IEEE GLOBECOM 2012 Showcases the “The Magic of Global Connectivity”

IEEE GLOBECOM 2012

Thousands participate in nearly 1,500 presentations focused on “New World” of IPv6, Smart Grid, Cloud Computing & Network Infrastructure Advancements.

New York, NY – Under the appropriately titled banner of “The Magic of Global Connectivity,” IEEE GLOBECOM 2012 [1] recently held its 55th annual event at the fabled Disneyland Hotel in Anaheim, California with more than 2,500 attendees participating in 1,500 presentations focused on the “new world” of IPv6, smart grid, cloud computing and network infrastructure advancements.

Beginning Monday, December 3, the conference’s comprehensive agenda started with more than 20 workshops and tutorials dedicated to topics ranging from digital gaming and small cell wireless networks to beyond 4G emerging technologies. Among these were the “Cloud Base-station and Large-scale Cooperative Communications” workshop, where Dr. Jesse Fang of Intel Corp. spoke on the “Challenges & Opportunities in the Age of Mobile Internet” and the industrial tutorial “Digital Games for People Networking – Challenges & Opportunities,” where Ross Smith of Microsoft addressed “gamification” as a method for developing organizational trust, facilitating interactions and breaking cultural barriers.

IEEE GLOBECOM 2012 then officially commenced Tuesday morning with the introductory remarks of Executive Chair Pierre Perra and the address of Dr. Henry Samueli, Co-founder, Chairman and CTO of Broadcom Corporation, who spoke on “Connecting Everything: Dream Becomes Reality.” In his talk, Dr. Samueli detailed Broadcom’s beginnings dating back to two decades, the ensuing paradigm shifts that have produced “more connected devices then people on the planet” and the underlying theme that chip development is the “key innovation driving the connected world.”

Following the conference’s opening keynote, IEEE GLOBECOM 2012 initiated its comprehensive schedule of industry forums, technical presentations, keynotes and panels. Highlighting this agenda was the Executive Forum titled “New Technologies to Watch,” which featured the new dynamic capabilities and applications currently under development by the industry’s leading corporations and research institutions. Among the session’s expert presenters was Dr. Chen Chang, CEO of BeeCube Inc., who started his presentation by citing the convergence of the wireless mobile world with E-commerce as the driving force behind the current use of one billion smartphones worldwide and $1 billion in sales on Black Friday within the United States and $4 billion in China on November 11, 2011.

The first day of activities then ended Tuesday evening with the highly-anticipated

“Dialog with Industry Leaders” featuring lively question-and-answer exchanges between leading communications executives and conference attendees. During the session highlighting the next wave of architectural changes, the panelists spoke at-length about LTE and its widespread ability to connect the world over the coming decade. This included providing different ways to service more customers at lower costs with less maintenance and even helping to provide improved mobility and data rates to rural communities that do not have access to fiber and coaxial connections.

On the following day, IEEE GLOBECOM 2012 began with the eagerly awaited addresses of Vinton Cerf, the current Vice President & Chief Internet Evangelist of Google and celebrated computer scientist most commonly known as one of the "Fathers of the Internet” as well as Krish Prabhu, President of AT&T Labs and Chief Technology Officer. Dr. Cerf shared his views on “Internet Challenges 2012-2020” and the policy and engineering problems underlying the next stage of growth. This began by noting the difference between engineering and policy, the latter of which is “driven by culture and attitude, not computation.”

According to Dr. Cerf, the Internet has witnessed an “astonishing evolution” that now includes 2.4 billion users with penetration rates reaching nearly 80 percent in North America, 63 percent in Europe and approximately 30 percent in Asia. Referring to the Internet as “one of the most effective tools of the democratization of speech,” Dr. Cerf also expressed his concerns about the governments that are currently “threatened by individuals speaking their mind” and their attempts “to control what people say and do.” As examples, he referenced the recent “Arab Spring” uprising and the current attempt of some officials representing nearly 200 countries at the Dubai Internet conference to adopt regulations that will complicate commerce and further cyber-crackdowns.

Immediately following this presentation, Krish Prabhu, President of AT&T Labs and the company’s Chief Technology Officer spoke about “Connected Life: the Future of Global Communications” and the evolution of smartphone technologies, which is now overcoming the challenges of distance, reach and touch to connect life. In the future, added Prabhu, these capabilities will be enhanced by advances in multiple frontiers. First, “4G LTE will be everywhere by the end of the decade” offering even better latency, higher data speeds and performance. Second, small cell clusters will help overcome the challenges associated with the phenomenal wireless data traffic growth that grew by 20,000 percent over the past five years. Next, industry and users alike will benefit from the pervasiveness of cloud services that will ensure customization as well as offer end-to-end solutions exploiting multiple components and accessibility through handsets “regardless of where you are.”

In addition, the Industry Forum schedule continued throughout the day with sessions dedicated to topics such as enhanced wireless learning methods and smarter pricing modeling for providers. For instance, David Michelson, the Director of Education at IEEE ComSoc, opened the Education Forum by highlighting the society’s mission to formulate educational strategies, appoint working group members and promote telecommunications as distinct engineering disciplines. Following these introductions, the session’s expert panel discussed the

fundamentals of “How Software Defined Radio Will Revolutionize Lab-based Communication Courses.” Matt Ettus, Founder & President of Ettus Research, initiated the talk by stating that “you have to feel and touch radio and be exposed to the nitty-gritty details to truly understand its realities. Software radio fills the need for education to provide a smooth transition from modeling to reality, while offering a perfect mode of experimentation.”

On Thursday morning, IEEE GLOBECOM 2012 proceeded with the keynote address of Stephen B. Alexander, Senior Vice President and Chief Technology Officer of Ciena, who spoke about “The Performance-on-Demand Application Ecosystem: The Next Phase of Telecom Infrastructure.” According to Alexander, “networks matter more today than over the past 20 years due to the overwhelming demand for capacity by providers.” As a result, the very nature of connectivity has changed requiring its reconfiguration into a “performance-on-demand application ecosystem” that connects people operating through 500,000 locations and 50 billion machines.

During the morning’s second keynote, Hossein Eslambolchi, Chairman & CEO of 2020 Venture Partners, addressed “The Power of Technology to Transform the Future” through the evolution of the network, cloud and future services. In his presentation, Eslambolchi addressed the technology trends driving the network’s massive transformation as well as the opportunities for next-decade services that “will impact every person and business in one seamless, virtual world.” He also stated that e-collaboration and mobility would dominate the “new world” workplace, “wireless access will be common” with personal device convergence and remote intelligence sensors everywhere and “a massive growth in data business intelligence units will provide better optimization across entire infrastructures.” In addition, Eslambolchi predicted that 50 percent of all workloads will be processed in the cloud by 2014.

Afterwards, the Executive Forum agenda continued with the session on “IT Transformation: Clouds, Security, Mobility and Computing” exploring the challenges and opportunities confronting the transformation of today’s IT and network infrastructures. At this, Flavio Bonomi of Cisco began by discussing “Computing and Communication in the Age of the Internet of Everything.” This included highlighting the next wave of scalable and efficient cloud-based infrastructures needed to cost-effectively connect millions of devices as well as the computerization that will in short-term provide the functionality necessary to create smart cities and connect vehicles through common IoT platforms.

The IF&E program ended Thursday afternoon with nearly 20 individuals participating in the conference’s “Lightning Talks” allowing each individual to address their choice of technical topics. Moderating the “new experimental” event was Leonard Reder of JPL, who introduced the speakers and kept the activities moving with tight five-minute limits. First up was Francisco Moreno of BEECube, who was immediately followed in quick succession by presentations highlighting social networks communicating over national language interfaces, “Additive Inverse Gaussian Noise Channels” and a talk describing the state of rural, unconnected South African villages that represent nearly two billion people worldwide, who live

“unequal” lives without the benefit of affordable, sustainable services.

IEEE GLOBECOM 2012 then concluded Friday afternoon with the conference’s last day of tutorials and workshops dealing with topics like “State of the Art Interference Alignment,” “Mobile Cloud Computing Resource Management,” “4G LTE Wireless Network Security Investigation” and “Smart Device Emerging Technologies.”

For more information visit www.ieee-globecom.org/2012 [1] or http://www.ieee-globecom.org/2013 [2].

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