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**Institute for Technology Assessment
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Findings of National Foresight Studies on ICT

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Outline:

1. Sources for Errors in Predictions – What Can Foresight Say About IT?

2. Comparing the Results of Foresight Studies on ICTs

3. Findings on Information and Communication Technologies

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What Can Foresight Say About IT?

- Are We Falling Victim to „Zeitgeist"?
- IT not priority in past European Delphis
- Well-known faulty predictions concerning IT. Examples:
  - „640K ought to be enough for anybody (Bill Gates, 1981)
  - I think there is a world market for maybe five computers (Thomas Watson, chairman of IBM in 1943)
  - UMTS/WAP

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What Can Foresight Say About IT?

An example of a failed interpretíon of a failed prediction (Herb Brody1991, Great Expectations- Why Technology Predictions Go Awry):

"In the mid-1980s,market researchers proclaimed that CD-ROMS were inevitable companions to large numbers of personal computers. But computer users preferred magnetic hard disks, which, unlike CD-ROMs are erasable and which retrieve data much more rapidly"

- Case underlines that it takes time for technology to achieve widespread diffusion;

- Prediction mistaken in detail: CDR did not replace hard drive, but floppy discs.

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What Can Foresight Say About IT?

- **Focus should be on technology in socio-economic context, not technology in the narrow sense.**

- **This has even been confirmed for Delphi studies. Recent „Technologies Clés" includes mainly items on functional needs rather than technologies**

- **IT is sector characterised by extreme dynamics. Time horizon for IT panels in some studies shorter than for other areas.**

- **IT is no longer subject of big controversy, but certain aspects (e.g. vulnerability, data protection, privacy)**

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Comparison of IT in National Foresight Studies:

Delphi Austria: not separate subject area, included in items on other fields

Czech Republic: Panel on the „information society"

France: Technologies clés 2005, separate section on „ITC"

Germany: ICT treated in „Leitvisionen´"

Hungary: Panel on information technologies, telecommunications and media

Spain: 3 panels in consecutive years, Delphi with shifting focus

Sweden: Panel on information and communication systems

United Kingdom: Panel on Information Communications and Media, IT „underpinning technology"

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Comparing results of Foresight Studies on ICT

How to classify technology (1):

- Comparison of foresight studies by Fleissner et al. For OCYT uses long list of technologies. Problem: Each technology only mentioned by few studies
- Other proposals (e.g. TILAB proposal circulated to FISTERA Partners, raise question of dimensions).

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How to classify technology (2):

- **Distinction between „enabling technologies" (materials, science, physics, maths research) and „functional technologies"**

- **Distinction between the IT sector and business based on ICT**

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How to classify technology (3):

The ICT sector Itself:

- **Basic computer science**
- **New and alternative IT (biocomputing, optical or quantum computing)**
- **Production/assembly of components (semi-conductors, equipment and appliances, peripherals, infrastructure)**
- **Software (operating systems/platforms; application software)**
- **Complete systems**

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How to classify technology (4):

Business based on ICT:

- **Information collection, distribution**
- **ICT based services**
- **Use of ICT to boost conventional business**

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Main conclusions from national foresight studies (1):

- **Recent exercises have strong socio-economic focus**
- **Recommendations are frequently the direct result of SWOT analysis**
- **Few exercises attempt to pinpoint specific technologies to back**
- **Many recommendations concerned with creating with a suitable framework for the oncoming „information society"**
- **Education and training area in many foresight exercises**
- **Technical strengths identified in more than one country: displays, human-machine interface, games, multimedia, in particular to „sell" existing know-how, e.g. in multimedia systems in health care.**
- **E-commerce as example of *Zeitgeist***

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Further possibilities for FISTERA

- **Attempt at SWOT Analysis for those countries whose foresight exercise did not explicitly include one (Read reports for info.)**

- **Analysis of national „e-society" action plans, to see if there is any foresight-type work flowing into these. (Context of Foresight – information required from network members)**

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Summary

- **Treatment of IT in foresight usually in context of application, IT is „underpinning" technology**

- **Few controversial areas, but need to resolve issues such as data protection, security etc.**

- **More information on IT requires access to other sources**

- **SWOT analysis would be useful**

- **Also need to examine the importance of foresight on IT in comparison with other IT activities by politics**