ICT Evolution in Europe: Innovation for a Better Quality of Life

Presentation by Dr. Claudio Carrelli
Director Eurescom

Abstract

Europe is at the centre of attention: it has recently been expanded to 25 States; its new Constitution has recently been signed, yet its industrial competitiveness is questioned again. What is happening to the ICT sector, or, more precisely, to the telecommunications industry?

In 2000, an ambitious objective was set for Europe in Lisbon to become the “most competitive and dynamic knowledge-based economy by 2010.” The EU Council of Ministers agreed on a common goal to increase the R&D investment up to 3% of the GNP by 2010.

Are we moving in that direction? This would imply a long-term strategy. But in the present time the general trend seems much more oriented towards short-term visions, rather than really looking to a defined strategy for the future.

Nowadays, five years later, many reports analyze the new scenario and several reports have been released in order to revitalize the Agenda and regain some progress.

Technological innovation is well spread across Europe; on the other side, Competition, as well as the mergers and acquisitions mania, have not yet reached the levels characterized in other regions of the world; what are the consequences, and what will be the future directions?

In this context the speaker will address some of the major issues relevant to the European telecoms sector and will essentially cover five points:

1. The need for innovation.
2. Technology and social impact.
3. The “myth” of broadband.
4. Impact of the digital world.
5. A new impulse to R&D.

The speaker will not deal with technical details, but rather simple and effective messages that can be easily received by a diversified audience.

Biography of Claudio Carrelli

Claudio Carrelli obtained his Doctorate Degree in Electronic Engineering in 1965 at the University of Naples, Italy.

He is currently the Director of Eurescom (European Institute for Research and Strategic Studies in Telecommunications) where he took responsibility in June 1998.

For over thirty-five years he has been working with the Italian telephone operating company, where he served in several positions and responsibilities from Research and Development to Marketing and to International Relations.

Previously, he was a research assistant at Princeton University, New Jersey, USA. Claudio Carrelli has always been very actively involved in the International telecommunications world with several responsibilities, particularly within the ITU (International Telecommunication Union) and the European Union Institutions.
Future Directions in Telecommunications Research

Presentation by Dr. Behzad Nadji
Vice President, AT&T Labs Research
Vice President, AT&T Network, OSS & ITS Architecture
AT&T Chief Architect

Abstract

In this talk, the speaker will present current and future directions in Telecommunications Research at AT&T. Then, the speaker will focus on three major areas of research including Speech and Video Data Mining, Network Management, and Software Techniques. The speaker will show how research in speech technologies, networks and network management, security, fraud management, and data mining are already impacting the computer and communications industry. Finally, the speaker will explore the resulting challenges and research opportunities for academia and industry.

Biography of Behzad Nadji

Dr. Behzad Nadji is the Vice President of AT&T Labs Research and the Vice President in charge of Operations Support Systems, ITS, and AT&T Network Architecture. As the head of AT&T Labs Research, Behzad is responsible for applied and core research for technologies essential for AT&T’s network infrastructure and services strategies. Research projects are primarily in the areas of speech technologies, networks and network management, security, fraud management, information systems, data mining, software and grid computing research.

Before joining AT&T, Behzad Nadji served as the President of Micro Computer Trends in Los Angeles for five years. While at AT&T, he spent most of his career in development, engineering, and architecture of various OSS’s and software and network systems. He is a senior member of the IEEE and serves on the advisory board of several companies. He also serves on the board of the TeleManagement Forum (TMF) and is on the AT&T Foundation Board of Trustees. Dr. Nadji is the recipient of AT&T’s prestigious “Science and Technology Medal”, as well as over 20 other awards in the area of business innovation, architecture, and software development excellence.

Dr. Nadji graduated with highest honors from the University of Southern California, where he received his M.S.EE Degree in Electrical Engineering and Ph.D. in Electrical Engineering/Computer Science.
Hardware/Software Co-design Approaches to System Security

Presentation by Professor Alok Choudhary
Director Center for Ultra-Scale Computing and Security, Northwestern University

Abstract

Computer and Information security has become a critical and central problem in this connected “anytime, anywhere” world. One of the key problems facing the computer industry today involves ensuring the integrity of end-user applications and data. One way to consider the security problem is the unauthorized execution of code on a particular system.

Researchers in the relatively new field of software protection investigate the development and evaluation of controls that prevent unauthorized modification or use of system software. While many previously developed protection schemes have provided a strong level of security, their overall effectiveness has been hindered by a lack of transparency to the user in terms of performance overhead. Other approaches are on the opposite extreme and sacrifice security for the sake of this need for transparency.

In this talk, the speaker will present an architecture for software protection that provides both security and user transparency by utilizing the concepts of multiple programmable cores on modern processors. The usage of additional resources dynamically enhance security and protection using the co-processing paradigm. Initial results show how the use of FPGAs as co-processors can accelerate execution of programs in a cryptographic environment, while maintaining the flexibility through reprogramming to carry out any compiler-driven protections that may be application-specific. Finally, the speaker describes some of the specific problems such as untrusted foundry, multi-level separation, etc. that is being addressed using the overall approach.

Biography of Alok Choudhary

Alok Choudhary is a professor in the Electrical and Computer Engineering Department and the Kellogg School of Management at Northwestern University. He is also the director of the multidisciplinary center on ultra-scale computing and Information Security. He joined Northwestern in 1996. Prior to that he was a faculty member of the ECE department at Syracuse University.

Alok Choudhary received his Ph.D. from University of Illinois, Urbana-Champaign, in Electrical and Computer Engineering in 1989, M.S. from University of Massachusetts, Amherst, in 1986 and B.E. (Hons.) from the Birla Institute of Technology and Science, Pilani, India, in 1982.

Alok Choudhary received the National Science Foundation’s Young Investigator Award in 1993. He has published more than 300 papers in various journals and conferences in various areas. He has also written a book and several book chapters on the above topics. His research has been sponsored by (past and present) DARPA, NSF, NASA, AFOSR, ONR, DOE, Intel, IBM, and TI. He is also a fellow of IEEE.
Enterprise Information Systems and Automation of Processes.
Case Study of a Telco Operator: ONO

Presentation by Mr. Carlos Moreno-Alonso
Director of Information Systems and Internet at ONO

Abstract

The conventional architecture for an Information System of a telco operator company is described and explained with special remarks regarding its organization and interoperation among different blocks. The structure of the different departments involved and the benefits of automation over the clients are reviewed. The evolution of the Spanish cable telco operator ONO is taken as an example, including mention of necessary changes to adapt to new business opportunities and incomes, as well as forecasting the future of the company in the risky business of the IT sector in a context of liberalization.

Biography of Carlos Moreno

Carlos Moreno-Alonso is the Director of Information Systems and Internet at ONO. He is an Industrial Engineer and has a Master of Communication Systems from the University of Wales. He has worked at Cableuropa (ONO) since June 2000. Previously, he was involved as a consultant in projects for the deployment and system integration of Internet Communications for Telco communication operators. He started his professional career in Paris in several civil and military communication projects before moving to Madrid to work for dot-com startups.