



Ubiquitous Network Societies

The case of Italy



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Union (ITU)**

**ICT TRENDS AND CHALLENGES
IN A GLOBAL ERA**

**Michigan State University and
INT & Business School Lausanne**

Geneva, Switzerland
4 July 2005

Italy at a glance



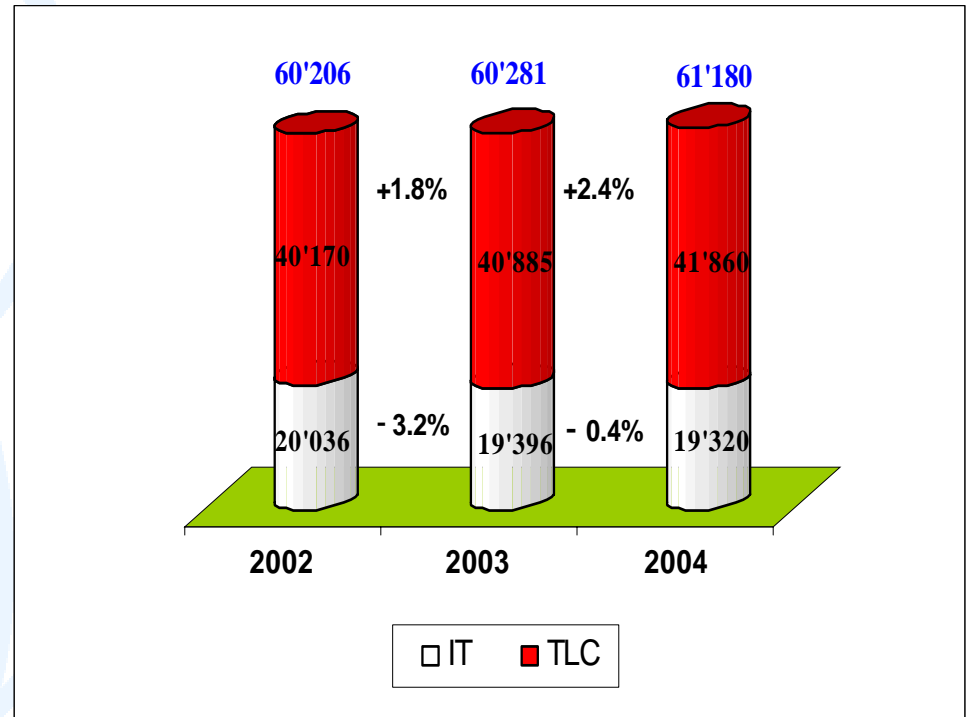
Republic of Italy	
Geography	
Coordinates	42 50 N, 12 50 E
Area	301 230 sq km
Terrain	Mostly rugged and mountainous; some plains, costal lowlands.
Population	
Total	58 057 477
Growth rate	0.09
Life expectancy	79.54 years
Women	76.61 years
Men	82.66 years
Median age	41.4 years
Economy (GDP, 2004 est.)	
Total (PPP)	\$ 1.55 trillion
Per capita (PPP)	\$ 26 700
Growth rate	0.4 %
Language	
Official	Italian

ICT Market

The real change toward Ubiquitous

Three driving forces...

- High penetration and technological leadership in mobile telephony
- The accelerated penetration and growth of broadband wireline access
- The final planned phasing-in of digital terrestrial TV, which will completely replace analogue TV by 2006



Note: IT is hardware, software and services, whilst TLC is fixed and mobile telecommunications.

Note: The percentages represent an increase or decrease in the respective markets.

Source: Assinform



The path to Italy's Ubiquitous Network Society

Implementing solutions to comply with the ubiquitous computing paradigm

At any place

- The capacity to access and use a specific IT service through different access technologies and physical devices

At any time

- The service must be “always-on”

With any object

- Enabling the use of a wide variety of non-PC equipment, such as cell phones, games machines and car navigation equipment, in addition to the desktop and laptops.

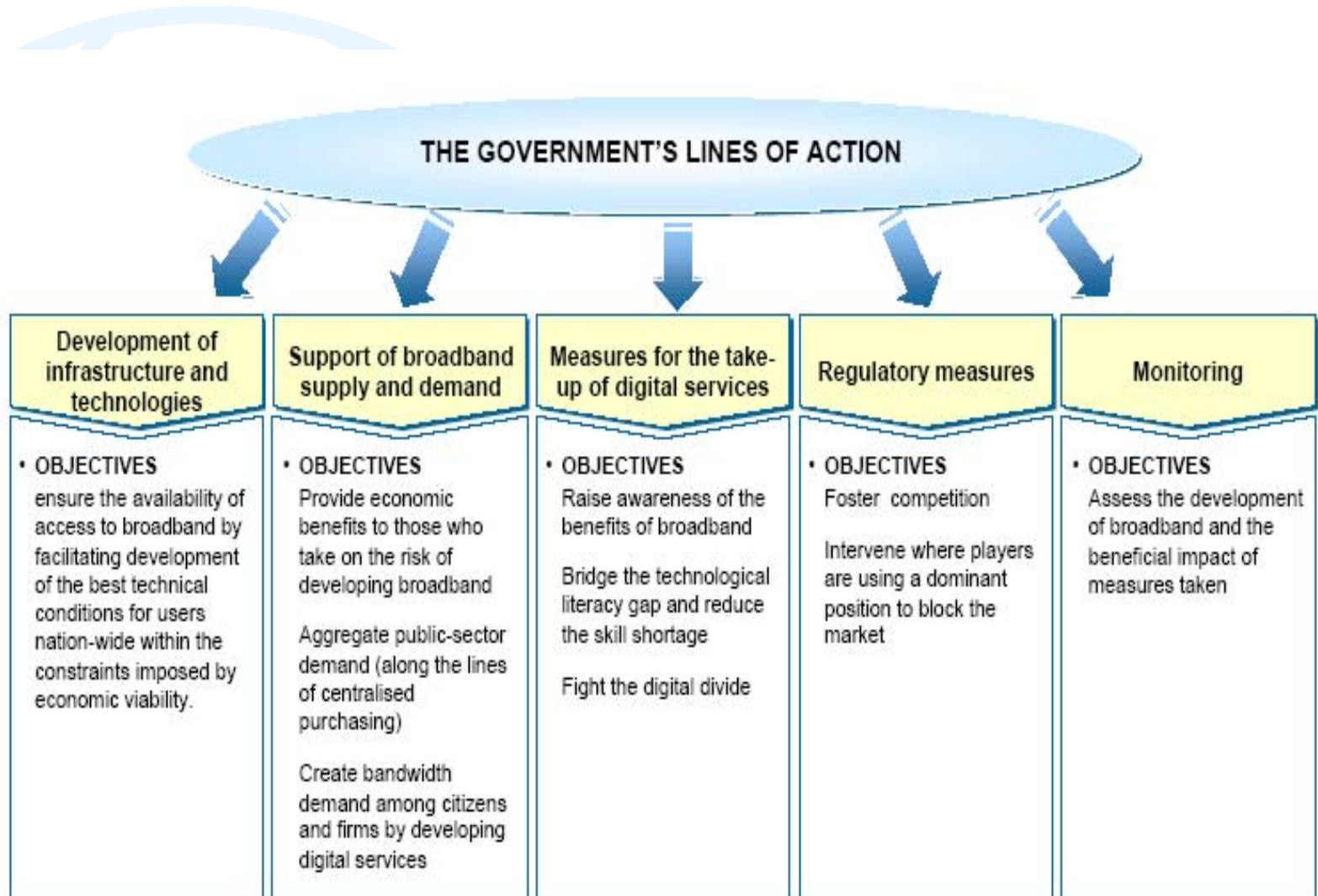


The Italian Government supports the Ubiquitous Society

The Italian Government is committed to making Italy a leader of the digital age

- **Modernizing the country through the widespread use of new information and communication technologies**
- **Boosting the country's competitiveness by accelerating the spread of the online economy and developing a model of the information society**

Government's Action Plan



The digital divide

Positive results towards Ubiquitous

GREEN ZONE	YELLOW ZONE	RED ZONE
<ul style="list-style-type: none"> • Multitechnology • Competition 	<ul style="list-style-type: none"> • Technological dualism • Wholesale competition 	<ul style="list-style-type: none"> • Monotechnology • Limited competition

2002*

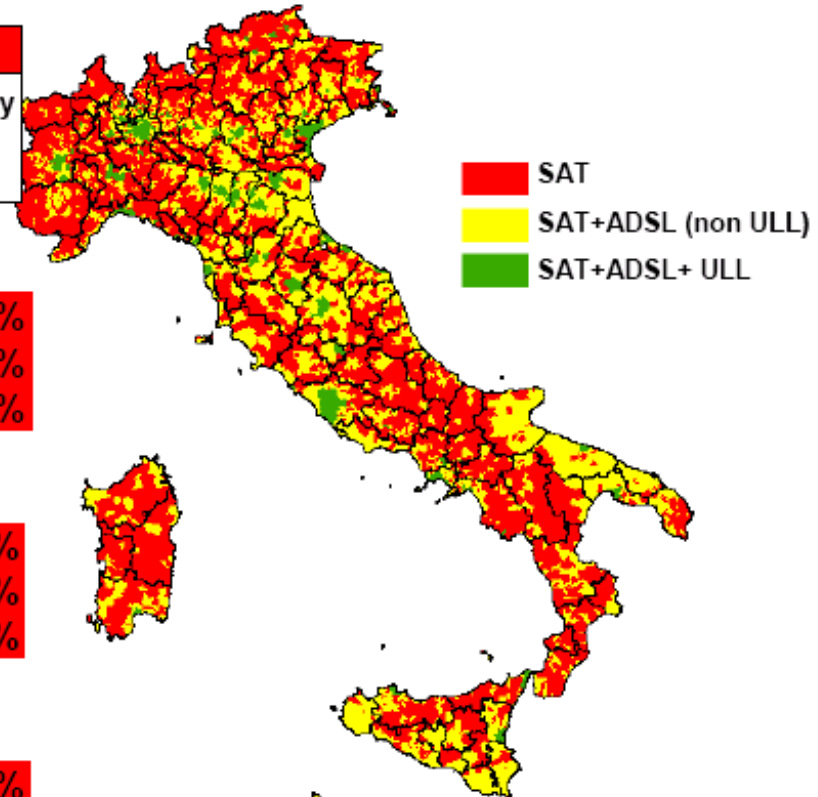
	GREEN ZONE	YELLOW ZONE	RED ZONE
Inhabitants	13%	50%	37%
Enterprises	16%	52%	32%
Surface	2%	23%	75%

2003**

	GREEN ZONE	YELLOW ZONE	RED ZONE
Inhabitants	25%	50%	25%
Enterprises	29%	50%	21%
Surface	3%	36%	62%

1H2004

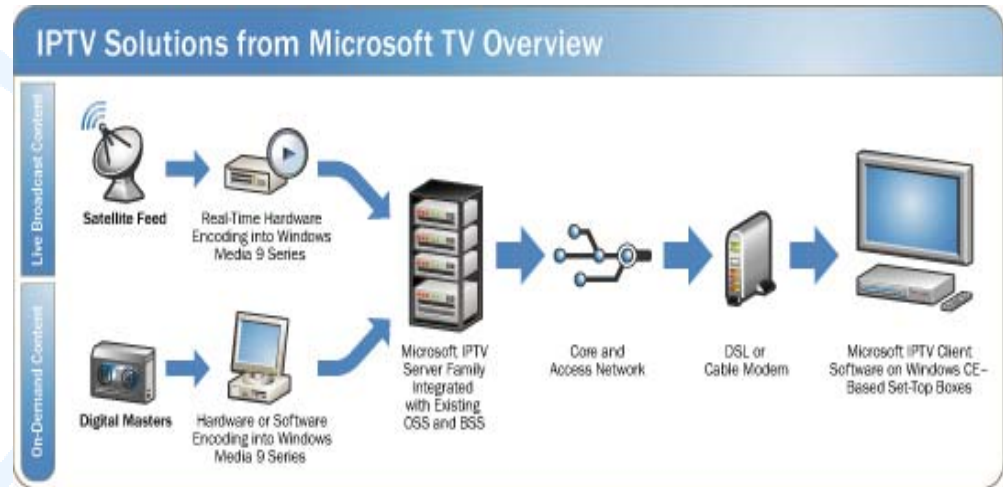
	GREEN ZONE	YELLOW ZONE	RED ZONE
Inhabitants	25%	53%	22%
Enterprises	29%	52%	19%
Surface	3%	39%	58%



Source: Italian Broadband Observatory
 * xDSL: October 2002, ULL: June 2002
 **December 2003

Broadband Applications

- **TV and Cinema Over ADSL**



- **Broadband penetrates public transportation**

Mobile Computing

Mobile market is mature for Ubiquitous

- UMTS introduced and adopted by all operators

Increasing presence of WASP (Wireless Application Service Providers) and Mobile Internet Portals

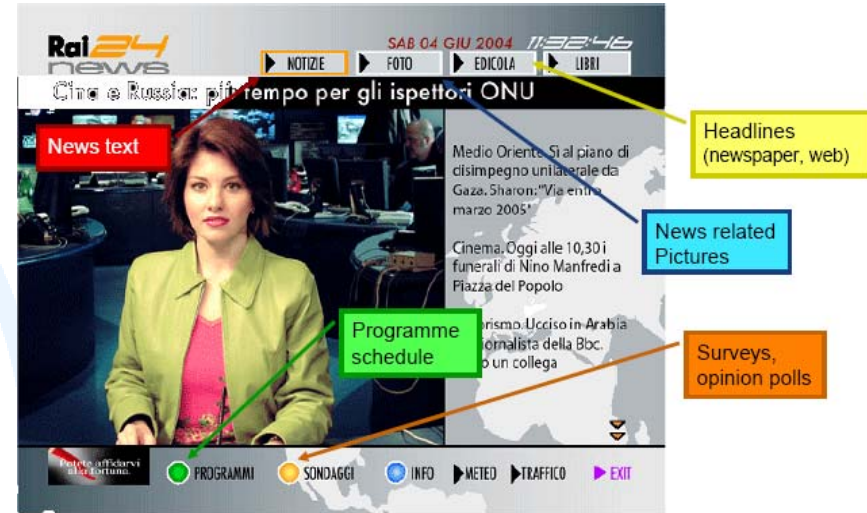
Interesting applications include

- M-payment (like parking reservation and payment in Turin)
- Ubiquitous banking; such as banking services via mobile (Ubifinance of Banca Intesa and Ubiquity)

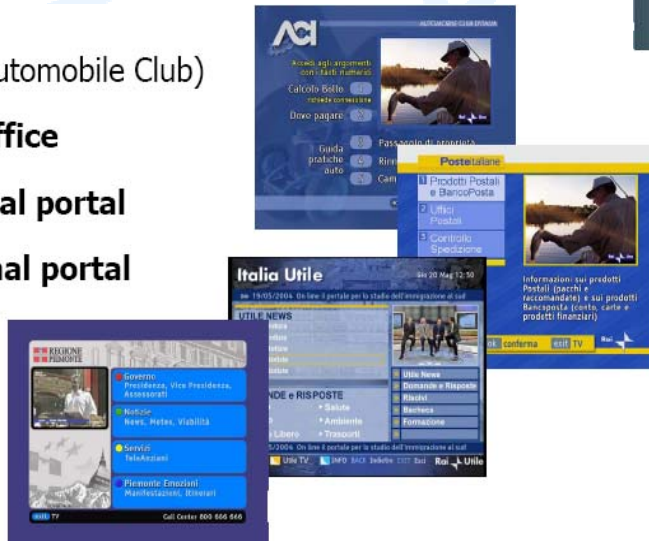


Digital TV

- 2004 has seen the take-off of digital TV in Italy



- ACI (Automobile Club)
- Post office
- National portal
- Regional portal



- Final switch-over on 31 December 2006



Wireless

Big Growth of Wi-Fi in Italy

- **35 licenses issued**
- **Map of hot-spots (released at last)**
- **R&D entities interested in the potential of wireless**

Some proof of concepts toward convergence:

- **Motorola and TIM co-design, deploy and support a hybrid Wi-Fi system to provide wireless Internet and intranet access using TIM's existing user authentication solution (SIM-based authentication).**
- **The Ugo Bordoni foundation (FUB) and Cisco Systems are experimenting with a Wi-Fi multi-operator infrastructure, which is a wireless network where different services (of different operators) are provided, using the same hotspots and access points.**

Domotics

Home appliances used to provide services via different technologies and communication media

My Home by BTicino to remotely control house functions



High speed network houses to integrate home appliances and internet access

Four of the major companies in Italy: AEM, Bticino, EuroMilano and Fastweb have joined forces to build the first domotic residential area in Milan.



RFID

Enabling factors

- Price Reduction (up to 10 US cents for RFID tags)
- Bigger reliability and efficiency



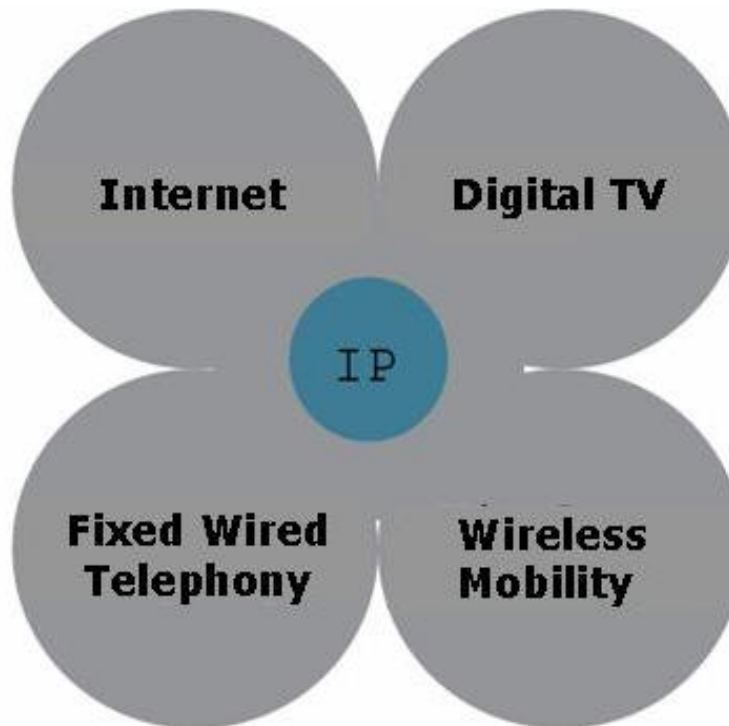
**Merloni implements
RFID on its home
appliances as proof of
concept**

**VeriChip: Technology
that cares**



Convergence is the real challenge ...

- **Convergence at the level of access technologies**
- **Network level convergence, end-to-end, already reachable for all terminals using the same protocol (specifically IP)**
- **Convergence at the transport-session-application level**





Thank you

The full case study (52pp) and survey are available at
<http://www.itu.int/ubiquitous>

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