

Monitoring the
Digital Divide
...and beyond



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Monitoring the Digital Divide...and beyond

An ORBI COM project

in collaboration with

- CIDA
- *infoDev*, World Bank
- UNESCO

and contributions from: ITU, MIMOS,
UIS, Statistics Canada, NRC

Monitoring the Digital Divide...and beyond

- The Information Society
- ICTs for development
- The Digital Divide
- The need for a monitoring instrument

Monitoring the Digital Divide...and beyond

Objectives

- Quantify the Digital Divide across countries
- Monitor its evolution over time

Terms of reference

- Place emphasis on developing countries
- Policy relevance
- Broader scope than connectivity

The Conceptual Framework

The notion of Infostate

Infodensity (ICT stocks indicative of productive capacity)

ICT capital, ICT skills

Info-use (current ICT consumption flows)

ICT uptake, ICT intensity of use

- Infostates are ever-evolving and unbounded
 - interplay between absolutes and relatives

Socio-economic, geopolitical and cultural environment

Economy

PRODUCTIVE CAPACITY

capital

labour

ICT infrastructure

ICT skills

Infodensity

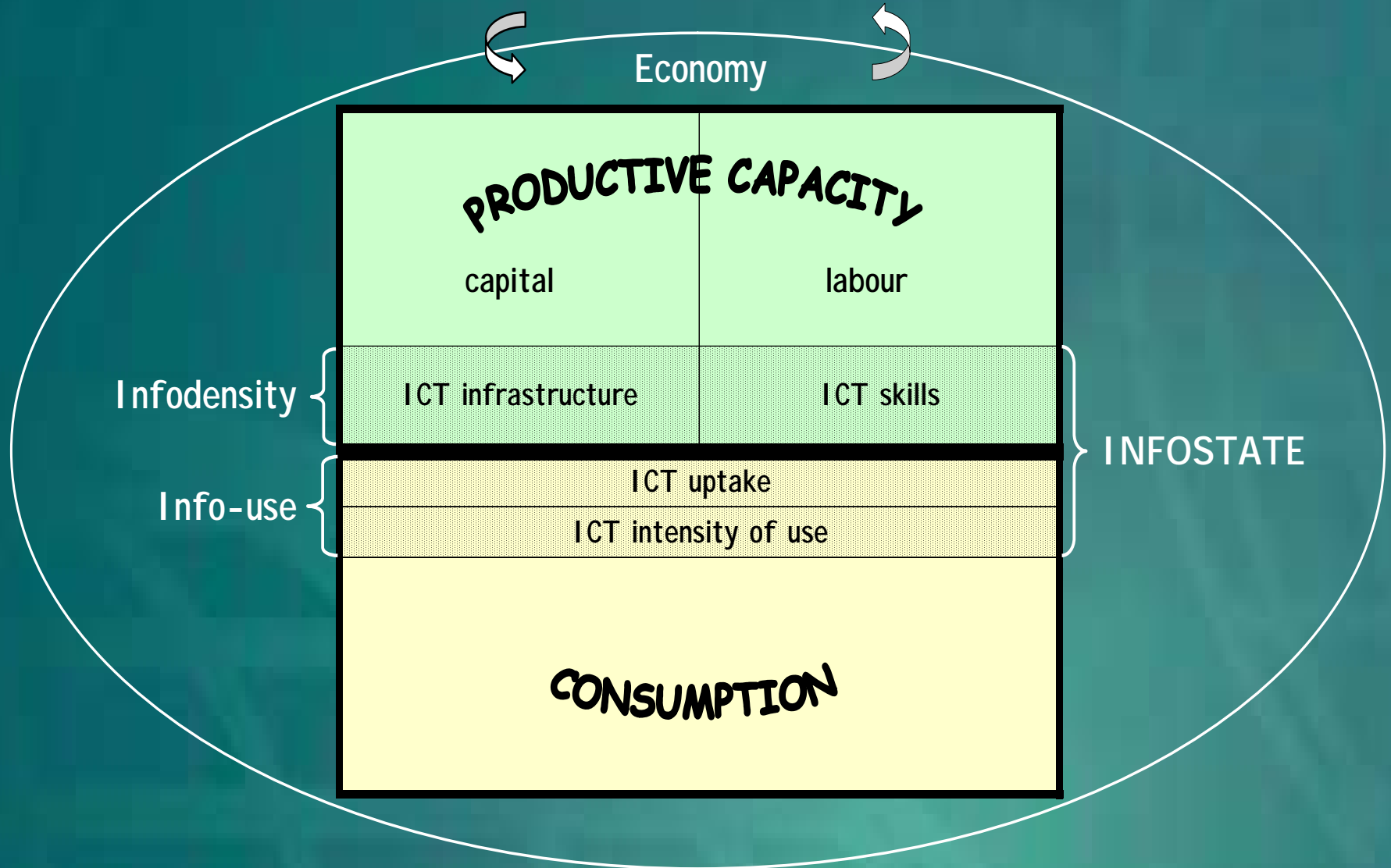
Info-use

ICT uptake

ICT intensity of use

INFOSTATE

CONSUMPTION



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The Digital Divide is defined as the difference among countries' Infostates

- o Model conducive to detailed analytical linkages
 - impacts of policies on performance
 - benchmarking, best practice, specific context, etc.
- o Methodology robust for comparisons between 'haves' and 'have-nots', but not intended for comparisons among top countries

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The Empirical Application

An indicators model

| | |
|-------------|--|
| indicators: | 21 |
| countries: | ranging from 192 for Networks to 139 for overall Infostate |
| coverage: | 95%-99% of global population |
| years: | 6 (1996-2001) |

Reference year and country

2001 - data driven

Hypothetica - the average country

Planetia - the planet (viewed as one country)

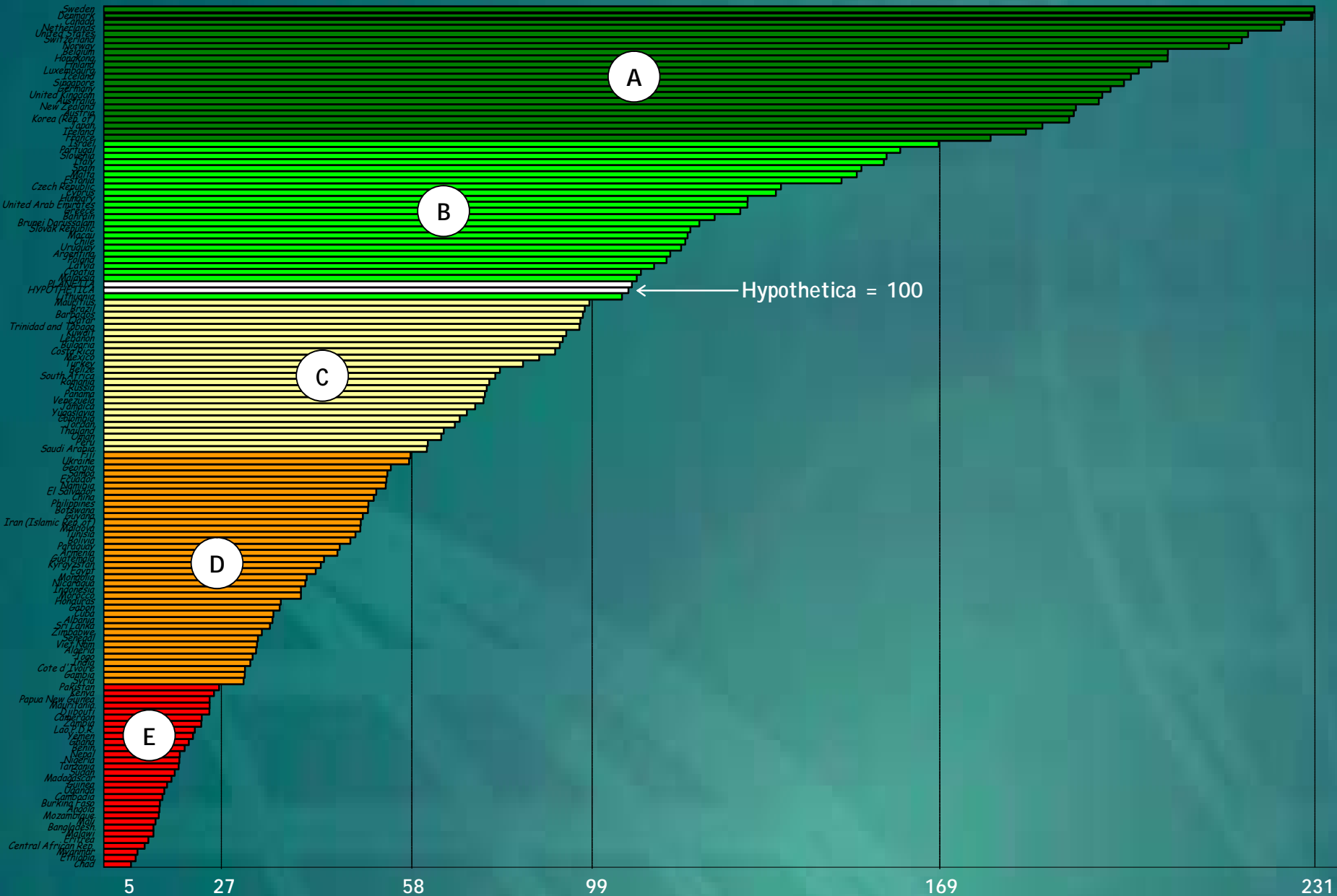
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Findings

- o How big is the Digital Divide?

- Its magnitude is huge
- Differences between top and bottom are staggering
- With the average country at 100, in 2001,
Infostate values ranged from 231 to 5!

Infostates 2001



Findings

o What are the main causes of the Digital Divide?

- All components contribute...
...but differ across countries and ICTs
- Generally, major causes are:

Networks, particularly newer technologies
(Internet, cell phones)

Uptake - mostly PCs and Internet use

Skills - as we move to higher levels

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Findings

o How is the Digital Divide evolving?

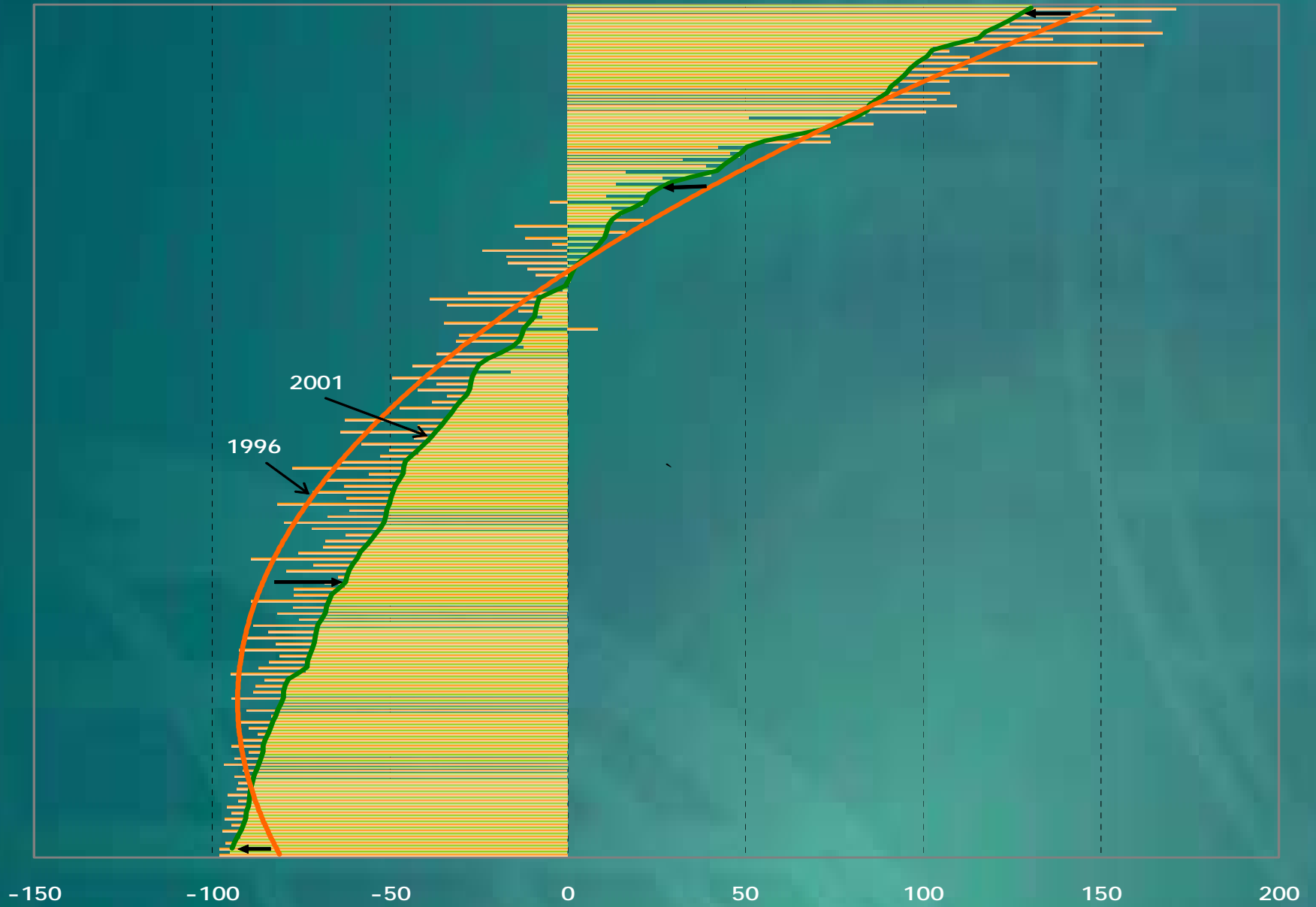
Generally closing but...

...due to middle countries catching up

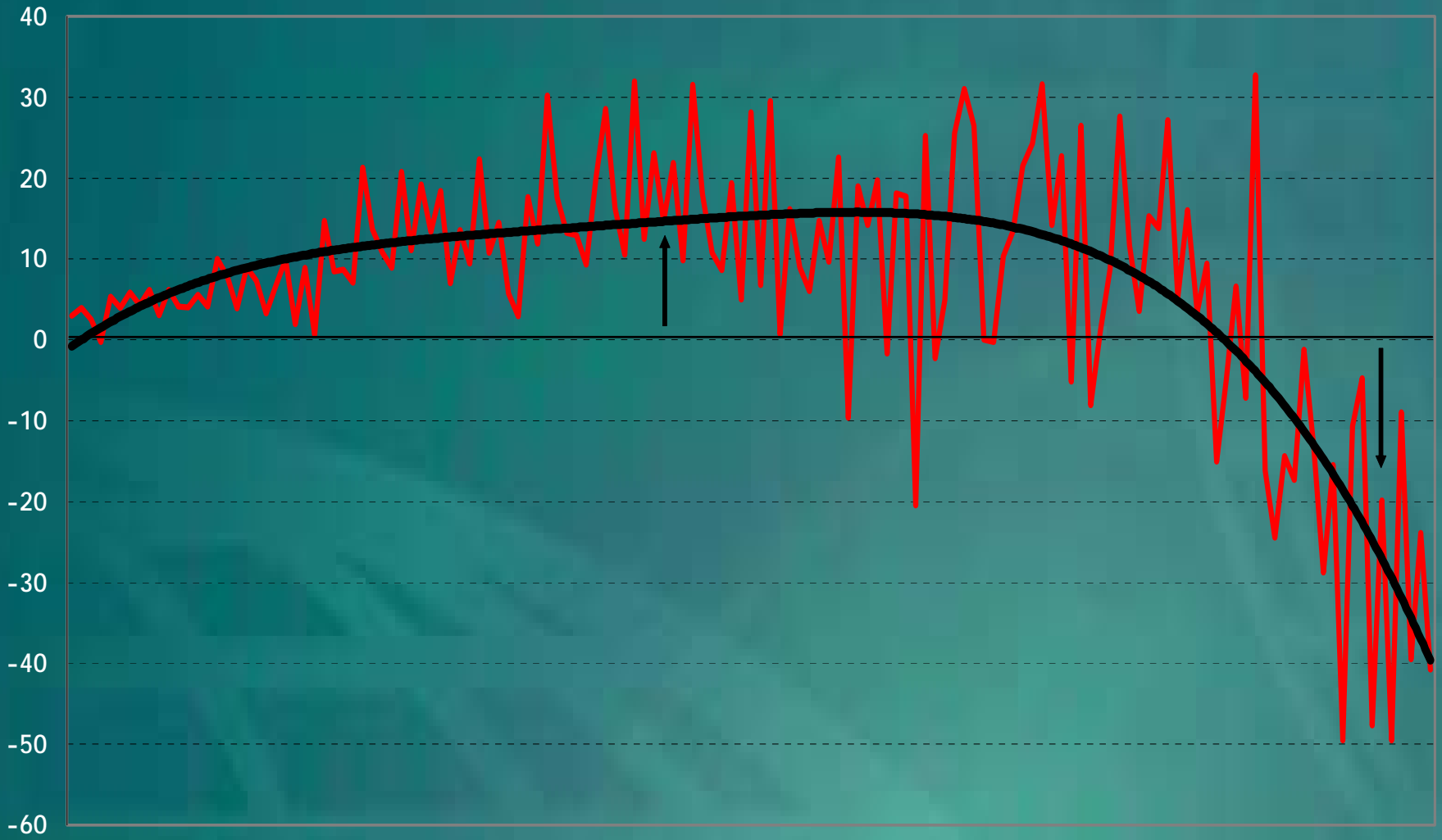
...countries at the bottom

- close slightly only against the top
- continue to lose ground against all other countries

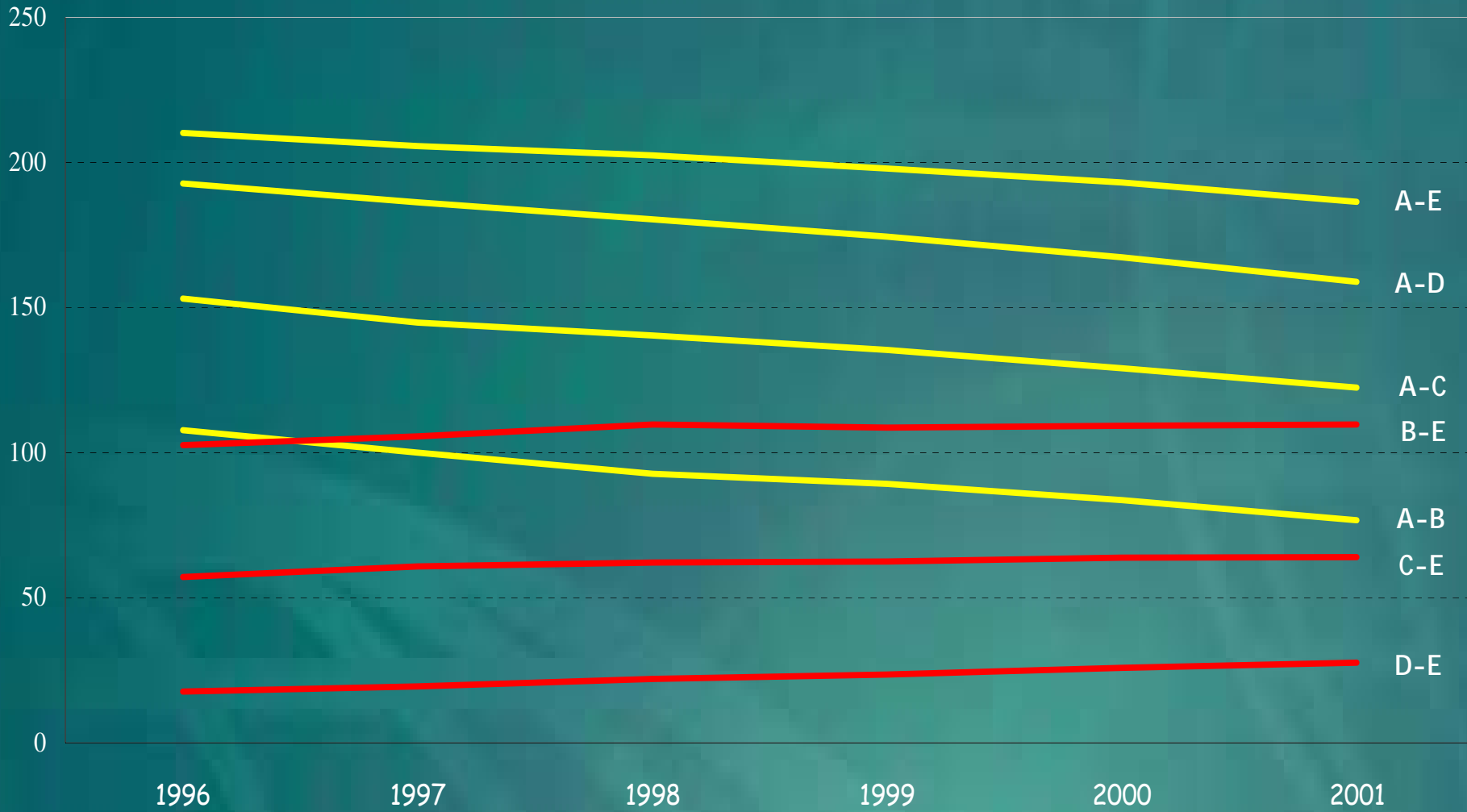
A (generally) closing Digital Divide



A closing Digital Divide



Evolution of the Digital Divide between country groups



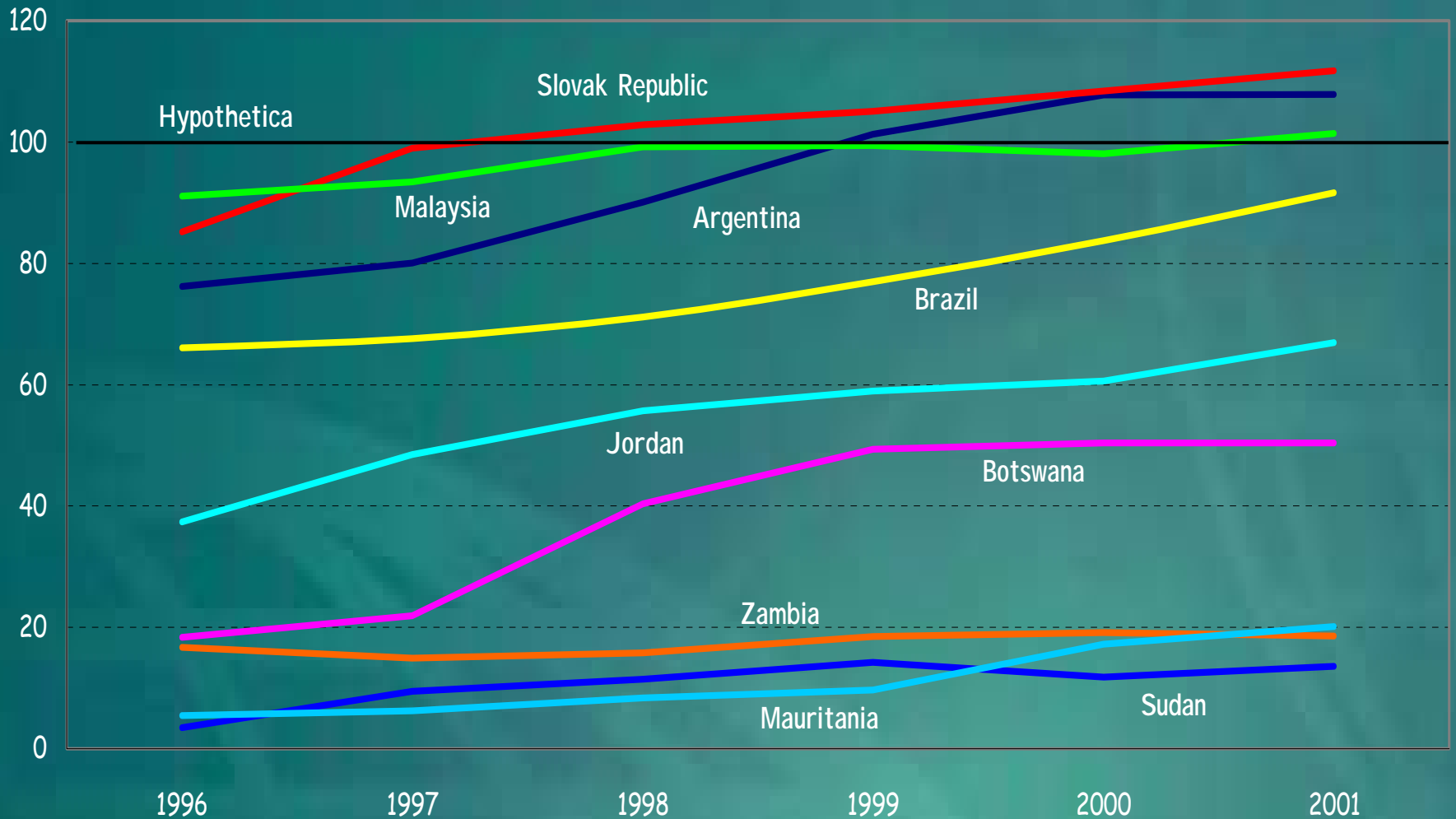
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Findings

- o At what speed is the Digital Divide evolving?
 - at a painfully slow pace
 - all things equal, it will take generations for countries at the bottom to achieve today's Infostate levels of countries in the middle...
 - ...which, by then, will have move upwards

Patterns of closing divides

normalized
Infostates



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Findings

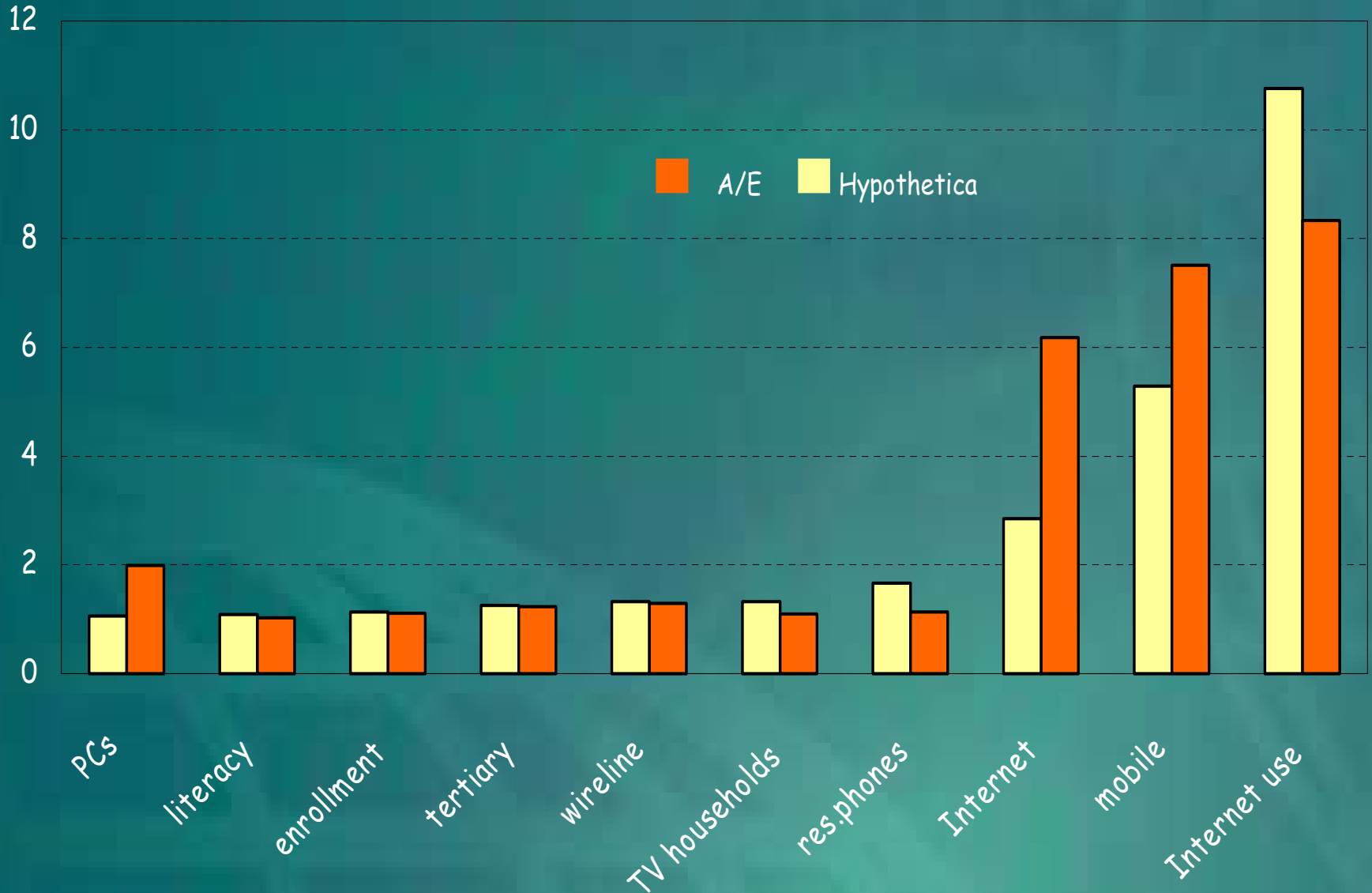
- o What contributes most to the slow overall closing of the Digital Divide?

Mostly the newer technologies

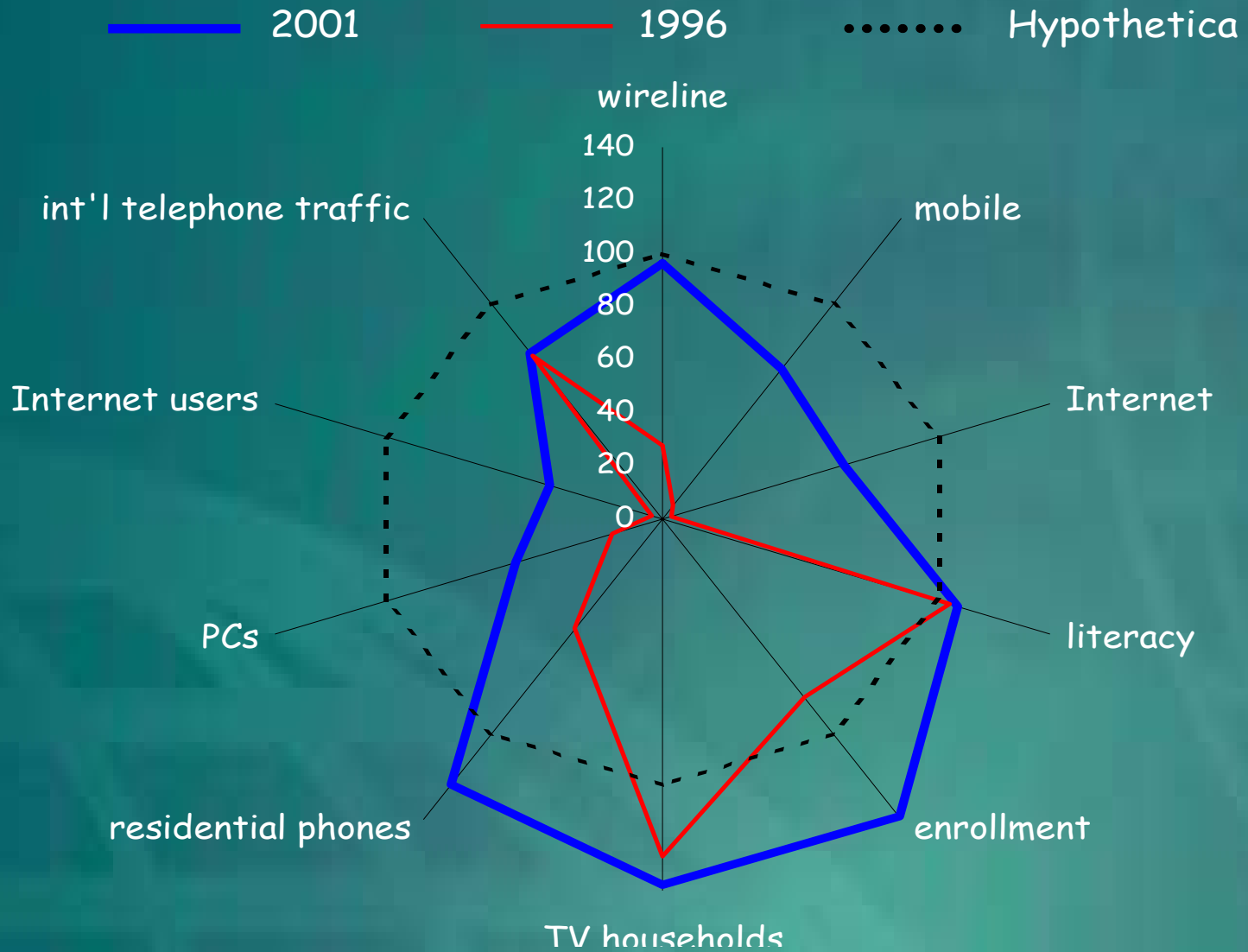
- Internet use
- mobile telephony
- Internet networks

Contributors to the closing Divide

2001/1996 ratios

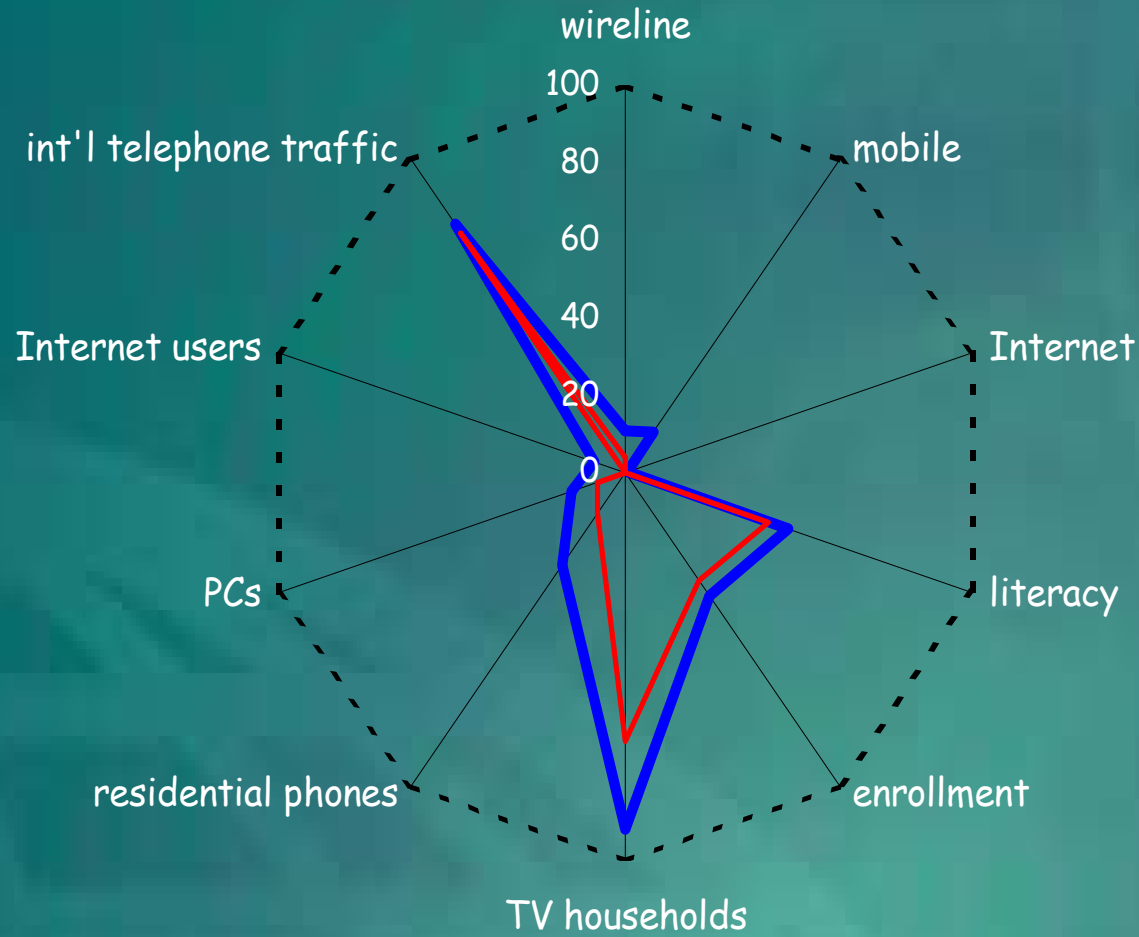


Evolution - Brazil

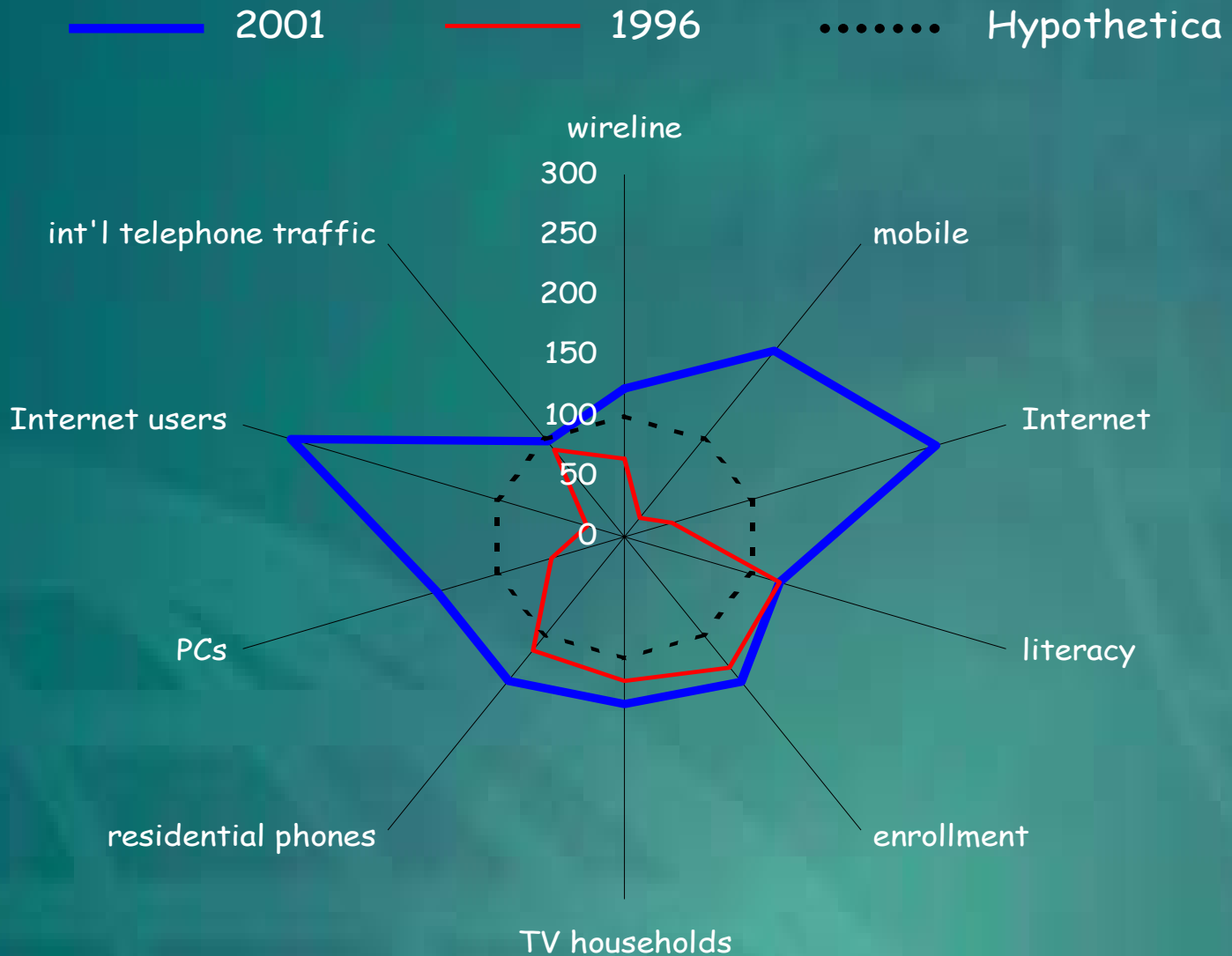


Evolution - Senegal

— 2001 — 1996 Hypothetica



Evolution - Estonia

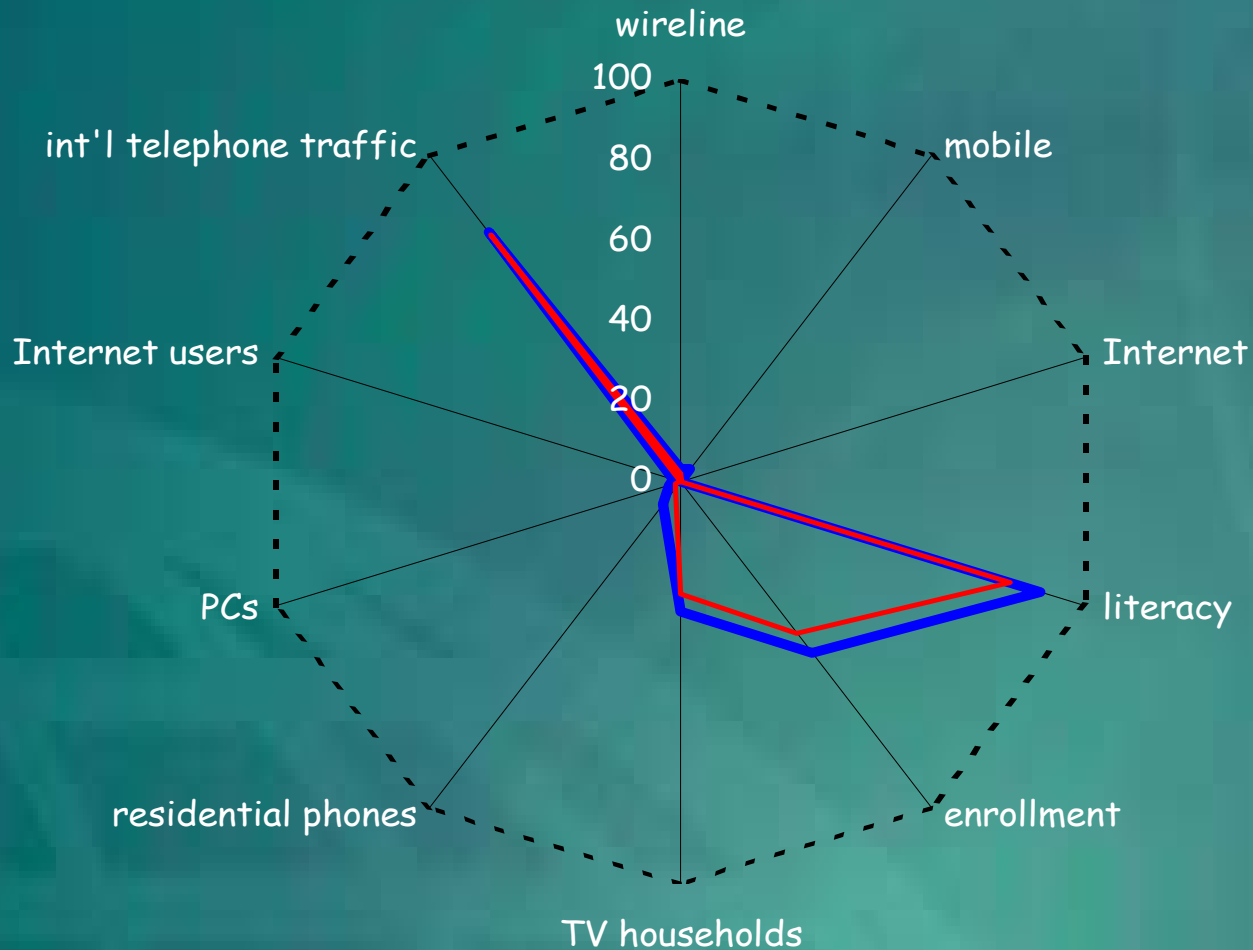


Evolution - Ghana

2001

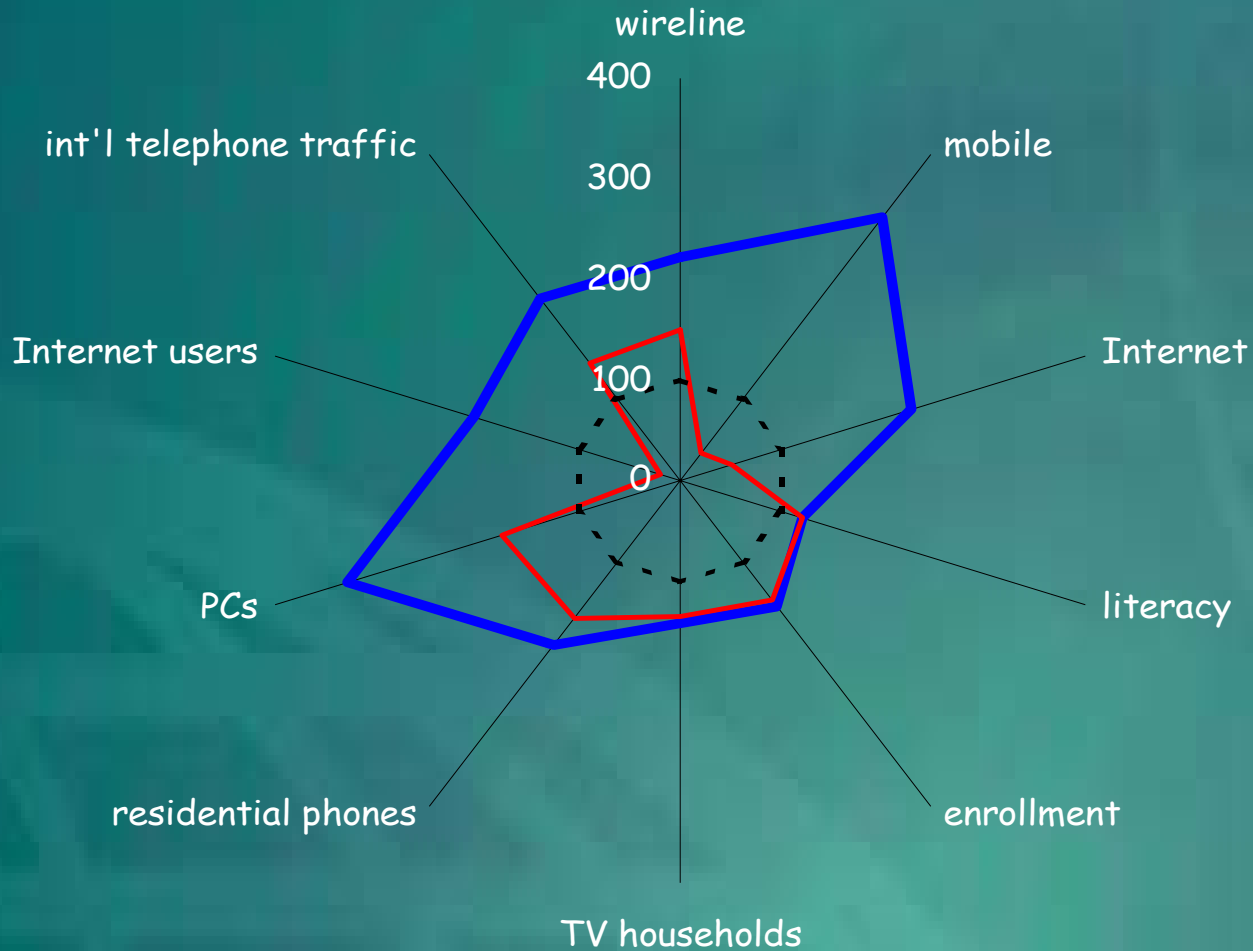
1996

Hypothetica



Evolution - Ireland

— 2001 — 1996 Hypothetica



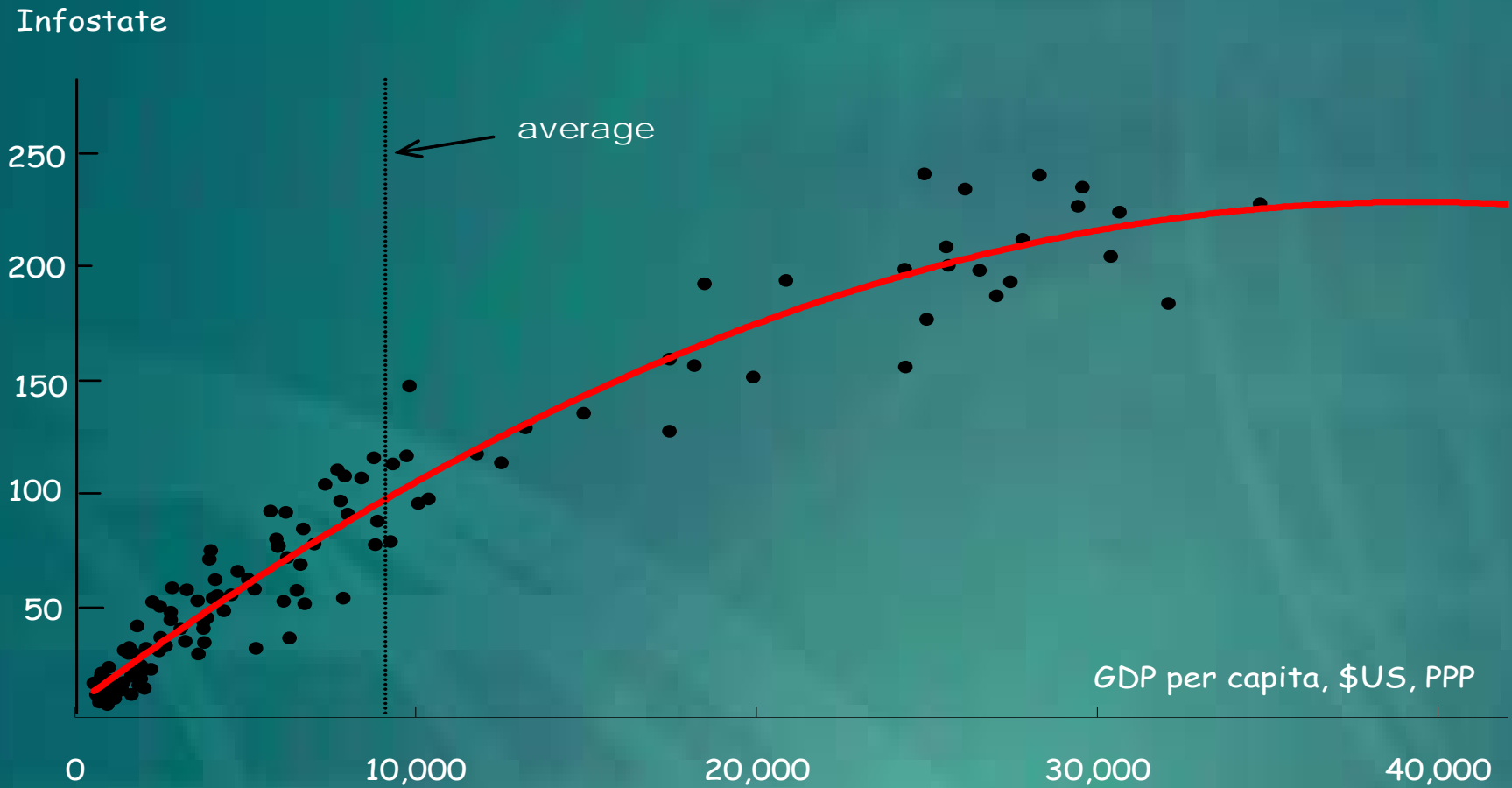
Macro linkages

- Correlation between Infostates and GDP

In the 1996-2001 period, the marginal effect of an increase by one point in Infodensity is an increase of \$124-\$164 in per capita GDP

- The relationship is more complicated, though, and there are exceptions

Infostate and per capita GDP, 2001



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From Digital to Knowledge Divide

- Knowledge vs. information
- Knowledge confers capacity for action
- Knowledge comes in many forms, valued differently in different cultures and times
- ICTs conducive to codified knowledge
- Mode 1 and Mode 2 knowledge
- Social dimensions in addition to personal

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From Digital to Knowledge Divide

- Knowledge in the context of development
- Knowledge vs. knower, East vs. West, thing vs. process
- Knowledge creation
- Transferring knowledge and de-contextualization
- Local/indigenous knowledge and its integration
- Absorptive capacity is key – serious policy implications

Refers to the capability to track, understand and assimilate externally sourced knowledge

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What's next

- Disseminate widely, solidify and expand partnerships
- Need to monitor progress for Tunis
 - continue empirical application
- Intensify analytical activities
 - expand linkages, derive detailed insights

Document available at:

www.orbicom.uqam.ca