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Dr. Mehmet Unsoy & Steve Gaynor
Managing Partners

mSolve Partners Newsletter

offering solutions for business problems in the mobile industry

Latest Mobile Industry Developments and Implications for CIOs

Dr. Mehmet Unsoy gave a keynote presentation last month, at Turkish Informatics Society's 18th annual conference for CIOs, on the latest mobile industry developments and their implications for enterprise CIOs. You can find the copy of the full presentation [here](#).



Here are the key near-term predictions from the presentation, that impacts enterprise CIO's:

- Tablets are here to stay and will play a major role in Enterprise; expect to see Tablet sales to exceed PC/Laptop sales in 2012/2013
- We will see less than \$100 Smartphones by 2012, without requiring a operator contract; this will have implications for employees and the customers of the enterprises
- Location, location, location; expect to have location leveraged for most of the services in the near future

Thinking Big about the Internet of Things

by Laurie Lamberth

It's time to think big. Really big.

Imagine, if you will, 50 billion objects connected to information networks of one sort or another. They can be anything: a car, a thermostat, an electrical transformer or your t-shirt, and yes, that's a "b." If it's hard to envision so many things at one time, try this: global mobile phone subscriptions topped 5 billion around the middle of last year. Grow that number by 26% per year for ten years straight, and you get to the 50 billion connected objects that Hans Vestberg, Ericsson's CEO, predicts we'll see by 2020. On a per-capita basis, compared to a predicted world population of 7.6 billion by 2020, 50 billion connected devices is a relatively modest 6.7 per person. However, factoring in the 1.9 billion people without electricity today and others who are on the wrong side of the "digital divide," the number jumps to 20-30 connected devices per person in developed countries by 2020.



This extreme increase in connections will be primarily facilitated through wireless technologies including low-power near-field communications (Bluetooth, Zigbee, z-Wave), mid-range communications (Wi-Fi) and wide-area wireless networks (commercial cellular networks, private networks). Also, on top of the new mobile consumer products that are exploding onto the market, there is a huge global population of industrial equipment that's currently monitored over plain old telephone (POTs) lines – ranging from security alarm panels to neighborhood transformer stations -- all of which must convert to new communication methods when the POTs networks start to phase out within the next few years.

These 50 billion devices make up the "Internet of Things", or "Internet of Everything", in its most tangible form. Everyday objects will become intelligent assistants, such as medicine bottles that alert us when it's time for the next dose, and commercial assets will become field reporters instead of just standing there doing whatever they do. Behind this rising tide of connected devices are even bigger changes to the applications, services, platforms and networks that support them. Extreme innovation will be required at every level of the ICT

- Rich communication for everyone; High Definition video communication on your handset and tablet to become commonplace across the enterprise

- Social Networking for Enterprise; corporations will increasingly leverage social networks such as Facebook and Twitter, not just LinkedIn, to reach out to their employees and customers

- Internet of Things: expect to connect billions of smart devices in the coming years, creating various opportunities and challenges; subject of the main article in this newsletter

- Unseating of Nokia from the top; Nokia has been a major leader in the mobile industry and being loved by many people; however, it seems that they will lose some market share and industry influence

- End of Microsoft dominance in the Enterprise; with the diverse set of Operating Systems on Smartphones and Tablets, Microsoft will lose its dominance as the enterprises accommodate these devices, in addition to or instead of PCs or laptops.

It is obvious that these will create lots of new opportunities as well as new challenges for enterprises. Tighten your seat-belts for the ride!

mSolve Team

Dr. Mehmet Unsoy
Managing Partner
Dallas, Texas

Steve Gaynor
Managing Partner
Tucson, Arizona

Noriaki Aomatsu
Managing Director,
Tokyo, Japan

Etienne Coulon
Managing Director,
Claix/Grenoble , France

Nigel Dixon
Managing Director,
Munich, Germany

Palle Kjaer
Managing Director,
Sao Paulo, Brazil

Kevin Wiant
Managing Director,
Boston, Massachusetts

Leo Zhang
Managing Director,
Beijing, China

Swapnil Bora
Associate,
Dallas, Texas

Joo Kwang Chua
Executive Advisor,

value chain in order to manage the influx of devices and data streams that the Internet of Things will bring.

Here are a few segments we think are primed for rapid growth:

Device and Platform Software

These data and device management platforms, and related client apps, manage and control connected devices. Connected device challenges on the device/platform software side include keeping devices updated with current firmware and apps, filtering massive data streams for actionable events and trends, defining what they can and can't do through policy management and inter-device coordination, and providing consistent interfaces and management tools across a hugely disparate set of network endpoints. Standout companies in this segment include:

- **Recursion Software:** Voyager Platform and client software enables direct inter-device communication, coordination and sharing of both data and applications
- **Axeda:** Axeda Platform enables rapid development and deployment of connected device solutions plus analysis, reporting and alerting tools and pipes to popular ERP platforms
- **Red Bend:** Red Bend platform/client software performs over-the-air (OTA) updates of device firmware and applications, and performs virtualization services to ensure optimal performance
- **Eurotech:** Everywhere Device Cloud provides an end-to-end connection through the Cloud between a device and the apps and services that consume its data
- **Smith Micro:** SODA, the Secure On-Device API, provides a consistent cross-platform, cross-device interface to reduce app development and support costs
- **Tango Telecom:** Carrier-grade platform for advanced messaging including SMS spam suppression, real-time data charging and policy control

Semiconductors and Modules

This category includes chipsets that provide the logic, protocols and interfaces that enable a device to connect to a network, and the modules that contain them. Modules are chipsets packaged on a board or inside a small device with inputs and outputs for power, antenna and data, many with on-board applications. Challenges in this segment include balancing the perpetual quest for smaller footprints and lower power consumption against ever-increasing requirements for onboard features and applications. Keep an eye on these companies:

- **Bluegiga:** First to market with a Bluetooth Low Energy device, a USB dongle, plus Bluetooth modules and access points targeted to eHealth, proximity marketing and general markets
- **Texas Instruments:** Surface-mount WiLink, NaviLink and BlueLink modules combine wireless LAN, assisted GPS, Bluetooth, Bluetooth Low Energy, FM and ANT+ wireless capabilities
- **Cinterion/Gemalto:** Broad product line of connected device modules, some targeted to verticals such as automotive and all featuring on-board security such as encryption and firewall

Wireless Access Networks

Terrestrial and satellite networks operating in both licensed and unlicensed spectrum. Challenges for these players include expanding bandwidth and network speeds to support bigger, more real-time payloads, providing ubiquitous coverage, supporting/switching between multiple network technologies and developing profitable business models. Leaders here include:

- **KORE Telematics:** Global mobile virtual network operator (MVNO) providing worldwide device connectivity through partnerships with Vodafone and Iridium
- **Inmarsat, Orbcomm and Spacenet:** Satellite operators that provide global connectivity, independently or through MVNO partners
- **Neul, FreeWave Technologies and Airspan Networks:** Provide network equipment and licenses (if needed) for private wireless networks, providing greater control and reliability than networks that are shared with cellular voice customers
- **SpectrumBridge:** Clearinghouse for U.S. licensed spectrum available for private networks
- **Encore Networks:** Encore's Bandit II Copper-to-Cell (CTC) router connects legacy POTs connections to cellular networks, adding security features such as VPN, firewall and encryption

Singapore

Andreas Constantinou

Executive Advisor,
Athens, Greece

Virgilio Freire

Executive Advisor,
Sao Paulo, Brazil

Laurie Lamberth

Executive Advisor,
Los Angeles, California

Raja Narayanan

Executive Advisor,
Los Angeles, California

Dr. Shobhaa Ravi

Executive Advisor,
Dallas, Texas

Cloud-Based Services

By-the-seat or fully hosted enterprise applications either residing in the Cloud (operated by a third party) or accessed via the Cloud. These services are expanding rapidly into multiple segments ranging from medical billing to enterprise asset management. Watch for developments from:

- **Kareo**: Cloud-based medical billing and claims processing application that's building interfaces to leading electronic health records (EHR) providers
- **MedApps**: Hardware and services that connect patients' medical devices directly to EHR systems and medical providers for monitoring, rapid problem response and supply reorders
- **Aerotel Medical Systems**: wireless health hub that transmits data from multiple medical devices to a health monitoring center allowing real-time response to emerging or critical conditions
- **GeaCom**: Phrazier handheld device that allows doctors and patients to communicate in multiple languages, including cultural cues and a multimedia touchscreen interface for medical content

In addition to new business opportunities, the Internet of Things provides a number of **challenges**. These include developing **sustainable business models**, resolving **data and personal privacy** concerns, **coordinating** the action of connected devices (so they don't all go off at the same time, and make us crazy), and resolving the issues that drive the **Digital Divide** so that everyone can participate.

The Internet of Things will bring some of the largest technological and societal advances of our lifetimes, and its emergence presents business opportunities that are far too compelling to ignore. If you're not already thinking about how the rising tide of the Internet of Things will affect your company, your distribution channels and your customers, now is the time.

Laurie is an Executive Advisor at mSolve Partners. She is a prominent expert in the field of connected devices and the "Internet of Things", with deep connections to the executives and thought leaders throughout the wireless eco-system. She was part of the management team that launched Nextel Communications, and then helped to grow Nextel to a Tier-1 operator in the U.S.

Please feel free to contact us with any thoughts, questions and suggestions.

Sincerely,

mSolve Team
mSolve Partners
info@msolvepartners.com



mSolve Partners • 4838 Stony Ford Drive, Suite 100 • Dallas, TX 75287

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