



Lessons from e-business and household use: Balancing broadband and applications

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Graham Vickery, OECD

Presentation

Lessons from OECD Information Technology Outlook 2004

- ICT access and use of firms
- ICT access and use of households

OECD policy initiatives

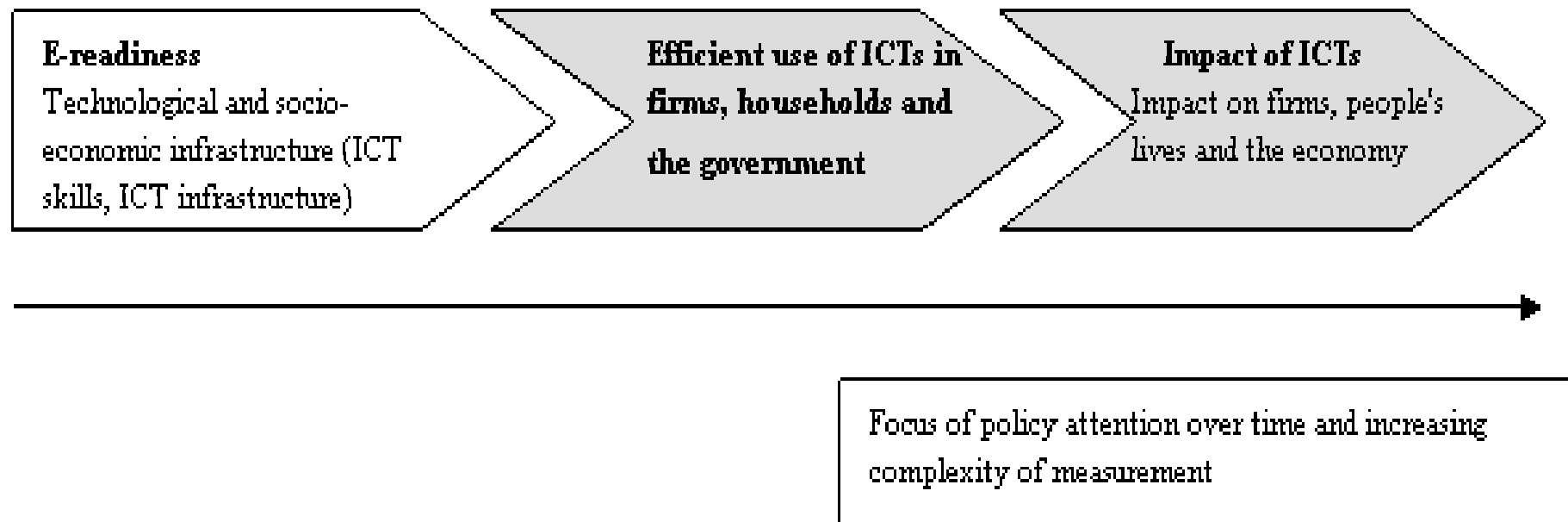
- Existing ICT policy mix and further policy requirements
- OECD Council Recommendation on Broadband, 2004
- OECD Work on Digital Broadband Content

Part 1)

Lessons from the OECD Information Technology Outlook 2004 on broadband access and use

*“Broadband as utility: Striking the balance between content
and infrastructure”*

Beyond the hype: From access to efficient use (broadband as utility)

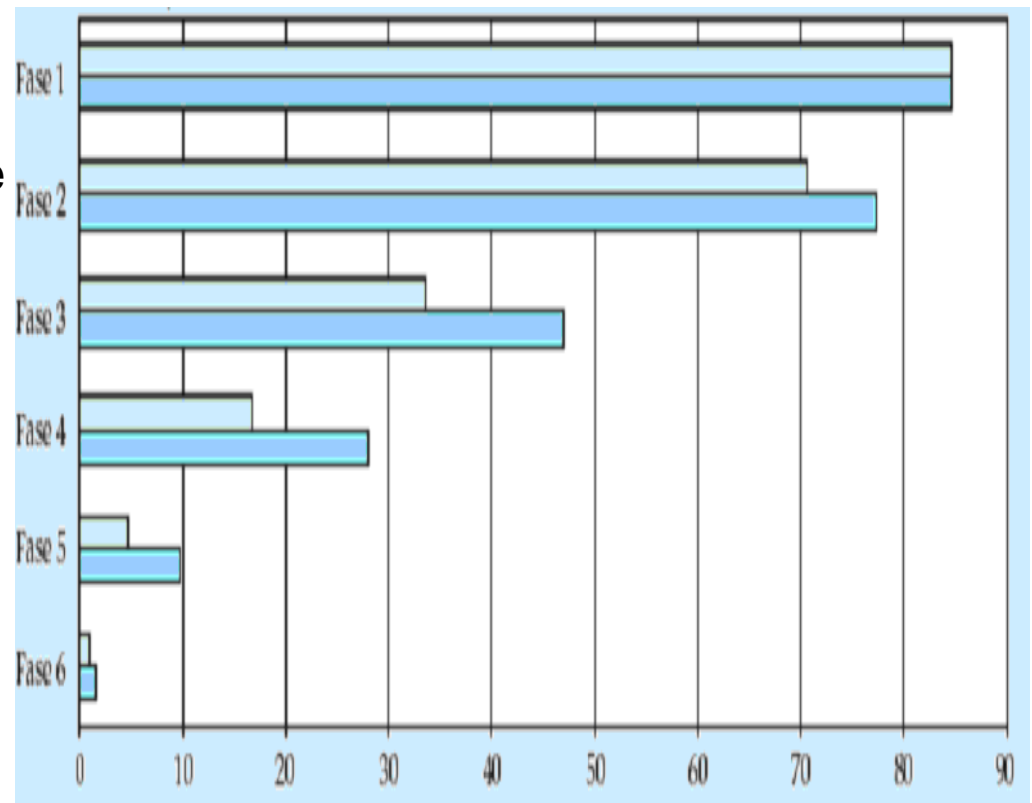


Firms: High access but no widely shared efficient ICT use / impacts

- Computers and the Internet are widely diffused in enterprises of all sizes and in all sectors in OECD countries.
- Differences between large and small enterprises still substantial.
- ICT spending is recovering with a rise in ICT spending in 2004.
- E-commerce has sustained – but slower than expected – growth.
- However, depending on sectors, there is little implementation of ICT-enabled integrated business processes (e.g. integration along the value chain, use of ICT in R&D / production).
 - Mostly used for information search and email.
 - Low integrated use along value chains
- E-business applications “divide” between small and large firms.

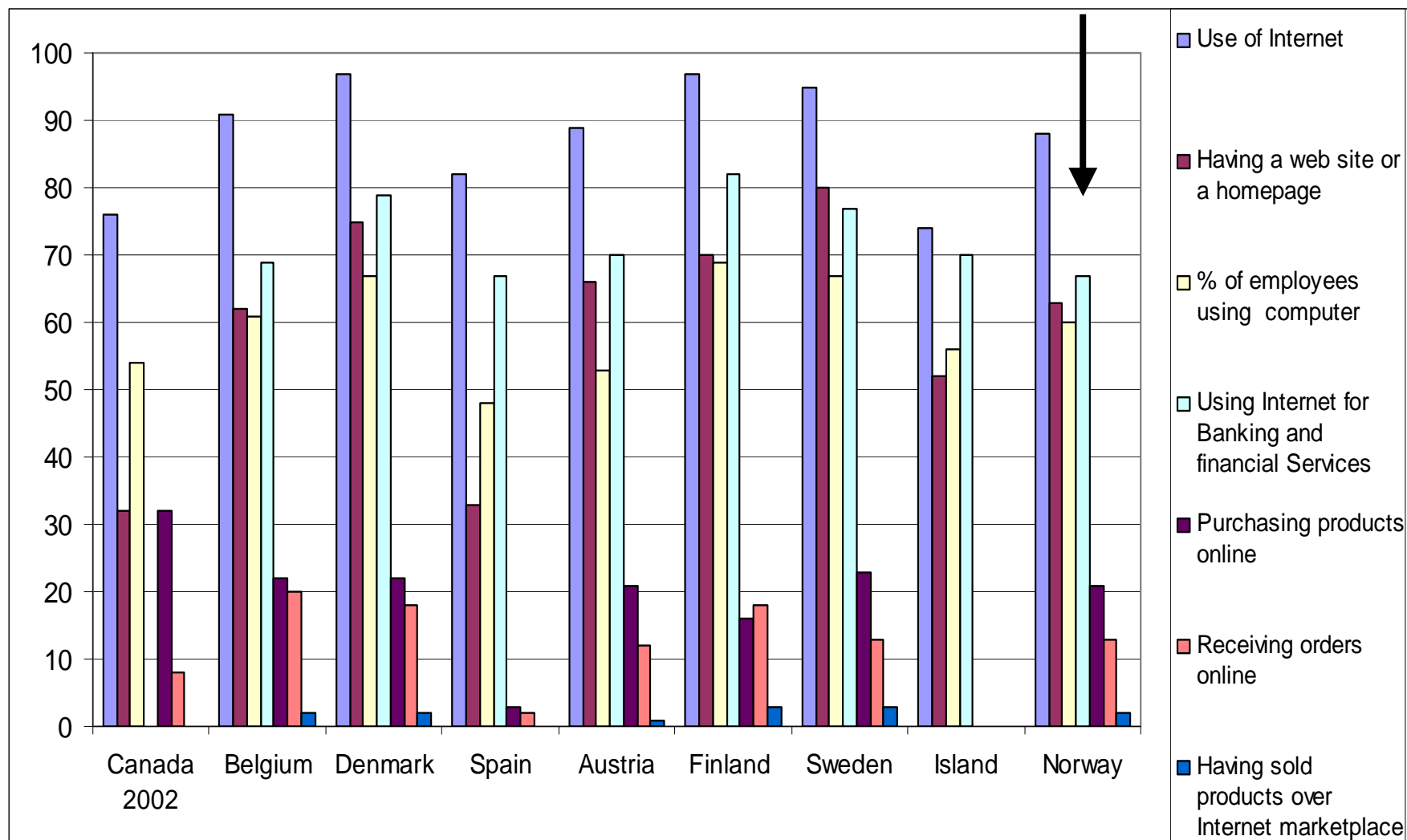
E-Business development phases

- Phase 1: Present company via website
- Phase 2: Provide product and/or price information
- Phase 3: Receive orders through the Internet or electronic networks
- Phase 4: Electronic delivery of goods /services and/or customer service
- Phase 5: Electronic orders coupled with ICT systems (financial, logistics, marketing)
- Phase 6: Electronic orders coupled with customer ICT system (stock administration)

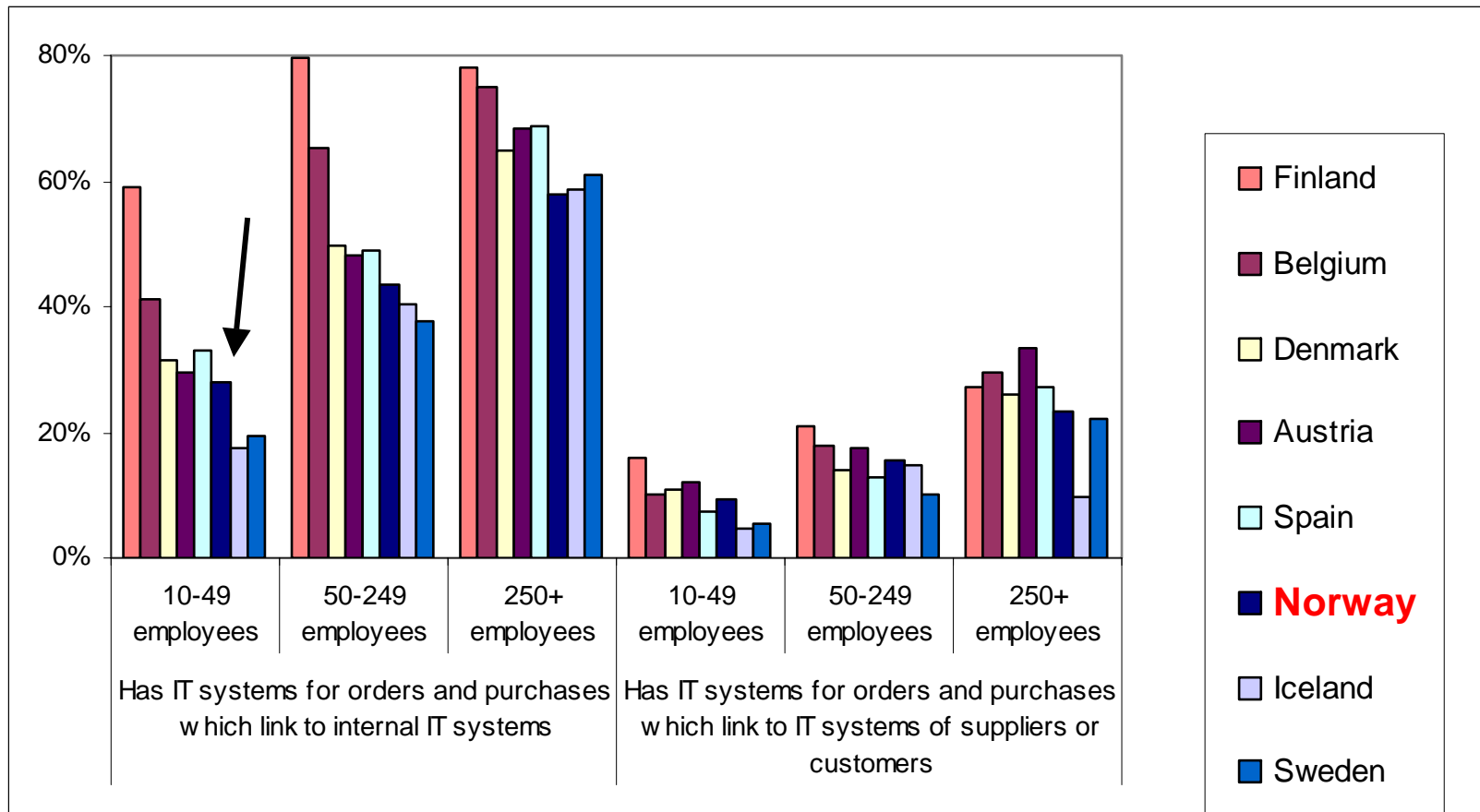


CBS (2003), Dutch statistical office (percentage of firms).

High business connectivity but low e-commerce adoption, 2003



High business connectivity but low e-business adoption, 2003



OECD based on Eurostat.

Impact of ICTs on businesses

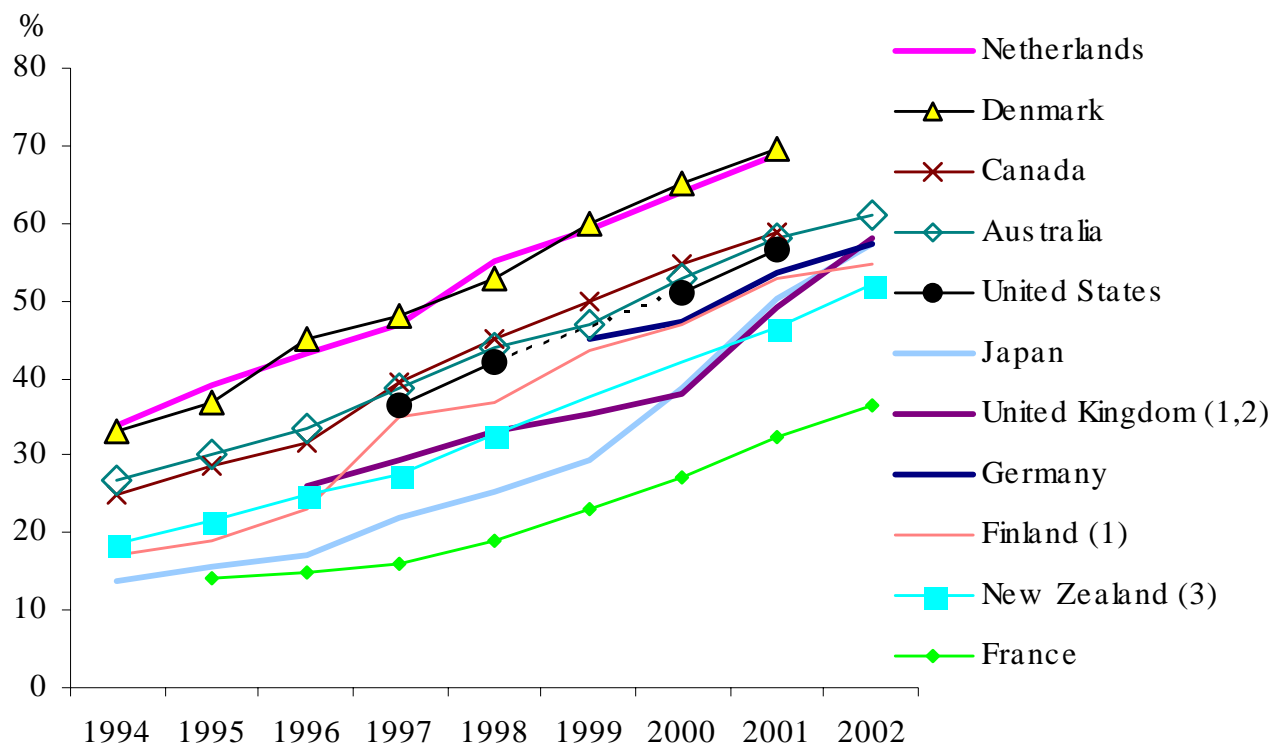
- Firms can increase business performance and productivity through the use of ICTs.
- But availability of ICTs does not automatically translate into effective use and positive economic impacts.
- Innovations: organisational change, improvement of human capital, are necessary conditions for maximising impacts.
- Few studies have estimated actual impacts in terms of money saved, reduced cycle times, increased customer satisfaction, etc.
- Benefit-cost analyses are difficult and rare.
- Obstacles
 - Lack of strategic clarity among top management to link e-business with existing business strategies
 - deficient organisational and product innovations
 - lack of investment in skills
 - lack of metrics to assess ICT impacts.

b. Households: Increasing access but no widely shared use / availability of applications

- PCs diffused quite slowly in households.
- Building on the installed PC base, the Internet has diffused rapidly and **broadband is following rapidly**
- **Lack of need or interest** and **costs** are the main reasons for not being equipped.
- Internet use is also evolving, influenced by the **supply of broadband** and **new access devices**, and by **educational attainment** on the demand side.
- **E-mail** remains the principal activity. Focused information search, obtaining news, and personal banking / and browsing for information on goods and services is becoming important for off-line shopping.
- **Now that ICT access is widely available, a “use” divide surfaced (young, educated, IT-using occupations).**

Access to a home computer in selected OECD countries, % of households

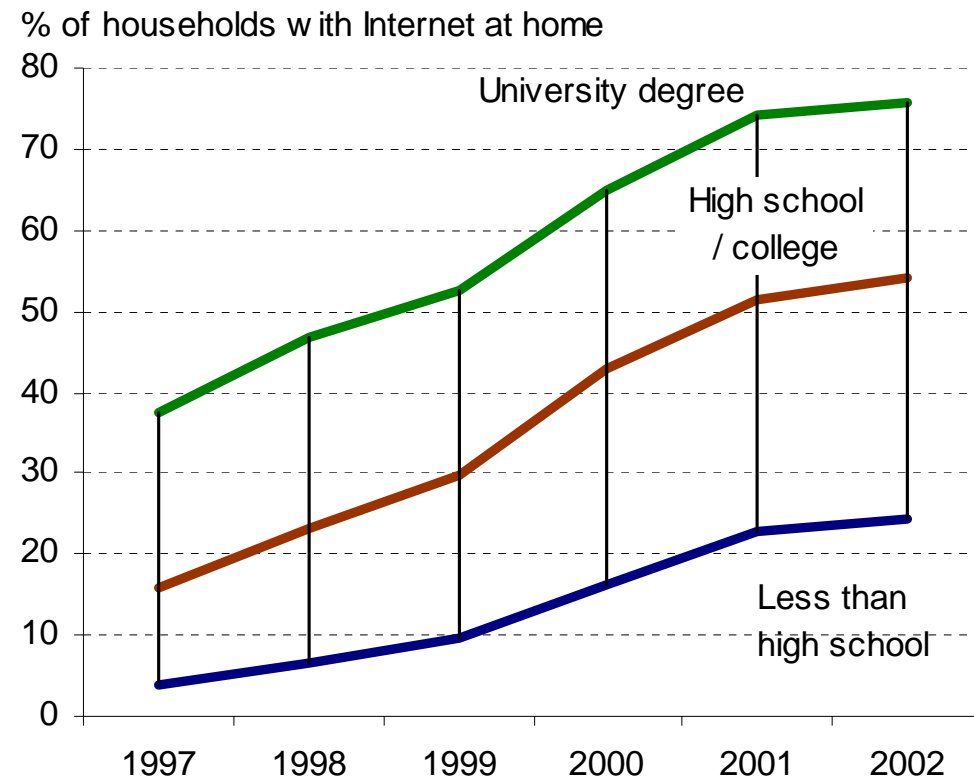
In leading OECD countries, ICTs are an integral part of everyday household use, despite a persistent if narrowing digital divide.



Some access divides persist

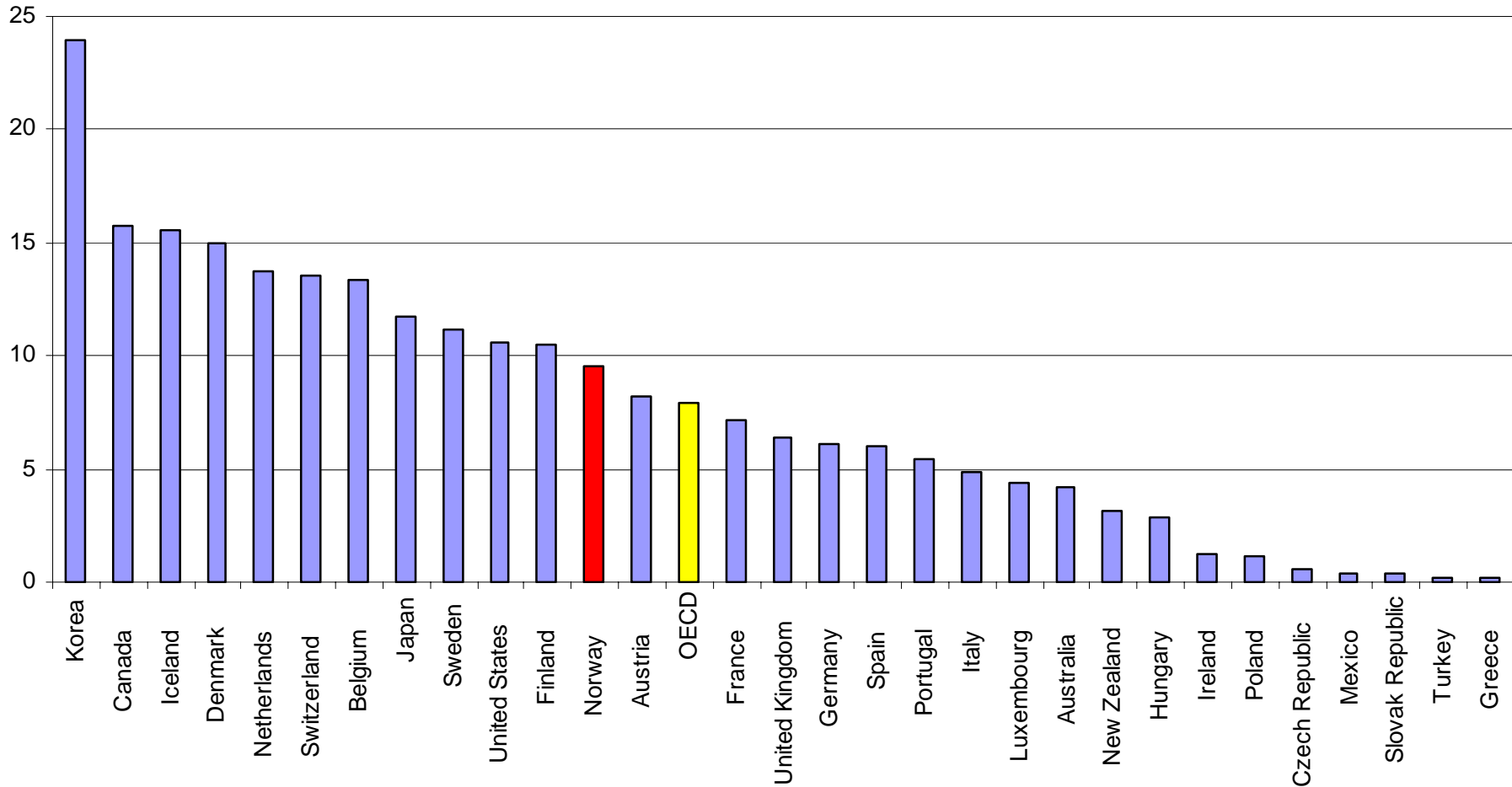
Nordic countries: Share of individuals with tertiary education accessing the Internet from home is one-quarter to one-third higher than for those with primary education (Nordic Council of Ministers, 2002)

Canada



Norway: Still catching up with broadband

Broadband subscribers per 100 Inhabitants (March, 2004)



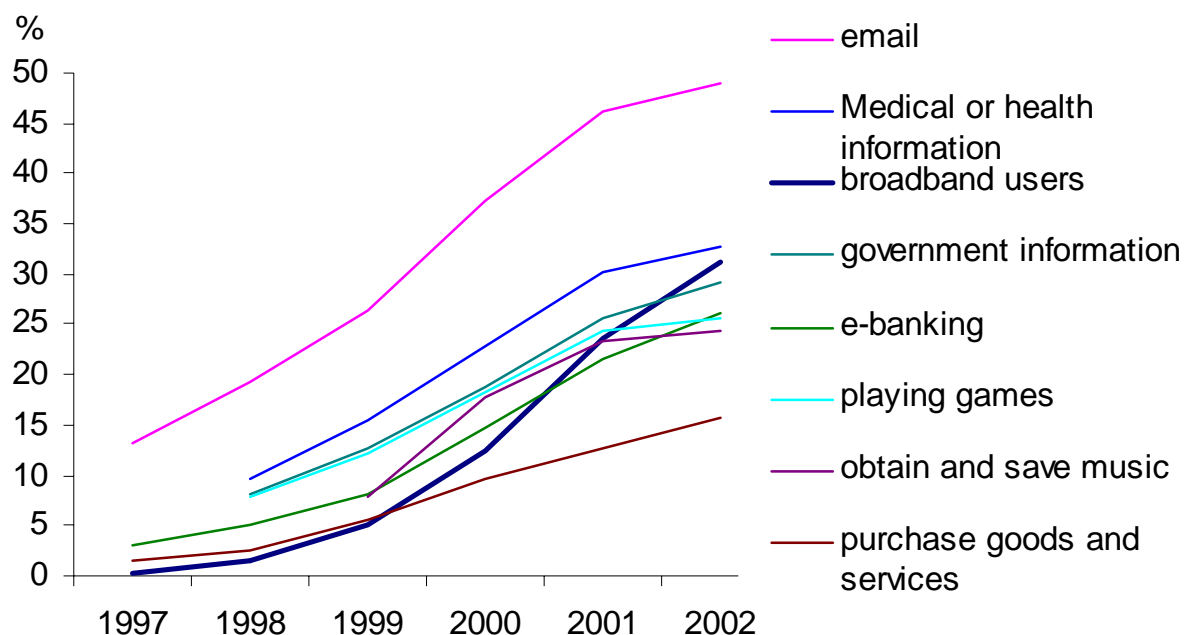
OECD Broadband Database.

Household usage patterns

- **Most common activities: E-mail and information search on products and services.**
- **Next come: reading /downloading news, playing/downloading games and music, banking, window shopping and buying goods and services.**
- **The adoption of broadband Internet access strongly affects usage patterns, in terms of activity (type of use) and in terms of intensity.**

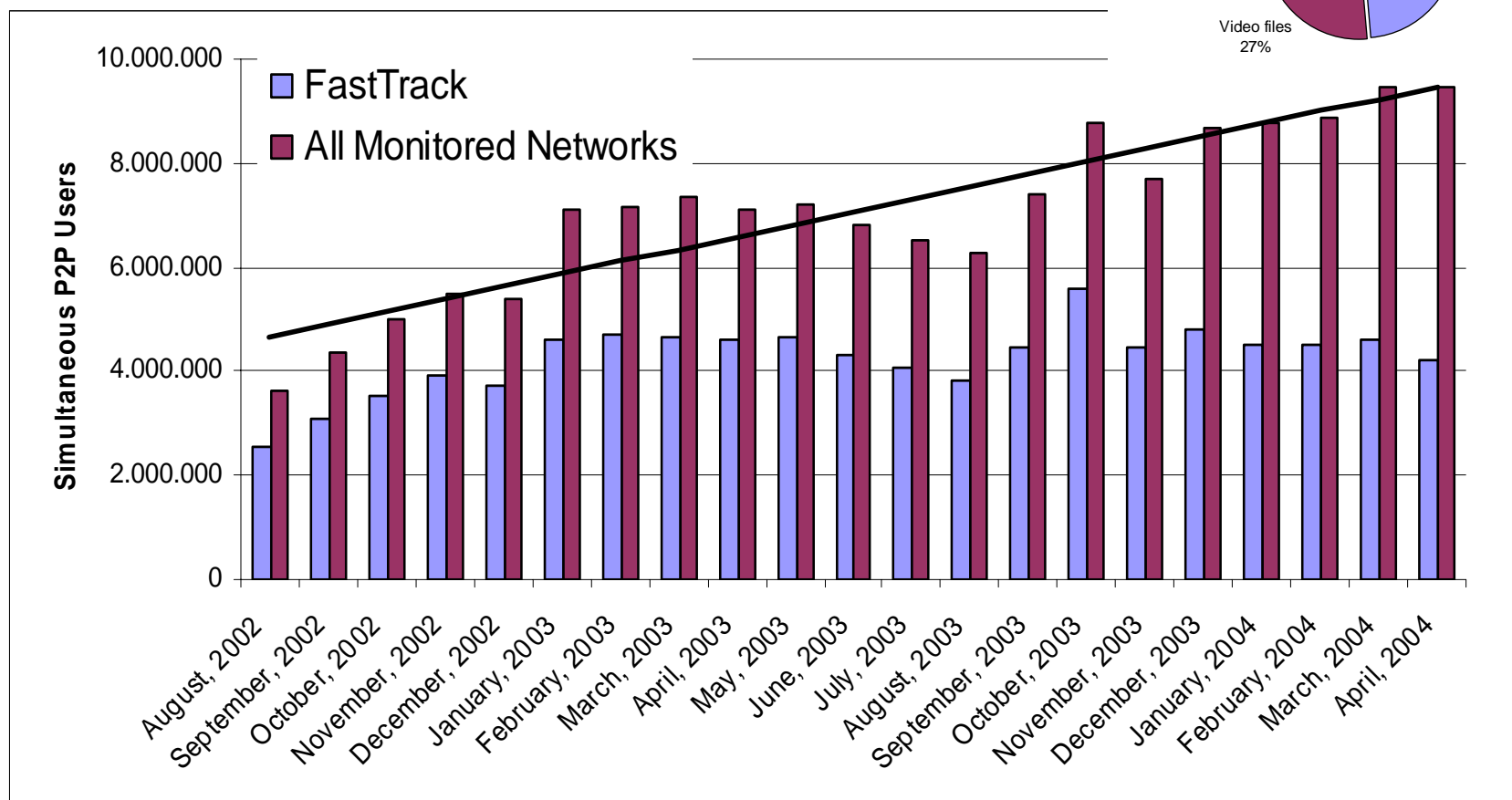
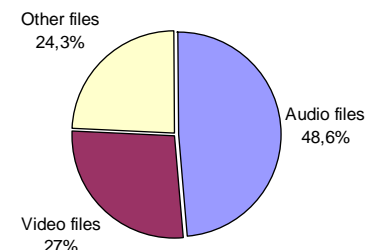
Broadband diffusion and use of Internet in Canadian households, 1997-2002

Percentage of all households



P2P: The only “*successful*” broadband application so far?

2003 File Type Breakout for OECD Countries



Part 2)

Policy reactions in the OECD:

Broadband Infrastructure, Applications and Content:
What role for policy ?

“Broadband as utility: Striking the balance between content and infrastructure”

a. Existing ICT policies and policy requirements

Primary focus on

- General ICT policy environment (visions, policy co-ordination).
- ICT innovation ([R&D support programmes](#) and government projects).
- Enhancing the infrastructure (broadband, electronic settlements, authentication and digital signatures, standards).
 - [Broadband](#) has been a new focus, accompanied by growing policy interest in [digital content](#) (especially public sector content) and digital delivery.
- Diffusion and use ([ICT skills](#), [government on line](#), diffusion).
- ICT business environment (getting the environment right, notably in the area of competition and intellectual property rights).
- Promoting trust ([security](#) of information systems and networks).

E-Business and organisational capabilities

Obstacles and policy issues

- **Obstacles:** Lack of strategic clarity as to how e-business can leverage existing business strategies, deficient organisational, process and product innovations, lack of investment in skills and lack of metrics to assess ICT impacts.
- Move beyond policies for basic connectivity and ICT readiness to facilitate more widespread uptake and use of complex e-business applications (ie. SMEs).
- Policies to encourage the electronic distribution of digital content.
- Financial and regulatory frameworks (e.g. authentication, payments) enabling online processes and transactions and foster trust/security
- Shift towards global networked production raises new policy issues including interoperability and standards and new forms of competition.

Household use and access:

Obstacles and policy issues

- ICT policies need to focus on mix of supply-side measures to raise connectedness, with demand-side measures to enhance diffusion and encourage content provision, and related education and social development measures.
- Existing policies encourage the
 - private-sector rollout of broadband infrastructure,
 - government development projects focusing on e-government
 - areas such as digital signatures and privacy measures.
 - the development and online sale of digital content.
- Focused measures for individuals and households include
 - integration of ICT literacy into education,
 - development or encouragement of community access points,
 - specific targeting of certain socio-economic groups,
 - enabling legal or financial measures to encourage uptake of ICTs.

b. OECD Broadband Recommendation 2004

- Effective competition and continued liberalisation in infrastructure, network services and applications.
- Technologically neutral policy / reassessment of regulatory frameworks.
- Policies (supply and demand-based) that encourage investment in technological infrastructure, content and applications.
- Recognition of the primary role of the private sector in the deployment of broadband, with complementary government initiatives.
- Encouragement of R&D in the field of ICT.
- Culture of security to enhance trust in the use of ICT (privacy, consumer protection, cross-border co-operation).
- Regulatory frameworks that balance the interests of suppliers and users, in areas such as the protection of intellectual property rights, and digital rights management without disadvantaging innovative e-business models.

c. OECD Work on Digital Broadband Content

Broadband content: What role for policy ?

- Rapid development of high quality "always-on" broadband Internet services will transform industries and services that provide or have the potential to provide digital content.
- Stocktaking studies in the following areas:

1. Mobile content

2. Scientific and technical publishing

3. Music

4. Online computer games

5. Public sector information.

- Business models for digital content and changing value chains.
- Drivers and barriers to growth, sectoral transformation and changing market structures, and their impacts on growth and employment.
- Barriers not technological ones

Issues for digital content development and delivery

- ***Innovation and technology***

- R&D and innovation in content, networks, software and hardware.
- An environment conducive to content production.
- Venture capital and other financing.
- Skills and human resources development.

- ***Value chain and business model issues***

- Framework conditions for new business models and best practices.
- Convergence issues and regulatory challenges across value chains and industries (content, communications, electronic equipment industries).
- Technology neutrality. For digital content on different platforms.
- Competition / co-ordination along value chains. Distribution and revenue sharing models (network services, content providers, intermediaries etc.).

Issues for digital content development and delivery

- ***Infrastructure***
- Broadband policies for coverage / access to infrastructure and applications.
- Technological issues for delivery: standards, interoperability (including DRM).
- Technical protection issues: digital rights management and watermarking.
- Infrastructure: (micro-)payments, electronic signatures, authentication.
- ***Business and regulatory environment***
- Adapting established regulatory frameworks to digital content value chains and business models.
- IPRs: Counteracting piracy, DRM as business model enabler, use rights along content creation and delivery value chains, digital rights clearing systems.
- Taxation issues specific to digital content – tax neutrality for digital content.
- ***Public / government content (public sector information)***
- Government as model user in putting government content online.
- Digitising public content (meteorological data, archives, etc.) and access to education, cultural and public information. Availability, access, pricing.
- Public demand: Digital content in education, health, etc. Multi-device access (e.g. mobiles, PDA, TV, PC, consoles) to education / cultural public resources.