THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Governmental Developments To Support The Uptake Of Online Technologies: EU, UK & Scotland from early 1990s to around 2005

Link:
[Link to publication record in Edinburgh Research Explorer](#)

Document Version:
Preprint (usually an early version)

OPEN ACCESS

GOVERNMENTAL DEVELOPMENTS TO SUPPORT THE UPTAKE OF ONLINE TECHNOLOGIES:
EU, UK & Scotland from early 1990s to around 2005

Stephen A Harwood

Business School
University of Edinburgh
February 2009

ABSTRACT

Online technologies (e.g. transaction enabled websites) are a relatively new innovation, which offers many possibilities for both more efficient and new practices. Where they have been accessible (e.g. within more developed economies) they have been rapidly taken up by both individuals and organisations. Moreover, these new technologies have been viewed by institutions (i.e. governmental organisations) as an opportunity to provide international competitive edge, about which they have taken the lead to promote their uptake.

The aim of this paper is to chart these institutional developments and reveal the changing symbolic value of online technologies over time. This symbolism manifests in the claims of statements and the variety of initiatives, legislation and reviews. The account presented is primarily descriptive and identifies events within the EU, UK and Scotland over a relatively short period commencing in the early 1990s and ending around 2005. This period is perhaps a transition phase, which marks the 'dawn' of the diffusion of the world-wide-web conceived by Tim Berners-Lee in 1989 and released into the public domain in 1992. The material is drawn from a variety of institutional websites and official documents.

It reveals the perception that these new technologies are important and thus their uptake needs to be encouraged. Indeed, deterministic claims about the benefits of these new technologies, has translated into a series of initiatives to promote uptake as well as legislation to regulate against misuse. Progress has been monitored within the EU by annual surveys. In recognition of inequitable uptake both socially and geographically (the 'digital divide'), additional initiatives were pursued. Perhaps most significant within the UK, was the formation in 1999 of "The Office of the e-Envoy" as part of the UK Government's Cabinet Office, symbolising the status accorded these new technologies. However, its dissolution in 2004 perhaps symbolises the view that these new technologies had become mainstream. Within Scotland, separate e-business support was absorbed in 2005 within the mainstream of business advice. Online technologies had 'come of age'.

INTRODUCTION

The development of networking between stand-alone computer systems in the 1960s paved the way for the rapid diffusion of a later creation, a hypertext-based information retrieval system, more commonly known as the World Wide Web (www). Conceived in 1989 by Tim Berners-Lee, its release as freeware into the public domain in 1992 perhaps marks a turning point in the use of networked computers and those who have used them. Within a short period, an increasing number of people's homes have been connected, thereby allowing anyone with knowledge of how to use a personal computer to access the 'Internet'. Furthermore, in 1995 the ubiquity of the Internet was predicted:

> "*an American consultancy specialising in the subject, suggested that at present rates, everyone on the planet would be connected by 2003*" (Arthur, 1995a[1])

Indeed, the possibilities offered by the Internet have appeared endless. This is the "Age of the Internet" (Moyses, 1995, Motluk, 1997[2]). Libraries would be rendered redundant in their traditional form (Holderness, 1992[3]). "*Changes in work patterns are inevitable*" (Arthur, 1994[4]). Democratic processes would be enhanced (Barbrook, 1995; Motluk, 1997[5]). Its commercial opportunities have witnessed a spate of entrepreneurial activity and a dot.com bubble burst. Further, even at an early stage in its life, it has been recognised as having more sinister uses: "*the Internet is anarchic*" (Arthur, 1995b[6]). In a subsequent article Arthur (1995c[7]) cites a consultant on the "*Four Horsemen of the Internet: terrorism, child pornography, money laundering and drugs*". The freedom offered by the Internet and encouragement to exploit it, is countered by the question of whether it should be regulated.

The aim here is to chart these institutional developments and reveal the changing symbolic value of online technologies over time. This symbolism manifests in the claims of statements and the variety of initiatives, legislation and reviews. The term 'institution' is use to signify governmental organisations. This is essentially a chronologically ordered, descriptive account. There is limited attempt to explain these

---

[1] Arthur, C (1995a) "*And the Net total is …*", New Scientist, 13th May 1995 [www.newscientist.com/article/mg14619774.200-and-the-net-total-is-.html, accessed 14th December 2008]

[2] Moyses, V (1995) "*Age of the Internet?*", New Scientist, 6th May 1995 [www.newscientist.com/article/mg14619766.300-age-of-the-internet.html , accessed 14th December 2008]

Motluk, A (1997) "*Click on the candidate - In the age of the Net there has to be a better way to run a ballot than putting a cross on a slip of paper*", New Scientist, 26th April 1997 [www.newscientist.com/article/mg15420794.700-click-on-the-candidate--in-the-age-of-the-net-there-has-to-be-a-better-way-to-run-a-ballot-than-putting-a-cross-on-a-slip-of-paper-says-italison-motlukit.html, accessed 14th December 2008]

[3] Holderness, M (1992) "*Time to shelve the library?: Who needs libraries now that the world's information is accessible through computer networks? Soon only historians may be interested in these shrines to learning*", New Scientist, 5th December 1992 [www.newscientist.com/article/mg13618504.500-time-to-shelve-the-library-who-needs-libraries-now-thatthe-worlds-information-is-accessible-through-computer-networks-soon-onlyhistorians-may-be-interested-in-these-shrines-to-learning-.html, accessed 14th December 2008]

[4] Arthur, C (1994) "*The future of work: it's all in the mind - In a world where offices cease to exist and job security has gone the way of lamplighters, your most precious asset will be your intelligence*", New Scientist, 16th April 1994 [www.newscientist.com/article/mg14219213.500--the-future-of-work-its-all-in-the-mind--in-a-world-where-offices-cease-to-exist-and-job-security-has-gone-the-way-of-lamplighters-your-most-precious-asset-will-be-your-intelligence--.html?full=true, accessed 14th December 2008]

[5] Barbrook, R (1995) "*Electronic power to the people*", New Scientist, 29th July 1995 [www.newscientist.com/article/mg14719885.500-electronic-power-to-the-people.html, accessed 14th December 2008]

[6] Arthur, C (1995b) "*Internet anarchy in the UK*", New Scientist, 25th February 1995 [www.newscientist.com/article/mg14519660.200-internet-anarchy-in-the-uk.html, accessed 14th December 2008]

[7] Arthur, C (1995c) "*Identity crisis on the Internet*", New Scientist, 11th March 1995 [www.newscientist.com/article/mg14519682.500-identity-crisis-on-the-internet.html?full=true, accessed 14th December 2008]

developments. The reason for producing this account was to develop an understanding of institutional concerns about e-commerce over time as a backdrop for detailed research that examines the exploitation of online technologies by Scottish serviced accommodation providers. This explains why there is a tendency to focus upon tourism issues rather than those of any other sector.

The material presented draws upon a variety of institutional websites and official documents and presents selected text to shed light upon the issues as perceived by their author. One of the challenges of a study using online materials is that you never know what you have lost until it becomes unavailable. The online archive facility http://web.archive.org has provided a rich source for material otherwise lost. The outcome is a rich, but necessarily, incomplete insight into the various developments over time. Its contribution is to provide a synthesis of what are perceived to be the main developments of a period which commences in the early 1990s and ends around 2005.

It was around 2005 that this embryonic phase of the Internet Age perhaps ends. Two events appear to signal a transition in institutional interest in online technologies; that the novelty factor and urgency has disappeared and that online technologies had become viewed as an integral feature of everyday life. The first was the dissolution of the UK's 'Office of the eEnvoy' in 2004, set up in 1999. The second was Scottish Enterprise's cessation in March, 2005 of funding for an initiative which provided specialist e-business support for businesses and its integration within mainstream business advice. Attention appeared to shift towards concern about infrastructure bandwidth and the 'Digital Divide'.

This account commences with a brief reference to the World Trade Organisation, highlighting the global significance of online technologies. It then sequentially identifies developments at the levels of the EU, UK and Scotland. It identifies a variety of Initiatives established to encourage uptake of online technologies. It infers how EU legislation cascades into UK legislation and manifests as policies and initiatives. Aside from this, there is evidence to suggest that with devolution, Scotland independently seizes the initiative and pursues its own interests relating to online technologies. An outline of these developments is provided in Figure 1. A brief discussion completes this narrative.
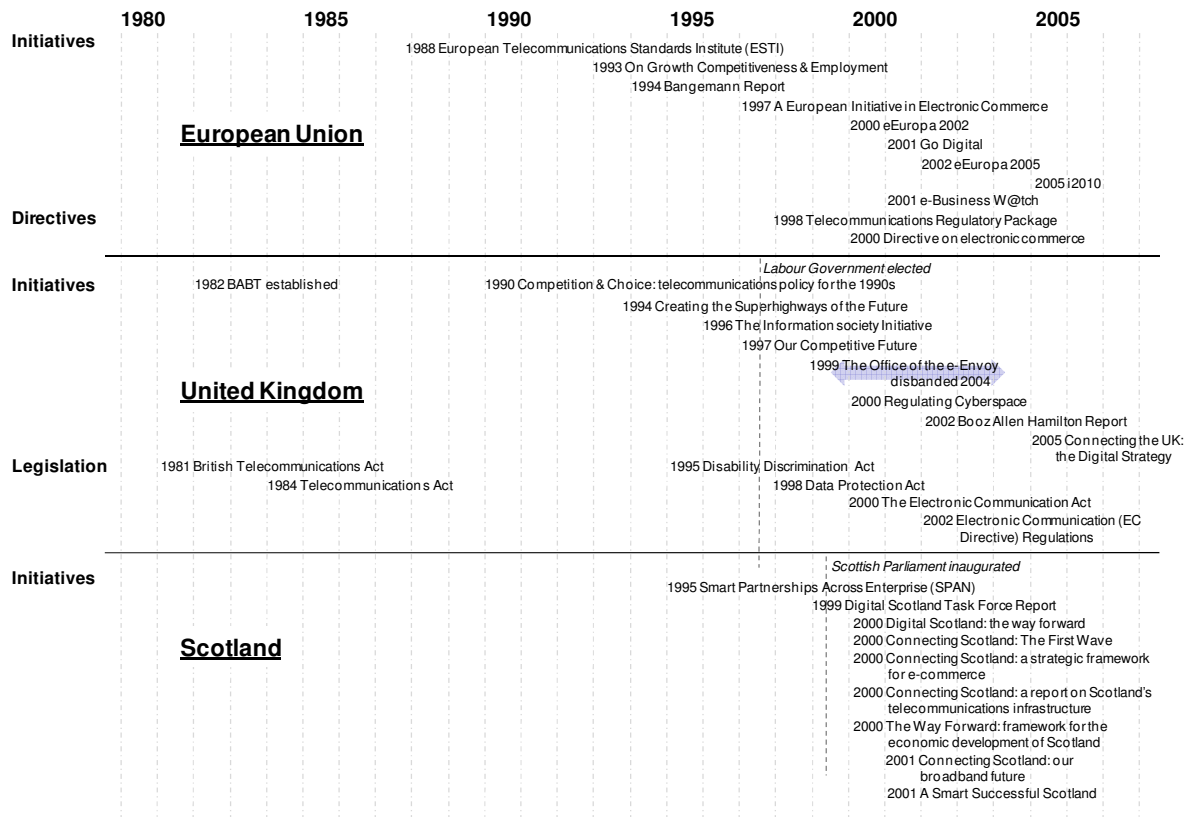

Figure 1   A diagrammatic outline of key institutional developments to support the uptake of online technologies

The Internet: an issue of global scale

This narrative starts, not with the EU, but with reference to the World Trade Organisation. In recognition of the growing importance of the Internet and e-commerce, the WTO (1998[8]) published their findings from an exploratory study of "*the benefits and challenges*" associated with this. One major issue raised concerned the policy challenges faced by governments relating to regulatory practices, particularly those relating to international trade. They highlighted that the issues themselves (infrastructure, access, standards, legislation, security, taxation and social effects) were not new and cite the case of the telephone. Instead it is the timely ability to accommodate technological developments and their impact that is the cause of concern. Whilst e-commerce offers "*unprecedented opportunities*", issues such as inequalities of access and its openness to abuse needs to be addressed.

European Commission – emergence of the "Information Society"

On 5th December 1993, the European Commission published a white paper "On growth, competitiveness, and employment: The challenges and ways forward into the 21st centur*y*" (CEC, 1993[9]). This recognised the emergence of an "*information society*" and its importance to the enhanced competitiveness of Europe. This prompted the European Council to request a report on the 'information society' to be available for its June meeting in Corfu in 1994. The report "**Recommendations to the European Council: Europe and the Global Information Society**" [Bangemann Report[10]] was published on 26th May 1994. It "*urges the European Union to put its faith in market mechanisms as the motive power to carry into the Information Age*", by promoting entrepreneurship and developing a "common regulatory approach".

At Corfu, 24th- 25th June 1994, the European Council endorsed the recommendations and invited the European Commission to develop an Action Plan. This was published on 19th August 1994 and covered four areas: "*the regulatory and legal framework*", "*networks, basic services, applications and content*", "*social, societal and cultural aspects*" and the "*promotion of the information society*" (CEC, 1994[11]).

The global nature of electronic commerce was revealed in a Commission Communication (4th February 1998[12]). This highlighted the need for issues to be also handled at an international level. It proposed that these issues be identified and raised at international ministerial meetings during 1998 or 1999.

Initiatives

A series of Initiatives were launched by the EU Commission to stimulate e-commerce in Europe. One of the first initiatives, "A European Initiative in Electronic Commerce", was presented on 16th April 1997[13].

---

[8] World Trade Organisation (1998) "*Electronic Commerce and the Role of the WTO*", Geneva: World Trade Organisation

[9] Commission of the European Communities (1993) "*On growth, competitiveness, and employment: The challenges and ways forward into the 21st century*", 5th December 1993, Commission of the European Communities Brussels, COM(93) 700 final, Brussels,

[10] Bangemann, M (1994) "*Recommendations to the European Council: Europe and the Global Information Society*", [http://ec.europa.eu/idabc/servlets/Doc?id=18174, , accessed 14th December 2008]

[11] Commission of the European Communities (1994) "*Europe's Way to the Information Society. An Action Plan*", 19th July 1994, Commission of the European Communities Brussels, 16COM (94) 347 final, [http://ec.europa.eu/archives/ISPO/docs/htmlgenerated/i_COM(94)347final.html, accessed 14th December 2008]

[12] Commission of the European Communities (1998a) "*The Need for Strengthened International Coordination*", Commission of the European Communities Brussels, COM (98) 50, 4th Feb 1998

[13] Commission of the European Communities (1997a) "*Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: a European Initiative in electronic commerce*", Commission of the European Communities Brussels, 16.04.1997COM (97) 157 final [ftp://ftp.cordis.europa.eu/pub/esprit/docs/ecomcom.pdf, accessed 25th August 2005]

Its aim was "*to encourage the vigorous growth of electronic commerce in Europe*". The reason given was that:

> "*electronic commerce will have a considerable impact on Europe's competitiveness in global markets. ... Electronic commerce presents enormous potential opportunities for consumers and for businesses in Europe, particularly for SMEs.*

The economic importance of e-commerce was such that it was imperative that businesses took up e-commerce with urgency. Furthermore, to encourage uptake it was urgent that there was institutional intervention to create favourable conditions to encourage uptake:

> *Its rapid implementation is an urgent challenge for commerce, industry and governments in Europe. ...Thus there is an urgent need to engage in an early political debate with the aim to provide a stimulus to electronic commerce and to avoid a fragmentation of this promising market*".

This would involve development of appropriate legislation and generation of awareness of e-commerce. It aimed to promote technology, infrastructure and skills development and to provide a coherent regulatory framework.

This initiative was complemented by a Telecommunications Regulatory Package of Directives in 1998[14] to harmonise European telecommunications legislation. A series of eight reports were produced monitoring the implementation of this package, the last being published on 3rd December 2002[15].

A subsequent Initiative (8th December, 1999) outlined a number of priorities, which included all schools within Member States having access to the Internet by the end of 2001. The "**eEuropa 2002 action plan**"[16] was agreed by Heads of State and Government at the European Council, Feira, 19th-20th June 2000. The plan aimed to make the EU "*the world's most dynamic knowledge based economy by 2010*" (CEC, 2001a[17]). One objective was to stimulate Internet use, particularly by SMEs. This led to the **Go Digital Initiative** (launched March, 2001) to stimulate SME's use of information and communication technologies. A set of eleven actions were identified to support SME ICT use. These included benchmarking national policies, measuring ICT uptake, providing information and loans and supporting skills development (CEC, 2001a).

A subsequent Communication on 29th November 2001 avowed the Commission's firm belief in the fundamental role of ICT in businesses "*for ensuring continuous and sustainable competitiveness both at macroeconomic and firm level*" (CEC, 2001b[18]). This was followed by a European Commission

---

[14] Details of this package are presented:
http://ec.europa.eu/information_society/topics/telecoms/regulatory/98_regpack/index_en.htm [accessed 17th December 2008]. It embraced Data protection (Directive 97/66/EC), Licensing of telecommunications services (Directive 97/13/EC) and Open Network Provision (ONP) (Directive 90/387/EEC , Directive 97/51/EC, Directive 97/33/EC, Directive 98/61/EC, Directive 92/44/EEC, Directive 97/51/EC, Directive 98/10/EC [Voice Telephony])

[15] Commission of the European Communities (2002a) "*EIGHTH REPORT FROM THE COMMISSION on the Implementation of the Telecommunications Regulatory Package: European telecoms regulation and markets 2002"*, Commission of the European Communities Brussels, 3.12.2002 COM(2002) 695 final
[http://ec.europa.eu/information_society/topics/telecoms/implementation/annual_report/8threport/index_en.htm,   accessed 14th December 2008]

[16] European Council (2000a) "eEurope 2002: an information society for all - Action Plan", prepared by the European Council and the European Commission for the Feira European Council 19-20 June 2000, [http://ec.europa.eu/information_society/eeurope/2002/documents/archiv_eEurope2002/actionplan_en.pdf,   accessed 14th December 2008]

[17] Commission of the European Communities (2001a) "*Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: Helping SMEs to "Go Digital*" , Commission of the European Communities Brussels, 13.3.2001COM(2001)136 final
[http://europa.eu.int/information_society/topics/ebusiness/godigital/docs/background/en.pdf accessed 25th August 2005]

[18] Commission of the European Communities (2001b) "*Communication from the Commission to the Council and the European Parliament - The impact of the E-economy on European enterprises: economic analysis and policy implications*",   Commission of the European Communities: Brussels

consultation, launched on 6th February 2002, on the 'e-economy'. The report identified five areas which policy could affect: legislation (the regulation of the Internet), infrastructure (the provision of high bandwidth infrastructure), security, e-skills and e-Government (to both improve public services and stimulate ICT diffusion (CEC, 2002b[19]). These five areas were to feed into the e-Europa 2005 Action Plan.

Legislative Developments

In addition to the aforementioned Directives comprising the aforementioned Telecommunications Regulatory Package of 1998, other Directives were passed. Directive 97/7/EC[20] in addressing contracts entered into at a distance (e.g. by telephone across borders), acknowledges the need to protect consumers who use 'new technologies' to purchase from their homes. Directive 98/34/EC is noteworthy in that its amendment Directive 98/48/EC[21]is to make explicit the 'Information Society' and accommodate "*Information Society services*", which are defined as "*any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services*", which is further defined.

On 17th August 2000, the "**Directive on electronic commerce**"[22]was passed. This was a landmark legislation, which created "*a legal framework to ensure the free movement of information society services between Member States*". This basic framework provided a guide for the harmonisation of individual Member State's legislation.

In March 2002, Directive 2002/21/EC "**A Common Regulatory Framework For Electronic Communications Networks And Services**"[23] was adopted, which dealt with telecommunications infrastructure and the convergence of Information and Communication Technologies (ICT). This was reinforced with four additional Directives dealing with specific issues, e.g. "access and interconnection arrangements between service suppliers", the authorised provision of electronic communication services, service and user 'rights' and privacy of personal data. This was supplemented in September with Directive

---

29.11.2001 COM(2001) 711 final [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2001:0711:FIN:EN:PDF, accessed 14th December 2008]

[19] Commission of the European Communities (2002b) "*Results of the Open Consultation on the E-Economy*", [http://ec.europa.eu/enterprise/ict/policy/cons-synth.pdf, accessed 31st August 2005]

[20] Commission of the European Communities (1997b) "*Directive 97/7/EC oftThe European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts*" (OJ L 144, 4.6.1997, p. 19) Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1997L0007:20071225:EN:PDF, accessed 14th December 2008]

[21] Commission of the European Communities (1998b) "*Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations*", 22nd June 1998, Directive 98/34/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:204:0037:0048:EN:PDF, accessed 18th December 2008]

Commission of the European Communities (1998c) "*Directive 98/48/EC the European Parliament and of the Council of 20 July 1998 amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations*", 20th July 1998, Directive 98/48/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:217:0018:0026:EN:PDF, accessed 18th December 2008]

[22] European Parliament and of the Council (2000b) "*Directive on electronic commerce*", 8th June 2000, Directive 2000/31/EC , Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th December 2008]

[23] European Parliament and of the Council (2002c) "*Directive on a common regulatory framework for electronic communications networks and services*", 7th March 2002, Directive 2002/21/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th December 2008]

2002/77/EC "**Competition in the Markets for Electronic Communications Networks and Services**"[24], which deregulated the telecommunications market and permitted the entrance of new players. These Directives were to be integrated within national legislation to ensure their implementation. Since it was believed that regular progress reports on the status of the 1997 package of legislation contributed to its success, it was decided that the same would be done for the 2002 package of legislation (CEC, 2003a[25])

Additional Action to Encourage SME uptake

Despite the various initiatives to support the uptake of e-commerce, it had been recognised that "*many SMEs are still lagging behind large companies in using the Internet as an efficient business tool*" (CEC, 2002e[26]). Thus, to further encourage the uptake of e-business, it was reasoned that the benchmarking of national policies that promoted the uptake of e-business by SMEs would reveal best practices (CEC, 2001a). This would result in more effective European and National policies. The benchmarking activity comprised five stages:
1. understanding SME ICT/ e-business adoption practices,
2. evaluate policies and identify best practice
3. present results
4. establish quantitative targets which policies are to achieve
5. monitor progress (CEC, 2002e)

The first report on this benchmarking exercise (CEC, 2002e) provided insight into SME adoption based upon Eurostat data. It made the distinction between perceived risks and experienced obstacles to SME ICT adoption. Perceived risks included unsuitability of products / services for online trading and legal problems. The obstacles or inhibitors identified were used to generate possible policy responses (Table 4: CEC, 2002e).

The findings from the first three stages of the benchmarking activity were contained in a subsequent final report (CEC, 2002f[27]). This presented fifteen lessons about good policy practice to support SME e-business adoption. One of its recommendations was the formation of a European e-Business Support Network as a follow up to the policy-benchmarking programme. The aim of this network was to strengthen and co-ordinate support activities for SMEs engaging in e-business. The network held its first workshop in Athens in January, 2003 with the aim of "*setting quantitative targets for e-business policies*" (DG Enterprise, 2003[28])

---

[24] European Parliament and of the Council (2002d) "*Directive on competition in the markets for electronic communications networks and services*", 16th September 2002, Directive 2002/77/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th December 2008]

[25] Commission of the European Communities (2003a) "*Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: report on the implementation of the EU electronic communications regulatory package*", Commission of the European Communities: Brussels 19.11.2003COM(2003) 715 final [http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/9threport/com20030715en.pdf, accessed 14th December 2008]

[26] Commission of the European Communities (2002c) "*Synthesis Report - Benchmarking National and Regional e-Business Policies*" Enterprise DG, European Commission, 7.2.2002 [http://ec.europa.eu/enterprise/ict/policy/doc/mb-2002-02-07-fsrv1.pdf, accessed 25th August 2005]

[27] Commission of the European Communities (2002d) "*Final benchmarking report on national and regional policies in support of e-business for SMEs*", E-business Policy Group, 28.6.2002 [http://ec.europa.eu/enterprise/ict/policy/benchmarking/final-report.pdf, accessed 25th August 2005]

[28] DG Enterprise (2003) "Workshop on setting quantitative targets for e-business policies", organised by DG Enterprise and the Greek Presidency, Athens, 16th - 17th January 2003 [http://ec.europa.eu/enterprise/e-bsn/about/workshops/athens/200301/documents/pdf/main-results.pdf, accessed 14th December 2008]

A review of the Go Digital Initiative (CEC, 2003b[29]) identified three SME specific "*e-business policy challenges*":

1. improving management understanding / competency
2. promoting "t*he availability of SME friendly e-business* solutions"
3. facilitating SME participation "*in electronic marketplaces and business networks*"

A subsequent review of the Go Digital Initiative (CEC, 2004a[30]) revealed that SMEs do not rate e-Business as a top priority. SMEs do not have the resources / time / finance to understand / exploit ICT. Indeed, not all SMEs viewed e-Business as beneficial, with uncertainty about the returns undermining willingness to go down this route. Further, SME scepticism appeared to be exacerbated by the hype and unfulfilled promises of vendors. Nevertheless, the report acknowledged that there were still opportunities for SMEs, but the challenge was how to find the best solution for them.

An online consultation about the legal barriers to e-business (Sept.-Nov., 2003) suggested that this was not a major issue: only 30% of respondents (651 total) indicated that they had experienced a problem. No specific issues were highlighted, though the contract and its validity were of most concern (CEC, 2004b[31]).

The successor to "**eEuropa 2002**" was **eEuropa 2005**. The "**eEuropa 2005 action plan**" was agreed 21st-22nd June 2002 at Seville. The aim was to have by 2005, "*online public services*" and "*a dynamic e-business environment*", both enabled by "*a secure information infrastructure*" and the "*widespread availability of broadband access at competitive prices*". This would be supplemented by exchanging experiences, setting good practices, benchmarking and "*overall co-ordination of existing policies*" (CEC, 2002g[32]).

In June, 2005, **i2010** was announced: a strategy to improve digital convergence amongst Member States. It highlighted three priorities:

1. to provide "*affordable and secure high-bandwidth communications, rich and diverse content and digital services*", identifying four core challenges: speed, rich content, interoperability and security
2. to encourage "*research and innovation in ICT*" so as to close the Europe's gap with its leading competitor's
3. to close the social digital divide and improve online public services

(CEC, 2005a[33])

---

[29] Commission of the European Communities (2003b) "*Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: adapting e-business policies in a changing environment: the lessons of the Go Digital initiative and the challenges ahead*", Commission of the European Communities: Brussels, 27.03.2003 COM(2003) 48 final [http://ec.europa.eu/enterprise/ict/policy/doc/com_2003_148_en.pdf, accessed 19th August 2006]

[30] Commission Of The European Communities (2004a) "The Go Digital Awareness Campaign 2001-2003: the main lessons to be learnt", Commission Of The European Communities [http://www.go-online.gr/files/document/23-01-2004/Awareness%20Campaign%20Report%20v2%20070104.pdf, accessed 14th December 2008]

[31] Commission of the European Communities (2004b) "*Legal Barriers in e-business: the results of an open consultation of enterprises*", Commission of the European Communities: Brussels, 26.4.2004 SEC(2004) 498 Working Paper [http://ec.europa.eu/enterprise/ict/policy/doc/legal_barriers_sec_2004_498.pdf, accessed 14th December 2008]

[32] Commission of the European Communities (2002e) "*eEurope 2005 Action Plan*", Commission of the European Communities: Brussels, 28.5.2002 COM(2002) 263 final [http://ec.europa.eu/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf, accessed 14th December 2008]

[33] Commission of the European Communities (2005a) "*Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: i2010 – A European Information Society for growth and employment*", Commission of the European Communities: Brussels, 1.6.2005 COM(2005) 229 final [http://ec.europa.eu/information_society/eeurope/i2010/docs/communications/com_229_i2010_310505_fv_en.pdf, accessed 14th August 2006]

Monitoring uptake: "e-Business Watch"

Statistics about European economic and social issues have been provided by Eurostat and its predecessors since 1957. This has included the provision of information about ICT usage. However, in late 2001, the Directorate-General Enterprise launched the **e-Business W@tch** initiative "*to monitor the growing maturity of electronic business across different sectors of the economy in the European Union*" (CEC, 2003c[34]). The first phase (2002-3) examined 15 sectors, the second (2003-4) examined 10 sectors. Subsequent surveys followed in 2005 covering 10 sectors and in 2006 covering nine sectors. In each round, new sectors were added whilst others were dropped. Details of the surveys are presented in Table 1. An outline of the findings is presented in the following section followed by findings from the tourism sector surveys.

Outline of the findings from the first surveys

The initial European e-Business Report (March, 2003: CEC, 2003c) was based upon the 2002 survey. It suggested that whilst most businesses, irrespective of size, had access to a basic IT infrastructure, the main differences related to the quality of access in terms of bandwidth: many small businesses connected using an analogue dial up modem. One big challenge appeared to be the ability to integrate "*e-activities*" into the mainstream activities of the business. It reports on policy implications highlighting six areas: a harmonised European regulatory framework, improved security, ongoing development of technical standards, raised e-business awareness, improved skills development conduits and better engagement with SMEs.

The second report (July, 2003: CEC, 2003d[35]) relating to the first 2003 survey, revealed a shift to higher bandwidth connections by smaller businesses. It also highlighted the growing importance of wireless connectivity, suggesting that it will "*dramatically change the way in which the Internet is being used by consumers and companies*". It reports that for many companies online sales tended to be only a small proportion (e.g. 10%) of the total sales. On the other hand, online purchases by businesses was a rapidly growing area of activity, though still a small proportion of total purchases. However, sales – purchasing activity was sector specific, with tourism taking a lead in online sales, building upon their expertise in computer reservation systems developed since the 1960s. The impact of e-business on business processes has only been significant in less than ten percent of companies and tends to be in larger companies.

The third report (September, 2004: CEC, 2004c[36]), based upon the second survey in 2003, suggested that the "*digital divide*" between businesses in new and old EU Member States was "*smaller than expected*". Larger firms experienced economy-of-scale benefits with respect to implementation / maintenance costs and efficiency gains. However, there were many specialised SMEs who had a high percentage of online transactions in both sales and procurement, particularly within the tourism sector. Highlighted policy issues included telecommunication infrastructure development and caution about the promotion of "*non-general purpose technologies*" (e.g. ERP, SCM, CRM). It drew upon the three "*e-business policy challenges for SMEs*" identified in the GoDigital Initiative Review (CEC, 2003b) to suggest that the main e-business benefits derived from large applications more suited to large organisations, thus disadvantaging SMEs, particularly in manufacturing. Understanding e-commerce and related skills, as an issue, was magnified in sectors dominated by small and very small businesses, e.g. textiles. Traditional sectorial attitudes / cultures undermined new ways of doing business.

---

[34] Commission of the European Communities (2003c) "*The European e-Business Report 2002/2003: a portrait of e-business in 15 sectors of the EU economy, 1st Synthesis Report of the e-Business W@tch*", March 2003, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR05.pdf, accessed 14th December 2008]

[35] Commission of the European Communities (2003d) "*The European e-Business Report 2003 edition: a portrait of e-business in 15 sectors of the EU economy, 2nd synthesis report of the e-business Watch*", July 2003. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR03.pdf, accessed 14th December 2008]

[36] Commission of the European Communities (2004c) "*The European e-Business Report 2004 edition: a portrait of e-business in 10 sectors of the EU economy, 3r synthesis report of the e-business Watch*", September 2004. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR04.pdf, accessed 14th December 2008]

The fourth report (November, 2005: CEC, 2005b[37]) drew upon the 2005 survey. It highlighted geographical disparities, differences in opportunities / challenges for small, medium and large businesses, and sectorial differences in "*pave and direction*" of developments. It highlighted a disparity in e-business adoption between small businesses (<50 employees) and medium businesses (50-249 employees). It iterated two themes running through the earlier surveys. First was the need for policy to accelerate SME adoption. The second was for policy to advance "interoperability and standards".

The report on the 2006 survey was published in January, 2007 (CEC, 2007[38]). Perhaps the most significant finding was that whilst the online activities of larger companies were maturing, in part due to their access to the requisite resources, "*smaller companies, by contrast, still struggle with the requirements of getting digitally connected with their suppliers and customers*" (p13, CEC, 2007). Nevertheless, smaller supplier companies were being pressed into online practices by their larger (customer) companies. One of the issues affecting smaller businesses was lack of technical skills, not an issue within the large companies.

Outline of findings about the tourism sector

Sector specific reports on e-business in the EU included six on tourism. The first report (October, 2002[39]) highlighted the pioneering role of the tourist sector in the adoption of ICT. The impact of the Internet was perhaps summed by the statement "*The Internet has deeply influenced and re-shaped the sector scenario*". However, it commented about the contrast between innovative large organisations and small conservative family run businesses. Whilst integrated systems, e.g. ERP and CRM, tended to be restricted to large organisations, e-mail use was widespread. It suggested that small businesses had the opportunity to adopt "co-operative strategies" to achieve economy-of-scale benefits enjoyed by larger organisations. It claimed that tour operators used their web-presence to draw customers, but required a visit to a travel agent for a signature to seal the transaction for fear of penalisation by travel agents for by-passing them. This was countered by the emergence of online intermediaries (re-intermediation), which, together with the opportunity for customers to deal directly with suppliers (dis-intermediation), undermined the position of traditional high-street travel agents who need to adapt. The corresponding newsletter (CEC, 2002i[40]) drew attention to the 're-shaping' of the value chain, the complementary nature of online channels rather than being a substitute, a significant correlation between the "*use of a secure socket layer*" and online sales and the emergence of portal (Destination Management Systems [DMSs]) development projects to promote local and national destinations.

[37] Commission of the European Communities (2005b) "*The European e-Business Report 2005 edition: a portrait of e-business in 10 sectors of the EU economy, 4^t synthesis report of the e-business Watch*", November 2005. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR05.pdf, accessed 14th December 2008]

[38] Commission of the European Communities (2007) "*The European e-Business Report 2006/07 edition: a portrait of e-business in 10 sectors of the EU economy, 5th synthesis Report of the e-Business W@tch*", January 2007. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR06.pdf, accessed 14th December 2008]

[39] Commission of the European Communities (2002f) "*ICT and e-Business in the Tourist Sector*", Sector Report, No. 13 October 2002, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2002_I.pdf, accessed 14th December 2008]

[40] Commission of the European Communities (2002g) "*ICT and e-Business in the Tourist Sector*", Newsletter, No. 13 October 2002, Enterprise Directorate General, European Commission

		2002-3	2003-4		2005	2006
Survey date:		Jun.-Jul., 2002	I. Feb.-Mar, 2003	II. Nov., 2003	Jan.-Feb., 2005	Mar.-Apr., 2006
No. of telephone interviews		9,264	3,515	7,302	5,218	14,065
No. of EU countries surveyed		15	5	25	7	29
			(Ger, Fr, It, Sp, UK)	(incl. Norway)	(CzR, Fr, Ger, It, Pol, Sp, UK)	(25EU, Iceland, Liechtenstein, Norway, Bulgaria, Romania, Croatia, Macedonia, Turkey)
					only ICT users	*only ICT users*
						only 10 countries (EU10) had all sectors surveyed
SECTOR						
Food & beverages, tobacco	manu.	798	502		571	1,709
Media & printing	manu.	657			563	
Chemical industries	manu.	538	502	492		
Metal products	manu.	580				
Machinery and equipment	manu.	593			565	
Electronics	manu.	517	502	542		1,687 (ICT manu) 665 (Consumer)
Transport equipment	manu.	509	501	581		150 (shipbuilding and repair)
Textiles	manu.			1021	561	980 (Footwear)
Crafts & trade (construction, wood & furniture)	manu.			729	566	
Pharmaceutics	manu.				532	
Automotive	manu.				565	
Aerospace	manu.				163	
Banking and leasing	fin.	641				
Insurance and pension funding	fin.	426				
Retail	ot. serv.	744	504	689		
Tourism	ot. serv.	699	502	636	567	2,663
Real estate activities	ot. serv.	668				
Business services	ot. serv.	692		1109		
ICT services	ot. serv.	567	502	491	565	1,580
Health and social services	ot. serv.	635		1014		834 (Hospital)
Pulp, Paper and paper products	manu.					1,158
Construction	manu.					2,655

Table 1 European "e-Business Watch" survey details

NOTES: manu. = manufacturing; fin. = financial services; ot. serv. = other services

Survey samples included large, medium and small companies though problems were experienced in attaining distribution quotas due to sectorial structural differences and national differences in sectorial presence. Where quotas for medium and large companies could not be attained these were filled by small businesses. <u>NB</u> due to sector size, the population of aerospace industry was surveyed

Roughly equal numbers were interviewed in individual surveys for each sector and within each country, although these numbers varied from survey to survey.

Areas covered by the 2002 questionnaire included: ICT facilities, training, access, e-business usage (maintenance, third party support, types of transactions - purchases / sales, internal activities supported, barriers to use and impact on sales / costs / efficiency / practices). The section on 'barriers to use' was dropped for latter surveys. The 2003-II survey incorporated new sections on the innovativeness of the company and technical standards and additional questions on skills/ and online purchases. The revised 2005 survey addressed the themes of previous questionnaires, but emphasising outsourcing, online purchases, online marketing-sales, interoperability / standards and drivers / inhibitors. The slightly revised and enlarged 2006 survey, had expanded sections on procurement, marketing / sales, interoperability and drivers / inhibitors and emphasised wireless enablement, the implications of skill shortages and expenditure /investment.

One of the key issues raised in the second report (July, 2003e[45]) was the distinction between large business innovation and small businesses non-adoption. It also highlighted national differences in uptake identifying France as lagging behind other countries.

The third report (May, 2004d[46]) iterated the distinction between large and small businesses and examined the opportunities / challenges facing SMEs. It outlined implementation barriers and benefits to SMEs (Table 2) though recognised the difference in importance attached to each. It suggested that the biggest benefit was possibly the "*speedy and timely access to information*".

CATEGORY	BARRIER
Awareness of SMEs / access to infrastructure	- costs (start-up costs)
	- unfamiliarity with Internet
	- lack of guidance and competence in how to start the process
Critical mass among business partners	- suppliers are not online
	- customers are not online
Confidence in legal and regulatory framework / security	- security hazards
	- guarantee of message delivery
	- tampering with network messages
	- unauthorised access to internal networks
	- interception of network messages
	- verification of authorship of messages
	- enforceability of contracts negotiated over the network
Adaptation of business processes	- decreased productivity through frivolous use
COMPONENT	**BENEFIT**
Product promotion	- direct and indirect advertising
New sales channels	- easy access to potential customers
	- online sales and transactions
	- ability to reach out to international markets
Direct savings	- increase in market share of products / services
	- low cost communication
	- savings in communication costs
	- savings in advertising costs
	- increased productivity
Time to market	- lower cost margins for products / services
Customer service	- lower cost of obtaining suppliers
Brand image	- product delivery
	- greater customer satisfaction
Technological and organisational learning	- company image enhancement
	- create an up-to-date corporate image
Customer relations	- obtain know-how through discussion with others on the Internet
New business models	- form and extend business networks
	- competitor's performance benchmarking
	- create new business opportunities
	- speedy and timely access to information from Websites
	- communication efficiency improvement
	- effectiveness of information gathering
	- availability of expertise regard less of location
	- better service and support from suppliers

Table 2   Benefits and barriers to Internet use within SMES (from CEC, 2004d)

---

[45] Commission of the European Communities (2003e) "*ICT and e-Business in the Tourist Sector*", Sector Report, No. 13 II July 2003, Enterprise Directorate General, Commission of the European Communities: Brussels   [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2003_II.pdf, accessed 14th December 2008]

[46] Commission of the European Communities (2004d) "*Electronic Business in Tourism: The quantitative picture - Diffusion of ICT and e-business in 2003/04*", Sector Report, No. 7-I May 2004, Enterprise Directorate General, Commission of the European Communities: Brussels   [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2004_I.pdf, accessed 14th December 2008]

Amongst the implications for policy, was the desirability to improve SME understanding of Internet use so that they based their decision upon the investment value rather than the cost.

The fourth report (August, 2004e[47]) again dwelt upon SME adoption, highlighting the distinction between idiosyncratic behaviour and rational economic argument, citing Morrison, 2002[48]. It noted that despite the Internet's information gathering utility the conversion rate into online sales was low, though was increasing. Thus, innovative SMEs used a variety of channels to secure business and attain competitive advantage. The four case-studies illustrated the e-Business efforts of: a local consortia of tourism businesses, an international hotel enterprise, a five person local travel agency and a city-centre tourist attraction. The case studies highlighted cost as a major disincentive and direct customer contact as "the greatest benefit". Attention was drawn to the similarities and contrasts between the case-studies and the published study by Heung (2003[49]). Opportunities, challenges, enablers and obstacles facing tourism business were examined (Table 3). It stated that applications tended to be orientated to larger enterprises. It suggested that, in addition to marketing, the Internet offers SMEs the opportunity to develop skills, optimise internal processes and improve purchasing practices. However, it highlighted the difficulty that SMEs have in justifying ICT, particularly in a quantitative manner.

The report considered the implications of the findings and identified five EU / national policy making areas which could influence e-business:
1. "*the regulatory environment for telecommunication services*": to compensate for market failure causing restricted ICT uptake
2. "*innovation and technology policy*": to inform decision makers and promote investments in innovations and also to compensate for market distortion effects due to innovations (e.g. monopolistic conditions)
3. "*education and labour market policy*": to develop favourable educational systems which develop ICT competencies and which do not disadvantage SMEs with regard to training
4. "*the role of the public sector*": to set example and stimulate uptake
5. "*other policy areas*" which impact upon e-business developments (e.g. IP, trade)

Further, it reinforced the relevance of the three policy challenges raised in the review of the Go Digital Initiative (CEC, 2003b), though regarded them as a "*rather crude simplification*".

OPPORTUNITIES	CHALLENGES
- direct access to potential customers - cutting valuable marketing and sales costs - optimising lead-time and instant adjustments of supply according to demand	- minimising set-up costs by developing systems and applications more suitable for SMEs - creating standard ICT and e-business solutions for SMEs - employ multi-channel strategies
ENABLERS	**OBSTACLES**
- supporting the formation of network relations among SMEs - customer driven demand for e-business products and services - large enterprises are leading the way for SMEs	- SMEs reluctance to invest in ICT and e-business - Establishing a business case for SMEs to grasp the potential of implementing e-business - Lifestyle SMEs

Table 3   **Opportunities, challenges, enablers and obstacles facing tourism businesses (from CEC, 2004e)**

---

[47] Commission of the European Communities (2004e) "*Electronic Business in Tourism: Key issues, case studies, conclusions*", Sector Report, No. 7 II August 2004, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2004_II.pdf, accessed 14th December 2008]

[48] Morrison, A (2002) "*Small Hospitality Business: Enduring or Endangered*?" Journal of Hospitality and Tourism Management, 9 (1) pp1-11.

[49] Heung, V (2003) "*Internet usage by International Travellers: Reasons and Barriers*", International Journal of Contemporary Hospitality Management, 15 (7) pp370-378

The fifth report (September, 2005[50]) drew attention to the refusal of a number of tourism businesses to engage with e-business. This was attributed partly to the lack of a "*basic ICT infrastructure*", the lack of appreciation about benefits and embedded business cultures / traditions. It claimed that the primary reason for engaging in online trade was competitive advantage. It highlighted the relatively low levels of investment in ICT in contrast to other sectors, attributable to the dominance of small-micro businesses. It revealed that larger businesses were more likely to adopt more sophisticated ICT solutions, these being too expensive or complex for the smaller businesses. Size of business, cost, complexity of technology, security and legal issues were deterrents to e-business adoption. The findings suggested that non-adopter's perceptions of legal and security issues were significantly worse than adopter's actual experiences. The report also raised the opportunity for wireless / mobile connectivity, particularly for location-based services, which was still immature in development.

The sixth report (January, 2007[51]) was more extensive in terms of the number of countries covered. It also focused upon specific sub-sectors to provide a more focused perspective, since it was argued that previous surveys provided the broader picture, though masked variation due to heterogeneity. Only the EU-10 were surveyed across all sectors. The findings from the tourism sector revealed that it was positioned about midway relative to other sectors for the adoption of ICT and e-business. Within the sectors, the leading adopters were travel agents and tour operators, followed by accommodation providers. The issues that were brought to attention included dis-intermediation (e.g. Accor) and re-intermediation (e.g. adriatica.net), dynamic packaging (e.g. Lastminute.com) and the activities of the 'no-frills airlines' (e.g. Ryanair), in particular eTicketing, self-service check-in, bar-coded boarding passes and RFID for luggage handling. It drew upon the work of Daniele and Frew (cf. 2006[52]) to provide insight into the nature of online intermediaries and the trend towards consolidation though acquisition in Europe (which was characterised by being a fragmented market and culturally diverse) and joint-ventures in the US.

It reported on the growing use of VoIP across all sizes of organisations, enhanced by the availability and uptake of broadband. It revealed the value of the Internet for finding new suppliers with online purchases being made more by larger organisations than smaller organisations. In response to whether companies would "*allow customers to order goods or book services online from the website or through other computer mediated networks*", a significant percentage of accommodation providers accepted reservations (62%) through an online booking facility (including those provided by intermediaries) with 34% receiving over 25% of their bookings this way and international customers representing 44% of bookings, in contrast to a lower international base for the other sub-sectors, especially travel agents and tour operators (2%). Those involved in gastronomic business activities tended not to use online booking facilities (16%). Reasons for embarking upon e-business were due primarily to both customer expectations and competition (for advantage and because competitors were doing it, i.e. imitation). The tourist sector contrasted with the manufacturing sector, where suppliers are an important driving force. Reasons given for not pursuing e-business corresponded to findings in other sectors. The main barrier related to the view that the business was too small to benefit, followed by the view that the technology was too expensive.

The report concluded with the proposal that, in general, large tourism businesses value e-business, with those 'in the front line' (travel agents, tour operators and accommodation providers) in the fore of not only tourism but also other industries. Larger companies were more likely to integrate ICT into their

---

[50] Commission of the European Communities (2005c) "*ICT and Electronic Business in the Tourism Industry ICT adoption and e-business activity in 2005*", Sector Report, No. 9, September 2005, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2005.pdf, accessed 14th December 2008]

[51] Commission of the European Communities (2007) "*ICT and e-Business in the Tourism Industry ICT adoption and e-business activity in 2006*", Sector Report, No. 8/2006, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2006.pdf, accessed 14th December 2008]

[52] Daniele, R; Frew, A (2004) "From *Intermediaries to Market-makers: An Analysis of the Evolution of E-mediaries*", in Frew, A J (ed.) "Information and Communication Technologies in Tourism 2004", Proceedings of the International Conference in Cairo, Egypt, 2004. New York: Wien, Springer-Verlag, pp546-557

processes to optimise and gain efficiencies and cost savings. The automation of services is regarded as contrary to the service quality, which emphasised the human dimension. The greatest future impact of ICT was perceived to be in the areas of front-office marketing and back-office accounting, which was proposed to be through the integration of activities. Its recommendations regarding policy included the promotion of ICT adoption, particularly amongst SMEs and micro companies.

Westminster – deregulation as a new beginning

The British Telecommunications Act 1981[53], which permitted British Telecom (BT) to be formed as a separate entity to its parent the Post Office, was perhaps the start of the deregulation of the British Telecommunications sector. This Act also provided for the connection of 'approved' non-BT apparatus to the BT network. The need for an approving body led to the founding of the British Approvals Board for Telecommunications (BABT) in May, 1982, under the guidance of the British Standards Institution (BSI). BT had responsibility for both the provision of telecommunications services and the development / maintenance of the telecommunications infrastructure. BT's domination of telecommunications ended in 1984 with the Telecommunications Act 1984[54]. This not only allowed the entry of other service providers, but also provided for the establishment of a regulatory body, the Office of Telecommunication (OFTEL) under a Director General (DG). The white paper "**Competition and Choice: telecommunications policy for the 1990s**" (DTI, 1991[55]) outlined a revised telecommunications policy expanding the range of services open to new entrants and also allowed new entrants (e.g. cable television operators) to develop the telecommunications infrastructure by incorporating their cable networks. However, the opportunity for new entrants to create their own networks has raised the issue of interoperability between the different systems and thereby the need for standards. At the European level this has been enabled by ESTI (European Telecommunications Standards Institute). ESTI was formed in 1988 to facilitate and produce European standards for telecommunications.

Since then, there have been a number of Government reviews and publications.

<u>**Government Reviews and Publications**</u>

The "**Optical Fibre Networks**" report (1994[56]) presented the findings of the Travel and Industry Committee's study of broadband infrastructure and services. It recommended that Government policies fostered the commercial development of broadband infrastructure and services in such a way that promoted their development and ensured interoperability.

A DTI Command Paper "**Creating the Superhighways of the Future: Developing Broadband Communications in the UK**" (DTI, 1994[57]) examined the concepts of the 'information superhighway' and the 'information society', and suggested the implications for policy. It identified three issues: the potential use of "*emerging communication networks*"; how the regulatory framework supports broadband infrastructure development; and what the Government can do to enable the "*development of the full range of communications*". It reaffirmed the relevance of the 1991 White Paper. It highlighted the Government's role as a "*provider and user of broadband services*", thus as a stimulus for innovation and uptake. It presents itself as a champion of a privatised and liberalised telecommunications sector within Europe, having led the way with its activities since 1981.

---

[53] Crown (1981) "*British Telecommunications Act 1981*", London: HMSO

[54] Crown (1984) "*Telecommunications Act 1984*", London: HMSO

[55] DTI (1991) "*Competition and Choice: telecommunications policy for the 1990s*", White Paper, March 1991 London: HMSO

[56] Trade and Industry Committee (1994) "*Optical Fibre Networks*", Trade and Industry Committee Third Report, Session 1993-94, HC 285-I, London: HMSO

[57] DTI (1994) "*Creating the Superhighways of the Future: Developing Broadband Communications in the UK*", DTI, London: HMSO [www.ifla.org/documents/infopol/europe/uk-csf.txt, accessed 14th February 2008]

A Parliamentary Office of Science and Technology (POST) report (1995[58]) examined the concept of a UK 'National Information Infrastructure' (NII), first mooted in the USA. The NII would provide a high-speed data transmission infrastructure accessible by anyone and thereby be of economic benefit. The summary report suggests that uncertainty about demand for online services has discouraged commercial development of the infrastructure, which is intensified by the discouraging effect of UK pricing upon the uptake of Internet and online services. This was suggested to be a matter requiring Government intervention.

On 13th February 1996, the UK Secretary for State launched "**The Information Society Initiative**"[59], whereby the DTI provided support to businesses, particularly SMEs, for them to exploit information and communication technologies[60].

In December, 1998, following the May, 1997 General Election, the New Labour Government issued a white paper "**Our Competitive Future: building the knowledge driven economy**"[61]. It proposed a "*new approach to industrial policy*" in order to improve UK competitiveness. It identified the UK's "*distinct capabilities" as "knowledge, skills and creativity*". It regarded:

> "*entrepreneurship as the lifeblood of the new British economy: both entrepreneurship and innovation being "central to the creative process in the economy and to promoting growth, increasing productivity and creating jobs*".

Business had the role of leading "*this process of modernisation*". The Government's role was that of "*catalyst, investor and regulator*". "*Digital technology*" was described as "the *nerve system of the knowledge driven economy*". Thus "*the Government's goal is that by 2002 the UK will have the best environment in the world for electronic trading*". Published alongside the white paper was a report[62] justifying the importance of "*the digital economy*" and identifying the drivers of the digital economy. The five demand drivers (culture, competitive pricing & packaging, access to skills, access to advanced infrastructure, macro-economic environment) and three supply drivers (industry competitiveness, willingness & ability to invest, access to skills) were used to benchmark the UK against other countries. It highlighted culture, competitive pricing and both user and supply side skills as priority areas for action.

In September, 1999, a report, The Cabinet Office published "**e-commerce@its.best**"[63]. This drew upon a six month study to present a strategy to achieve "*the Government's vision for building a modern, knowledge driven, economy in the UK*". It highlighted three priorities: for business, particularly small business, to recognise the opportunities; for Government to drive the implementation of e-commerce; for better co-ordination between Government and industry in order to maximise opportunities from Initiatives, existing or proposed. It recognised key barriers being "*the lack of a clear, internationally agreed, regulatory framework and of clarity in some areas of tax policy*", limited understanding of the opportunities, skill shortages, limited access to the technologies, especially by those disadvantaged, and fears about fraud and personal privacy. One recommendation was:

---

[58] Parliamentary Office of Science and Technology (1995) "*The UK National Information Infrastructure: report summary*", Parliamentary Office of Science and Technology [www.parliament.uk/post/pn062.pdf, accessed 31st August 2006]

[59] DTI (2000a) "*Information Society Initiative Strategic Evaluation*", DTI Assessment Unit, London: HSMO [www.dti.gov.uk/innovation/innovation-statistics/evaluation-reports/page17224.html, accessed 29th August 2006]

[60] It can be argued that, while the Conservative Government acknowledged the value of ICTs, it did not view them as significantly as the succeeding Labour Government. Examination of the 1995 white paper on "Competitiveness", acknowledges the new technologies, but there does not appear to be any explicit reference to digital technologies, Internet or WWW. The 1996 white paper on "*Competitiveness*" has a section entitled "*The Information Society*" which recognises the "*new revolution*" of digital technology and the convergence of the telecoms, IT, broadcasting and publishing sectors. However, it appears unclear about its role regarding new technologies and places the onus on the private sector within a privatised and liberalised environment to develop these technologies, especially "*the superhighways*".

[61] DTI (1998a) "*Our Competitive Future: building the knowledge driven economy*", White Paper, Cm. 4176, DTI, London: HSMO

[62] DTI (1998b) "*Competitive advantage in the digital economy*", DTI, London: HSMO

[63] Cabinet Office (1999) "e-commerce@its.best.uk", September 1999, A Performance and Innovation Unit, Strategy Unit, Cabinet Office, London: Cabinet Office

"*the immediate appointment of an e-Minister and e-envoy, with the role of co-ordinating and promoting e-commerce and eGovernment activities*".

The Office of the e-Envoy and UK Online

During September, 1999, "**The Office of the e-Envoy**" was established. As part of the Cabinet Office, it "*was set up to lead the UK in its drive to be the best place in the world for e-commerce*"[64]. "UK Online" was established both as the brand name for its 'Information Age' activities (e.g. the Information Society Initiative) and as the name of its website (www.ukonline.gov.uk)[65]. The prototype website was launched 4th December 2000 and formally launched 19th February 2001. Goals that the UK needed to excel at were set:

- *Confident people: people who have the access they need to information and communication technologies, along with the trust, skills and motivation to use them.*
- *Successful businesses: companies across the economy exploiting information and communication technologies to win business advantage*
- *Government as exemplar: leading-edge use of new technology in the public sector*
- *World class supply sectors: IT, electronics and communications supply sectors which are innovative, dynamic and growing*
- *Modern markets: a market framework which both empowers consumers (individuals, in business and in government) and encourages competition and innovation from the industries which serve them.*

(UK Online Annual Report, 2000[66])

Although initiated in 2001[67], "*the UK online centres network was formally launched*" in 2002[68]. This was a network of outlets whereby local people could access a computer and gain new skills[69]. Targets presented in the UK Online Annual Report, 2000, included:

- *that everyone in the UK who wants it will have access to the Internet by 2005*
- *100% of government services are available online by 2005*
- *the UK's smaller businesses (under 100 employees) to have reached the level of international best in use of e-business*
- *a higher proportion of business-to-business and business-to-customer transactions taking place electronically in the UK than in any other G7 country*

In December, 2000, the Government published a white paper "**A New Future for Communications**"[70], proposing "*a framework for communications regulation in the 21st century*". It aimed "*to promote access to the Internet and higher bandwidth services*" and to establish a new regulator: the Office of Communications (OFCOM).

In the same month, the Better Regulation Task Force[71], an independent advisory group established in 1997, published its recommendations, "**Regulating Cyberspace: better regulation for e-commerce**"[72]. It concluded that businesses, particularly SMEs, who did not have access to the expertise available in larger companies, were unclear about the regulatory environment. Further, UKOnline, whilst providing advisory services, was unknown to many SMEs. These recommendations declared that:

---

[64] www.cabinet-office.gov.uk, accessed 3rd June 2004

[65] Office of the e-Envoy (2000) "Monthly Report", 31st March 2000, Office of the e-Envoy, [www.e-envoy.gov.uk, accessed 18th May 2004]

[66] http://archive.cabinetoffice.gov.uk/e-envoy/reports-anrep1-top/$file/default.htm, accessed 17th December 2008

[67] www.ufi.com/ukol/template_1.asp?articleID=115, accessed 9th January 2007

[68] www.digitalchallenge.gov.uk/links-and-resources/uk-online-centres, accessed 9th January 2007

[69] www.ufi.com/ukol/template_1.asp?articleID=115, accessed 9th January 2007

[70] DTI (2000b) "*A New Future for Communications*", White Paper, DTI, London: HSMO

[71] The remit of this group is "*to advise the Government on action which improves the effectiveness and credibility of government regulation ...*" [Cabinet Office (2000) "*Regulating Cyberspace: better regulation for e-commerce*", December 2000, Better Regulation Task Force, London: Cabinet Office]

[72] Cabinet Office (2000) "*Regulating Cyberspace: better regulation for e-commerce*", December 2000, Better Regulation Task Force, London: Cabinet Office

> "*a mixture of self-regulatory and co-regulatory schemes will work best, underpinned by an effective arbitration system and existing regulation*".

Its ten recommendations, which reinforced these views, were accepted in the Government Response[73], with only one reservation; this concerned the need for an independent assessment of the impact of the Regulation of Investigatory Powers Act 2000[74].

On 25th May 2004, there was a Cabinet Office press release announcing that the Office of the e-Envoy would be replaced by the eGovernment Unit to reflect changing requirements. This Unit would focus upon delivering online public services. The website, www.ukonline.gov.uk (disabled, 28th May 2004), was replaced by a radically new portal www.direct.gov.uk (enabled 1st March 2004).

Westminster – Regulatory Framework

The exploitation of the new technologies also required appropriate legislation to ensure comparability of the online legal environment to the off-line environment. Two Acts were passed to enable this: **The Electronic Communication Act 2000[75]** and the **Electronic Commerce (EC Directive) Regulations 2002 (SI 2002/2013)[76]**. These Acts affected the online *commercial* transactions and promotions of UK businesses only and not any corresponding off-line activities nor the goods themselves.

The former Act[77] created, "*a legal framework for e-commerce*", clarified "*the legal status of electronic signatures*", enabled electronic alternatives to paper and provided "*a fall back to a statutory scheme if self-regulation does not work*". The latter Act provided for the aforementioned European Directive on Electronic Commerce 2000. It required the identification of transactions as commercial, the provision of information prior to any order, details of the transaction process, with details incorporated about how errors can be corrected, and the identification of unsolicited commercial e-mails.

Other Acts relevant to online commercial transactions included:
- the handling and storage of personal data (Data Protection Act 1998[78]),
- security of transmission, unsolicited marketing communications, the processing of location identification data, use of cookies (Statutory Instrument 2003 No. 2426: The Privacy and Electronic Communications (EC Directive) Regulations 2003[79]),
- the interception of communications, surveillance and encryption keys (Regulation of Investigatory Powers Act 2000[80]) and consumer's rights (Statutory Instrument 2000 No. 2334: The Consumer Protection (Distance Selling) Regulations 2000[81]).

The authorised interception of communications was provided for by Statutory Instrument 2000 No. 2699 (The Telecommunications (Lawful Business Practice) (Interception of Communications) Regulations 2000[82])

A subsequent review of "*the importance of electronic networks, including the development of broadband, to the UK's productivity and long-run economic growth*" was published in December, 2002 ("Electronic Networks: Challenges for the Next Decade"[83]). It suggested that electronic network innovations were

---

[73] http://archive.cabinetoffice.gov.uk/brc/government_responses/ecommerceresponse.html, accessed 17th December 2008
[74] Crown (2000a) "*Regulation of Investigatory Powers Act 2000*", London: HMSO
[75] Crown (2000b) "*The Electronic Communication Act 2000*", London: HMSO
[76] Crown (2002) "*Electronic Commerce (EC Directive) Regulations 2002 (SI 2002/2013)*", London: HMSO
[77] explained in the "Guide" published by the DTI, 2000
[78] Crown (1998a) "*Data Protection Act 1998*", London: HMSO
[79] Crown (2003) "*Statutory Instrument 2003 No. 2426: The Privacy and Electronic Communications (EC Directive) Regulations 2003*", London: HMSO
[80] Crown (2000c) "*Regulation of Investigatory Powers Act 2000*", London: HMSO
[81] Crown (2000d) "*Statutory Instrument 2000 No. 2334: The Consumer Protection (Distance Selling) Regulations 2000*", London: HMSO
[82] Crown (1998b) "*Statutory Instrument 2000 No. 2699 (The Telecommunications (Lawful Business Practice) (Interception of Communications) Regulations 2000*", London: HMSO
[83] Cabinet Office (2002) "*Electronic Networks: Challenges for the Next Decade*", Strategy Unit, Cabinet Office, London: Cabinet Office

likely to evolve from existing networks rather than from new networks and, consequently, the market-place would likely comprise of those operators currently active. The regulator OFCOM had the task of "*removing barriers to competition*", thereby ensuring a competitive environment yet enabling "*immature markets to develop without interference*". It was the Government's role to balance public interest against legislative demands, particularly from the EU.

One Act that is perhaps overlooked is the Disability Discrimination Act 1995[84]. It was introduced in three phases, 1996, 1999 and 2004. This stipulates that it is the "*duty*" of the service provider to provide the same level of service to disabled persons (i.e. those who have a long term or major "*physical or mental impairment*") as to anyone else. This includes "*access to and use of means to communication*" and "*information services*" (e.g. websites), irrespective of whether there is a payment for this service. Under this Act, on 1st October 1999, it became the duty for service providers to change any "*practice, policy or procedure*" and to provide any "*auxiliary aid or service*" that enables the provision of a uniform level of service to all.

The Booz Allen Hamilton Report 2002

A report published in 2002 by Booz Allen Hamilton[85] provided a review of the Government policies relating to online technologies of the G7 countries and also Australia and Sweden. It presented a framework comprising of three major stakeholders – citizens, businesses and the Government - against which were assessed the three states: 'readiness', 'uptake and use' and 'impact'. It noted that regulation was similar across all countries with the exception of sales tax in the US. Each country expressed concerned about how to roll-out broadband. It identified the UK's relative strengths and weaknesses. Weaknesses included "*Low household broadband penetration*", "*Low frequency and duration of internet use*" and "*Low availability of broadband (both DSL and Cable Modem)*". Included in issues raised were those of business uptake and the digital divide.

On business uptake, it reported that the:
> "*Policy emphasis around uptake has generally been on ensuring smaller businesses are supported in establishing a web presence, and in trading online. Information, advice and training are the typical means of support rather than financial incentives. Governments have also acted to lighten the regulatory burden, and to help firms find staff with the right skills*".

It identified five common approaches:
1. "*Support to get SMEs started. Perhaps the most common approach to getting more businesses of all sizes online, and fully participating in e-commerce, is the provision of advice, support and training. There is considerable variation in the scale and the quality of the resources provide…*
2. *Support to get SMEs doing more sophisticated things... A range of approaches have been taken to get SMEs up the ladder of usage sophistication... The questions seem to be 'Where is the blockage for SMEs?' and 'How much should we get involved... PROVIDING FUNDS (French and Japanese approach)... PROVIDE TRAINING/RESOURCES (Swedes)*
3. *Lightening the regulatory burden… taxation of online commerce*
4. *Enabling businesses to find the skilled staff that they need to do e-business*
5. *Facilitating online B2B interaction. A few governments are going as far as actively providing content as a draw to businesses to go online. In addition to putting existing services online, governments may provide additional services, or play the role of facilitator in bringing industry participants together online*".

It concluded that:
> "*In general, government policy has focused on supporting smaller businesses in their endeavours to get online rather than promoting more 'sophisticated' online behaviour*".

The report acknowledged the efforts to address the 'digital divide':

---

[84] Crown (1995) "*Disability Discrimination Act 1995*", London: HMSO Disability Discrimination Act 1995

[85] Booz Allen Hamilton (2002) "International e-Economy Benchmarking The World's Most Effective Policies For The e-Economy", 19th November 2002, London: Booz Allen Hamilton [http://unpan1.un.org/intradoc/groups/public/documents/UNPAN/UNPAN007030.pdf, accessed 14th February 2009]

> "*all governments in the benchmark group see the digital divide as a problem which they have some role in tackling. Most take the approach of direct provision of some sort of internet training to target groups. Another common approach is to try and use IT in education to even out the divide – this is the American approach at the federal level to overcome the income divide. A major contrast, however, is which dimensions of the digital divide governments concern themselves with. In Canada, Australia and Sweden, wiring up rural areas seems to be a major goal, whereas in Germany women and the elderly have a relatively high degree of policy activity. In the UK getting the internet to lower income groups is a major policy area… Geographic divides have typically been tackled through either direct provision of infrastructure, or provision through co-operation with the private sector*".

A Digital Divide

Concern about the continued existence of a "*digital divide*" led to the publication of "**Connecting the UK: the Digital Strategy**" in March, 2005[86]. It highlighted the need for people to be confident about "*living and working in a digital world*". It identified the barriers to Internet use as cost, confidence, skills and perceived relevance. Regarding relevance it is stated that some people "*do not see how ICT and broadband particularly can transform their lives*", suggesting that everyone can be enriched, this leading to the next statement:

> "*Government has a clear role in helping to promote and increase public awareness about the Internet and harness the economic and social returns in a way that benefits all society… We will help protect consumers from the dangers of the "darker side" of the digital world. We will use ICT to minimise social exclusion and ensure that the UK is the first nation to succeed in closing the digital divide.*"

Activities to achieve this included:
-   embedding ICT in education by giving all secondary school pupils the opportunity to access ICT from their homes
-   the launch of the "***Digital Challenge***", a local authority partnership to seek out innovative ways of providing local people and communities with "*advanced public services*" using ICT
-   the set up of a "*multi-agency national Internet safety centre*" to deal with Internet crime
-   the setting out of the "*vision of public service delivery transformed by modern technology and a strategy for achieving that vision*"
-   the continued improvement of access to technology to reduce digital exclusion.

It identified interest and motivation as the greatest barrier to "*accessing ICT… followed by a lack of perceived need*". It stated that:

> "*Trials aimed at closing the digital divide in disadvantaged areas suggest these perceptions do change once internet technology is introduced into lives*".

It also highlighted perceived cost and software application complexity as deterrents. It claimed that:

> "*Broadband is important in 'hooking' users as it supports a richer, more interactive content, increases reliability, and makes the Internet a more satisfying experience – less waiting, more surfing*".

It concluded:

> "*Education, information, support and easy access to ICT are therefore crucial to ensuring that people from low income backgrounds reap the benefits of the digital world*".

Underpinning ICT uptake "*by households and firms*" is the assumption of an effectively functioning market dynamic to drive down prices and improve choice. However, it argued for Government intervention to overcome the digital divide, to ensure "*the correct national skills framework*", to compensate through regulation for market failure and to provide "*responsive public services*". The Digital Challenge Initiative was launched on 7th December 2005.

A press release from the Digital Challenge and Inclusion Network (DCIN[87]) reveals the shift in policy from provision of access at the start of the millennium to creating awareness of benefits by 2006:

---

[86] Cabinet Office (2005) "*Connecting the UK: the Digital Strategy*", March 2005, Prime Minister's Strategy Unit, Cabinet Office, London: Cabinet Office [www.berr.gov.uk/files/file13434.pdf, accessed 18th December 2008]

[87] DCIN (The Digital Challenge and Inclusion Network) was established as part of the Digital Challenge Initiative

"*When the UK online centres network was formally launched in 2002, the issue of digital exclusion was seen primarily in terms of access: tackle that and the journey to becoming a self-sufficient internet user was inevitable. Evidence from UK online centres and from other practitioners in the field has shown that the picture is far more complex. It's not just about creating pathways to technology, it's about highlighting the potential benefits and facilitating and supporting use*"   (DCIN, 2006[88])

Scottish Parliament (May 1999)

Seven months prior to the DTI's "The Information Society Initiative", during the first week in July 1995, Scottish Enterprise launched "**Smart Partnerships Across Enterprise**" (SPAN). This Initiative was "*designed to help Scottish businesses discover the benefits of information and communication technologies*" (Scottish Enterprise, 1998[89]). It was supported by a website www.spanscot.org.uk. By 2000, this Initiative appeared to have been displaced by subsequent e-Business programmes[90].

In January, 1998, Scottish Enterprise commissioned the first of a continuing series of annual surveys to establish the state of online practices across a range of industrial sectors. These surveys, while retaining a core commonality over the years, evolved to reflect the change in interest from the level of adoption of technologies to their manner of use (details about the surveys are presented in the Appendix).

Scottish Enterprise, the Scottish public sector organisation leading the promotion of online practices, had been providing "*comprehensive information, advice, guidance and e-business support since 1997*" (eEurope GoDigital, 2002[91]). In 1999, it held its first e-business week (held annually up to and including 2003) to encourage businesses to exploit the benefits of the Internet. Further, it launched two new initiatives "*First Steps*" (it was renamed "*e-business Workshop Series*" in June, 2002[92]), which provided workshops on e-business topics, and "*ecomm2001*" (renamed "*ecommadviser*s"), which provided "*independent and experienced e-business advisors, managed by Scottish Enterprise*". Their e-business activities were supported online with its own website www.ecommerce-scotland.org.

The Scottish Parliament held its first sitting on 12th May 1999. This was followed soon after (24th June 1999) by the first debate on the Scottish Economy, during which the Minister for Enterprise and Lifelong Learning (Henry McLeish), set out "*the key principles of our approach to the economy and to economic development*" (Scottish Parliament, 1999[93]). He stated that "*We will create a modern, knowledge-based economy in which enterprise can flourish*". This was to be achieved "*by investing in jobs and skills, promoting a stable and competitive environment for enterprise, and encouraging the growth of new businesses*". This approach was to build upon the programmes resulting from the aforementioned UK white paper "**Our Competitive Future**".

Connecting Scotland

On 21st February 2000, Henry McLeish, launched the first phase of a Scottish e-commerce strategy, marking this with the publication of "**Connecting Scotland: The First Wave**"[94], an action plan outlining

---

[88] DCIN (2006) "*UFI - UK online centres*", press release, 11th Dec. 2006,
    [www.digitalchallenge.gov.uk/links-and-resources/uk-online-centres, accessed 9th January 2007]
[89] Scottish Enterprise (1998) "*Moving into the Information Age: an international benchmarking study for Scotland 1998*", Glasgow: Scottish Enterprise Network
[90] This Initiative appears to 'fade away' – no evidence has been found to-date about its demise
[91] eEurope GoDigital (2002) "*Benchmarking National and Regional E Business Policies, Stage 1 - Synthesis report*", June 2002 [www.technopolis-group.com/downloads/reports/298_Final_synthesis_report.doc, accessed 2nd May 2008]
[92] Harrington A (2002) "*Scots on the web snare net profits*" 23rd June 2002, Scotland on Sunday
[93] Scottish Parliament (1999) "The Economy", 24th June 1999, Official Report, 1 (12) col 819-846, Edinburgh: Scottish Parliament
[94] http://web.archive.org/web/20020105142905/www.ecommerce-scotland.org/level4.cfm?item_ID=96, accessed 17th December 2008 and also Scottish Government News Release: E0407/2000

"*the priorities and actions*" to promote and accelerate the use of e-commerce in Scotland. The plan was based on the recommendations of the "Connect Scotland Steering Group", which comprised of leading public and private sector figures from "*business, industry, technology and education*". The report proposed both the appointment of an "*E-commerce Director*" as well as a variety of programmes. The Scottish Parliamentary debate on e-commerce, 24th February 2000, highlighted the need to fill this appointment quickly, as it would champion the e-commerce cause which was viewed as important to Scotland's well-being. There is no indication that this role was filled[95].

A **Digital Scotland Task Force** was set up in October, 1999. It recommended a number of actions in a report (May, 2000[96]) which covered business, education, training and public services. It highlighted the importance of infrastructure and skills for progress to be made and exposed how digital technologies could enable "*social inclusion*". The Scottish Executive's response "**Digital Scotland: the Way Forward**" (14th September 2000[97]) agreed with all 68 recommendations and proposed how they would be implemented.

A Final Report on the Enterprise and Lifelong Learning Committee's "*Inquiry into the delivery of local economic development services in Scotland*" which commenced in September, 1999 was published on 12th May 2000[98]. It highlighted "*confusion, overlap, duplication and even active competition between the many agencies involved*". Despite progress to significantly improve co-operation, there was still a need to restructure service provision and distinguish between the different roles of the Executive, the Enterprise Agencies and Local Enterprise Companies. It recommended the formation of Local Economic Forums, to develop local economic development strategies in a manner consistent with the Economic Framework for Scotland, and also a single Small Business Support Service, thereby consolidating service provision. It singled out the tourism sector as "*isolated from the economic development mainstream*" and called for its integration through mandatory ATB membership of local economic forums, with tourism being an element of each forum's strategy. Local Economic Forums were established in March, 2001.

In June, 2000, the Scottish Executive presented a framework, "**The Way Forward: Framework for Economic Development in Scotland**"[99], for the economic development of Scotland over a five to 10

---

http://openscotland.gov.uk/News/Releases/2000/02/a4004828-96e0-47cf-b8cc-6d04de871e9b, accessed 17th December 2008

[95] Whilst the Scottish Parliament debate on the 24th February 2000 announced the creation of the role and there is mention of it in the 'Scottish Enterprise Ayrshire' Annual Report 2000 (p9, www.scottish-enterprise.com/publications/annrep2000.pdf), there is no other evidence of this role existing. Instead the Scottish Enterprise Annual Report for 1999-2000 mentions a Knowledge Management senior management position filled by Charlie Woods. The Glasgow Herald article, "*Restructure of hierarchy for Scottish Enterprise*" (25th March 2000), reports on reorganisation at the Scottish Executive and mentions the roles of both Knowledge Management and E-commerce. The Scottish Enterprise 2000-2001 Annual Report specifies Charlie Watt (E-Business) and Charlie Woods (Knowledge Management) The Annual Report for 2002 identifies Charlie Woods in the Knowledge Management role but the e-commerce role is not mentioned. A powerpoint presentation, 24th November 2003, is presented by Charlie Watts, Senior Director E-Business, Scottish Enterprise [http://info.worldbank.org/etools/docs/voddocs/507/969/watt.ppt, accessed 18th December 2008]

[96] Digital Scotland Task Force (2000) "*Digital Scotland Task Force Report*", May 2000, (May-00/TASK FORCE REPORT - FINAL v1.1.doc) [www.scotland.gov.uk/digitalscotland/report.htm]

[97] Scottish Executive (2000a) "*Digital Scotland - The way forward: The Scottish Executive's response to the report of the Digital Scotland Task Force*", 14th September 2000, Edinburgh: Scottish Executive [www.scotland.gov.uk/deleted/digitalscotland/seresponse.pdf]

[98]Enterprise and Lifelong Learning Committee (2000) "*1st Report, 2000, Inquiry into the Delivery of Local Economic Development Services in Scotland*", SP Paper 109, Session 1 (2000) Final Report, Volume 1: Conclusions, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-00/elr00-01v1-01.htm, accessed 18th December 2008] Volume 2: Evidence, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-00/elr00-01v2-01.htm, accessed 18th December 2008]

[99] Scottish Executive (2000b) "*The Way Forward: Framework for Economic Development in Scotland*", SE/2000/58, 29th June 2000 , Edinburgh: Scottish Executive [www.scotland.gov.uk/Resource/Doc/158281/0042858.pdf, accessed 18th December 2008]

year period, with attention to the creation of a "*knowledge-driven economy*". It presented the Executive's vision:

> "*To raise the quality of life of the Scottish people through increasing economic opportunities for all on a socially and environmentally sustainable basis*"

This would result from achieving the outcomes of:
- economic growth through international integration
- regional development
- social integration
- sustainable economic development

It would be attained by:
- "*a stable and supportive macroeconomic environment*"
- "*a facilitating national economic context: encompassing the physical, human and electronic infrastructures*"
- "*a dynamic competitiveness in Scottish enterprises*"
- "*economic policies and programmes to secure the social, regional and environmental objectives*"

It emphasized the need to develop a "*dynamic and responsive*" economic infrastructure in terms of education, skills, transportation and communications. Included in its priorities was the need to encourage innovation and entrepreneurship, to "*promote the use of e-commerce*" and to foster tourism[100].

Also in June, 2000, the Connect Scotland Steering Group published "**Connecting Scotland: a strategic framework for e-commerce**"[101]. This declared the strategic vision of Scotland to be the "*main European hub for e-commerce*" and which would be achieved by addressing four "*strategic themes*":
- "*creating the right environment*": including regulatory and ICT infrastructure
- "*accelerating business uptake*": particularly among SMEs
- "*accelerating supply-side development*"
- "*developing skills and knowledge for the future*"

It set four targets:
- "*for **Small & Medium-sized Enterprises**: by 2002, a minimum of 50% of Scottish SMEs will be connected to the Internet and using websites and 33% will be selling online. This mirrors the target for the UK as a whole*
- *for **New Enterprises**: E-businesses will comprise 20% of all new business start-ups by the Spring of 2001. As part of the drive, a dedicated e-commerce stream will feature in Personal Enterprise campaigns during 2000*
- *for **large companies**: by 2001, 50% of all companies in Scotland employing more than 500 people will require their suppliers to be e-commerce-capable*
- *for **Higher Education Institutions & colleges**: e-commerce will be a curricula component in at least 3 Scottish programmes for the 2000/2001 session*"

June, 2000, also saw publication of "**Connecting Scotland: a Report on Scotland's Telecommunication's Infrastructure**"[102]. This provided an overview of the status of the Scottish telecommunications infrastructure, its suitability for current "business needs", its weaknesses and how it compares internationally. It concluded that Scottish networks "*are on the whole modern*" and comparable to places like Denmark and Ireland, though raised concern about the sole supplier status of BT in many areas of Scotland, though noted the expectation that this would change with the planned opening of the telecommunications market to other suppliers over the following year. Moreover it highlighted the danger that broadband access would be restricted to "*Glasgow, Edinburgh and Aberdeen and cable franchise areas in the short to medium term*" due to its high costs. By August, 2001, the state of Broadband coverage in Scotland was quoted as 43%, which contrasted with 63% for the UK as a whole[103].

---

[100] This is the only sector named

[101] Scottish Enterprise (2000a) "*Connecting Scotland - a Strategic Framework for e-commerce*", Glasgow: Scottish Enterprise Network

[102] Scottish Enterprise (2000b) "Connecting Scotland: a Report on Scotland's Telecommunication's infrastructure", June 2000, Glasgow: Scottish Enterprise Network

[103] www.scotland.gov.uk/Topics/People/BroadbandforScotland/SEBroadbandInitiatives/History, accessed 18th December 2008

In September, 2001, the strategy document "**Connecting Scotland: Our Broadband Future**"[104] was published. This outlined how broadband would be rolled out throughout Scotland. It highlighted the need for "*faster more flexible telecoms services*" in recognition of the demand by businesses and education for the fast electronic transmission of data. This would be achieved by commercial telecommunications suppliers rather than by the public sector. Recognising that some areas would be commercially less financially viable, one strand of this strategy was to "*aggregate public sector demand for broadband*", thereby improving a locality's demand and thus its commercial attraction. The strategy provided for intervention "*only where activity would not otherwise happen, or to accelerate existing action*" with the view that "*competition must be encouraged as far as possible*".

In November, 2001, Scottish Enterprise published its contribution "**Connecting Scotland: an update from Scottish Enterprise**"[105] to the implementation of the Connecting Scotland strategic framework. It stated that "*almost all Scottish businesses believe online technologies offer some level of business benefits*" though "*the conviction is stronger among large firms*". It revealed that "*50% of Scottish businesses don't think e-business is important… and 10% of those who are connected don't use it*". It acknowledged that Scottish Enterprise's "*e-business contributions sit within a wider suite of strategies*". It outlined the range of actions that it had initiated. These included workshops, advisers, online facilities and a project to develop the infrastructure: Project ATLAS.

A Smart Successful Scotland

The Scottish Executive's expectations for the Enterprise Networks was established in the policy statement "**A Smart Successful Scotland: ambitions for the Enterprise Networks**" (January, 2001[106]). This defined the relationship between the Executive and the Enterprise Networks. Strategy would be developed jointly by the Executive and the Boards of the Enterprise Networks. The Enterprise Networks would deliver the strategy. The Vision concerned three "*themes*", captured by the phrases: "*Growing businesses*", "*Global connections*" and "*Learning and skills*". Amongst the goals were, to raise awareness, promote and support the implementation of e-business and to enable accessibility to digital technologies throughout Scotland.

This led to the formation of the Joint Performance Team with its members drawn from the Scottish Executive and the Enterprise Networks. On 23rd August 2001, they produced a consultation document, "**Measuring Scotland's Progress Towards A Smart Successful Scotland**"[107], which outlined how progress would be measured using indicators for each of the three themes. The first annual report on "**Measuring Scotland's Progress Towards A Smart Successful Scotland**" was published on 18th March 2002[108] and highlighted the role of:
> "*an extensive and integrated suite of offerings, including the national products, First Steps and ecommadvisers*"

The second report on 26th March 2003[109] revealed that, whilst there was a positive level of both online households and online business transactions, this was offset by the level of broadband usage, entrepreneurial activity and demand for learning.

[104] Scottish Executive (2001b) "*Connecting Scotland our broadband future*", 2nd September 2001, Edinburgh: Scottish Executive   [www.scotland.gov.uk/Publications/2004/06/19531/39266, accessed 18th December 2008]

[105] Scottish Enterprise (2001) "*Connecting Scotland - An Update from Scottish Enterprise*", November 2001, Glasgow: Scottish Enterprise Network

[106] Scottish Executive (2000c) "*A Smart, Successful Scotland: Ambitions for the Enterprise Networks*", 30th January 2000, Edinburgh: Scottish Executive
[www.scotland.gov.uk/Resource/Doc/158455/0042945.pdf, accessed 18th December 2008]

[107] Joint Performance Team (2001) "M*easuring Scotland's progress towards smart, successful Scotland*", 23rd August 2001, Consultation Paper, Joint Performance Team, Edinburgh: Scottish Executive [http://cci.scot.nhs.uk/Resource/Doc/156401/0041969.pdf, accessed 18th December 2008]

[108] Scottish Executive (2002a) "*Measuring Scotland's progress towards smart, successful Scotland*", 18th March 2002, Edinburgh: Scottish Executive
[http://cci.scot.nhs.uk/Resource/Doc/158351/0042893.pdf, accessed 18th December 2008]

[109] Scottish Executive (2003) "*Measuring Scotland's progress towards smart, successful Scotland*", 26th March 2003, Edinburgh: Scottish Executive
[http://cci.scot.nhs.uk/Resource/Doc/47034/0025780.pdf, accessed 18th December 2008]

The findings of the Enterprise and Lifelong Learning Committee ("**Report on the Inquiry into the Impact of the New Economy**") were published on 19th June 2001[110]. The remit that had been agreed in June, 2000 was to investigate how equipped Scotland was "*to deal with the challenges of the new global e-economy*". It was required:

"*to address four specific questions:*
- *To what extent has Scottish business moved to take up e-commerce?*
- *What infrastructure will be necessary in the next five years to allow Scottish business to exploit the e-economy, and what steps are being taken to ensure that it will be put in place?*
- *How does Scotland's position and preparedness compare to that of its global competitors?*
- *What can be done to enhance Scotland's competitive position*?"

It clarified how it would view the term "*new economy*" focusing upon:

"*the impact of the new electronic technologies on business. It has focussed upon e-commerce - doing business using the internet. This includes e-retailing, but also business-to-business transactions. However, it also encompasses, to an extent, those sectors of the economy that provide the software, and hardware, to make e-commerce possible, as well as the public sector's interaction with it*"

The Committee found that SMEs lagged behind both large and micro-businesses in the implementation of e-commerce and exposed a gap between rural and urban areas with regard to broadband. It stated that "*one of the principle aims of an e-strategy*" should be "*the creation of a universally IT-literate population*". Its recommendations included the development of "*an overarching e-strategy*" under the responsibility of the Minister for Enterprise and Lifelong Learning. Also, the Scottish Executive should:

"*take a lead to ensure that high-quality telecommunications infrastructure, which will promote the development of the new economy, is available throughout Scotland*".

In recognition that there were parts of society who did not have access to "*any of the new communications tools*", on 23rd September 2001, the Scottish Executive published its strategy to "*achieve digital inclusion*"[111]. It aimed to present a range of initiatives to improve awareness, basic ICT literacy and public access, and also involve local communities. Two initiatives were the Public Internet Access Initiative (PIAI) and the Digital Communities Initiative – discussed in the next two sections.

Public Internet Access Initiative (PIAI)

During the summer of 2002, the Public Internet Access Initiative was launched. It aims were presented as:
- "*improving public access to the Web*"
- "*encouraging more people – including those in disadvantaged communities, and disadvantaged individuals such as some older people – to access the web*"
- *improving the IT literacy rate*"   Scottish Executive (2004a)[112]

The goal was to enable everyone in Scotland to access a "*publicly available internet connection*", within one mile in urban areas and five miles in rural areas. By the summer of 2003, approximately 1,300 interconnected PCs had been set up in community centres, public buildings and private businesses (e.g. hotels, garages and pubs). In May, 2004, a review of this initiative was published (Scottish Executive, 2004a). It concluded that it has:

"*been particularly effective in attracting unemployed users and have had a greater impact on disadvantaged areas. However they have not succeeded in attracting older people to any great extent, and are not a particularly effective way of getting new people to use the internet*".

---

[110] Enterprise and Lifelong Learning Committee (2001) "*6th Report, 2001, Report on the Inquiry into the Impact of the New Economy*", SP Paper 355 ,Session 1 (2001) Final Report, Volume 1: Report, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-01/elr01-06-v01-01.htm, accessed 18th December 2008] Volume 2: Evidence, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-01/elr01-06-v02-01.htm, accessed 18th December 2008]

[111] Scottish Executive (2001a) "*Digital Inclusion strategy :Connecting Scotland's People*", 25th September 2001, Edinburgh: Scottish Executive [http://cci.scot.nhs.uk/Resource/Doc/158435/0042935.pdf, accessed 18th December 2008]

[112] Scottish Executive (2004b) "*Evaluation of the Public Internet Access Point Initiative*", Report for the Scottish Executive, 4th August 2004 Glasgow: Hall Aitken [www.scotland.gov.uk/Resource/Doc/17002/0024844.pdf, accessed 18th December 2008]

However, it was observed that "*many venues had crammed the PCs into small corners or back-rooms making the atmosphere off-putting*" and that, whilst "*in the majority of cases staff were friendly and helpful*"*,* there were many cases where staff "*were unable to provide effective assistance*". Also access to "*inappropriate material*" had been commonly reported. Technical support and connection speed, particularly in remote rural areas, were problems.

Digital Communities

Another Initiative was set up "*to create pilot Digital Communities in two disadvantaged areas of Scotland one urban and one rural*" (Scottish Executive, 2004b[113]). Disadvantage could arise due to lack of telecommunications infrastructure, poverty, lack of awareness and lack of skills. Those affected could include the low paid or unemployed, the disabled and those with poor numeracy / literacy skills[114]. It recognised that the Internet could have a significant impact upon those in remote / rural areas, suggesting a stronger need for it in such areas.

Following a competition, "*the areas chosen in March 2002 were Mull and 12 other north Argyll islands and Bellsmyre in West Dunbartonshire*" (Scottish Executive, 2004b). Internet connected PCs were provided to all households in the two locations, irrespective of whether they owned, or were planning to buy, their own PC.

The review of this Initiative was published on 4th August 2004 (Scottish Executive, 2004b). The key findings of the review are summarised in Table 4. It revealed that, whilst it encouraged new uptake of ICT, there was:

> "*still a very significant group of people that do not take up the opportunity of ICT even if free access is provided*".

It recommended a community perspective for "*targeted intervention*s" tailored to specific needs and based upon "*appropriate outcome objectives*" and that "*the focus of future digital inclusion interventions should be more on*", but not exclusively, "*'intangibles' (such as training and education and community portals) rather than 'tangibles' (such as computers)*"[115].

---

[113] Scottish Executive (2004c) "*Digital Communities Final Report*", Report for the Scottish Executive, 4th August 2004, Edinburgh: DTZ Pieda Consulting
[www.scotland.gov.uk/Publications/2004/08/19735/40913, accessed 7th January 2007]

[114] No mention of the elderly

[115] A number of issues are raised. Although there was a level of satisfaction with the training provided, some perceived training not to be available and others were dissatisfied (interviews with islanders on Mull, 2007). This raises questions about the training; how it has been perceived by both providers and recipients, how it is promoted and whether the right learning experience has been generated for the learners. Whilst the community portal was deemed useful for local information, the statistics on repeat visits is less convincing – how frequently did the regular users visit the site? Likewise the different usage of the online discussion forum suggests that the provision of alternative forums and the characteristics of users may be important considerations regarding use. The lack of interest by some in using the PC and the Internet was interpreted as implying that the project "*has not been entirely successful*", raising the question of why everyone should want to use a PC. The predominant use of PCs was access to the Internet, followed by e-mails (N Argyll) and games (Bellsmyre). The claims of "*strong advantages in having a home computer*" and "*usefulness or importance of internet access*" makes the assumption that everyone has a use for a PC / Internet, just as everyone has a use for a TV or radio. It ignores the idiosyncratic nature of people, in particular, non-users (e.g. those who do not or rarely watch TV). It suggests a view that it is in everyone's interest to use the Internet, because it is good for them. Nevertheless, this Initiative appears to bear out the view that not everyone is interested in new electronic technologies, despite the rhetoric about their benefits.

Issues	North Argyll	Bellsmyre
Location type	Rural, relatively inaccessible	Urban, deprived
Reason for involvement in project	e-mail, information	Learning, child use
Infrastructure issues	Shared telephone line	No active landline (10%)
Problems with use	The main problem (34% & 39% respectively) was crashes / freezes, followed by access issues (inability to connect (both 24%) and slow connection (26%, 24%))	
Support	Locally based support (particularly family and friends (48% & 43% respectively) appeared to provide better support than help-lines	
Training	Training tended to focus upon basic use of the PC, e.g. Windows, Word, e-mail, Internet. About 33% of respondents claimed no training was provided. Of those recalling the offer of training opportunities, around 25% took this offer up. Of those not taking these up, 47% and 24% respectively did not need it, around 20% respectively were either too busy or had other commitments, whilst timing was unsuitable for 5% and 19% respectively Better training was an issue for less than a third of all respondents. Learning desires included more sophisticated use of applications.	
	28% of those dissatisfied with training was due to the delay in its delivery after receiving the PC with 16% due to basic nature of training	64% of those dissatisfied with training was due to it not being offered
Community portal	www.argyll.com [unavailable 7th January 2007]	www.bellsmyre.com [Live and accessed 7th January 2007]
	Respondents who have visited their community website: (44% &67% respectively, with 38% 49% visiting the site more than 10 times. Around 50-55% used the site for local information / news. The online discussion forum was used by 4% and 36% .	
ICT practices	Those not using their PC, 12 months after installation were 8% & 12% respectively of all respondents. Around 20% of initial non-users had not used their PC after 12 months. Internet access was the dominant use of the PC with e-mails being next more important in N. Argyll and games in Bellsmyre (has a higher level of under 16s and unemployed). New users appeared to use their PC less and for more basic tasks. Online non-grocery purchasing and banking was noticeably higher for N. Argyll than for Bellsmyre.	
Changed attitudes to ICT	62% of new users would find removal of their PC either very or fairly inconvenient in contrast to 85% of previous users. Likewise 59% of new users would find removal of Internet access either very or fairly inconvenient in contrast to 83% of previous users	65% of new users would find removal of their PC either very or fairly inconvenient in contrast to 76% of previous users. Likewise 62% of new users would find removal of Internet access either very or fairly inconvenient in contrast to 74% of previous users
Conclusion regarding PC use	*"This suggests that the project has not been entirely successful in changing participants' attitudes to ICT in so far as at least some respondents do not appear to see particularly strong advantages in having a home computer"*	
Conclusion regarding Internet use	*"suggesting that the project has not been entirely successful in convincing all participants of the usefulness or importance of internet access"*	
Main gains by users from the project	Learnt about computers
Ability to contact people	
Nothing / not much / haven't used it	18%	13%
After the project	The transfer from a free Internet service to a paid service was a potential deterrent to continued use of the Internet by new users (22% & 10% respectively)	

Table 4   A summary of the 2004 Review's key findings for both areas of the Digital Communities Initiative (Scottish Executive, 2004b).

Economic Development in Scotland

In September, 2004 "**The Framework for Economic Development in Scotland**" was published[117]. Whilst retaining the vision and objectives of the original 2000 framework, this updated the original framework to accommodate global developments, emergent issues and priorities. It emphasised the need for flexibility and environmental friendliness. The key priorities covered competencies, innovation, entrepreneurship and public sector effectiveness. Further, "*electronic infrastructure*" was named as a priority issue within this framework.

The economic significance of e-business is perhaps reflected in the commissioning by Scottish Enterprise of a report which was published in September, 2004 on the "**Economic Value of e-Business in Scotland**"[118]. Its findings were based upon an analysis of existing studies including the Scottish e-Business Survey 2003. Its conclusions included the finding that "*generally, businesses using e-business processes have a higher turnover than those that do not*". Further, "*as the number of e-business applications used increases, there is an increase in turnover per employee*". They suggested that the "*policy implications*" point "*towards encouraging businesses to make more of internet access rather than assuming that access itself contributes to productivity*".

Infrastructural Development – the emergence Project 'Broadband Reach'

One aspect of the Digital Divide which had been recognised from the outset was the availability of a quality telecommunications infrastructure. A strategy for the roll-out of broadband throughout Scotland had been presented in "**Connecting Scotland: Our Broadband Future**"[119]. Whilst intervention was not viewed as important then, an update of this strategy on 2nd December 2002 ("**Connecting Scotland: Our Broadband Future – making it happen**"[120]) revealed that it was now appropriate and outlined future actions. One action included the upgrading of telephone exchanges in remote areas to make them "*ADSL enabled*", which if "*left to the market*" would have a "*very lengthy*" implementation timescale. It also recognised the need to seek alternative "*delivery mechanisms in rural areas*" due to their particular access issues. A simultaneous press release announced that "*by the end of 2003 at least 70% of the population have access to ADSL broadband*"[121].

Concern about the remaining 30% of the population surfaced during a debate on the 'New Economy' in a meeting of the Enterprise and Lifelong Learning Committee (5th February 2003)[122]. The Committee (Mr Ingram) highlighted the danger of the digital divide being exacerbated by 30% of the population not having access to broadband. The reply by the Minister for Enterprise, Transport and Lifelong Learning (Iain Gray) was that "*we are pursuing pilots and trials of alternative technologies that will perhaps give us that final reach, such as satellite connection and power line connection*".

On 20th January 2004 there was a call for evidence to inquire about the roll-out of broadband in Scotland. The Enterprise and Culture Committee published its report[123] on 20th May 2004. It revealed that

---

[117] Scottish Executive (2004a) "*Framework for Economic Development in Scotland*", 2nd September 2004, SE/2004/112, Edinburgh: Scottish Executive
[www.scotland.gov.uk/Resource/Doc/46932/0028823.pdf, accessed 18th December 2008]

[118] Scottish Enterprise (2004) "*Economic Value of E-Business in Scotland*", September 2004, SEIARN0112, Report for the Scottish Enterprise , Edinburgh: SQW Ltd.

[119] ref. footnote 97, Scottish Enterprise (2000a)

[120] Scottish Executive (2002b) "*Connecting Scotland our broadband future: Making it Happen*", 2nd December 2002, Edinburgh: Scottish Executive
[www.scotland.gov.uk/Resource/Doc/46932/0028823.pdf, accessed 18th December 2008]

[121] Scottish Executive (2002c) "Plans to accelerate reach of Broadband", 2nd December 2002, Edinburgh: Scottish Executive [www.scotland.gov.uk/News/Releases/2002/12/2700, accessed 18th December 2008]

[122] Col 3092-3, www.scottish.parliament.uk/business/committees/historic/x-enterprise/or-03/el03-0402.htm#Col3064, accessed 18th December 2008]

[123] Enterprise and Culture Committee (2004) "*4th Report, 2004 (Session 2) Report on Broadband in Scotland*", SP Paper 158 Session 2 (2004) Volume 1: Report, [www.scottish.parliament.uk/business/committees/enterprise/reports-04/elr04-04-vol01-01.htm, accessed 18th December 2008] Volume 2: Evidence,

broadband coverage was around 80%, to rise to around 95% by mid-2005, but that there was no target date to complete the coverage, this including remote areas. Furthermore, despite broadband availability, there was a lack of uptake. It recommended the "*re-orientation*" of the broadband strategy to:

- *Close the gap for the remaining 5% or so of the population who do not have broadband coverage*
- *Focus on encouraging the take-up of broadband*
- *Take a strategic lead on broadband to `future-proof' its strategy*
- *Act as an advocate for broadband in a UK context*
- *Measure the impact of broadband.*

On 25th April 2005, the Scottish Executive announced that "*every community in Scotland will have access to affordable broadband services by the end of 2005*"[124], under the "Broadband for Scotland's Rural and Remote Areas" initiative. However, a report[125] on 'broadband reach' commissioned by the Scottish Executive and published on 21st December 2006, revealed that around 1% of telephone lines could not be upgraded to handle broadband, with 47 specific location being identified throughout Scotland. On the same day, the Scottish Executive announced that:

> "*A further £5 million is to be made available to extend the roll-out of broadband services to make access in Scotland as widespread as possible… By implementing the largest UK broadband project of its kind with BT, we brought access to every Scottish community and at least 99% of households*"[126].

This was followed by a Scottish Government[127] announcement on 5th October 2007:

> "*The Scottish Government is pleased to announce that it will take forward a programme of work, where it will try to deliver an affordable, sustainable, broadband service to those households and businesses who are currently unable to access a Broadband service (Out of Reach), and who have notified us of their demand*" (Scottish Government, 2007[128]).

The contract to deliver this service using "*a mix of technologies... including satellite and wireless*" was awarded to Avanti Caledonian Broadband Ltd in 2008, to be completed in May 2009[129], thereby creating the situation whereby "*every single eligible household and business should now benefit from affordable broadband access*".

Being Online Becomes Mainstream

During the 1990s and first half of 2000s, priority was given to encourage the uptake of online technologies and practices by both individuals and organisations. The view appears to have been held that online technologies and practices are an integral feature for the economic success of Scotland. However, 2004-5 is perhaps a transition point. Whilst views about the benefits may not have diminished, several events suggest that online technologies and practices are viewed as having become embedded in everyday life and commonplace. Indeed, Scottish Enterprise's "Operating Plan 2005–2008" emphasised the "*Need for wider adoption of e-business as a mainstream business tool*". No longer is there a need to distinguish e-business from any other related activity. Further, in March, 2005, Scottish Enterprise ceased funding its

---

[www.scottish.parliament.uk/business/committees/enterprise/reports-04/elr04-04-vol02-01.htm, accessed 18th December 2008]

[124] Scottish Executive (2005) "*Broadband for all*", press release, 25th April 2005, [www.scotland.gov.uk/News/Releases/2005/04/25085656, accessed 18th December 2008]

[125] Mason (2006) "*A Study Into Broadband Reach in Scotland*", 21st December 2006, Report for Scottish Executive, Edinburgh: Mason Communications Limited [http://194.247.95.102/Resource/Doc/161597/0043878.pdf, accessed 18th December 2008]

[126] Scottish Executive (2006) "*Broadband roll out continues*", press release, 21st December 2006, [www.scotland.gov.uk/News/Releases/2006/12/21103201, accessed 18th December 2008]

[127] The Scottish Executive was renamed the Scottish Government on the 3rd October 2007 , with "*immediate effect*" [www.scotland.gov.uk/News/Releases/2007/09/31160110, accessed 15th December 2008]

[128] Scottish Government website "Latest News on Broadband Reach Project" [www.scotland.gov.uk/Topics/People/BroadbandforScotland/SEBroadbandInitiatives/LatestNewsAnnouncements, accessed 2nd May 2008]

[129] Scottish Executive (2008) "*Further broadband extension*", press release, 26th June 2008, [www.scotland.gov.uk/News/Releases/2008/06/26132321, accessed 18th December 2008]

initiatives which provided specialist e-business support for businesses, instead this support was integrated within the mainstream of business advice.

Nevertheless, although it appears to have attained mainstream status, e-business has not been forgotten, particularly in the context of small businesses.

In 2006, two reports were published on the future of e-business. The first, "**Future Trends for e-Business to 2011**"[132], was published in January, 2006. It identified seven key business themes:

1. **Richer customer experience**: *'customers will be more demanding'*
2. **New working practices**: suggestions included greater information exchange and more flexible practices
3. **Supply chain efficiencies**: integrated real time systems for orders, invoicing and payments
4. **Management of information and knowledge**:
5. **Security**: suggestions included improved security, better disaster recovery, increased network monitoring and control
6. **Mobility and wireless communications**: suggestions included widespread connectivity and increased use for tracking, but undermined by high cots, incompatible technologies and security weaknesses
7. **Technological developments**: 'e*volution, not revolution'*.

It stated that constraints to uptake primarily affect SMEs and relate to lack of understanding / vision / IT skills, implementation difficulties, flawed existing practices and lack of resources. Also raised was the inability of vendors to effectively engage with SMEs "*to deliver reliable and cost effective IT solutions and support*". However, it highlighted as the greatest risk:

> "*Scottish businesses will believe that things can continue as they always have been – that there is no need to enrich the customer experience; that they can continue indefinitely to compete with the supply chain models and ways of working they have always used; and that ICT is a problematic cost, rather than a strategic change-enabler*"

The issue raised about vendors is perhaps significant and does reveal the dilemma of how to select the most appropriate technology for use, with cost being a critical issue for relatively low margin businesses – can the vendor be trusted to give the 'best' solution.

The second report "**Mobile & wireless technologies: A business case for Scottish SMEs**"[133] attempted to identify the important mobile – wireless technologies and the barriers to their adoption in the work-place. It distinguished between carriers (e.g. 3G/GRPS) receivers (e.g. PDAs), transmitters (e.g. RFID), mobile voice technologies (e.g. VoIP) and protocols (e.g. Bluetooth). Key issues included lack of understanding, "*inertia to change*", perceived lack of business benefit, security concerns, lack of trust, non-interoperability and inappropriate solutions on offer. The report concluded:

> "*that technology is not the key issue. Rather, it is about the embracing of effective mobile working and the ways that Scottish companies can best achieve this. The mobile and wireless devices and services are tools, no more. Key benefits are reported to be increased productivity, the ability to work anywhere and reduced downtime and costs. However, the report also concludes that while the benefits of adopting mobile working practices can be demonstrated, there are considerable barriers which will have to be overcome to entice Scottish SMEs to take the plunge. Despite this, the key drivers are strong, not least because they can be linked to some of the growing business characteristics identified by Scottish Enterprise as key for companies who are likely to succeed. The report appendices include a series of case studies and some practical recommendations for Scottish Enterprise which would enable it to assist companies in incorporating mobile solutions*"

Again the underlying message is that mobile & wireless technologies are good for business and therefore businesses should be adopting them. The task is to convince users of the benefits. It appears to ignore the applicability of solutions offered.

---

[132] Scottish Enterprise (2006) "Future Trends for E-Business to 2011", Final Report, January 2006, Edinburgh: Giraffe Consulting [www.scottish-enterprise.com/publications/future_trends_for_e-business_to_2011.pdf, accessed 16th December 2008]

[133] Scottish Enterprise (2006) "Mobile & wireless technologies: a business case for Scottish SMEs", Report for Scottish Enterprise, Glasgow: Targeting Innovation Limited [www.scottish-enterprise.com/publications/e-business-mobile-wireless-research-report.pdf, accessed 16th December 2008]

OBSERVATIONS AND SUMMATION

The aim of this paper has been to map out what appear to be the main developments in the institutional support by the EU, UK and Scottish institutions for the uptake of online technologies since the early 1990s and reveal the changing symbolic value of online technologies over time. This symbolism manifests in the claims of statements and the variety of initiatives, legislation and reviews.

The new digital technologies have signalled the 'New Age' of the 'Information Society'. These new technologies 'offer' opportunities for all aspects of live, whether social, economic or political. For economic regions, they offer international competitive advantage. It is therefore imperative that these new digital technologies are taken-up and exploited. It is evident that within the EU, institutions have taken the initiative and developed policies and programmes to support the exploitation of the opportunities offered by these new technologies. They address three issues. The first is to create awareness of these new technologies to encourage their uptake. The second is to create the conditions to support their uptake. This involves ensuring an adequate technical infrastructure (e.g. telecommunications network) and an effective regulatory infrastructure (e.g. legal). The third is to provide support (e.g. financial, advisory) through engagement with adopters.

One noticeable feature is the lag between the emergence of the new technologies and the creation of legislation, to regulate and protect, and institutional Policies and Action Plans, to guide or support uptake. Nevertheless, this does occur despite the uncertainty of how these technologies are to be used. The legislation passed at EU level has cascaded into UK and Scottish legislation. Surveys have allowed uptake to be monitored and provide tables of performance. The ineffectiveness of specific national Policies manifested in low levels of uptake by SMEs. The institutional response was to benchmark best institutional practices. Progress is reviewed by the respective institutions and recommendations are made.

An important aspect of uptake is the provision of an adequate technical infrastructure. Within Scotland the aim has been to ensure that there is comprehensive Broadband coverage, which has focused attention upon the telecommunications infrastructure and its development. However, in keeping with other aspects of promoting the uptake of online technologies, there is reluctance for institutional intervention, with the 'market' expected to function in a manner that encourages uptake. However, this has been undermined by limited availability of online technologies, which are supplied within commercial constraints. This market failure is exemplified by the roll-out of broadband in Scotland. The institutional response was financial support to develop less commercially attractive locations, as well as the adoption of a public sector strategy for the procurement of online services to improve the commercial attractiveness of lower demand localities.

At the outset, this new technology is clearly not mainstream. However it is of such importance that it has been allocated resources in terms of manpower and budget. Activities to promote and encourage uptake are embedded institutionally. It is accorded a status position within the UK Government's Cabinet Office as 'The Office of the e-Envoy'. Within Scotland, Scottish Enterprise funded e-business advisors. However, this is short-lived. The Office of the e-Envoy, formed in 1999 is dissolved in 2004. Scottish Enterprise funding is withdrawn in 2005. It might be assumed that this structure has served its purpose. Online technologies had 'come of age' and become mainstream. But has it?

A Digital Divide has emerged between the 'haves and have-nots'. However, this distinction has become blurred with the quasi-ubiquitous uptake due to the pervasive nature of ICTs as they become embedded as commoditised every-day items. This is distinct from 'sophisticated' uptake which results from progression up the ladder of evolving development and use. 'Sophisticated' uptake suggests innovative use in contrast to the 'unthinking' passive use of the commodity. The divide manifests in households, despite both an educational system and a cultural system whereby the youth are exposed and become familiar with the latest technologies, with the contagion effect infusing the household with understanding and practice. Innovative initiatives to overcome this have included the Scottish Public Internet Access Initiative and its counterpart the Digital Communities Initiative. Nevertheless, it is clear that there is a hard core of non-adopters.

Economically, the divide also appears among SMEs. Businesses have been a primary target for institutional efforts. Despite implorations and institutional initiatives, surveys reveal that, in contrast to larger organisations, many SMEs do not engage or have limited engagement with online technologies.

The reasons for this, which include relevance, cost and understanding/skill, are examined in another publication. However, the institutional view appears to be that the failure to take up these new technologies is a weakness of those not adopting.

One remedy is to improve awareness of the benefits and train people so that they understand the technology and have the skill to embrace it. However, this presents the challenge of how to deliver the requisite training and generate a learning experience that allows the benefits of these new technologies to be fully appreciated and exploited. Also to be considered is the appropriateness of these new technologies to specific applications. There is evidence to suggest that they are becoming more 'friendly' for use in smaller businesses. Competency, cost and relevance are issues affecting SME uptake.

Another remedy is to enrol the public sector as an early adopter (e.g. eGovernment). Whilst public sector organisations can encourage uptake, they may enforce uptake by requiring their partners to take up online technologies.

Summation

The development of institutional support for the uptake of online technologies within the EU, UK and Scotland has been mapped out for the period spanning the early 1990s up to around 2005. This period is perhaps the transition period for online technologies from their emergence to them becoming mainstream within these societies. The underlying storyline of this paper oversimplifies the reality of institutional support to encourage the uptake of online technologies. The dependence upon documented sources does not take into consideration the views of those involved. Thus, it omits the colourful accounts that may reveal the tensions and opposition to the events / statements on record.

Nevertheless, this paper serves its purpose to provide an insight into the "big picture". It reveals the perception that these new technologies are important and thus their uptake needs to be encouraged. Indeed, deterministic claims about the benefits of these new technologies, has translated into a series of initiatives to promote uptake as well as legislation to regulate against misuse. Progress has been monitored within the EU by annual surveys. In recognition of inequitable uptake both socially and geographically (the 'digital divide'), additional initiatives were pursued. Perhaps most significant within the UK, was the formation in 1999 of "The Office of the e-Envoy" as part of the UK Government's Cabinet Office, symbolising the status accorded these new technologies. However, its dissolution in 2004 perhaps symbolises the view that these new technologies had become mainstream. Within Scotland, separate e-business support was absorbed in 2005 within the mainstream of business advice. Online technologies had 'come of age'.

ACRONYMS

CEC: Commission of the European Communities
DCIN: Digital Challenge and Inclusion Network
DTI: Department of Trade and Industry
ICT: information and communication technologies
PC: personal computer
SME: small & medium sized enterprise
UFI: University for Industry

ACKNOWLEDGEMENTS

REFERENCES

Arthur, C (1994) "The future of work: it's all in the mind - In a world where offices cease to exist and job security has gone the way of lamplighters, your most precious asset will be your intelligence", New Scientist, 16th April 1994 [www.newscientist.com/article/mg14219213.500--the-future-of-work-its-all-in-the-mind--in-a-world-where-offices-cease-to-exist-and-job-security-has-gone-the-way-of-lamplighters-your-most-precious-asset-will-be-your-intelligence--.html?full=true, accessed 14th December 2008]

Arthur, C (1995a) "And the Net total is …", New Scientist, 13th May 1995 [www.newscientist.com/article/mg14619774.200-and-the-net-total-is-.html, accessed 14th December 2008]

Arthur, C (1995b) "Internet anarchy in the UK", New Scientist, 25th February 1995 [www.newscientist.com/article/mg14519660.200-internet-anarchy-in-the-uk.html, accessed 14th December 2008]

Arthur, C (1995c) "Identity crisis on the Internet", New Scientist, 11th March 1995 [www.newscientist.com/article/mg14519682.500-identity-crisis-on-the-internet.html?full=true, accessed 14th December 2008]

Bangemann, M (1994) "Recommendations to the European Council: Europe and the Global Information Society", [http://ec.europa.eu/idabc/servlets/Doc?id=18174, , accessed 14th December 2008]

Barbrook, R (1995) "Electronic power to the people", New Scientist, 29th July 1995 [www.newscientist.com/article/mg14719885.500-electronic-power-to-the-people.html, accessed 14th December 2008]

Booz Allen Hamilton (2002) "International e-Economy Benchmarking The World's Most Effective Policies For The e-Economy", 19th November 2002, London: Booz Allen Hamilton

Cabinet Office (1999) "e-commerce@its.best.uk", September 1999, A Performance and Innovation Unit, Strategy Unit, Cabinet Office, London: Cabinet Office

Cabinet Office (2000) "Regulating Cyberspace: better regulation for e-commerce", December 2000, Better Regulation Task Force, London: Cabinet Office

Cabinet Office (2002) "Electronic Networks: Challenges for the Next Decade", Strategy Unit, Cabinet Office, London: Cabinet Office

Cabinet Office (2005) "Connecting the UK: the Digital Strategy", March 2005, Strategy Unit, Cabinet Office, London: Cabinet Office [www.berr.gov.uk/files/file13434.pdf, accessed 18th December 2008]

Commission of the European Communities (1993) "On growth, competitiveness, and employment: The challenges and ways forward into the 21st century", 5th December 1993, Commission of the European Communities Brussels, COM(93) 700 final, Brussels,

Commission of the European Communities (1994) "Europe's Way to the Information Society. An Action Plan", 19th July 1994, Commission of the European Communities Brussels, 16COM (94) 347 final, [http://ec.europa.eu/archives/ISPO/docs/htmlgenerated/i_COM(94)347final.html, accessed 14th December 2008]

Commission of the European Communities (1997a) "Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: a European Initiative in electronic commerce", Commission of the European Communities Brussels, 16.04.1997COM (97) 157 final [ftp://ftp.cordis.europa.eu/pub/esprit/docs/ecomcom.pdf, accessed 25th August 2005]

Commission of the European Communities (1997b) "Directive 97/7/EC ofThe European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts" (OJ L 144, 4.6.1997, p19) Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1997L0007:20071225:EN:PDF, accessed 14th December 2008]

Commission of the European Communities (1998a) "The Need for Strengthened International Coordination", Commission of the European Communities Brussels, COM (98) 50, 4th Feb 1998

Commission of the European Communities (1998b) "Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations", 22nd June 1998, Directive 98/34/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:204:0037:0048:EN:PDF, accessed 18th December 2008]

Commission of the European Communities (1998c) "Directive 98/48/EC the European Parliament and of the Council of 20 July 1998 amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations", 20th July 1998, Directive 98/48/EC, Brussels: European Parliament [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:217:0018:0026:EN:PDF, accessed 18th December 2008]

Commission of the European Communities (2001a) "Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: Helping SMEs to "Go Digital" , Commission of the European Communities Brussels, 13.3.2001COM(2001)136 final [http://europa.eu.int/information_society/topics/ebusiness/godigital/docs/background/en.pdf accessed 25th August 2005]

Commission of the European Communities (2001b) "Communication from the Commission to the Council and the European Parliament - The impact of the E-economy on European enterprises: economic analysis and policy implications", Commission of the European Communities: Brussels 29.11.2001 COM(2001) 711 final [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2001:0711:FIN:EN:PDF, accessed 14th December 2008]

Commission of the European Communities (2002a) "EIGHTH REPORT FROM THE COMMISSION on the Implementation of the Telecommunications Regulatory Package: European telecoms regulation and markets 2002", Commission of the European Communities Brussels, 3.12.2002 COM(2002) 695 final [http://ec.europa.eu/information_society/topics/telecoms/implementation/annual_report/8threport/index_en.htm, accessed 14th December 2008]

Commission of the European Communities (2002b) "Results of the Open Consultation on the E-Economy", [http://ec.europa.eu/enterprise/ict/policy/cons-synth.pdf, accessed 31st August 2005]

Commission of the European Communities (2002c) "Synthesis Report - Benchmarking National and Regional e-Business Policies"   Enterprise DG, European Commission, 7.2.2002 [http://ec.europa.eu/enterprise/ict/policy/doc/mb-2002-02-07-fsrv1.pdf, accessed 25th August 2005]

Commission of the European Communities (2002d) "Final benchmarking report on national and regional policies in support of e-business for SMEs", E-business Policy Group, 28.6.2002 [http://ec.europa.eu/enterprise/ict/policy/benchmarking/final-report.pdf, accessed 25th August 2005]

Commission of the European Communities (2002e) "eEurope 2005 Action Plan", Commission of the European Communities: Brussels, 28.5.2002 COM(2002) 263 final [http://ec.europa.eu/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf, accessed 14th December 2008]

Commission of the European Communities (2002f) "ICT and e-Business in the Tourist Sector", Sector Report, No. 13 October 2002, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2002_I.pdf, accessed 14th December 2008]

Commission of the European Communities (2002g) "ICT and e-Business in the Tourist Sector", Newsletter, No. 13 October 2002, Enterprise Directorate General, European Commission

Commission of the European Communities (2003a) "Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: report on the implementation of the EU electronic communications regulatory package", Commission of the European Communities: Brussels 19.11.2003COM(2003) 715 final [http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/9threport/com20030715en.pdf, accessed 14th December 2008]

Commission of the European Communities (2003b) "Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: adapting e-business policies in a changing environment: the lessons of the Go Digital initiative and the challenges ahead", Commission of the European Communities: Brussels, 27.03.2003 COM(2003) 48 final [http://ec.europa.eu/enterprise/ict/policy/doc/com_2003_148_en.pdf, accessed 19th August 2006]

Commission of the European Communities (2003c) "The European e-Business Report 2002/2003: a portrait of e-business in 15 sectors of the EU economy, 1st Synthesis Report of the e-Business W@tch", March 2003, Enterprise Directorate General, Commission of the European Communities:

Brussels [www.ebusiness-watch.org/key_reports/documents/EBR05.pdf, accessed 14th December 2008]

Commission of the European Communities (2003d) "The European e-Business Report 2003 edition: a portrait of e-business in 15 sectors of the EU economy, 2nd synthesis report of the e-business Watch", July 2003. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR03.pdf, accessed 14th December 2008]

Commission of the European Communities (2003e) "ICT and e-Business in the Tourist Sector", Sector Report, No. 13 II July 2003, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2003_II.pdf, accessed 14th December 2008]

Commission Of The European Communities (2004a) "The Go Digital Awareness Campaign 2001-2003: the main lessons to be learnt", Commission Of The European Communities [http://www.go-online.gr/files/document/23-01-2004/Awareness%20Campaign%20Report%20v2%20070104.pdf, accessed 14th December 2008]

Commission of the European Communities (2004b) "Legal Barriers in e-business: the results of an open consultation of enterprises", Commission of the European Communities: Brussels, 26.4.2004 SEC(2004) 498 Working Paper [http://ec.europa.eu/enterprise/ict/policy/doc/legal_barriers_sec_2004_498.pdf, accessed 14th December 2008]

Commission of the European Communities (2004c) "The European e-Business Report 2004 edition: a portrait of e-business in 10 sectors of the EU economy, 3r synthesis report of the e-business Watch", September 2004. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR04.pdf, accessed 14th December 2008]

Commission of the European Communities (2004d) "Electronic Business in Tourism: The quantitative picture - Diffusion of ICT and e-business in 2003/04", Sector Report, No. 7-I May 2004, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2004_I.pdf, accessed 14th December 2008]

Commission of the European Communities (2004e) "Electronic Business in Tourism: Key issues, case studies, conclusions", Sector Report, No. 7 II August 2004, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2004_II.pdf, accessed 14th December 2008]

Commission of the European Communities (2005a) "Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions: i2010 – A European Information Society for growth and employment", Commission of the European Communities: Brussels, 1.6.2005 COM(2005) 229 final [http://ec.europa.eu/information_society/eeurope/i2010/docs/communications/com_229_i2010_310505_fv_en.pdf, accessed 14th August 2006]

Commission of the European Communities (2005b) "The European e-Business Report 2005 edition: a portrait of e-business in 10 sectors of the EU economy, 4t synthesis report of the e-business Watch", November 2005. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR05.pdf, accessed 14th December 2008]

Commission of the European Communities (2005c) "ICT and Electronic Business in the Tourism Industry ICT adoption and e-business activity in 2005", Sector Report, No. 9, September 2005, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2005.pdf, accessed 14th December 2008]

Commission of the European Communities (2007) "ICT and e-Business in the Tourism Industry ICT adoption and e-business activity in 2006", Sector Report, No. 8/2006, Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/studies/sectors/tourism/documents/Tourism_2006.pdf, accessed 14th December 2008]

Commission of the European Communities (2007) "The European e-Business Report 2006/07 edition: a portrait of e-business in 10 sectors of the EU economy, 5th synthesis Report of the e-Business W@tch", January 2007. Enterprise Directorate General, Commission of the European Communities: Brussels [www.ebusiness-watch.org/key_reports/documents/EBR06.pdf, accessed 14th December 2008]

Crown (1981) "British Telecommunications Act 1981", London: HMSO

Crown (1984) "Telecommunications Act 1984", London: HMSO

Crown (1995) "Disability Discrimination Act 1995", London: HMSO Disability Discrimination Act 1995

Crown (1998a) "Data Protection Act 1998", London: HMSO

Crown (1998b) "Statutory Instrument 2000 No. 2699 (The Telecommunications (Lawful Business Practice) (Interception of Communications) Regulations 2000", London: HMSO

Crown (2000a) "Regulation of Investigatory Powers Act 2000", London: HMSO

Crown (2000b) "The Electronic Communication Act 2000", London: HMSO

Crown (2000c) "Regulation of Investigatory Powers Act 2000", London: HMSO

Crown (2000d) "Statutory Instrument 2000 No. 2334: The Consumer Protection (Distance Selling) Regulations 2000", London: HMSO

Crown (2002) "Electronic Commerce (EC Directive) Regulations 2002 (SI 2002/2013)", London: HMSO

Crown (2003) "Statutory Instrument 2003 No. 2426: The Privacy and Electronic Communications (EC Directive) Regulations 2003", London: HMSO

Daniele, R; Frew, A (2004) "From Intermediaries to Market-makers: An Analysis of the Evolution of E-mediaries", in Frew, A J (ed.) "Information and Communication Technologies in Tourism 2004", Proceedings of the International Conference in Cairo, Egypt, 2004. New York: Wien, Springer-Verlag, pp546-557

DCIN (2006) "UFI - UK online centres", press release, 11th Dec. 2006, [www.digitalchallenge.gov.uk/links-and-resources/uk-online-centres, accessed 9th January 2007]

DG Enterprise (2003) "Workshop on setting quantitative targets for e-business policies", organised by DG Enterprise and the Greek Presidency, Athens, 16th - 17th January 2003 [http://ec.europa.eu/enterprise/e-bsn/about/workshops/athens/200301/documents/pdf/main-results.pdf, accessed 14th December 2008]

Digital Scotland Task Force (2000) "Digital Scotland Task Force Report", May 2000, (May-00/TASK FORCE REPORT - FINAL v1.1.doc) [www.scotland.gov.uk/digitalscotland/report.htm, accessed 14th December 2008]

DTI (1991) "Competition and Choice: telecommunications policy for the 1990s", White Paper, March 1991 London: HMSO

DTI (1994) "*Creating the Superhighways of the Future: Developing Broadband Communications in the UK*", DTI, London: HMSO   [www.ifla.org/documents/infopol/europe/uk-csf.txt, accessed 14th February 2008]

DTI (1998a) "Our Competitive Future: building the knowledge driven economy", White Paper, Cm. 4176, DTI, London: HSMO

DTI (1998b) "Competitive advantage in the digital economy", DTI, London: HSMO

DTI (2000a) "Information Society Initiative Strategic Evaluation", DTI Assessment Unit, London: HSMO

DTI (2000b) "A New Future for Communications", White Paper, DTI, London: HSMO

eEurope GoDigital (2002) "Benchmarking National and Regional E Business Policies, Stage 1 - Synthesis report", June 2002 [www.technopolis-group.com/downloads/reports/298_Final_synthesis_report.doc, accessed 2nd May 2008]

Enterprise and Culture Committee (2004) "4th Report, 2004 (Session 2) Report on Broadband in Scotland", SP Paper 158 Session 2 (2004) Volume 1: Report, [www.scottish.parliament.uk/business/committees/enterprise/reports-04/elr04-04-vol01-01.htm, accessed 18th December 2008]   Volume 2: Evidence, [www.scottish.parliament.uk/business/committees/enterprise/reports-04/elr04-04-vol02-01.htm, accessed 18th December 2008]

Enterprise and Lifelong Learning Committee (2000) "1st Report, 2000, Inquiry into the Delivery of Local Economic Development Services in Scotland", SP Paper 109, Session 1 (2000) Final Report, Volume 1: Conclusions, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-00/elr00-01v1-01.htm, accessed 18th December 2008]   Volume 2: Evidence, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-00/elr00-01v2-01.htm, accessed 18th December 2008]

Enterprise and Lifelong Learning Committee (2001) "6th Report, 2001, Report on the Inquiry into the Impact of the New Economy", SP Paper 355, Session 1 (2001) Final Report, Volume 1: Report, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-01/elr01-06-v01-01.htm, accessed 18th December 2008] Volume 2: Evidence, [www.scottish.parliament.uk/business/committees/historic/x-enterprise/reports-01/elr01-06-v02-01.htm,   accessed 18th December 2008]

European Council (2000a) "eEurope 2002: an information society for all - Action Plan", prepared by the European Council and the European Commission for the Feira European Council 19th – 20th June 2000,

[http://ec.europa.eu/information_society/eeurope/2002/documents/archiv_eEurope2002/actionplan_en
.pdf, accessed 14th December 2008]

European Parliament and of the Council (2000b) "Directive on electronic commerce", 8th June 2000,
Directive 2000/31/EC , Brussels: European Parliament [http://eur-
lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th
December 2008]

European Parliament and of the Council (2002c) "Directive on a common regulatory framework for
electronic communications networks and services", 7th March 2002, Directive 2002/21/EC, Brussels:
European Parliament [http://eur-
lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th
December 2008]

European Parliament and of the Council (2002d) "Directive on competition in the markets for electronic
communications networks and services", 16th September 2002, Directive 2002/77/EC, Brussels:
European Parliament [http://eur-
lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML, accessed 14th
December 2008]

Harrington A (2002) "Scots on the web snare net profits" 23rd June 2002, Scotland on Sunday

Heung, V (2003) "Internet usage by International Travellers: Reasons and Barriers", International Journal
of Contemporary Hospitality Management, 15 (7) pp370-378

Holderness, M (1992) "Time to shelve the library?: Who needs libraries now that the world's information
is accessible through computer networks? Soon only historians may be interested in these shrines to
learning", New Scientist, 5th December 1992 [www.newscientist.com/article/mg13618504.500-time-
to-shelve-the-library-who-needs-libraries-now-thatthe-worlds-information-is-accessible-through-
computer-networks-soon-onlyhistorians-may-be-interested-in-these-shrines-to-learning-.html,
accessed 14th December 2008]

Joint Performance Team (2001) "Measuring Scotland's progress towards smart, successful Scotland", 23rd
August 2001, Consultation Paper, Joint Performance Team, Edinburgh: Scottish Executive
[http://cci.scot.nhs.uk/Resource/Doc/156401/0041969.pdf, accessed 18th December 2008]

Mason (2006) "A Study Into Broadband Reach in Scotland", 21st December 2006, Report for Scottish
Executive,   Edinburgh: Mason Communications Limited
[http://194.247.95.102/Resource/Doc/161597/0043878.pdf,   accessed 18th December 2008]

Morrison, A (2002) "Small Hospitality Business: Enduring or Endangered?" Journal of Hospitality and
Tourism Management, 9 (1) pp1-11.

Motluk, A (1997) "Click on the candidate - In the age of the Net there has to be a better way to run a
ballot than putting a cross on a slip of paper", New Scientist, 26th April 1997
[www.newscientist.com/article/mg15420794.700-click-on-the-candidate--in-the-age-of-the-net-there-
has-to-be-a-better-way-to-run-a-ballot-than-putting-a-cross-on-a-slip-of-paper-says-italison-
motlukit.html, accessed 14th December 2008]

Moyses, V (1995) "Age of the Internet?", New Scientist, 6th May 1995.
[www.newscientist.com/article/mg14619766.300-age-of-the-internet.html , accessed 14th December
2008]

Office of the e-Envoy (2000) "Monthly Report", 31st March 2000, Office of the e-Envoy, [www.e-
envoy.gov.uk, accessed 18th May 2004]

Parliamentary Office of Science and Technology (1995) "The UK National Information Infrastructure:
report summary", Parliamentary Office of Science and Technology
[www.parliament.uk/post/pn062.pdf, accessed 31st August 2006]

Scottish Enterprise (1998) "Moving into the Information Age: an international benchmarking study for
Scotland 1998", Glasgow: Scottish Enterprise Network

Scottish Enterprise (2000a) "Connecting Scotland - a Strategic Framework for e-commerce", June 2000,
Glasgow: Scottish Enterprise Network

Scottish Enterprise (2000b) "Connecting Scotland: a Report on Scotland's Telecommunication's
infrastructure", Glasgow: Scottish Enterprise Network

Scottish Enterprise (2001) "Connecting Scotland - An Update from Scottish Enterprise", November 2001,
Glasgow: Scottish Enterprise Network

Scottish Enterprise (2004) "Economic Value of E-Business in Scotland", September 2004, SEIARN0112,
Report for the Scottish Enterprise , Edinburgh: SQW Ltd.

Scottish Enterprise (2006) "Future Trends for E-Business to 2011", Final Report, January 2006,
Edinburgh: Giraffe Consulting [www.scottish-enterprise.com/publications/future_trends_for_e-
business_to_2011.pdf, accessed 16th December 2008]

Scottish Enterprise (2006) "Mobile & wireless technologies: a business case for Scottish SMEs", Report for Scottish Enterprise, Glasgow: Targeting Innovation Limited [www.scottish-enterprise.com/publications/e-business-mobile-wireless-research-report.pdf, accessed 16th December 2008]

Scottish Executive (2000a) "Digital Scotland - The way forward: The Scottish Executive's response to the report of the Digital Scotland Task Force", 14th September 2000, Edinburgh: Scottish Executive [www.scotland.gov.uk/deleted/digitalscotland/seresponse.pdf,   accessed 14th February 2009]

Scottish Executive (2000b) "The Way Forward: Framework for Economic Development in Scotland", SE/2000/58, 29th June 2000 , Edinburgh: Scottish Executive [www.scotland.gov.uk/Resource/Doc/158281/0042858.pdf, accessed 18th December 2008]

Scottish Executive (2000c) "A Smart, Successful Scotland: Ambitions for the Enterprise Networks", 30th January 2000, Edinburgh: Scottish Executive [www.scotland.gov.uk/Resource/Doc/158455/0042945.pdf, accessed 18th December 2008]

Scottish Executive (2001a) "Digital Inclusion strategy :Connecting Scotland's People", 25th September 2001, Edinburgh: Scottish Executive [http://cci.scot.nhs.uk/Resource/Doc/158435/0042935.pdf, accessed 18th December 2008]

Scottish Executive (2001b) "Connecting Scotland our broadband future", 2nd September 2001, Edinburgh: Scottish Executive [www.scotland.gov.uk/Publications/2004/06/19531/39266, accessed 18th December 2008]

Scottish Executive (2002a) "Connecting Scotland our broadband future: Making it Happen", 2nd December 2002, Edinburgh: Scottish Executive [www.scotland.gov.uk/Resource/Doc/46932/0028823.pdf, accessed 18th December 2008]

Scottish Executive (2002b) "Measuring Scotland's progress towards smart, successful Scotland", 18th March 2002, Edinburgh: Scottish Executive [http://cci.scot.nhs.uk/Resource/Doc/158351/0042893.pdf, accessed 18th December 2008]

Scottish Executive (2002c) "Plans to accelerate reach of Broadband", 2nd December 2002, Edinburgh: Scottish Executive [www.scotland.gov.uk/News/Releases/2002/12/2700, accessed 18th December 2008]

Scottish Executive (2003) "Measuring Scotland's progress towards smart, successful Scotland", 26th March 2003, Edinburgh: Scottish Executive [http://cci.scot.nhs.uk/Resource/Doc/47034/0025780.pdf, accessed 18th December 2008]

Scottish Executive (2004a) "Framework for Economic Development in Scotland", 2nd September 2004, SE/2004/112, Edinburgh: Scottish Executive [www.scotland.gov.uk/Resource/Doc/46932/0028823.pdf, accessed 18th December 2008]

Scottish Executive (2004b) "Evaluation of the Public Internet Access Point Initiative", Report for the Scottish Executive, 4th August 2004 Glasgow: Hall Aitken [www.scotland.gov.uk/Resource/Doc/17002/0024844.pdf, accessed 18th December 2008]

Scottish Executive (2004c) "Digital Communities Final Report", Report for the Scottish Executive, 4th August 2004, Edinburgh: DTZ Pieda Consulting [www.scotland.gov.uk/Publications/2004/08/19735/40913, accessed 7th January 2007]

Scottish Executive (2005) "Broadband for all", press release, 25th April 2005, [www.scotland.gov.uk/News/Releases/2005/04/25085656,   accessed 18th December 2008]

Scottish Executive (2006) "Broadband roll out continues", press release, 21st December 2006, [www.scotland.gov.uk/News/Releases/2006/12/21103201, accessed 18th December 2008]

Scottish Executive (2008) "Further broadband extension", press release, 26th June 2008, [www.scotland.gov.uk/News/Releases/2008/06/26132321,   accessed 18th December 2008]

Scottish Government website "Latest News on Broadband Reach Project" [www.scotland.gov.uk/Topics/People/BroadbandforScotland/SEBroadbandInitiatives/LatestNewsAnnouncements,   accessed 2nd May 2008]

Scottish Parliament (1999) "The Economy", 24th June 1999, Official Report, 1 (12) col 819-846, Edinburgh: Scottish Parliament

Scottish Parliament (2003) "The New Economy- Update", SPICe Briefing 03/08, 29th January 2003 Edinburgh: Scottish Parliament [www.scottish.parliament.uk/business/committees/historic/x-enterprise/papers-03/elp03-04.pdf, accessed 18th December 2008]

Trade and Industry Committee (1994) "Optical Fibre Networks", Trade and Industry Committee Third Report, Session 1993-94, HC 285-I, London: HMSO

World Trade Organisation (1998) "Electronic Commerce and the Role of the WTO", Geneva: World Trade Organisation

APPENDIX: Issues presented in questionnaires for the Scottish e-Business Surveys

Table 5   **Issues presented in questionnaires for the Scottish e-Business Survey** (italics highlight changes over preceding year)

	2001	2002	2003	2004	2005	2006
EDI	the nature of PC communication technologies, e.g. intranet, extranet, EDI, LAN, WAN	use of EDI	use of EDI			
Networking		the range of ICT facilities owned or used	the range of ICT facilities owned or used			
PCs and related						
e-mail	the use of PCs, e-mail and the Internet, reasons for non-use and the likely use within the next year to 18 months	the use of e-mail, reasons for non-use and the likely use within the next year to 18 months	the use of e-mail, reasons for non-use and the likely use within the next year to 18 months			*E-mail interaction with customers*
Internet		use of the Internet and reasons for non-use	use of the Internet and reasons for non-use	Reasons for non-use		
Internet connection	manner of connection	manner of connection and *bandwidth*	manner of connection and bandwidth, *likelihood of broadband use within the next year to 18 months and reason for non-use*	manner of connection and bandwidth *availability & benefits of broadband* *reason not to adopt broadband*	manner of connection and bandwidth availability & benefits of broadband reason not to adopt broadband	manner of connection and bandwidth availability & benefits of broadband reason not to adopt broadband
Databases, systems	the use of databases, online financial services, customer contact logging applications	the use of databases, online financial services, customer contact logging applications	*the use of different function oriented systems and their level of integration*			
Company website	the existence of a company website, its revenue generation and its frequency of update	the existence of a company website, its revenue generation and its frequency of update, *likelihood of setting up website within year to 18 months*	the existence of a company website, its revenue generation and likelihood of setting up website within year to 18 months *why discontinue with website*	the existence of a company website, its revenue generation and likelihood of setting up website within year to 18 months why discontinue with website	the existence of a company website, its revenue generation	the existence of a company website, its revenue generation *and how the website is promoted*

	2001	2002	2003	2004	2005	2006
e-commerce	importance of e-commerce now, in next year to 18 months	importance of e-commerce now, in next year to 18 months	importance of e-commerce now, in next year to 18 months	importance of e-commerce now, in next year to 18 months	importance of e-commerce now, in next year to 18 months	importance of e-commerce now, in next year to 18 months
	export status and importance of e-commerce to this	importance of e-commerce to exports				
	the nature of electronic enabled services offered to customers by the business, especially regarding ordering and payment	the nature of electronic enabled services offered to customers by the business, especially regarding ordering and payment	the nature of electronic enabled services offered to customers by the business, especially regarding ordering and payment *and importance to business*	*Nature of online transactions – ordering, payment, tracking (sales / purchases), intentions, benefits and deterrents, manner of online payment*	Nature of online transactions – ordering, payment, tracking (sales / purchases), *Nature of security and frequency of updates,* Intentions, benefits and deterrents, manner of online payment *Nature of public sector online dealings*	*Commencement* and nature of online transactions – ordering, payment, tracking (sales / purchases), Nature of security and frequency of updates, Intentions, benefits and deterrents, manner of online payment
	the nature of online dealings with suppliers, especially regarding ordering and payment	the nature of online dealings with suppliers, especially regarding ordering and payment	the nature of online dealings with suppliers, especially regarding ordering and payment *and importance to business*			
m-commerce	the likelihood of using mobile technologies for m-commerce within the next year to 18 months	*existing use of and* likelihood of using mobile technologies for m-commerce within the next year to 18 months	existing use of and likelihood of using mobile technologies for m-commerce within the next year to 18 months	likelihood of using mobile technologies for m-commerce within the next year to 18 months	likelihood of using mobile technologies for m-commerce within the next year to 18 months	likelihood of using mobile technologies for m-commerce within the next year to 18 months
Business processes & IT				*Processes important to business and those using IT*	Processes important to business and those using IT, Reasons both for and against IT enabling processes	Processes important to business and those using IT, Reasons both for and against IT enabling processes
Skills, training, strategic orientation				*Source of IT skills and effectiveness of existing IT skills* *The existence of an IT plan budget*	Source of IT skills and effectiveness of existing IT skills The existence of an IT plan budget	Source of IT skills and effectiveness of existing IT skills *Outsourcing of ICT services and reasons for not doing so*

	2001	2002	2003	2004	2005	2006
Impact of ICT	the reasons for the current use of IT, influences *(5 options offered)* and inhibitions *(7 options offered)*	the reasons for the current use of IT or e-commerce, influences *(6 options offered)* and inhibitions *(11 options offered)*	the reasons for the current use of IT or e-commerce, influences *(4 options offered)* and inhibitions *(7 options offered)*			
Outsoucing	the outsourcing of applications	the outsourcing of applications	the outsourcing of applications			
Planning		existing of an e-commerce strategy and budget	existing of an e-commerce strategy and budget			
Advice	sources of advice	sources of advice	sources of advice	sources *& nature* of advice	sources & nature of advice	sources & nature of advice
Profile data	turnover, number of employees, sector and job title of respondent.	number of employees, turnover (sector identified as part of sample procedure)	number of employees, turnover, *ethnic origin. Gender, disability, age* (sector identified as part of sample procedure)	*Rate of future growth,* number of employees, turnover, *number of customers*, ethnic origin. Gender, disability, age (sector identified as part of sample procedure)	Rate of future growth, number of employees, turnover, number of customers, ethnic origin. Gender, disability, age (sector identified as part of sample procedure)	Rate of future growth, number of employees, turnover, number of customers, ethnic origin. Gender, disability, age (sector identified as part of sample procedure)