1 Telecommunications and access

1.1 Domain description

The area of Telecommunication and Access encompasses a large area of research. It is important to highlight the importance of this topic in a global context. Telecommunication networks are the infrastructure by which the entire new economy is enabled. In their raw state they provide the infrastructure over which increasingly large proportions of national economic wealth is generated; they have to some extent taken over from traditional infrastructure – road and rail – as the carriers of national prosperity. In order to give a framework to the research being done through SIBIS, a definition of Telecommunications and Access has been taken as:

Ÿ   **Telecommunications**: Conveyance of speech, music and other sounds, visual images or signals by electric, magnetic, electro-magnetic, electro-chemical or electro-mechanical means

Ÿ   **Access:** The ability to retrieve data, graphics, sound, text etc whether on-line or offline

However, within these broad, and yet rather bald, statements there are myriad aspects which we might consider. For example, in terms of telecommunications we can look at (de)regulation, convergence, different technologies, the existence and distribution of telecommunications networks, the status of a nation's competitiveness, the propensity to invest in infrastructure, and market players, shares, dynamics etc. In terms of access we can look at universality, access mechanisms, speed, quality, applications, existence of content, education and skills, socio-economic or demographic influences etc.

Access is a term used to describe the various mechanisms by which citizens, business, and the public sector interact with the networks. They include computers and telephones, and increasingly new devices such as interactive TV, multimedia kiosks and Internet-enabled wireless appliances.

The issue of 'content' (such as e-commerce, e-health, e-government) is covered by the other SIBIS Topic areas, to be outlined in the following chapters of this document.

For reasons of 'data manageability' we have chosen to focus the scope of our investigations on issues which are:

Ÿ   directly correlated with eEurope priorities OR

Ÿ   concerned with emerging technologies (on the basis that the detailed information on the distribution of their existence, let alone their use and impact, is still patchy) OR

Ÿ   concerned with pricing (this topic is still at the forefront of national and European policy attention, especially as a determinant of equality of access) OR

Ÿ   concerned with regulation (however, although of great interest, this topic is more rigorously treated in the policy documents section. Also, bearing in mind that SIBIS focuses on new statistical indicators for which data can be gathered through representative population and business surveys, measurement of regulatory matters seems to be outside the reach of the project)

1.2 Description of major problems and gaps in statistical coverage

The majority of the 'gaps' in available indicators included below derived from the review of the policy documentation included in the first part of the SIBIS research, which showed that the broad categories of missing data are as follows:

Ÿ   Broadband and high speed network technologies, e.g. penetration rates for different broadband technologies, use and inhibitors to digital wireless broadband, use of cable modems, pricing, choices of access mechanisms (e.g. digital TV), choices of subscriptions rates and packages (such as premium services), socio-economic aspects of access

Ÿ   Bluetooth and other emerging technologies – barriers to take up and success factors

Ÿ   Mobile data services and usage

Ÿ   Internet technologies – use, barriers, location, multiple platforms, Internet telephony (VOIP is especially for business to business adoption)

Ÿ   Use of alternative technologies (such as Powerline, although we have to acknowledge that this topic receives very little policy attention)

Ÿ   Convergence Issues and regulatory progress.

Ÿ   User behaviour – motivations, barriers to use and impacts of new technologies

Ÿ   Composite indices – such as combining pricing and the use of one or multiple technologies

Ÿ   Establishing the physical location of secure Internet hosts for e-commerce

Ÿ   Pricing - local access pricing, interconnection charges, mobile pricing (particularly international roaming, fixed to mobile tariffs, SMS (mobile contents downloads: e.g. ringtones, logos, localised based services, etc…)

Because the area of Telecommunications and Access is so diverse, and so many indicators already exist, it is difficult to highlight only one or two areas to investigate. Because of this it is also tempting to try to create composite indicators to combine two or more items of information, rather than creating new indicators, to deepen knowledge and understanding of the topic. However, as T&A is changing so fast, if we only adopt this 'composite' approach then we risk omitting key data, such as the rate of progress of introduction of new technologies or new access mechanisms. This type of information requires 'old fashioned' methodology (such as counting the instances of something) but applied to new items (of technology, access appliance, pricing comparison, market share etc).

Therefore, we are pursuing two approaches:

Ÿ   the development of composite indicators (either based on existing data or on existing themes but with new rounds of data collection to ensure consistency of approach), as well as

Ÿ   the development of new indicators for which data can be collected via surveys of the population and establishments.

In the following, some of the new indicators developed are described.

1.3 New indicators overview

In order to address the highlighted difficulties, the report suggests to use three general areas or domains for defining new indicators:

Ÿ   Access to new technologies
Ÿ   Usage of new technologies
Ÿ   Impact of new technologies

Thematic Domain	Sub-domain	Selected new level 1 indicators	Piloting in SIBIS
Access	Broadband	Ÿ Share of Internet users with broadband access	SIBIS GPS
		Ÿ Broadband Migrators - Share of users who previously subscribed to a slower service (e.g. dial up connections)	SIBIS GPS
	Internet	Ÿ Share of Internet users who access the Internet from one, two, or multiple places -- (a) at home (b) at the workplace (c) at an educational institution (d) at free PIAP (e) at commercial PIAP	SIBIS GPS
		Ÿ Internet drop-outs - Share of persons who used to have Internet access at home, distinguishing between those who still access the Internet from somewhere else (work, school, or any other place) from those who do not access it anymore.	SIBIS GPS
		Ÿ Degree of penetration and typology of narrowband and broadband ISP's subscription packages	-
	Mobile	Ÿ Degree of Internet access through mobile phones, broken down by age groups, income bands and other demographic data	SIBIS GPS

Usage	Broadband	Ÿ Broadband users according to online tenure (share of broadband users according to length of time since first use of the Internet)	SIBIS GPS
	Internet	E-mail networking intensity Ÿ (a) Degree of networking amongst friends and relatives Ÿ (b) Usage of e-mail network with friends and relatives	SIBIS GPS
		Degree of multi-platform online use. Ÿ (a) Digital TV Ÿ (b) PDA/ palmtop Ÿ (c) mobile phone Ÿ (d) others	SIBIS GPS
	Mobile	Ÿ Mobile networking intensity - Degree of mobile ownership networking amongst friends and relatives	SIBIS GPS
		Ÿ Degree of SMS mobile data services use (communication, transactions, downloads, news subscriptions)	SIBIS GPS
		Ÿ Use of mobile phones abroad	-
Impact	Broadband	Ÿ Effect of broadband use on time spend online	SIBIS GPS
		Ÿ Benefits and barriers to using broadband technologies	-
	Internet	Ÿ Barriers to Internet usage	SIBIS GPS
		Ÿ Benefits of Internet usage (Hypothetical effects of not being able to use the Internet)	SIBIS GPS
	Mobile	Ÿ Benefits of mobile phone use (Hypothetical effects of not being able to use a mobile phone)	SIBIS GPS

A list of composite indicators including both SIBIS data and other external sources will become available from the project soon. Four indices are to be developed and piloted:

Ÿ Broadband e-readiness
Ÿ Broadband Snapshot
Ÿ 3G readiness index
Ÿ Internet e-readiness