# Information Society Statistics and Analysis
# A Guided Tour

TASCHA seminar
University of Washington

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Seattle, April 21, 2011

- Context, misconceptions and reality
- Transformations and meaning
- We, the people… and our lives

# INFORMATION

- Information as a strategic economic and social resource
- Quantitative information is a major component

  …and does not fall from the sky
- Numbers and analytical insights

  manage complexity – without reducing it to triviality
- ‘informed ignorance’ vs ‘uninformed arrogance’
- The numeracy paradox

# INFORMATION

- **Construction of indicators - mapping the unknown, but...**

  ***if you don't know where you are, a map doesn't help***

- **Information flows**

  ***a patient is scheduled for amputation of right leg, but...***

  ***left leg is amputated***

- **Standards - the numeracy scale**

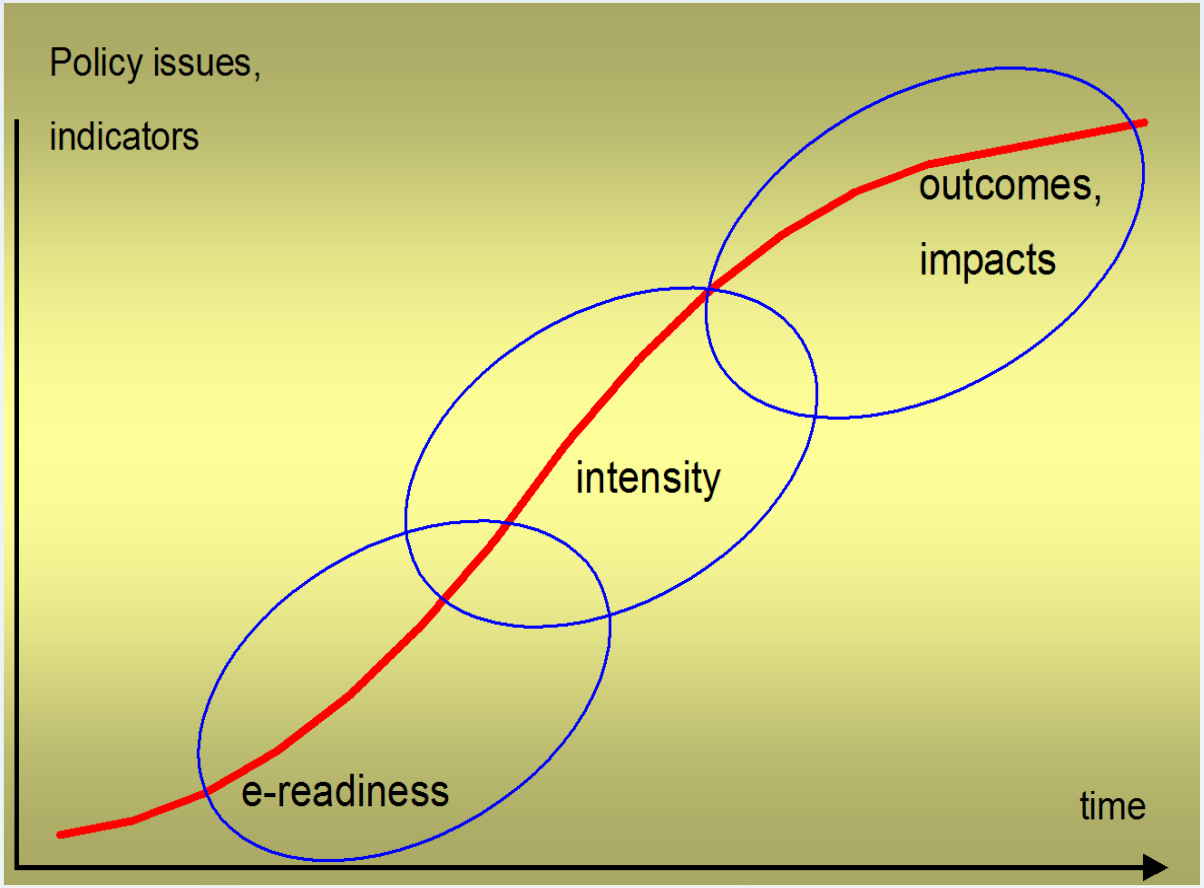
  ***In 1999, NASA's Mars Orbiter burns in space***

  ***- scientists confuse metric and imperial units***

# A way of thinking…

## A taxonomy

- Evolution of
  - technologies
  - policy needs
- Benchmarking indicators
  - over time
  - across countries
- Developing countries
  - similarities
  - specific needs



# Are Information Society measurements coming of age?

- Overview of national and international experiences
- Official and other measurements
- Survey measurements and statistical aggregations
- A brief look through a cross-section of experiences
  - in different areas (people, business, gov't)
  - over time
  - across countries

# FALLING THROUGH THE NET:

## A SURVEY OF THE "HAVE NOTS" IN RURAL AND URBAN AMERICA
National Telecommunications and Information Administration, 1995

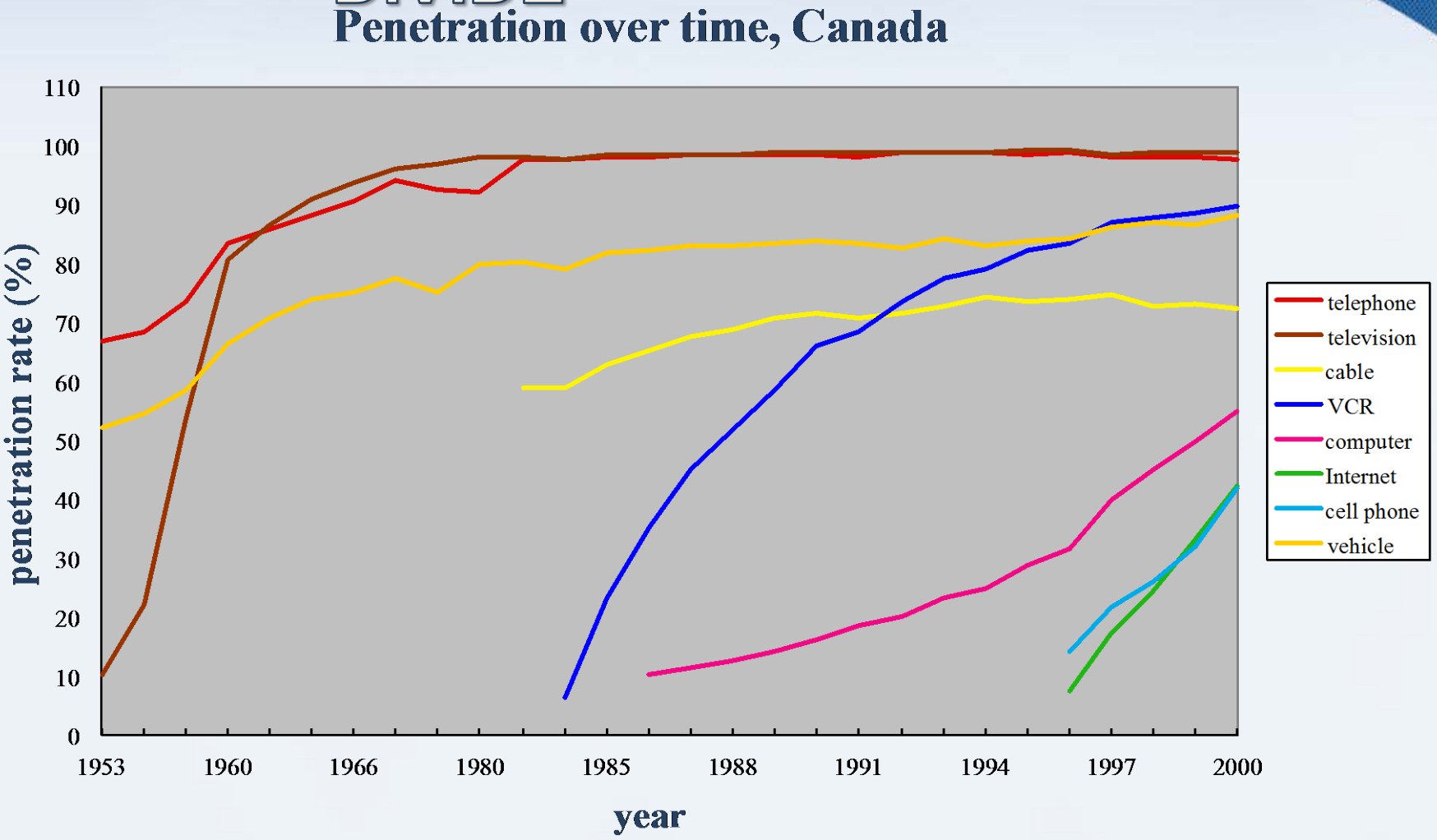
### Percent of U.S. Computer Households with a Modem

| US $ (,000) | Rural | Urban | Central City |
|---|---|---|---|
| < 10 | 23.6 | 44.1 | 43.9 |
| 10-15 | 28.9 | 40.6 | 44.8 |
| 15-20 | 32.4 | 30.7 | 28.3 |
| 20-25 | 28.5 | 38.2 | 36.8 |
| 25-35 | 32.6 | 41.1 | 43.3 |
| 35-50 | 34.4 | 45.6 | 48.0 |
| 50-75 | 46.7 | 49.8 | 49.2 |
| > 75 | 52.2 | 58.1 | 56.4 |

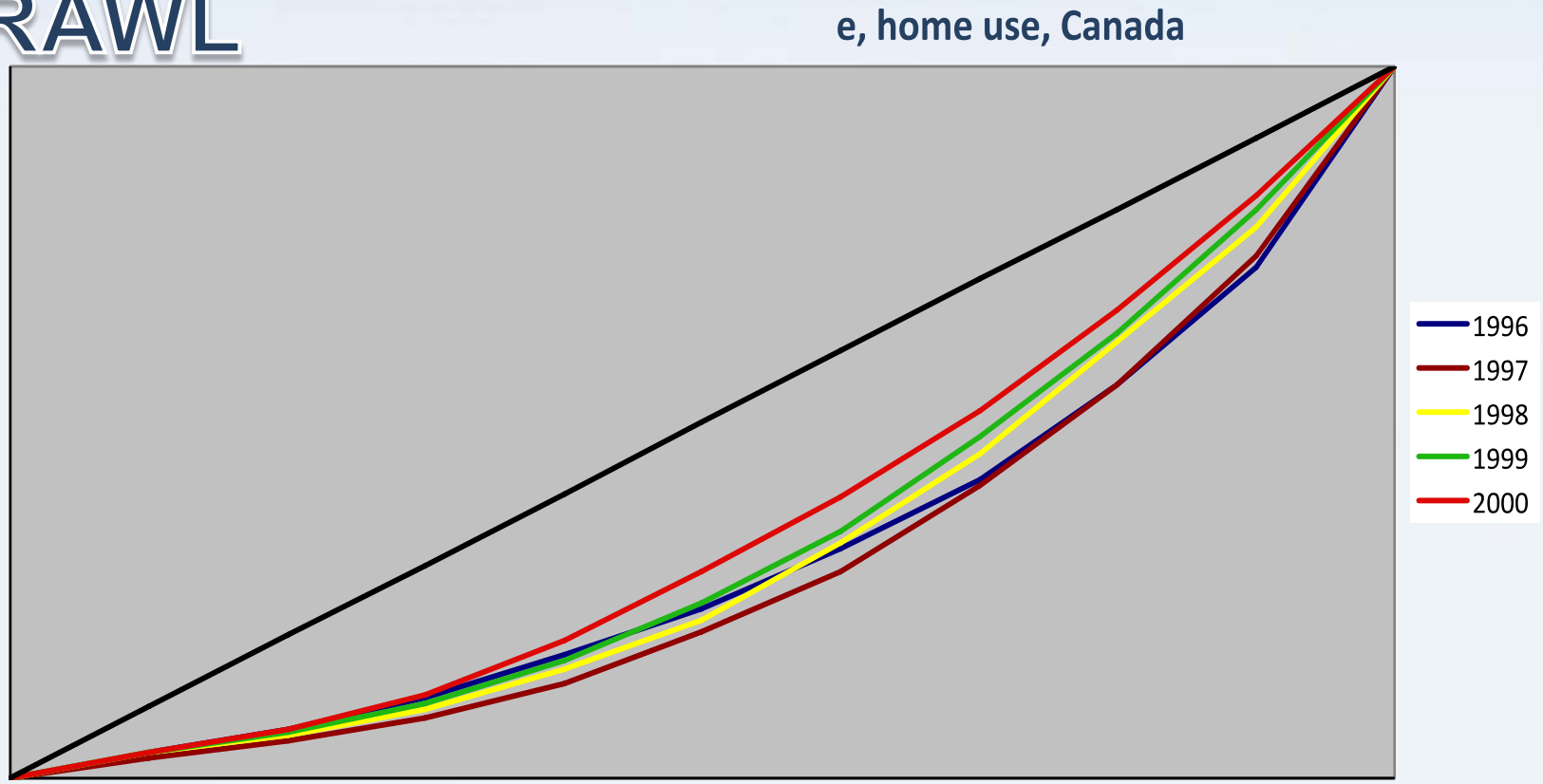
# In 1997, a range of policies followed:

- e-rate (for schools and libraries)
- Lifeline and Link Up (support for low income)
- Rural Health Care (affordable access)
- After 2000, A Nation Online

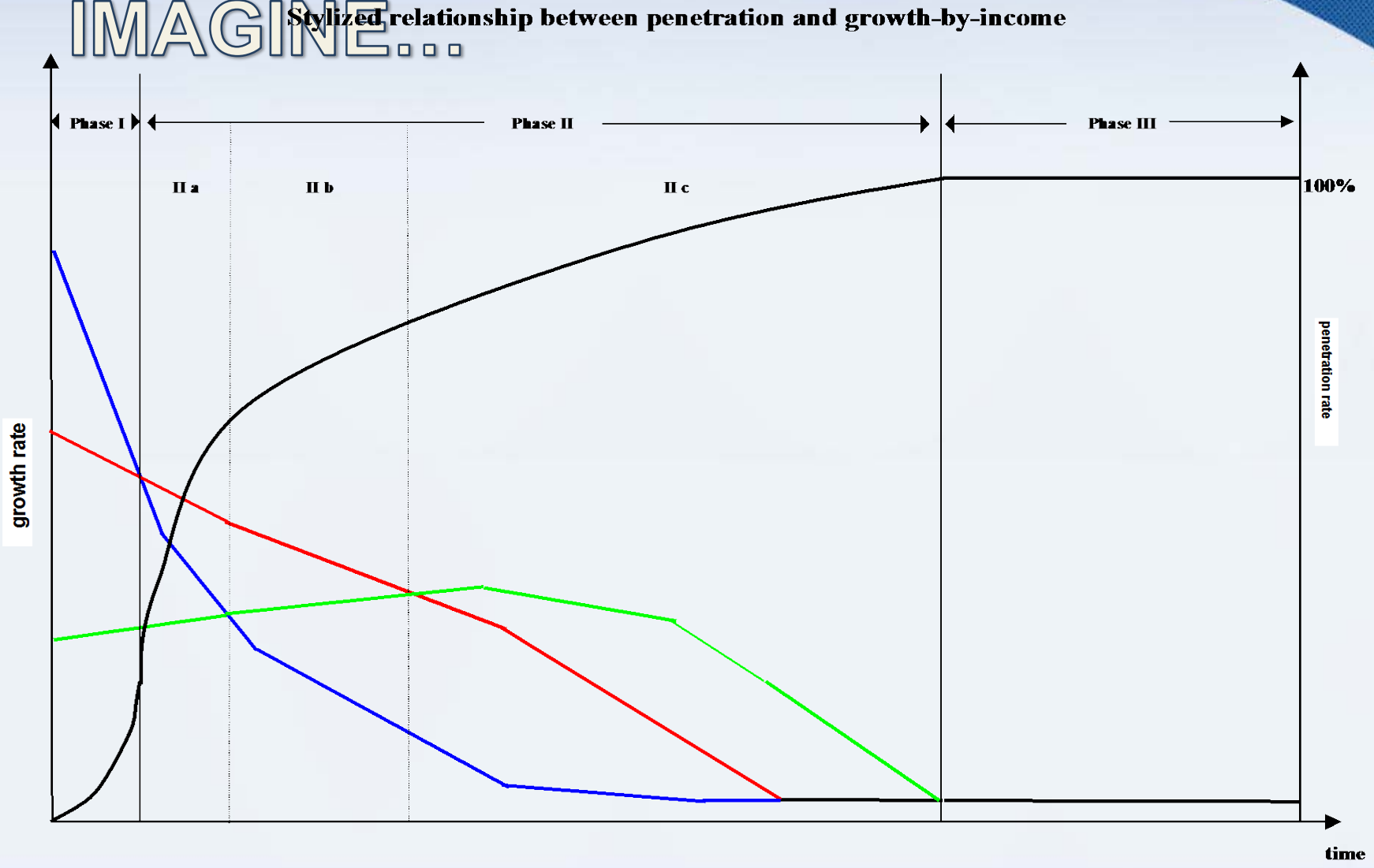
# UNVEILING THE DIGITAL DIVIDE



# CONNECTED WE STAND, DIGITALLY DIVIDED… WE CRAWL



# JUST IMAGINE...



# JUST IMAGINE...

**Possible future paths for Internet penetration**

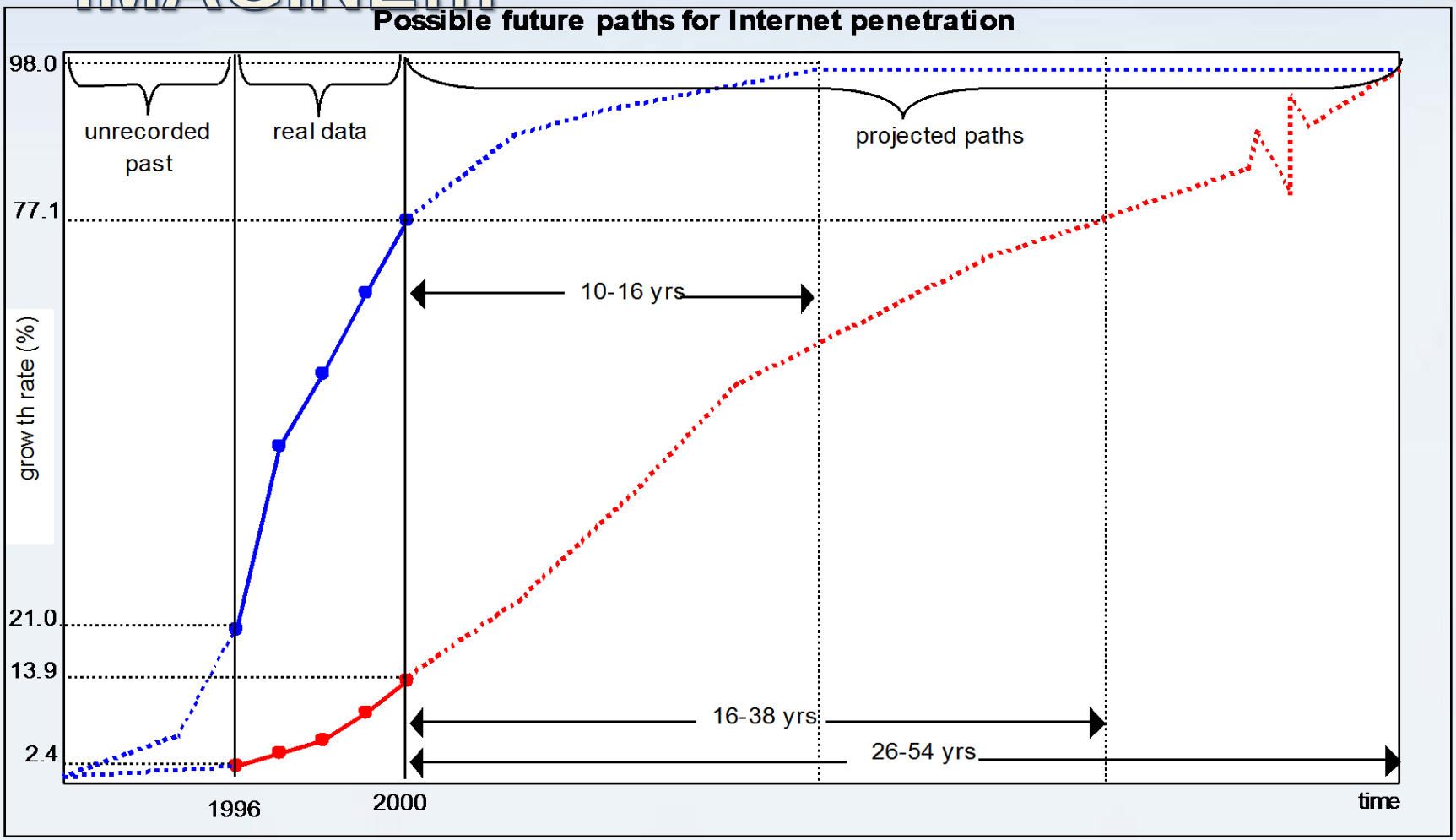
A: Penetration rate of lowest penetration decile to reach today's penetration rate of top decile

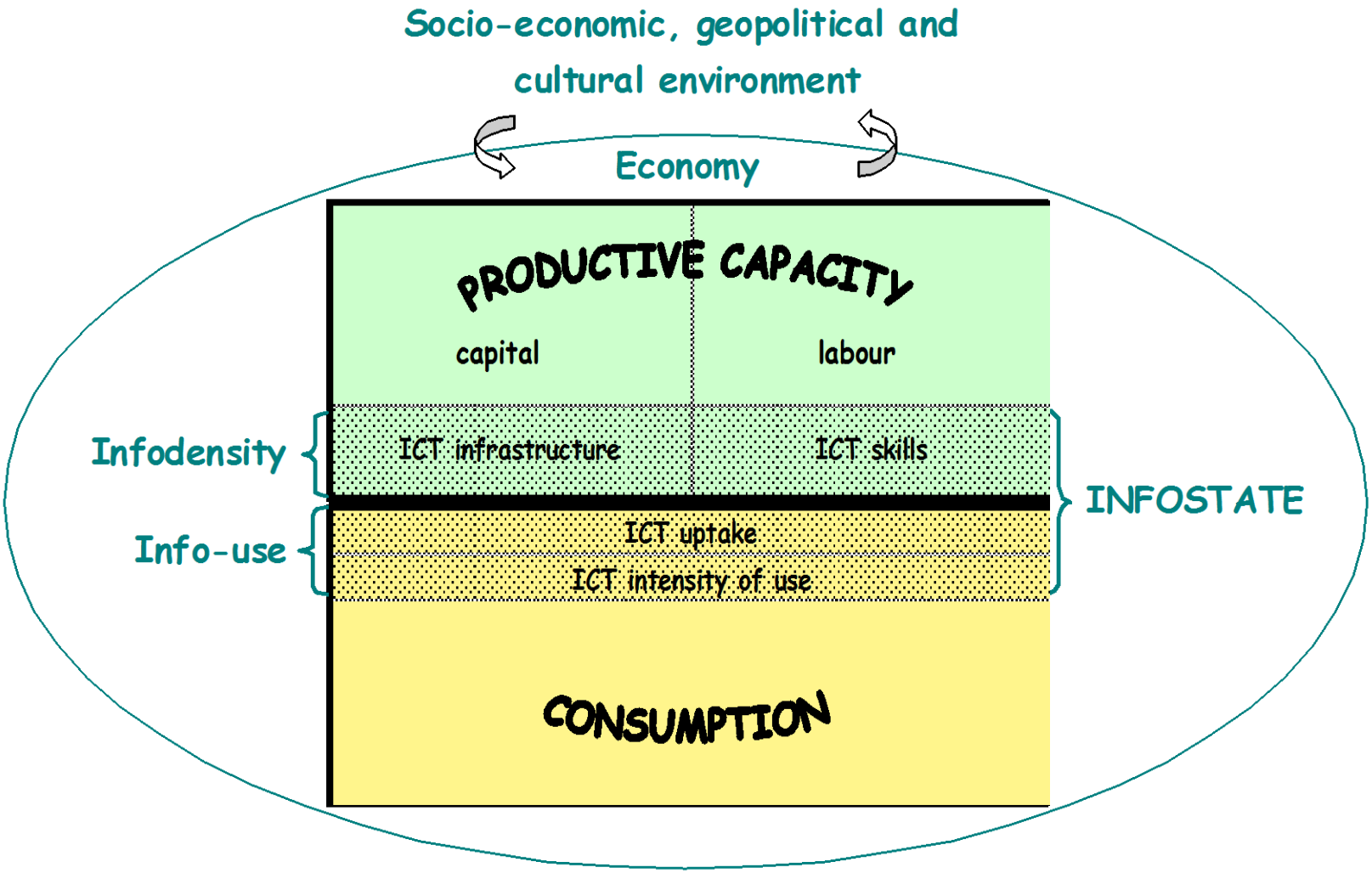
B: Penetration rate of top decile to reach 98%

C: Penetration rates of top and lowest penetration deciles to equalize at 98%

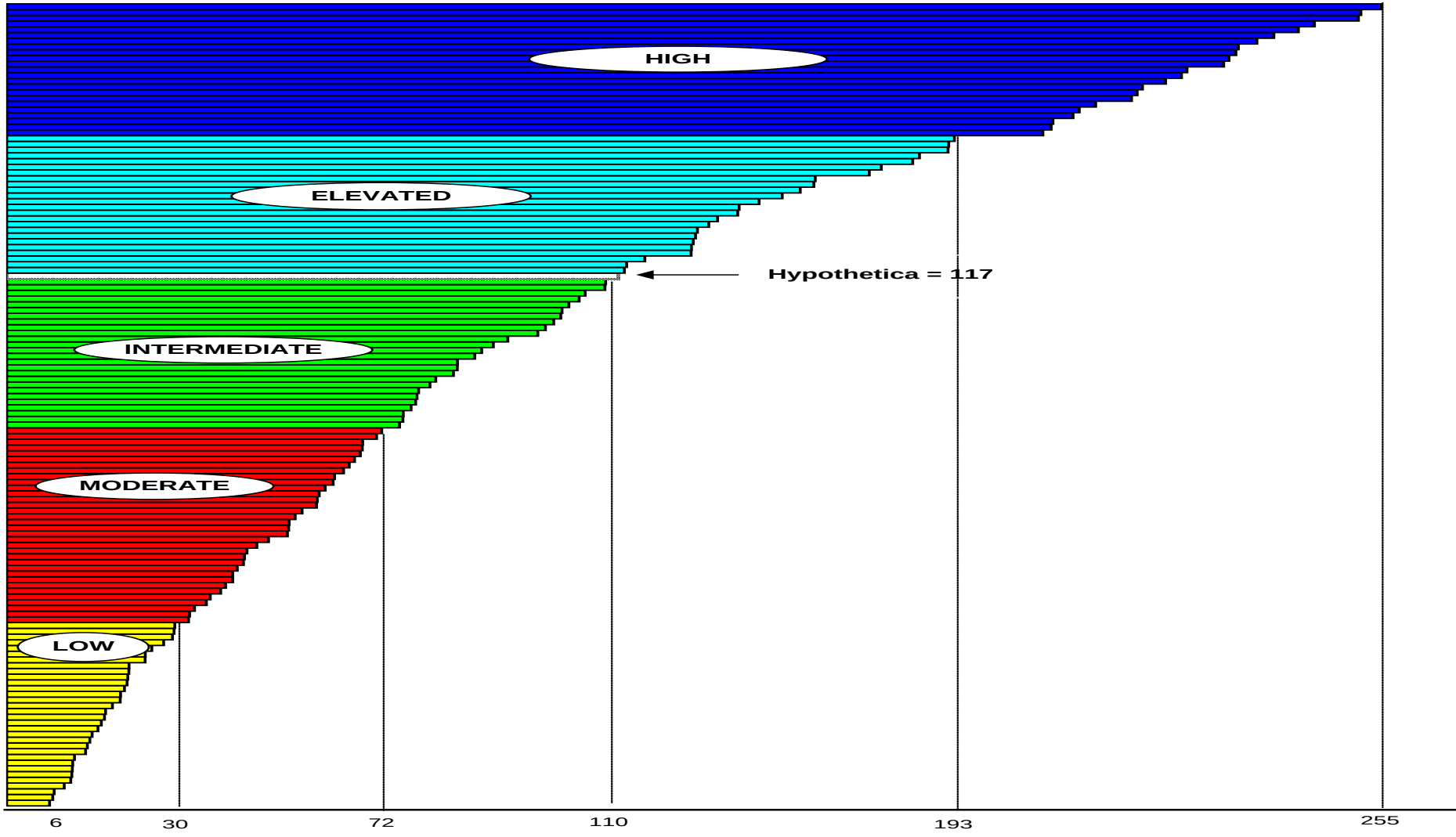
| Growth scenarios | rates of growth by decile | | years | | |
|---|---|---|---|---|---|
| | Lowest | Top | A | B | C |
| **High growth** | 12% | 4% | 16 | 10 | 26 |
| **Medium growth** | 9% | 3.5% | 23 | 12 | 35 |
| **Low growth** | 6% | 3% | 38 | 16 | 54 |

# JUST IMAGINE...

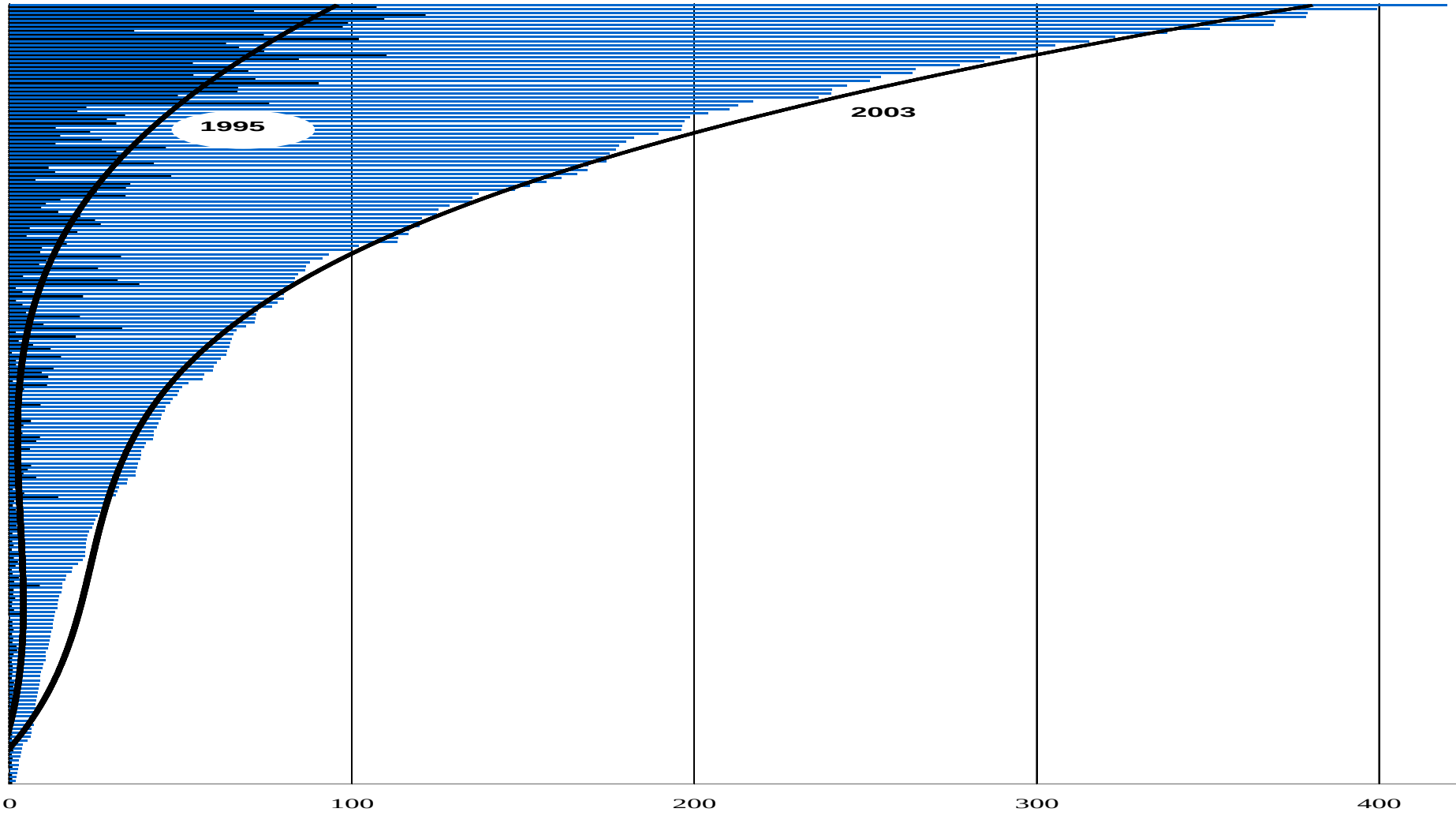



Socio-economic, geopolitical and cultural environment
Economy
PRODUCTIVE CAPACITY
capital
labour
Infodensity
ICT infrastructure
ICT skills
Info-use
ICT uptake
ICT intensity of use
INFOSTATE
CONSUMPTION

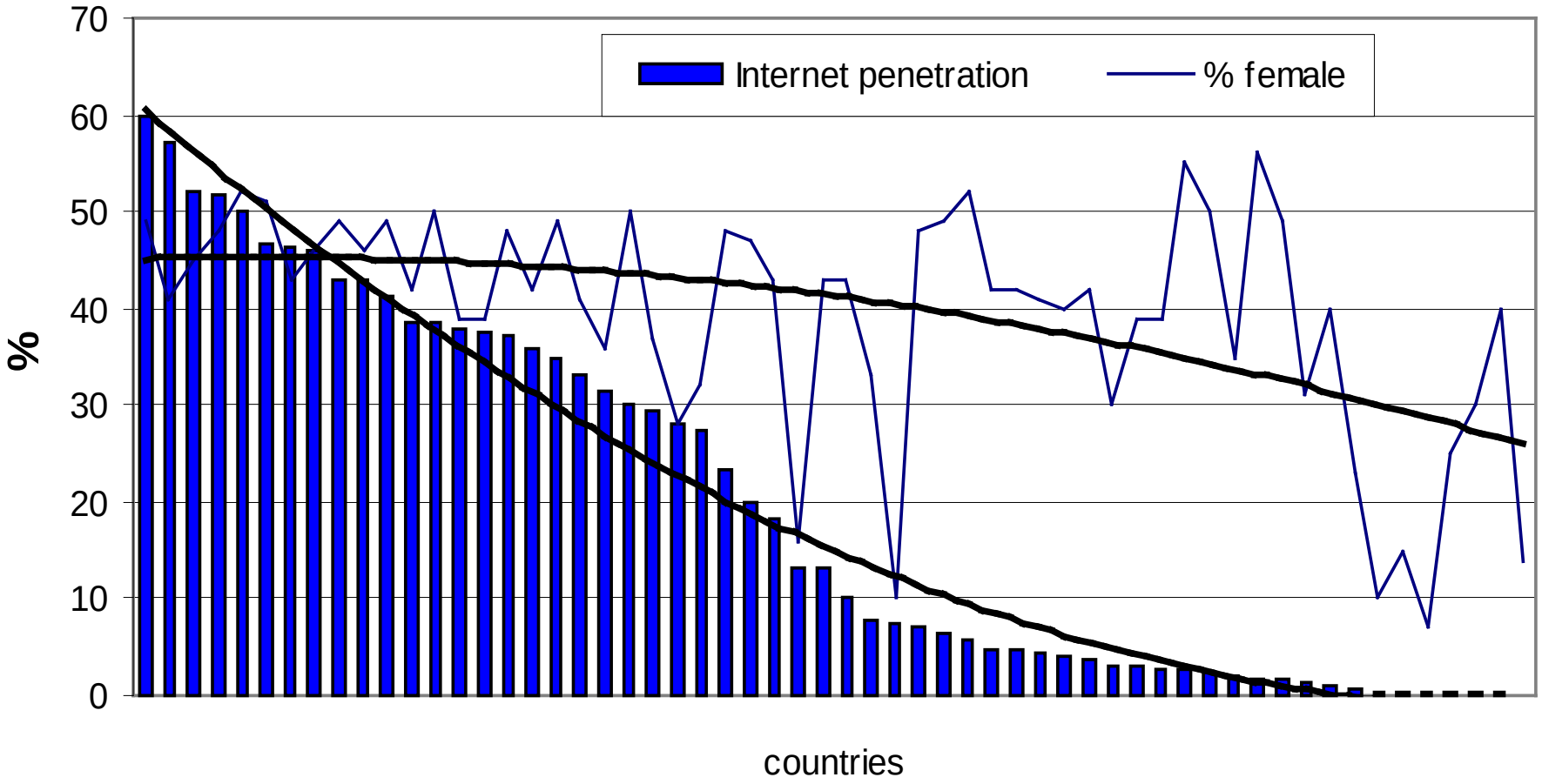
# Infostates 2003



# Networks 2003

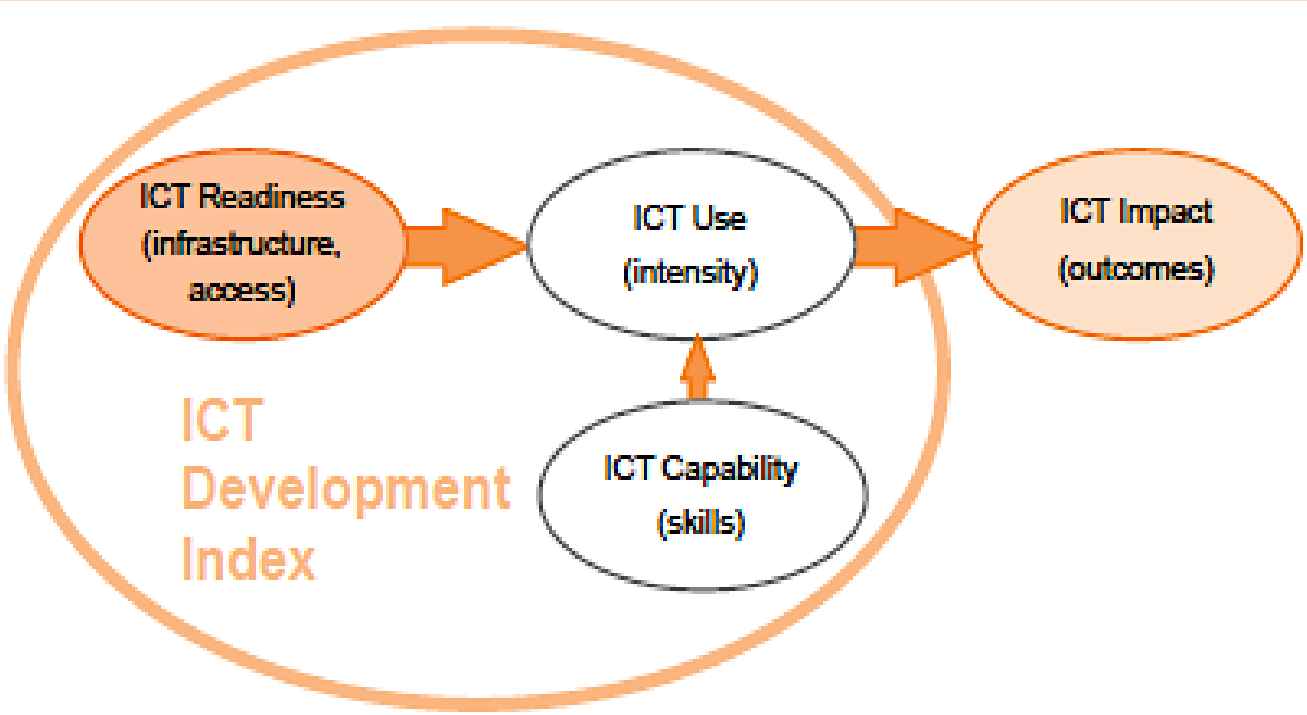


# Internet penetration and proportion of female users



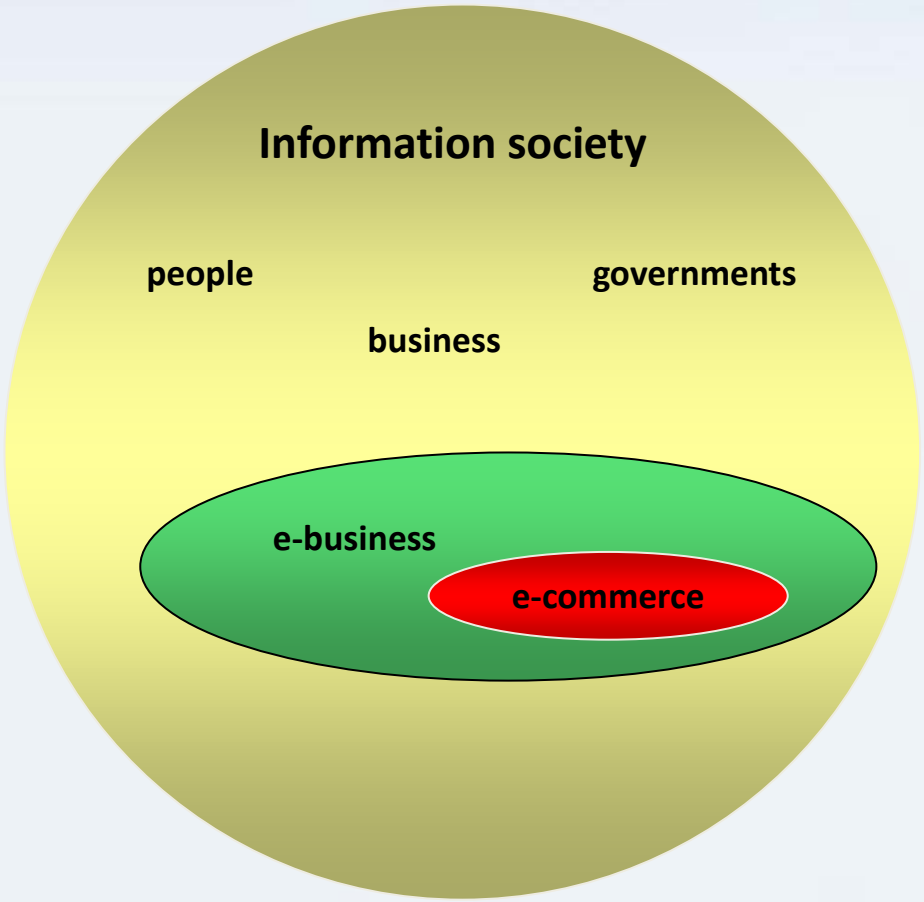
# ITU: DIGITAL OPPORTUNITY INDEX

Figure 2.1: Three stages in the evolution towards an information society




Source: ITU.

# E-COMMERCE




| | e-sales | other | |
|---|---|---|---|
| e-delivery | A | C | Y |
| other | B | "old" | |
| | X | | |

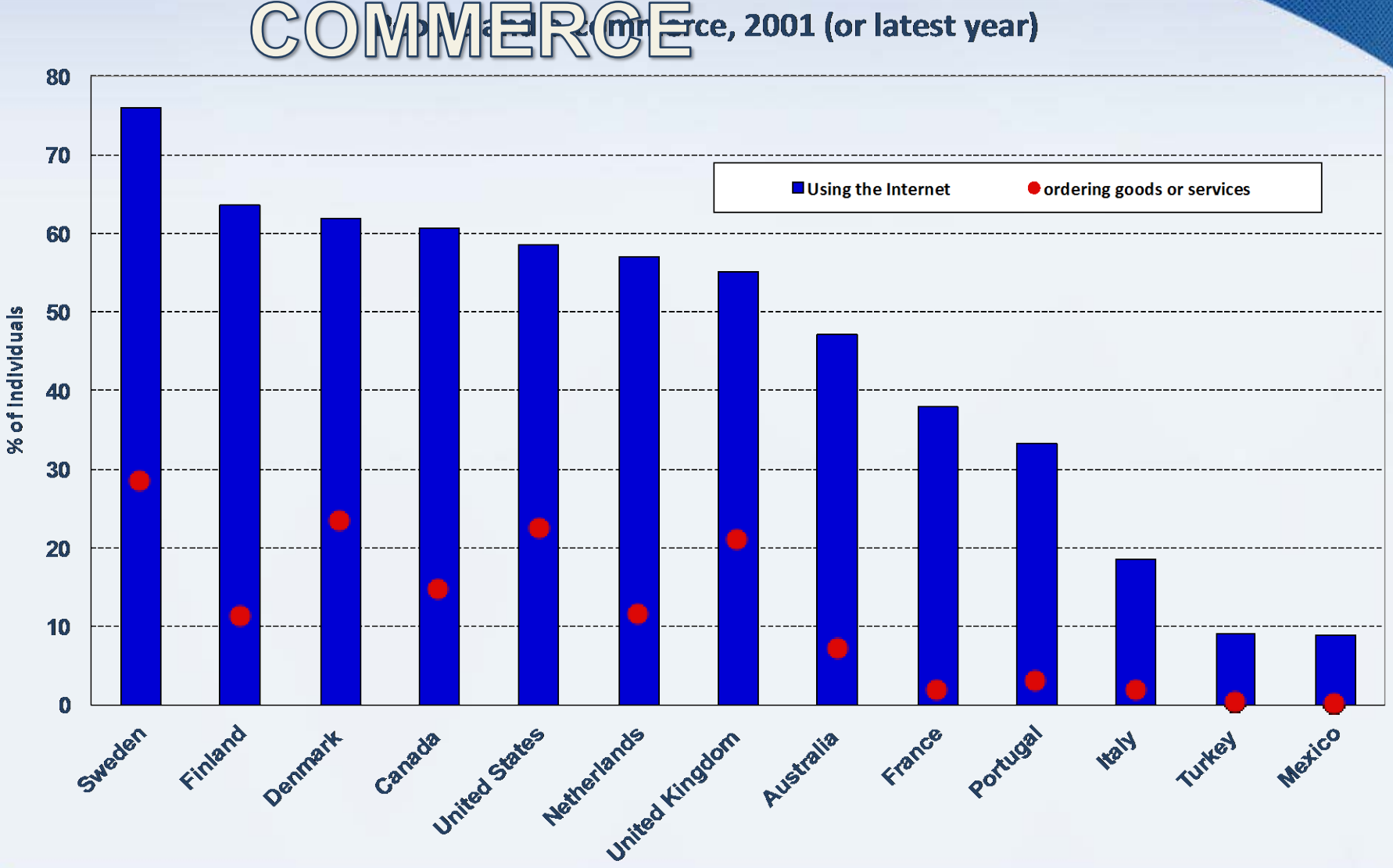
Indicators based on

- **online transactions**

Definition ignored

- **methods of delivery**
- **means of payment**

# PEOPLE AND E-COMMERCE



# THE INTERNATIONAL SCENE

- WSIS 2003 & 2005
- OECD: A guide to Information Society Measurements
- International Partnership on Measuring ICTs for Development – Core Indicators
- Regional networks and initiatives

# THE ICT SECTOR

- The need and early attempts
- Rationale, criteria, guiding principles
- Problems encountered
  - absence of an ICT commodity classification
  - inadequacy of existing industrial classifications
- The definition
  - goods and services
- Implementation, applications and examples
- Interpretation, meaning and caveats

# NAICS BASED DEFINITION

## North American Industry Classification System (NAICS)

### Manufacturing

33331 Commercial and Service Industry Machinery Manufacturing
33411 Computer and Peripheral Equipment Manufacturing
33421 Telephone Apparatus Manufacturing
33422 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
33431 Audio and Video Equipment Manufacturing
33441 Semiconductor and Other Electronic Component Manufacturing
33451 Navigational, Measuring, Medical and Controlling Devices Manufacturing
33592 Communication and Energy Wire and Cable Manufacturing

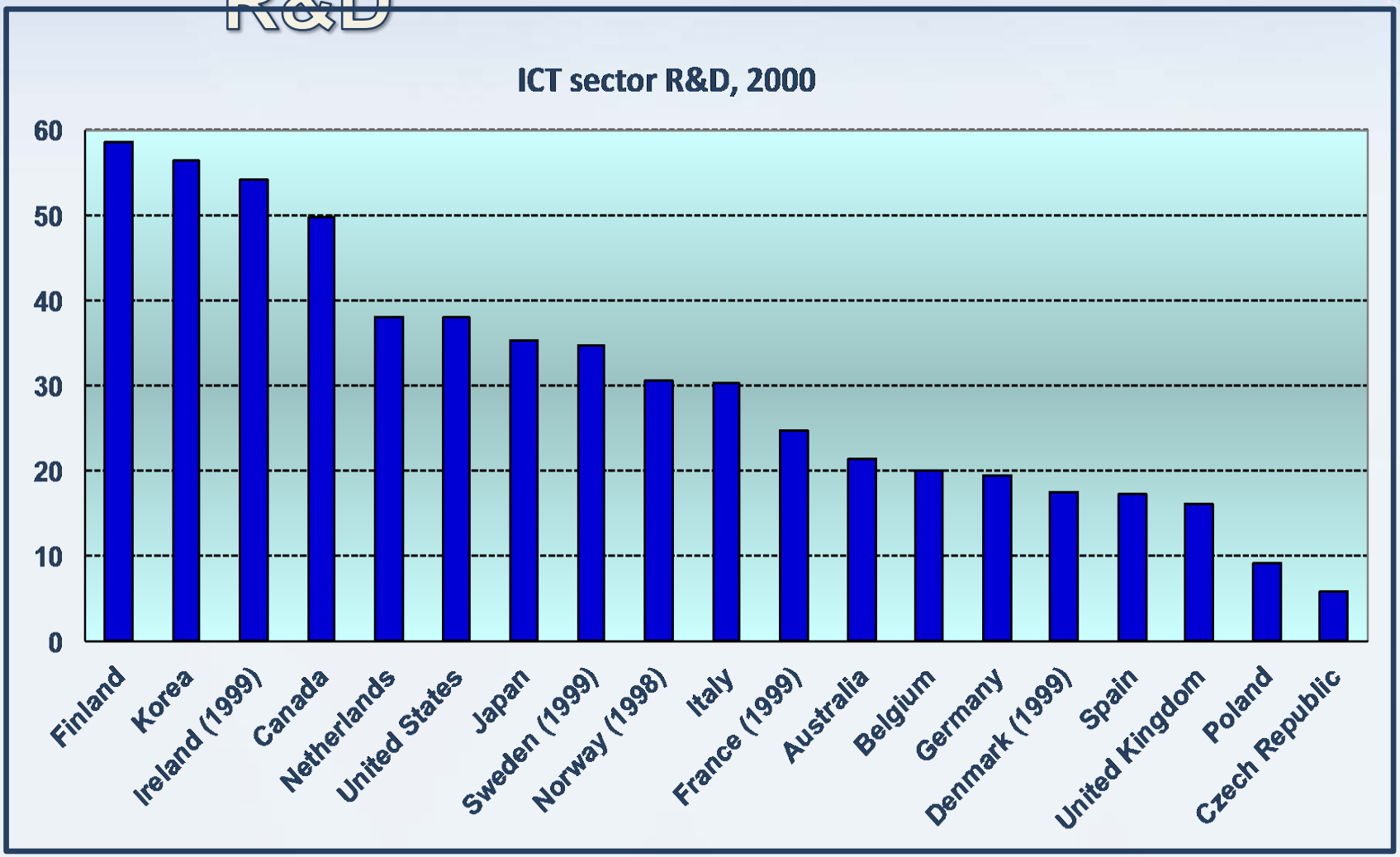
### Goods Related Services

41731 Computer, Computer Peripheral and Pre-packaged Software Wholesaler-Distributors
41732 Electronic Components, Navigational and Communications Equipment and Supplies Wholesaler-Distributors
41791 Office and Store Machinery and Equipment Wholesaler-Distributors
53242 Office Machinery and Equipment Rental and Leasing

### Intangible Services

51121 Software Publishers
51322 Cable and Other Program Distribution
51331 Wired Telecommunications Carriers
51332 Wireless Telecommunications Carriers (except Satellite)
51333 Telecommunications Resellers
51334 Satellite Telecommunications
51339 Other Telecommunications
51419 Other Information Services
51421 Data Processing Services
54151 Computer Systems Design and Related Services
81121 Electronic and Precision Equipment Repair and Maintenance

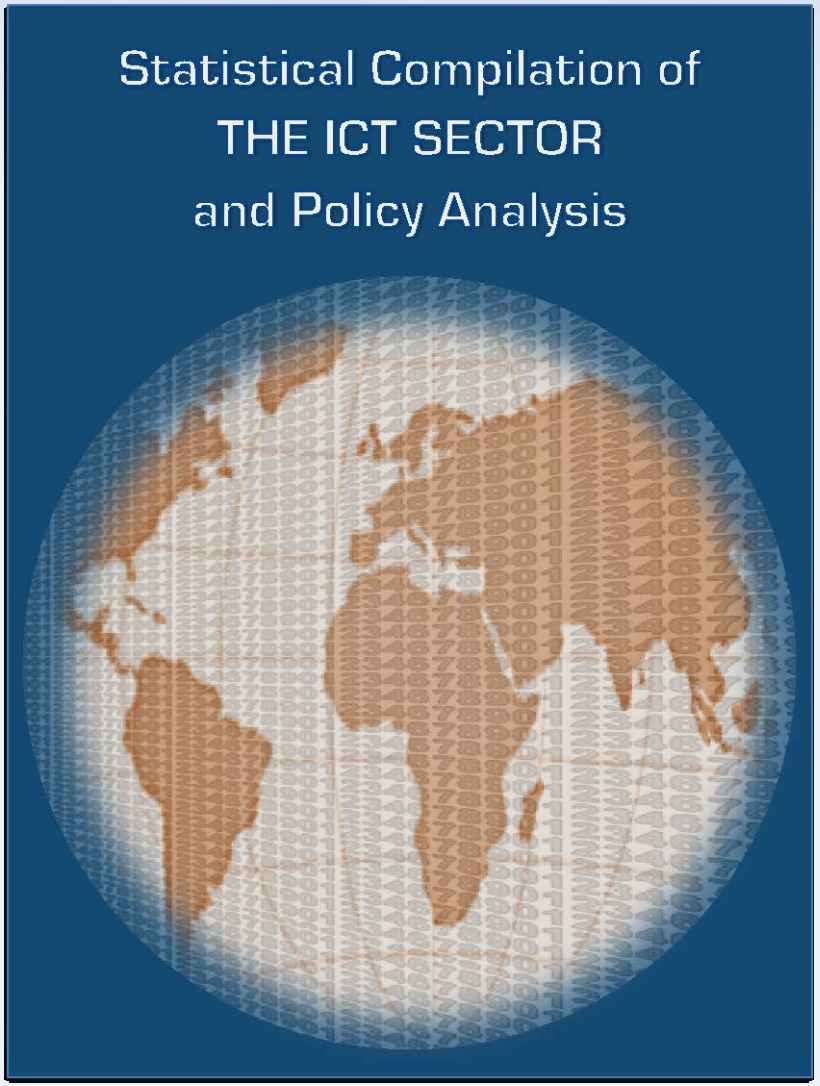
# ICT SECTOR R&D



# ORBICOM–IDRC PROJECT

**Participating countries:**

- Brazil
- Cameroon
- Egypt
- India
- Malaysia



# OUR LIVES IN DIGITAL TIMES

**Traffic over wireline networks, US and Canada**

| | lines | calls | minutes | calls per day | | minutes per day | |
|---|---|---|---|---|---|---|---|
| | (millions) | (billions) | (billions) | per line | per capita | per line | per capita |
| | | | | US | | | |
| 1980 | 102 | 312 | 1,734 | 8.4 | 3.8 | 46 | 21 |
| 2001 | 188 | *609* | 4,866 | 8.9 | 5.9 | 71 | 47 |
| | | | | Canada | | | |
| 1983 | *11.5* | 29 | - | 6.9 | 3.3 | - | - |
| 1987 | 12.8 | 37 | - | 7.9 | 3.8 | - | - |
| 1997 | 18.4 | - | *340* | - | - | 51 | 39 |
| 2003 | *19.5* | - | *461* | - | - | 65 | 47 |

Sources: Federal Communications Commission, Statistics Canada and author's estimates *(italics)*

# OUR LIVES IN DIGITAL TIMES

**Traffic volume over cell phones, US and Canada**

| | subscribers (millions) | billions of minutes | minutes | |
|---|---|---|---|---|
| | | | per line/day | per capita/day |
| **US** | | | | |
| **1993** | 16.0 | 26.9 | 4.7 | 0.3 |
| **2002** | 140.8 | 721.3 | 14.2 | 6.7 |
| **Canada** | | | | |
| **1993** | 1.3 | 2.1 | 4.4 | 0.2 |
| **2003** | 13.5 | 39.4 | 8.2 | 3.5 |

Sources: Federal Communications Commission, Statistics Canada

# SUMMARY INFERENCES

- ICTs have numerous outcomes
  - economic and social outcomes are inter-related

- The Information Society is also a 'talkative' society
  - ICTs change behaviour and absorb extra time daily
  - People choose to expand from geographic communities to communities of interest

- People are willing to pay, indicative of deriving utility

- Technological evolution, prices, learning/adaptation of usage affect and re-define outcomes

# THE GLOBAL IMPACT STUDY

**IDRC and the Gates Foundation**

**A TASCHA project**

**Assessing the economic and social impacts of public access to ICTs**

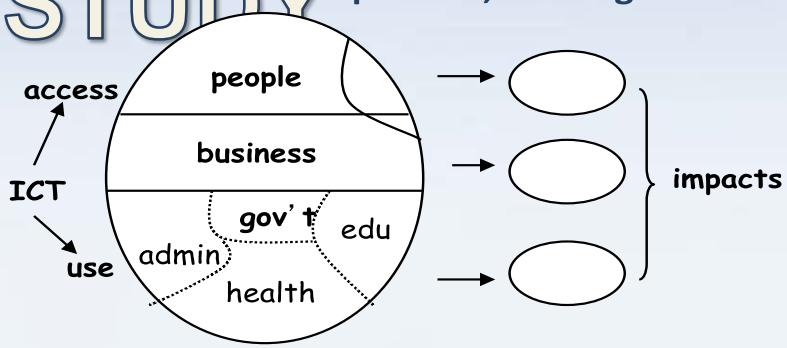
- Multi-dimensional, 5-year research
- Brazil, Chile, Bangladesh, the Philippines, Ghana
- Literature Review
- Inventories
- Country Surveys
  - PA venues
  - PA users
  - Non-users
- A series of in-depth studies
- Cost-Benefit

# THE GLOBAL IMPACT STUDY

## STAGE 1: Inquisitive, investigative

- Concepts
- Definitions
- Boundary decisions
- Questions/hypotheses
- Info gathering (incl. audiovisual)

1




2

- Experimentation
- Taxonomy of facilities
- Classification of services
- Establishment of relative priorities
- Content development

3

## STAGE 2: Methodology

foundation

lit review

existing data

inventories

In-depth studies

4

structural

surveys

facilities

users

non-users?

focus groups

logs

tracking?

5

finishing

longitudinal

?

interventions?

6

## STAGE 3: Outputs

country-specific

7

A. Impacts and resources

inventory d-base

survey results

audiovisual, testimonials

maps

8

global syntheses

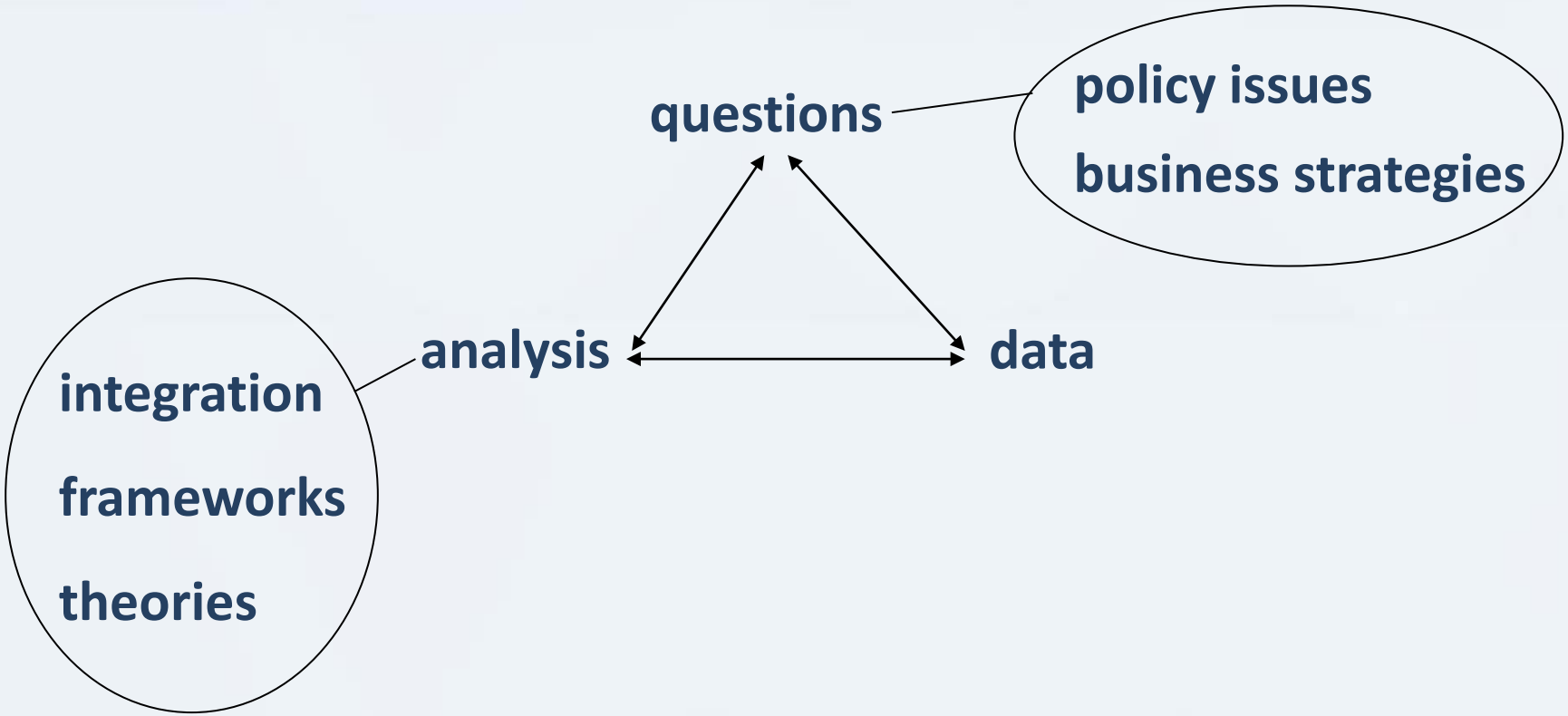
9

B. Cost-Benefit

10

# THE (R)EVOLVING LOOP

## Analysis: An iterative process



# THANK YOU