



# Statistical Indicators Benchmarking the Information Society

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Technopolis



# Content

- SIBIS project: Statistical Indicators Benchmarking the IS:
  - Current status of work
  - New indicators
  - Indicator piloting via representative surveys
  - Questionnaire modules for use by others
  - Data for 2002
  - Next steps
- Discussion: co-operation Eurostat – NSIs - OECD – SIBIS
- Workshops
  - Attendance at meetings

# SIBIS Topics

- No. 1: Telecommunications and access
- No. 2: Internet for research
- No. 3: Security and trust

Objective 1:  
A cheaper, faster  
and secure Internet

- No. 4: Education
- No. 5: Work, employment and skills
- No. 6: Social inclusion

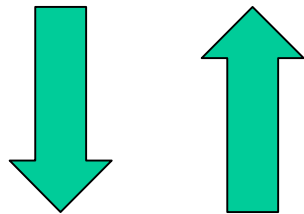
Objective 2:  
Investing in people  
and skills

- No. 7: e-Commerce
- No. 8: e-Government
- No. 9: Health

Objective 3:  
Stimulate the use of  
the internet

# SIBIS worksteps

- Topic Research Reports (9 topics) (2001)
- Gap Analysis and new Indicator Development (2001/02)
- Indicator Testing (in Surveys) (2002)
- Topic Reports (9 topics) (2002/03)



Eurostat, NSIs, OECD ...

# SIBIS Topic Research tasks

- To conduct an extensive yet focused **literature review**
  - Identify and review relevant literature sources
- analyse literature, **statistical reports and policy documents** relevant to the development of statistical indicators for e-Europe and benchmarking associated with it,
- report on relevant **statistical indicators** identified & provide initial definitions along the lines of the e-Europe objectives

# Description format for statistical indicators

- Definition
- Notes
  - on relationships to (other) existing indicators
  - on methodology
- Sources for data and availability
  - Countries covered
  - Time series availability
- Operationalisation
  - e.g. question wording, branching instructions, data analysis instructions
- eEurope relevance

# An example: How to measure telework

- Considered important tool in eEurope Action Plan
- How it is measured currently
  - Use of Eurobarometer data (also used for Benchmarking eEurope Action Lines)
  - “Telework occurs when paid workers carry out all, or part, of their work away from their normal places of activity, usually from home, using information and communication technologies”
  - Benchmarking Report says “In the future, the definition may be revisited to include wider forms of telework/ework”.

# An example: How to measure telework

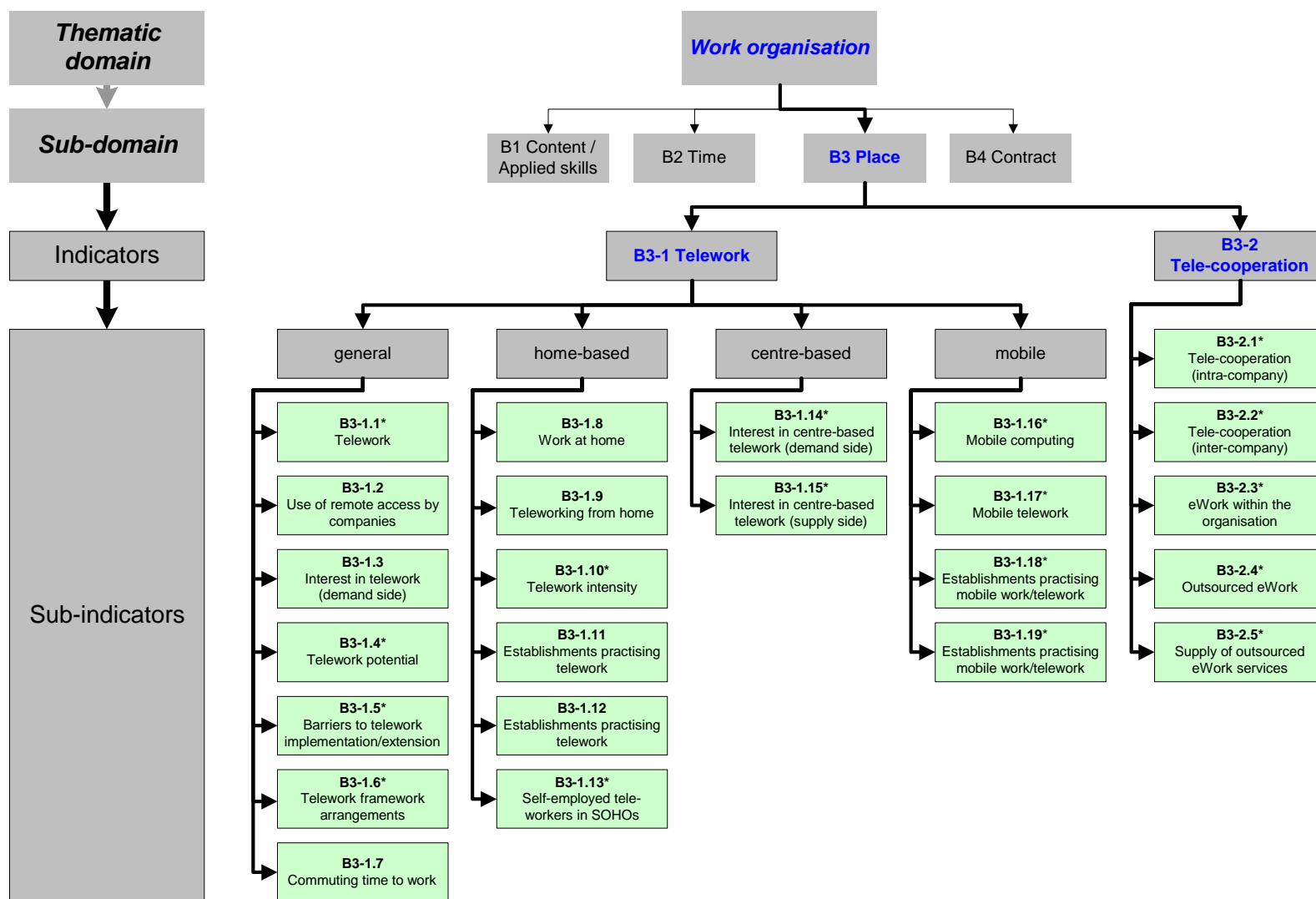
- “Telework occurs when paid workers carry out all, or part, of their work away from their normal places of activity, usually from home, using information and communication technologies. Do you currently telework, or not?”



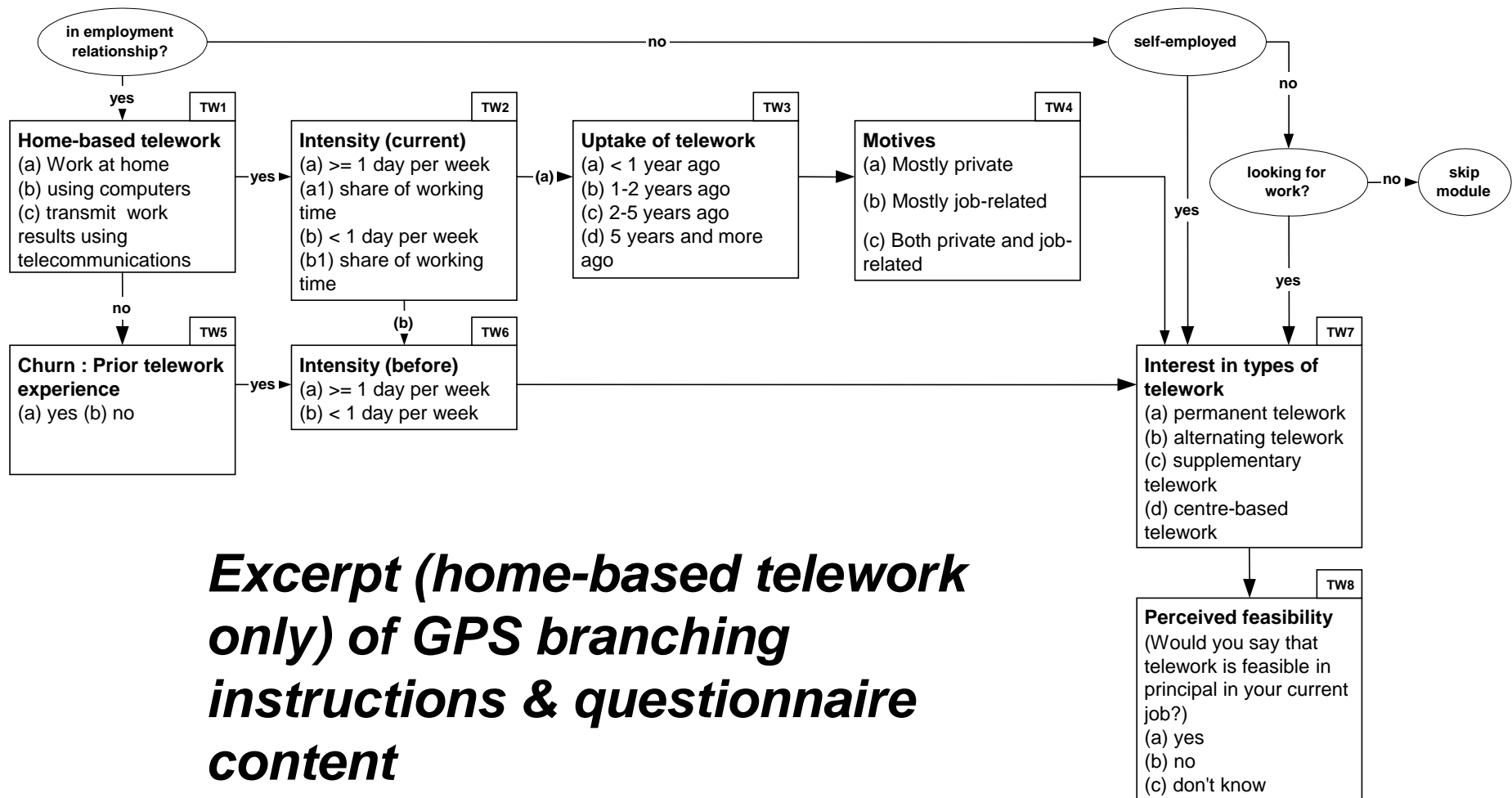
# An example: How to measure telework

- Conceptualisation of telework
  - Home-based telework
    - Permanent
    - Alternating
    - Supplementary
  - Mobile telework
  - Self-employed teleworkers in SOHOs (small office home office)
- Telework becomes part of majority of work settings
  - "anywhere-anytime, natural interactions with a universe of IST applications and services" (Liikanen)
- Measuring intensity of telework rather than counting teleworkers

# Description of indicators



# Operationalisation of “telework” indicators



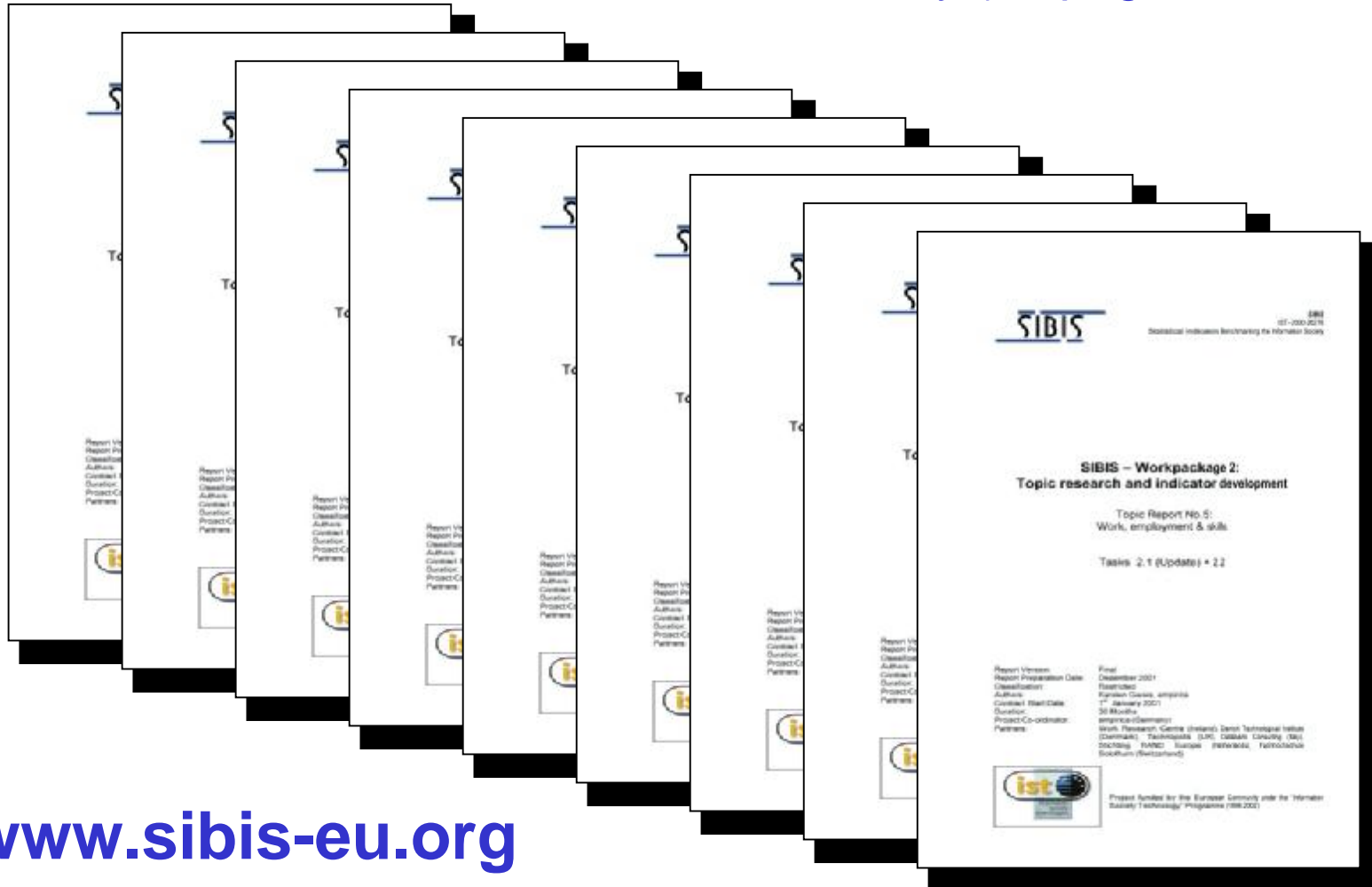
***Excerpt (home-based telework only) of GPS branching instructions & questionnaire content***

# SIBIS New Indicators (example)

Thematic Domain	Sub-domain	Selected new level 1 indicators	Piloting in SIBIS
<b>Skills</b>	Skill acquisition	ÿ Use of e-learning by workers (offline/online)	SIBIS GPS
		ÿ Spread of self-directed learning	SIBIS GPS
		ÿ Share of companies that offer staff access to ICTs	SIBIS DMS
		ÿ Use of PIAPs by the population, by teleworkers	SIBIS GPS
	Skill provision	ÿ ICT skills in the labour force (self-assessed)	SIBIS GPS
		ÿ ICT skills in the labour reserve (self-assessed)	SIBIS GPS
<b>Work Organisation</b>	Content/ applied skills	ÿ Spread of cross-organisational co-operation	SIBIS GPS
		ÿ Participation in decision-making in jobs with flexible working arrangement	SIBIS GPS
	Time	ÿ Worker-centred adaptability of working times	SIBIS GPS
	Place	ÿ Share of teleworkers according to telework intensity (home-based, mobile, SOHO)	SIBIS GPS
		ÿ Share of jobs which are perceived feasible for telework	SIBIS GPS
		ÿ Interest in telework (demand side)	SIBIS GPS
		ÿ Teleworker churn	SIBIS GPS
		ÿ Teleworkers by motives for starting telework	SIBIS GPS
		ÿ Telework-enabled labour force participation	SIBIS GPS
	Contract	ÿ Spread of eLancing among self-employed	SIBIS GPS
<b>Employment Structure and Outcomes</b>	Benefits from employment	ÿ Relative job satisfaction in flexible work arrangements	SIBIS GPS
		ÿ Job quality of jobs with flexible work arrangements	SIBIS GPS
		ÿ Perceived job security of workers with flexible work arrangements	SIBIS GPS
		ÿ Outcomes of flexible work arrangements on work-family balance	SIBIS GPS
	Employment structure	—	—
	Output of employment	—	—

# SIBIS Topic Research Outcomes / 'products'

Plus: Executive Summary (32 pages for all reports)



[www.sibis-eu.org](http://www.sibis-eu.org)

# SIBIS Surveys: General Population Survey

- Target population: resident population (15+) in private households
- GPS: EU15 (AT, DE, DK, FI, FR, GR, IR, IT, LU, NL, BE, SE, ES, PT, UK) + CH + US  
(sample size 500-1,000 per country)
- 11.832 respondents
- Fieldwork: April – May 2002
- Fieldwork execution and management by INRA
- CATI
- > 50 questions
- Interview duration 10 - 20 min.

# SIBIS Surveys: Decision Maker Survey

- Target population (observation unit): establishments
- Reporting unit: IT decision makers
  - smaller establishments: managing director, general manager, proprietor
  - larger establishments: head of IT department, senior professionals in IT department
- DE, ES, FR, IT, UK + FI, GR (sample size 300-500 per country)
- 3.139 respondents
- Disproportionally stratified sample reflecting labour force distribution across establishment size bands
- Fieldwork: April – May 2002
- Fieldwork execution and management by INRA
- CATI; ~ 50 questions; average interview duration: 16 min.

# GPS (population): **Structure of questionnaire I**

**Module IN: Introduction and screening** (Age, Educational attainment, Employment status, Occupation, Type of organisation, Main working place)

**Module A: Basic ICT equipment access and use** (Use of computer, Use of e-mail, Internet access and use, Methods of Internet access, Effects of Internet use, Barriers to using the Internet, Access to mobile phone, Mobile data services, Effects of mobile phone use)

**Module B: E-commerce and other uses of the Internet** (Online activities, Barriers to buying online)

**Module D: Skills** (Internet user experience and know-how)

**Module L: e-Health** (Use of online health information, Perception regarding the trust placed in online health information provider, Rationale for health info search)

**Module J: Security** (Security concerns, Reporting of security violations, Security-related awareness and behaviour)



# GPS (population): **Structure of questionnaire II**

**Module K: e-Government** (Preference for e-Government services, e-Government experience, Barriers to e-Government)

**Module E: Telework** (Home-based telework, Intensity of home-based teleworking, Duration of telework, Financing of tele-workplace, Interest in telework, Perceived feasibility, Effects of telework)

**Module F: Mobile work** (Mobile work (Intensity), Mobile telework)

**Module G: Tele-cooperation/Tele-collaboration** (Co-operation with external contacts using ICTs, e-Lancing)

**Module H: Outcomes of work** (Work-family balance, Job quality, Job satisfaction)

**Module C: Educational attainment and lifelong learning** (Company-provided training, Training provided by other organisations, Self-directed learning, Modes of training (use of eLearning))

**Module Z: Standard demography** (Household size, Disability, Income)

# DMS (establishments): Structure of questionnaire

## Introduction and Screener Section

**Module A: Basic characteristics** (Type of organisation, Number of staff (employees), Turnover)

**Module B: Basic ICTs take-up and intensity of use** (e-Business) (e-Mail, Internet, Intranet, EDI, Video-conferencing, Call-centre, Staff access to ICTs)

**Module C: e-Commerce** (Website/ Internet presence, Online sales, Barriers to e-commerce (selling), Benefits from / Outcomes of e-commerce, Online procurement, Barriers to online procurement, Benefits from/ Outcomes of online procurement, Online supply chain integration, e-Marketplaces)

**Module D: e-Business security** (Security breaches, Information security strategy, Barriers to security, Security provisions)

**Module F: e-Government** (Use of e-Government services, Barriers to e-Government)

**Module G: Website accessibility** (“Design for all” / ”universal design” principle awareness)

**Module E: R&D** (R&D staff, Computer staff in R&D unit(s), IT staff providing computer services to R&D, Outsourced computer services for R&D, Vacancies in IT for R&D)

# SIBIS and SIBIS+

- SIBIS extension towards NAS:
  - Slovenia
  - Hungary
  - Slovak Republic
  - Czech Republic
  - Bulgaria
  - Romania
  - Estonia
  - Latvia
  - Lithuania
  - Poland
- **General Population Survey (GPS) in NAS10 later in 2002**
- 6000 interviews in 10 countries; mostly PAPI
- Result: GPS data for: EU15, CH, USA and NAS 10 (27 countries)

# SIBIS Next steps in the project

9 Topic Reports (education, work, e-commerce, ...):

- Executive Summary (which mainly contains results)
- Introduction
- Identification of the indicator framework and hierarchy (5-20 pages)
- Analysis of data (20 to 50 pages) (which also includes the discussion on quality of indicators, drawbacks, limitations etc.)
- Identification of gaps / Questions arising from the analysis
- Conclusions

Draft: September 2002

Final: April 2003

# Synopsis of survey questions and comparisons

- E-Commerce surveys of companies:
  - EC survey on ICT usage of enterprises (2003) (PAPI)
  - SIBIS Decision Maker Survey (DMS) (2002) (CATI)
  - E-business marketw@tch (2002) (CATI)
  - ECKMU-2 (2001) (CATI)
  - ECATT (1999) (CATI)
- Household / population surveys:
  - EC survey on ICT usage of households (2002) (CATI or CAPI recommended)
  - SIBIS General Population Survey (GPS) (2002) (CATI)

## Questionnaire Comparison: **SIBIS** offers

- E-Commerce survey of companies (DMS):
  - Questionnaire module and comparative data on e-commerce 1999 – 2001 – 2002 incl. e-commerce phase/stage model data
  - Detailed data on web accessibility (disabled people: differentiating according to types of disability, priority for changes, ease of change, plans)
  - **Impact** of online sales and purchasing: e.g. costs, quality of customer service, efficiency of internal processes; number of / relations to suppliers)
  - E-Business **security** (e.g. breaches and judgement on substantiveness, security policy, barriers)
  - **E-Government** questionnaire module (key e-Europe 2005 topic)
  - ...

# Questionnaire Comparison: eBiz offers

## (A) Readiness

- ICT infrastructure
- Skills & skills development
- Staff access to ICT

[www.ebusiness-watch.org](http://www.ebusiness-watch.org)

## (B) Activity/Usage

- Usage of company website
- E-commerce: online sales and purchase
- Usage of specific e-Business solutions (e-marketplace, CRM, ASP, online collaboration with partners etc.)

## (C) Impact

- Of selling and purchasing online
- On business processes
- Overall satisfaction and outlook

## Questionnaire Comparison: **SIBIS** offers

- Household / population survey (GPS):
  - Skills (required, confidence in providing them ...)
  - Use of internet (first time, previously, at all, use of devices, time spent, communications partners, impact if excluded)
  - Questionnaire modules on key e-Europe 2005 topics:
    - E-Health (use of services, suitability and appropriateness, purpose, trustworthiness of information)
    - Skills (cf. above)
    - E-Government
    - Telework, mobile work
    - Tele-Co-operation
    - Educational attainment and Life-log-learning



# Co-operation SIBIS – Eurostat - NSIs

- Objective: harmonisation of IS / ICT statistics
- Next Steps (proposal):
  - Sharing of experiences from indicator development, testing and surveys
  - Identification and discussion of overlaps, complementarities, synergies in questionnaires
  - Where appropriate: ad hoc use (in Eurostat / NSI surveys) of relevant SIBIS:
    - Questions
    - Questionnaire modules
  - National workshops with NSIs, Eurostat, OECD
  - Joint “Integrated Project” in FP6 !?

# Thank you very much for your attention!

For more information please visit:

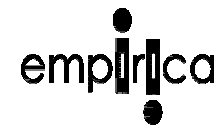
[www.empirica.com](http://www.empirica.com)

[www.sibis-eu.org](http://www.sibis-eu.org)

[www.ebusiness-watch.org](http://www.ebusiness-watch.org)

[www.ecatt.com](http://www.ecatt.com)

[www.seniorwatch.de](http://www.seniorwatch.de)



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