**"As Tecnologias de Informação e Comunicação e o Ordenamento do Território"**

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# Challenges and Opportunities


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**The Human Development Report of 2001** (UNDP) **argues that information and communication technologies (ICT)...**

**"can make major contributions to reducing world poverty"** and are **"truly a breakthrough technology for democracy and expansion of knowledge for poor people"** (HDR 2001, UNDP).

**But at the G8 meeting in 2000, protesters set fire to a laptop computer on an Okinawa beach.**

**"We can't eat computers", "people are dying", was the response to what was seen as a technology "fad" distracting from real priorities.**

# It is not enough to throw ICT… at countries, organizations or people

1. **What makes new ICT a technology revolution?**
2. **ICT "enable factor" is there but policies are failing!**
3. **New ICT challenge Institutional & Regulatory Framework.**
4. **e-Planning and new thinking: on policy, regulation and citizen empowerment.**
5. **Towards a new research & action agenda.**

**ICT - Information and Communication Technologies**

Table 7.3.1.-1 - Period before broadcasting

| | |
|---|---|
| >600 BC | The abacus (=arithmetic unit of CPU) is invented in China |
| 387 BC | Foundation of Plato's Academy |
| 1450 | Printing press invented (Johannes Gutenberg) |
| 1876 | First telephone patent (Alexander Bell) |

Table 7.3.1.-2 - Period between broadcasting and microcomputer + world wide network

| | |
|---|---|
| 1906 | First broadcast of human voice, AM radio (Reginald Fessenden) |
| 1930 | 18 million radios owned by 60% USA households |
| 1936 | Regular TV broadcast begins in UK |
| 1956 | 72 % USA households own a TV |
| 1968 | First ARPANET (IMP), installed at UCLA (precursor to INTERNET) |

Table 7.3.1.-3 - Period after microcomputer + world wide communications network

| | |
|---|---|
| 1971 | First microcomputer in USA |
| 1972 | Created the InterNetwork Working Group, creating the INTERNET |
| 1975 | First Personal Computer (PC) introduced |
| 1991 | First Internet Web Server and Web Browser (CERN) |
| 2001 | 529 million people on-line (Internet) |


In (Ferraz de Abreu) , 2002"New Information Technologies in Public Participation: A Challenge to Old Decision-making Institutional Frameworks"

# Decision models and the enabling factor of ICT developments

In (Ferraz de Abreu) , 2002"New Information Technologies in Public Participation: A Challenge to Old Decision-making Institutional Frameworks"

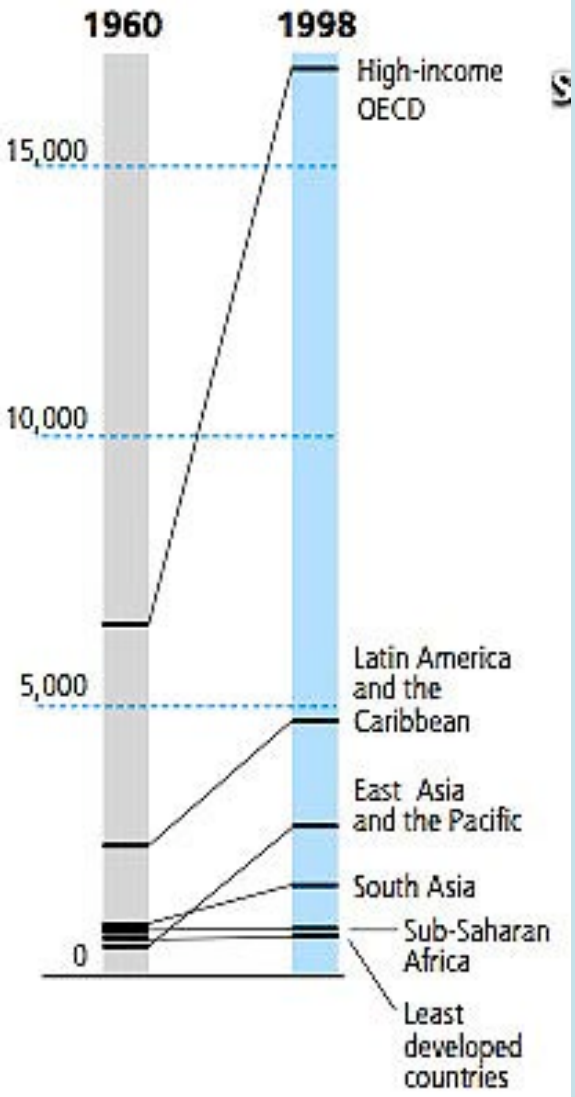
| Information Technology | Features / Attributes | Decision Models |
|---|---|---|
| Voice<br>Manuscript | • from "few" to "few"<br>• limited reach<br>• without auxiliary processing<br>• cheap, potentially universal access (low cost to enter the market)<br>• low control / regulatory costs | Direct Democracy<br>Heterogeneous Empires |
| Press<br>Radio<br>TV | • from "few" to "many"<br>• non-limited reach<br>• with processing in source<br>• expensive, restricted access (high cost to enter the market)<br>• average control / regulatory costs | Representative Democracy<br>Homogeneous Dictatorships |
| Satellite network<br>Fiber optics net<br>µcomputer<br>Internet | • from "many" to "many"<br>• non-limited reach<br>• with processing in source and destination<br>• moderate access cost, potentially universal (low cost to enter the market)<br>• high control / regulatory costs | Participatory Democracy<br>Technocrat Dictatorships |

## ...and democracy


*Source:* IMF, OECD, UN and World Bank 2000.

## Widening income gap between regions

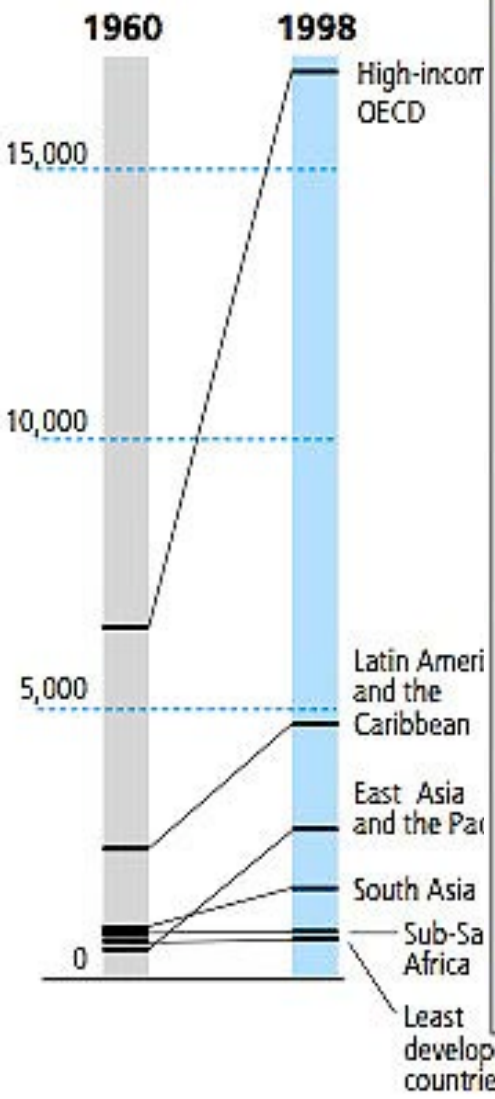
GDP per capita (1985 PPP US$)




*Source:* Human Development Report Office calculations based on World Bank 2001g.

**Widening income gap between regions**

GDP per capita (1985 PPP US$)

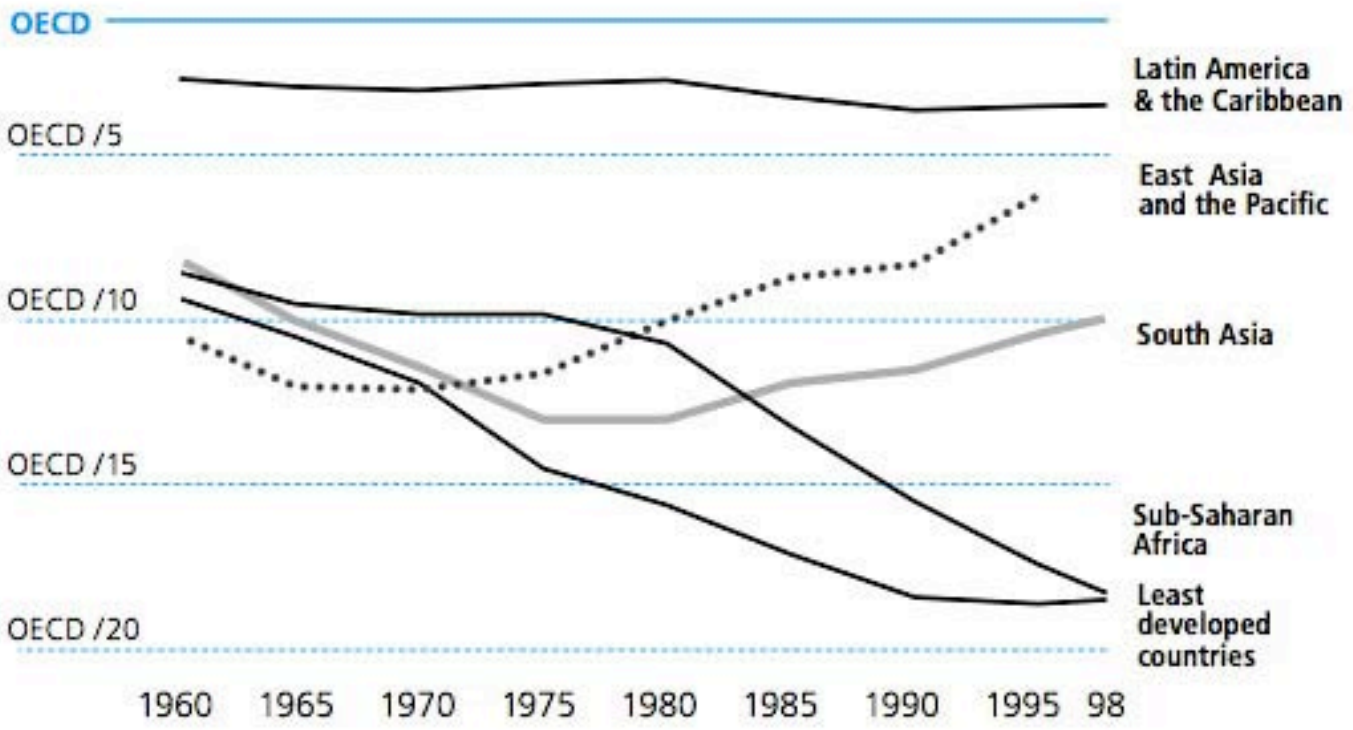



*Source:* Human Development Report Office calculations based on World Bank 2001g.

FIGURE 1.5

**Comparing incomes—developing regions and high-income OECD**

Regional average GDP per capita (1985 US$ PPP) as a ratio of that of high-income OECD countries




*Note:* High-income OECD excludes OECD members classified as developing countries and those in Eastern Europe and the CIS. See the classification of countries.

*Source:* Human Development Report Office calculations based on World Bank 2001g.

## Widening income gap between regions

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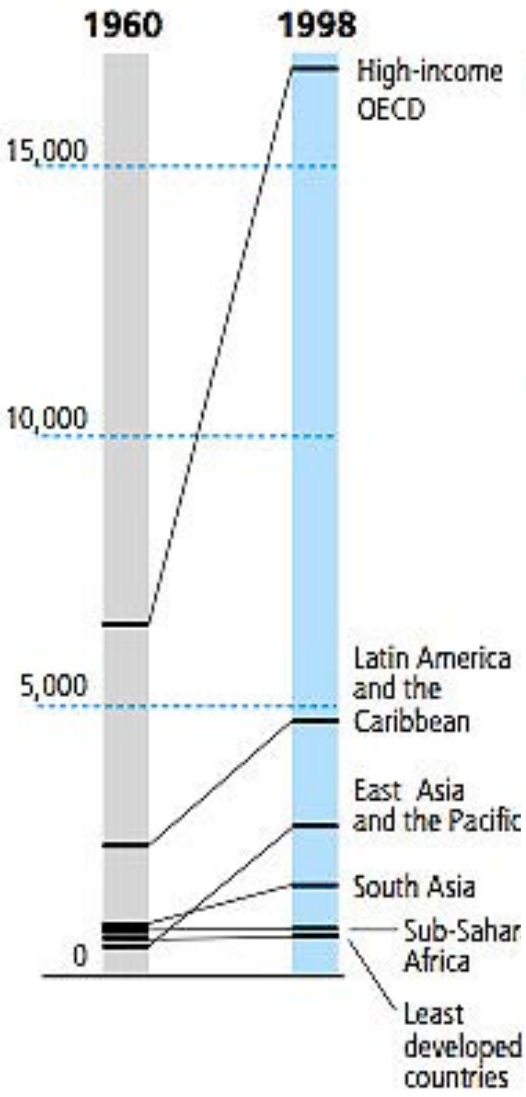
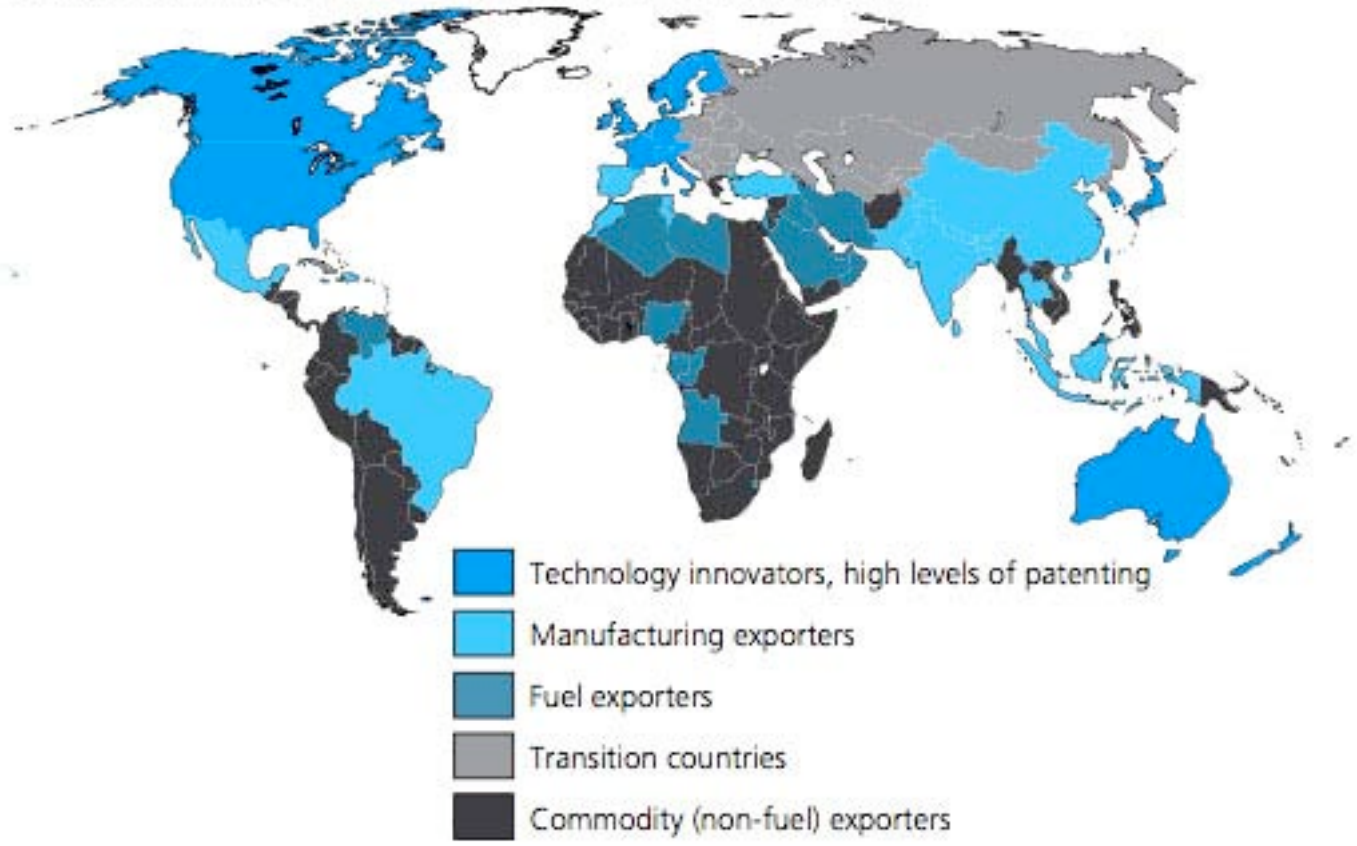



*Source:* Human Development Report Office calculations based on World Bank 2001g.

## Classification of countries by economic structure, 1995



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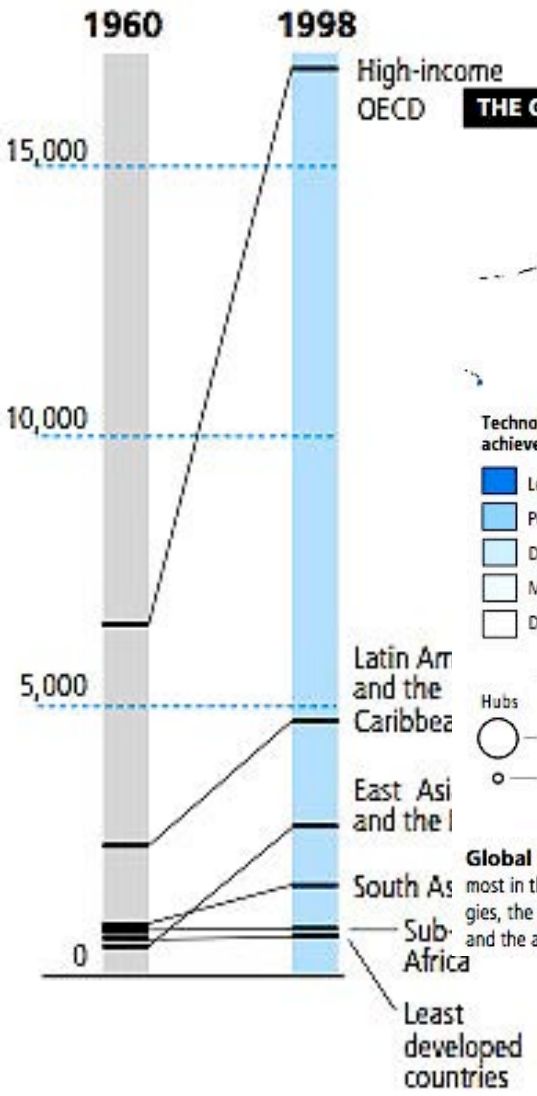
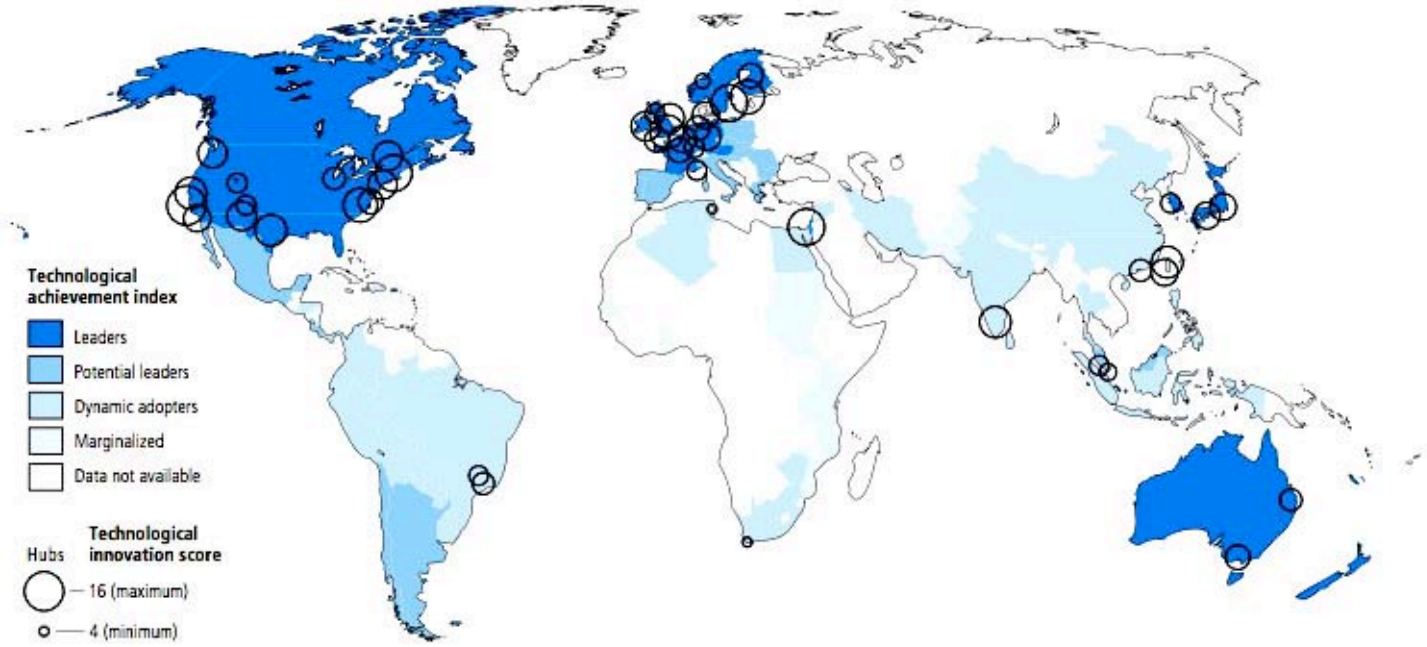



*Source:* Human Development Report Office calculations based on World Bank 2001g.

## THE GEOGRAPHY OF TECHNOLOGICAL INNOVATION AND ACHIEVEMENT

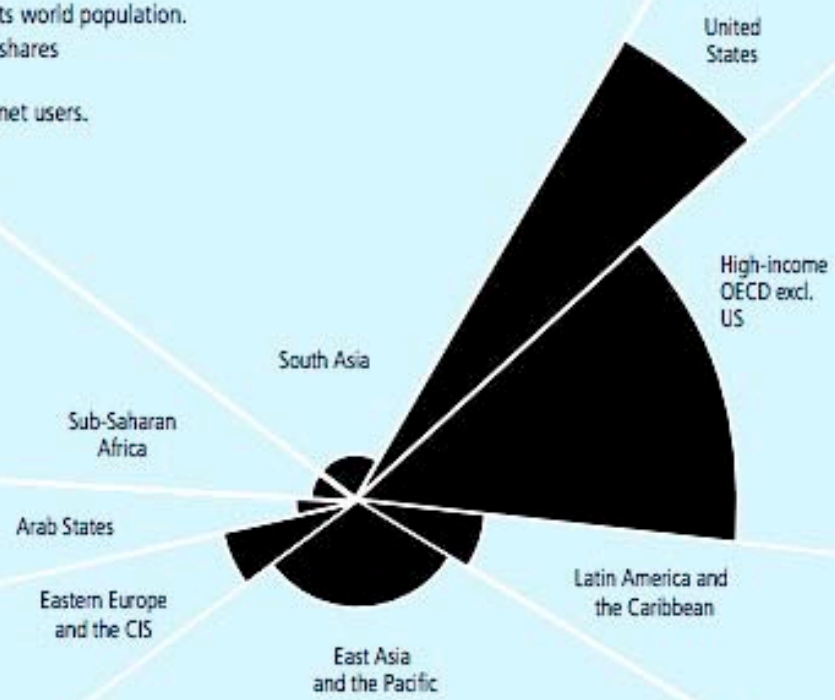



**Global hubs of technological innovation** In 2000 *Wired* magazine consulted local sources in government, industry and the media to find the locations that matter most in the new digital geography. Each was rated from 1 to 4 in four areas: the ability of area universities and research facilities to train skilled workers or develop new technologies, the presence of established companies and multinational corporations to provide expertise and economic stability, the population's entrepreneurial drive to start new ventures and the availability of venture capital to ensure that the ideas make it to market. Forty-six locations were identified as technology hubs, shown on the map as black circles

## UNEVEN DIFFUSION OF TECHNOLOGY—OLD AND NEW . . .

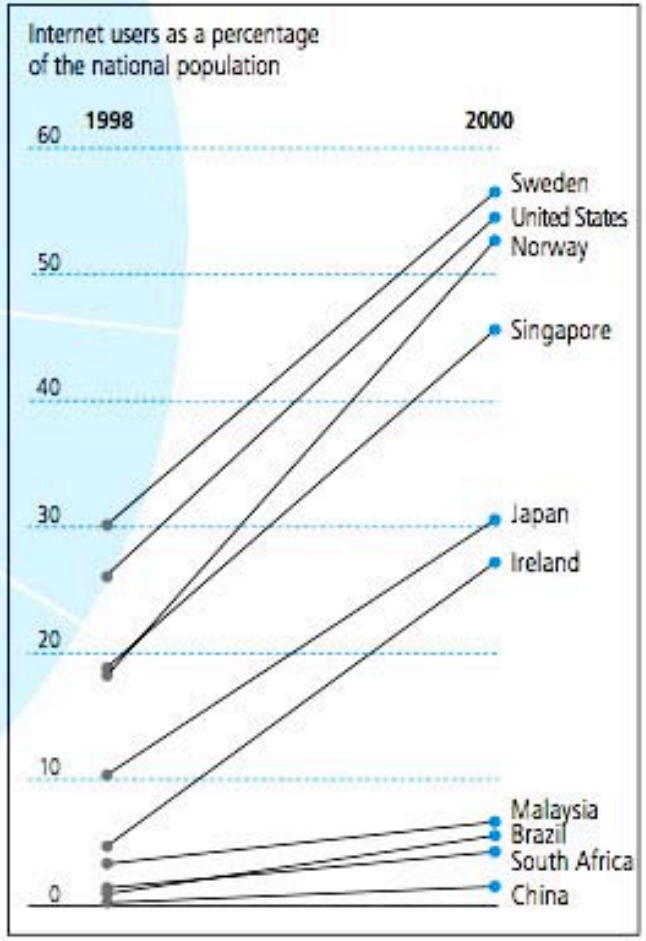
### INTERNET USERS—STILL A GLOBAL ENCLAVE

The large circle represents world population.
Pie slices show regional shares of world population.
Dark wedges show Internet users.



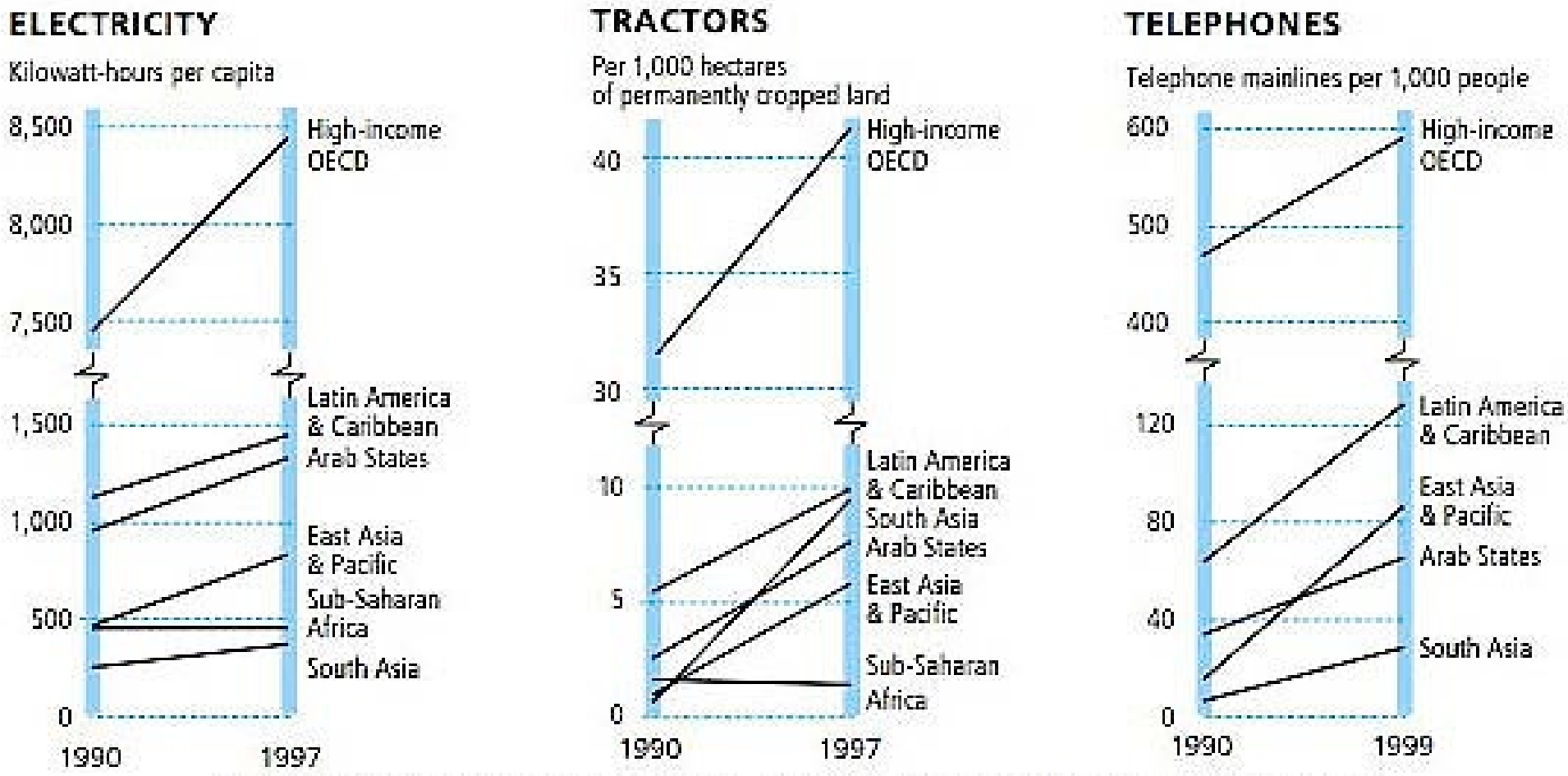

**Internet users**
(as percentage of population)

| | 1998 | 2000 |
|---|---|---|
| United States | 26.3 | 54.3 |
| High-income OECD (excl. US) | 6.9 | 28.2 |
| Latin America and the Caribbean | 0.8 | 3.2 |
| East Asia and the Pacific | 0.5 | 2.3 |
| Eastern Europe and CIS | 0.8 | 3.9 |
| Arab States | 0.2 | 0.6 |
| Sub-Saharan Africa | 0.1 | 0.4 |
| South Asia | 0.04 | 0.4 |
| **World** | **2.4** | **6.7** |




*Source:* Human Development Report Office calculations based on data supplied by Nua Publish 2001 and UN 2001c.

**The digital divide is nothing new. Diffusion of decades-old inventions has slowed**




*Source:* Human Development Report Office calculations based on World Bank 2001h, FAO 2000a and ITU 2001b.

We are obviously doing something wrong…

… and yet we are persisting in the very same policies in the past 15 years

- Why is the gap between the rich and the poor widening, at global and local levels, despite of, or in consequence of, ICT developments with current policies ( "Washington consensus”)?

- What have been the consequences of the market-driven ICT development models and strategies?

- How is ICT challenging the current institutional and regulatory framework?

- Why simply "throwing in" technology to poor regions or neighborhoods is likely to fail reversing bad trends?

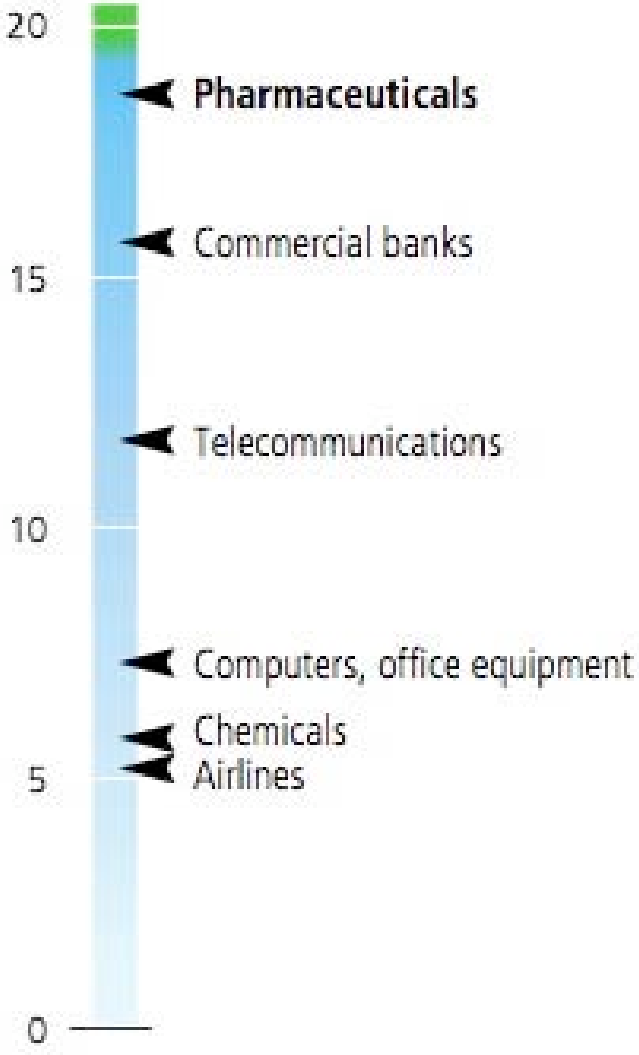
- Which are the most promising areas where ICT may improve the planning process, and how to get there?

*Policy, not charity, will determine whether new technologies become a tool for human development everywhere*

HDR 2001

**Profitable industry—pharmaceuticals top the list**

Median return on revenue for Fortune 500 companies, 1999 (percent)




*Source: Fortune* 2000.

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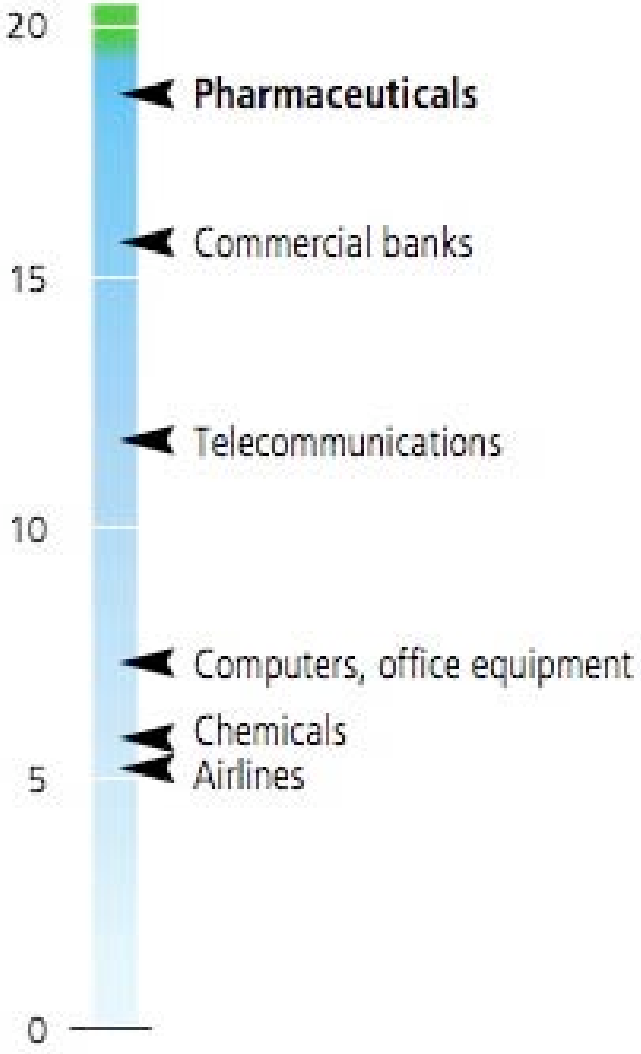
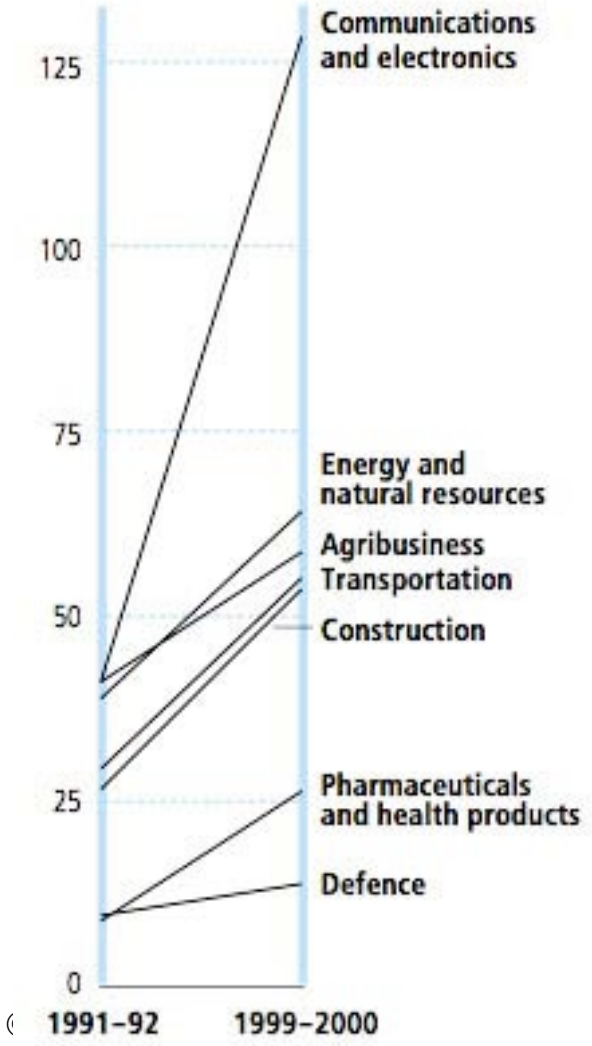



*Source: Fortune* 2000.

## Industry's influence over public policy

Contributions to federal candidates and political parties in the United States (millions of 2000 US$)




*Source:* Centre for Responsive Politics 2001.

# New ICT Challenge Institutional & Regulatory Framework

Public administration hierarchical model in question;

Representative Democracy under pressure from Participatory Democracy;

Power shifts resulting from different adoptions of new ICT-related knowledge;

State sovereignty erosion (virtual borders harder to enforce);

New rules of the game in the information economy.

# e-Planning and new thinking

- **On new policies "New-ICT-aware"**
- **On institutional and regulatory reform**
- **On ICT development strategies**
- **On ICT as tool to build "knowledge capacity"**
- **On the use of ICT to empower citizens**

We need Policy / Decision Makers with good understanding of new ICT and all their implications

# 1. New ICT-Aware Policies

***Deficient new ICT understanding favors monopolies:***

(Examples)

- War for Standards (ex. windows adoption vs compatibility requirements);
- New Business Models (ex. free product to gain market share; Microsoft vs. Open Source);
- "Natural" and "Artificial" Monopolies (ex. control of wiring ["lacete local"]; Pt Telecom "fattening" thru "flat rates"delay, crippled ISDN-RDIS offer; artificial high costs to enter service provision market, with quasi-monopoly);
- Merge "carrier+content" providers and the "net neutrality" issue;
- The software patent dispute.

# 2. Institutional and regulatory reform **serving public interest and LF regions**

***Deficient new ICT understanding favors special interests:***

(Examples)

- Advertising in Schools (logo youth branding);
- The SPAM inevitability myth (opt-in/opt-out faillure)
- Cities that offer Internet - and succeed, imagine that;
- Cambridge-CableTVagreement vs. content monopolies;
- Hierarchy vs. network models in public administration;
- ONU and Internet Governance- private vs. institutional.

# 3. ICT Development Strategies

***Deficient new ICT understanding endangers equal opportunities, competition and freedoms***

- "Broad"Band, ADSL vs. DSL (banda "larga" assimétrica): a consumer vs. a citizen view;
- Internet II proprietary, closed bandwith control;
- "Built-in" wiretaping (escuta) in new phone chips;
- Growing invasion of privacy, "spyware", software "call home" + "activation server-dependent", system vulnerability (virus and market monopoly hold).

# 3. ICT Development Strategies

- Broadband:

  – "It's the Upload, Stupid"

# 4. ICT for citizen empowerment

(Examples)

- **New ICT enables 3 participatory science models:** *(GLOBE, PEOPLE, SETI/BOINC)* - **www.eurolifenet.eu**
- **Tools to aid end user knowledge processing/analysis** *(CITIDEP - Kit Cidadania)*
- **Open access to information (as consumer and provider) without middlemen** *(CITIDEP/MIT - IMS)*
- **Direct communication and interaction between citizens vs. gate controls** *(CITIDEP - Walls of Communication)*

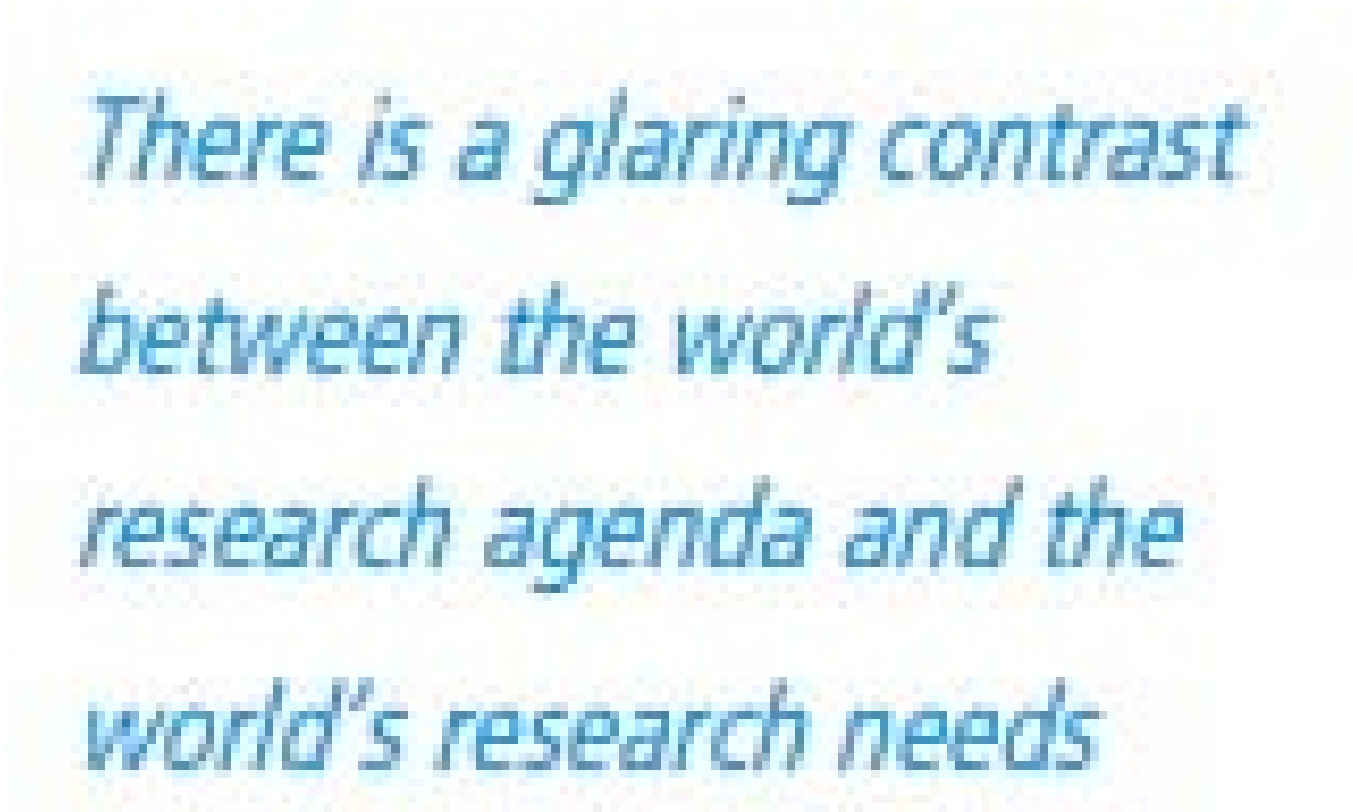
# As TIC ao serviço dos cidadãos

## Projectos CITIDEP, MIT:

(Exemplos)

- IMS - Sistema Multimedia Inteligente para Apoio à consulta publica www.citidep.pt/ims/
- PEOPLE-Cidadania www.citidep.pt/act/peoplecitidep.html
- **EuroLifeNet (em curso)** www.eurolifenet.eu
- ***Kit Cidadania*** **(em curso)**
- ***Walls of Communication*** **(em preparaçao)**

**WWW.CITIDEP.PT**




HDR 2001

# MIT e-Planning Research Agenda

- Analytical Methods and Urban Models
- Knowledge Representation and Information Management
- Institutional and Regulatory Implications of Information and Communication Technologies
- Development Policies for and with Information and Communication Technologies

# e-Planning International Agenda

- Community level: **e-Neighborhood Planning**
- City level: **Enhancing City Performance with ICT**
- Global level: **The Fading Borders between Regional, National and Local Planning**
- **Public Participation and ICT**
- **Privacy, Security and freedoms in the e-World**
- **Urban Modeling and Urban Design with ICT**
- **Environmental e-Planning**
- **Institutional / Policy Reform and ICT**

# MIT-Portugal / e-Planning

FROM MIT FINAL REPORT (Prof. Dan Roos):

"Although we have received suggestions about many potential projects and focus areas, we mention "**e-Planning**" initiatives in particular because we have received many expressions of interest from faculty in Portugal and MIT.

We suggest that the "e-Planning" initiatives should be the subject of further analysis dusring the coming year after the launching of the initial program"

August 29, 2006

**“Pressures” from “Market” or from “Washington consensus” policies ?**

*Technology is created in response to market pressures—not the needs of poor people, who have little purchasing power*

HDR 2001

# MIT-Portugal / e-Planning Goals

- 1. A *Portuguese e-Planning Center*, based on a multidisciplinary "consortium" within Portuguese Academia, with strong participation of related entities from public and private sectors and civil society;
- 2. A strategic institutional relationship with USA Centers of Excellence on e-Planning, such as DUSP;
- 3. A *European Research Network for e-Planning*, as a Network of Excellence (NOE), evolving to an *Institute for e-Planning*, within the framework of the EU Joint Research Centre, with possible headquarters in Portugal.

# TIC: As Grandes Questões

## Para os choques tecnológicos resultarem, é fundamental conhecer:

- A natureza especifica das novas TIC
- Os seus impactes institucionais e processuais
- Os custos da info-exclusão
- Os custos da não participação pública

## Não basta despejar tecnologia em cima…

# MIT-Portugal / e-Planning Agenda

| | |
|---|---|
| **e-planning knowledge infrastructure** | mapping the Portuguese knowledge society / mapping the planning knowledge. |
| **e-planning for the government of the future (e-government)** | more efficient and responsive, closer to citizens, better enabling role, better e-government |
| **e-planning for a new governance (e-governance)** | better services towards the common good, better institutions, better regulations for a truer market and handling market failures, better balance security vs. freedoms and liberty, more equity and less exclusion |
| **e-planning for the city of the future (e-city)** | better quality of life, new functionality, breed innovation, more attractive and competitive |
| **e-planning for a new citizenship (e-citizenship)** | enabling a better informed and educated citizen, more participative, more critical, more responsible |

# MIT-Portugal / e-Planning Agenda

Transversal Topics:

International Cooperation on e-Planning

Curricula Modernization on e-Planning

Laboratory of Technology for Social and Political Sciences

# MIT-Portugal / e-Planning Consortium

MIT-DUSP

**University of Lisbon** (UL):

ICS-UL: Institute for Social Sciences

FC-UL : Faculty of Sciences

ICAT-FC-UL: Institute of Applied Science and Technology

**Technical University of Lisbon** (UTL):

ISCSP-UTL, Superior Institute of Social and Political Sciences

**New University of Lisbon** (UNL):

FCT-UNL: Faculty of Science and Technology

**University of Aveiro**: (UA):

SACSJP: Dept. of Law, Social and Political Sciences

**Polytechnic Institute of Viana do Castelo**: (IPVC):

ESE- Superior School of Education of Viana do Castelo

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