

First to know

“FIRST is an ICT project supported under the EU’s 7th R&D Framework Programme (FP7)”

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First is a Support Action funded by the European Commission Seventh Framework Programme in order to foster International Cooperation in the areas of Future Internet and ICT Components and systems between Europe and Latin America.



First



European Commission
Information Society and Media

FIRST is already contributing to the action plan agreed in the last EU-LAC Madrid Summit



Antonio Alfaro
project First Coordinator

On last May 18th 2010, the Heads of State and Government of the European Union and Latin America and the Caribbean, the President of the European Council and the President of the Commission, convened in Madrid in order to reaffirm their commitment to **continue promoting and strengthening the biregional Strategic Partnership between the European Union and Latin America.**

As part of the declaration agreed during this EU-LatAm summit, it was confirmed the key role played by **science, technology and innovation** for achieving sustainable development and social inclusion, as well as mutual benefits through cooperation in capacity building, research programmes, and technology transfer activities. As consequence, it was agreed to **give priority to bi-regional and triangular cooperation to enable access to cooperation opportunities** to countries with low or no participation in European Programmes.

The development and implementation of the **EU-LAC Joint Initiative for Research and Innovation** (the 'Initiative') was agreed at the EU-LAC Ministerial Forum on Science and Technology held in Madrid on 14 May 2010. This is expected to create conditions for strengthening the interface between research and innovation, the participation in the European Research Framework Programme, progressive opening of national research programmes, interconnectivity between research infrastructures and promoting cooperation in capacity building human and institutional.

These high level agreements were reflected in the action plan for 2012 through the agreement on the development of the EU-LAC Knowledge area:

The main objective is to **develop the "EU-LAC Knowledge Area"** through:

- I. Improving cooperation in research and innovation;*
- II. Strengthening scientific and technological capacities, and infrastructures;*
- III. To enable sustainable research, innovation and knowledge sharing taking into account the contribution of ancestral and traditional knowledge;*
- IV. To boost the use of new technologies and technology transfer underpinning sustainable socio-economic development and*
- V. To foster cooperation between both regions as regards the digital economy and the reduction of the digital divide for improving competitiveness while making social inclusion a cross-cutting issue.*

Taken from the VI EUROPEAN UNION – LATIN AMERICA AND CARIBBEAN SUMMIT Madrid, 18 May 2010 MADRID DECLARATION (9931/10 (Press 131).)

"Towards a new stage in the bi-regional partnership: innovation and technology for sustainable development and social inclusion"

FIRST will definitely contribute to develop the **"EU-LAC Knowledge Area"** through the creation of Latin American Technology Platforms (LATPs) and the establishment of strong links between these LATPs and the European Technology Platforms (ETPs) and other European organizations relevant in the promotion of R&D activities.

Going deeper in the analysis of the Madrid Declaration and action plan annexed, there are several aspects that confirm the alignment of FIRST objectives with the conclusions and actions agreed during the EU-LatAm Summit 2010. These points are:

- Establish or strengthen thematic networks on agreed issues of mutual interest, which should facilitate exchanges between EU-LAC universities and research centers and networks and private and public sector institutions.
- Develop an interface between research and innovation through a knowledge and innovation centers network to facilitate social appropriation of knowledge and technology in particular keeping in mind the micro and SMEs.
- Promote the extension of scientific and technological cooperation within all Latin American sub-regions and the Caribbean, as well as the adoption of innovative instruments to strengthen cooperation with special attention to countries with low participation in EU-LAC Science and Technology cooperation activities.
- Exchange experiences and best practices in areas of innovation, such as incubation, entrepreneurship, science parks and start-up enterprises.

Some of the expected results of this action are also in line with FIRST goals, as it can be seen in the following list that points out those areas identified in the Madrid declaration where FIRST results will impact positively:

- New initiatives for more effective coordination and cooperation aiming at interconnecting knowledge, science, research and innovation; as well as business, entrepreneurial, and research centers from the EU and LAC countries, leading to an improved uptake and

dissemination of research results for innovation in particular for the micro and SMEs.

- A comprehensive joint strategy in research, development and innovation.
 - Improved quality and effectiveness of the scientific and technological cooperation through:
 - I) increased knowledge of EU-LAC scientific and technological communities,
 - II) increased research focus on agreed items of mutual interest
 - III) larger scientific and technological capacities of LAC countries, involving also national programmes and capacity building for the Caribbean, to drive their own development and to achieve enhanced cooperation opportunities with the EU
 - IV) increased information exchange.

From the FIRST project we welcome with great pleasure the agreements made during the EU-LAC Madrid Summit, which to our view suppose an excellent step forward in the consolidation of the cooperation between Europe and Latin America. We consider that our project objectives and final goals are fully in line with the conclusions of this Summit and its action plan, both in content and timing, and therefore we are glad and proud to be contributing with our small bricks to the construction of the solid bridge that establishes the basis for the present and future cooperation between Europe and Latin America.



LATPS: the path is easier where there are strong public R&D policies

With almost 150 ICT stakeholders interviewed and several data and information gathered across five Latin American countries, the FIRST project is about to close its first crucial activity. For about three months, the consortium partners have been busy contacting researchers, companies' managers and policy makers to feel the pulse of Argentina, Brazil, Chile, Colombia and Mexico on the possibility to set up a research consultation mechanism inspired by the European Technology Platforms in fields that are relevant to the Future Internet (FI).

The investigation was led essentially on two parallel paths, on the one hand to obtain data and background information on the existence of policies and on the density of research communities working on FI research fields, on the other to get direct feedback from high profile representatives of ICT research. The expected outcome is to draw conclusions on which technological areas and research fields could be targeted first, and in which country, to launch the Latin American Technology Platforms.

Although the analysis is not yet complete, very interesting indications have already emerged. The most important of all is probably that public policies appear to be a driving force in the region to push industry to invest in R&D. In all countries where the regulatory framework is sufficiently defined, the private sector seems to have found favourable ground to develop and act in a very innovative way. For instance the software industry has benefited in Argentina and Chile from the adoption of specific laws, satellite communication is attracting the investment of large companies in Brazil thanks also to a national satellite development plan.

From a technology adopter, Brazil is turning into a technology developer and Brazilian companies are now looking at other markets (among which Mexico) to develop and sell satellite applications. In other areas which are not yet perceived as fully fledged fields of scientific investigation, or where even the categorisation of research areas is different from Europe (like in embedded systems or

nanoelectronics), the emergence of private players as key stakeholders in research appears much slower.

As a result, research groups tend to be more scattered, operating in niches and mainly within an academic environment with limited links to the industry. And even when a surprisingly high density of researchers emerges in areas like Photonics in Argentina and Brazil, the ground for local Technology Platforms does not seem very fertile for the lack of sufficient interest by the industry.

The final results of the preliminary analysis, and therefore the precise indications on the Latin American TPs should come around early July. But a first indication is drawn, that where governments have thought of clear R&D paths, the way to go seems much easier.

CINTEL brings forward Colombian Framework Analysis

Over the last five months, CINTEL has performed data collection and analysis of Colombia's current conditions on R+D+i related to the topics framed within the FIRST Project. Methodologically, it has performed an analysis of national R+D+i policies, it has gathered information from Colciencias - Colombian Administrative Department of Science, Technology and Innovation regarding Colombian Research Groups, and has conducted interviews with different representatives from the Academia, Large Industry, SME and Government, in order to determine their work on R+D+i and to evaluate their interest in participating in the future Colombian Technology Platform.

As a result of the study, it has been identified that Colombia has created major changes in laws, policies and guidelines: The National ICT Plan, Law 1341 of 2009 (ICT Law), Law 1286 of 2009 (Science and Technology Law) and CONPES 3582 of 2009 (National Policy on Science and Technology), which encourages research, innovation and development in the country, strengthening its position in global ICT and providing a

consistent regulatory framework in R+D+i.

In addition, Colombian research critical mass stems from the research groups of universities, consisting of PhD, Magister and Bachelor students and graduates. There are currently 4239 research groups registered at Colciencias, from which 398 groups focus on Electronics, Telecommunications and Informatics.

However, Colombia is not characterized as technology developer, but as a technology adopter, which also develop some applications to implement solutions for diverse sectors within the country. A statement confirmed by Ramon Villa, Manager of the Department of Products and Services of Internexa, who reasserts that his company, like others, "analyzes technology and the viability for its implementation, in order to adapt it according to their business model and product portfolio". Also, Mr. Rodrigo Albornoz, Coordinator of the Research and Development Department at COMCEL, states that "... Developments are tailored to the needs and conditions of the Colombian market".



According to the analysis, and taking into account indicators considered, thematic areas of Future Internet can be classified into three groups according to their priority level. In the first level, areas with greatest potential: Mobile and wireless communications, Networked Electronic Media, Software and Services and Embedded Systems. In the second level: Satellite Communications and Integration of Intelligent Systems. In the third level: Nanoelectronics and Photonics.

However, there is still much room to work and deepen into the different areas addressed by the European Technology Platforms, even when cooperation between Industry and Academia becomes tighter.

WP2 results: Potential areas for cooperation and key stakeholders identified in Brazil

During the month of April, USP was responsible for the collection and analyses of data concerning the specific areas related to the European Technology Platforms, according to WP2 tasks. After thorough research and interviews with key stakeholders, it was possible to identify two main areas for short-term cooperation, and two areas which can prove to be fruitful in the long run.

The areas for cooperation that are currently most developed relate to Software and Services, and Wireless Communications – associated with NESSI and eMobility ETPs, respectively. For long-term cooperation, the areas of Photonics – Photonics 21 – and Embedded Intelligence and Systems – ARTEMIS – are also promising.

The nature of Brazilian development in ICT cannot be directly compared with that from Europe, since the concept of technology platform doesn't exist in Brazil. Research is conducted on a knowledge areas basis, so the analysis that compose this article allocate these areas to the most similar ETPs.

Software & Services is a well-developed area in Brazil. In 2002, this country was the seventh largest software market in the world, and there are many large industries in the area, as well as small and medium enterprises. This is also a frequent topic of research in almost all Universities, and most of them have dedicated Software Engineering Laboratories. To boost the already-developing Software & Services market, the national ICT policy specifically foresees investments in SMEs related to the area, and aims to increase the percentage of software that is exported. This is essential for Brazil, since most of the software produced in the country is aimed at the internal market.

Other indications to support the idea that Software & Services is a viable area of cooperation to begin in the short term is that NESSI is one of the ETPs that were mentioned the most, despite none of the key stakeholders interviewed reported using it. This market development is the agent that pushes to boost exports and, in the coming years, it will be well prepared to cooperate internationally.

The second area identified for cooperation in the short term is Wireless Communications. This is especially significant because the country is rapidly developing in the Cellphone Networks and Technology segment, with a growing number of cellphones and a constant need for the newest and most reliable technologies available.

In apparent opposition to that development, R&D in large industries is much more closely related to the market's immediate needs than any long term research, as it was possible to assess during the interviews with key stakeholders. Despite this seemingly short-sighted advancement, there are a few very interesting research centers, including some which have private and multinational partner companies, like Ericsson and Tim. On top of that, eMobility was also one of the ETPs mentioned during the interview process, even though it was again only studied and not used.

The two areas considered for long-term cooperation were chosen based primarily on the state of research in the country. Within the field of Photonics, Brazil can be considered one of the advanced research centres on Photonic Crystal Fiber. One of the innovations brought up in Unicamp (State University of Campinas), for instance, was a photonic crystal fiber with integrated copper electrodes, while another is an experiment conducted in

the Ultra Rapid Phenomena Laboratory, demonstrating the development of a frequency converter for energy transfer between photonic bandgaps. There are also many other research facilities and initiatives in the area, both governmental and privately funded, including the R&D department of a large industry, PADTEC. Although the market for this technology in Brazil is still very small, the amount and state of research indicates that the area would greatly benefit from international cooperation.

The last area to consider while implementing cooperation is Embedded Intelligence and Systems. Despite not being so well developed yet, there is a growing interest in the area. Most universities have some kind of related research going on in Electronics or Digital Systems Labs, while a few have dedicated Laboratories. There is also a rising interest in studying the topic, resulting in the creation, in two universities in the south of Brazil, of majors focusing on this specific area, as well as The National Institute for Science and Technology on Embedded Systems, funded by government agencies.

There is also the moderate presence of large industries that deal with this subject, primarily in consulting and systems design, and a few R&D initiatives with private-sector partners have started to pop up, aiming not only at researching but also producing and commercializing the resulting technology. In addition, ARTEMIS was the third platform mentioned by the interviewees: UnB (University of Brasilia) was aware of its existence, although it was never used.

In the coming months, the areas identified should be explored as viable alternatives for cooperation, and the main stakeholders in each area should be contacted in order to validate their commitment to cooperation mentioned in the interviews. We at USP are looking forward to the next steps in implementing cooperation and developing common research between the EU and our own country, and Latin America.



The discovery of Future Internet potential in Argentina

During the first months of the FIRST project, information has been collected and analysed in order to assess R&D capacities and potential areas for cooperation between Europe and Argentina in the field of Future Internet. This initial exercise will also serve as basis for the definition of the initial working groups structure of the Argentinean Technology Platform on Future Internet.

In the Argentinean case, the picture was even more advanced than what was originally expected. The project assessed Argentinean R&D capacities in different technology areas within Future Internet, as the result of interviews conducted with more than 30 representatives from the industry, the academia and the public sector and the analysis of other relevant documents, such as the ICT Prospective White Book – 2020, published last August 2009 by the Ministry of Science, Technology and Production Innovation.

The general conclusion was that Argentina counts with a very well prepared academic sector, which is also complemented by the support provided by the local R&D agencies (In this case mainly by the Ministry of Science, Technology and Production Innovation). The general consensus is that academia carries out most research activities in the country although there are some very good examples of industrial leadership in R&D activities.

Nonetheless, it was confirmed that there is low interaction between the academic and the private sectors, producing a very low transfer of results and technology. This conclusion reinforces our initial estimations and confirms the need for major internal coordination and cooperation between industry and academia. We consider that the creation of the Latin American Technology Platform in Argentina will contribute to the strength of links and cooperation between industry and academia

in a complementary way to efforts already put in place by the Argentinean Ministry of Science, Technology and Production Innovation.

Another fact is that scientific wages are extremely low compared with those offered in developed countries, provoking the continuous emigration of researchers from Argentina to foreign countries. The current government has given to Science and Technology the characteristic of Ministry, instead of a simple secretariat. This increase of status facilitated the creation of a Programme called R@ICES, a network of Argentinean scientists and researchers working abroad that pretends to facilitate the integration of these professionals in Argentina.

The technology Platforms in Europe are a great example of how to promote a more coordinated and structured research cooperation involving industry and academia, and Latin American Technology Platforms will bring also these benefits to Argentina and other Latin American countries, thank to the links that will be created among Argentinean researchers and with Europeans through ETPs.

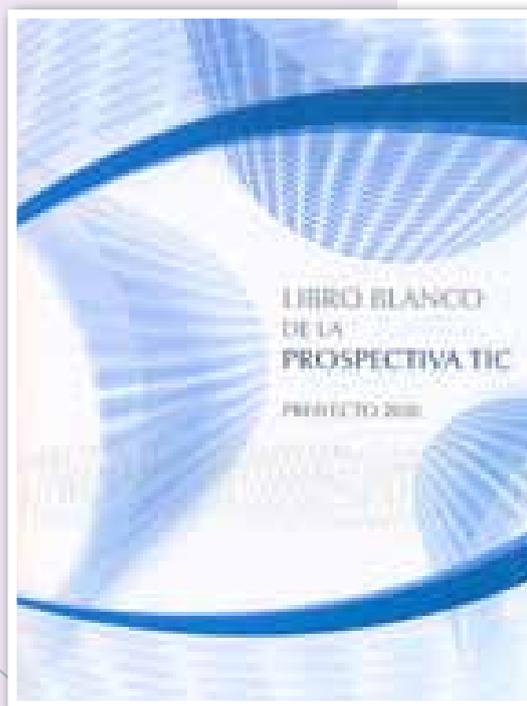
According to the initial studies, it has been confirmed that Argentina already has a high potential in areas such as software



and information services (Matching with the ETP **NESSI**), as well as in embedded systems (Matching with **JU ARTEMIS**), Networked Electronic Media (Matching with the **ETP NEM**) and nanoelectronics (Matching with **JU ENIAC**).

In the following months a more detailed report will be published and the Argentinean Technology Platform on Future Internet will be officially launched. For more information please do not hesitate to visit the project website: www.latin-american-technology-platforms.eu where you will also have the opportunity to show your interest and register in the Technology Platform.

The **FIRST** project will be able to channel Argentinean interests to get involved in the emerging European initiatives towards the creation of Future Internet core infrastructures and relevant services and applications for the exploitation of Future Internet technologies. Specific workshops will be promoted, as necessary, to assist Argentinean researchers to find European partners and get involved in the European proposals to upcoming FP7 calls, depending on the expression of interests from the Argentinean researchers, so we invite you to be proactive and contact us!!



Contact:

Dr. Silvia Bidart

ALETI General Director

silviabidart@aleti.org

Lic. Luz Ledesma

ALETI Communications Coordinator

rrpp@aleti.org



Potential areas for cooperation and key stakeholders identified in México

Mexico has a special significance due to its proximity to North American markets and status as the country in the region where many foreign vendors first launch brands. (BMI,2010). Technological readiness indicators reflect the penetration of ICT and the extent to which countries leverage technology knowledge from abroad (notably through FDI), by adopting and adapting it in their production systems.

Mexican regions with higher potential on ICT and significant industrial and research activity in the national economy are Mexico City, State of Mexico, State of Jalisco, State of Nuevo Leon, State of Sinaloa and State of Baja California. The main industrial clusters in competitiveness are: IJALTI from Guadalajara, Jalisco; CSOFTMTY from Nuevo Leon; MIT Cluster from Monterrey, Nuevo Leon and IT@BAJA from Tijuana, Baja California.

National Chamber of Electronics, Telecommunications and Information Technologies Industry (CANIETI) is the major non-decentralized organism for ICT in Mexico. CANIETI has local offices in all country.

The areas with greatest potential for Future Internet and ICT components in this country are:

ISI

Foreigner companies had been the solution to satisfy the Mexican Satellites Communication market dominated by operators as SES, Intelsat, Hispasat and others. SATMEX (Satélites Mexicanos) is the unique enterprise of Mexico in the satellite sector. There are two main Mexican institutes to train researchers in satellite communications: CICESE and UNAM.

In the early of 2010, the Congress established the creation of a Mexican Space Agency to lead and concentrate diverse national efforts around the

development of an innovative aerospace technology. The potential found at the Mexican satellite communication industry to create immediately a thematic working group is poor. The industry is just focus on services.

Photonics21

The large industry of electronics components, like Electronic and photonic devices and systems, is placed on the border with USA and Guadalajara area. In the country, the research investment of these kinds of companies is poor. The independence of the local industry is total, 98% of the production is exported. The research in the large industry is poor because their activity is focus on manufacturing operation with technology of foreign and corporative research centers. There is a gap between the interest of academic, industry and government.

Important clusters of advanced studies of the National Polytechnical Institute are to be found in Guadalajara, Merida and Mexico City. major Optics and photonics Centers can be found in Ensenada's (CICESE), in Guanajuato (CIO), Puebla (INAOE) and Monterrey (ITESM). The potential of collaboration with Photonics21 ETP is medium.

ENIAC

The main industrial sectors that use in Mexico nanotechnology are: chemistry, plastic, petroleum, manufacturing of electronic devices, food industry and manufacturing of metallic products. Several large and small companies in Mexico are interested in innovation using nanotechnology research results.

CONACYT has a National Network of Nanosciences and new materials with four main members: National Laboratory of Nanoelectronic (LNN),

Potosino Institute of sciences, National Initiative on Nanotechnology (NANOMEX) and UNAM. Mexico is member of the International Network on Nanosciences and Nanotechnology (INN) with 6 national and international institutions.

The nanoelectronics large industry has a high level of independence of the local market due to its multinational issue. The Mexican nanoelectronics market is incipient and not yet mature. FDI is present in almost large industry for operative activities but not for create important number of research centers. The lack of capable industrialists to support an applied nanoelectronics research in Mexico is a weakness.

EPOSS

Baja California State (border with California and Arizona) is the largest concentration of medical device companies in Latin America. 64 medical device companies are operating in Baja California: 91% from US, 5% Mexican, 2% UK-Sweden and 2% from Australia.

Jalisco State is one of the main clusters on electronics and microelectronics devices, large industries as IBM, HP, Seagate, Plantronics are placed in Guadalajara City. In Mexico, only INAOE (National Institute for Astrophysics, Optics and Electronics) has a National Laboratory of Microelectronics with strong research activity

The research investment of large companies is weak yet due to technology dependence from the foreign. The relationship with national academic centers is not significant, the technology resource come from theirs research centers. The independence of local industry is high; also the total production is exported and has a growing market and demand.



ARTEMIS

According with CANIETI, potential embedded system sectors in Mexico are: industrial electronics, automotive industry, aerospace industry and telecommunication and data communications.

In Tijuana-Mexicali area, the major group of consumer electronics companies is concentrated. In Guadalajara metropolitan area, the major group of computer electronics is concentrated. In Mexico City and Querétaro, the major group of industrial electronics is concentrated. In Chihuahua y Edo de México, the main group of telecommunications equipment is concentrated.

Mexico has few research centers where embedded systems have a presence in the research lines. INAOE has a National Laboratory for design and manufacture integrated circuits and has research activity focus on embedded systems.

However, the country has not developed its own local industry but it become in one of the main world leader host industry with the consequent technological dependency and high level of FDI. The large companies has a strong presence but the research investment in research center is poor as well as their collaboration with the academy sector is weak. Mexican research public policies not difference the embedded systems from general electronics systems.

eMobility

In Mexico, issues like health and inclusion, transport, and environment, that are framed by Future Internet concept, has little presence in the industry. Some efforts are done only in the social context by companies like Microsoft and Motorola.

The universities and research centers have an important presence of projects related with

internet for people, internet for things, healthcare telemedicine, teleoperation of industrial machines, and others. Around 600 researchers can be dedicated their efforts to mobile and wireless research projects. CUDI is the organism that handles the project of Internet 2 in Mexico and encourages the development of applications that use this network in emobility topics.

The potential found to establish a technology platform associated with eMobility-European ETP is considered medium. There is not a critical-mass of researchers and universities, but isolated efforts had been done. The government more and more time founded social oriented topics based on internet.

NEM

Networked and electronic media services suppliers have an important presence in the ICT Mexican Market. The number of large industry from this sector is significant but the number of research intensive SMEs is poor, the independence of local industry is medium high.

Main universities of Mexico have interest to create new methods of interactive contents, and multiplatform. ITESM, UNAM and IPN have suppliers of research projects related with e-commerce, e-government and e-services.

As part of the National Development Plan, one objective includes the development of a national software industry including the networked and electronic media. The government of Mexico develops the National System e-Mexico.

Networked and electronics media in Mexico has an enough potential to establish a technology platform associated with NEM-European ETP. The public policy of the government is very strong due to

programs like Mexico IT underpins the NEM area on the country.

NESSI

Mexican IT services industry is divided in numerous small firms and a few larger firms. Nuevo Leon and Jalisco states are home to two dynamic IT service clusters. The market for products and services is consolidated. The FDI support research activities at large industries, companies like Cisco Systems, Tata consulting Sun Microsystems, Microsoft, HP and IBM offer special grants or research opportunities.

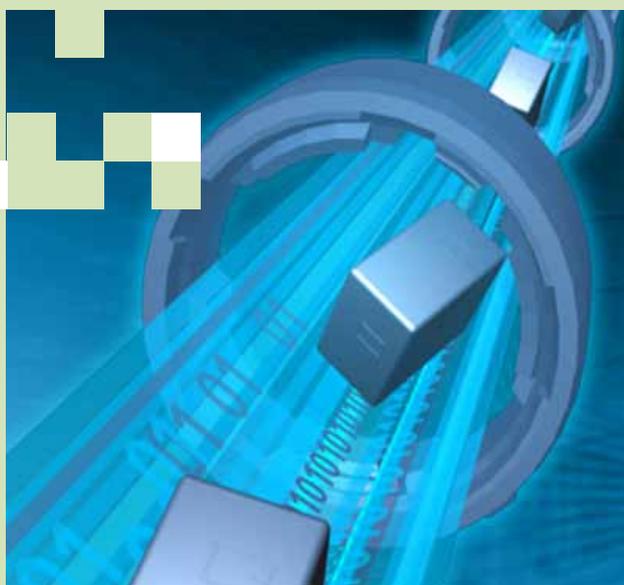
The main universities with software development programs are: UNAM, IPN, ITESM, Guadalajara University and others. The main research institutions with software development research lines are: CINVESTAV-IPN, CICESE, INAOE and CENIDET.

Software and services has a great potential to become a Mexican thematic working group. In Mexico there is a large industry and a SME with high level to deal with its reflex European Technology Platform.-NESSI. The research academic community is focus on research targets similar to NESSI. Mexican government founded PROSOFT (Program National of Software) to improve the international competitiveness in software development and services niches which is a guarantee to the official support to this sector.

Chile, small country, high potential

Chile is a small country with a well developed ICT sector that makes us consider it as one of the best opportunities for cooperation that European entities will find in the region.

In this case it is also extremely important to highlight the high interest that the Chilean government has shown in the creation of the Chilean Technology Platform and the commitment to cooperate with the FIRST project in order to do so. Mainly, two entities have demonstrated their willingness to cooperate with the project from the Chilean government side: CORFO and CONICYT.



CORFO is the Economic Development Agency and performs the role of fostering production and innovation in the country, and they were the main collaborators of FIRST during for the organization of the first event in the country, kindly offering their facilities for this event, participating in the dissemination and later implementation of actions agreed in that event. In the same way CONICYT also showed a tremendous interest and openness to cooperate in the creation of the Chilean Technology Platform on Future Internet.

This government and institutions commitment was followed by the response from the industry. They conformed around 60% of the event attendance, demonstrating their interest in the Latin American Technology Platforms.

The answer from industry was therefore positive, as it was previously perceived thanks to interviews already made with some of the local stakeholders, and it was even more positive the

assessment made during the event, when it was also confirmed that R&D activities of high level were already conducted by some of these Chilean industrial representatives. In addition, some other very good examples came from the academic side. This sector showed interest in the project and it was concluded that the quality of the academic research in the country is good.

Of course, as it was expected, some technology areas have a better position to initiate cooperation with European researchers, and this is one of the main conclusions coming from this event and the complementary activities conducted in the country by the project. In particular, the Future Internet areas that have been considered of higher potential for cooperation between Europe and Chile are: Embedded systems -ARTEMIS-, Software and services -NESSI- plus important potentialities that have been also found in the photonics and wireless communications fields (Photonics21 and eMobility respectively).

In the following months a more detailed report will be published and the Chilean Technology Platform on Future Internet will be officially launched. For more information please do not hesitate to visit the project website: www.latin-american-technology-platforms.eu, where more information will be uploaded and interested entities will also have the opportunity to register in the Technology Platform.

The FIRST project will be able to channel Chilean interests to get involved in the emerging European initiatives towards the creation of Future Internet core infrastructures and relevant services and applications for the exploitation of Future Internet technologies. Specific workshops will be promoted, as necessary, to assist Chilean researchers to find European partners and get involved in the European proposals to upcoming FP7 calls, depending on the expression of interests from the Chilean researchers, so we invite you to be proactive and contact us!!



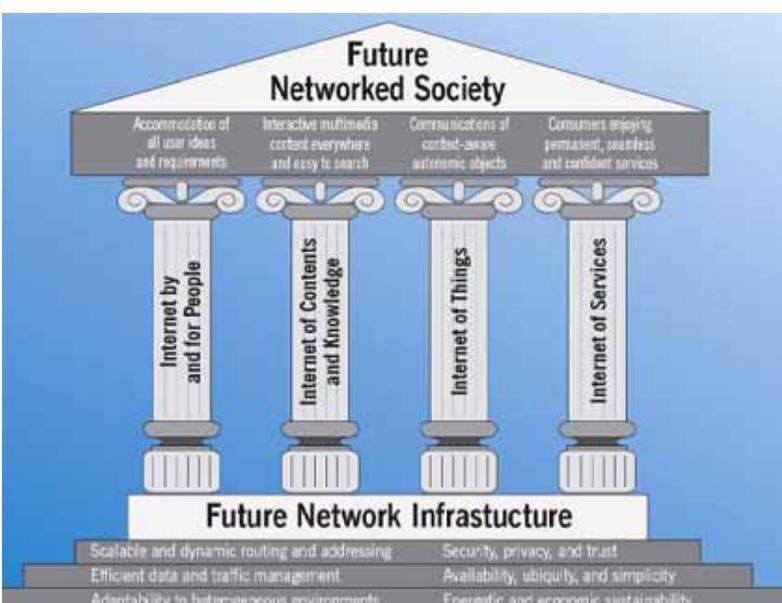
Final Users: link of strategic importance for the Future Internet

Why we need a new vision of the Internet? One consistent answer is: to improve the services quality desired, and perceived, by final users.

The discussion about the Future Internet, traditionally, considers as stakeholders the industry, the academia and the government.

The Internet communities must be considered in this discussion about innovation, and they are, indeed, stakeholders too. The final users, as a class of the Internet communities, are the customers, since the internet, and the services available through it, are consumed by them. They are who push the services/products providers' development efforts, the business model and, consequently, the marketing action. Final users, inside or outside of an Internet community, are stakeholders as well, since the Future Internet must attend their perception about what a good service is.

The concept of Future Internet, according to Future Internet X-ETP Group Report – January 2010 (represented in Figure 1), has four main pillars: a) people, b) contents/knowledge, c) Internet of Things and d) Internet of Services.

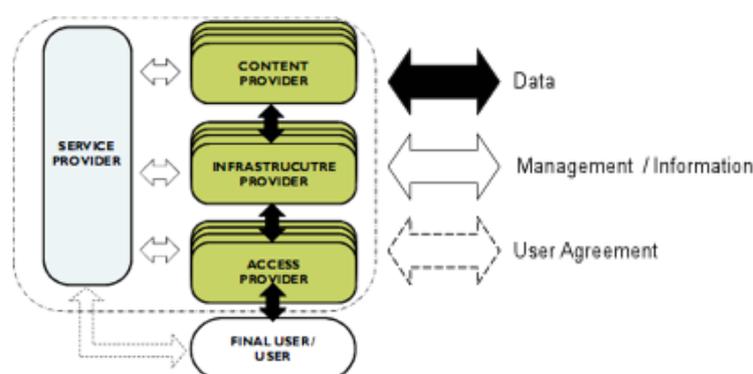


Source: http://www.future-internet.eu/fileadmin/documents/reports/FI-SRA-V1_1_final_clean_050210.pdf

The paper “Telecommunications business model for converged networks focusing final users”, to be published soon by USP, points out that “The main focus of our society is information, available under format of audio, data, images and video; and increasingly,

the users want to obtain, to supply, to share and to interact with information using interactive mobile services with multimedia content in any place, any time, using any device, and on the move. This scenario has created new opportunities to offer new services by providers that compose the segment of telecommunications businesses”.

To support these final users' demands, the mentioned paper proposes a new business model to be adopted, as depicted on



Source: *Telecommunications business model for converged networks focusing final users*

Authors: Sakurai, Martucci and Hirakawa

The Figure 2 shows that the base of the whole process is the final user, and the Service Provider is the entity responsible for understanding and meeting the needs of each particular user, ensuring the quality of services engaged and offering the cost-benefit relation expected.

This vision about the fundamental importance of final users (inside or outside of the Internet communities) in the development and implementation of Future Internet, led USP to include the final users as speakers in the FIRST dissemination event to be held in USP on next June 16th. They have been invited to attend the event and express their opinion, through the representative entities of society, such as the Users Society for Information Technology and Telecommunications, the Federation of Industries of São Paulo State (industries are users too) and the Brazilian Computer Society.

People are, then, the reason why all the Internet resources exist, and the reason why the Future Internet course has been discussed.

Decentralized Innovation and the development of Technology Platforms

García, P.; Ariza, M.A.; Estévez-Bretón, C.M.
Innovation Department
Futura Networks

Between the varieties of possibilities that the crowd-sourcing offers, Open Innovation appears as an important one. The term was first established by Professor Henry Chesbrough¹:

“ Innovation is a strategy under which companies go beyond the internal boundaries of their organization and where cooperation with external professionals has a key role”.

Open Innovation means combine internal with external knowledge, to take forward projects in R&D. This means that enterprises use both internal and external channels to introduce their products and innovative technologies in the market. This approach contrasts with the classic model of innovation, in which projects could be started only within the company and end up in their own market.

However under the Open Innovation Model, projects can be originated both inside and outside a company, can be incorporated both in the beginning or intermediate stages of innovation processes and can reach the market through the same company or through other companies in different business models like intellectual property licensing, technology transfer, etc. If companies can benefit from decentralizing their innovation processes, more can the research and development of Future Internet.

The concept of Open Innovation, for example, is widely explored in Technological Platforms, such as the ones envisaged by FIRST, which aim at creating digital ecosystems by including the point of view of different stakeholders that should have a say in the discussion.



A digital ecosystem is possible due to the presence of commercial partners, enterprises, government institutions and Academia, along with, the ICT users, people who interact on internet and constitute flexible networks for different reasons with different motivations for agglutination.

According to the theoretical biologist and biophysics of Los Alamos Institute, Norman Johnson,² knowledge can self-organize in distributed networks directed by human interactions.

Johnson tells that the social structures have evolved, as well as their supported dynamics, in such a way that now we can solve problems that threaten our existence and concludes that: “biological and social evolution use the same dynamic process, and exhibit the same characteristics inherent self-organizing systems”.

This statement implies that:

- A solution emerges as the choice among a variety of potential solutions because of the system dynamics.

- Complex global behaviour is managed by relatively simple local processors and free connected.

- The global features of these systems are: larger functionality than the one of the subsystems; robustness; persistent imbalance; ability to find solutions in the presence of conflict and scalability without losing viability.

Today it is easy to see how technological advances have radically changed the timing and magnitude of social dynamics. Through the advances in communication, transportation and information storage, our social unity has grown bigger: tribes, cities, state-cities, nations, regional coalitions and global society. No wonder that this revolution happens because the technology associated with Internet.

Internet has three significant capabilities that go beyond the earlier human-technological systems:

- The network integrates the breadth of knowledge processes:

¹ Chesbrough, H.W. (2003). *Open Innovation: The new imperative for creating and profiting from technology*. Boston: Harvard Business School Press

² <http://collectivescience.com/symintel.html>

Storage, disclosure, traditional computing vast amounts of data and limited but complex human information processing. So far these were separate processes requiring human action to be integrated.

- The network captures the depth of knowledge processes:

The detailed traces of the use of information are captured by the network. This information was obtainable only with extra costs.

- The network transmits the accuracy of knowledge processes:

Human to human verbal communication rapidly loses information; it is removed from its original source. In contrast, the information exchanged or listed in the network, websites and emails, suffers minimal loss of information during transmission.

According to the information above, we can point out that the development of new technologies and services (in Internet as well as in other areas) is affected in three areas:

Knowledge: It is vital for researching, understanding and projecting the future. Access to knowledge was limited and, in that way, areas of expertise were built through networking among companies, universities, research institutes and consulting firms specialised in each productive sector. This meant that their access had an ever-increasing cost, which was considered a scarce resource. Not only does the possibility of exchanging real-time knowledge affect the dynamics of its generation, but it frees this process from the places where it would commonly take place.

Open innovation represents this change by providing access to the knowledge of thousands of people through the use of information technology, fostering a competitive environment in which the challenge is to attract the best, no matter whether they are part of a specific institution or not, but how innovative is the solution they propose to keep the industry competitive..

Interactivity: The generalized knowledge and information technologies expand the possibilities of relationship between people and industry. Today more than ever everyone has different ways to compare, validate and verify information about each person with whom one interacts. This is why it is important that companies are aware of its role. Every moment is someone scrutinizing actions, products/services and culture.

Processes: Companies, government agencies, universities can no longer think themselves as closed units where the only players allowed to bring innovation are employees, consultants or business partners. Today millions of people are generating, creating and giving ideas all the time. Technology Platforms should extreme their efforts to attract them and include them for specific purposes.

Networks are nowadays more important than ever. Their magnification in recent years has highlighted the vast number of people who are related through hobbies, feelings, experiences and knowledge. In some cases, the banality of the information flowing through them is obvious, but necessary as the constant flow of information that keeps the structure of the network topology. In

this sense, the type of information surrounding is irrelevant because what matters is that interactions (connections) between members are continuous and frequent, thus contributing to maintain and strengthen the links between people. At this point the transmission of values that can be related to the social network becomes an opportunity.

Enterprises, governments and research institutes would benefit from acknowledging that everyone could be in a position to be a customer as well as a producer, may have something to say and more over, they will probably say it through social networks. Every organization should evaluate whether its structure is adequate to respond to changes arising from the information society.

The value of networking is that allows organizations to achieve goals and targets that would be unattainable by just an individual. For Technology Platforms, the current challenge is to interact, encourage and assist building networks of stakeholders in order to link the largest number of participants, to attract the best human knowledge and talent resources who are able to deliver user centred Future Internet.



From ARTEMIS ETP to ARTEMIS Joint Undertaking and ARTEMIS-IA association

The ARTEMIS European Technology Platform was established in June 2004. Its aim was to bring together key players in the Embedded Computing arena across the entire spectrum of industrial sectors by 17 major companies.

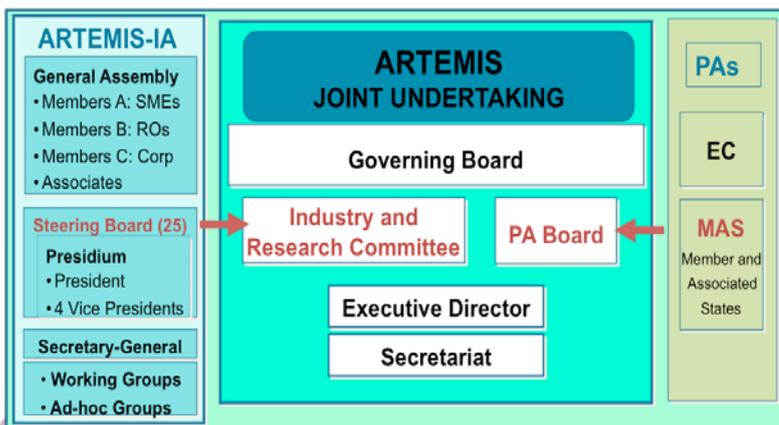
One of its core tasks is to define a common Strategic Research Agenda (SRA) which acts as a reference for the Embedded Computing domain to attract investment from the stakeholders. The first version of the SRA was published in March 2006.

The SRA addresses the R&D challenges that will allow Europe to compete effectively in the future markets of ambient intelligence and to realise a number of visionary applications in the interest of society at large. The SRA also addresses structural weaknesses and obstacles, such as openness of middleware and standards, fragmentation of research, or the development of a state-of-the-art research infrastructure. The SRA is aligned to major European policies on competitiveness (notably the Lisbon agenda), sustainable development, transport and eEurope.

In addition, the platform's "Mirror Group" gathered representatives from 24 member states and associated countries. This group went on to become a founder of the Joint Undertaking alongside the Commission and ARTEMIS-IA.

The activities of the ARTEMIS Technology Platform have now been continued by ARTEMIS-IA, the ARTEMIS Industrial Association. ARTEMIS-IA was established in January 2007 by five founding companies: Philips, ST Microelectronics, THALES, Nokia and DaimlerChrysler.

ARTEMIS-IA is member of the ARTEMIS Joint Undertaking which was launched in February 2008 by the European Council as an industry-led initiative with full participation of research and academic institutes. The ARTEMIS-JU will define and implement a 10-year R&D funding programme on embedded systems that is open for all R&D actors in all Member States of the European Union and Associated Countries. The ARTEMIS-JU will implement significant parts of the Strategic Research Agenda through open calls for proposals. Each year a call will be launched. Selected projects will be co-funded by the EC and the Member States that have joined the ARTEMIS Joint Undertaking.



13 projects were selected in ARTEMIS –JU 2009 call.

RDA = Reference Design and Architectures

SCM = Seamless Connectivity and Middleware

DMT = Design Methods and Tools

Who is part of ARTEMIS Community? How is ARTEMISIA membership organized?

ARTEMIS-IA supports the entire ARTEMIS community. ARTEMIS-IA already has more than 200 members and associates. Large firms, SMEs, universities and research institutes active in the area of embedded systems are encouraged to join. Membership of ARTEMIS-IA brings voting rights for elections and key decisions in ARTEMIS-IA, permits involvement in shaping the future evolution of the SRA and other policies, and provides an extensive and respected network of potential R&D partners.

As stated by the Articles of Association, Membership is equally open to SMEs (Members A), Public Research Organisation (Members B) and Corporate members (Members C). Individuals who are active in the field of embedded systems or legal persons that maintain an organisation of enterprises and/or Public Research Organisations that are active in the field of embedded systems can apply for a position of Associate.

What is ARTEMIS's role in the Future Internet?

Embedded Systems are everywhere, built into cars, roads, bridges and tunnels, into medical instruments and surgical robots, into homes, offices and factories, into aeroplanes and airports, into mobile phones and communication and virtual reality glasses, and even into our clothes. They are interconnected in networks of many devices - the car to the fixed road infrastructure, the smart card to the banking system. Embedded Systems technologies are deployed in all relevant market sectors for Europe. Consequently Embedded Systems have a major impact on the way these sectors work and collaborate, how they will develop, how they are perceived by both professionals and the public, and how successful their products will be on the world market.

Embedded systems will realise the dream of ambient intelligence, in which intelligent support for people will be embedded in everyday objects. This large-scale application of ICT will not only boost the quality of life but also enhance sustainability. The result will be to help make life healthier and more secure - and to provide more comfort for Europe's ageing population. ARTEMIS-IA nurtures the ambition to strengthen Europe's position in embedded intelligence and systems and to attain world-class leadership.

ARTEMIS can make essential contributions to the development and support of research

objectives and the improvement of innovation capabilities in the area of the Internet of Things within the federating concept of the Future Internet.

More information?

<http://www.artemis.eu/> ARTEMIS ETP overview page

<https://www.artemisia-association.org/> access to ARTEMIS-IA latest news, activities and memberships information

<http://www.artemis-ju.eu/> dedicated to open calls of ARTEMIS Joint Undertaking

www.future-internet.eu main activities relating to the Future Internet

NEM Initiative

The European Technology Platform where New Media Content and Networks meet

The NEM Initiative aims at building sustainable European leadership in content production and networking technologies. Its objective is to promote an innovative European approach to the convergence of media and telecommunications towards a Future Media Internet that will enhance the lives of European citizens through a richer media experience.

What is NEM?

NEM, the Networked Electronic Media initiative, is a European Technology Platform under the Seventh Framework Programme. As an industry-led initiative NEM aims at fostering the convergence between consumer electronics, broadcasting and telecoms in order to develop the emerging business sector of networked and electronic media.

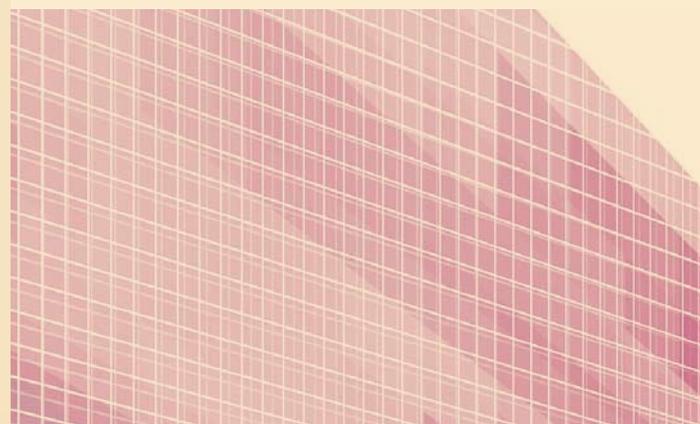
The NEM constituency includes all major European organisations working in the networked and electronic media area, including content providers, broadcasters, network equipment manufacturers, network operators and service providers, academia, standardisation bodies and government institutions. Those actors share a common vision and have produced a Strategic Research Agenda (SRA) as well as position papers, in order to accelerate the innovative development of the new sector in a harmonised and fruitful way and to place European industry at the forefront of the information era. The NEM Initiative is supporting Europe's activities on the Future Internet and is actively contributing to the definition of the related research and innovation areas. In particular, the Future Media Internet has been identified by the NEM community as its major innovation area.

NEM Community

The NEM Community is a dynamic mix of multisector players organised around various activities of the NEM Initiative. Currently, more than 700 NEM member companies participate in various NEM activities, such as: NEM General Assembly meetings (where NEM members are informed directly by EC officers about latest news on FP7, a wide spectrum of NEM activities and related topics is discussed, and



workshops are organised in which NEM members can express their interest in the creation of collaborative projects), NEM Activities and R&D Clusters for smaller members' groups focused on particular topics, creation of NEM position papers giving the NEM Initiative view on any related subject, etc.



PRO-IDEAL PLUS promotes the ICT dialogue and supports the ICT R&D cooperation between Europe and Latin America.

The PRO-IDEAL PLUS FP7-ICT project (www.pro-ideal.eu) was launched in January 2010 to enhance the ICT policy dialogue between the European Union and Latin America in the field of ICT Research & Development. To this purpose and to encourage the participation of Latin American researchers in ICT projects, PRO-IDEAL PLUS foresees events like ICT Days to familiarize local researchers with the European funding mechanisms and ICT Fora that support the ICT policy dialogue. Furthermore, it will set up a Virtual Dialogue Space on the PRO-IDEAL platform, and promote the already existing tools such as the ICT Wiki, training modules and partner search.

It is envisaged to hold at least one ICT Forum in each Latin America country with S&T Agreement with the EU, i.e. Argentina, Brazil, Chile and Mexico. The ICT Fora will act as ICT meeting points of stakeholders from Latin America and Caribbean region and will be devoted to discuss the opportunities and challenges for FP7-ICT R&D cooperation between Europe and Latin America, and the role of ICT R&D as an enabler for growth, competitiveness and innovation.

The first PRO-IDEAL PLUS ICT Forum will take place in Santiago (Chile) on 15 November 2010 on the occasion of the next S&T Joint Committee meeting between EU and Chile, in cooperation with CONICYT.

EU-Latin America ICT cooperation projects join forces for ICT 2010 “Digitally Driven”

Three ICT support actions devoted to the support and enhancement of ICT research cooperation between the EU and Latin America have joined forces to take part in key biannual ICT event organised in Brussels by the European Commission and the Belgian EU Presidency on 27-29 September.

Cooperation between the EU and Latin America under FP7 has been flourishing in the recent years and projects FIRST, FORESTA and PRO-IDEAL PLUS have decided to continue the “EU-LAC ICT Gateway” (www.lac-ictgateway.eu) initiative first launched during the Lyon 2008 edition encompassing all EU-LA activities within the event. The three projects will host an exhibition stand for the three days, as well as running a Networking Session devoted to collaborations in ICT research between the two regions.

The objective of the three projects is to centralise all relevant initiatives and stakeholders relating to EU-LA cooperation in ICT research and be a catalyser of new projects and opportunities.

In its action to support the research dimension of policy dialogue FORESTA (www.forestaproject.eu) targets policy makers, universities and the research community as well as the industry aiming to bring valuable inputs to the priority setting process and negotiations between Latin American countries and the EU. FORESTA will also organise a series of conferences and other dissemination opportunities aimed to bring Latin American and European stakeholders together around concrete opportunities for collaboration and projects.

EU-Latin America ICT Research Cooperation Projects' Common Entry Page



First

FIRST aims to further improve cooperation between Europe and Latin America focusing on the field of Future Internet, ICT components and systems. The central goal of the project is to adapt the successful concept of European Technology Platforms (ETPs) to the Latin American Region, and launch 5 Technology Platforms focused on Future Internet, in Argentina, Brazil, Chile, Colombia and Mexico, bringing cooperation between Europe and Latin America in the ICT R&D field to a new level.



PRO-IDEAL

PRO-IDEAL and PRO-IDEAL PLUS promote the ICT dialogue and support the ICT R&D cooperation between Europe and Latin America through on-line tools (ICT Wiki, training modules, partner search) and face-to-face events (ICT Days and ICT Fora). Furthermore, local "Project Angels" are trained to create a sustainable support network in Latin American countries..



FORESTA

FORESTA The project aims to promote research cooperation between the European Community and Latin America (EU-LA) in terms of Information Technology to identify research opportunities between communities and examine the IT policies in each country to identify the main future complications for researchers (and how to make best use of instruments of support among the communities to avoid such complications).

First Consortium

<http://www.lac-ictgateway.eu/>



Rose

Rose Vision, S.L
<http://www.rose.es/>
Spain



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DE MONTERREY.

Instituto Tecnológico
y de Estudios Superiores de Monterrey
<http://www.itesm.mx>
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For more information, please visit www.latin-american-technology-platforms.eu