



Agenzia nazionale per l'attrazione
degli investimenti e lo sviluppo d'impresa SpA

Investment Opportunities

ICT

Invitalia is the Italian national agency for inward investments and economic development. Its mission is to promote the country competitiveness – in particular in the Southern Regions – and support growth in strategic sectors.

Its main objectives are:

- Supporting inward investments*
- Boosting innovation and growth*
- Improving the economic opportunities in the country.*

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ICT in Italy

Italy boasts a long tradition of ICT innovation dating back to the beginning of last century. Today Italy remains a source of vigorous and dynamic innovation, a major developer of pioneering technologies, with an impressive track record of successful cases.

Its **60 million potential consumers** (Source: Eurostat 2010) – highly sophisticated and receptive to innovative technologies – contribute to making Italy one of the most outstanding pilot markets worldwide for development and launch of ICT products and services.

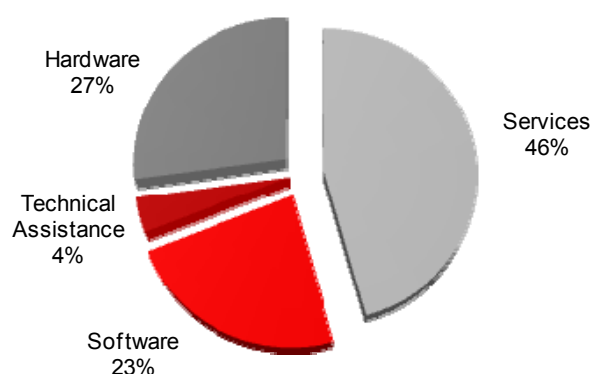
Market

Italy is Europe's fourth largest ICT market, with market value exceeding € 60 billion in 2010. TLC market share is worth € 41,8 billion and the IT one is equal to € 18,4 billion

Italian TLC market breakdown (2010)



Italian IT market breakdown (2010)



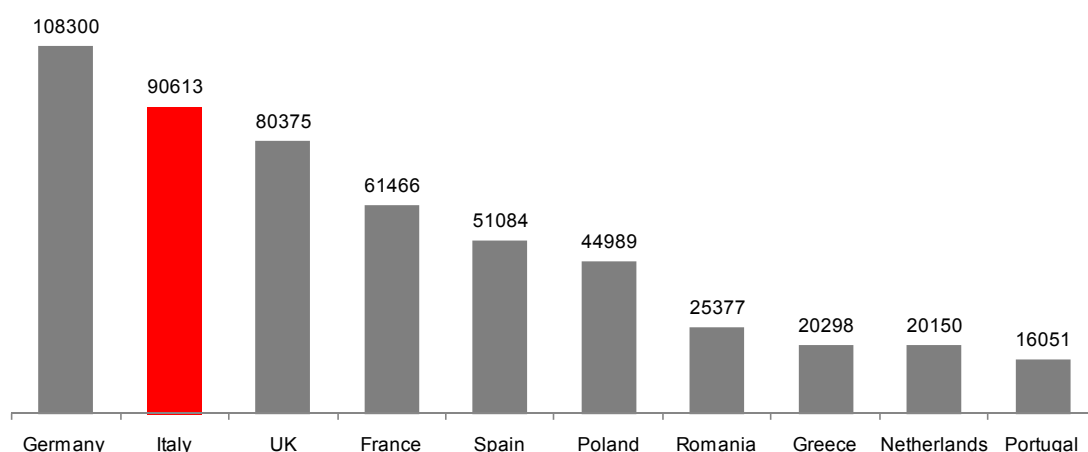
Source: Assinform / NetConsulting

With reference to the TLC sector, Italy is one of the most advanced mobile communications market in the world.

As for the **mobile phone penetration**, Italy ranks second in Europe after Germany for overall number of users with over 90 million active SIM Cards *(Source: Eurostat)*.

Italy has been the reference country for anyone operating in the wireless market since the 1990s, and still today it remains a laboratory for early adopters trying out and testing the latest mobile services and technologies before exporting them to other European markets.

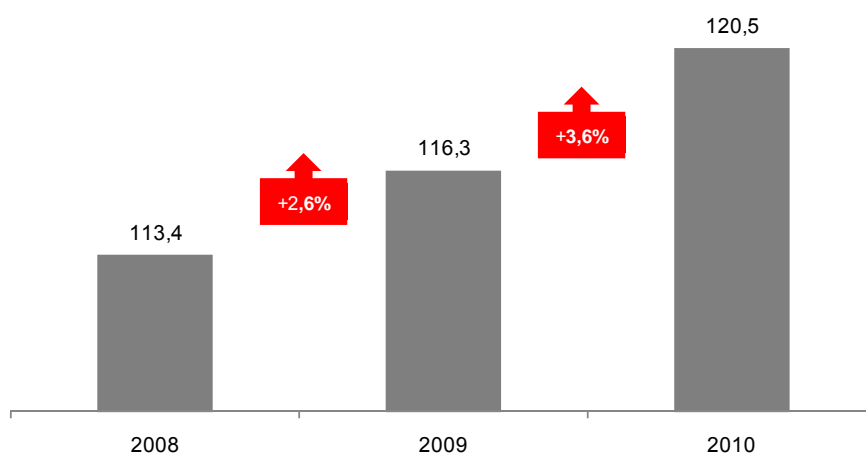
Mobile phone subscribers: top ten countries in Europe (thousands) - 2009



Source: Eurostat

The **Average Revenue Per User (ARPU)** in the Italian mobile market is equal to € 392,1 (2010); it is made up of voice traffic (€ 270,7) and data traffic, a segment that has reached a significant value of € 120,5, growing by +3,6%.

**ARPU of consumer data traffic in the Italian mobile market
(euro/year per single user)**



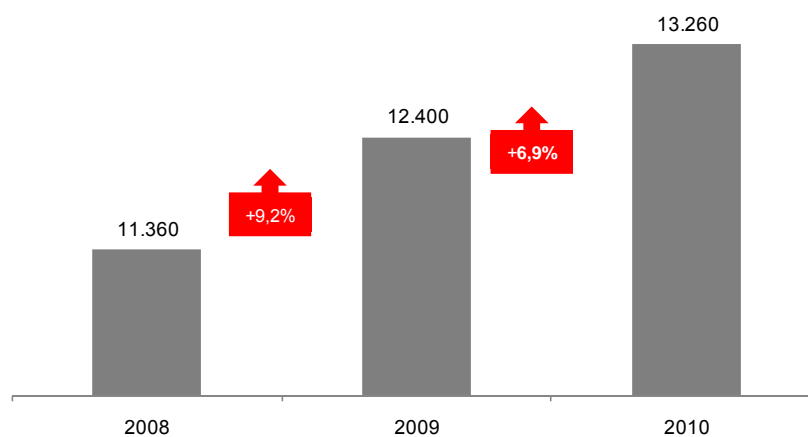
Source: Assinform / NetConsulting

With a number of 29,2 million **Internet users** registered in 2009 Italy ranks 3rd in Europe and 13th in the world (Source: CIA World Factbook).

Internet service revenues have risen to € 3,5 billion, growing by + 7.4% (2010) (Source: Assinform/ NetConsulting).

Broadband access is developing steadily, at a rate of 6,9% in the last year: with 13, 3 million users at the end of 2010 Italy ranks 4th in Europe. Moreover, in 2010 49% of households are broadband connected (39% in 2009). xDSL dominates the market and is used in over 97% of cases, while fiber optics represents only 3%. (Source: Assinform / NetConsulting).

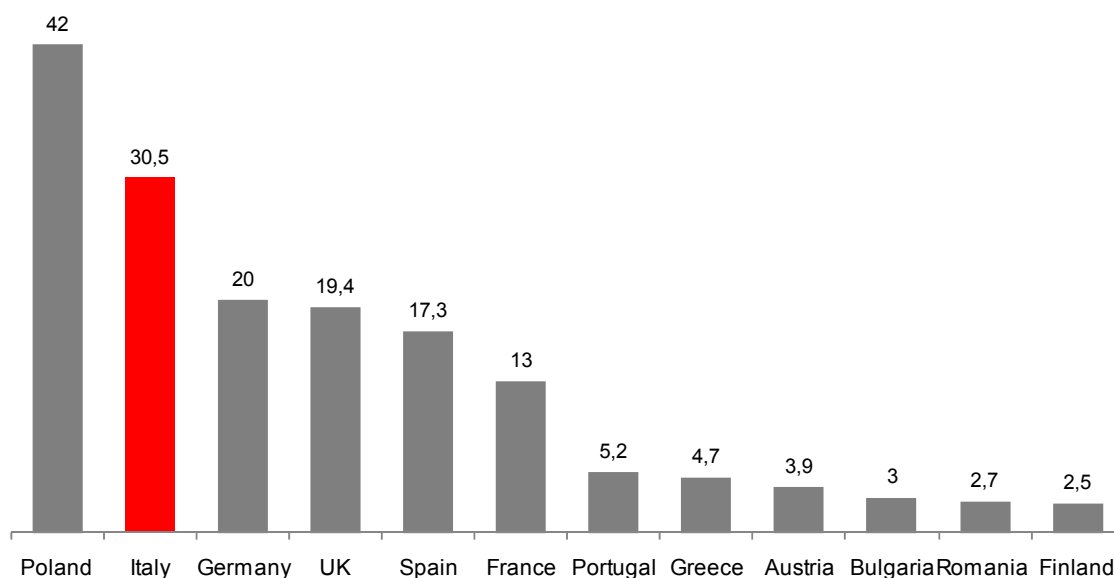
Broadband subscriptions (thousands)



Source: Assinform / NetConsulting

As for the mobile broadband Italy is second only to Poland among European countries with a presence of over 30 million devices dedicated to mobile broadband internet as smartphones, internet keys, tablets (Source: Confindustria Innovative and Technological Services, Report E-Content 2010). In 2010 428.000 tablets were sold and smartphones doubled to 4 million

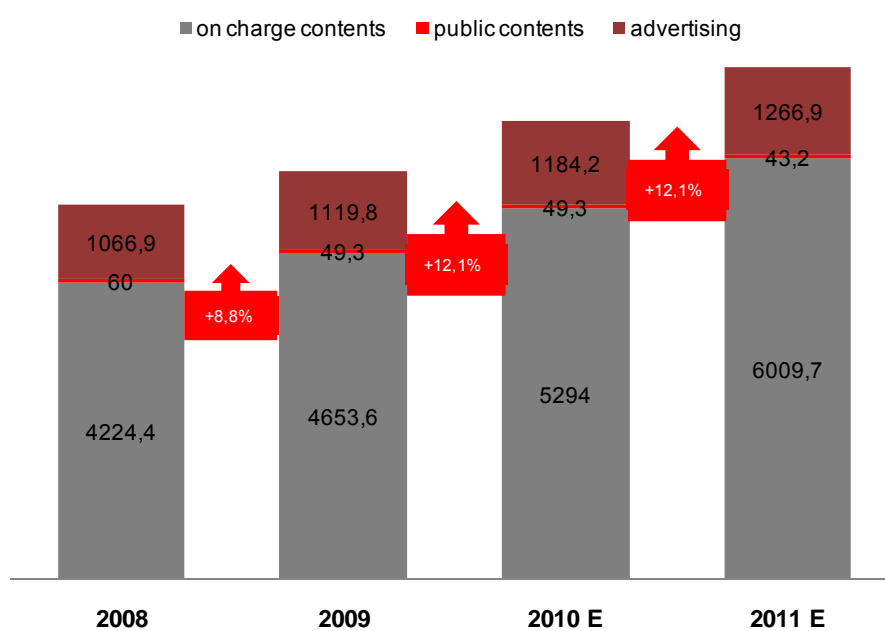
Mobile broadband in Europe (number of available devices in millions)



Source: Confindustria Innovative and Technological Services, Report E-Content 2010

The widespread presence of mobile internet devices and of almost 30 million Internet users, besides the rise of digital TV (18,7 million households in February 2010) have been pushing the growth of a significant digital content industry. In 2009 the Italian e-content market rose by 8,8% to € 5.823 million and it is forecasted to increase by 12% in the following two years. The largest segment is represented by *on charge contents*: video, music, news, entertainment and e-book contents, for which a steep growth is expected within the next few years (Source: Confindustria Innovative and Technological Services, Report E-Content 2010).

E-Content market in Italy (Million Euro)



Source: Confindustria Innovative and Technological Services, Report E-Content 2010

Competitive

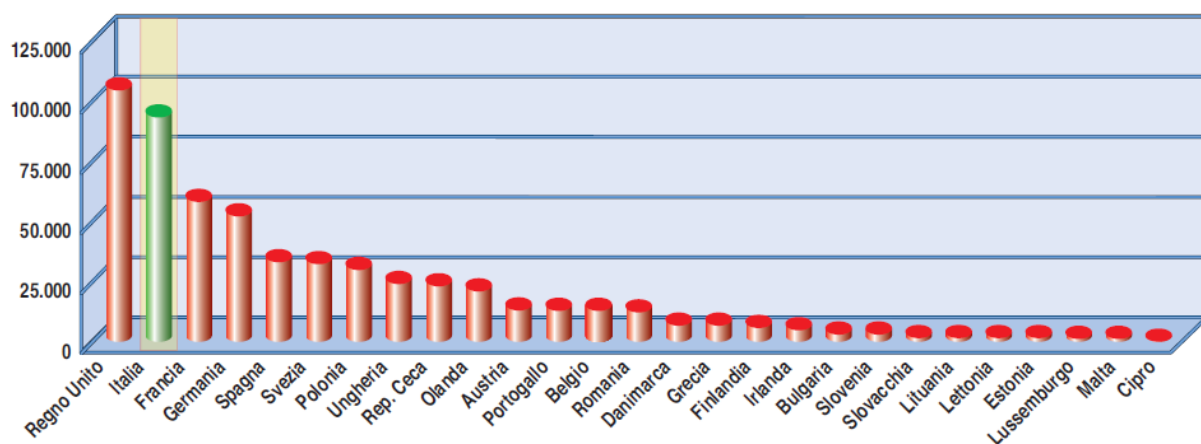
advantages

Industry

As a major market, Italy hosts most of the world's top ICT companies and a **huge number of flexible SMEs**, which are potential partners for foreign companies.

With reference to the IT industry, Italy ranks 2nd for number of companies after the UK, and ahead of France and Germany with 97.000 active companies and 390.000 employees.

IT companies in Europe



Source: Assinform, Report on IT sector in Italy

Moreover, Italy is a unique location for the development of **new pervasive ICT technologies**. Besides the traditional ICT industry, Italy offers a solid manufacturing and R&D base in sectors as Mechanical and Precision Instruments, Electrical Products, Transport, Navigation, Aerospace, Medical Equipment. In these sectors, Italy provides investors with the right mix of skills and a long tradition of excellence to develop new applied ICT solutions.

Human capital

Italy boasts highly-qualified **human resources** drawn from a rich vein of creative talent in each area of knowledge and research, including almost 45.000 graduates in ICT-related disciplines every year. In Engineering alone, there are 165.000 students and 29.000 graduate engineers each year (*Source: Ministry of Education, University and Research*).

Students and graduates in ICT-related disciplines

University courses	Students in 2009-2010	Graduates in 2009
Computing	29.567	4.302
Engineering and engineering trades	165.294	29.535
Manufacturing and processing	11.396	2.908
Mathematics and statistics	18.111	3.045
Physical sciences	30.629	5.108
TOTAL	254.997	44.898

Source: Ministry of Education, University and Research

R&D Competencies

The **extraordinary quality of Italian research** rings true for a variety of fields. Firstly, in Electronics with the development and application of **Microelectronic Technologies, Nanoelectronics, and Optoelectronics/Photonics**. A wide range of university centers and public institutes are actively engaged in this field, working in close collaboration with leading multinationals such as STMicroelectronics, Alcatel-Lucent, Siemens, Pirelli, Micron, and Cisco Systems.

The range of applications of these technologies continues to grow in sectors like Automotive, Domotics, Domestic Appliances, and Medical Equipment, where specialization in Italy is

particularly strong. This is an additional factor, which has prompted numerous groups of international producers to locate their R&D activities in Italy.

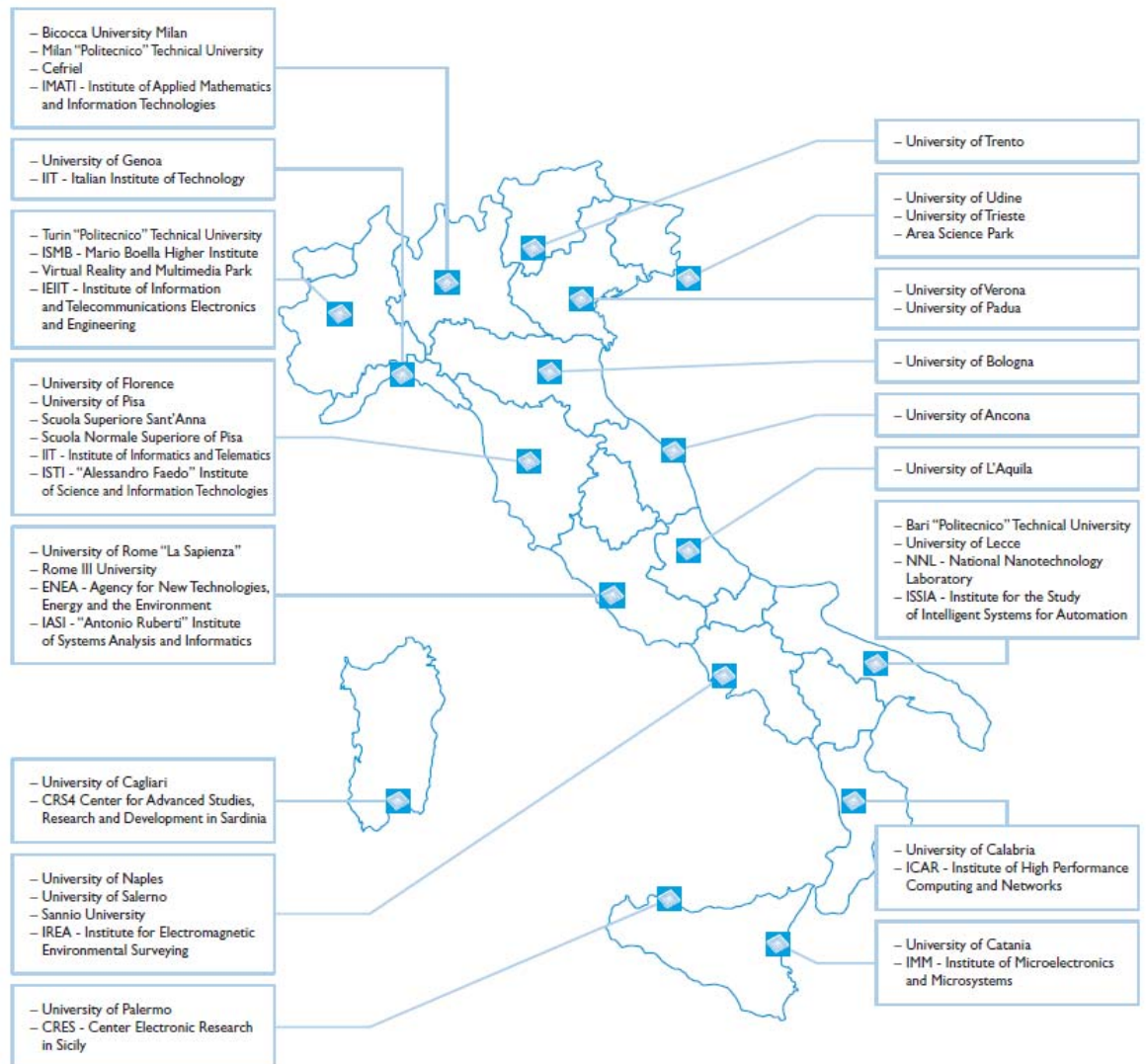
Several Italian research centers are successfully involved in **Information Technology**: Software Production Systems, Embedded Systems, Human Oriented and Man-Machine Interaction Systems, as well as Web Technologies. Microsoft and IBM are just some of the leading multinationals already active in R&D in this sector.

A further area of international excellence for Italian research involves **Telecommunications Technologies** with particular university and industrial proficiency in Optical Networks, IP Networks, Mobile Networks and Services, Security, Voice Recognition and Synthesis, architecture and systems for the production and protection of Multimedia Content. Among the large multinationals active in this research field in Italy are Nokia Siemens Networks, Alcatel-Lucent, Thales Alenia Space, Ericsson, Telecom Italia, and Avaya.

R&D centres

ICT businesses located in Italy rely on an efficient network of research centers throughout the country. The centers of the National Research Council (CNR), S&T universities, and many other dedicated public research centers, constitute an important element in this network, in carrying out both basic research and applied research in close cooperation with industry. Alongside these long-standing exponents of research, recent years have seen the growth of a number of many organizations oriented toward knowledge transfer services for businesses, including some 32 Science and Technology Parks, Business Innovation Centers, Regional Competence Centers and NETVALL, the Italian Network of University Technology Transfer Offices.

Selected institutes and research centers



Public commitment

Italy's economic and financial conditions are extremely favourable, and the business environment is constantly improving thanks to **ongoing legislative reforms** (i.e. New Code for Digitalisation in Public Administration (Legislative Decree 82/2005, which transposes European Directive 98/2003 on Public Sector Information).

Italian Authorities, both at central and local level, are currently managing several initiatives within the **E-Gov Plan for 2012 by Italy's Ministry for Public Administration and Innovation**, which will result in strongly increased public procurement of ICT services and products.

Italy's annual total expenditure for ICT within Public Administration amounts to approximately € 1.7 billion at central level and € 1.8 billion at local level (*Source: CNIPA, 2008 "Annual Report on ICT Public Expenditure"*).

Investment

Opportunities

Among ICT main investment opportunities, it is worth signalling Italy is efficiently complying with recent technological trends and, primarily, "Cloud Computing" and "Green ICT" developments.

Among the major ICT firms there is growing acceptance of virtualisation combined with the need to adopt less expensive on-line applications for business and organisational purposes.

Italian firms' traditional system integrator approach must now be switched to solutions such as Software as a Service (SaaS) or Platform as a Service (PaaS), both concerning Cloud Computing, introducing innovative and high value-added services, and supported by foreign company partnership.

Partnership will be aimed at developing both new applications and related services throughout the Cloud.

Cloud Computing is rising rapidly in Italy: in 2010 cloud services amounted to € 280 million and in 2013 are expected to grow to € 660 million. According to a recent survey conducted on 300 medium-large Italian companies, 61% of them is going to adopt Cloud technology within the next 12 months (*Nextvalue, Cloud Computing Report 2011*).

In light of the growing interest in applications virtualisation, investment opportunities could be more strongly focused on software & IT services, semiconductors, sensors, and Green ICT.

The Italian Government's main purpose is to promote Italy as one of the focal points of the new "open innovation" business model currently adopted by most multinational companies in the ICT sector. In order to satisfy the fast growing demand for innovation both from suppliers and customers, such companies are developing a worldwide innovation net with universities and research centres, aiming to catch the best idea and develop innovative applications and products.

Investor Target

The following stakeholders have been identified as the best suited investors to build up initiatives within the Italian ICT market:

- **SMEs** carrying out global strategies – i.e. acquiring market share in different countries thanks to displacement of previous firms due to credit loss, financial crisis, etc;
- **Venture Capitalist** specialised in ICT sector;
- ICT firms yet established in Italy with the aim of expanding previous activities or opening new business activities;
- **Firms operating in energy sector or construction sector**, interested in integrating their offer(s) with ICT embedded solutions aiming to increase energy efficiency and enhance integration of renewables and grids, building, logistic infrastructure systems, industrial processes, etc.

Cloud Computing

The ICT sector is currently undergoing structural change.

Virtualisation – intended as the separation of computing tasks and physical systems – characterises the IT industrial process. The “Cloud Computing” trend allows users to access data and software (also on demand) located on the net rather than on PC and local server.

Cloud Computing is a hybrid model exploiting sources coming from computer networks (primarily the Internet) and going well beyond the old client–server scheme.

Data services (hardware services) and functionalities (software services) mostly lie on web servers (clouds) connected within the Internet.

Through specific devices (PC, palmtop, smartphone, etc.), a browser and Internet connection, users can access the Cloud providing them with the needed services and/or data.

Such services are often composed and tailored by the user depending on own needs, so as to create a personalised tool offering several web services. Data can furthermore be shifted from the PC/device onto the Cloud, thus having all the necessary data/information available anywhere and worldwide. Users can then access the Internet anywhere, retrieving the needed data, software and/or related services. Cloud computing enhancement is establishing a new paradigm, revolutionary for production line, industry and ICT market, through development of new IT methods and strategies.

Italy’s ICT sector could provide strong expertise in development of applications designed for Cloud Computing, confirmed by Italy’s SMEs numerous applications for iPhone. Business initiatives include:

- B2R (Collaborations in Research) – aiming to develop research results for business and industrial applications, such as partnership within academic spin-off or risk capital investments.
- Greenfield (Design Centre, Development Centres) – including the development of a dedicated Green Data Centre running all of the developed applications.
- Brownfield – acquisition of a number of stocks of companies looking for external financial support to develop or improve their products or services, or whereby a

company or government entity purchases or leases existing production facilities in order to launch a new production activity.

Green ICT

Among the fields mostly involved by “Open Innovation” and “Cloud Computing”, Green ICTs are developing and gaining a central role in ICT investments.

Green ICTs are systems and/or applications implemented in the ICT sector or other sectors (e.g. Energy), which contribute to global warming relief via a 2% reduction of total Greenhouse Gas Emissions (OECD estimates).

Italy offers business opportunities in the following fields:

- Green Data Centre: design and development of green data centres powered by renewables, largely available in Italy and integrated with energy efficiency technologies
- Smart Grids: design and development of applications or systems (SW and HW) aimed at managing and optimising energy flows within national or local grid(s), taking in account the power generated by renewables power plants, rapidly growing throughout Italy.
- Smart buildings and domotic: design and development of applications, sensors, and systems aimed at managing and optimising electricity production and use within buildings (residential, commercial or industrial). Such applications could be developed via Cloud approach, enabling users to remotely control the appliances in own houses (PC, mobile, PDA)
- Smart Logistics: design and development of applications, sensors, and systems aimed at managing and optimising transportation and tracking of goods within a logistic platform, a single plant or a whole value chain.

Already in Italy

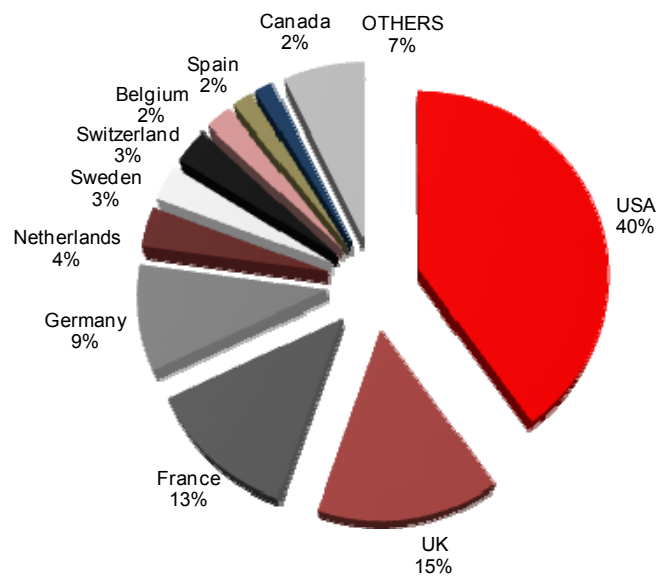
As a major market, Italy has already attracted the presence of all the top ICT multinational companies, both to serve the rich local market and develop research, products and strategic activities for the international market. **Over 500 foreign ICT companies have already invested in Italy employing about 160,000 workers**. The ICT sector accounts for many of the Country's most significant foreign investments, including three of Italy's largest foreign multinational companies – Microsoft, IBM and Vodafone, each employing thousands of people. Particularly relevant in the IT Software and Services sector are giants such as Microsoft, IBM, Oracle, Hewlett Packard, Accenture and Cisco Systems. Top players such as Thales SA, Vodafone, and STMicroelectronics and Micron Technology INC feature in TLC Services and Microelectronics, respectively; while Alcatel-Lucent, Ericsson, and Nokia Siemens Networks in TLC Equipment have made Italy one of their core global markets.

Foreign ICT investors in Italy per segment

	Companies	Employees	Turnover (mIn €)
IT Software and Services	373	51.041	10.952
TLC Services	64	78.859	41.539
Electronics and TLC Equipment	55	30.188	6.207
IT Hardware Equipment	13	439	164
<i>Total</i>	<i>505</i>	<i>160.527</i>	<i>58.862</i>

Source: Reprint 2011

Foreign ICT investors in Italy per country



Source: Reprint 2011