FITCE Forum

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Newsletter of the Federation of Telecommunications Engineers of the European Union

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Congress 2002—centre stage in Genoa

As this edition of *FITCE Forum* is being compiled, the organisation of the 41st FITCE Congress being held from 4–7 September in Genoa, Italy, is in full swing. The Congress has been organised on behalf of FITCE by AIIT (Associazione Italiana Ingegneri di Telecomunicazioni) in cooperation with IIC (Istituto Internazionale delle Comunicazioni).

Participants in the Congress will enjoy an excellent technical programme on the theme 'Evolving Networks: Service Opportunities and Market Realities'. The International Technical Committee, under the chairmanship of Guido Vannucchi, had a hard job to make the final selection of papers for the Congress from over 90 very interesting abstracts received. The committee selected 43 papers grouped into three main sessions: 'From Circuit-Switched to IP-Based Networks: Risks and Opportunities,' 'Broadband Solutions for the Last Mile to the Residential Customers' and 'Mobile Communication in the Future'. Each of these sessions is to be introduced by a keynote speaker: Peter Walker, Technical Director of Oftel, UK; Claudio Carrelli, Director of EURESCOM; and Dr. Atsushi Murase, President and CEO of DoCoMo Communications Laboratories Europe. Each session will close with a round table discussion.

Thanks to the efforts of our Italian colleagues and the AIIT many sponsors have been convinced of the added value of the Congress. No less than 24 companies have come forward as sponsors:

- *Platinum Sponsors*: Alcatel, Italtel, Marconi, Siemens Mobile, Telecom Italia, TIM and Vodafone Omnitel.
- *Gold Sponsors*: Edisontel, Ericsson together with Sony Ericsson, Lucent Technologies, Pirelli, Sirti and Wind.
- *Silver Sponsors*: Alpitel, Atlanet, Autostrade, CIET, Intelfin, Optotec, Elitel, SELTA, Telecomponeti, and Tratos Cavi.

An important and valuable part of our Congresses is the social programme, and delegates and accompanying persons visiting Genoa will have many opportunities to meet one another, renew old and build new relationships, and at the same time enjoy interesting events in the beautiful city of Genoa.

As in the previous four years, the printed Proceedings for the Congress is being produced to professional standards in cooperation with UK colleagues. The Communications Network (formerly known as the Institution of British Telecommunications Engineers (IBTE)) is managing the editing and production of the Congress Proceedings on our behalf, and it is interesting to note that FITCE in the UK and this organisation have recently become even closer, with FITCE UK becoming a part of The Communications Network.

We hope to include reports from the Congress in the next issue of the *Forum*. If you are one of the participants, do please write and tell us about your experiences of the Congress and send us your photographs—we will consider printing suitable contributions within these pages (send your articles to forum@fitce.org). We hope also to include photographs from the Congress on the FITCE web site—www.fitce.org—so please visit this site often and enjoy images of FITCE in Genoa 2002!

While the Genoa Congress is very much in the focus of our minds, already we are starting to think about the 42nd Congress in Berlin in 2003. On page 8 of this issue of the *Forum* you can read some advanced information about this event.

For information on FITCE Congresses, visit www.fitce.org

FITCE Forum

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FITCE President José Van Ooteghem (left) with Peter Walker (centre) and Chris Earnshaw at the launch of The Communications Network

FITCE President speaks at London launch event

On 3 May 2002, at a special event at the world-famous Savoy Hotel in London, the Institution of British Telecommunications Engineers was relaunched as The Communications Network. The launch signified the organisation's positioning as a cross-industry body serving the self-development needs of everyone working in the broad communications industry in the UK.

In recognition of the recent alignment of FITCE UK with The Communications Network, FITCE President José Van Ooteghem was invited by The Communications Network Council to give one of the official speeches at the event. Other speeches were given by Chris Earnshaw, President of The Communications Network and of FITCE UK, and BT Group Engineering Director and Chief Technology Officer; and Peter Walker, Vice-President of FITCE UK and Technology Director of Oftel, UK.

In his speech José gave his perspective of the merger, congratulating the two organisations on this very significant move forward. Said José: 'The founding of this new organisation, open to all UK players in the communications industry, is the right way forward and one which I promote among the other national FITCE associations.'

FITCE UK will operate as a special national grouping within The Communications Network, effectively becoming its European arm. Membership of FITCE in the UK will be through membership of The Communications Network.

Developing QoS standards for Internet access

The European Telecommunications Standards Institute (ETSI) is about to commence work on the production of a standard for quality-of-service (QoS) parameters for Internet access. FITCE Members will have an opportunity to contribute in this exercise, writes Antony Oodan, delegate to the ETSI Speech Transmission and Quality (STQ) technical sub group and User Group and Member of FITCE UK.

The Internet has become an essential part of telecommunications. Today, email, web browsing and e-commerce are day-to-day necessities for the majority of businesses. However, there are no mandatory quality-of-service (QoS) parameters for any of the service providers to report Internet performance. In a research programme carried out in year 2000, Bannock, the consulting company who was awarded a contract by the European Commission, came up with 21 QoS criteria, which they said are relevant to customers for Internet Access. However, these parameters were not customer validated. They were developed with a limited number of interviews with service providers and other pertinent bodies. Whilst it is safe to assume that these could broadly represent user concerns, a standardising body would be unwise to take these and proceed with standardisation without evidence of customer validation.

Some work has also been carried out by the standards body CEN in identifying criteria on which the ISPs could indicate what their offerings are suited for. Again this was an office exercise. Without customer validation it is little more than speculation whether these criteria represent customer's real concerns.

The ETSI User Group in conjunction with Speech Transmission and Quality (STQ) technical sub group has earmarked resources in the next 18 months to identify customer-related QoS criteria, define these in terms of parameters and specify methods of measurements and methods of presentation of results. This document, when published, could be used by the European Commission to issue a directive requiring ISPs of European member countries to report delivered quality. Such data would be of direct benefit to users.

The methodology planned is on the following lines:

- A review of work carried out to date on QoS parameters pertinent to uses will be carried out.
- Interviews, workshops, focus groups and discussions with user groups will be carried out in as many as six countries in Europe to obtain an understanding of user's QoS criteria which are of concern.
- Conclusions will be drawn from these discussions and a list of QoS criteria will be drawn up. These will include the following aspects:
  —whether there are uniquely identifiable groups with unique QoS requirements,
  —the preferred order of priority of QoS criteria, and
  —the preferred range of performance values.
- Validation on a sample of population in Europe. Selection of samples will be from users of the Internet. Examples of such groups are FITCE membership, user group membership such as CMA, TUA, other members of INTUG, chamber of commerce and other similar groups.

Analysis of customer-validated information should enable the following information to be obtained: *Statistically significant QoS criteria customers are most concerned with for Internet access.*

It is expected that these would be classified according to email, web browsing and e-commerce. However, these classifications may be revised during the course of the study as and when any relevant trends show up.

This information would enable the STQ to formulate the most important parameters for the main Internet access, if necessary along the lines of email, web browsing and e-commerce. The ETSI standard would be available for comment and later for adoption as standard for use within the European member countries.

As the FITCE membership covers the main European member countries this would be a very useful population sample to carry out the survey. Subject to agreement by FITCE CD all members will be invited to take part in the customer validation. This is expected in the first half of 2003. The final report is scheduled for August 2003 and adoption of the report by December 2003. ETSI STQ will attempt to define parameters as a parallel exercise and by early 2004 there ought to be an ETSI document (perhaps a standard) for QoS parameters for Internet access.

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UMTS: 3G mobile communication system

A summary of four FITCE Belgium and SITEL UMTS lunch sessions

by Prof. Dr. ir. Leo Van Biesen
(Vrije Universiteit Brussel)

Introduction

The primary aim of third-generation mobile communications systems, referred to in Europe as UMTS, is to achieve convergence between the mobile and the Internet environments by offering a broad range of high-quality and high-speed mobile multimedia services.

FITCE Belgium, together with SITEL, organised four lunch sessions that offered a unique opportunity to familiarise with a broad range of concepts associated with these new emerging telecommunications systems. The lunch sessions were held in Brussels between November 2001 and February 2002 and were aimed towards technical and marketing people. An attendance of more than 40 participants per lecture illustrates the success of the FITCE and SITEL initiative. This article summarises a more complete synthesis of the four sessions which is available on www.fitce.be.

Enhancements in 3G mobile systems

The first generation in mobile networks based on cells used analogue voice communications. A common feature in the second generation is digital communication, both for voice and data at low speed (9.6 kbit/s). Examples are the well-known and popular GSM (with some limited extra features such as SMS), the TDMA solution in IS-136, the CDMA solution in IS-95 or the Pacific/Japanese digital cellular.

The author: Prof. Dr. ir. Leo Van Biesen

The third-generation groups of mobile services will allow multimedia applications and mobile Internet at relatively high speeds (2 Mbit/s). UMTS (Universal Mobile Telecommunications System) and IMT-2000 (International Mobile Telecommunications) are 3G systems. Five different standards are foreseen. The UMTS in Europe will be implemented using UTRAN (UMTS terrestrial radio access network), which has two modes of operation (UTRA-FDD, which is compatible with IMT-DS (direct sequence) and UTRA-TDD, which is equal to IMT-TC (time code)).

In transition from 2G to 3G enhancements to 2G have already been made. Examples are the wireless application protocol (WAP), short-distance connectivity using Bluetooth (2.45 GHz spread spectrum link), CAMEL (customised application for mobile enhanced logic), EDGE (enhanced date rates for GSM evolution, allowing data rates up to 384 kbit/s), GPRS (general packet radio services), etc.

The major enhancements to be expected from third-generation mobile services are directly linked to the new kind of services, which will be offered:

- *communication services:* enhanced voice quality, fax, e-messaging;
- *information services:* news, weather reports, sports information, lottery results, stock exchange, etc.;
- *financial services:* on-line banking and shopping, ticketing, electronic payments;
- *business services:* virtual office, corporate Internet, etc.;
- *entertainment services:* video and music on demand, electronic games;
- *transport-related services:* in-car real-time navigation (GPS), traffic information, etc.

UMTS architecture and protocols

The evolution towards packet switching (PS) reached the realm of mobile cellular systems with the creation of packet-switched GSM or GPRS. The GPRS network uses IP routers with statistical multiplexing. The important revolution in mobile networks, therefore, should be considered to be the implementation of GPRS in GSM core networks, whereas UMTS or 3G are a straightforward evolution of GPRS!

The revolution of GPRS can be described by the fact that a user is constantly connected to the network (always on), which is very suitable, for example, for email services or web browsing. New also is the way of tariff charging per volume, instead of per connection or time duration of a connection. The noticeable increase in data rate compared to classical GSM is also appreciated by customers, together with the fact that one remains reachable while surfing, as is the case with ISDN in the local access loop. With UMTS the user will enjoy all the advantages of GPRS but at a still higher throughput (in theory up to 2 Mbit/s).

With respect to the implementation of 3G mobile networks, the world-wide differences relate to the pre-

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FITCE Belgium and SITEL UMTS lectures

The first lecture was a technical '*Introduction to UMTS*' presented by J-P Pirlot of the BIPT (Belgian Institute for Postal Services and Telecommunications).

In the second session, M. Recinella of Telindus shared the views of an '*UMTS Integrator*'. He addressed the successive steps in the resources to build or to migrate to UMTS. Special attention was also given towards the site acquisition and site sharing problems and the current status in Belgium of the sites.

The third session was a panel discussion in which the three licensed operators in Belgium had the opportunity to answer questions about the current state of the deployment of the operations, their preferences or choices for hardware manufacturers and about their testing facilities and experiences. The panel discussion was preceded by presentations by the representatives of the Belgian operators (O. Vandenbulck for Mobistar, L. Claus for Proximus (Belgacom Mobile) and E. Rijks for KPN Orange (now Base)).

During the final lunch session some views of content and media contributors were collected, stressing problems with respect of how to use UMTS as a new medium, to share some forecasts on new interactive media and to inform on copyright issues. Speakers were B. Tuyteleers of Tele Atlas and M. Lauwers of Siemens.

J-P Pirlot of the BIPT (Belgian Institute for Postal Services and Telecommunications) presenting 'Introduction to UMTS'

ferred radio access technologies: BRAN (radio access network), SRAN (satellite radio access), GERAN (GPRS/EDGE radio access network), CDMA 2000 (multicarrier) or UTRAN. Almost all European operators prefer the last of these. The 3G implementation of radio access technologies is depicted in Figure 1.

The interworking functions either use GSM evolution as the core network, GPRS with Internet protocol or, if no GSM MAP messaging is foreseen such as for some providers in the US, the ANSI-41 core network.

In UTRAN, the preferred European radio network, the user equipment will consist of the mobile unit (handset) in which a new universal subscriber identity module (USIM) will have to be placed. This USIM will have twice as much RAM as the SIM in GSM (64 kbyte), will be backwards compatible with SIM (the USIM will not work in GSM phones, but a GSM SIM card will operate in 3G/UMTS devices) and will allow global roaming and multiple network access (for example, with a USIM smartcard, the three future 3G UMTS providers in Belgium will be accessible).

The interconnectivity between the core network and the user equipment is shown in Figure 2. The radio network subsystem consists of radio network controllers (RNCs) connected to base stations (Node B). When compared to the GSM core networks, one observes that in UTRAN the base station controllers (BSCs) have interfacing between each other too.

New features and technologies have been selected for the digital communication in UMTS. An important key player undoubtedly is code division multiple access (CDMA) and the application of the latter using spread spectrum techniques. It can be shown from theoretical studies that CDMA (as will be used in UMTS) has some important advantages when compared to time domain multiple access (TDMA, as is used in the actual GSM for each allocated frequency channel). Worth mentioning are:

- flexible services: bit rates, quality of service (QoS), delays, packets;
- bandwidth on demand;
- the spectrum efficiency and frequency planning;
- the robustness against interference and an enhanced resistance against multipath reflections; and
- the soft way of handover, due to base-station diversity, without the usage of interrupts as is the case in GSM.

In UMTS, users in a cell occupy both the entire allocated frequency and time domain. The distinction between the users is done through the use of unique codes. Codes of other users appear as noise that can be partly suppressed by the receiver at the base station. But not all interference can be suppressed, especially if high-data-rate users are located at the edge of a cell.

An important change in the radio link for UMTS, furthermore, is the spectral assignment of frequencies and bandwidth. The spectrum usage of UMTS, when compared to GSM is sketched in Figure 3.

The primary GSM (P-GSM) in the 900 MHz band has been extended first with 50 extra channels to yield the extended global system for mobile communications (E-GSM), whereas the 1800 MHz band, referred to as the *dual band* GSM in many locations worldwide, occupies the radio spectrum just below a window allocated to some DECT (digital European cordless telephone) applications. Note that the 1900 MHz band allocated to GSM in the USA (known as the *third band*, hence *tri-band* GSM) is not shown in Figure 3. MSS in Figure 3 indicates mobile satellite services, TDD refers to time division duplex and FDD to frequency division duplex, with an offset of 190 MHz.

Regulatory aspects for UMTS in Belgium

The regulatory and legal aspects of UMTS deployment concern the following issues: spectrum licensing, telecom numbering, tariffs, interconnection and roll-out of mobile networks.

In March 2001, three 3G (UMTS) licences were attributed through auction:

- Licence A (€150.2 million): Belgacom Mobile;
- Licence B (€150 million): KPN Mobile;
- Licence D (€150 million): Mobistar.

The spectral occupancy of the licences (licence C is not attributed) in Belgium is depicted in Figure 4.

Since telecommunications numbers are scarce resources, some legal actions have been ordered in Belgium related to numbering issues. A national numbering plan was established which attributes the prefix number 04XX to the mobile services. Next, mobile number portability will be operational from 2002 on.

The licencees are required to launch commercial services within a period of 18 months, with coverage objec-

Lunch lectures on important industry topics are a popular aspect of FITCE Belgium

Figure 1: Implementation of 3G mobile networks

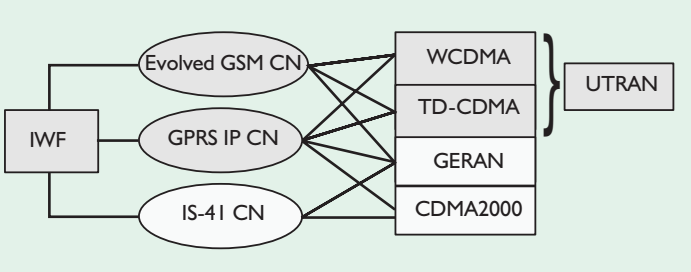
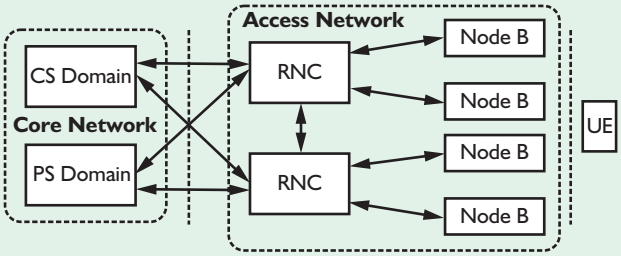


Figure 2: Interconnection scheme between the core network with either circuit-switched (CS) or packed-switched (PS) domains, the access network and the user equipment (UE)



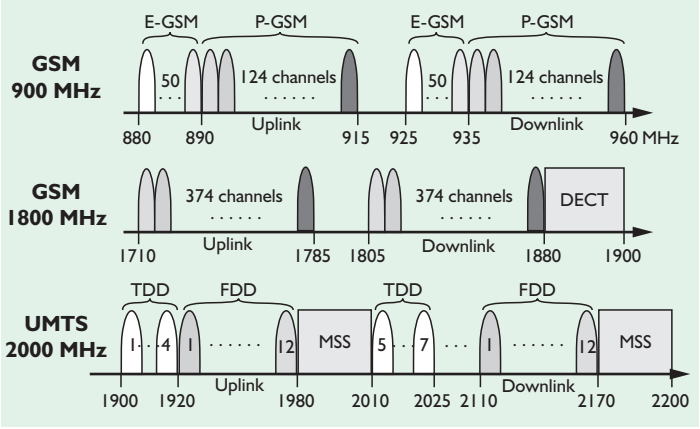


Figure 3: Spectral management of UMTS compared to the European GSM bands

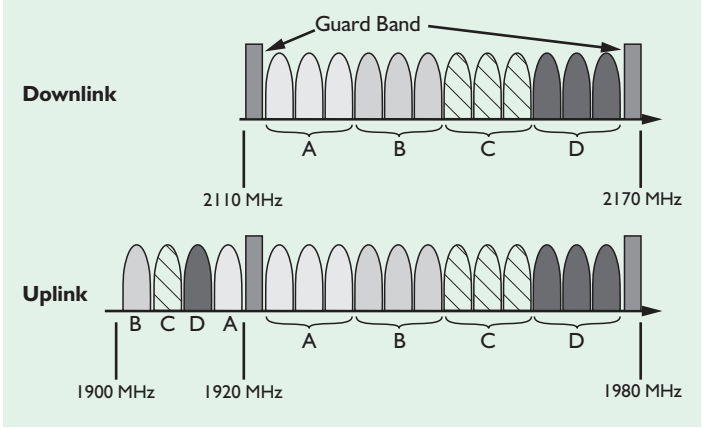


Figure 4: Spectral allocation for 3G services to the different licensees in Belgium

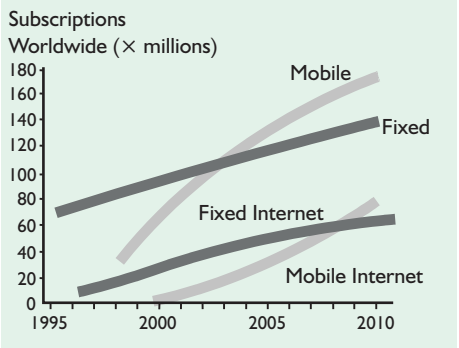
4 tives of 30% in year 3, 40% the year after and 50% in year 5. However, during the UMTS lunch sessions, it became clear from the Belgian operators that some delays can be expected.

Commerical aspects of 3G deployment in Belgium

Several sources forecast global revenues of mobile commerce. Taking the lowest figure of the available forecasts for 2003 into account, a worldwide revenue of US$ 13 billion is to be expected (Analysys). However, forecasts in telecommunications matters are very difficult to make. WAP, for example, has been forecasted and carefully planned, but has up-to-now not generated a serious breakthrough. SMS (short message service), on the contrary, was not as such forecasted to yield success, but has gained an important market share due to youngsters, who prefer this communication medium over voice.

The worldwide expected number of mobile subscriptions (source: Siemens) is shown in Figure 5. Following this forecast, the number of fixed and mobile users will be equal from 2003 onwards, whereas after that the number of mobile users will grow faster than that of fixed-line users. With respect to Internet usage, the crossing of both curves is expected to take place in 2008. All mobile operators agree that the number of mobile clients will increase at a rate much higher than is the case for fixed users.

Figure 5: Expected worldwide mobile subscriptions



Planning in 3G is totally different from that in for example 2G. Marketing, engineering and finance functions have now to work closer together in an integrated fashion. An important difference in network planning for UMTS compared with GSM is the fact that geographical coverage and capacity (by cells) no longer can be regarded as being independent design parameters. This is because of the use of wideband code division multiple access (WCDMA), where all users in a cell share the same time and frequency resources and the same power amplifier with respect to the transmitter. The transmission range—and hence the size of a cell—of a Node B (equivalent to BSC in GSM, see Figure 2) depends on the loading of the cell, which is referred to as *cell breathing*. This is mainly due to the inter-user interference, which is typical for a CDMA system. This interference increases with the number of simultaneous users. To maximise the capacity in a cell, and hence to maximise the reachable data transmission rate, the transmitted power should be reduced and minimised.

The planning of a network for UMTS deployment consists of three distinct steps, according to Telindus:

1 a static analysis considering the general outline;
2 a static (Monte Carlo based) analysis and dynamic simulations; and
3 time and space dynamic simulations.

The first step defines the different types or classes of services in terms of the obtainable data rate, the unavoidable generated delay, the reachable bit error rate (BER) and the quality of service (QoS). With these the local distribution of the types of services in the region to be covered can be determined, and, hence, budget calculations, for example considering 50–80% loading of the cells, can be linked. In this phase, sites have to be identified; that is, investigations have to be made to see whether existing GSM sites can be used or if new ones have to be acquired.

In the second step, simulations have to be made to investigate the quality of different services at different locations, and this also as a function of time. Statistics on performance will have to be generated; for example, the effective data rate, information on dropouts, reachable coverage, etc. In this step, service availability and quality of service have to be measured from field trials.

In the final phase, time dynamic simulations are proposed to investigate the performance of a population of moving mobiles over a period of time. Special attention has to be paid to investigate the handover parameters and the attained performance of the network. From these, physical site parameters can be derived, such as height, tilt, azimuth with respect to the site location and some radio frequency parameters (frequency and capacity planning, handover regions, etc.).

In Belgium, site sharing is required by law. Operators are obliged to share their own sites with interested competitors. Compensation will be based on the real cost for the acquisition, the construction, and the maintenance added with a percentage to compensate for the invested capital. The operator requesting a building permit for a site must first verify whether other operators are also interested in that particular site; and, if that is the case, then site sharing has to be foreseen in the design of the site. All operators must develop a common database containing all existing sites and sites which are under development. The Belgian Institute for Postal Services and Telecommunications (BIPT), again, will act as arbiter in all these matters.

Riding the waves of economic and technological growth

by Patrick van der Duin
(KPN Research/ Technical University of Delft)

In current times, where after years of economic prosperity and optimistic future visions, the phrase 'economic recession' often appears in the media. However, we are still witnessing dynamic technological growth. History has shown that technological and economic development are mostly in the same direction. Patrick van der Duin, from KPN Research/Technical University of Delft, takes a closer look at how we can link economic and technological developments to each other.

Economy and technology: three levels

The first question that immediately arises is which of the two developments, economic or technological, is the dominant one. Some people might say that this is not an interesting question because this relationship is always changing. Although I think that they have a point, I still want to consider the impact of technological developments on the economy because it played a significant role in the 'rise and fall' of the New Economy.

This relationship has three levels:

1 *Macro*: what influence do technological developments have on macro-economic indicators such as inflation and GNP?
2 *Meso*: how do technological developments influence the economic behaviour of companies and what strategy do they follow towards innovation?
3 *Micro*: how do people and employees relate to technological developments?

Ad 1) The history of economic thought clearly shows that in the beginning not only technology had a great impact on economical developments but also technology was something outside of the economic system. The physiocrats, a group of French economists living in the seventeenth and eighteenth centuries who held the opinion that agriculture was the sole source of economic growth, saw technology as a kind of 'deus ex machina'. Karl Marx was of the opinion that economy and society heavily leant on technology. Technology in his sense was viewed as a black box; that is, Marx wasn't interested in technology as such, but only in the consequences of technology on the economy and the well-being of people. Adam Smith, who just as Marx considered technology to be a very important driver for the growth of the economy, was more interested in technology as such. In his famous book *The Wealth of Nations*, he extensively describes a pin factory as an example of the division of labour and the implementation of new technology that spurs economic growth.

Ad 2) Joseph Schumpeter was one of the first economists to assign a central role to the entrepreneur in promoting technological growth and boosting innovation within firms. He also considered technology not as something outside the economic sphere: 'As soon, however, as an invention is put into business practice, we have a process which arises from, and is an element of, the economic life of its time, and not something which acts on it from without. In no case, therefore, is invention an external factor.' (*Business Cycles*, 1964).

Ad 3) Technology is ultimately a people's thing. People decide if and how they will make use of technology in their working environment and which products and services they will buy. Although people are not always free in this decision, in the long run they shape the course of technological developments, something that marketeers view as the cornerstone of their science and practice.

The rise of ICT has changed the way companies are doing business and the relationships they have with each other. But that doesn't take away the feeling that despite these changes the situation hasn't improved a lot.

Imbalance at three levels

So let us now view from these three standpoints the current imbalance between technological and economical developments.

Macro: It seems that the current rate of high technological growth doesn't translate itself directly into higher economic growth rates. Rapid developments in information and communication technology (ICT) don't pay-off immediately. The service sector uses a lot of new ICT applications and particularly in this sector it is difficult to attain higher productivity growth rates. However, almost every government stresses the importance of investing in new technologies as it promises economic growth in the future. History has shown that this might ultimately be true although this might take some time. For example, the invention and diffusion of the automobile didn't lead to considerable economic growth in the short run. So investing in technological developments is indeed investing in the future.

Meso: Technology has changed the way of doing business considerably during recent years. In particular, the rise of ICT has changed the way companies are doing business and the relationships they have with each other. But that doesn't take away the feeling that despite these changes the situation hasn't improved a lot. It looks as if new ICT applications take away some problems and at the same time create new problems. Especially, the Internet seems an example of a new technology that has undoubtedly brought about some advantages. However, at the same time a lot of companies and their employees still ask themselves what is really the big advantage of

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6 the Internet and when will the Internet fulfil its big expectations for them.

Micro: The connection between economical and technological growth seems to be the strongest at the level of consumers. Consumers have witnessed a big growth in their income during the past few years and at the same time they have seen a dynamic growth in the use of mobile phones, PDAs and the Internet. But despite these facts the discussion around UMTS and its future role shows that on this level there also is a lot of uncertainty.

Some conclusions

Based on the three levels mentioned above I give three possible explanations for the current imbalance between the dynamic technological growth and the lagging economic growth.

1 *Macro*: Keynes once said that in the long run we're all dead. The same thing seems valid for the relationship between economical and technological growth; history has shown that imbalances between these two phenomena have occurred before, although not often and that it takes some time before the two follow the same track again. So at the macro level, time is the medicine and governments should be reluctant in trying to match these two as soon as possible because that will only delay the process.

2 *Meso*: Several studies have shown that companies with an innovative strategy perform better than companies without such a strategy when one looks at profit rates, turnover or stock prices. So slowing down investments in ICT is not such a good idea. Rather it is advisable to continue the current level of investments in ICT, to learn from mistakes and to align the ICT functionality as close as possible to the organisation, the needs of employees and other business practices.

3 *Micro*: for all marketers, ICT specialists, CEOs and other managers the lesson to be learned is to keep listening to consumers and their demands and wishes. Ultimately, the key to business success is the fulfilment of the needs of consumers. Only by doing this can one cope with the uncertainty that comes from sudden changes in the tastes of consumers.

Would you like to contribute an article to the FITCE Forum? Articles on topics of interest to European telecommunications professional are welcome. Please contact the editor at forum@fitce.org

The broadband illusion

Since the early 1980s the concept of broadband services has been raised several times. It started with videotext and teletex type of services. Governments of several countries have spent hundreds of millions of Euros on trials which, apart from the French Minitel project, were unsuccessful. Also money-devouring projects in the European RACE arena have resulted in nothing substantial.

ISDN is a nice technical concept but experience has learned that customers are not interested when they have to pay more for the same and do not need the extras. Germany is the only country where ISDN has really penetrated because Deutsche Telekom just took the costs and did not give the choice. In most other countries ISDN was saved by the bell when residential Internet users who wanted just a bit more speed than an analogue telephone line could provide embraced it.

Field trials with cable modems organised by the cable television distribution companies were unsuccessful while introductions of the DSL concepts are rather slow.

One can point at a number of reasons:

- Incumbents are not too eager to share the last mile with other operators. Local loop unbundling is still a hot topic.
- Incumbents as converged service providers (combined infrastructure, service and information provider) will not work because the staff skill sets available do not match the market requirements, at least not at present. That means that to be successful incumbents have to partner with specialist companies. This creates issues like customer ownership and revenue sharing.
- Cable TV companies have mainly one-way distribution networks which with additional investments can be upgraded to two-way purpose but it has hardly been done. Apart from that, the TV set is unsuitable for computer use and vice versa and they normally are in the wrong places.
- Marketeers are on cloud nine. Fortune tellers in cable companies and the IP industry have predicted huge customer needs for pay-TV, shopping and other interactive applications via the TV set, apart from specialised movie packages (sports, pornography, etc.). Given the results of these companies it is clear that the public does not want these facilities, especially not when they have to pay for additional subscriptions and usage.

We now hear the almost science fiction type stories of remotely controlled houses with respect to heating, security, refrigerators that automatically do their own inventory and call the supermarket to refill the stock (it is always filled but often with the wrong goodies) and more of that stuff. In the infotainment area it is expected that the downloading of multimedia will see a boost.

The reality is that there will be some people interested and prepared to pay for these type of services. These are the so-called early adopters, the freaks, the trendiest, the perverts† and the rich. Unfortunately they do not form a market segment that is large enough to support the necessary investments and operations to run these services. It has been proven time and again that the mass public is not (yet) interested:

- They do not need it or mistrust it
- They are not prepared to shift money from one budget post to another because money remains a scarce resource.
- Still large parts of the public do not have access to the Internet or do not use it at all. (Less than 50% of the world population has access to telephone service and less than 10% is online). Even in Western Europe a large part of the population does not use the Internet yet.

Of course there will be private or business (SOHO) customers with broadband requirements. They have to realise that these services can and will be provided under the conditions of the 'Newest Economy' concept*. This means that the provider must make a profit and therefore the user has to pay the price. Private customers must make the evaluation if they want to spend their money on more and better entertainment; business users must make business cases to see if their business results will be better by using the applications offered by broadband. In time these services will develop but it will take decades instead of years.

Looking at the history of telecommunications the following rule can be recognised: *The introduction of interactive services lasts at least ten times longer then the introduction of broadcast services.*

With that in mind there is good hope for broadband but not tomorrow.

Jos Gerrese
(GANESHA consult, The Netherlands)

† It was stated in an article in *Communications International* that about 50% of the total volume of Internet traffic is pornographic content.

* See *FITCE Forum*, April 2002.

ADVANCE INFORMATION

42nd EUROPEAN TELECOMMUNICATIONS CONGRESS

Berlin, 4–6 September 2003

Deutsche Telekom's Representative Office in Germany's Capital City

A warm welcome

We are delighted to welcome you all to the 42nd European Telecommunications Congress 2003 in Berlin.

This Congress will bring you up to date with the latest mobile communications innovations and broadband business trends in Europe's telecommunications markets.

We would like all of you to join us in sharing our first experiences of the new UMTS era.

Take part, learn about new business models and strengthen the network that binds our members together across European boundaries.

Welcome to Berlin in 2003.

Guntram Kraus
FITCE Group Germany

Evolving communications in an evolving city

'Evolving Communications: Making human dreams real' is the provisional theme for the FITCE Congress in Berlin, 2003. The Congress will focus on mobile (UMTS) and fixed (DSL) broadband applications, including the underlying technologies, as well as the associated Internet applications and their market prospects.

Outside the Congress you will have the opportunity to experience the city of Berlin—a capital city rich in symbolism, where the tides of German history and the unification of East and West have left visible marks.

During your stay you will be able to discover the numerous streets, squares and sights of Berlin, whose fascinating history bring this cosmopolitan city to life.

Europe's largest building site, Berlin is the city that never stands still and is constantly evolving. Where is the new Berlin heading to?

Find out how past, present and future converge and sometimes clash in 21st century Berlin.

Embracing change and shaping the future

In the centre of Berlin, where East meets West, Deutsche Telekom's Representative Office has becom a forum in which innovative visions for the future are brought to life.

Once it has been fully restored and redeveloped, the building will link the future with the past in a very special way—utilising the world of interactive media and the evolution of forward-thinking technologies.

Deutsche Telekom's Berlin base has been conceived as a forum for the future. In terms of aesthetic appeal and technological infrastructure, the building provides the perfect setting for the FITCE Congress in 2003.

Deutsche Telekom's Representative Office

Further information

From September 2002, you will be able to find the latest information and registration details for the Berlin Congress at:

www.fitce.org

This Congress 2003 web site will be updated regularly as new information becomes available. So please make sure you visit us often!

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