



EUROJÄRJESTELMÄ  
EUROSYSTEMET

Governor  
Erkki Liikanen

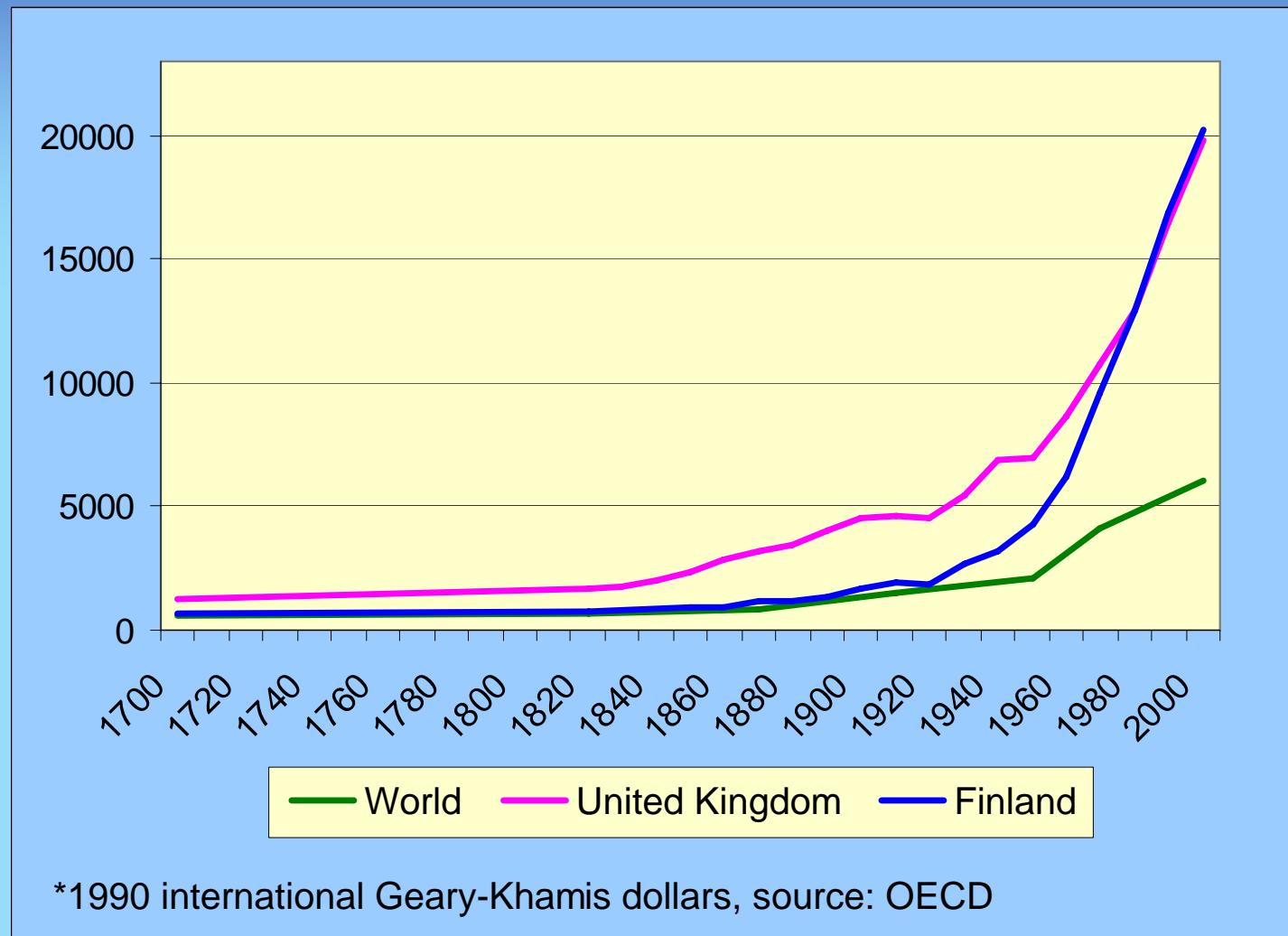
# ICT and productivity, challenges and opportunities

Tampere, 30 November 2006

# Productivity growth and ICT

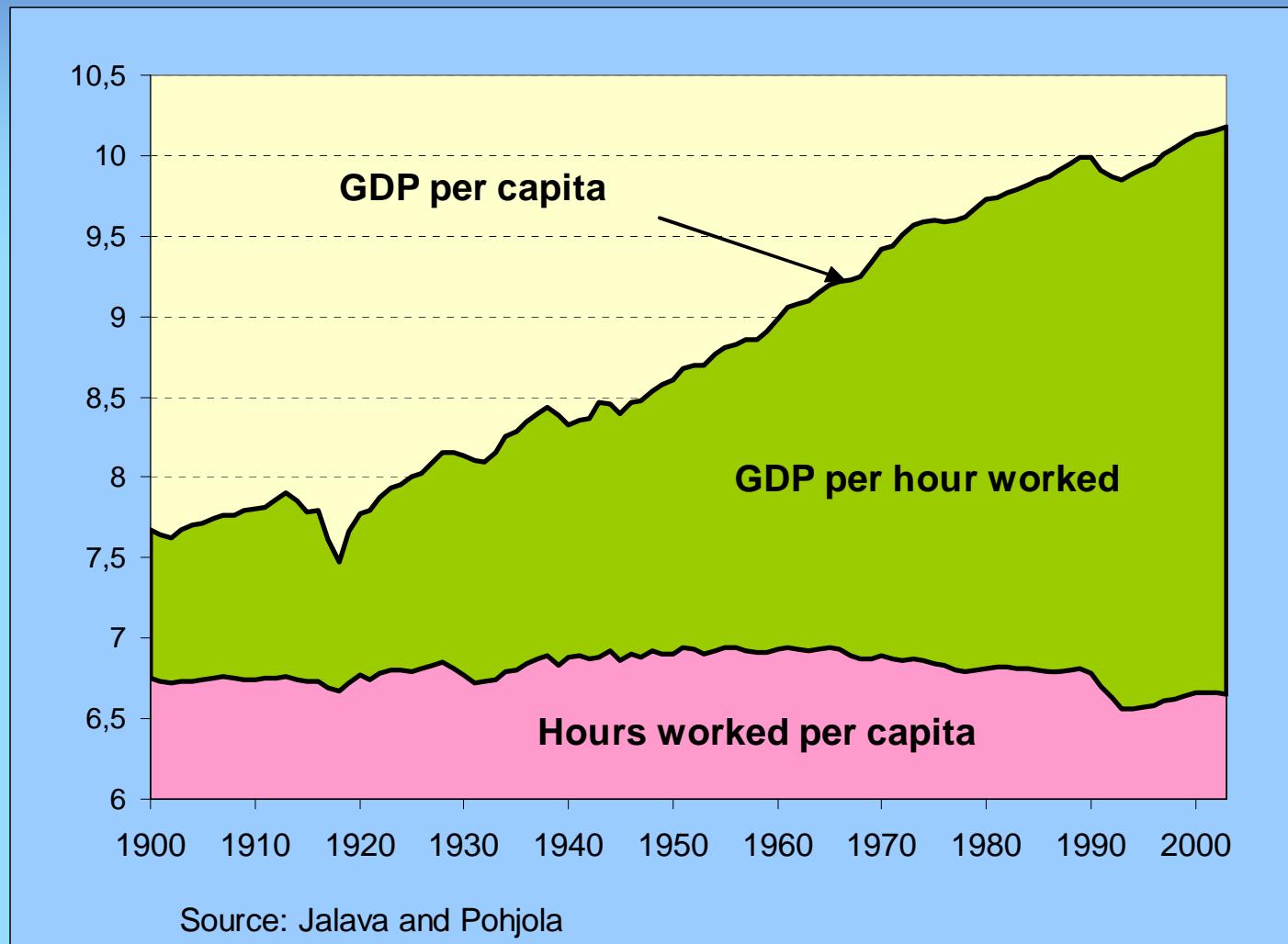
- Economic growth is a new phenomenon
- Key to faster productivity growth first in electricity, now in ICT and its use
- ICT – from investment to utilisation
- Continued growth in productivity a challenge for leadership
- ICT-driven restructuring of working methods in the Bank of Finland and the Eurosystem

# GDP per capita in world economy, United Kingdom and Finland, 1700–2000\*



# GDP per capita and its components, Finland 1900–2004

(logarithmic scale, GDP at year 2000 prices)



# What are the factors behind growth?



- Investment
- Greater labour input
- Labour productivity growth  
(growth in output created per person)

# What are the components of labour productivity?

- Growth in capital intensity  
(eg. investment in machinery and equipment per employee)
- Growth in human capital (education)
- Total factor productivity
  - technological advancement
  - organisational changes
  - better 'recipes'

# Sources of productivity growth in Finland

- Finland quickly learned to utilise electricity
- Electricity used to process forests and ore
- Electricity's possibility to stimulate productivity extensively exploited by the 1970s
- ICT became increasingly important from the 1980s, although its impact on productivity was slow at first
- Robert Solow 1987: '*You can see the computer age everywhere but in the productivity statistics*'

# How does growth contribution of ICT work?

## ■ ICT investment

- Capacity increased, lower prices
- Common-use technology, similar to electricity

## ■ Restructuring of working methods

- Enabled big changes in work processes and organisations
- Enabled flattening of hierarchy and efficient group work

## ■ Education and training

- Focus of work, education and training shifted from mechanical tasks to problem-solving and communication skills

## ■ Problem of time lags



# Requirements for a successful IT project

- Focus on activity, not on technology
- Clear objective (key processes)
- Strong support from top management
- Usability of the tool
- Good and broad project group from the start
- Constant user participation
- Choose a project where you have immediate deliverables; better processes and cost savings

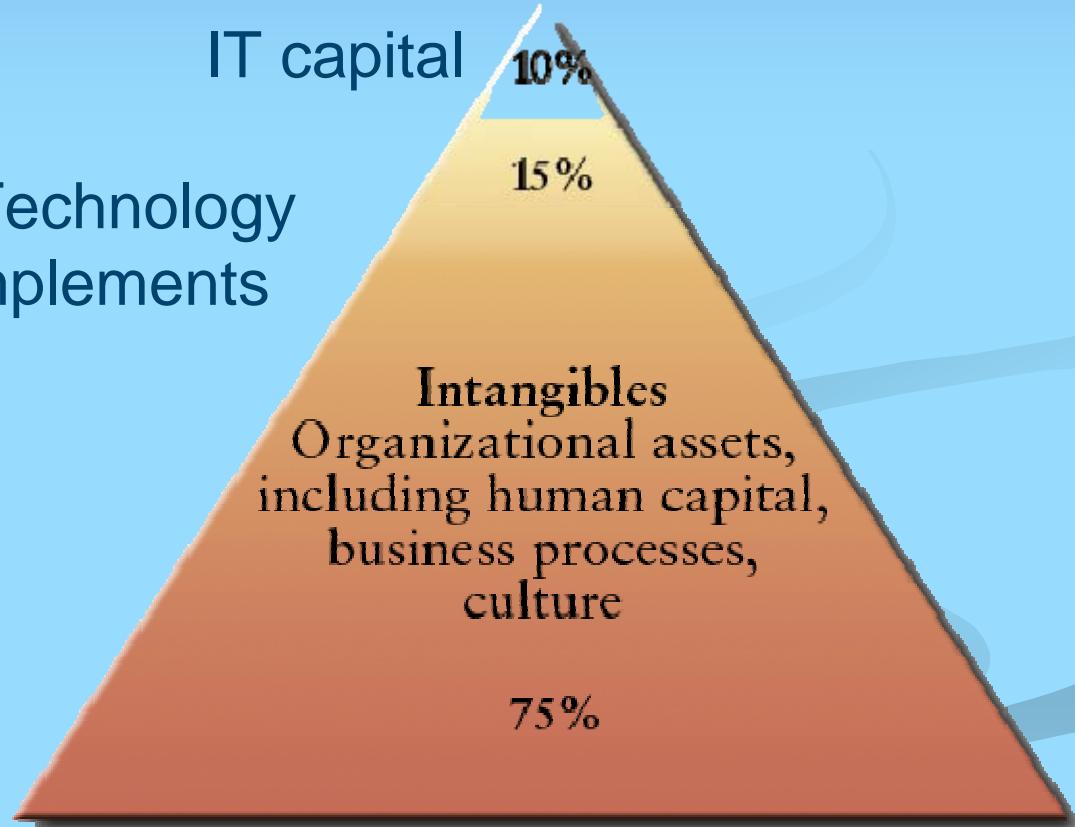
# Investment in organisation and education greater than ICT investment

## Intangible Assets

Enterprises spend far more on intangibles than on IT and technology complements

Technology complements

IT capital



# Productivity growth in EU and USA

Labour productivity growth in the private sector, 1987-2003

	1987-1995	1995-2000	2000-2003
<b>European Union (EU15)</b>			
Labour productivity growth	2.7	2.2	1.1
of which			
IT production*	0.5	0.8	0.5
Other industrial production**	1.3	0.8	0.6
Services**	0.8	0.6	0.1
Others	0.2	0.0	-0.1
<b>USA</b>			
Labour productivity growth	1.4	3.4	3.6
of which			
IT production*	0.8	1.2	1.1
Other industrial production**	0.3	0.5	0.9
Services**	0.5	1.8	2.0
Others	-0.2	-0.1	-0.3

\* Includes IT production, telecommunications and software production

\*\* Excludes IT production

Source: Van Ark and Inklaar (2005)

# How can we speed up productivity growth in companies ?

- Competition forces companies to invest in ICT and adapt to new working methods
- Successful implementation of changes requires
  - innovative leaders
  - staff well disposed towards change

# Labour productivity growth in public sector



- Problem: not always competition
- Measurement of results difficult (but essential!)
- Strong leadership in key role
- Rise in public sector productivity growth essential when adapting to increasing expenditure pressures arising from population ageing

# Main tasks of the Bank of Finland



- Monetary policy:
  - Governor is member of the ECB Governing Council
- Financial markets:
  - Promotion of the stability and efficiency of payment and financial systems
- Banking operations
  - Implementation of ECB's monetary policy in Finland
  - Ensure liquidity in the banking system
  - Transfer of large-value interbank payments
  - Investment of reserve assets
- Maintenance of currency supply

# Bank of Finland shared desktop

in the preparation of the  
ECB Governing Council  
meetings



- Shared desktop on the Intranet containing, for example
  - documents
  - division of duties and timetable
  - Bank of Finland's policy approach
- available to persons involved in the preparation of meetings for editing and commenting
- Speeds up information flow
- Improves process transparency
- Cuts down overlapping work stages
- Supports change in work methods
- Reduces need for support functions and costs

# Workspace for ECB Governing Council meeting preparation

Home Documents and Lists Create Site Settings Help Ohje Up to EKP:n neuvoston kokoukset 2006

EKP:n neuvoston 197. kokous 5.10.2006 Home Modify Shared Page ▾

**VETY**

**Documents**

- Neuvoston kommentit
- Linjausehdotus

**Lists**

- Tehtäväjako
- Aikataulu
- Ilmoitukset

**Discussions**

- Keskustelu

**Surveys**

**Pictures**

**EKP:n neuvooston kokousvalmistelun työtila**

**Neuvoston kommentit**

Type	Name	Agenda kohta	Modified	Modified By	Tila	Checked Out To
	GovC03JH	3	3.10.2006 10:34	Peisa, Paavo	Linjaukseen	
	GovC03RH	03	28.9.2006 16:16	Peisa, Paavo	Linjaukseen	
	GovC03TK	3	28.9.2006 16:15	Peisa, Paavo	Linjaukseen	
	GovC04aKT	4a	29.9.2006 10:51	Harismaa, Camilla	Linjaukseen	
	GovC04bEB	04b	27.9.2006 14:10	Harismaa, Camilla	Linjaukseen	
	GovC04bJT	04b	29.9.2006 11:41	Harismaa, Camilla	Linjaukseen	
	GovC04cHJ ! NEW	4c	3.10.2006 11:35	Peisa, Paavo	Linjaukseen	
	GovC04cMM_VMM	4c	3.10.2006 9:59	Peisa, Paavo	Linjaukseen	

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**Linjausehdotus**

Type	Name	Modified	Modified By	Tila	Checked Out To
	061005 EKP 197 LinjausDRAFT	4.10.2006 10:02	Kyllönen, Inka	Luonnos	Kyllönen, Inka

Add new document

**Aikataulu**

- 4.10.2006 9:00 Johtokunnan kokous
- 5.10.2006 9:00 EKP:n neuvoston kokous Pariisissa
- 9.10.2006 10:30 Debriefing-kokous (R16 Auditorio)

Add new event

**Tehtäväjako**

Agenda kohta	Osasto	Kommentoija
GovC 3	RPSE	Korhonen, Herrala, Hukkanen
GovC 4. a)	MV	Kari Takala
GovC 4. b)	PT, JOLA	Jari Toivonen ja Anna-Maija Tikkanen, Eija Brusila
GovC 4. c)	RP, RMTI	Mattila, Melolinna, H.Jokinen

Add new item

**Agendan kohdat (Documentum)**

[Neuvoston 197. kokous 5.10.2006](#)

**Tyyppi Nimi**

- 1. Adoption of the agenda
- 2. Approval of the draft minutes of the Governing Council meeting of 14 September 2006
- 3. Economic, monetary and financial situation and monetary policy decisions
- 4. a) Other matters: Monthly schedule for delivery of euro banknotes in 2007
- 4. b) Assessment of the claims relating to the TARGET malfunctioning
- 4. c) Publication of harmonised competitiveness indicators for euro area countries
- Table documents
- Outcome of the 197th meeting of the Governing Council

# Conclusion

- Declining labour force and ageing population
- Rise in productivity a superior factor in economic growth
- ICT makes productivity growth possible but does not guarantee it
- In future, emphasis on working methods, organisational structures and leadership:

New phase in the utilisation of ICT