Connected Home and Building: Beyond the Hype of Hockey Stick Market Forecasts

Presented by:

Delivering meaningful insight into industry trends requires an ability to describe the impact at a grand level while highlighting the individual aspects of the trends. Today most consumers have seen a commercial on TV about the Internet of Things and heard projections that either sound like the start of Terminator or make you rethink your stock portfolio.

IoT Evolution Expo, as a conference, can be useful for investors, but the overall objective is to show the value within the trends. For Connected Home and Building the trends are numerous.

The Connected Home & Building Conference, *Collocated with IoT Evolution Expo*
The conference reflects many different markets. Sampling projections of these markets represents a huge Opportunity.

	2015	2016	2017	2018	2019	2020
Total ($B)	165	223	313	455	683	1,054

This white paper highlights why the hockey stick projections associated with IoT often reflect the total value of the service or solution and not specifically IoT's portion of the value. For example a smart kitchen appliance embraces the total value of the appliance and not just the cost of benefits of connectivity and applications. On the other hand, IoT smart home forecasts address only the IoT smart home devices sold.

What markets are covered by Connected Home?

Apps to Manage Smart Appliances:
Consumers have the ability to remotely manage and monitor their homes with apps on their smart phones and this has created opportunities for retooling of house. Everything from exterior sprinklers and surveillance to interior motion detectors and temperature monitoring are being enabled with applications, gateways and sensors. Business Insider suggests this is already a $61B industry with projections to grow at 67% a year for the next five years. At the heart of this trend are the enabling software applications and platforms that turn the phone into a remote control which is the basis of the Connected Home & Building Conference session "**Home is Where the App Manages".**

Smart Appliances:
Big Ticket items like kitchen appliances have a much slower growth rate (15.9% CAGR from last year to 2020), which is logical given the consumers typical reluctance to spend on these products. However just like the displaying of energy rating of appliances has driven sales, the Consumer's ability to remotely manage and interact with their appliances will drive purchasers. One of the more interesting aspects of this connectivity is the ability to affiliate appliances with online ordering of groceries. The

session the **IoT Appliances: The Kit in the Kitchen** is more than the refrigerator talking to you, it's about enabling innovative solutions through sensors and connectivity.

Resource Management:
The Home represents a safe surrounding, but the overall environment can benefit from IoT as well. Weather Stations and satellite images have given us a worldview that was hardly possible just decades ago. IoT Evolution's keynote Mike Finnerty of the Weather Company (now part of IBM) explains the importance of data and its' roll in keeping consumers informed to avoid being caught off guard. Resource management has given us insight into oil fields and disaster recovery. Market forecasts for Environmental Resource management are elusive and the growth rate is slower as many of these solutions represent significant lag time in sales cycle and government regulation. However as the UN DP has pointed out, the costs of not doing anything are 260B annually, for water resources alone. Having market forecasts for big government projects sound gigantic our **Resource Management: Waste Not Want IoT** panel will show that local low cost solutions can have great impact.

Industrial and Consumer Lighting Solutions
From the elusive environmental market we find concrete market data on industrial lighting as the entire market is forecasted to grow to $63B by 2020. However included in that number is the consumer's migration to Light Emitting Diode {LED] solutions which save energy, reduce thermal pollution and generally are more luminous. When it comes to IoT, the industrial markets present a more interesting value proposition as warehouses, production facilities and office buildings start to see significant cost reduction as a result of intelligent lighting solutions. Seeing how IoT and LED combine for business will be highlighted in **Let There Be Light in Industry.**

Facilities Management
The crossover between lighting and facility management may be significant and yet the forecasts for facilities management of $49.4B is less than LED lighting total market suggesting that this forecast is more focused. The predictions are for North America to be the leader in developing this market. As millennial join the work force the expectation to be more nomadic is going to significantly impact the need for office space. This makes IoT more critical as a shifting work force requires the energy consumption to be dynamic and modular. Hear more about this in the **Facilities Management: Making the Cost Center a Buyer's Market** session**.**

Smart Cities
The recent rise of low power wide range systems have shaped a new battlefront for Smart City alternative deployments. While cable operators focus on Wi-Fi and Wireless carriers point to LTE; Sigfox and the LoRa alliance are looking to change the costs models to support fixed wireless IoT that benefits smart city developments. The market forecasts for Smart Cities range from a mere $16.6B to $1.1T. The differences in the forecasts can be explained, to some extent, by scope. In discussions with politicians and

thought leaders, it's clear that citizen's convenience is going to drive the deployment. **It takes a Village: Smart City Architecture** will discuss how smart cities become the host for a variety of citizen solutions.

Precision Farming

Through the use of sensors to determine crop yield, environmental factors, irrigation, nutrient, and soil we find the growing role of IoT in Precision Farming. The $9B market (in 2050) may look smaller and less immediate compared to the giant numbers from other markets, but it represents significant opportunity for new entrants and regional services including ocean fisheries. **The Farmers IoT Markets: From Drones to Prawns** includes some more interesting discussions of how sensors are enabling new customer implementations.

Smart Parking

Having seen the smaller market forecast for agriculture, the market forecast for smart parking at $43B in 2025 shows the importance of density. It also points to the importance of connectivity. While this category includes the simple in and out counts of some parking garages, it also includes the apps that help find street parking. Many companies have been proponents of the Dedicated Short Range Communication [DSRC] technology that can be used to manage intelligent parking and better navigation. **Street Wise IoT: Parking Intelligence** will explore how apps, radios, and sensors combine to make telematics about the users needs when they want to stop driving.

In Conclusion, the hype of the Smart Home & Building opportunity may seem so over exaggerated that many people may not realize the IoT opportunities are real. The Smart Home opportunity is comprised of several subsets. Seeing these components and how they roll up into the very large Smart Home number shows this in a more realistic light, as shown below.

Markets/Years	2015	2016	2017	2018	2019	2020
Smart Home	61	102.7	172.9	291.1	490.0	824.9
Smart Kitchen	10.0	13.0	16.9	22.0	28.6	37.2
Resource Management	28.9	30.4	31.9	33.5	35.2	36.9
Industrial LED Lighting	16.9	22.0	28.6	37.1	48.3	62.7
Facilities Management	27.3	30.7	34.6	38.9	43.8	49.4
Smart City	10.0	11.3	12.9	14.6	16.6	18.8
Precision Farming	2.7	3.1	3.5	3.9	4.4	5.0
Smart Parking	8.3	9.8	11.5	13.6	16.0	18.9
Total	165	223	313	455	683	1054

The market represents consumer "fast to market" opportunities with a 70% growth projected over the next few years. If you were to remove that specific consumer

driven market forecast the projections are at 17% and represent a slower growth market of $229B by end of 2020.

Regardless of the hype, the reality is that IoT is having an impact and represents an opportunity that will benefit almost every enterprise.

About IoT Evolution Conference and Expo

IoT Evolution provides attendees with an understanding of how M2M and the Internet of Things (IoT) will be the driving forces behind improving efficiencies, driving revenue opportunities and solving business problems across multiple industries and in nearly all business functional areas. Attendees will learn how to use IoT solutions to create an ecosystem for actionable data, information and efficiencies for a myriad of different applications including retail, medical and smart home/building applications as well as cross industry applications in big data, security and logistics. (Includes transportation, fleet management and demand response). IoT Evolution's conference content will have a strong focus on how enterprise IT and enterprise business processes will change based on the capabilities inherent in connected devices, sensors, controls and cloud computing.