

France Telecom Group's research and development



- over **3,900** researchers and engineers involved in research activities
- a portfolio of more than **8,000** patents
- **15** sites on 3 continents
- **15** start-ups created
- one of the first worldwide R&D centres in telecommunications

source of innovation

inventing the new generation of telecom services

Innovation is a fundamental aspect of the telecommunications sector and a strategic lever for the France Telecom Group. This is how Didier Lombard, Chief Executive of the Group referred to it in the strategic NExT plan, whose ambition is to make the Group the operator of choice for new services in Europe. In order to respond to this innovation challenge, laid out in the new services and offers marketed under the Orange brand, France Telecom Group is relying on two assets:

- a **centralized marketing strategy** oriented towards the client, the aim of which is to allow the rapid development of integrated offers and combined services.
- an **integrated R&D** which from now on, will anticipate and visualize the solutions which will make part of tomorrow, today. France Telecom has increased its investment in Research and Development by 20% over the last 3 years.

R&D, an opportunity for growth

France Telecom's R&D sector aims to be at the heart of the Group's development focusing on 3 main topics:

- **issuing the Group with growth enhancing projects**, while redefining efforts on technological priorities, facilitating the development of services. This consists of moving from a split universe (dedicated terminals, distinct platforms and services, different identifiers) to a universe which is centred on the client (cooperative networks, interoperable equipment and simplifying usage).
- **valuing intellectual property**. France Telecom is continuously developing its public intellectual property by creating new patents, with the aim of protecting its innovations and its freedom to develop new projects.

- **excelling at research on a worldwide level**.

Researchers at France Telecom are leading a world-class policy to acquire skills in the main fields (increase in network rate, optimizing networks, security of networks, services and terminals, software architecture and usage) and actively participating in international standardization work.

France Telecom maintains various ties with universities, public and industrial research centres in France and abroad.



France Telecom Group, leader in innovation

2006 : featured in a case study in "A French Revolution in Innovation is unfolding" by Forrester.

2005 : winner of Best Innovator at AT Kearney in the "Innovation and Technology" category.

2004 : Forrester names France Telecom Group one of the most innovative operators in the telecommunications sector.



R&D, a source of innovation for France Telecom Group

protecting and valuing intellectual property

This step firstly relies on the creation of patents to protect innovations and develop new sources of growth. Today, France Telecom has a total of **8,000 patents** in France and abroad. The second stage consists of financially valuing the outcome of research in comparison with telecom companies, start-ups, software firms in France and abroad.

major player in European research

By participating in European programs which focus on the Information Technology society, France Telecom Group is contributing to the success of the work which has already been carried out on major future themes, while at the same time acquiring new skills. By actively working with these cooperative programs through its R&D, the operator is able to capitalize on the standardized work resulting from this research. These programs allow France Telecom Group to be internationally recognized as a major European player.

France Telecom participated in the **6th PCRD** (research and development framework program) with various projects. The operator is either the leader or the major partner of ambitious integrated projects on **3G Beyond** (E2R, 4MORE, Ambient Network, Magnet, SPICE), on **audiovisual networks** and **domestic platforms** (ePerSpace) and even on **high bit rate for all** (MUSE).

The Group is also present within European technological platforms (eMobility and NEM) which bring together major players from a given sector to define common objectives and actions.

France Telecom will be one of the major contributors to the **7th PCRD** in 2007.



competitive clusters

France Telecom's participation in competitive areas demonstrates its ability to take an active role in the development and distribution of innovation and research at the international level and to reinforce its abilities on its strategic development axis.

This allows the operator's R&D to work with local governments to create new partnerships (notably with SME's), to reinforce already established partnerships and to develop field experiments.

In this way, France Telecom is investing in 7 competitive clusters in the ICT domain:

- 3 worldwide competitive clusters: **Communicating Solutions**, **Minalogic** and **System@tic**.
- 2 world vocation areas: **Cap Digital** and **Images and Networks**.
- 2 areas on a national and regional scale: **Secure Electronic Transactions** and **Risk Management of land**.

Besides having representatives present in the Administrative Councils of these clusters, **France Telecom also presides over the Images and Networks competitive cluster in Brittany**, centred on new image and network technologies (fixed and mobile) for content distribution.

worldwide partnerships

France Telecom Group's strategy is to use its various partnerships to bring together the best worldwide innovations. France Telecom Group is therefore very heavily involved in major research programs like the Agency for Industrial Innovation on a European vocation, competitive areas on a national or international vocation or innovation clusters.

Elsewhere, France Telecom has concluded many partnerships:

- **with manufacturers:** Alcatel, Ericsson, Intel, Motorola, Nokia, Nortel, Siemens and Thomson, Fujitsu, Micro Electronics...
- **with operators:** China Telecom, Deutsche Télécom, TPSA...
- **with institutions:** CNRS, INRIA, GET, Supelec, ENST, Stanford, MIT...

This partnership policy allows to speed up technological transfers and to be recognised as a source of internationally renowned experts. The objective is to reach worldwide excellence by incorporating the strengths and the expertises of the partners.



research

Research is increasing and is an integral part of the activities of France Telecom's R&D sector: nearly 15% of all R&D investments are dedicated to research.

The object of doing research is to develop intellectual property, to detect advances and disruptive technologies and to acquire essential skills and knowledge.



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15 laboratories
on 3 continents