

The Internet of Things – Hype or Value?

A CIMdata Education Webinar

PLM Leadership

IoT: Hype or Value?

CIMdata PLM Leadership Webinar Series
10 March 2016
#cimdatawebinar

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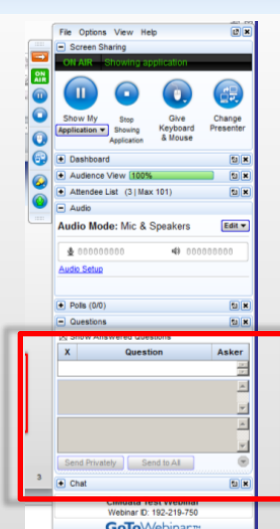
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High Tech Practice Manager

Professional background

- Laila Hirr, High Tech Practice Manager and Sr. Consultant
 - Has worked in PLM space for over 20 years
 - Over 10 years in semiconductor equipment and high tech manufacturing
 - 5 years of enterprise engineering systems management
 - 5 years of global PLM program management
 - MSME with emphasis on CFD and engineering technology management
 - BSME focused on materials engineering



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Our Mission...

Strategic management consulting for competitive advantage in global markets

CIMdata is the leading independent global strategic management consulting and research authority focused exclusively on the PLM market.

We are dedicated to maximizing our clients' ability to design and deliver innovative products and services through the application of PLM.



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Our Role...
Our role in the PLM ecosystem—facilitating and energizing the PLM economy

Solution Providers Exec. Mgt.
Product Mgt.
Mktg./Sales

CIMdata

Exec. Mgt.
PLM Prog. Mgt.
Users

Industrial Clients

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Our Services...
Creating, disseminating, and applying our intellectual capital

Research

- Market research & analysis
- Technology research & analysis
- Reports & publications
- Market news
- Member services...

Education

- Executive seminars
- PLM Certificate Programs
- Technology seminars
- Int'l conferences & workshops
- Best practices training...

Consulting

- Strategy & vision
- Needs assessment
- Solution evaluation
- Best practices
- Quality assurance
- Program management
- Market planning...

Delivering strategic advice and counsel through a comprehensive, integrated set of research, education, and consulting services

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PLM Transformation
Services for Industrial Organizations—improving your PLM-related processes

CIMdata's PLM consulting methodology—transforming your business for a competitive advantage!

A comprehensive set of services tailored to fit your specific needs...

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Our PLM Transformation Clients...
A sampling of CIMdata's international industrial clients (1 of 2)

A&D	Auto	Fab & Assembly	High-Tech

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Our PLM Transformation Clients...

A sampling of CIMdata's international industrial clients (2 of 2)

CPG/F&B/Process	Medical/Pharma	Emerging Ind.	Other

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IoT – Hype or Value

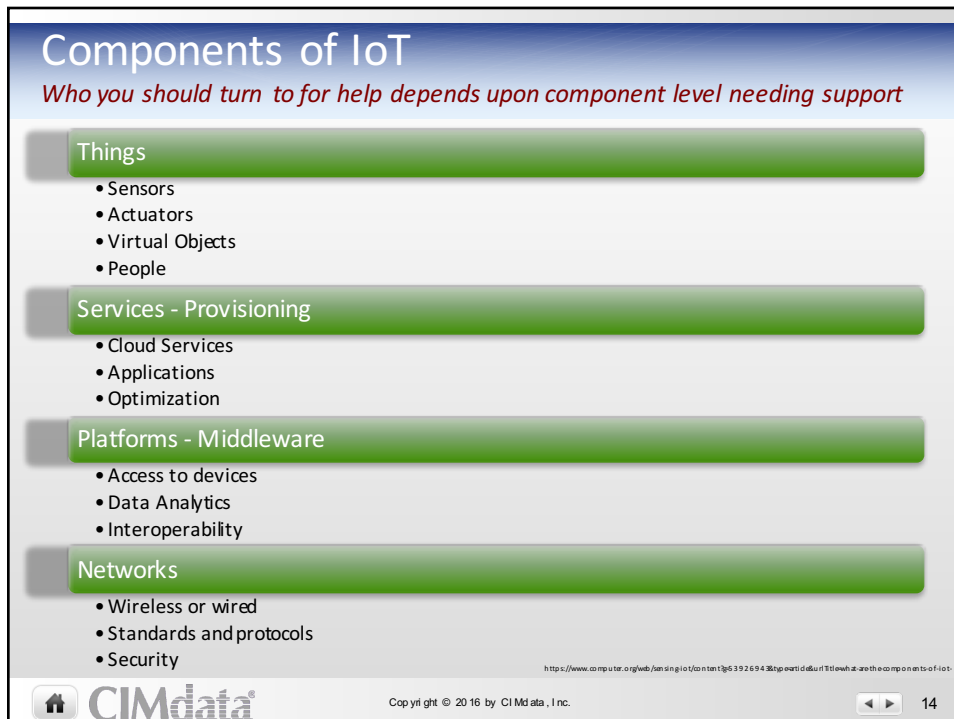
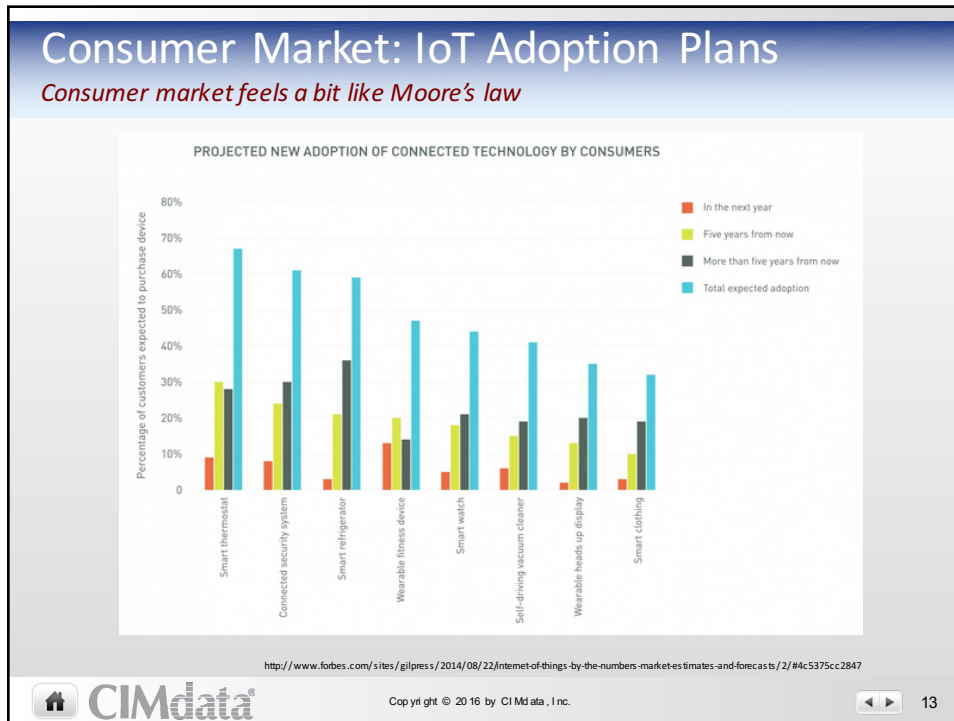
Key Takeaways

- You will better understand the IoT Hype
- You will learn how to prepare for IoT in a deliberate manner
- You will be in a position to consider the possibilities for leveraging IoT
- You will have a clearer understanding of the business case for IoT
- You will gain an understanding of the importance of closing the product lifecycle with IoT delivered data

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More About the Components

This is where to begin making IoT real

- Understand your objectives
 - Service offerings
 - Reporting
 - Design iterations
 - User consumption
- Understand your gaps and alternatives
 - Retrofit or redesign
 - Software or hardware
- Understand options for support
 - Make sure the solution providers you consult with are operating in the right realm of your need



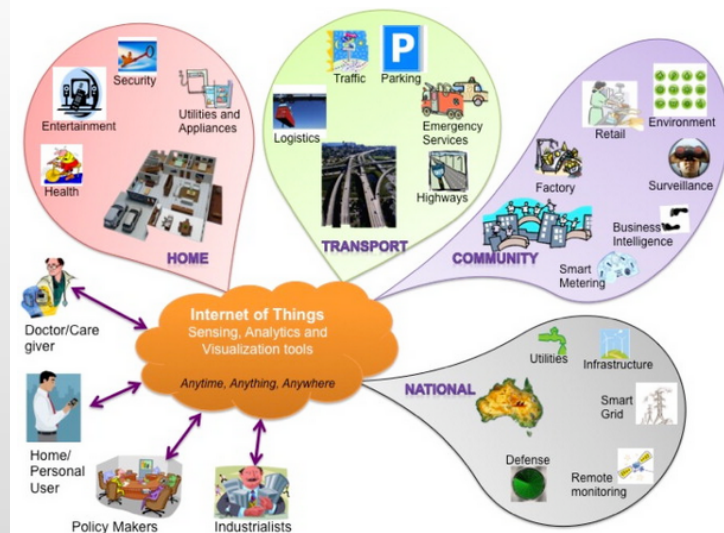
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IoT is Everywhere and is Proliferating

IoT is moving faster than the standards, laws, or ethics can regulate



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Common Expansion Areas

Markets challenges and opportunities (1 of 2)

- Industrial equipment
 - One of the largest areas of being able to expand service offering
 - Challenges are multiple standards, non-networked systems
 - Opportunities to better forecast service needs for customer and better manage service inventory
- Consumer products
 - Wearables, white goods, automotive, and more
 - Challenges are around anonymizing data, privacy, operational hacks, and security
 - Opportunities to capture consumables



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Common Expansion Areas

Markets challenges and opportunities (2 of 2)

- Building management
 - Smart buildings – business and residential
 - Challenges are privacy, security, and operational hacks
 - Opportunities in improving building operations, maintenance, and efficiencies
- Health management
 - Portable health management
 - Challenges are ethics, privacy, security
 - Opportunities to provide real-time monitoring, feedback
- Product development
 - Close the feedback loop, use a digital twin
 - Challenges are leveraging feedback on existing products, sorting data to validate decisions
 - Opportunities to leverage real world usage of offerings and to iterate designs



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Leveraging IoT

Retrofit, Redesign, Iterate, or New

- Retrofitting for IoT
 - Existing products may be more capable than you think
 - Sensors, controllers, computer connected, even manual logging
 - Open Manufacturing Language (OML), external devices, systems
- Redesign
 - Software updates, field kits, and more
- Iterate
 - Usage information as a means to define future offerings
- New
 - It's not the only option to become IoT enabled



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IoT and Security

Sensing and actuating have different security concerns

- Sensing
 - Data access concerns – anonymizing and/or privatizing the data
- Actuating
 - The riskier side of IoT – impacting safety, financial, health
 - The benefits may outweigh the risks – eliminating error
 - Security testing in a fully systems engineering context must be done
 - Think like a hacker, not just killing bugs
- Legal or ethical
 - Just because you can?
 - Make sure you consider extension of the ramifications



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IoT and PLM

Closing the Loop

- IoT data
 - Should not reside in PLM
 - Drives analytics and decision making
- Requirements and Quality
 - From the analytics of IoT data the requirements or corrective actions are defined and managed within PLM
- Making sense of the IoT noise
 - Being a data analyst is not enough
 - Must understand the systems and sources
 - Digital twin is a buzz word for a reason



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Concluding Remarks

IoT is moving fast—it's time to leverage it, secure it, and to close the loop

- IoT is real and growing opening new avenues of revenue
 - Manufacturing, services, government agencies, and consumers
- Getting expert help means knowing what tier of IoT the experts serve best
- Opportunities abound for leveraging IoT even if you haven't already designed it into your product and service offering
- Understand what security levels are needed based upon whether you are sensing or controlling
- PLM with IoT enables the digital twin allowing you to add value to your offerings



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Call to Action

Moving the PLM community forward

- Attend CIMdata educational webinars monthly
 - Feb 11: Simulation Governance: Managing Simulation as a Strategic Capability – recording has just been released
 - Next educational webinar topic is:
PLM Support for Knowledge Management & Retention
With John MacKrell on April 14th
 - check for details on both at:
<http://www.cimdata.com/en/education/educational-webinars>
- Join the High Tech Electronics PLM Action Group (see next)
 - Topics like this are rich opportunities to get involved
- Attend HTE/Med Device PLM Road Map (see next)
- For more information on these topics be sure to contact us



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HTE Action Group

High Tech Electronics companies collaborating to further PLM research & dvlp.

- Unique opportunity for High Technology Industry leaders to maximize the benefits they receive from their Product Lifecycle Management (PLM) related investments
- Enrollment is open to major high technology electronics companies and selected related industry companies
 - Collectively address current PLM-related challenges
 - Close technology gaps
 - Expose needed standards
 - Co-sponsor collaborative research with CIMdata
- Topics to include
 - IoT in High Tech
 - PLM in the Cloud
 - The complete product definition and PLM



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High Tech – Med Device PLM Road Map

Innovation and Structure – Where processes and tools collide

- Tuesday, May 24th at the Santa Clara Biltmore
- This one day event will cover topics relevant to the technology explosion by touching on these themes:
 - Taking innovation from concept to production in regulated industries such as medical devices
 - Key trends impacting innovation 2016 forward
 - The importance of cross disciplinary teams in innovative innovation
 - How is “mobility and connected” impacting product innovation, definition and service?
- Speakers from GoPro, Dell, USC, Edwards Lifesciences, and more
 - <http://www.cimdata.com/en/events/plm-conferences/event/162-plm-road-map-2016-for-high-tech-medical-device-communities>



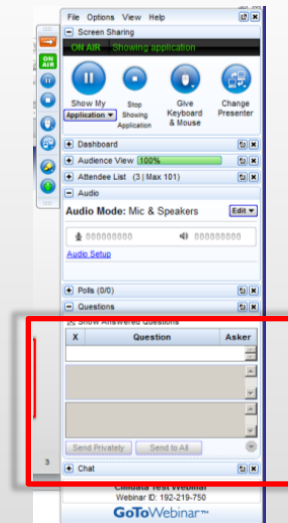
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