

Future Focus of ICT

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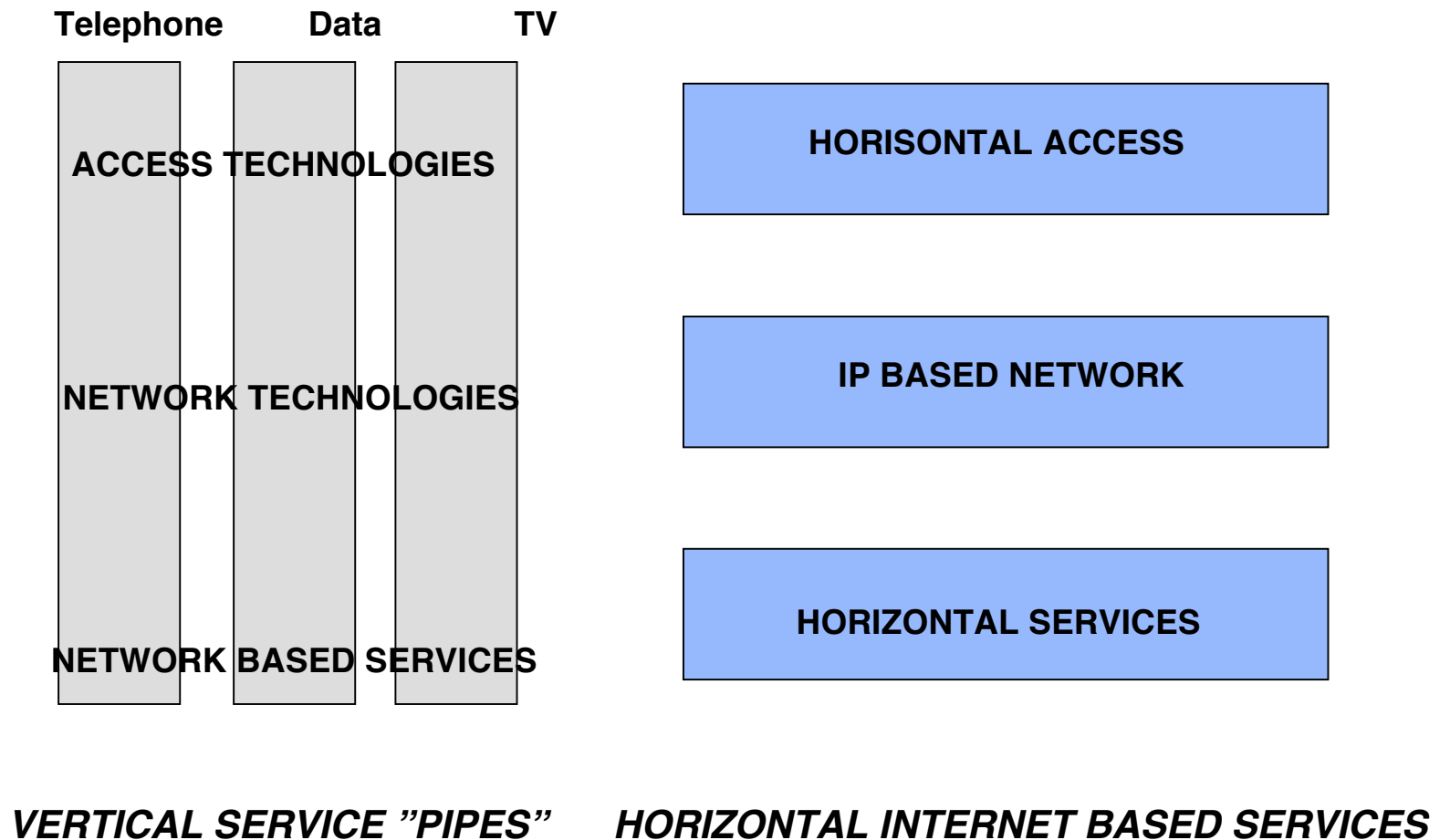
ETLA, The Research

Institute of Finnish Economy

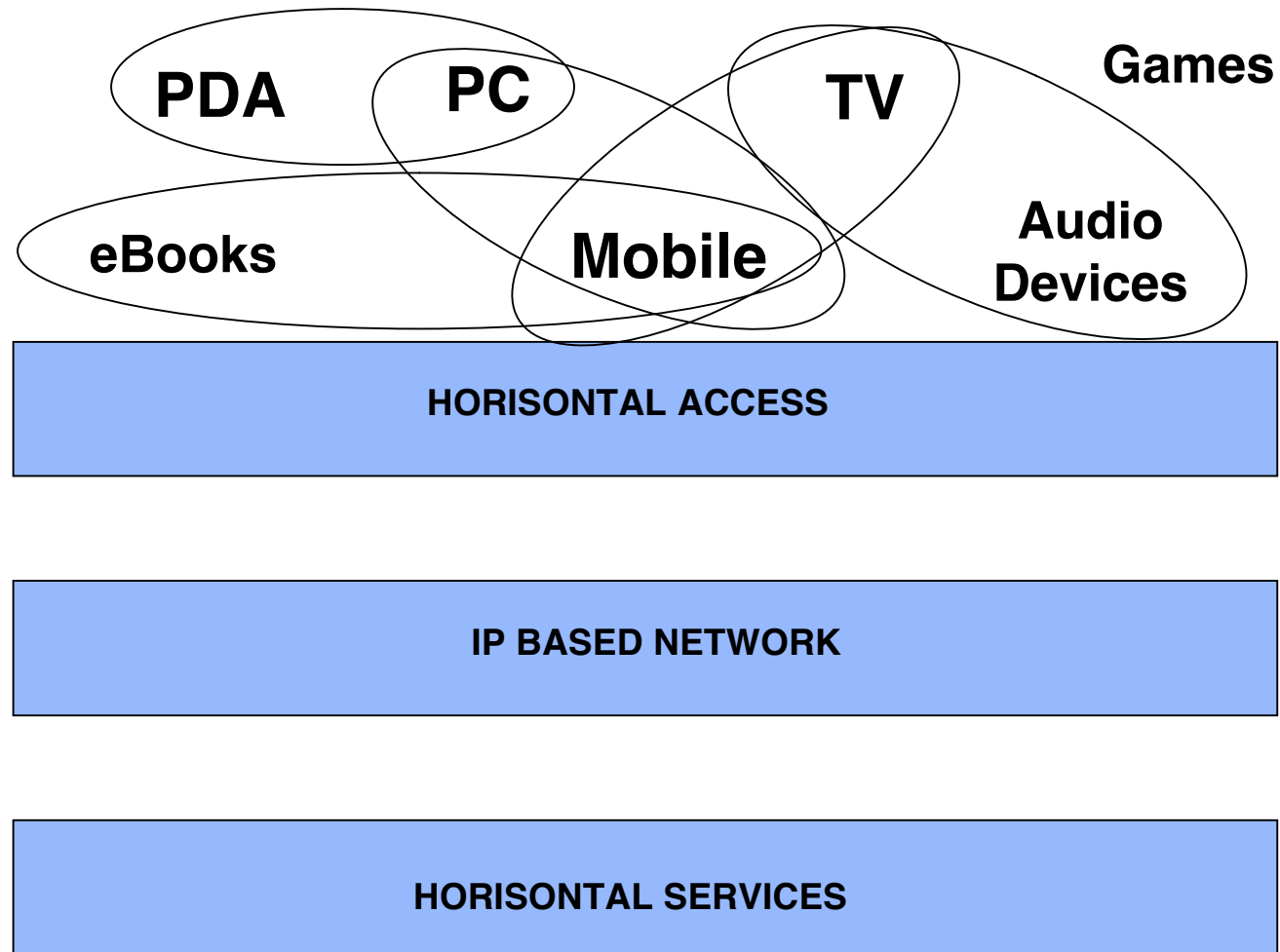
Value from networks to applications

- Internet Protocol (IP) has become the dominant standard for new telecom services
- All services and terminals will become IP compatible (All-IP development)
- Generic network services and systems will become commoditized businesses – This *horizontal development* will consolidate the telecom industry
- The benefits of this development will be reaped from All-IP based applications = *IP-Applications*
- The productivity and quality improvements, new features, cost-effective infrastructure and New Generation Media (NGM) will be the drivers

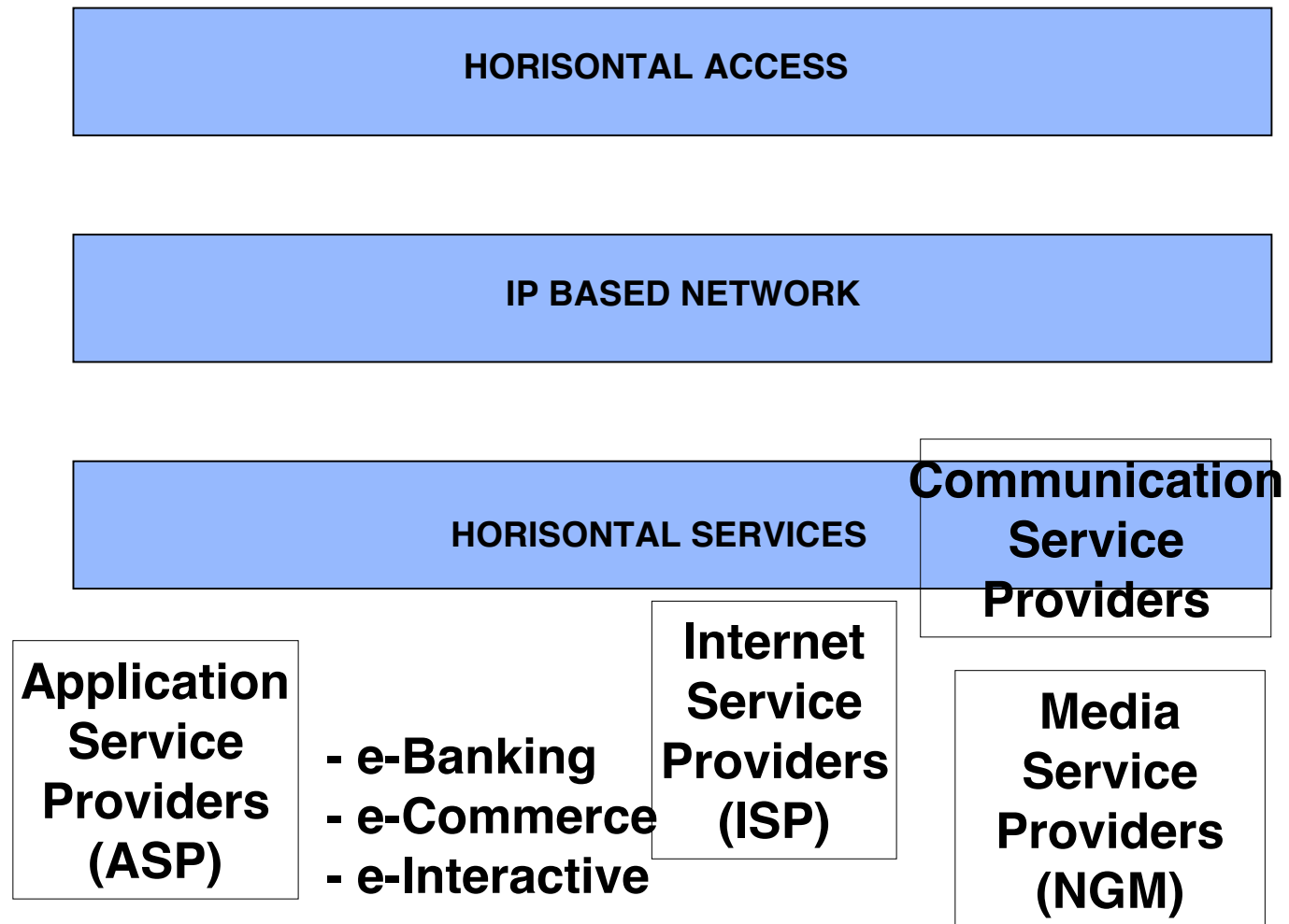
From Vertical to Horizontal



New Terminal Functionalities

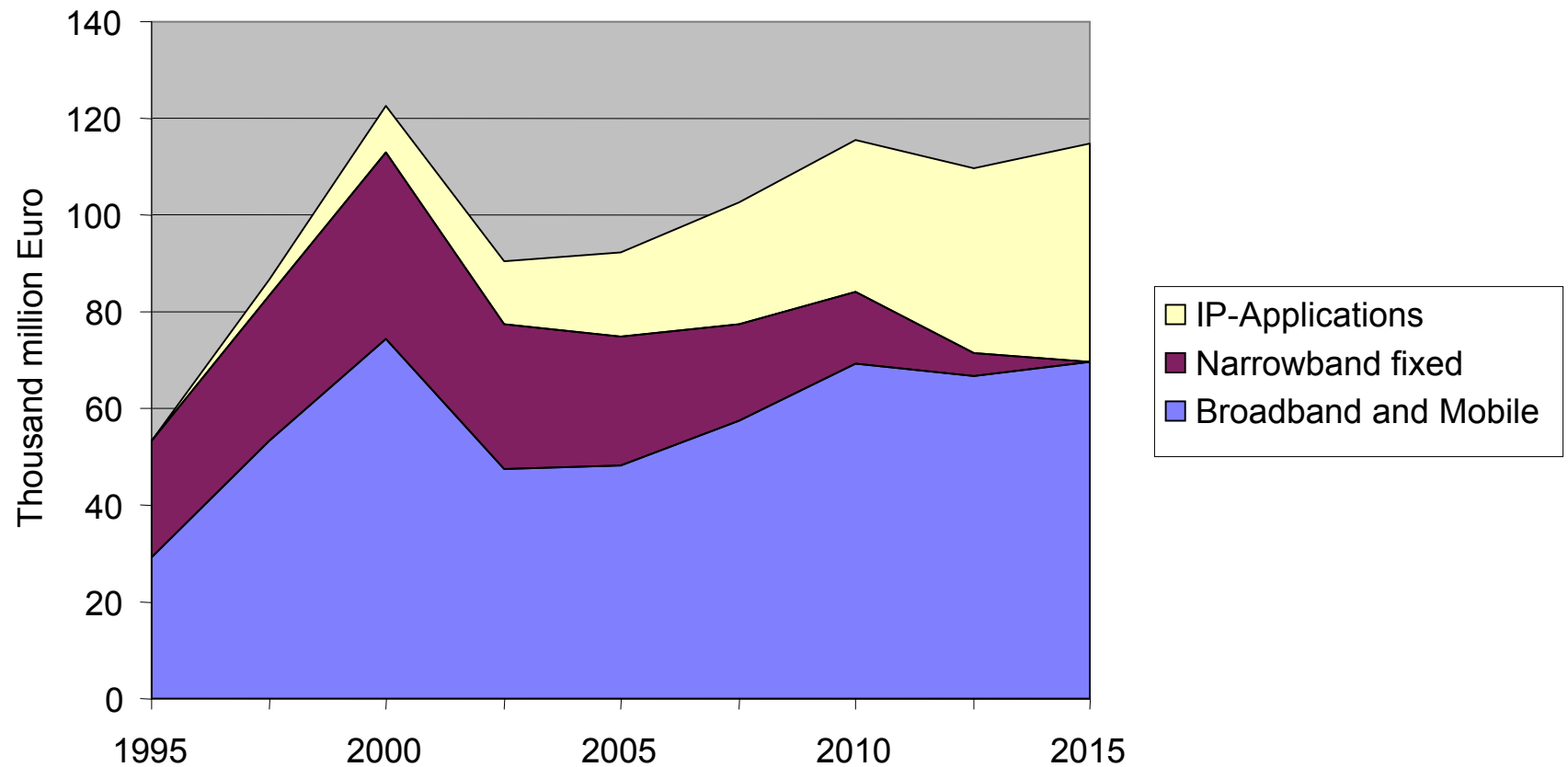


New Service Functionalities



Value from IP-Applications

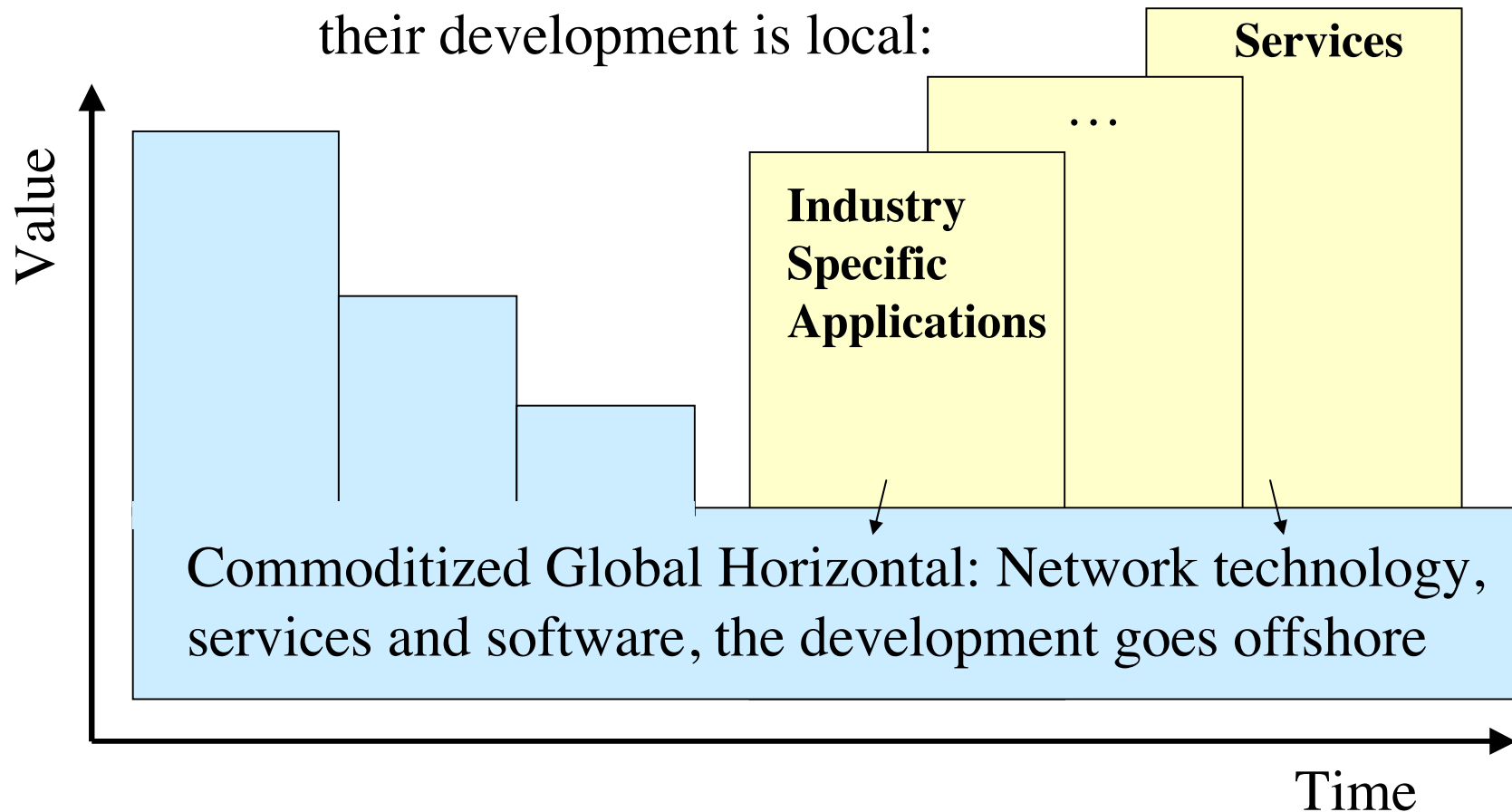
Digital Communication related *Investments in Europe* by firms, service providers and teleoperators



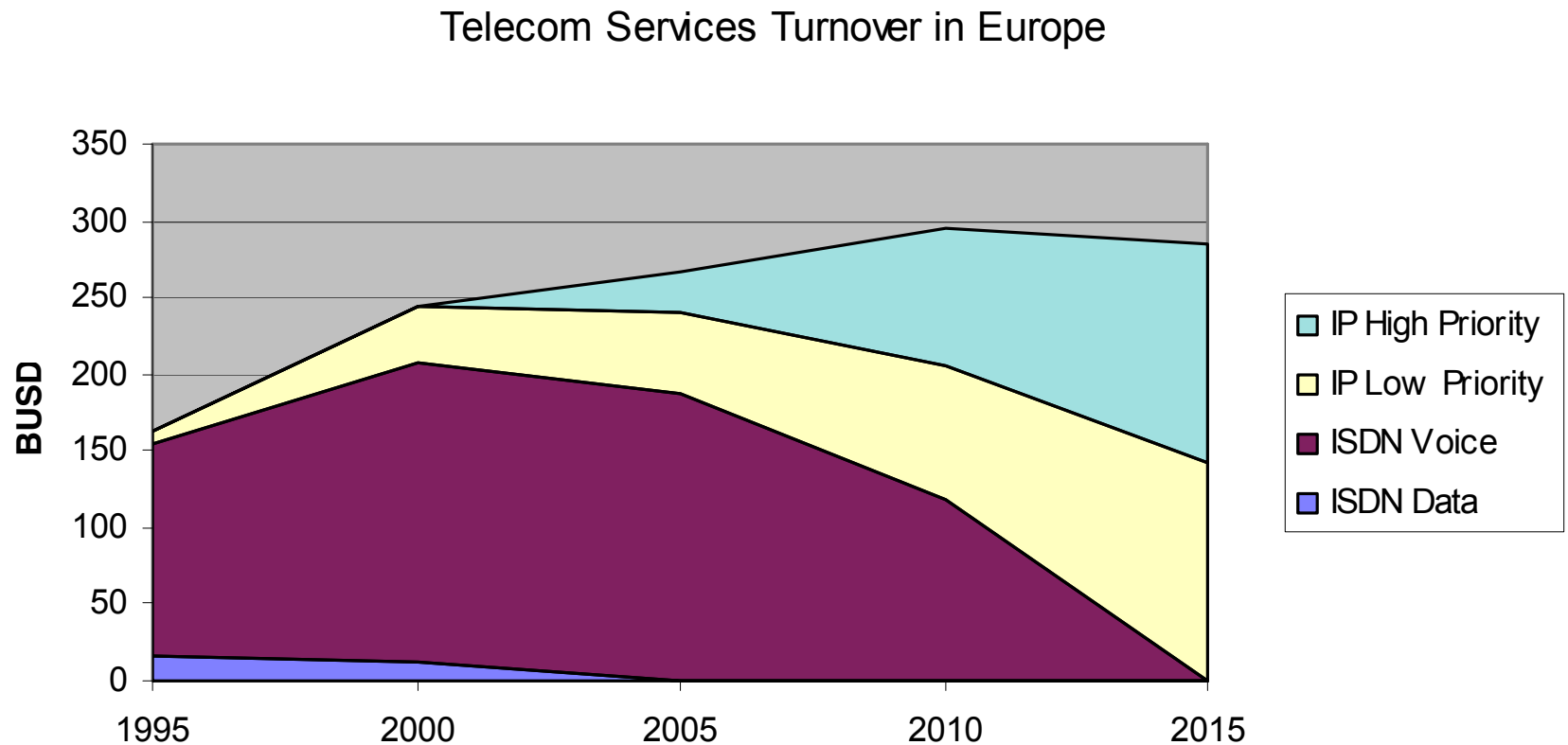
Source: Extrapolated from service turnover forecasts of EITO, OVUM, IDATE, IDC

Value from IP-Applications

IP-Applications create value,
their development is local:



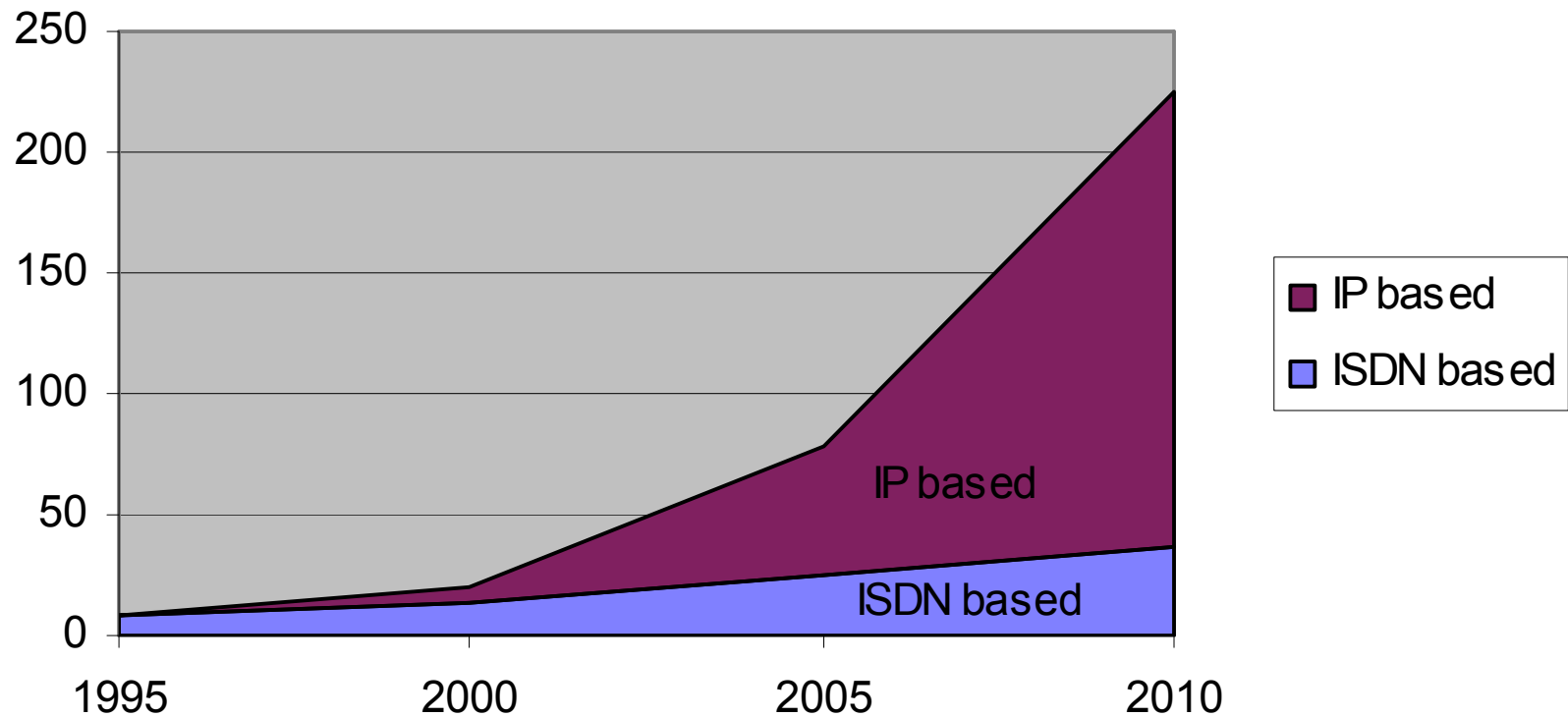
Value from Telecom Services



Extrapolated from service turnover
forecasts of EITO, OVUM, IDATE, IDC

Value from Telecom Services

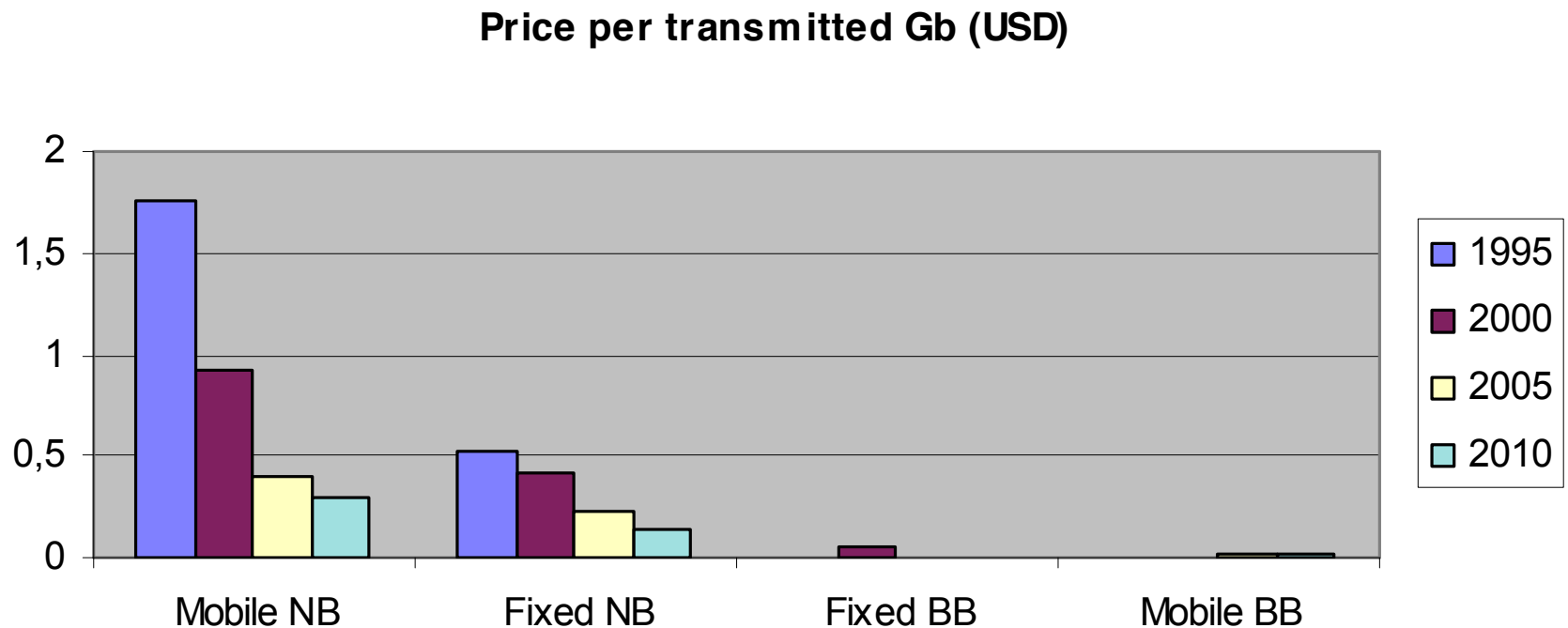
Transmitted Petabits per day in Europe



Extrapolated from service traffic
forecasts of EITO, OVUM, IDATE, IDC

Value from Telecom Services

Values from broadband and mobile traffic divided by volumes of transmitted traffic in Europe yield fast decreasing transmission prices:

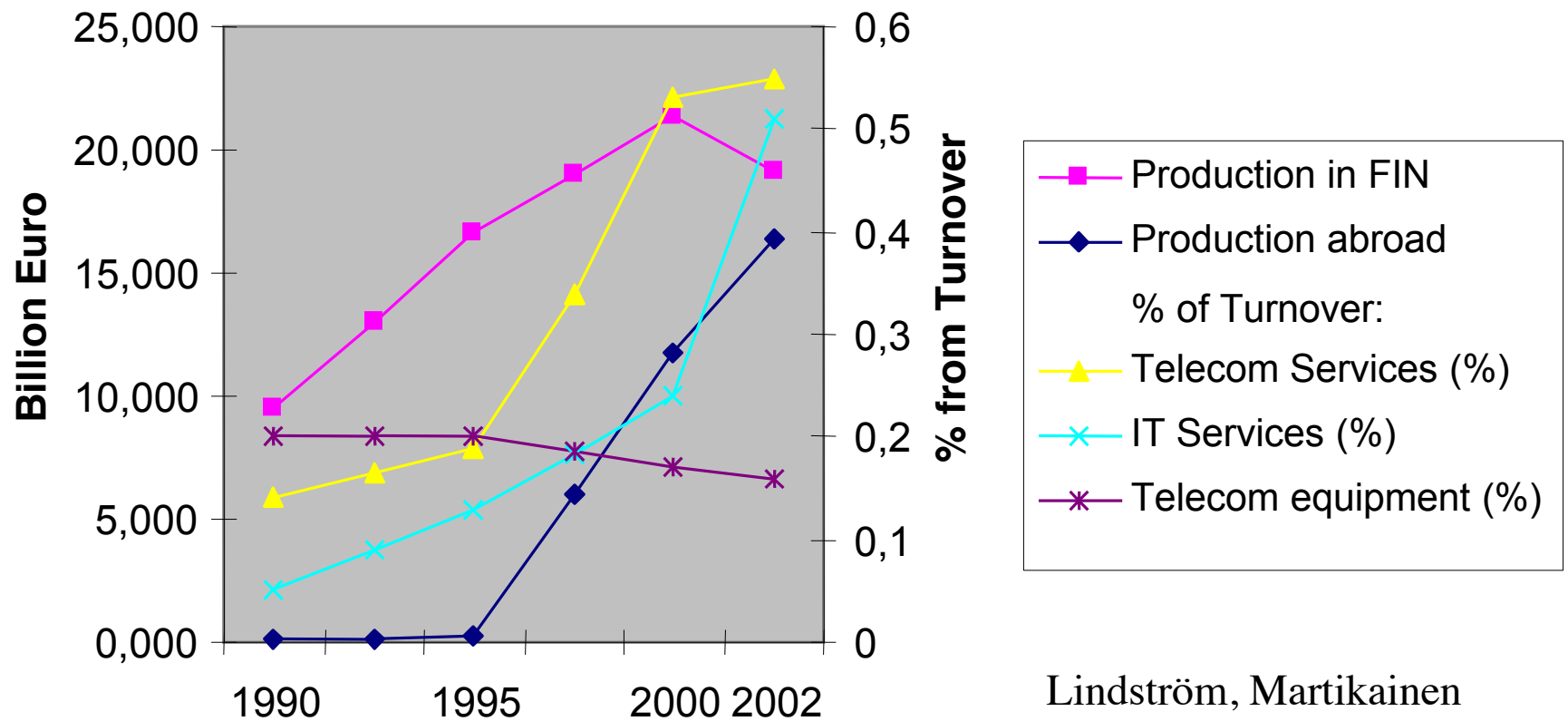


Business sector

- During the last 20 years *large application benefits* have been based on the automation of industrial, service and business processes and EDI on top of traditional networks
 - In the Finnish Pulp and Paper industry during 1995-2002 the telecom services grew 189 % and IT services 299% (see the next figure)
 - In Banking the transaction volumes per capita have grown fourfold
 - In Wholesale-Retail value chains the banks were bypassed with EDI
 - The average productivity increase in Finnish industry from ICT investments has been 8-20%
 - *The productivity increase from mobility has been 40%* (Maliranta and Rouvinen 2003, mobility data 2004)

Business sector

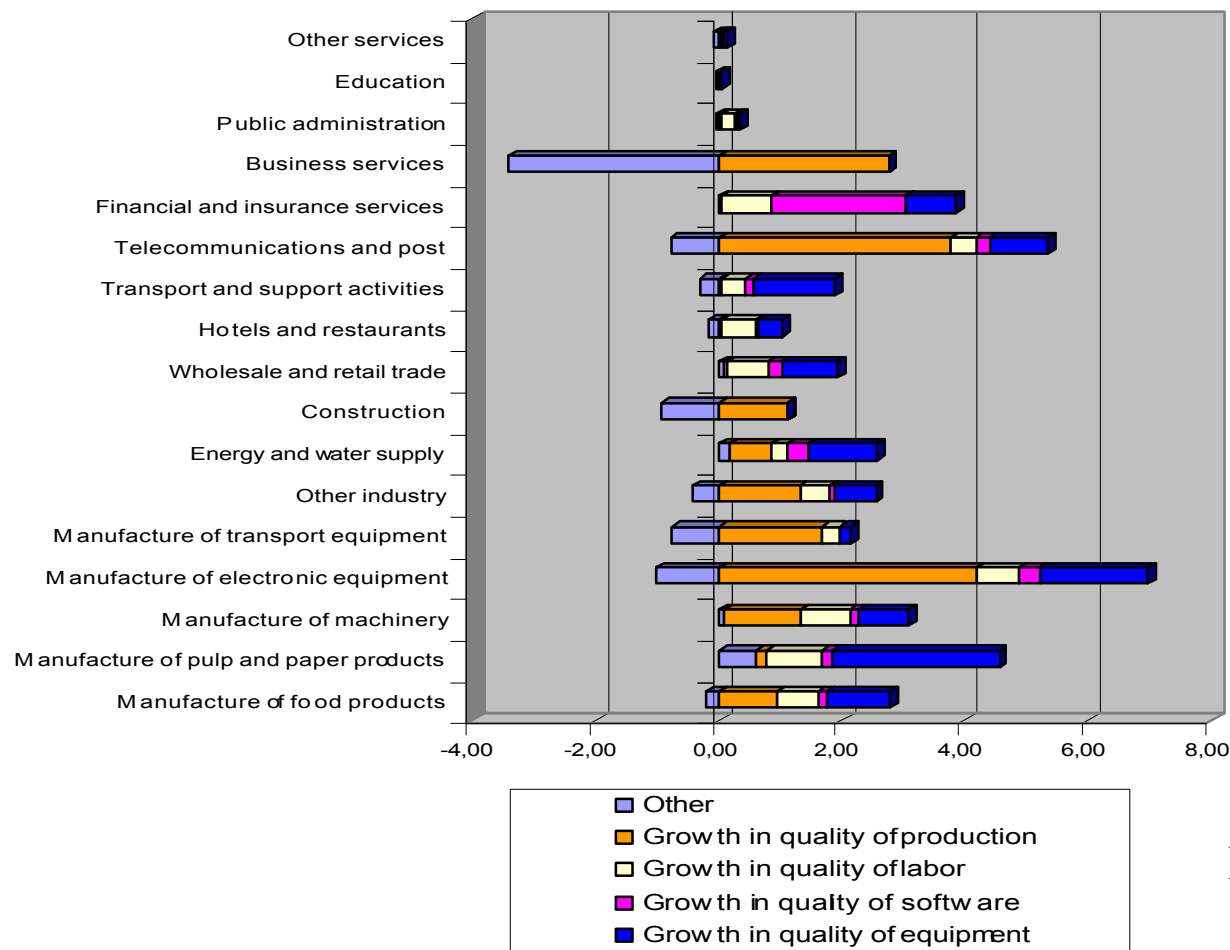
Pulp and Paper Industry



Lindström, Martikainen
and Hernesniemi 2004

Productivity growth 1976-2003

Annual average growth of Total Factor Productivity in Finland and its components:



Rantala 2004

Business and public sector

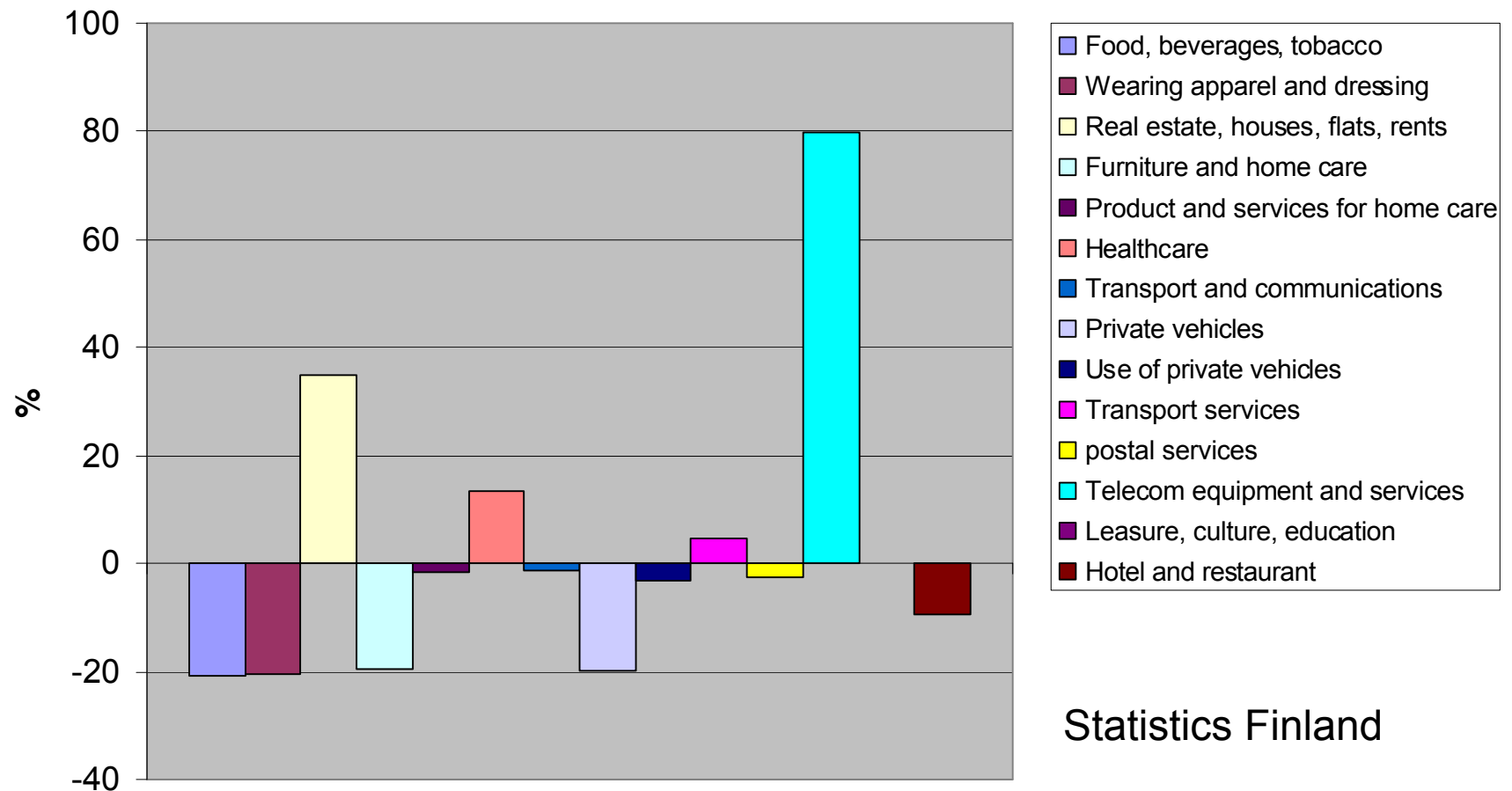
- *How IP-Applications create their benefits*
 - Products and services can be combined
 - Business, production and service processes can be automated and integrated
 - Perceived customer value can be integrated in the product/service profiling
 - Process integration between firms and/or public players can be realized
 - Knowledge-creating organizations can be developed
- ***Typical patterns of creating these benefits are not so well known*** – theoretical and applied research as well as precompetitive development projects would be needed

Business and public sector

- High value *IP-Application patterns and the most productive best practices* in the industrial and public use in chosen segments should be studied, piloted and developed
- *Theory and practice, patterns and models* how to create measurable productivity increases in business and service processes by using ICT are to be developed
- The counterpart of EDI should be standardized in All-IP to enable the potential European benefits - *European XML-based service and business standards*
- To provide the IP-Applications for mobile users, the *Wireless All-IP* with European user identification, vertical roaming and multichannel capability should be developed, standardized and deployed in Europe
- The deployment of All-IP and the IP-Applications in public and private sectors create opportunities not yet realized to knowledge intensive business services and SMEs

Consumer sector 1990-1998

Relative Change of Private Consumption 1990-1998



Consumer sector

- Fundamentals
 - Broadband connectivity adsl, wireless, dtv
 - Reliability, security, managed PC, STB or VoIP
 - Intelligent terminals, software, smartcards
 - Support, education, usability and experience
- New Generation Media (NGM)
 - Experience and development of Internet based business models for voice, data and multimedia
 - Segmented offerings, analyzed impact, campaigns and products based on segments
 - Innovative: Italian Prepaid PayPerView, AOL video and voice, Japanese rich and proactive services
 - Platforms, partnering, usability, experience the keys

Consumer sector

- New Generation Services (NGS)
 - Ubiquitous computing: Fixed, cellular and ad-hoc networks (at home)
 - Context awareness and personalization enable adaptive service provisioning
 - Semantic rich and proactive services that apply usage scenarios and learning
 - These are the personal service environment concepts which are counterparts of the upgraded and more productive IP-Applications and processes in industry and public sector

References

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