

INTERNET: THE ELUSIVE QUEST FOR A FRICTIONLESS ECONOMY



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Catania -- 15 June 2002



Outline

- Dimensions of the Digital Divide
- The Research Questions
- Evidence
- Policy Implications: Telecom Reforms, Trust, and Competition

A first digital divide

■ A Large Country Divide

Country	Internet		Active internet		Weighted by surfing time	
	penetration	Rank	penetration	Rank	time	Rank
Sweden	64%	1	42%	1	2,5	4
United States	63%	2	38%	2	4,0	1
Germany	37%	13	22%	13	1,8	10
Japan	37%	13	16%	15	1,5	12
Italy	34%	15	16%	15	0,9	15
France	19%	17	11%	17	0,7	16



Regulation Failure ?

- **Test on a large panel of countries (180 countries, ITU sample 1995-2001) for the determinants of internet diffusion**
- **The level of GDP per capita and cost of phone calls seem to influence internet diffusion; however the latter effect is not robust (vanishes with fixed effects regressions)**



A language barrier?

- **English is the dominant language on the World Wide Web**
- **Consequences for:**
 - the inter-country divide
 - the intra-country divide



Education and income

- determinants of PC Penetration and Internet Access
- highly educated workers generally have **white-collar jobs** and thus training and access to computer technology
- The digital divide supposed to **split the middle class**



Towards Digital Inclusion?

- **Steady decrease in the cost** of access to the internet, partly endogenous (network and diffusion effect)
- The **US case** : 70 per cent of the individuals use internet at home or at work



From a digital divide to a **consumer divide**

- ICT and internet technologies are expected to significantly **improve** the efficiency of markets through the decrease in information costs associated to intermediation, and particularly the search costs
- **However...**



A. Face to Face

- Some goods must be **seen** before purchase (cars, housing...)
- Some must be **tried** (clothing...)
- The **seller** might want to see the other party (banking, insurance...)



B. Barriers to entry and competition

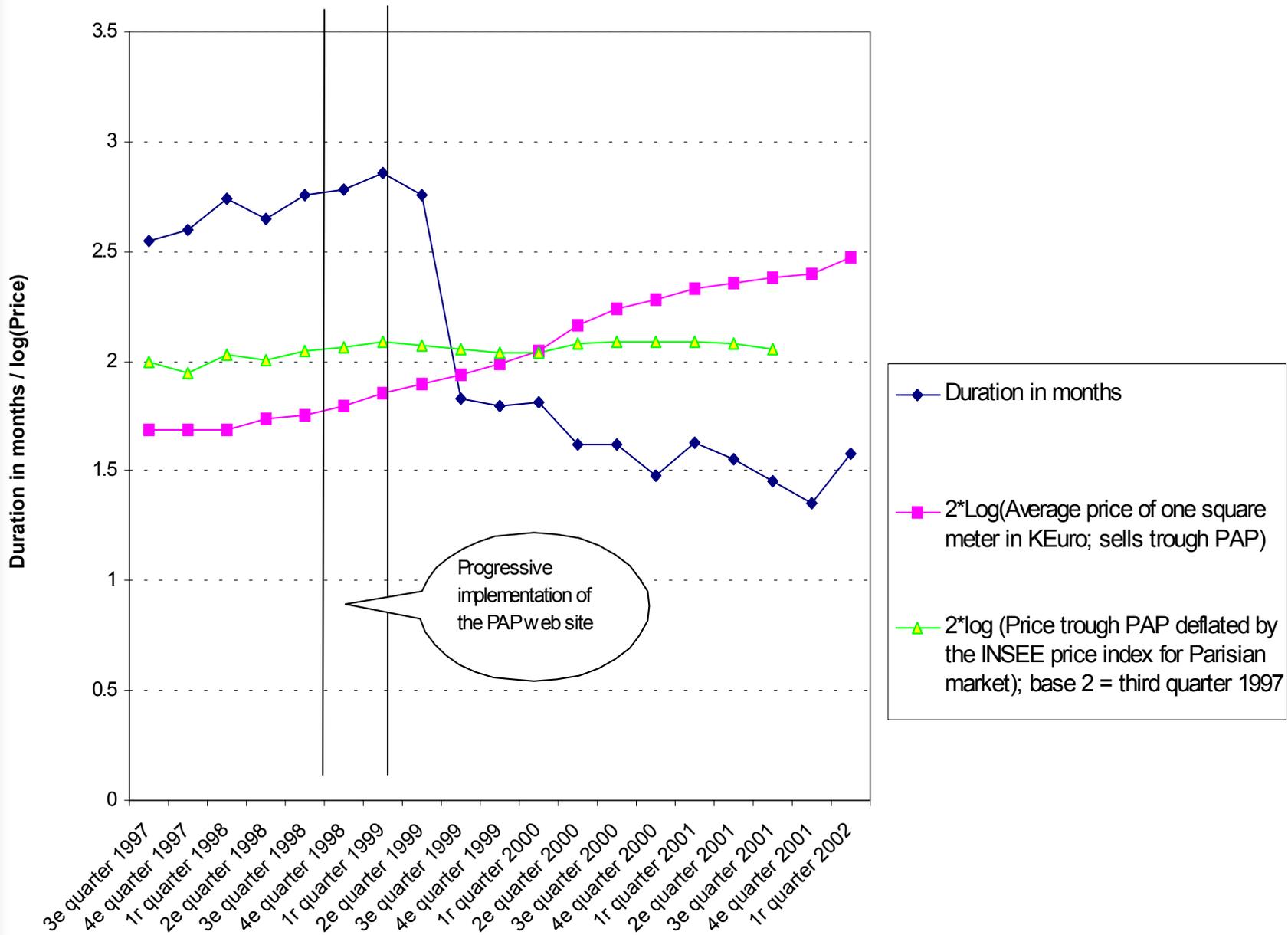
- **Information overload**
 - **Logistics**
 - **Endogenous sunk costs** (branding, reputation building...)
- ⇒ No clear evidence on the evolution of price levels and dispersion



Still, internet is not neutral

- **Lower prices (both online and offline) but only for online individuals: life insurance example**
- **'Product' differentiation (service) makes comparisons difficult**
- **C2C modifies rent sharing between buyer and seller**
- **Search costs actually decrease: real estate example**

**PAP estimates of the time between the posting of the advert and the transaction;
Parisian apartments, 1997-2002**

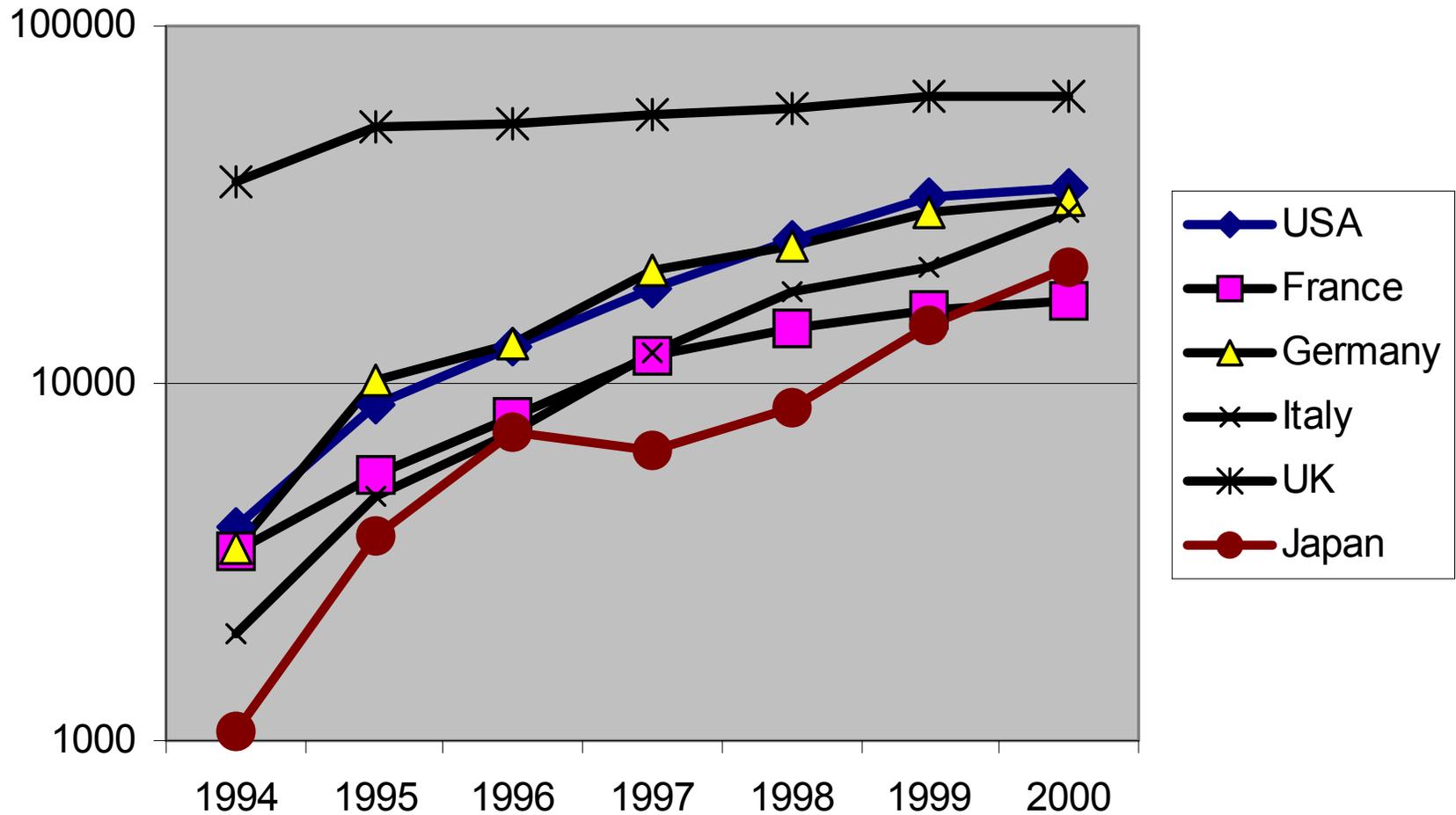




B2B

- First idea: a digital divide between workers affected by B2B (outsourcing and relocation) and ‘core’ workers
 - **B2B requires certification of suppliers**
 - *Test of the influence of certification on internet diffusion for a representative sample of French establishments*
- Endogenous sunk costs**

Number of ISO 9000 Certificates (logarithmic scale)





A new supply chain

- **Short time to market : the key strategy in the new competition**
- Just in Time
- Distance's not dead
- **Location of production relatively near the final market** in spite of higher labour costs: example of Zara

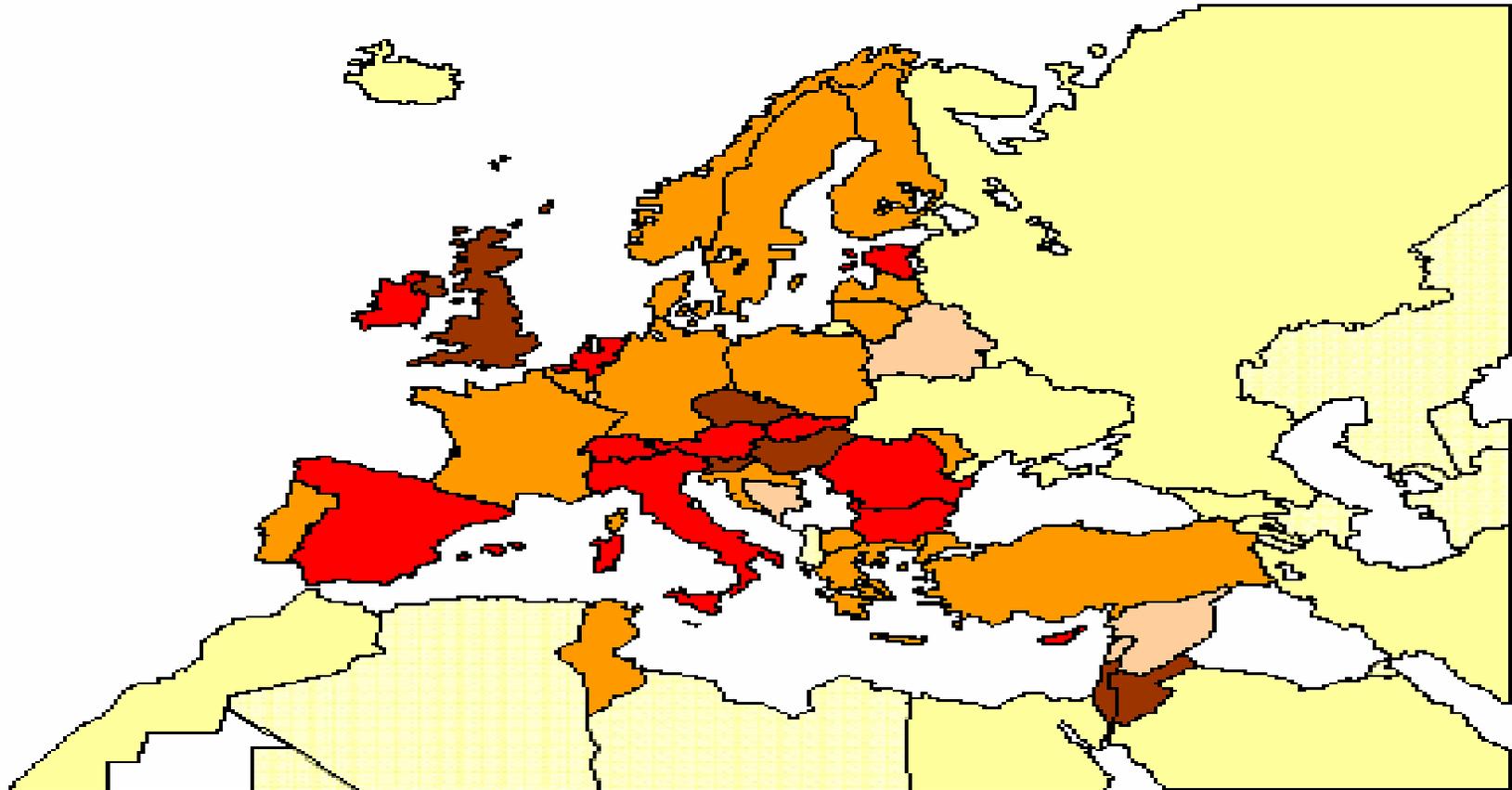


Opportunities for Europe

- **European diversity** within one day's shipping

⇒ A new **European** supply chain

Diffusion of ISO 9000 norms in Europe, North Africa and West-Asia (December 2000)



Index of diffusion (number of ISO firms per billions \$ GDP):

Albania		< 2	Georgia		< 5
Luxembourg		< 10	Macedonian Republic		< 20
Cyprus		< 40	Hungary		> 40

Source: Authors' calculus using ISO survey 2001



Internet: the Great Equalizer ..

- makes the whole economic system, nationally and internationally, more competitive
 - prices of well-specified goods and services available on-line
 - buyers can shop for the best deal over a wide geographic area
 - sellers can reach a larger group of buyers
 - textbook model of perfect competition
 - large numbers of buyers and sellers
 - market with perfect information
 - lower profit margins
 - more efficient production
 - greater consumer satisfaction



B2C Markets

■ Approaches/Applications:

- direct selling to international customers at negotiated price (high quality handicrafts, travel services)
- supply of content in electronic form (music, educational software, translation and other services)

■ Advantages:

- lower costs of establishing international market presence
- lower transaction costs:
 - ➔ either lower prices to customers, or
 - ➔ higher price to producers, or
 - ➔ both



B2B Markets

- Opportunities for small manufacturers to compete in online parts exchanges
- As more parts procurement moves online
 - risk of losing business if not e-commerce ready (Wal-mart condition for suppliers)
- “Old economy” challenges remain:
 - meeting quality standards of customers (technological capabilities matter)
 - ensuring on-time delivery (infrastructure)



... or the Great Pretender?

- Education and skills still an obstacle
- infrastructural bottlenecks in telecoms, transport, and logistics still formidable
- “South” trails in addressing governance issues
- information \neq knowledge



Will the digital divide reinforce the income divide?

- Diffusion of telecoms and Internet technologies varies widely
- Per capita income is one important explanatory variable
- “the Internet certainly affects transaction costs, but determining whether that means companies will be bigger or smaller requires careful analysis of competing forces” (Varian 2002)



May product markets be made narrower as a result of increased scope for price discrimination?

■ e-commerce makes it easier to

- quote different prices to different buyers
- use information about consumer buying habits to identify those willing to pay higher prices
- take advantage of the fact that higher income consumers, i.e. those with a greater ability to pay higher prices, place a higher value on time



evidence points to persistence of price dispersions across Internet markets



Analysis

- macro-level data on production, income, trade, and investment can provide a rough idea of the volume and location of economic activity, but not the detailed contours of the world economy, the role of personal and firm-to-firm relationships, the influence of power and politics, and the differential impact -- across firms, sectors, and economies -- of technologies like the Internet”



Basics

- History --> economic growth and trade liberalization much more important than drop in transport costs
- “Southern” companies unable to compete internationally as stand-alone entities
- Options:
 - horizontal product differentiation
 - vertical integration into processing



Five case studies

- Coffee/flowers/garments --> “South” accounts for a large and growing share of world production and trade + key income source
- Travel & tourism --> large impact of the Internet
- Software --> quintessential digitisable product



Questions

- How has the global industrial structure evolved?
- What role do “Southern” producers play?
- What is happening to prices, profit margins and the distribution of value added along the supply chain?
- Is the ICT revolution leading to greater fragmentation or more seamless integration?



Methodological pros and cons

- + Takes a system of interrelated activities as the unit of analysis and focuses on a limited number of fundamental issues ⇒ multi-perspective, inductive analyses
 - = sample bias -- cases must be selected so as to maximize what can be learned
 - = results are not easily generalizable



Coffee and Flowers -- generalities

- Big global markets
- South-North trade
- volumes ↑ values ↓
 - higher breeding productivity
 - better supply chain management
- high labor intensity
- quality difficult to judge ⇒ reputation
 - rising investments
 - concentration, economies of scale
- producers receive smaller shares of value added



Internet and Coffee

- Trends occurring even before internet
 - greater product differentiation
 - vertical integration (upstream, downstream)
- Internet's impact
 - online auctions of premium coffees
 - higher price obtained by successful competitors
 - little impact on non-premium coffees to date



Internet and Flowers

- Sense perception even more important in buyers' decisions than with coffee
- Internet auctions have yet to take off
 - resistance from both traditional auctioneers and
 - buyers to screen-based trading
- The marginal costs of transshipping from Holland to other European mkts minimal relative to the transport costs from Africa to Europe



Obstacles to SME adoption

- Low use of e-commerce by customers & suppliers
- lack of knowledge & technical skills
- language barriers
- limited awareness among entrepreneurs
- high Internet access cost
- security concerns & regulatory uncertainty



E-commerce challenges for developing country entrepreneurs

- Besides infrastructure limitations...
- ... establish trust relationships with anonymous and distant customers ...
- ... and provide online consumers with the level of protection and privacy they have come to expect



Digital Trust

- Overcoming barriers to entry into mkts where reputation matters
 - Trust by association (NGO, webpage hosting portal)
 - Subscribing to standard code of conduct
- Building reputation
 - online peer review and rating schemes
 - customer testimonials



Ensuring security of customer information

- Use of industry standard protocols, software for secure payment, encryption, privacy guarantees
- Buying in these services from reputable agent when too costly to provide in-house



Accelerating Adoption

- *Eventually*, ICT access in low-income countries will broaden with rising incomes ...
- ... *but* the income gap remains wide and convergence at best slow
- What role can policy reforms, other measures play in accelerating the IT catch-up process?



Grazie!!!