

Governor  
Erkki Liikanen



EUROJÄRJESTELMÄ  
EUROSYSTEMET

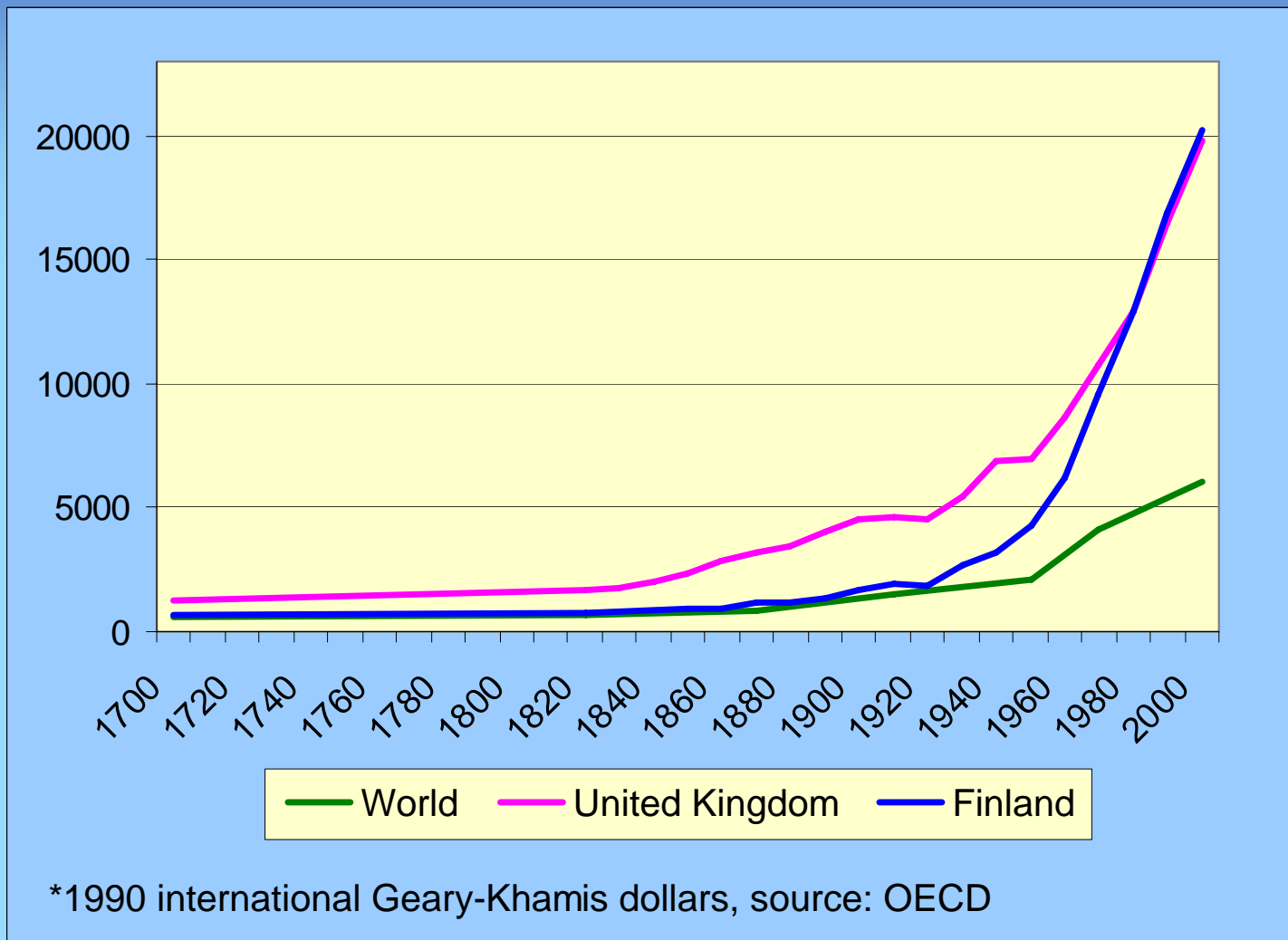
# ICT and productivity, challenges and opportunities

Tampere, 30 November 2006

# Productivity growth and ICT

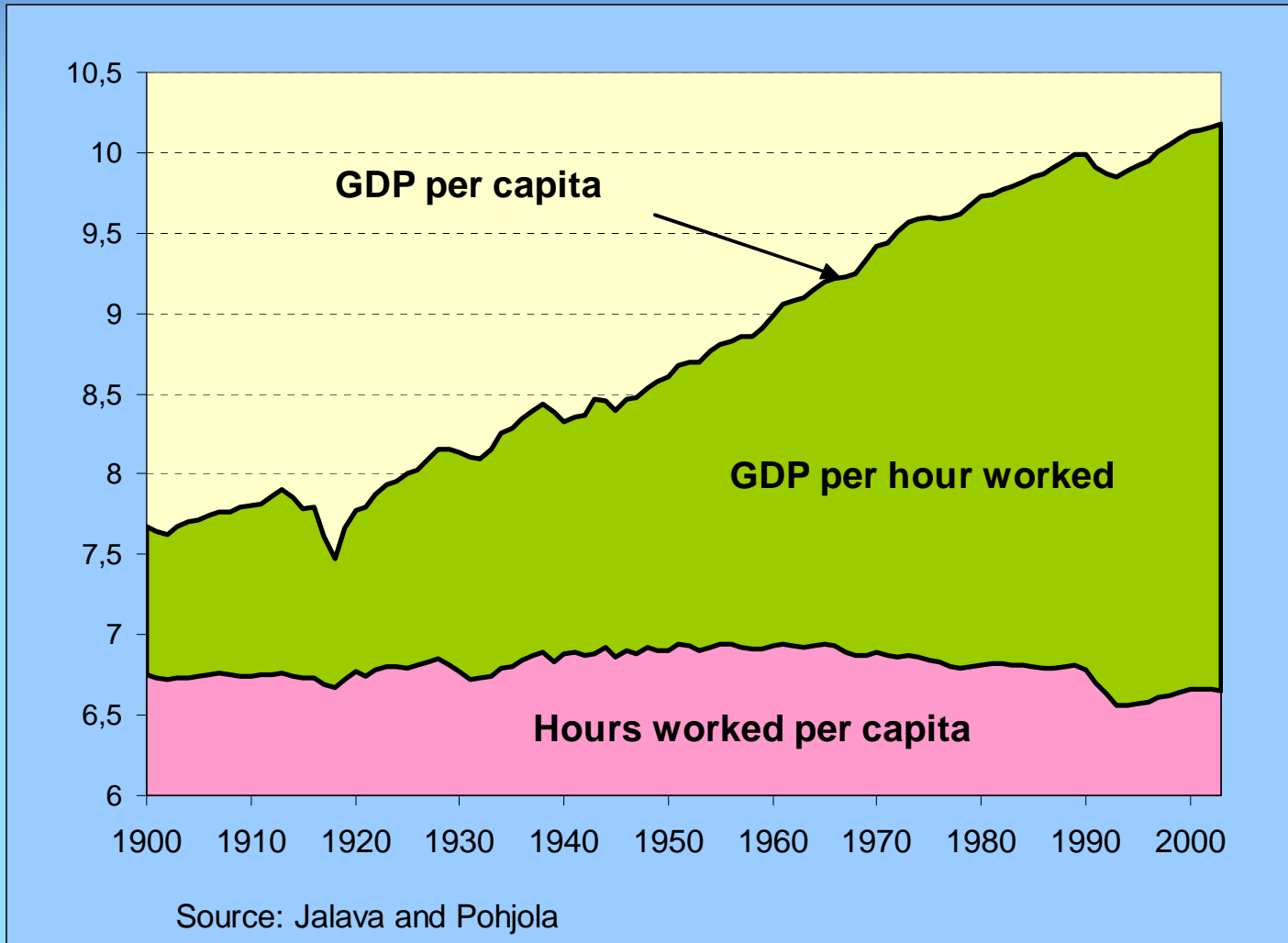
- Economic growth is a new phenomenon
- Key to faster productivity growth first in electricity, now in ICT and its use
- ICT – from investment to utilisation
- Continued growth in productivity a challenge for leadership
- ICT-driven restructuring of working methods in the Bank of Finland and the Eurosystem

# 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



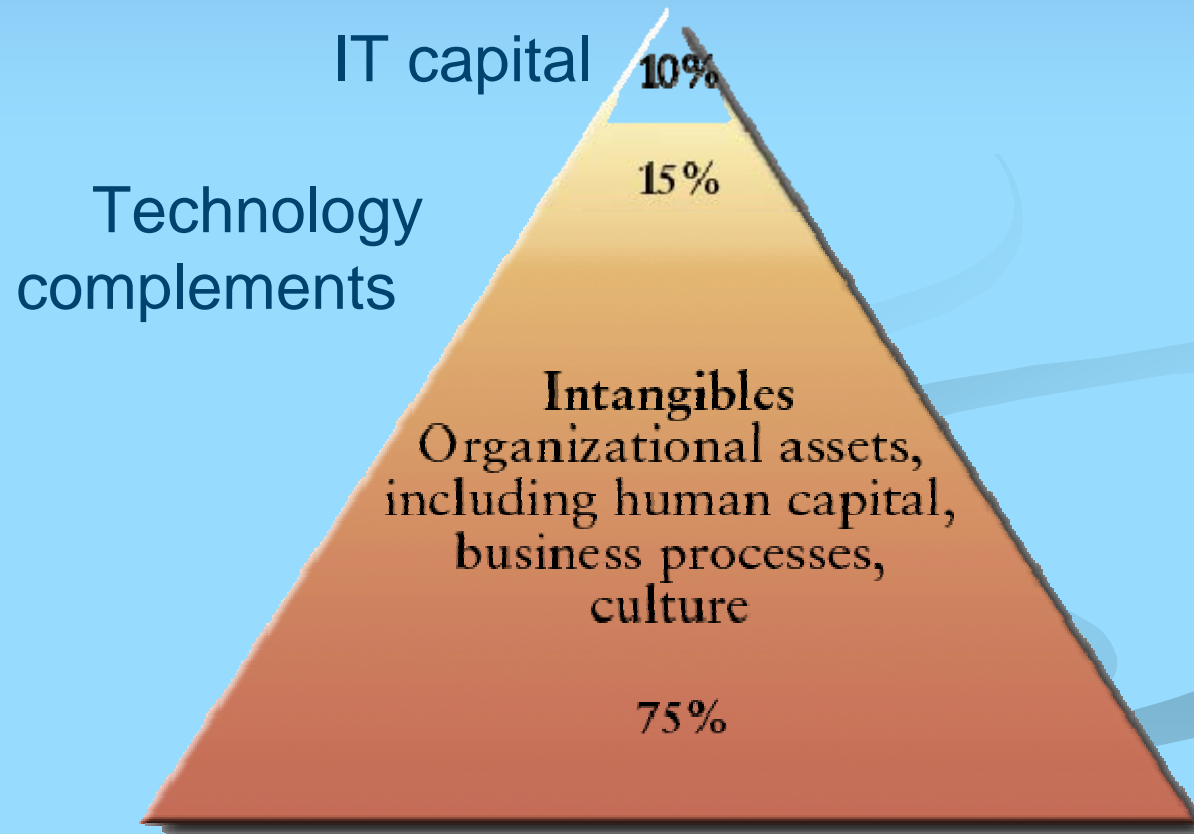
# Requirements for a successful IT project

- 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



# 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



EKP:n neuvoston 197. kokous 5.10.2006

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EKP:n neuvoston kokousvalmistelun työtila

### Neuvoston kommentit

| Type | Name                 | Agendan 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 <b>NEW</b> | 4c            | 3.10.2006 11:35 | Peisa, Paavo      | Linjaukseen |                |
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|------|-----------------------------|-----------------|----------------|---------|----------------|
|      | 061005 EKP 197 LinjausDRAFT | 4.10.2006 10:02 | Kyllönen, Inka | Luonnos | Kyllönen, Inka |

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### 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)

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### Tehtäväjako

| Agendan kohta | Osasto   | Kommentoija  |
|---------------|----------|--|
| GovC 3        | RPSE     | Korhonen, Herrala, Hukkinen                        |
| 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                      |

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### 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