A Review of the Danish ICT Policy

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The Networked Readiness Index 2008–2009 rankings

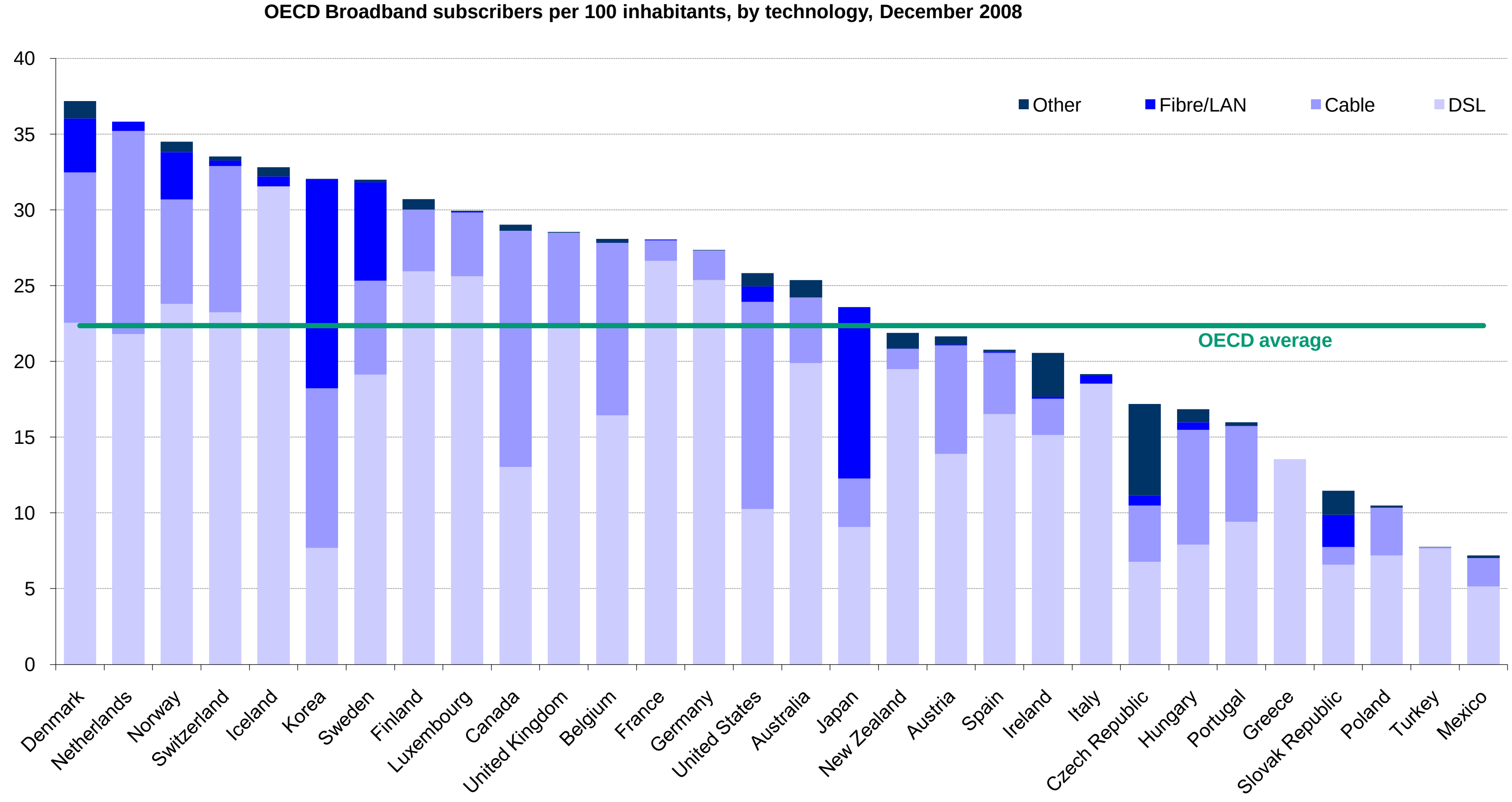
2008–2009 rank	Country/Economy	Score
1	Denmark	5.85
2	Sweden	5.84
3	United States	5.68
4	Singapore	5.67
5	Switzerland	5.58
6	Finland	5.53
7	Iceland	5.50
8	Norway	5.49
9	Netherlands	5.48
10	Canada	5.41

Economist Intelligence Unit e-readiness rankings, 2008

Category scores

	Overall score	Connectivity	Business enviroment	Social and cultural environment	Legal environment	Government policy and vision	Consumer and business adoptio
Category weight		*20%*	*15%*	*15%*	*10%*	*15%*	*25%*
United States	8.95	8.50	8.53	9.00	9.00	9.00	9.50
Hong Kong	8.91	9.00	8.64	7.47	9.80	8.95	9.50
Sweden	8.85	8.80	8.52	8.60	8.60	9.35	9.05
Australia	8.83	8.60	8.59	9.13	9.50	8.85	8.70
Denmark	8.83	8.70	8.65	8.67	8.60	9.85	8.60

Broadband subscribers per 100 inhabitants



Source: OECD

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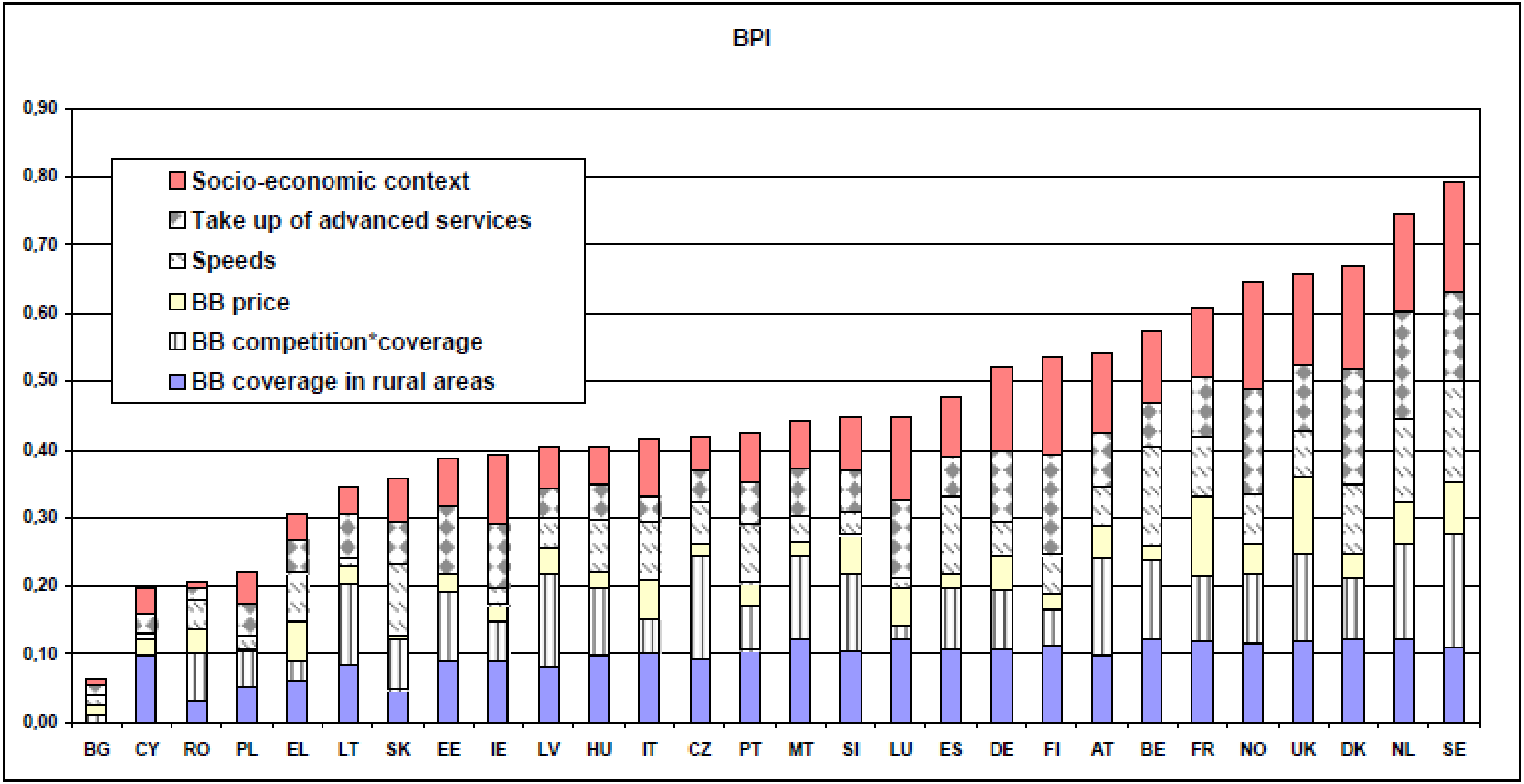
EU Broadband Performance Index

www.aau.dk

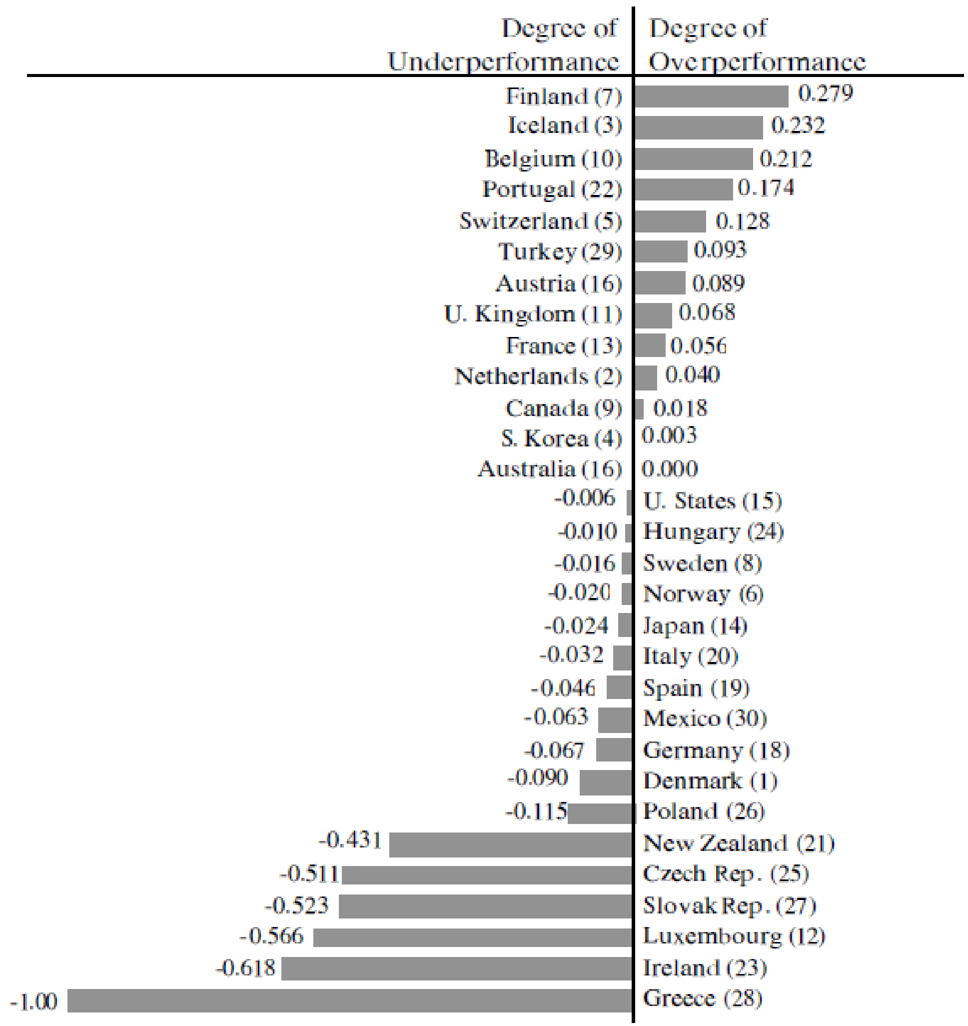


center for Communication, Media and Information technologies

Motivation

- How has Denmark and other Scandinavian countries been so successful?
- What is the role of government policies vs. Other factors?

Broadband Performance Index (December 2006 OECD Rank in Parenthesis)



Categories of policy initiatives

- Strengthening and harmonisation of internal use in public organisations
- Developing public communication networks and services relating to citizens and businesses
- Facilitation of the development of communication networks and services
- Regulation proper, setting the ‘rules of the game’
- Support for demand
- Support for supply

Policy documents

- 1994: Info 2000
- 1995: Best and cheapest – through real competition
- 1999: Political agreement
- 2001: Broadband strategy – from facilities to content
- 2009: The High speed committee
- Annual reports from the national IT and Telecom Agency

Phases in the Danish telecom policy

1987-94 Reluctant attitude towards liberalisation

- Gradual liberalisation
- Presure from EU and users
- Creation of Tele Danmark

1994 – Wants to be in the forefront

- Attract investments and advanced services
- New Ministry of Research and Telecommunication
- Info 2000 published
- Free competition from mid 1996
- Tele Danmark sold in 1997
- Unbundling of local loop 1998

2001- More liberal approach?

- LRAIC replaces best practise
- Next generation networks
- More focus on facility based competition
- Auctions and spectrum trading

Info 2000

- IT is important:

  "Applied successfully, information technology is a source of economic development, improved quality of life and better service, both public and private."

- Denmark in the forefront:

  "Therefore there is a need for a strategy that places Denmark in the forefront of the development towards an Information Society."

- Universal Access

  "The strategy must rely upon the extensive use of information technology, and it must be based upon values such as openness, democracy and responsibility for all people in society in order to avoid a division among Danes into an "A-team" and a "B-team" with regard to information technology."

- Public sector involvement

  "The public sector shall be actively involved with the private one and be the leading force in the efficient use of information technology."

1. Denmark should have an electronic communication **infrastructure** ranking among the best in the world.
2. The Danes should obtain the necessary **competencies** to utilise this infrastructure optimally.
3. The Danes should **feel secure** and confident when using the infrastructure.
4. The Danes will use the infrastructure in practice because it offers **valuable and useful content**.
5. **Green IT**: The National IT and Telecom Agency should contribute actively to a reduction of energy consumption and environmental strain in Denmark.

Best and Cheapest 1995

A texbook in competition

Recommend asymmetric regulation

To be in the forefront

Attract investments and advanced services

Principles in the broadband strategy 2001

- Infrastructure development should be market driven
- Regulation and policy initiatives should be technology neutral.
- Content shall drive the demand for broadband services.
- The public shall:
  - Support and develop IT competencies of citizens
  - Provide attractive digital service

Supply site: Creation of TDC

- 1990 TDC created through a merger of regional operators
  - Vision: to create a strong national champion
- 1994 49% of the shares sold on the open market.
  - 15% to Danish shareholders
- 1998 The remaining shares sold to Ameritech
  - Vision: to establish Denmark as a European hub through a strategic partnership
- 1999 SBC takes over Ameritech
- 2004 SBC sells its share on the open market
- 2006 A private equity fund takes over 88.2% of the shares

The Nordic Incumbents

	Revenue 2008	Revenue in € (mill.)
TDC	38,819 (mill.) DKK	5,214
Telia	103,585 (mill.) SEK	10,043
Telenor	97,194 (mill.) NOK	11,635

Attracting new actors

- About 140 telecom operators including “grassroot providers”
- The Mobilix story (Denmark as a test market)
- Today limited presens of international operators
  - (small market strong competition)
- Heavy investments from electricity companies

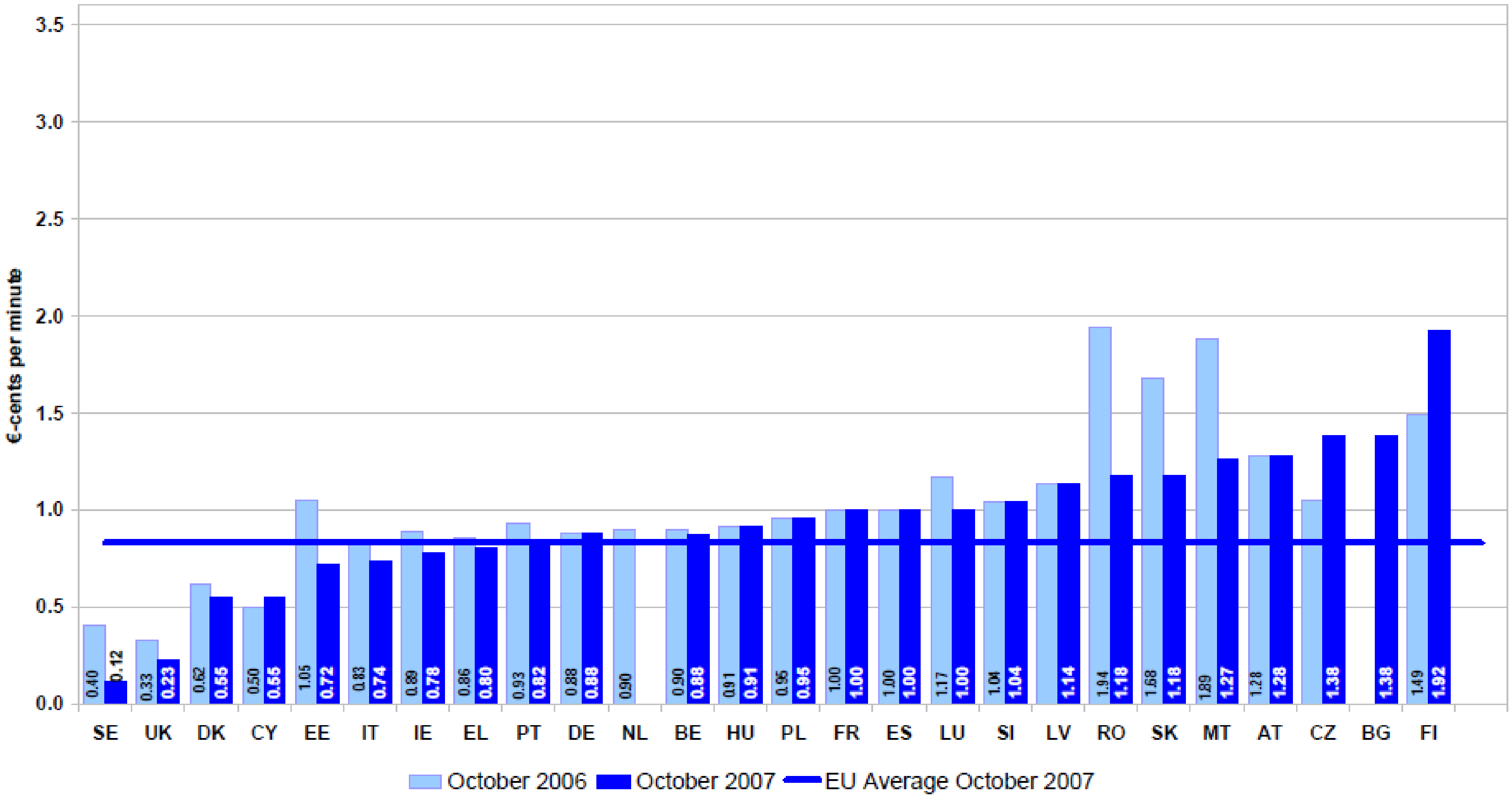
Demand site policies

- Attractive taxation schemes
  - Being replaced by a mulimedia tax
- IT in schools and in public libraries
- Early adoption of electronic banking
- Intentions to early introduction of digital signature
- EDI
  - Early standardization (EDIFACT)
  - Mandatory use of electronic invoicing
  - Digital salary statements for civil servants
- Promotion of digital services in municipalities etc.
  - Digital reporting to taxation authorities
  - Digital library services
  - Digital applications for housing/kindergartens etc.

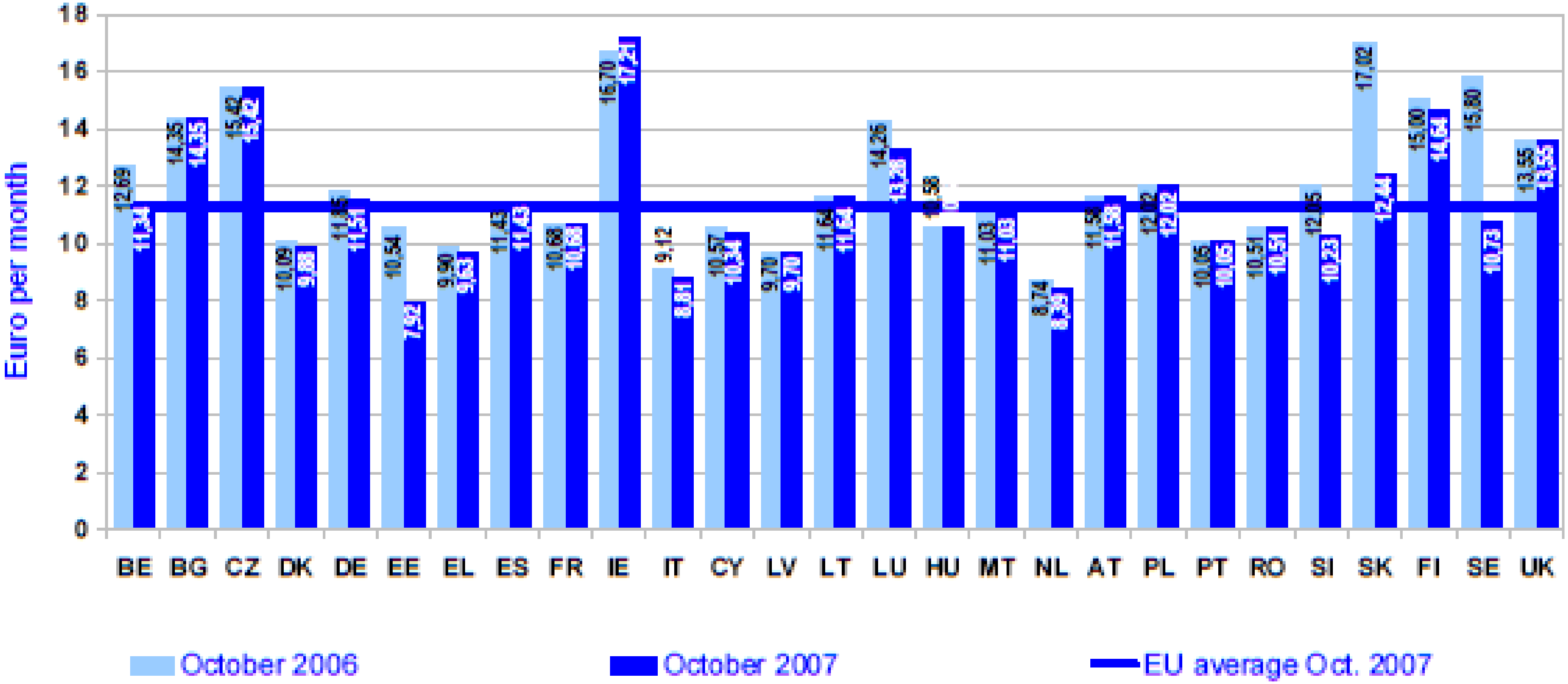
Supply side: Regulation

- Facility based competition: Several pipes to the home
- Investment ladder
- Tough on interconnection regulation and open access
- No regulation of retail prices
- Structural separation not on the agenda

Termination charges Single transit - EU average: 0,83 €-ces



Unbundled loop Monthly average total cost EU average Oct. 2007: 11,28 €



Interconnect charges (termination)in 01.01.2007

	Price 2007	Index 2007 2003=100	Index 2006 2003=100	Index 2005 2003=100	Index 2004 2003=100
Local IC	2.34 øre	80	88	107	97
Regional IC	3.30 øre	62	89	109	98
Transit IC	4.59 øre	86	98	105	98
ULL	736 Kr	99	104	108	104

Conclusions

- Several parameters on the Danish market favours a rapid adoption of ICT services including broadband.
- Danish policy has focused on the demand site
- Regulation has been used to promote service based competition.
- More attention is now given to facility based competition
- Public sector has been instrumental in promoting digital content.

Challenges

- Maintain the momentum in service development
- Standardization issues (e.g. ODF, EPJ)
- Create facility based competition
- Lower prices