Global
Communications
Newsletter

January 2001

Editor's New Millenium Message

By Nelson L. S. da Fonseca, Editor-in-Chief

The advancement of science and technology in the 20th century supported broadened and more prosperous life to mankind. In particular, advancements in telecommunications and information technology allowed people from all corners of the world to share information, ideas, and dreams. These advancements shape the way we live in all facets of life such as entertainment, education, health, and commerce. As we enter the new millenium, we expect tremendous growth in all these area with further increases in network capacity as well as a whole spectrum of new multimedia applications.

NELSON FONSECA

At the beginning of the 20th century, telegraph was already established, and technology development was still needed to provide telephony service on a large scale. Nonetheless, progress could not rely on men such as Morse, Bell, and Marconi. Professionals felt the need to associate themselves to overcome the complexity of new technological challenges. In this vein, the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE) were founded in 1884 and 1912, respectively. In 1963 the Institute of Electrical and Electronics Engineers (IEEE) was created by the merger of IRE and AIEE. The IEEE Comunications Society (ComSoc) has its roots in the Professional Group of Communications of IRE, and was created in 1952.

The IEEE Communications Society has played an important role in the communications area since its creation. Comsoc connects researchers, professionals, and students in a fast-changing world, allowing debate and the dissemination of high-quality research results to a large worldwide audience.

The *Global Communicatuions Newsletter* (*GCN*) resulted from the ComSoc globalization process, which has recently been translated into several cooperation agreements with sister and related societies. *GCN* publishes ComSoc-related articles as well as articles about telecommunications. ComSoc articles introduce ComSoc structure and activities. Articles about telecommunications bring the attention of the ComSoc community to communications issues in a specific country or region of the world. These articles intend to make the world a common place for ComSoc members. I would like to make it clear that the value of articles in this category is the dissemination of information about the status of telecommunications worldwide.

Over the past years, readers' participation has been rewarding. We would like to emphasize that *GCN* was created for the benefit our readership, and therefore readers' contributions are welcome at any time. We encourage you to submit your contributions to *GCN*. Contributions can be sent to this address in either plain ASCII or MSWord format. Articles should be no longer than 1000 words. Areas of interest are:

- National and regional developments in communications technology and services
- Communications research and development around the world
- Trends in regulatory and legal matters
- Market trends
- Telecommunications education
- ComSoc chapter activities

Contributions can be sent to either gcn@comsoc.org or nfonseca@ic.unicamp.br .

Moreover, I would like to mention that *GCN* would not be possible without the hard work of its regional correspondents and Algirdas Pakstas, *GCN* associate editor. Joe Millizo, publication manager, and Carole Swaim, senior administrator, play a major role in *GCN*'s success.

Last but not least, I would like to wish all GCN readers a healthy and fruitful New Millenium!

Third Millennium Medal Presentation

The Third Millennium Medals were created by the IEEE in celebration of the new millennium. This is the first IEEE medals program since Centennial Medals were presented during the IEEE's 100th anniversary year in 1984. A quantity of medals was allotted to each IEEE entity; medal recipients need to be IEEE members at the time of selection.

Sixty-five medals were allocated to the Communications Society. This number does not come close to covering the truly exceptional contributors among our current 50,000 members. However, after a selective process the IEEE Communications Society identified its medallists among those who have made outstanding contributions to our Society and those who have done so much to build communications technology into an incredible success story at the turn of the millennium.

Third Millennium Medal Presentations at IEEE International Conference on Communications (ICC) 20 June 2000 New Orleans, LA

Hiroshi Inose
Richard C. Kirby
William C. Lindsey
Joseph L. LoCicero
Robert W. Lucky
Laurence B. Milstein
Raymond L. Pickholtz
Thomas J. Plevyak
Curtis A. Siller, Jr.
William H. Tranter
Douglas N. Zuckerman

Total IEEE Communications Society Third Millennium Medals

M. Robert Aaron
Leonard G. Abraham, Jr.
Frederick T. Andrews, Jr.
Paul Baran
Jose Roberto Boisson de Marca
David Braverman
Vinton G. Cerf
John M. Cioffi
Donald C. Cox
Alan F. Culbertson
Maurizio Decina
Bruce R. Demaeyer
Celia L. Desmond
Alton C. Dickieson
George D. Dil
Irwin Dorros
Joel S. Engel
Allen Gersho
Edward J. Glenner
Paul E. Green, Jr.
William R. Hewlett
Hiroshi Inose
Ferdo Ivanek
Irwin M. Jacobs
Amos E. Joel, Jr.
Robert E. Kahn
Richard C. Kirby
Noriyoshi Kuroyanagi
Adam Lender
Raymond J. Leopold
John O. Limb
William C. Lindsey

(Continued on page 4)

IEEE Electrical Engineering and Computing Milestones: County Kerry Transatlantic Cable Stations

By James Christie, Ireland

On 13 July 2000, in County Kerry, Ireland, three IEEE plaques were unveiled at Waterville, Ballinskelligs, and Valentia on the sites of the original County Kerry Transatlantic Cable Stations to mark yet another IEEE Engineering Milestone. This Milestone Ceremony, which took place on the 134th anniversary to the very day of the departure from Valentia Harbour of the cable-laying ship, the *Great Eastern*, recognized the starting point for that famous transatlantic voyage, and the contribution County Kerry and its people have made to faster communications links between the continents of the world.

The message on each plaque reads:

"On July 13, 1866 the Great Eastern steamed westward from Valentia, laying telegraph cable behind her. The successful landing at Heart's Content, Newfoundland on July 27 established a permanent electrical communications link that altered for all time personal, commercial and political relations between people across the Atlantic Ocean. Later, additional cables were laid from Valentia and new stations opened at Ballinskelligs (1874) and Waterville (1884), making County Kerry a major focal point for global communications."

In 1985, a similar Milestone Ceremony was held to dedicate a plaque at Heart's Content, Newfoundland, Canada, to mark the landing of the 1866 communications cable in North America.

At the main ceremony on Valentia Island, IEEE President Dr. Bruce Eisenstein and Irish Government Minister for Justice and local Member of Parliament Mr. John O'Donoghue took part in the Milestone Ceremony. Wally Read, a past IEEE President and member of the IEEE History Committee, brought greetings from the Premier of the Province of Newfoundland and Labrador, the Honourable Brian Tobin.

Irish Government Minister for Justice and local Member of Parliament Mr. John O'Donoghue presents a piece of the original 1866 cable to IEEE president Dr. Bruce Eisenstein.

In his remarks, Dr. Eisenstein praised this unprecedented

(Continued on page 4)

The Telecommunications Market Evolution in Egypt

By Khaled Fouad Elsayed, Egypt

The telecommunications market has evolved from a state of monopoly by Telecom Egypt (TE) to a semi-competitive market over the past three years. TE, formerly an authority, is now a government-owned corporation partly privatized by the end of 2000. The company has done a great deal of investment to enhance the telecommunications facilities in Egypt over the past two decades (Table 1). The year 1998 witnessed the first move toward an open market. The mobile sector of TE was privatized into Mobinil, and the second operator, ClickGSM/MisrFon, was launched. Also, two licenses were offered for public payphone service companies (Menatel and Niletel).

A renewed effort toward market liberalization was born in late 1999 by the formation of the new cabinet and the construction of the new Ministry of Telecommunication and Informatics. For the first time, a cabinet minister became responsible for the development of IT in Egypt. The Ministry has prepared a national plan for the development of the communications and IT industry by identifying a number of areas for action. The cornerstone of the plan is a $1 billion three-year investment to establish the most advanced telecommunications network possible — a high-speed core backbone, necessary in any modern-day information-driven society. Such a network will not only ease the transfer of information within Egypt and to the outside world, but is also essential to the establishment of IT-related industries such as software development. Also, the Government of Egypt (GOE) is seeking to train young Egyptians in the use of IT by creating centers in several regions in Egypt. In addition, the GOE plans to increase automation in several sectors like tourism, health, and education. A new telecom law is being drafted. Its main goals are to provide a fair opportunity for operators and to open the market for competition. The government intends to establish a stronger and more independent Telecom Regulatory Authority to foster the new environment that will emerge.

All segments of the communications market should witness double digit growth in the period 2000–2004. This is due to the demographics of the population. Well-to-do Egyptians will fuel the growth in the mobile and Internet sectors, while the larger segment of poorer people will produce large demand for payphone and fixed line access. On the corporate side, connectivity to the Internet/virtual private networks (VPNs) and construction of private networks will increase due to the rapidly growing need for business automation and modernization.

	1981	1999
Fixed telephony		
Phone lines	510,000	6,500,000
Teledensity	1.2%	10%
International circuit capacity (DS0)	820	8480
Number of subscribers for direct international dialing	571	128,706
Volume of international traffic in million minutes	28	689
Mobile service		
Telecom Egypt Pager	-	28,782
Telecom Egypt Car Phones (Analog TAC)	400	6973
Mobinil (GSM)	-	365,149
ClickGSM (GSM)	-	218,399
Public payphones		
Telecom Egypt	250	5129
Menatel	-	4113
Niletel	-	3300

Table 1. *Evolution of telecommunications in Egypt; source: Telecom Egypt.*

Fixed Telephony

Fixed telephony will continue to grow. As of December 1999, there were about 6.6 million wireline telephones available The current 10 percent penetration rate is still far from saturation. It is projected that by 2004 the penetration rate will be 14 percent; for a rapidly growing population, it means an almost 55 percent increase in the number of telephone lines currently available. About one million new lines are expected every year for five years at a cost of about $400/line. Acquiring a new telephone line is getting easier. Now, in some districts in Cairo and Alexandria a new phone contract can be finalized in one day. Recently, TE reduced the price of international phone calls by 25 percent. Telecom Egypt's annual revenue per line is one of the lowest in the region. However, the GOE would allow no or very small competition to TE in this area (at least in the near future).

Mobile Telephony

Mobile telephony will continue to grow at an astounding rate. The introduction of prepaid services and competition-driven prices have led to overwhelming growth in the demand for mobile telephony. In 1999 700,000 new users were added — about seven times the number in 1998. Eighty-five percent of the users were prepaid. By 2004, mobile penetration is expected to reach 6.35 percent or 4.5 million subscribers. In 2003, the exclusive license for the two operators will end. A third operator will be allowed to offer mobile service. It is expected that the third license will be given to a consortium led by TE. The two operators are currently offering WAP-based services to their customers and are contemplating the implementation of 2.5G solutions such as EDGE and GPRS. Implementation of 3G is still a big question mark since the investments needed are huge and market demand does not seem to be there yet. It is still possible that the third operator will go directly into a 3G deployment to offer a competitive advantage over the existing operators.

Internet and Data Communication

Internet services are widely available in Egypt, and businesses are hooking up in the thousands to access international trade. The market for Internet service provision can be divided into three main groups: academic, governmental, and commercial/private users. The government's Cabinet Information and Decision Support Center (IDSC) is responsible for government users, the Egyptian Universities Network (EUN) is responsible for the academic and research network, and the Regional Information Technology and Software Engineering Center (RITSEC) is providing access for the private sector. IDSC/RITSEC is also peering with the EUN to exchange local traffic.

Between early 1997 and early 2000, the number of Internet users in Egypt increased from around 25,000 to around 250,000 (50,000 paid subscribers); the number of ISPs

(Continued on next page)

TELECOM MARKET IN EGYPT/*(Continued from page 3)*

increased from 16 operational ISPs to around 60; and the number of cities where users can access the Internet at local call rates increased from 4 to 13. Currently, the international Internet bandwidth installed in Egypt is about 34 Mb/s.

Domestically, IDSC/RITSEC has installed digital multiplexers in the public switches to establish the first digital access network in Egypt. The network is managed by TE and provides a high-speed distribution network for more than 50 nodes in Egypt with speeds up to full E1. IDSC is currently using a pilot network of VSATs to connect six information centers in rural administrations in upper Egypt to the Internet with access speeds of 64 kb/s for each site.

In September 1998 TE made an agreement with Digitcom of California to establish an Internet voice telephony service between the United States and Egypt. The service has been operational since March 2000. The market is currently estimated at over 100 million min/yr between the two countries. TE will be able to cut its operating costs and become more familiar with the technology, but is unlikely to make the service available for resale to ISPs in the short term; much of TE revenues come from international traffic, and this is used to cross-subsidize local service.

In December 1999, TE reduced the price of leased lines by as much as 50 percent. Large companies and banks will enjoy the full 50 percent reduction. Individual Internet end users (i.e., dial up users who connect via ISP) will end up experiencing a 30 percent reduction in price.

High international tariffs and insufficient international bandwidth for delivering Web pages over the Internet are still major constraints to the expansion of the Internet in Egypt. However, in fall 1999, a new company called Nile Online was formed in which TE, the TV and Radio Union, and other national entities hold major shares. Nile Online has an ambitious target of increasing the number of Internet users in Egypt to about one million in the next three years. The purpose of the company is to build an Internet backbone for Egypt, and it will work as a wholesaler for local ISPs. The company has signed an agreement with TE and Flag Telecom to lease an international fiber optic link of 45 Mb/s to an Internet point of presence in the United States.

In the data communication arena, Egynet was formed in Summer of 1999. Egynet will build a frame relay/asynchronous transfer mode (ATM) network to cater to financial institution connectivity demands. Egynet will offer a VPN data network service to provide Egypt's financial institutions with a fully redundant network with service level guarantees, increased bandwidth, and the ability to remotely manage and monitor their VPN, while reducing operational costs. Banks will use the service as their primary data network, in order to connect their branch offices securely throughout the country, and will have the ability to expand their VPN for home banking initiatives. Egynet estimates the total value of its network expansion plans at approximately US$600 million over the next five years. The network will be extended to provide Internet access and video broadcast capability for Egynet's business customers.

The economic growth and well being of any country depends largely on the status of telecommunications and IT infrastructure. Egypt is no exception to that rule — the good news is that prospects for enhancing both are imminent. Hopefully, Egypt will successfully implement its telecom/IT development plans and offer an attractive opportunity for investors, operators, and vendors in the medium/long term.

Global Communications Newsletter

www.comsoc.org/pubs/gcn

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COUNTY KERRY/*(Continued from page 2)*

technological accomplishment and the instantaneous impact it had for all of the peoples of the world.

Minister O'Donoghue then brought greetings from the Government of Ireland and thanked the IEEE for this recognition and sent his best wishes to the United States, Canada and especially to the Premier of the Province of Newfoundland and Labrador. He closed his remarks with a special presentation to President Eisenstein of a piece of the original 1866 cable.

MILLENNIUM MEDAL WINNERS/*(Continued from page 2)*

Joseph L. LoCicero
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William H. Tranter
Jonathan S. Turner
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William F. Utlaut
Andrew J. Viterbi
Stephen B. Weinstein
Douglas N. Zuckerman