48th FITCE Congress a success!
- looking towards FITCE 49 in Spain.

Santiago De Compostela FITCE 2010

Dear friends,

As you know, since last September 5th, when I was elected President, I tried to identify the most important actions which needed to be put in place in order to give to Fitce a new face , a new spirit and I would dare "a new beginning".
All of us fully recognize that in the last years Fitce lost a

Handover the Presidency to Andrea Penza.

bit of appeal in front of people: members are continuously decreasing and perhaps young professionals are not more interested in becoming part of it. Nevertheless people, especially the young ones showed a reinforced interest in being part of community and sharing either the professional or the private life. Social networking like Linkedin, Twitter for professional and Facebook for private became a very strong instrument for relationship improvement.
Yes, the community.   Fitce was really born in 1961 as the Federation of telecommunication engineers of the European Community, with the awareness and the pride of representing telecommunication professionals in the world, but very soon it became also a community of friends. Where people could talk to each others, share experiences and competences, learn, live technical and

FITCE 2010 Call for Papers

48th FITCE Congress…a success.

The 48th FITCE Congress took place in the Diplomat Hotel in Prague from 3rd to 5th September 2009. There were over 120 Delegates with 50 accompanying persons, and the overall feedback from the Congress was very positive. As befits FITCE Congresses, there was a very pleasant and convivial atmosphere, where delegates enjoyed high quality presentations, stimulating discussions, and excellent opportunities for networking with old and new friends.

A Working session in the Congress

The 2009 Congress Theme was "Infosphere - The Reality" and included topics, which addressed areas such as, The Converging Global information market, 21st Century User Communications, Information Security and the WebCo explosion, the impact of ICT in a global economic downturn, and evolution of NGN networks in the real world. There were 34 high quality

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social events of the highest level, as the yearly congress that for a lot of year has been able to collect the participation of hundreds of people. Every year the "European days of Telecommunications", as they were called, represented a real reference point not only for the members, but also for a good part of the stakeholders of the market.

Fitce certainly played an important role in the years when the European Community was going to be structured and started to find a real identity.

In the last 10 years the world changed a lot, not only the telecommunication one, even if this last one has been strongly impacted by the internet revolution and the imposture of the new Information & Communication technology culture.

The economic crisis and the saturation of the Western European market created a lot of problems in the investment capabilities of the companies and due to that the cultural associations mainly had to reduce their budgets and, consequently, the ambitions and the possibilities to be present and visible in the wished way.

But, despite that, we are fully convinced that Fitce has inside all the capabilities to take again his institutional role for which it has been formed.

We are fully convinced again that Fitce has the capability to attract professionals, to satisfy the cultural interests of the young people, to promote events and initiatives for the growing progress of all the members and able to attract the market stakeholders.

We are fully convinced that Fitce is really able to represent a community of friends, where to share, to learn, to identify opportunities, to be up to date in competence development.

But in order to achieve all of that, we have to change, we have to start a new course without loosing our essential identity but really immerging ourselves in the new digital world, completely adapted to it.

We have to innovate; we have to use our creativity in order to establish new paths, a new way to communicate, and a new way to make culture

A very appealing web side, updated & updated and making full usage of the new 2.0 technologies, the social communities, the digital communication, the capability to act as prosumers of digital content, all of that should become our daily bread, all of that have to be part

of the daily life of Fitce.

It is really challenging, but we will achieve all of that, I'm fully convinced of that.

We need the help of all of you, ideas, suggestions, and propositions.

Make an extensive use of the e-mail instrument in order to communicate, to share, to indicate initiatives and ideas.

Fitce needs the help and the contribution of all of you.

In particular I would like to indicate the initiatives which are ongoing and are moving forward the right directions.

New Fitce project: started last September after the formal approval of the Prague General Assembly. The aim is to define and implement a way to achieve the new wanted Fitce, as indicated and requested by the National Associations. Details on this item are shown in another part of this Forum magazine.

Mini events between boundary countries, in order to increase Fitce visibility and give the members other chances to meet and share. Up to now, two mini events, organized between Fitce Greece and Fitce Italy, have been held and the members reacted in a very successfully way. These kinds of initiatives are fully recommended even in the future and I ask all the countries to try to implement these events making them international and not only domestic.

The web site is going to be updated with all the most important national events and mini events; but it is still not sufficient as this portion of the web site is still too poor of contents yet. All the National Associations have to feel the responsibility to make the marketing and the reports of the events and the initiatives strongly visible forward all Fitce members.

Agreements with the most important associations and societies of our world. We signed an important agreement with the IEEE COMSOC and it is really good for the exhaustive mutual benefits covered by the agreement. Other initiatives in this respect are strongly welcomed. if meaningful and of high level.

In particular I would like to stress the concept that the web site can be considered as the expression of

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presentations, spread over 9 Sessions. The theme was addressed by the opening keynote speakers which included Mr Pavel Dvorak Chairman of the CTU Council, Mr Petr Slovacek Vice President of Telefonica O2 Czech Republic, and the outgoing President Mr Barry Reynolds, who expressed a vision for the Congress with the statement "We hope explore in depth all aspects of the global info-society and its implications for the highly internet literate up-and-coming social networking generation. Last years theme dealt with Transformation of Networks, Services and Lifestyles. The driving force behind the transformation is and always has been the empowerment of the individual, which is also at the heart of the Global Infosociety". We were also very appreciative of our sole sponsor T-Mobile CZ.

The opening session dealt with ICT transformation in the Czech Republic.

Frank Meywerk – CTO of T-Mobile CZ summarized actual developments and deployments in mobile communication with special accent on increasing of data

Barry Reynolds President with President elect Andrea Penza

transmission bitrates in general and focused on technological as well as business issues particularly seen inside the Czechia itself. Zdeněk Brabec of FEL CVUT completed series of various statistics performing telecommunications in the CZ mirrored to all other Europe from domestic as well as various, mainly EU or OECD sources. It was demonstrated that the current state of the CZ telecommunication is fully comparable with all the other in Europe. Petr Zeman – director for international affairs of CTU – Czech regulatory body - complemented in opening session performed basic information by Pavel Dvorak, the Chairman of the CTU Council. He summarised actually solved open regulatory tasks concerning relevant markets, digital dividend as well as spectrum aspects. Anton Kuchar presented a role of small and medium CATV operators in CR in providing e-Services.

the beauty and the charm of a community. for this reason I intend to promote all the initiatives taken to improve and ameliorate our web site.

Furthermore we have to spend more on the marketing aspects, strengthen the Marketing Group and encourage all the initiatives for the best promoting of Fitce. Sometime, in order to get room for marketing initiatives event sponsorships are really welcomed.

Finally I think that Fitce has to really strengthen his presence in the European Community bodies, in order to give technical contributions and opinions coming from a 'real independent' telecommunication engineer's body. The modalities to achieve that have to be identified and the contributions of all of you are really welcomed, even making part of the 'New Fitce' project.

To really finish: I strongly ask you to collaborate, to write, to indicate advice and solutions, and be fully present ….

Fitce needs all of us, no one excluded. All together we will achieve our strategic goals.

My best wishes to all of you

Kind regards

The President
Andrea Penza

NEW FITCE Project :
a new beginning for a successful future

Summary

The last years the Telecommunication world changed, new models appeared and young generations create**d** new ways to network. FITCE is having difficulty to react to this change and keep its important role for European professionals. The project "New Fitce" should invert this tendency.
Reference scenarios for the Fitce of tomorrow and the future form the basis for a discussion between National Associtions and CD members to get consensus on the way forward for Fitce.

Fitce has a business model based on the years that it has existed. This business model has been beneficiary for many years. The last few years it showed that the entire Fitce organisation has been losing money.
So it is time for Fitce to reconsider the vision, mission and goal and check whether the current business model is still the right one.

New Fitce defined a process to come to a new future scenario consisting of the following steps:
- SWOT
- Preparing possible scenario's
- CD Madrid : feed-back questionnaire – discuss possible scenario's
- Discussion paper
- Feed-back NA's and adjustments
- Consensus meeting (CD) final solution
- Implementation by workgroups

The permanently increasing demand for BB brings a good chance for the CATV operators to successfully compete with the traditional telco operators. The paper performs CZ Telecom theatre focusing on the challenge for small and medium ones particularly. The overall conclusion was

The Congress Panel Session.

that the actual situation in ICT business in CZ overall is comparable now with the situation in all other Europe countries.

There were 3 winners this year. The best paper award went to Mr Ekkelenkamp from the Netherlands who addressed "Telco 2.0: The Innovation for Telecom Operators." The best presenters award went jointly to Mr Cimiotti of CGI Group Germany and Mr Schonowski of Deutsche Telekom Laboratories Germany for a presentation on Mashed Services and Business Models enabled by NGOSS. The best Young Presenters award went to Mr Holvoet of Ghent University, who presented on video scheduling in the last mile.

The Congress concluded with a panel session, Chaired by Wim Van Der Bijl, with Mr Frank Meywerk, Mr Hererra_Gonzalez and Mr Zdenek Brabec.

During the General Assembly the outgoing President Mr Barry Reynolds of Ireland, handed over the chain of office to the new President Andrea Penza of Italy. The Accompanying Persons also enjoyed a tour of Prague castle and a visit to a famous Czech Health Spa at Karlovy. The Gala Dinner was held in the Rytirsky Hall, where we were surrounded by many historic Czech knights clad in full armour.

- General Assembly & Launch

The way Fitce can go forward can be split into several dimensions:
1. One congress per year vs several activities per year
2. Strong NA's vs a strong international organization
3. Focus on one topic vs small broader overview
4. Sponsor oriented vs Member oriented
5. Independent vs Merge with other organisation

Combining these dimensions in different ways will result in several scenarios.
There are scenarios that will change the Fitce business model hardly and there are scenarios that will change the business model and the organisation dramatically.

Best Paper - FITCE 2009

Telco 2.0: Innovation for Telecom Operators

Huib Ekkelenkamp

Synopsys

Telecom Operators require a drastic change in service orientation and business models to cope with new entrants in the market. Telco 2.0 innovation combines solutions from the Telecom and the IT sector using IP based services provided by a Service Delivery Framework, Service Oriented Architecture and Next Generation Intelligent Network. This combination provides a sustainable competitive advantage in a fast developing market.

Introduction,

Telecommunications and Information Technology, integrated as ICT is a key enabler for the substantive growth of our global economies. The Organisation of Economic Co-operation and Development (the OECD) states end 2008 that: *"ICT skills are an important contributor to growth and are spread widely across the economy. Over 4% of total employment is in ICT specialist occupations and this share is growing rapidly. Over 20% of employment is in intensive ICT-using occupations".*

In difficult economic times, first priority is given to cost savings, considering the Total Cost of Ownership during the lifecycle of a system. The next priority is to re-establish economic growth for which innovation in the Telecom and IT sectors is vital. In times of recession new opportunities arise in particular for the ICT sector which entail not only new marketing strategies but also diverse and value-add product portfolio or service offerings (see).

With the accelerated merge of Telecom and IT, Telecom Companies are moving in the direction of ICT providers. The focus shifts from network providers to full service providers, dealing with a wide range of communication and information handling services. Next Generation is the buzzword in front of some of the key areas such as Next Generation Networks and Next Generation Service Provisioning.

Stimulated by the IT industry it is favoured to use instead of Next Generation <something> the addition 2.0 like Telco 2.0, Web 2.0, Music 2.0, Advertising 2.0 and Identity 2.0. It is the shift from doing different things to doing things differently. For "Telco Innovation" a good understanding of the main trends, hypes and solutions is crucial. Traditional business models based on Michael Porters five forces (barriers to entry, power of buyers, power of suppliers, threat of substitution and rivalry) change to co-operative models based on communities and interactive value chains. The result is a change from "service provisioning" towards "service enabling". Customers become content generating end-users, creating communities and collaboration based on "services" or facilities of Telco and ICT providers. Here the worlds of Telco 2.0 and IT 2.0 merge: Open source, Virtualisation, SaaS, Cloud Services and SOA support this trend. This requires another orientation and creates new opportunities for both Telco and IT providers. The main themes for innovation and the provided solutions will be presented in the following sections. This creates new opportunities as will be shown.

Main themes for innovation

The traditional users of Telecom Services via fixed or mobile connections have gradually moved from voice centric to data centric services. Mobile broadband internet, including messaging, browsing and streaming is growing fast. The generation born after 1982 spend a large part of their time and income on mobiles, laptops, music, and video players. This generation expects that connectivity to the www or web is always available, at high speed and low cost. Their social network and work relations heavily rely on networked ICT solutions. These "Users 2.0" expect a full interactive internet where collaboration using Web 2.0 creates virtual communities fulfilling their lifestyle and professional needs. Users 2.0 demand high bandwidth always-on connections, providing ubiquitous access to a wide range of voice (over IP), internet, data, messaging, audio and video services including streaming. These basic communication services must be provided at low cost and so new revenue models such as advertising funding are important.

Users 2.0 are the early adopters of instant messaging and presence which they expect on any type of terminal (mobile or fixed) in any location. This stimulates a new lifestyle, combining social and work societies in a flexible way. Users 2.0 expect that services and facilities used in the private environment will also be available in the enterprise environment. Here additional requirements for reliability and security exist. It is seen that the enterprise requirements are driven increasingly by the private consumer requirements. Services which started as a personal communication environment like Blogging, MySpace, Facebook, Hyves, YouTube, Flickr, Twitter and Second Life soon were embraced by enterprises for marketing and advertising purposes. The business models of these social networking websites are largely based on revenue from advertising to large numbers of users with a specific profile.

The major developments providing high bandwidth access to the new services are based on the Next Generation Fixed Networks and the Next Generation Mobile Networks as well as their converged combination. This will be elaborated further.

Next Generation Networks – All IP

A Next Generation Network (NGN) is an IP packet-based network able to provide a wide range of flexible multimedia Telecom Services and is able to make use of multiple broadband, Quality of Service (QoS) -enabled transport technologies. Service-related functions are independent from underlying transport-related technologies. It offers unrestricted access by users to different service providers. It supports generalised mobility which will allow consistent and ubiquitous provision of services to users (as defined by the International Telecom Union). This means that services are based on the Internet Protocol (IP), therefore NGN is also called All IP. In practice services are often delivered by means of IP Ethernet connections. As different services can require different Quality of Service levels, it is not always evident that all services are provided via the same IP network (see .

NGN covers the access network, as well as the long-distance transport network. As most of these transport networks have been transferred the last years to packet-based IP networks, the main focus is on the access networks. The high bandwidth required can only be obtained with short lengths of local copper wires or by installing new optical fibres in the local network. Digital Subscriber Line Access Multiplexers (DSLAMS) provide the IP based transmission channels on the copper or fibre lines as shown in Figure . DSLAMS on existing copper cables with

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lengths up to 1 km provide a maximum bandwidth of 20 Mbit/s. This is the most economic solution as local digging for new cables can be restricted. It often provides sufficient bandwidth for basic services like voice, internet and IP-TV.

Fibre provides almost unlimited bandwidth; in practice the bandwidth is limited in general to 100 Mbit/s with a maximum of 1 Gbit/s. This enables High Definition TV
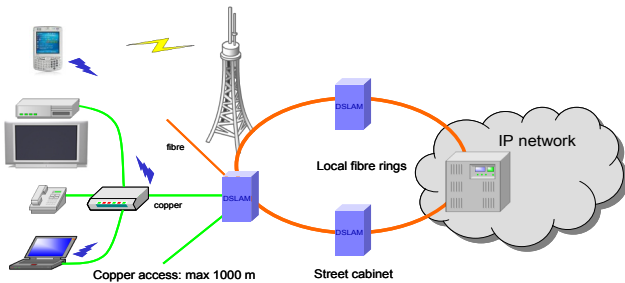

Figure 1 Local Access in All IP

with requires with proper coding about 10 Mbit/s per channel.

Fibre-To-The-Home (FTTH), Fibre-To-The-Curb (FTTC) and Fibre-To-The-Office (FTTO) are now installed world-
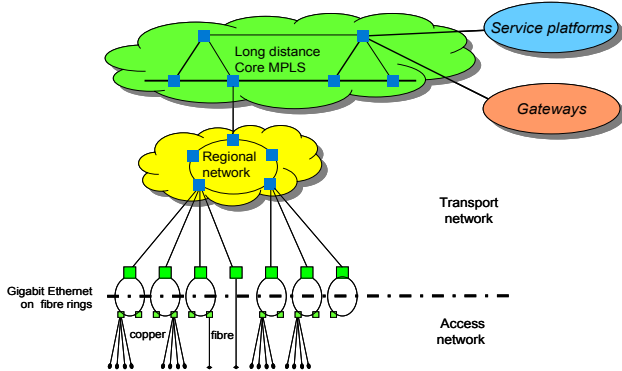

Figure 2 NGN All IP network

wide on an increasing scale (see also www.ftthcouncil.e). In less densely populated areas, wireless systems like HSPA and WiMax can provide alternative solutions for the basic services. These mobile broadband systems will be covered in the next section.

The regional and long-distance networks shown in Figure 2 provide the IP connectivity between the users. Service platforms provide the requested services like Voice-over-IP, IP-TV, internet access and messaging. Gateways provide access to other IP- or non IP- networks, including public switched fixed and mobile networks.

IP Multimedia Subsystem

A Service Delivery Framework provides the reference for NGN All IP. A major component is the IP Multimedia Subsystem (IMS) providing the infrastructure for call-control (including signalling) and connectivity to other networks. The IMS can be considered as part of the Service Delivery Environment for IP services as shown simplified in Figure 3. Here three layers are distinguished: the Access Layer, the Session Control Layer and the Application Layer. The main components of the IMS are in the Session Control Layer. The Call Session Control Function (CSCF) is the core "switching" function controlling "calls" between users based on the requested services, delivered by the servers in the Application Layer.

The service profile of the user is stored in the Home Subscriber Server (HSS).

For setting up and closing down of multimedia sessions such as voice and video calls via the internet or IP networks in general, the Session Initiation Protocol (SIP) is widely used. Other application services are video conferencing, audio and video streaming, instant messaging, presence information and online games. SIP can be used
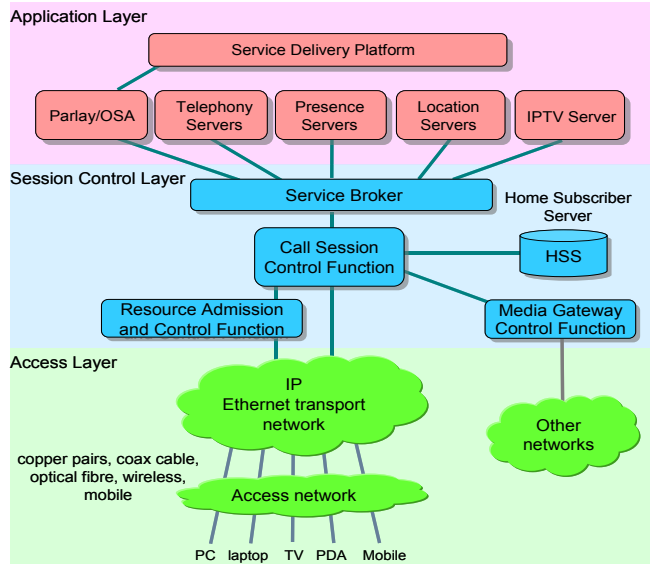

Figure 3:   IMS in IP-based service provisioning

for modifying sessions consisting of one or several media streams. This can involve changing addresses or ports, inviting more participants and adding or deleting media streams.

A Media Gateway Control Function (MGCF) does call control protocol conversion between SIP and the legacy Circuit Switched signalling and connects IMS to other networks. The Service Broker provides interaction management between the CSCF and the application servers. The Service Broker is often a Service Capability Interaction Manager (SCIM) which can be considered as a Service Oriented Architecture for real-time orchestration of the service components.

IMS is the key component in the Fixed-Mobile Converged environment which will be described in a later section.

Mobile broadband

Since its start in 1991 GSM has been introduced in every country of the world. The total number of GSM subscribers is now over 3 billion. As shown in Figure 4 mobile data transmission speed has been increased steadily in GSM from 9 kbit/s to 100 Mbit/s in the latest standard LTE.

Figure 4 also shows the mobility for the different wireless systems. Fast moving mobile communication (like in high-speed trains) limit the bit rate. With the introduction of 3G (in Europe called UMTS, elsewhere called WCDMA) bitrates of 384 kbit/s became usual. A further extension of 3G was possible with HSPA (High Speed Packet Access) with bitrates to 10 Mbit/s and even higher. The recent finalisation of the LTE standard by 3GPP will stimulate worldwide the broadband roll-out. The bitrates of the new mobile systems are comparable or even higher than those of the current broadband fixed internet connections.

Bitrates higher than 1 Mbit/s stimulate use of multimedia broadband applications like real time video. The result is that the fixed and mobile worlds converge. Differences between fixed and mobile are not only determined by bit
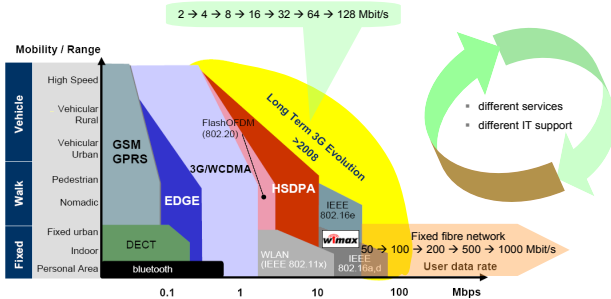
Figure 4:　Wireless access technologies compete with fixed in transmission rate

rate. The user terminals, displays, power consumption, and user interfaces pose considerable differences. This leads to different applications and services, requiring different IT support. Also the wide range of available terminals necessitates support of several operating systems and rendering of information in different formats. Next to 3G mobile cellular systems, the standardisation of wireless broadband WiMax has progressed so far that the rollout of these systems has started. As with 3G,

Figure 5:　From Fixed to Mobile with ubiquitous services

WiMax also makes use of licensed frequency bands which has resulted in some delays of the introduction. Both 3G LTE and WiMax provide broadband mobile connectivity. The market will show their preferences.
Femtocells provide another access to the operator network. Femtocells can be considered as small mobile base stations connected via IP connections (DSL, cable or fibre, or wireless) to the telecom network. The concept can be used for 3G (UMTS) or WiMax using standard mobile terminals in licensed frequency bands (see www.femtoforum.org).
The key benefits of on-line mobile communication are related to mobility (movement), instantaneous (my moment), community (my relations), payment (my money) and remote control (my tools and gadgets). As shown in Figure 5 traditional fixed telephony and data services are expanded with a range of new services covering voice, messaging, internet, TV, video, location-based, presence and navigation. It is the combination of these services which creates new possibilities

The network should enable provisioning of services via different networks and user terminals. For IP based services the IMS will enable this in an efficient way. The next phase is convergence of services provided via all possible networks, in particular fixed and mobile. This requires control of the existing digital networks at a higher level.

Fixed-Mobile Convergence

Bundling of general Telco services (triple play etc.) is not compelling anymore; customers expect similar or comparable services in the fixed and mobile environment. Telco's should provide personalised service offerings at the right time. Corporate customers are moving to mobile communications and want the benefits of the fixed PBX also on their mobiles. This means for example that Virtual Private Networks (VPN) with private numbering plans, Closed User Groups (CUG) with call transfer facilities, corporate directory services and charging should cover fixed and mobile connections. The first phase is the basic telephony service via fixed or mobile networks called Fixed-Mobile Convergence (FMC). The aim of FMC is to use a single phone using both fixed and mobile networks.

Figure 6 shows the layers involved:

1.　　the terminal layer (fixed or mobile, gateways)

2.　　the access layer with fibre, copper (All IP) or Radio Base Stations

3.　　the control layer for IP (IMS) or fixed / mobile circuit switched connections

4.　　the Intelligent Network layer for special services, features, numbering etc.
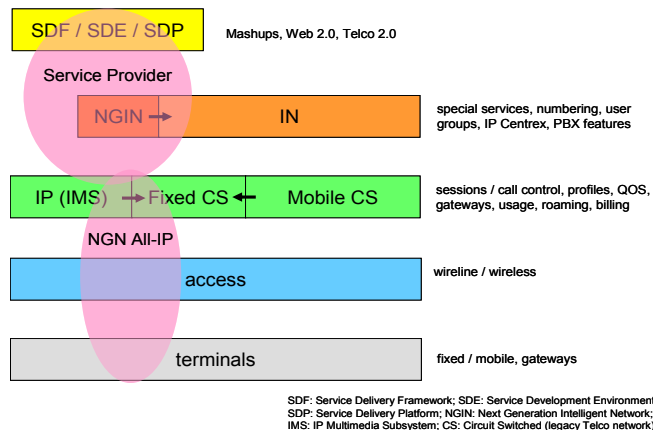
Figure 6:　Telco 2.0 Service & Resource layers

5.　　the Service Delivery Framework with the Service Development Environment and Service Delivery Platform for Telco 2.0 services

Next Generation Service Provisioning covers the top three layers. The ovals Service Provider and NGN All IP provide the core of the Telco 2.0 innovation. As shown in Figure , Fixed Circuit Switched networks are squeezed between Mobile CS and VoIP (IMS based) networks. The growth is in Mobile and in VoIP. The trend is that networks migrate from circuit switched to IP-based, from vertical silos to a horizontal approach with a clear separation of network and services and from proprietary to open structures. As will be shown later, the Next Generation IN (NGIN) in the Intelligent Network (IN) layer controls both CS and IP based networks.

Web 2.0, Mashups

Web 2.0 refers to websites which encourage users to collaboration via the web. This results in the web as participation platform instead of the web as information platform (as it used to be).

Telecom operators realise that delivering high speed con-

(Continued from page 6)

nections and leaving content to the Over-The-Top (OTT) providers will lead to a marginal commodity role in the market. They opt for a more holistic approach covering personal needs of the end-user depending on location, time and special interest.

This personalisation of services should enhance the quality of experience, resulting in greater loyalty and spending of users. Telco's and IT providers are therefore considering making also the Service Development Environments themselves available for external service developers to stay in the centre of this development. In the Web 2.0 world, the balance of power has shifted, irreversibly, from the provider to the consumer of communications and IT services.

For the first time in Telecom, innovation is being driven primarily by the consumer market needs, rather than the corporate market.

This hasn't happened before. Consumers are now driving the future and technology is running to catch up. Control is passing from service provider to the end user. It is mainly video which is driving the bandwidth requirements. Content provisioning and billing are more and more advertisement driven. Quality assurance is a key aspect of service provisioning. Quality is a distinguishing factor of choice for the user.

A "mashup" is a web application that combines data from more than one source into a single application. Mashup services are composed or mashed from a variety of sources. Mashups combine web based API's to create a new service. They are defined on a portal and executed on the client. There is a need for an environment for running mashups at the network level. Figure 7 shows an example of a simple mashup, combining Google maps and company information.

From the main themes for innovation: All IP, IMS, Mo-

Figure 7: Mashups combine data from more than one source in a single presentation

bile Broadband, Fixed-Mobile Convergence and Mashups it may become clear that for the user, created ubiquitous broadband converged multimedia service provisioning will lead to new opportunities for telecom operators. With the user determined community services new revenue streams are emerging.

Main solutions for innovation

IMS-NGIN

Telecom services and features have been provided initially by distributed nodes like exchanges in the telecom networks. Addition of new services and features required extensive development and testing leading to long implementation cycles. Concentration of certain services like number portability and special charging numbers (special rates, free phone) in a few intelligent serving nodes created the concept of the Intelligent Network (IN). This leads to a wide range of services provided via IN, controlling the services of the whole network. Both the fixed and mobile networks can be controlled in this way. In particular for virtual networks and value-added-services the IN concept has been developed beyond the basic telephony services. The Next Generation IN or NGIN enables combined control of fixed and mobile services. This is the key solution for Fixed-Mobile Converged services as virtual private networks and related private numbering plans can be extended over fixed and mobile networks.

By combining the flexibility of the IT based Service Oriented Architecture (SOA) with the high throughput, resilient, low latency Java applications the best of both worlds is used for creating telecom services. The NGIN platform is based on this principle: it provides direct control of all major telecom components of the underlying network. It provides also the IT flexibility for service creation and contains the basic associated functionalities for provisioning, assurance and billing from the NGOSS (Next Generation Operations Support Systems) world.

The NGIN platform is able to control the mobile and fixed Circuit Switched and Packet Switched (IMS based) networks by using standard signalling protocols as shown in Figure 8. In this way NGIN manages multi-service integration, consistency and orchestration of events and services

Subscribers can have many different services associated and still get a consistent user experience. NGIN simplifies integration complexity for provisioning and charging which
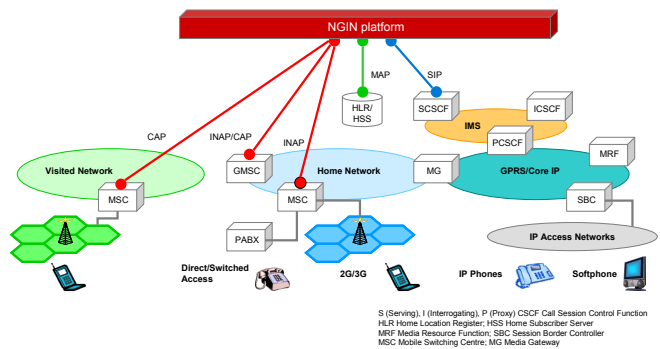

Figure 8: The NGIN platform controls all major network components

usually are the two main issues when deploying a new service. NGIN provides rich and extensible billing, containing all service information and network information (Mobile Number Portability, location-based parameters, session context parameters, VPN, Closed User Group, etc).

To enable fast development of IN services the JAIN (Java APIs for Integrated Networks) standard has been developed. Through the APIs, Java developers are capable to create new services and features.

The main functionalities provided with NGIN are:

- PBX trunking

- Virtual Private Networks (VPN)

- Fixed Mobile Convergence (FMC)

- Wireless Office (WO)

- Convergent Centrex

Innovation by a Service Oriented Architecture

A Service Oriented Architecture (SOA) is a key concept in IT used for interaction of basic modules, often called services to produce applications. However, in the Telecom world, Services are related to end users and are provided by Applications running on Application Servers connected to the IMS. Here modularity, reuse, separation of functions, supporting business processes in a flexible way are key. In SOA, a basic unit is referred to as a service, but to avoid ambiguity with telecom services the term (software) component will be used. Components are independent of applications and the platforms on which they run. Components in a SOA can be loosely connected without having knowledge of their technical details. To connect components during execution, SOA supports dynamic binding. For the information exchange between components, standardized communication protocols are used. SOA, with principles of modularization, reuse and ubiquitous access has become one of the biggest software engineering initiatives of this age. Telecom operators have embraced SOA to transform their internal OSS/BSS IT systems like CRM, fulfilment / order management, service & resource activation, service assurance and billing.

Telecom operators have discovered that the SOA concept can also be used for rapid product and service deployment, in order to keep up with the competition. SOA is seen as a key enabler, allowing telecom services or products to be developed from reusable SOA components. This avoids the stove pipe OSS approach often seen in the past. SOA can reduce the time to market of products, and enable Telecom operators to maintain a competitive edge.

SOA can make use of different environments like EAI and Web services.

In an "Internet of Services", all users and machines will have access to services via the internet network. This will offer services for all areas of private and business, like banking, insurance, payment, gaming, social networking etc. The enabling technologies SOA and Web 2.0 create new business models based on mutual enhancement through networked enterprises. Examples are Google, PayPal and Amazon. Web 2.0 based web sites provide visitors the ability to contribute information for collaboration and sharing. Web 2.0 makes from the web a participation platform. Web 2.0 applications use Web services; Web 2.0 can be regarded as based on SOA characteristics. Interactivity, collaboration and content sharing are important characteristics of the Telco 2.0 innovation. It can be seen that service creation, service ordering, service provisioning and service monitoring all have benefits from the orchestration in the service oriented architecture.

Currently most SOA deployments are concerned with transformation of internal IT systems, Telecom operators are starting to investigate the benefit of applying SOA principles across organisations boundaries, and either further onto the web.

The next step is providing access to billions of services

using the web. Recently the Networked European Software & Services Programme started the Service Oriented Architectures for All (SOA4All) project. SOA4All will help to realize a world where billions of parties are exposing and consuming services via advanced Web technology. The main objective of the project is to provide a comprehensive framework and infrastructure that integrates complementary and evolutionary technical advances (i.e., SOA, context management, Web principles, Web 2.0 and Semantic Web) into a coherent and domain-independent service delivery platform. See also Figure 9.

SOA4All is a consortium of 17 partners of which Atos Origin provides the overall programme management. SOA4All will facilitate a Service Web of billions of services revolutionizing the access and usage of software. SOA4All
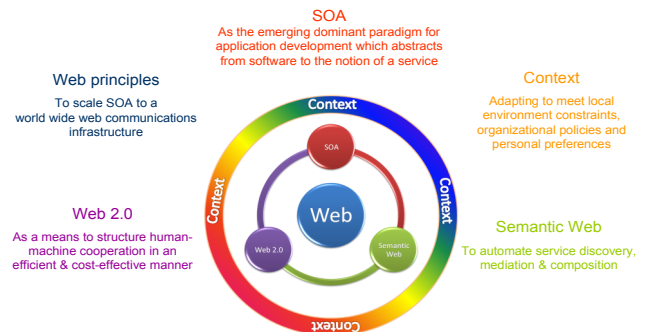

Figure 9: SOA4All web-based ICT innovation

will significantly impact the competitiveness of the European Software and IT Services.

Deliverables addressing the overall SOA4All framework, including semantic spaces, platforms for service provisioning, modelling, consumption and monitoring, among others are available on their website www.soa4all.e together with elaborated descriptions of the industrial case studies. SOA4All is a cornerstone for the Future Internet of Services.

New Telco business models

The so-called Over-The-Top (OTT) providers tend to degrade the Telco's to low-margin broadband connectivity providers. OTT providers deliver services and create value with higher margins. Telco's should play a role in the total value chain and must therefore participate in these OTT services as well. However, content creation and IT service provisioning are not the strongest parts of a Telecom operator. Even partnerships are not the solution. Telecom operator's strengths are in the area of reliable networks and platforms, handling large volumes of traffic. Their large installed customer base, their knowledge of customer behaviour, their billing capabilities and their reliable reputation are important unique assets.

Disruptive innovation is required: totally new business models with new players and new revenues. These so called Shaping Strategies change roles of customers, service providers and network operators completely resulting in a redefined terms of competition (see). Three elements are mentioned: a shaping view, shaping acts & asset and a platform.

An example of a shaping view is using the web as a platform and a source of applications; this leads to the concept of Software as a Service (SaaS).

An example of shaping acts & assets is a cooperation model for service development like BT's Web21C Standard Development Kit, where users after payment of a fee can
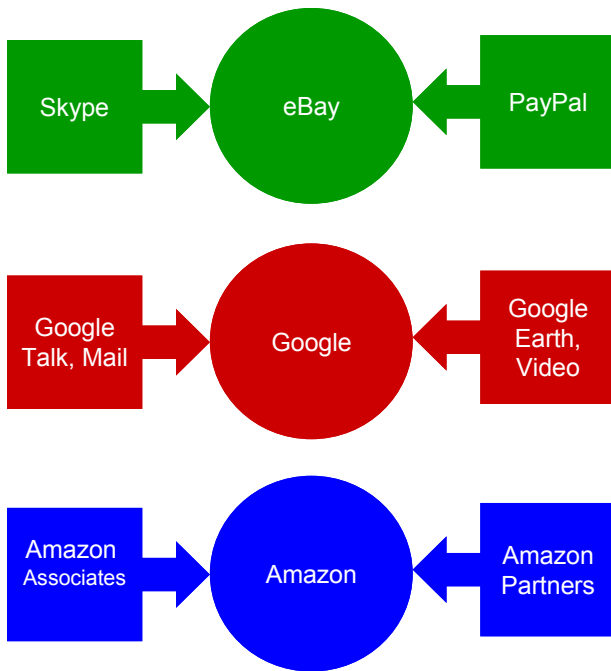
develop services on the BT network.

An example of a platform is Google's AdSense platform which uses technology to connect advertisers, content providers, and potential customers, including how ad-

Figure 10: Disruptive innovation by new business models

vertisements are submitted, priced presented and paid for.

Shaping Strategies use web based Service Oriented Architectures in which Service Delivery Platforms play an important role. The revenue of traditional voice and data services is decreasing. Provided services are often paid by advertisements like with Google.

Business models are based on networked cooperation like eBay, Google and Amazon as presented in Figure 10. The related activities of Google as web search engine, video sharing and telecom provider, with advertising paying for its services has resulted in a total different approach.

Conclusions

Users 2.0 expect ubiquitous collaborative telecom services. Telco 2.0 combines the worlds of Telecom and Information Technology by using a Service Delivery Framework, Service Oriented Architecture and Next Generation Intelligent Network. Disruptive innovation under Telco 2.0 is stimulated with the possibilities of Web 2.0 and SOA for collaboration and mutual enhancement. New business models are required to provide Telco's a position in the total value chain. The result is a paradigm shift for Telecom operators.

The Author

Huib Ekkelenkamp graduated at Delft University of Technology in 1978 in the field of telecommunications. He joined KPN, with research on digital optical fibre transmission systems. He worked for the international consulting organisation of KPN in several countries. He spent many years in the Far East and worked in Indonesia in the area of tele-com network planning. After his return to Europe he headed a KPN consulting team for telecom business customers.

He managed telecom consulting projects in Central and Eastern Europe and was involved in international acquisitions of KPN. In 2001 he became in KPN responsible for ICT business development. Currently he is in Atos Origin as Telecom Sector Manager with a team responsible for business and solutions development.

His main professional areas of interest are Fixed-Mobile Convergence, Next Generation Intelligent Networks, IP Multimedia Subsystems (IMS), Operational Support Systems and Service Delivery Environments.

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FITCE 2010. Galicia—Spain

INTRODUCTION

Spanish and Galician Associations of Telecommunications Engineers are commissioned by FITCE to organise the 49th FITCE Congress, an event which will take place in Santiago de Compostela (Galicia-Spain) from 1-4 September 2010.

This year's Congress will focus on the present state and future plans for the EU's telecommunications infrastructures under the slogan "The Way of Santiago and European Telecommunications". A slogan which links one of the most ancient means of communication (the Way of Santiago – main link between medieval Spain and Europe) to the most modern ones, the proliferation of telecommunications.

The Congress is proud to have the backing of the Galician Regional Government and the sector's and indeed Spanish leading ICT companies. This will facilitate the participation of top European, Spanish and Galician officials and keynote speakers from the telecommunications sector.

We are also privileged to have the backing of the Spanish Universities, especially that of the Vigo School of Telecommunications Engineers (Pontevedra-Galicia) and the support of the organisations comprising Spain's telecommunications engineers, the Professional Association of Telecommunications Engineers (COIT) and the Spanish Association of Telecommunications Engineers (AEIT).

FITCE 2010, WHY SANTIAGO DE COMPOSTELA?

The 49th FITCE Congress will take place in Santiago de Compostela to coincide with the "Xacobeo" Holy Year, which occurs when the 25 July falls on a Sunday. A coincidence which will not happen again until 2021.

This will mean that in 2010 Santiago de Compostela will play host to more than 10 million pilgrims from all over the world who will follow the Way of St. James to revere the remains of the James the Apostle which lie in the Cathedral there.

LOCATION WHERE THE CONGRESS IS TO BE HELD: THE GALICIA CONFERENCE AND EXHIBITION CENTRE

Opened in 1995, the Galicia Conference and Exhibition Centre is now nationally and internationally renowned within the conference organisation sector.

Palacio de Congresos e Exposicións de Galicia

Its innovative infrastructure, multipurpose by nature and in the most privileged of locations, the final destination of the Way of St. James, make Santiago de Compostela one of the most popular cultural and tourist destinations in Europe, making it an unbeatable place of encounter.

The two-storey Conference Centre measures 15,000m2, it has an auditorium, large areas, meeting rooms, VIP and press areas, exhibition spaces, a restaurant, cafeteria, ample parking and entrances for the handicapped. It provides all the necessary services and is equipped with the most up-to-date technology the conference market demands.

ACCOMMODATION IN SANTIAGO DE COMPOSTELA

Santiago de Compostela has a wide range of accommodation possibilities to fit the needs of its visitors. Bearing in mind the amount of tourists that visit Santiago de Compostela every year, the AETG have made the reservations considered appropriate in the city's most emblematic ho-

tels in order to meet the demands that the Congress will necessarily create.

Among which we have to underline the "Hostal dos Reis

Católicos", in the very heart of the historical city, where we can also find some of Santiago de Compostela's most important monuments: the Cathedral and the City Hall, and the Puerta del Camino Hotel, situated right at the business centre of the city, opposite the Galician Conference and Exhibition Centre and just 8 minutes from the International Airport, 4 minutes from the rail station and 3 minutes from the bus station.

FITCE 2010 PROGRAMME
Wednesday 1 September

Arrival of participants
20:00. Protocol reception

Thursday 2 September

10:00. Inauguration ceremony
10:30-11:15 First session
11:15-12:00 Coffee break
12:00-12:45 Second session
12:45-13:30 Third session

Lunch

16:00-18:30 Fourth session
18:30 End of first conference day
20:00 Cultural programme

<u>Friday 3 September</u>

10: 30-11:15 Fifth session
11:15-12:00 Coffee break
12:00-12:45 Sixth session
12:45-13:30 Seventh session

Lunch

16:00-18:30 Eighth session
20:00 h. Telecommunications concert
22:00h. Gala dinner

<u>Saturday 4 September</u>

10:00 Conclusions. Technical summing up
11:00 Thematic panels. Judges' decision
12:00 Coffee break

12:30 Closing session

13:00 FITCE general assembly
14:00 Lunch
16:00 Tourist trip

2010 ex VAT Prices unchanged from FITCE 2009 prices.

Life is beatiful": how ICT can improve it?

An important *workshop organized by Italian-Greek FITCE Section took place in Rome (Italy) on 13th November 2009, with the slogan "Life is beautiful..: how ICT can improve it ?" Main ICT professionals had the opportunity to discuss about new digital technologies and relative influence on our life.*

Mr. Andrea Penza – FITCE President, AICT Member

Mr. Alessandro Vizzarri – AICT Secretary

The event was opened by **FITCE President Mr. Andrea Penza** (**Ericsson, AICT Member**), **AICT President Mr. Michele Morganti** (**Polytechnic of Milan Foundation, Italy**) (*"in this important european event we are very glad for involvement of AICT, Italian Association of ICT Professionals and FITCE Italian Section")* and by **Konstantinos Sidiropoulos** (**President of FITCE Greek Section**) (*"I'm sure the collaboration of Italian and Greek FITCE Sections will be very profitable for all European ICT Professionals").*

Attendees at Italian-Greece Mini Event

The key-note speech ***"Technical scenarios to support quality of life"*** was held by **Mr. Roberto Saracco** (**Telecom Italia, AICT Vice President**). Remembering how *"in our homes a great number of ICT devices is present"*, Mr. Saracco analyzed market trend of new digital technologies for the next decade. *"From 2012 new handheld devices integrated with Wi-Fi receiver and 2 TB memories will be available. Every digital object will be connected to network through more presence and immersion effects given by screens of next generation. We will notice a substantial growth of digital sensors (in biometrics,…) and PDA (Personal Digital Assistant) using very high network connections, together with new security & safety approaches, information tagging techniques and open platforms for very advanced applications like image immersion, reactive objetcs and on line check-up."* *"In 2019* – Mr. Saracco ended – *our houses will be much more digitalized: we'll know which kind of wine is available in our refrigerator or the exact position of favourite book in our library using advanced mobile terminals."*

Mr. Maurizio Mayer (**AICT Vice President**) introduced the first session ***"Cultural Heritage improvement and preservation: Italy and Greece compared"*** considering that *"Cultural Heritage is certainly one of most common themes for Italian and Greek countries."*

The speech ***"Italy 2.0: how to live a new Italian experience"*** held by **Mr. Fabio Carati** (**Telecom Italia Future Centre**) was focused on a business ecosystem approach for an agritourism. *"After a deep analysis of a great number of informations coming from different contexts (tourism, fashion, gastronomy,..), we were able to manage them through the Telecom Italia Integrated Platform: so we made easier the contact between tourists looking for an agritourism and directors of farms."* Remembering *"the aim of the project was to promote our made in Italy in a global market"*, Mr. Carati underlined benefits of this approach: *"new markets at low cost, innovative applications, collaboration of different companies. Then considering the opportunity to share several informations through different convergent platforms (mobile devices, net blogs or social networks like Twitter), using Telecom Italia Integrated Platform we can improve all communications in our community."*

After introducing company activities and the ***virtual world platform***, **Mr. Fabio Pasquazi (Nergal Consulting)** in **"Cultural Heritage improvement and virtual reality"** speaked about ICC Project (*Italian Institute of Culture*). *"In the 2007 Italian Ministry of Foreign Affairs committed to Panebarco Company and us the Virtual ICC management. The aim of group was to advertise our made in Italy and Italian cultural heritage using a virtual infrastructure (with 3D images, video and virtual tours)."* For Mr. Pasquazi *"the virtual museum is crucial: infact this can help us when it is not possible to set up a real musem because of little dimensions or unavailable staff."*

Roko Žarnić (University of Ljubljana) in ***"European cultural heritage - Identity Card: a challenge for Greece and Italy compared in the European framework"*** explained an european project called EU-CHIC (*Cultural Heritage Identity Card*) which fixed *"criteria and methods to collect and storage informations of all european artworks."* For Mr. Žarnić *"infra red thermograph technique used for material status analysis (like Byzantine Museum case) and its integration with GIS systems (like case of Rodi City) are positive effects of ICT applications in cultural heritage field, but we still have to define documentation protocols and procedures about information decision making."*

The second session ***"ICT at the Citizen service"*** was opened by Chairman **Mr. Carmelo Basso (Italian Ministry of Economic Development)**: *"By now we can notice how ICT is present in our life: security & safety, healthcare, law, education,..."* *"So ICT is also fundamental for Public Administration: infact the italian government action plan (called   e-gov 2012) defines projects of digital innovation to decrease costs of public authorities   (25 % expected by 2012)."*

Mr. Agostino Ragosa (Poste Italiane) in ***"An innovative firm case to the Country System service Un caso di azienda innovativa al servizio del Sistema Paese"*** introduced Company profile and main assets: Phisical Network, Logistic network and Multi Channel Access Network. *"This structure* – for Ragosa – *enables links between 11.000 postal offices using IP Broadband Network (Best Class),* 5 *Data Centers with storage memories of 1.000 TB and Data-warehouses systems serving 31 million of customers."* Poste Italiane Company is also involved in e-gov 2012 action plan: infact there are postal and financial operators dedicated to special services, like Digital Mailbox, Digital Sign e PEC (Certified E-Mail), passports, e-

commerce, Home Banking & Postepay. *"In this context – Mr. Gerosa continued – PosteGov Platform is very important, since it allows a multichannel access to traditional and new postal services, all integrated in Poste Italiane Valued Added Services (VAS). In this way the relationship between citizens and public institutions is more efficient."* Moreover, using PosteGov Platform we can delivery 800.000 Carte Acquisti, implement ELI Project (Immigrants Work Management) and create Digital MailBox."

Mrs. Rita Bizzoni (Acea) in ***"Technology and knowledge to the customer service"*** Focused on importance of an efficient Customer Care in a company like ACEA, with 13 Millions of customers for hydric services and 1,5 Million for energetic ones. *"For this reason – Mrs. Bizzoni specified – the contact with our clients is crucial*: Customer Care System manages around 2 Millions of calls and 1 Million of trouble tickets. Moreover, visitors of our web site are around 1,6 millions. Then we have to improve reengineering processes, investments in staff trainings and new Hi-Tech instruments able to support our work load."*

The speech ***"ICT in Society: adoption and diffusion"*** held by **Diamantis Kotoulas (OTE SA)** analyzed the slow diffusion of ICT in Europe: *"Introduction of these ICT solutions brings not only benefits to companies, government, society, global economy, but also real investment costs (still too much high), lack of infrastructures and difficult reengineering processes."* *"Until now – Mr. Kotoulas continued – we haven' t noticed a concrete collaboration between governments, private companies and citizens. We should use a methodology with a long term vision (think big), short term priority (start small) and efficient implementation (scale fast)."* After suggesting models for ICT diffusion and adoption, Mr. Kotoulas was sure that *"in any case ICT remains one of the instruments able to speeding up development".*

For **Mrs. Clara Pelaez (Ericsson)** in ***"The new city: innovation for citizens"*** ICT is also relevant for projects of CO$_2$ emissions reduction. *"Infact by 2050 it will be necessary to reduce carbon goblal emissions by 50-80% in all productive sectors (agriculture, energy, industry, buildings,). Only ICT contribution is around 15-20%."* About *"Smart Society – Smart City",* for Mrs. Pelaez *"by now every part of our modern city is connected to a network, allowing access to several digital services. For this reason ICT remains a factor key for a better life and a best citizenship."*

The Major and Vice Major of City of Veria (Greece) explained Hi-Tech National Projects defined by Greek Government and adopted by Municipality of Veria. "First of all – for Vice Major of Veria - Society of Information 2000-2006 action plan is focused on metropolitan network (MAN) in optical fiber, GIS systems, telematic systems for infomobility and platform for diffusion of digital contents. The second one called Digital Convergence 2007-2013 action plan, actually in progress, is related to systems for fire prevention, web TV, management and digitalization of cultural heritage contents, building web monitoring, integrated access to information, GIS applications and management of public contract. "Broadband Digital Park" and "systems for air monitoring in public buildings" action plans are going to be defined."

The third session ***"Broadband and Ultrabroadband deployment: how the financial support can be ensured in Europe?"*** was opened by Chairman **Prof. Francesco Vatalaro (University of Tor Vergata, Rome, and AGCOM - NGN Italia Group)**. For him *"it's very necessary to decide about the future of broadband*

networks in Italy and in Europe through a deep analysis of all technologic, economic and regulatory factors."*

Mr. George Georgiadis (OTE SA) in ***"Possible scenarios for broadband NGA systems"*** explained the approach chosen by Greek Ministry of Communications: *"Greek Government decided to develop an optical fiber network with open access and technologic neutrality, able to reach 2 millions of buildings in Athens, Thessalonik and other 52 cities."* *"Analyzing recent statistics – for Georgiadis - in the last four years we have noticed a great increase of request for broadband systems, although ADSL remains the only fixed network technology. For this reason it's necessary to develop FTTH solutions (Fiber to the Home) with open access and connection speed greater than 100 Mbps. A neutral entity, called EFODIA (National Optical Fiber Infrastructure): the main activity is to manage new TLC network without offering digital services to end users."*

"In Italy the TLC situation is quite different" – said **Mr. Romano Righetti (Wind)**.   Infact in ***"Possible scenarios for broadband NGA systems"*** he specified that *"in our Country we still must solve the question of unique, open and neutral TLC network, since every carrier deployed other broadband systems (wireless, xDSL,..) to offer their digital services. Since this happens for all carriers, the situation is very heterogeneous and complicated."* *"For this reason – Mr. Righetti ends - NGN Group, formed by AGCOM (Italian Agency for Communications Regolamention) and all players of ICT, has a strategic role to find the best solution."*

For **Mr. Kiriakos Vergos** (**Codium Networks SL**) in ***"A wireless perspective: is there a strong enough case for the deployment of 4G networks in Europe to thus generate the very necessary financial support?"*** *"the mobile broadband is a valid solution for a single network infrastructure: this is proved by 3 success case studies".*

Mr Georges Agapio speaking at the event.

Vergos underlined *"there are three key factors to enable development of mobile broadband: great increase of mobile data traffic, overload of 3G network capacity and investment costs not very high (in 4G the Capex investment is only 20% of the total, excluding license acquisition costs). Since demand of 4G devices is already there and supply too, it's necessary European Union defines financial support and strategic plans, first of all accelerating the process of distribution of the Digital Dividend and concluding the 2.6 GHz allocation program."*

After explaining the RSPG 2010 activities, **Mr. Roberto Viola (AGCOM, Italian Agency for Communications Regulamentation)** in ***"How to regulate new TLC Networks between competition and innovation"*** outlined the actual situation of television technologies. *"In our homes we can watch TV using many platforms: Internet TV (set-top-box integrated with internet access, contents*

(Continued from page 12)

recording and web computing), mobile TV (Mobile IPTV, on line virtual reality, social networking) and IP contents (banners and short clips). Regulamentation Agencies have to guarantee not only an open access but also competition rules."

For Mr. Viola *"the regulatory enablers factors are related to three areas: net neutrality and content access, access to smartphones API and DRM systems (Digital Right Management)."* About next future, for Mr Viola: *"it will be based on marriage between traditional TV and Internet, increase of set-top-boxes and PDAs. With an approach focused on policy and regulatory, we can enter in a new convergent world described by this slogan: think convergent-rule convergent."*

Mini Event Organisers.

The chairman of final round table **Mr. Gildo Campesato (Director of "Corriere delle Comunicazioni")** asked to partecipants *"which is the future of ICT in Greece and Italy."*

For **George Agapiou (OTE Research)** *"by 2010 Greece should complete deployment of FTTC solutions (Fiber To The Cabinet) and by 2012 FTTH systems (Fiber To The Home). But the main issue is related to regulatory models linked to Hi-Tech evolution."*

"The situation of ICT in Italy – for **Mr. Alessandro Alessandroni (Order of Engineers, Rome)** *– presents positive elements. Infact development of new technologies in our country has been improved by collaboration with Orders of Engineers and public institutions: in this way different professional experiences had the opportunity to match and to choose the best strategies. A real example is Digital Rome Project: based on private investments of 300 millions of euro for three years and more than 600 millions of euro in next years, the main purpose of the project is to create a real convergent ICT networks through the best fixed-mobile broadband technologies."*

FITCE President Mr. Andrea Penza closed the event, saying *"very important ICT contents and strategies have been explained. Thanks to all partecipants and I'll see you again in next FITCE initiatives."*

FITCE collaborates in a History of Telecommunications Conference: "*A Century of Broadcasting*"

According to the new initiatives that FITCE is working on, there is in agreement to collaborate in HISTELCON 2010: HISTory of TELecommunications CONference.

FITCE is a mature organization, created in 1961, that recognises the importance that the history of our profession has to develop our future. "Study the past if you would define the future", Confucius.

Histelcon 2010 is the second Conference that the Region 8 IEEE arranged. It is co-organized by the Spanish Association of Telecommunication Engineers (AEIT, the Spanish FITCE member) and the Technical University of Madrid (UPM).

It is sponsored by Telefónica, the leading telecommunications operator in the Spanish and Portuguese speaking world, and technically co-sponsored by the IEEE History Center, the IEEE Region 8 History Council, and the IEEE Spain Section.

The Congress theme is "A Century of Broadcasting", as year 2010 marks a series of historical milestones in relation to the birth of broadcasting a hundred years ago. The topics that can be included are related to the theme, although any other contributions to the field of History of Information and Communication Technologies will be very welcome. **The lasted date to present the abstracts is the 29th of March**.

The Congress will be held in Madrid during the 3rd and 5th of November 2010. All the information related to it can be find in http://www.aeit.es/histelcon2010.

It will be a very good opportunity for FITCE members to attend to HISTELCON to improve the networking and share information about our profession and interests.

We are looking forward to seeing you in Madrid and to participating actively in Histelcon 2010 presenting a paper related to our history.

(Continued from page 3)

Vision
There is a need for an independent international European organisation focussing on the ICT Professional and his/her needs for networking and knowledge transfer on the ICT developments
Mission
The mission of new FITCE is to act as a platform for networking and knowledge exchange between ITC Professional in Europe on ICT Developments
Goal
Main Goal of New FITCE is to organise yearly an international recognised high level Congress highlighting the ICT developments. The focus in the congress will be to cover a broad range of topics on (senior) management level, with a good mix of views coming from the academic world, the industry and the ICT service providers.
Second goal is to enable the knowledge transfer between its members.

49th FITCE CONGRESS
Galicia Conference and Exhibition Centre
Santiago de Compostela, Spain. 1-4th September 2010.

Call for Papers

Abstracts of proposed papers are now invited for the 49th European congress of FITCE. Submissions are welcome on any subject related to the congress themes – services and applications, networks and ICT transforming lives – and a non exhaustive list of suggested areas in shown below.

THEMES AND TOPICS
- E-Government, E-Health, E-Learning
- Applications & Services
- Emerging Business Models/ Changing Value chains
- Regulatory and Policy Issues
- Ambient-assisted living
- Network and Technology development
- New video communications and content distribution
- Spectrum Issues and the Digital Dividend
- Data and network security
- Fixed and mobile convergence
- Network and service management. Next Generation Networks

THE WAY OF SANTIAGO AND EUROPEAN TELECOMMUNICATIONS
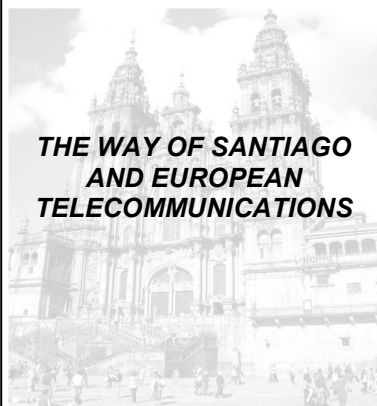
THEMES AND TOPICS
- Networks: Mesh, sensor, optical, metro,…
- Quality of Service and traffic control
- Sustainability: Energy, Smart Grid, Distributed Generation
- Internet of the things: wireless sensors, M2M, Future
- Digital World: HDTV, 3DTV....
- DRM (Digital Rights Management)
- Roaming the new ultrafast ways: applications and contents, cloud applications, grid computing.
- Telecommunications Infrastructures in buildings and offices.
- Rural Broadband Divide
- Other Telecommunications or ICT related Issues.

Please keep in mind that submissions that look at the applications and implications of technology and technology change will be welcome.

Submissions should contain:
- An abstract of 500 words (in English)
- A brief biography of the author(s)
- Full contact details (e-mail, phone, and postal address)

The papers will be selected on relevance and originality of content.

For submission of abstracts and further details see: http://www.fitce2010.org

Deadlines:
- Submission of abstracts via web portal by **30th March 2010**
- Authors will be advised of the outcome of paper selection **not later than 10th May 2010**
- The full text of the selected papers (max. 6 x A4 in English including illustration/ pictures) is required **not later than 10th June 2010**

Prizes of €500 will be awarded at the Congress for:
- Best Paper
- Best Presenter
- Best Young Presenter – one of the central aims of FITCE is to support young ICT professionals in their career development; a "Young Presenter" is one under 32 years of age on 5th September 2010

www.fitce2010.org

Congress 2010 Themes and Topics

THEMES AND TOPICS

- **E-Government, E-Health, E-Learning**

- **Applications & Services**

- **Emerging Business Models/Changing Value chains**

- **Regulatory and Policy Issues**

- **Ambient-assisted living**

- **Network and Technology   development**

- **New video communications and content distribution**

- **Spectrum Issues and the Digital Dividend**

- **Data and network security**

- **Fixed and mobile convergence**

- **Network and service management. Next Generation Networks**

- **Networks: Mesh, sensor, optical, metro,…**

- **Quality of Service and traffic control**

- **Sustainability: Energy, Smart Grid, Distributed Generation**

- **Internet of the things: wireless sensors, M2M, Future**

- **Digital World: HDTV, 3DTV….**

- **DRM (Digital Rights Management)**

- **Roaming the new ultrafast ways: applications and contents, cloud applications, grid computing.**

- **Telecommunications Infrastructures in buildings and offices.**

- **Rural Broadband Divide**

- **Other Telecommunications or ICT related Issue**

FITCE values and Aims

1. Keeping in touch with leading edge ICT developments.
2. Ensuring that our Members benefit from the experience acquired by other Members in all ICT fields.
3. Building strong cultural and business ties between European ICT Professionals.
4. Ensuring that Young Professionals are able to use FITCE as a valued resource in their career development.