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Internet of Things Evolving Into a Game Changer

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Unless you're completely off the technology grid (and in which case, you wouldn't be reading this post anyhow), you've probably been bombarded by countless stories/mentions about the Internet of Things (IoT). Whether you're aware of it – like it or not – the IoT is already transforming our lives. Procter & Gamble, for instance, rolled out a web-enabled toothbrush at last month's Mobile World Congress in Barcelona. It links with your smartphone, records your brushing habits and even has an app providing mouth-care tips alongside news headlines. While that toothbrush may not initially be overwhelmingly transformative, it further illustrates where we're heading. So to glean more, I queried four leading authorities who waxed eloquent on all things IoT. The cast of distinguished players (listed alphabetically):

- Andy Castonguay – Principal Analyst with market research firm Machina Research. Andy focuses on the rapidly evolving M2M ecosystems in the Americas with a particular focus on mobile health solutions and the M2M devices space.
- Daniel Obodovski – Author of 'The Silent Intelligence: the Internet of Things,' Daniel most recently served as Qualcomm's director of business development, where he led the commercial launch of multiple M2M products and businesses.
- Keith Robinson – Senior Strategist/Consultant, Head of M2M/IoT for market research firm Compass Intelligence.
- Mike Sapien – Mike's Principal Analyst-Enterprise for Ovum, a global market research company. He's the U.S. liaison for Ovum's telecom practice which includes coverage of enterprise mobility and M2M.

I lobbed a few questions to them; here are excerpts from our digital roundtable of sorts:

How is the IoT transforming our lives right now?

Andy: IoT is steadily being introduced into many aspects of our lives in intriguing layers - health and fitness measurements, connected home systems, contextually aware electronics and new models of cars fully connected and prompting new business models for service and content. Within a few years connected devices and sensors will have become a mainstream element of our lives.

Daniel: A smart thermostat helps you save on your utility bill by turning air conditioning or heat off when there is nobody in the house; it also allows you to remotely control the temperature. A fitness tracking device helps you staying healthy and on top of your fitness goals by measuring the amount of calories you burn throughout the day and comparing it to your friends and peers. And car insurance may offer you a better rate based on your actual driving habits instead of just your demographic profile, by using a device connected to your car's OBD-II port. In addition, location tracking and monitoring devices help you accurately track your package while in route, connected industrial machines help optimize service cycles and dramatically reduce downtime, and cars can communicate to each other to avoid accidents.

Keith: In the consumer market, IoT is allowing people to have greater access to information to make more informed decisions. People are gaining more insight into their vehicles, health, and energy management. The IoT is making people more analytical and improving the thought process for humans. It is taking the focus away from gathering information and shifting it to the interpretation of data. In the enterprise market, IoT it is creating new business models with the amount of data being collected. IoT is also making companies more efficient in their operations. Both consumers and companies have access to information in real-time 24/7. The amount of information being collected is allowing companies to create actionable strategies much faster.

Mike: Some emerging mHealth solutions are starting to emerge as adoption increases for monitoring patients and overall improved patient outcomes driven by growing patient engagement. This is just one example but there are many including the use of wired parking meters that today allow cities to market, monetize and collect more revenue from street parking with integrated systems.

And how will it be transformative a year from now? Five years from now?

Andy: Within a year, connected car models will be common across the portfolios of many major manufacturers. This will begin to reshape how car owners interact with their dealers and the car companies in profound ways. Along these lines, Tesla recently used its connectivity platform to perform systems updates on its entire fleet following a recall announcement. This is all done in an over-the-air fashion, practically eliminating the need for Tesla owners to take their cars into a service center to perform the update. That signals the growing shift in experience brought about by IoT and the models will evolve from here.

Daniel: You won't need to go to a doctor's office just to check your blood pressure or measure your ECG. Your healthcare providers will receive a much richer picture of your health and well-being by utilizing data sent in real-time from devices you wear on your body or embedded in your clothes. That would allow your doctor to only contact you if something really requires her attention. So no more routine check-ups

Keith: Five years from now, the majority of new vehicles are anticipated to be connected vehicles. With wireless carriers making a big push in this market, vehicles are expected to be a major hub for Internet activity, thus allowing passengers to use more connected devices within vehicles. Companies like Audi have been real innovative in this area. And while there has been a considerable amount of discussion on the connected home, also watch for advancements in intelligent buildings. This market took a backseat because of the economy because building owners were spending fewer dollars on capital expenditures for retrofits. As the economy grows, new construction starts are expected along with more retrofits in existing properties. This is an emerging sector that will help transform the way we work in five years and how buildings are managed and interact with the smart grid.

Mike: Five years from now, every electronic device or any device that requires power will have a wireless connection and provide a value-added service or maintenance program based on the wireless connectivity for the user or the manufacturer. Car

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Friday, May 30, 2014

BLOGPOST Back in 1974, Dov Frohman, one of Intel's first employees and the inventor of EPROM, erasable programmable read only memory, decided to leave Silicon Valley and return to Israel, his adopted home since 1949. Frohman was charged with helping Intel establish a small chip design center in Haifa, which at the time, was Intel's first outside the U.S. The rest, as the cliché goes, is history. In a little over a generation, the Israeli semiconductor industry has grown to now employ more than 20,000; annual revenues are about US \$5 billion.

manufacturers will not be controlling infotainment or wireless connectivity in cars; end users and the devices that passengers bring will be driving most services and infotainment in cars. Mobile development and mobile device replacement will always be faster than car technology so they will never keep pace with new services.

What are some of the most promising IoT areas for entrepreneurs?

Andy: Technology represents the best hope for improving compliance, service delivery and monitoring health and behavioral shifts. The sector is notoriously complex, but for the ones who crack the code, the payoff will be substantial.

Daniel: Hardware remains one of the most attractive areas - just look at the successful campaigns by Pebble, Tile and others. In the IOT space hardware is years away from being commoditized. Smart applications - utilizing existing sensors and a smart phone or tablet as user interface is another promising area.

Keith: Connected healthcare is very promising because you have a sizeable aging baby boomer generation that is tech savvy. The ecosystem and key influencers are vast in this market and there is a plethora of potential opportunities. For example, there are opportunities with patients, caregivers, physicians, insurance companies, government, medical device companies and family members monitoring patients. Products and services targeting the smart city segment are very promising. Municipalities are constantly looking for ways to reduce expenses and provide more efficient services. Cities like Boston, Charlotte and New York are experimenting with unique applications.

Mike: The most promising areas are applications or solutions that simplify and improve the end user's experience with a focus on simplicity and ease of use. In most cases, if the solution can be integrated into what the user does or has already, the more likelihood of increased adoption. As with most inventions or new business opportunities, it comes down to solving a problem, improving the existing process and/or creating unique solution for a specific market. Some of the most promising innovations will be consumer solutions that can make the transition to business use/markets.

And for venture investors?

Andy: The M2M/IoT vendor community is still quite diverse and fragmented. The next few years will provide plenty of opportunity for capital investors as well as the chance to roll up companies to gain scale and reach.

Daniel: Again, hardware has a lot of potential if done right. Most investors prefer to focus on software and services, but without hardware in the IOT space no software and services can thrive. Wearable devices are a very promising area. Consumer medical devices are a good bet, because they don't require a FDA approval. In addition, any vertical solutions (platforms, services) that simplify and facilitate time-to-market for IOT applications may be promising.

Keith: The key for venture investors is finding companies that provide a unique value proposition and they truly understand the ecosystem and end-user requirements for each market they participate in. The hot areas are expected to be mHealth, connected home, intelligent building and smart city. The industrial process industry is a unique opportunity because there are several legacy products in the field and various standards. This is a market that could experience solid opportunities but it will require a company that has a very unique value proposition.

Mike: With IoT and the pace of innovation, it may require investors to speed up their decisions in all phases of the investment timeline and cycle. It is a little more than 'fail fast' but definitely with IoT, the development cycle may be accelerated versus other investments.

Provide a couple of successful IoT examples.

Andy: Tesla is one. Medical devices such as sleep apnea machines and diabetes care devices are also making significant progress.

Daniel: Already this year there have been several significant acquisitions in the IOT space. Two of these are ThingWorx being bought by PTC for \$130 million and the acquisition of Nest Labs, the makers of a smart thermostat, by Google for \$3.2 billion. ThingWorx offered a platform allowing for easy development and deployment of third party apps on IOT devices. Nest Labs, a startup, managed to sell almost a million thermostats within two years, which says a lot about the demand for IOT solutions.

Keith: AT&T's Digital Life solution illustrates how the connected home is evolving. It allows customers to monitor their home remotely and can be customized based on each end user's needs.

Mike: FitBit is good example of simple IoT solution that has gotten a certain amount of adoption.

How will the IoT transform economies from both a macro and micro perspective?

Andy: At a macro level, one of the areas receiving heavy focus and investment is smart cities. Barcelona is among the vanguard in this area of smarter coordination of city systems and resources including transportation, energy, and waste management.

Daniel: The IOT will dramatically transform the global supply chain. The impact will be similar to that of the Internet in the 1990s when order entry processes were dramatically shortened. The IOT will allow all stakeholders in the supply chain to monitor the movement of goods in real-time and save huge amounts on optimizing the flow, preventing incidents and so on. In the emerging economies the IOT will allow them to leapfrog some of the legacy proprietary technologies that developed economies had to cope with.

Keith: Cisco predicts a \$14.4 trillion in value is at stake between now and 2022.

Mike: IoT will definitely change government activity and transactions with its citizenry from regulation, fee administration and the simple parking meter example. From government to universities to corporations, the incoming generation will be demanding more access, be more visual, social media conscious and accept the use of simple IoT solutions versus many of the traditional methods.

Any IoT caveats that are a cause for concern?

Andy: Security is definitely a concern in the current environment, especially for any product or service that can represent a personal safety risk, financial privacy target or crucial infrastructure liability. That concern is being addressed by many companies, but I suspect hiccups are imminent.

Daniel: Data privacy is crucial - significant amounts of data are being collected on a daily basis about our lives - from personal fitness devices, medical devices, thermostats, intelligent cars and so on. It still remains unclear who owns all of this data and how it's being used and monetized, and, most importantly, how much control consumers have in this whole process.

Keith: All of this data being collected is also a major concern for enterprises. Companies are spending R&D dollars to close the loop because security concerns are limiting some of the growth in this market. There is also a noticeable lack of standards.

Mike: The basic question remains - Is the IoT solution solving a problem? Is it much simpler than the previous process or solution? If the answer is yes, then the security, ease of use, ROI and go-to-market tactics are all critically important.

And where do we go from here?

Andy: IoT and M2M solutions present some of the most exciting business opportunities in the market today. Those opportunities are as much related to selling cool, connected products as they are focused on rethinking the nature of existing business models and client interaction. The next few years will bring substantial change in how connected things become part of our daily lives. In the same way most of us can't imagine a life without a smartphone or computer today, the expanding array of connected devices and sensors will soon become part of the fabric of our daily lives.

Daniel: We are at the very early stages of the IOT, but it's about to change our lives in more profound ways than we can imagine today.

Keith: Companies that will be successful will be those that understand the trends and make actionable strategies based on the ecosystem of each vertical market they are targeting. This will be the difference between winning and losing in this market.

Mike: IoT should not be viewed as a complete panacea - it's an overused, abused and misunderstood term that really is about solving a problem or improving a current process using wireless communication effectively. Since most electronics or powered devices will have some form of communication, the challenge isn't about the solution, it's about the implementation and the business model.



Getting Help from the Home Country Proving Essential for Foreign Startups in the U.S.

Friday, Apr 18, 2014

BLOGPOST It's challenging enough trying to generate some noise and buzz about your product/service/app if you're a U.S.-based startup. Cracking the U.S. market can be daunting. But if you're a foreign startup, the difficulties are manifold. Fortunately, many countries and private organizations have realized this and have rolled out extensive programs and services to bolster the success rate for these nascent companies on this side of the pond.



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device will have a wireless option, the challenge is to develop the solutions that have an adoption rate, lifecycle and sizable market that match the investment and resources required for a profitable IoT based business.



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