dr. Kanao Tsuji, a geriatrician with Life Care System, a home visit health care provider"*¹⁰⁷.

¹⁰¹ MACMILLAN, D. (2006). *A New Breed of Tech for the Aging*. (December 5) Business Week, [cited December 5 2006].
http://www.businessweek.com/technology/content/dec2006/tc20061205_555322.htm?chan=technology_technology+index+page_more+of+today%27s+top+stories

¹⁰² BBC. (2007e). *Mobile targets the 50+ generation*. (March 17) BBC, [cited March 19 2007].
<http://news.bbc.co.uk/1/hi/technology/6462559.stm>

¹⁰³ MACMILLAN, D. (2006). *A New Breed of Tech for the Aging*. (December 5) Business Week, [cited December 5 2006].
http://www.businessweek.com/technology/content/dec2006/tc20061205_555322.htm?chan=technology_technology+index+page_more+of+today%27s+top+stories

¹⁰⁴ RICHTEL, M. (2007). *Social networking sites take notice of seniors*. (September 6) International Herald Tribune, [cited September 10 2007]. <http://www.ihf.com/articles/2007/09/06/technology/websocial.php>

¹⁰⁵ CLAPPERTON, G. (2007). *Elderly get to grips with gadgets*. (September 6) Guardian (London), [cited September 10 2007]. <http://www.guardian.co.uk/technology/2007/sep/06/news>

¹⁰⁶ REUTERS. (2007c). *TV on cellphone screens? No thanks, say Europeans*. (September 24) Reuters, [cited September 24 2007]. <http://www.reuters.com/article/technologyNews/idUSL2436545720070924>

¹⁰⁷ FOULK, E. (2007). *Robots turn off senior citizens in aging Japan*. (September 20) Reuters, [cited September 23 2007]. <http://www.reuters.com/article/technologyNews/idUST29547120070920>

In addition, far from being a generically excluded group, the elderly are now seen as a source of knowledge and business expertise, for example “*the International Longevity Centre advocating a social network to connect retired people with companies that can make use of the social capital of retirees*”¹⁰⁸. On a wider scale the European Commission notes in its call for an e-skills initiative that “*e-skills are becoming central to boost innovation, productivity and employability and to respond to global challenges*”¹⁰⁹.

Technology innovation and foresight will contribute in particular to the diminution, or removal of some of the existing areas of social exclusion. For example announcements at the end of 2007 included a plug-in for Word 2007 that would automatically translate documents into DAISY (Digital Accessible Information System) XML¹¹⁰, prosthetic limbs that can ‘feel’¹¹¹, or multi-channel communication through “*radio for the deaf, a counter-intuitive sounding system that translates speech radio into text in real time*”¹¹².

4.3.2 Business Strategy – Socially Disadvantaged Markets

For the very reason that the ‘aged’ are not necessarily excluded, **business sees exclusion often as a business opportunity**. Therefore inclusion in the information society occurs through the profit motive, rather than the subsidy motive. For example:

- In the USA “*Internet retailers are in a particularly unique position to take advantage of the market for people with disabilities. On average, 40% of people with disabilities conduct business and personal activities online, spending an average of 20 hours per week logged on to the Internet, Solutions Marketing Group says. That’s more time on average than people without disabilities spend online*”¹¹³.
- In the USA the dominance of high-cost (10% commission) cheque-cashing agents to poor people (often without a credit history, with low incomes etc) is being challenged “*as Wal-Mart rolls out more than 1,000 dedicated check-cashing outlets in its stores, charging a flat fee of just \$3 per check*”, and as banks see the large group of poor Americans as being a viable market¹¹⁴.

¹⁰⁸ KEEGAN, V. (2007). *The age-old problem of online inclusion*. (May 3) Guardian (London), [cited May 4 2007]. <http://technology.guardian.co.uk/weekly/story/0,,2070575,00.html>

¹⁰⁹ ANON. (2007b). *EU proposes actions to drive forward 21st Century e-Skills*. (September 10) Public Technology, [cited September 12 2007].

<http://www.publictechnology.net/modules.php?op=modload&name=News&file=article&sid=11367>
¹¹⁰ REUTERS. (2007b). *Microsoft to develop document translator for blind*. (November 13) Reuters, [cited November 19 2007]. <http://www.reuters.com/article/technologyNews/idUSL1371784420071113>

¹¹¹ SINGER, E. (2007). *Prosthetic Limbs That Can Feel*. (November 27) Technology Review, [cited November 28 2007]. <http://www.technologyreview.com/Biotech/19759/>

¹¹² BBC. (2008b). *The best gadgets of CES 2008*. (January 8) BBC, [cited January 9 2008]. <http://news.bbc.co.uk/1/hi/technology/7173582.stm>

¹¹³ BROWNE, L. (2007). *Enabling Disabled Shoppers*. (December 31) Internet Retailer, [cited January 13 2008]. <http://www.internetretailer.com/article.asp?id=24897>

¹¹⁴ HAMILTON, A. (2007). *Profiting from the Unbanked*. (August 16) Time, [cited August 21 2007]. <http://www.time.com/time/magazine/article/0,9171,1653666,00.html>. Although the collapse of the sub-prime mortgage market in the summer of 2007 indicates the risks involved.

- Stored value payment (pre-paid phones for example) and credit cards¹¹⁵: For those without bank accounts there are multi-purpose cards, which can be used almost anywhere that accepts a credit card¹¹⁶, one of the long-established virtual online stored pre-payment mechanisms being PayPal¹¹⁷.
- Credit cards which are cash loaded, rather than debt loaded: “*Think of your Barclaycard OnePulse as having a built-in Oyster card in addition to your standard credit card and cashless payment, so you can move faster and shop smarter*”¹¹⁸.

Other strategies focus on ‘entry-level’ products to stimulate a market, for example with low-cost in-car navigation systems such as “*a pink nuvi-branded device aimed at women in Europe during the fourth quarter and Gartner said its nuvi 200 series -- another entry-level product -- is being marketed as a contemporary and fun-to-use device for young consumers*”¹¹⁹, or the availability in the US of the \$100 laptop that was first targeted at developing countries through an innovative form of philanthropy: “*The organisation behind the project has launched the ‘give one, get one’ scheme that will allow US residents to purchase two laptops for \$399 (£198). One laptop will be sent to the buyer whilst a child in the developing world will receive the second machine*”¹²⁰.

4.3.3 Beneficial Pricing Regimes

Low costs may be given by business to stimulate a market, so we need to evaluate **pricing strategies in business as well as funding strategies in the public sector**¹²¹. Pricing has been particularly sensitive in the context of excluded groups and developing nations, and business responses include: “*Microsoft has begun renting its Office productivity suite to users in South Africa so that they are able to run the package without buying it*”¹²². This activity is being stimulated by market-place competition, where also IBM will “*start offering free word processing and other office software, joining a growing group of companies with free applications challenging a core Microsoft Corp product*”¹²³

¹¹⁵ HOSKINS, P. (2005). *Ireland gets world's first disposable 'credit card'*. (August 30) Reuters, [cited August 30 2005]. http://today.reuters.com/news/newsArticle.aspx?type=internetNews&storyID=2005-08-30T170648Z_01_MAR061597_RTRIDST_0_NET-IRELAND-CREDITCARD-DC.XML

¹¹⁶ ECONOMIST. (2006). *Plastic promise*. (May 4) Economist, [cited May 5 2006]. http://www.economist.com/finance/displayStory.cfm?story_id=6889263

¹¹⁷ ILET, D. (2006). *PayPal breaks 100 million account mark: Are Gartner's predictions coming true?* (February 14) Silicon.com, [cited February 15 2006]. <http://www.silicon.com/financialservices/0,3800010322,39156430,00.htm>

¹¹⁸ BARCLAYS. (2007). *Barclaycard OnePulse*. (September) Barclays Bank plc, [cited September 19 2007]. http://www.barclaycard.co.uk/barclays_landing/BarclaycardOnePulse01.html?TC=ESGLA15651

¹¹⁹ TILAK, J. (2007). *Navigation devices set to take mass market route*. (September 17) Reuters, [cited September 17 2007]. <http://www.reuters.com/article/technologyNews/idUSBOM16247820070917>

¹²⁰ FILDES, J. (2007a). *'\$100 laptop' to sell to public*. (September 24) BBC, [cited September 24 2007]. <http://news.bbc.co.uk/2/hi/technology/6994957.stm>

¹²¹ The pricing of information and services is the subject of a book co-authored by Michael Blakemore: LONGHORN, R. A. & BLAKEMORE, M. (2008) *Geographic Information: Production, Value, Pricing, and Access* Chicago, CRC Press.

¹²² BBC. (2007d). *Microsoft launches pay-as-you-go Office*. (August 21) BBC, [cited August 21 2007]. <http://news.bbc.co.uk/1/hi/technology/6956521.stm>

¹²³ REUTERS. (2007a). *IBM to offer free word processing, office software*. (September 18) Reuters, [cited September 23 2007]. <http://www.reuters.com/article/technologyNews/idUSN1737149520070918>