Global
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New Format at GLOBECOM '99

By J. Roberto B. de Marca, Brazil

The field of communications has been exploding in recent years and it has become probably the most lucrative business in the world. The global trend to privatization has brought several new business players to the communication and networking game. This new level of impact and relevance to society has brought increased press coverage and an enormous growth in number and size of events dealing with communications. However, ComSoc's two premier conferences (ICC and GLOBECOM) have not shown a similar growth. Actually, attendance at these two events has held at a steady level for the past three or four years. There is conjecture about the different causes responsible for this lack of growth. One of them is that nowadays engineers have less interest in attending broad scope conferences. They would rather go to a meeting solely dedicated to their topic of specialty. It seems that the same preference is shared by managers who more easily approve a trip to a symposium where all the sections address topics closely related to the work they are responsible for. This perception has prompted the ComSoc Board of Governors to direct the Meetings and Conferences Dept. to make the transition to a concept where GLOBECOM and ICC could be seen as a collection of topical symposia. GLOBECOM '99, to be held in Rio de Janeiro, 5–9 December, will be the first conference implementing this new model.

GLOBECOM '99 will be composed of eight symposia and one broad scope event, known as the General Conference (Chair: E. Sousa). This last event is similar in scope, but not in size, to the current GLOBECOM format for technical sessions. The eight topical Symposia were conceived to address topics which are extremely current, namely: Access Networking (Chair: S. Weinstein), High Speed Networks (Chair: M. Karol), Internet Applications and Technology (Chair: S. Jamin), Multimedia Services and Technology Issues (Chair: C. Judice), Future Wireless Systems (Chair: H. Bertoni), Enterprise Application and Services (Chair: L. Cerchio), Communication Theory (Chair: E. Biglieri) and Advanced Signal Processing for Communications (Chair: J. Elmirghani). These symposia in some ways can be seen as an evolution of the mini-conferences held at the last GLOBECOMs as an addition to the regular technical program. However there are new features that should make the symposia more attractive and easier to attend. First, a single registration fee will allow a participant to roam through all the symposia as well as attend sessions in the General Conference, in summary one fee buys the whole package. Today separate registration fees are charged for the general conference and for each mini-conference. The technical program of each symposium will also feature tutorials, workshops and services and application (SAS) sessions. Today tutorials and the other special sessions are organized separately, yielding a program less cohesive with higher likelihood of scheduling conflicts.

A special word should be said about SAS sessions. Another objection which is frequently voiced concerning ICC and GLOBECOM is a possibly too strong academic emphasis. SAS sessions were created to correct this shortcoming. Their objective is to feature topnotch industrial and technological leaders addressing topics of great interest from a business perspective. The GLOBECOM '99 Executive Committee is devoting great care to present an outstanding lineup of SAS sessions across all symposia.

I wish all the readers of this newsletter a very successful 1999 which includes at its latter part a trip to beautiful Rio de Janeiro to attend GLOBECOM. Do not miss the chance to participate at this revitalized leading edge conference!

Student Activities in Beijing Chapter

By Y. X. Zhong, China

In 1998, the ComSoc Chapter, Beijing Section, made more efforts to attract graduate and undergraduate students, and this proved successful. The Chapter organized a lecture in memory of the 50th anniversary of Shannon Information Theory. Many students attended the meeting and expressed much appreciation because, as some said, they felt this was a good opportunity to get to know many outstanding people and learn outside the classroom. Particularly, they gained more knowledge about the advancements in information theory, as well as new challenges to this theory. This provided great motivation to their own learning and studies.

In October, newly elected IEE President Dr. John Taylor, a fellow of British Royal Society, lectured at the Beijing University of Posts and Telecommunications (BUPT). Although the lecture was announced that same day, more than 300 students occupied the lecture hall before Dr. Taylor's arrival. The topic of his speech was the convergence of Internet and telecommunications. Many students proposed good questions to discuss with Dr. Taylor after his lecture, and he said the BUPT students made a very good impression.

Last November, IEEE ComSoc President Thomas Plevyak attended the 1998 International Conference on Communications Technology (ICCT '98) in Beijing. He was invited by our

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A European View on "Concurrent, Ubiquitous, and Seamless Service Provisions"

By Alessandro Farnesi, Italy

The incoming Information Society is widely seen as a "brave new world" where the full potential of information and communications services and applications is exploited for the social, cultural, and economic benefit of everybody. This implies the development of services and applications which can be created, provided, and enjoyed with minimal restrictions, in a context of evolving exchange mechanisms, both profit-driven (markets) and non-profit-shaped.

Within this general framework a three-day workshop on "Concurrent, Ubiquitous and Seamless Service Provisions" was held in Venice, Italy on 18–20 November 1998, at Centro Studi San Salvador–Telecom Italia. The workshop aimed at defining a landscape for the contributions of the Information and Communication Technologies (ICT) industry to the development of the Information Society and helping to define related activities within the 5th Framework R&D Programme of the European Union (1999–2002).

In particular, the event focused on the following concepts:

- Ubiquitous fruition: by everybody, everywhere, every time
- Concurrent provisions: competing and cooperative provisions of service, within segments (e.g., terminals, access, and server capabilities) which can be dynamically chosen "on the market" to build convenient service configurations at any given time/condition
- Seamless fruition: across concurrent provisions (fruition of service configurations that are transparent to the supporting technical infrastructure)

The workshop has been a highly interactive event, involving professionals from European telecom operators (and related research centers), manufacturers, universities, EURESCOM, and the European Parliament and Commission. A plenary session opened the event and a global perspective related to the main objectives of the workshop was presented. The speakers explored social, cultural, economic, industrial, market, and regulatory aspects, which addressed the need to pave the way for concurrent, ubiquitous, and seamless service provision. Changes in the interactions between technology, markets and regulations are on the way; technology is surely evolving, but it often forecasts more trends than what actually happens. Also, both markets and regulations have to progress: what we can foresee is that they are going to run faster and faster, said Mr. Carrelli, director of EURESCOM. Dramatic changes are at the door: Public Network Operators will/must move themselves from conveying bits, through information networking, to knowledge networking; e-commerce will become the oil that we need for a "frictionless economy"; R & D activities will change from a linear approach for the progressive build-up of knowledge to a discontinuous, opportunistic, more "people-centered" approach. This deep evolution of everyday lives is strongly determined by the new telecommunications paradigm clearly represented by Internet. But in this new context, according to Mr. Valdar, BT technical director, some challenges are present: What role will the regulator undertake in a converged industry structure? How do we provide seamless services for the customer within a competitive environment? The new technology will penetrate deeply into everybody's lives; what social obligation will different sectors of the industry have to accept? If tomorrow's world is to be an IP-dominated one, how do we influence its development?

The second day opened with a plenary session concerning specific themes playing a crucial role for the real development and diffusion of "Ubiquitous Seamless Services" in a competitive environment. Themes considered were: Economics and Regulation, Market Aspects, Essential Technologies and Infrastructures, and Architectures Supporting Creation, Provision, and Fruition of ICT Services.

According to Mr. Martin, director of Ryton Associated, from the market viewpoint, the prediction of services customers will buy depends on some stability; however, the rules of the game are changing and will continue to do so. This leaves three options: continue with established techniques, ride the chaos and keep options open, or look for new approaches. The main uncertainties are the boundaries of enterprises (i.e., core activities, outsourcing, relationships with suppliers and customers) and the split between information structure and communication infrastructure (or applications and services). Being clear about where value is to be added will help.

Looking at Essential Technologies and Infrastructures, two aspects have been highlighted: interoperability and fixed-mobile convergence. Taking into account the increasing changes and complexity within the present telecommunications market scenario, Mr. Pietroiusti of Telecom Italia began his presentation by highlighting the growing expectation for the establishment of globally interoperable multimedia communications, especially from the business customer point of view. Customers will want to use existing and new services independently from their actual location and whatever customer premises equipment they use. At the same time service providers and network operators will want their services to be available as widely as possible. In order to make all this feasible, services and networks will need to be interoperable in a multi-operator and multinetwork context. True interoperability between networks and services is one of the most important requirements in an information and communication environment that is rapidly evolving toward complexity and heterogeneity. Examples of the interworking and interoperability issues include SS7 interconnection, fixed–mobile convergence (including personal numbering, VPNs, and IN services), and PSTN/VoIP.

Internet could become the unifying convergence layer we need, even if the bunch of options for delivering IP (over WDM, SDH, ATM, etc.) could further increase the complexity of the interoperability between IP networks, as well as interoperation of more advanced IP services (e.g., mobile IP, multicast, QoS).

As far as Service Architecture is concerned it has to hide the underlying distributed resources, the heterogeneity of networking, thereby supporting the interworking between "service objects." A service architecture must provide a reusable set of components — a wide range of services for communications, information, multiparty collaboration. It must also provide tools for management and customization of services to be used by providers or online users. A real problem, said Mr. Kennedy of EURESCOM, is that IT products change too rapidly for traditional telecommunication service provisioning and the current expectation of service life cycles. This problem needs an urgent solution. Within the four parallel sessions following the plenary, the above themes were thoroughly discussed and analyzed, leading to the identification of key messages and items in order to produce a "Baseline Document" pointing out sets of recommendations for the actors involved in implementing the Information Society.

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ACTS "Guidelines" for Broadband Interoperability

By Paulo de Sousa, Belgium

As presented in the October 1998 issue of *GCN*, Advanced Communications Technologies and Services (ACTS) is one of the major specific Programs in the European Union's fourth research framework. In this issue we describe the activities of one of the groups of projects within ACTS, the Network Integration (NI) Chain Group. This is a group of projects which are active in many aspects relating to interoperability; some of their results were presented at GLOBECOM '98 as one of the TMB sessions.

The NI Chain Group focuses on issues of interoperability at various levels. This includes interworking at the network level, end-to-end performance, and network management. Key projects within this Chain Group support a series of practical interoperability trials, involving a large number of operators from all over the world.

The consensus results from the NI Chain Group assume the form of "guidelines," which are short, concise documents that address themes, rather than specific technical issues. This helps avoid any tendency to be vendor-specific. The added value of "guidelines" is achieved through the validation of the recommendations through trials in ACTS projects, and the endorsement procedure (including exposure to selected qualified audiences).

ACTS "guidelines" describe all aspects of broadband deployment and are aimed at specific audiences, including equipment manufacturers, network operators, users, and policy makers. Members of the NI Chain Group are often involved with demonstrations of various aspects of interoperability (e.g., the regular series of IDC Conferences on Network Interoperability, which in 1997 was held in Madeira, and was linked to the Global Networking '97 conference in Calgary). Such events and experiences serve also to verify the technical recommendations in the "guidelines."

At the NI session at GLOBECOM '98, 10 November 1998, the following papers were presented.

"ACTS 'Guidelines' for Broadband Interoperability" explained the concept of "chains" within the ACTS Program, and the philosophy behind the production of "guidelines." An introduction on aspects of network interoperability, ranging from the lowest layer of physical interconnectivity to the interoperability of various management systems, was provided.

"Broadband Deployment" showed the increasing degree of interoperability which is needed between services, networks, and underlying network technologies and their management systems.

"Reservation Models: From Arequipa to SRP" discussed explicit and implicit reservation models, covering also the issues of Arequipa and SRP, a new implicit reservation model.

"UMTS Interface between the Access and Core Networks" dealt with the general themes of interworking, integration, and services in fixed-mobile networks, and in particular with the interface between the access and core networks.

"ATM Charging Strategies" covered generic charging/billing/contract schemes and specific case studies for different access networks (e.g., SME, residential, CATV, businesses).

"Accounting Requirements and Charging Models in ATM Networks" discussed the implications of charging in the area of interoperability (charging should be made interoperable).

"Evolution of Network Management Systems" analyzed the convergence in the area of Telecommunications Management system evolution, as well as the whole technology gateway area of TMN/CORBA.

"Strategies for the Interoperability of Management Systems" defined a potential scenario for the evolution of Broadband Transport Services, and identified the requirements and issues concerning Network Management of integrated transport networks based on SDH, WDM, and ATM.

A book containing the first set of "guidelines" is available upon request. New NI "guidelines" to look forward to in the near future include:

- Internet and ATM coexistence
- Towards Resilient Networks and Services
- Satellite & Terrestrial Network Interoperability
- Security of Multi-Domain Management Systems
- A Generic Management Information Model for Optical WDM Networks

Further and updated information on the ACTS program and the NI Chain Group are available at http://www.uk.infowin.org/ACTS/ANALYSYS/CONCERTATION/CHAINS/NI. Comments and suggestions are welcome and can be directed to: paulo.desousa@cec.be. The full text of the "guidelines" is available at http://gina.iihe.ac.be

The views expressed in this article are those of the author and do not necessarily reflect the views of the European Commission.

Enterprise Networking TC Sponsors World Manufacturing Congress

By Algirdas Pakstas, UK and Lithuania

The Second World Manufacturing Congress (WMC '99) will be held at the University of Durham during 27–30 September 1999. WMC '99 is sponsored by the IEEE Communications Society (via its Technical Committee on Enterprise Networking), IEE (UK), IMechE (UK), and the City of Newcastle-upon-Tyne. WMC '99 is organized jointly by the International Computer Science Conventions (ICSC), Canada/Switzerland, as well as three UK universities, including University of Sunderland, University of Durham, and University of Newcastle-upon-Tyne. WMC '99 will be held in conjunction with the Northern Manufacturing Exhibition (29–30 September 1999 at Telewest Arena in Newcastle-upon-Tyne).

The first congress of its kind, WMC '97 was held in November 1997 in Auckland, New Zealand (the conference Website is http://www.icsc.ab.ca/wmc97.htm). In 2001 WMC will be held in Rochester, New York, USA.

Manufacturing for the Millennium is a central theme of WMC '99; the emphasis is on bringing researchers and industry closer to each other than before and highlighting the importance of both applied and theoretical research in the light of new shifts in the global economy. The biannual congress has three symposia in the fields of systems, technology, and management, respectively: International Symposium in Manufacturing Systems (ISMS), International Symposium in Manufacturing Technology (ISMT), and International Symposium in Manufacturing Management (ISMM).

Members of IEEE, IEE, IMechE, as well as members of the Sister Societies, will be eligible for a reduced congress registration fee. The Web site http://www.icsc.ab.ca/wmc99.htm provides more details about WMC '99.

The IEEE Communications Society Office for the Asia Pacific Region

By Fanny Su Beh Noi, Singapore

1998 was an active year for our office. Over the years, the office has worked towards improving services to ComSoc members and building better rapport with ComSoc volunteers. In 1998, we were pleased to be part of a more permanent entity within the Communications Society by being included in the Charter of the new Asia Pacific Board (APB). You will find the Charter in the homepage of the ComSoc Asia Pacific Region (AP Region) at this site: http://www.fujitsu.co.jp/hypertext/flab/APR/

The office is a regular contributor of articles to the *Global Communications Newsletter*. We also assist the editor (T.K Tan) and sub-editor (Chui Chee Cheon) in the production of the AP Region newsletter twice a year to coincide with the Asia Pacific Board meetings at ICC and GLOBECOM.

Within the Charter of the new APB, we have begun working with the various committees to bring more services, activities, and information to our members and volunteers.

On 26 May 1998, we had the pleasure of hosting IEEE President-Elect Dr. Ken Laker at a luncheon meeting with the IEEE Singapore Section Committee members.

This is the third year that we have continuously supported major ComSoc conferences in the AP Region by setting up promotion booths. The two conferences this year were ICII '98 (26–29 April 1998) in Beijing, China and APCC/ICCS '98 (23–27 Nov 1998) in Singapore. Do drop by the ComSoc membership booths to pick up souvenirs and information on new publications and activities, and have a chat. We hope to get to know our members better at these gatherings.

In collaboration with the AP Region Chapters' Coordination Chair Kwang Cheng Chen, we coordinated three executive ComSoc officers' (ComSoc President Tom Plevyak, VP–Membership Development Ron Horn, Director, Meetings and Conferences Celia Desmond) visits to nine chapters in our region on their way to/from GLOBECOM '98 (8–12 November 1998) in Sydney, Australia. Our office hosted Celia Desmond on behalf of the Singapore ComSoc Chapter, with a dinner meeting arranged on the 4 November with the Singapore ComSoc Chapter Committee members.

We also had the pleasure of having the AP Region Director Byeong Gi Lee and other AP Region volunteers visit our office during APCC/ICCS '98 (25 November) for an informal meeting to discuss future activities for our office.

Plans for 1999

The office will continue to improve its current member and customer services through the greater use of interactive Web sites and the Internet for faster response and resolutions to their inquiries.

Our plans for activities will include the Distinguished Lecture Tour by Dr. Manu Malek to the Victoria Chapter (Melbourne), New Zealand North Section (Auckland), and Singapore Chapter. Dr. Nelson Sollenberger is also scheduled for a Distinguished Lecture Tour of Korea Chapter (Seoul), TENCON '99 (Cheju, Korea), Hong Kong Chapter, Malaysia, and Singapore. Both lecturers are highly respected in their fields as good presenters and members are strongly encouraged not to miss this opportunity to attend their presentations when they tour these Chapters.

We will be working with the AP Region's Conference Technical Committee to promote the four major AP Region sponsored conferences (i.e., APCC, ISPACS, APNOMS, and OECC).

There was an impressive rise in ComSoc membership in 1998. In collaboration with ComSoc headquarters and Chapter Chairs, we hope to generate activities that will encourage new and continuing members to retain their memberships through 1999.

We are also on the lookout for new ideas and suggestions to improve services and increase activities in the AP Region. We welcome our readers to contribute. Please contact us at:

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BEIJING CHAPTER/*(Continued from page 1)*

Beijing Chapter to give a talk before the conference to a small group of students who are currently IEEE student members at BUPT. The event was designed and organized by IEEE BUPT Student Branch itself and the Beijing Chapter provided some necessary assistance. Beyond imagination, when Mr. Plevyak came into the meeting room, he found an audience of 400 students, 20 times more than the number previously estimated. As with Dr. Taylor's lecture, the students had active and in-depth discussions with the respected speaker.

What we saw from those events in Beijing in 1998 is that there is great potential and a bright future for the development of our ComSoc Chapter due to the students' enthusiasm.