

# STARVest

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PARTNERS

Internet of Things (IoT)  
B2B Applications

August 2015

# StarVest Thesis

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*The Internet of Things, is an underlying horizontal trend that is growing and will have a large impact on the landscapes of StarVest's verticals going forward*

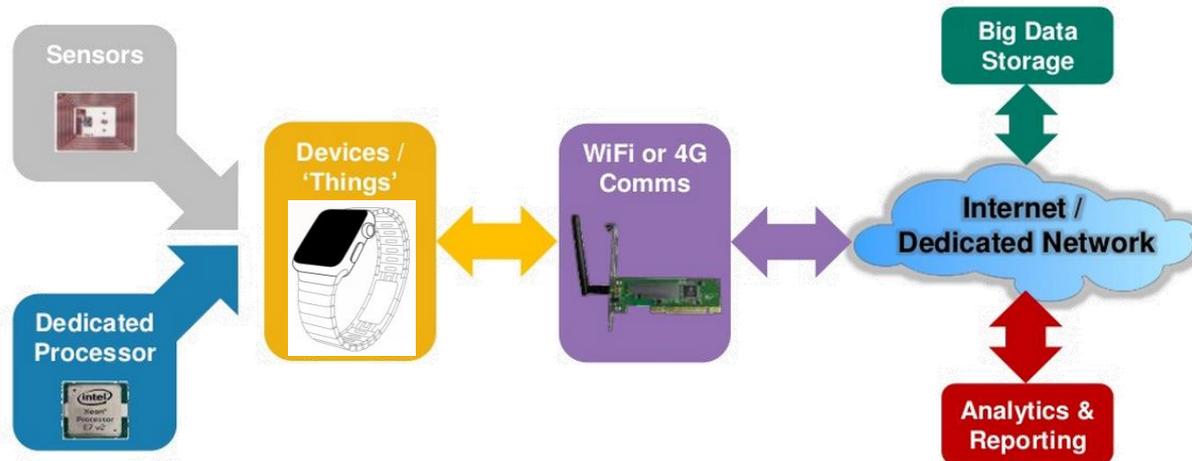
## StarVest Thesis

*“We seek investments in technology companies that provide critical business services generating high returns on investment (‘ROI’) for their enterprise customers”*

# What is the IoT?

*The definition differs by company and researcher which, in part, leads to the differing market sizes and expectations. Nuances aside, everyone agrees the opportunity is massive*

- The Internet of Things is the network of physical objects or “things” that contain embedded technology and software, which allows them to sense, interact, and communicate with the manufacturer, the operator, and/or other connected devices
- More simply, IoT is the term for matching sensors with cloud-computing systems
- The Industrial Internet, as it is called by GE, refers more to the B2B application of IoT and includes the Big Data and analytics component needed to recognize the true business value
- IoT is also sometimes referred to as “Internet of Everything” (Cisco) or Industry 4.0 (Bosch)



*Source: Diagram adapted from OpenText*

# How Big is it?

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*There exist many different views on the potential size of IoT, but what everyone can agree on, is that it is huge!*

**McKinsey** estimates it will have a global economic impact of **\$3.9tr to \$11.1tr per year by 2025**

**IDC** finds that the global IoT market will hit **\$7.1tr by 2020**

**Cisco** believes that IoE will create in aggregate **\$14.4tr** of “Value at Stake” (net profits) over **the 10 years (2013-2022)**

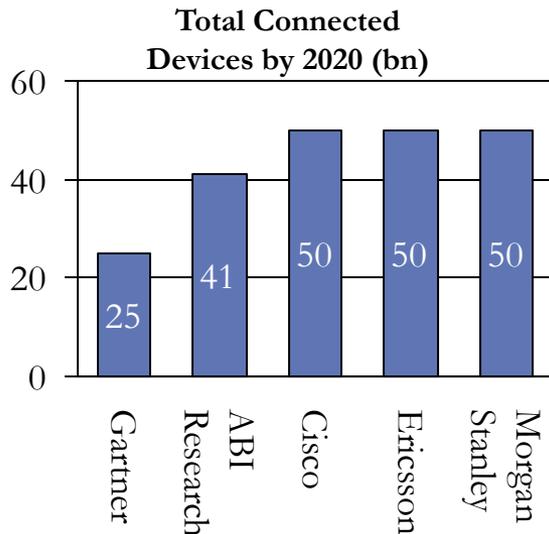
**GE** believes the power of the Industrial Internet to be as much as **\$15tr of global GDP by 2030**

GE expects revenues of \$6bn from software in 2015, up 50% YoY; much of this increase is from Predix, their pattern finding system

# Key Drivers to Growth

*The growth in IoT is being driven by primarily by three macro industry trends*

## Connected Devices<sup>1</sup>



- Consensus is hard to reach but the number of connected devices is rapidly increasing, compared to an estimated 5bn to 10bn today

## Decreasing Costs

- Price of sensors found in phones and wearables have on average declined 9% a year
- Cost to collect, store, and process data has decreased significantly allowing SMB's to leverage the power of big data analytics

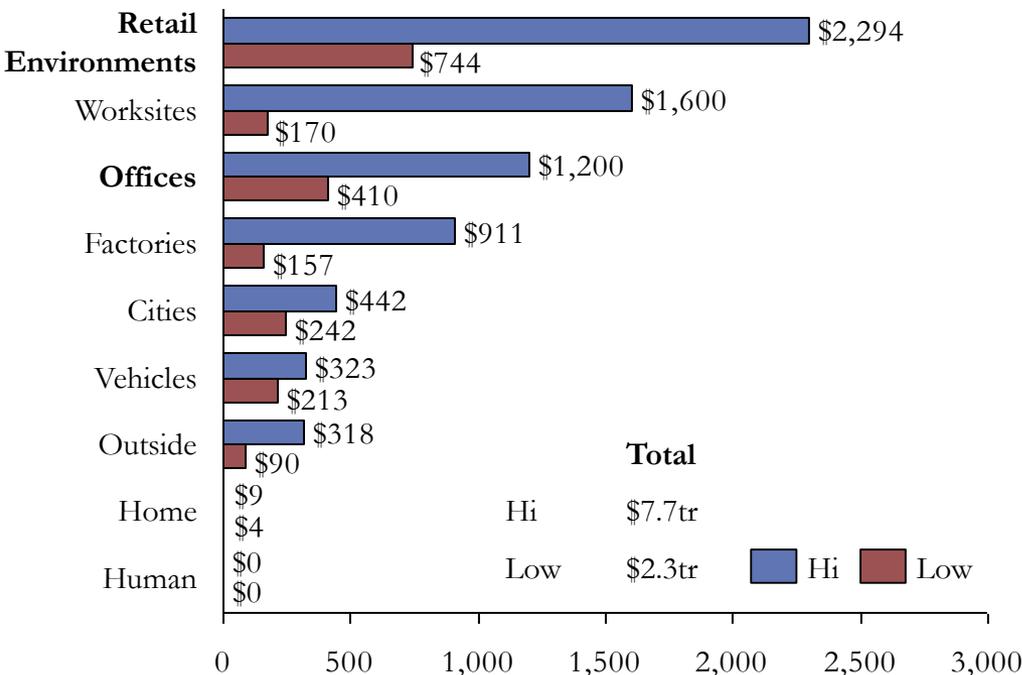
## Big Data and Analytics

- Through analytics and flexible production techniques, manufacturers have boosted productivity by as much as 30%
- Predictive maintenance of assets based on data from sensors has been seen to reduce overall maintenance costs by 30% and eliminate breakdowns up to 70%

# B2B Benefits by Settings

*While most of the buzz around IoT relates to consumer applications (e.g., FitBits and Apple Watches), the majority of expected value created by IoT comes from B2B*

McKinsey B2B<sup>1</sup> IoT Value by Setting (\$ in bn)



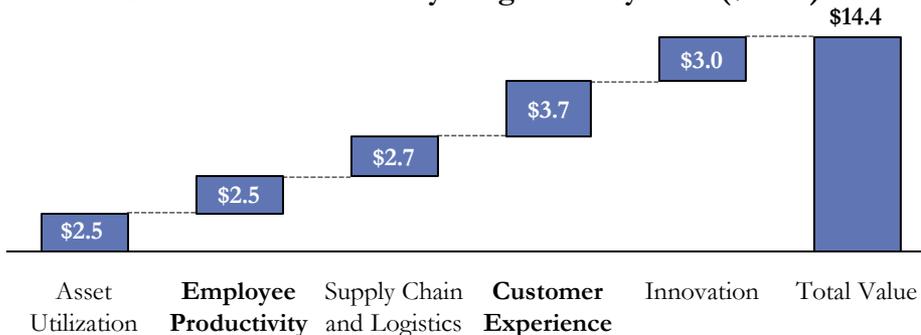
- McKinsey finds that, within the 9 settings they analyzed, over two-thirds of the value created from IoT is from B2B applications
  - Offices, worksites, factories, retail environments, and cities are found to have the most B2B value
- GE's \$15tr estimate for the industrial internet relates all to B2B applications

StarVest's core four verticals fall primarily in the Retail Environments and Offices settings, two of the largest value settings; Worksites and Factories is an area of opportunity for StarVest to broaden their expertise

# B2B Benefits by Improvement Area

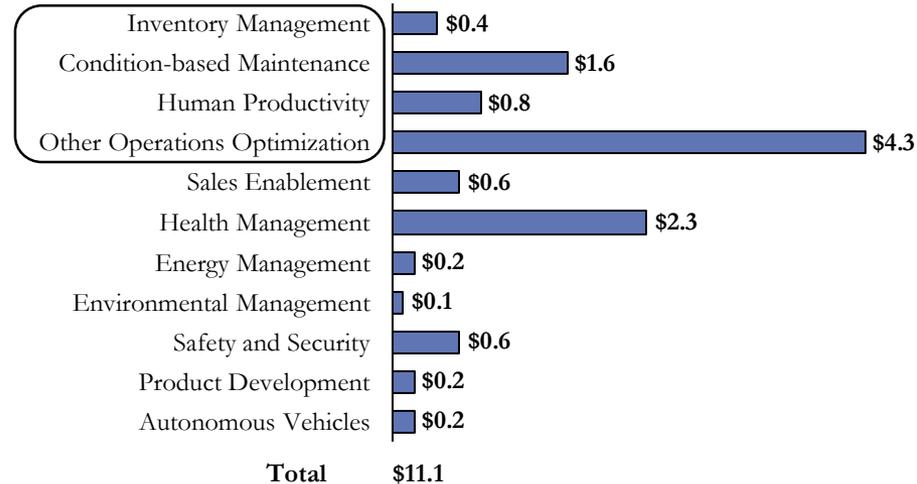
*B2B value can be recognized in various areas of business, with most value being generated from operational efficiencies and optimization*

Cisco Internet of Everything Value by Area (\$ in tr)



- Asset utilization: reduces SG&A expenses and CoGS by improving business process execution and capital efficiency
- Employee productivity: creates labor efficiencies that result in fewer or more productive person-hours
- Supply chain and logistics: eliminates waste and improves process efficiencies
- Customer experience: increases customer lifetime value and grows market share by adding more customers.
- Innovation: increases the return on R&D investments, reduces time to market, and creates additional revenue streams from new business models and opportunities

McKinsey IoT Value Breakdown by Area (\$ in tr)<sup>1</sup>



- McKinsey found that 63% of total IoT value will be generated from operations optimization (areas circled above)
- McKinsey finds that health management is the single largest area for IoT value generation

Customer Experience, the largest area by value, and Employee Productivity align with StarVest's investment "sweet spot;" Companies building solutions for Supply Chain and Asset Utilization are areas in which StarVest is building expertise

# B2B Settings Company Map

Retail  
Environments

Worksites

Offices

Factories

Cities

Vehicles

Outside



# Industry Examples

*Value from IoT will be seen in a wide array of industries*

## Utilities

### Thames Water Utilities Limited:

- Largest provider of water and wastewater services in the UK
- Use sensors, analytics and real-time data to help the utility respond more quickly to critical situations, such as leaks or adverse weather events

## Energy

### Columbia Pipeline Group:

- Use existing asset data integrated with digital visualizations, analytics, and shared situational intelligence, to respond to potential pipeline events faster
- Helps them prioritize maintenance tasks, resource allocation, and capital spend more effectively based on risk assessment

## Government

### The City of Seattle:

- Applying analytics to building management data to optimize equipment and related processes for energy reduction and comfort requirements
- Software identifies equipment and system inefficiencies, and alerts building managers to areas of wasted energy
- Elements, such as lighting, temperature and the position of window shades, can be adjusted in each room, depending on data readings, to maximize efficiency

## Healthcare

### Florida-based Hospital and Medical Center:

- Use real-time tracking and analytics to optimize patient flow
- Cut emergency department (ED) wait times by 68%
- Each ED patient receives a tag - combining patient Real-Time-Location System (RTLS), interfaces and bed placement timestamps they can evaluate and display real-time patient throughput metrics
- Achieved shorter lag time between discharge and patient pickup, ~30 min for ambulatory patients

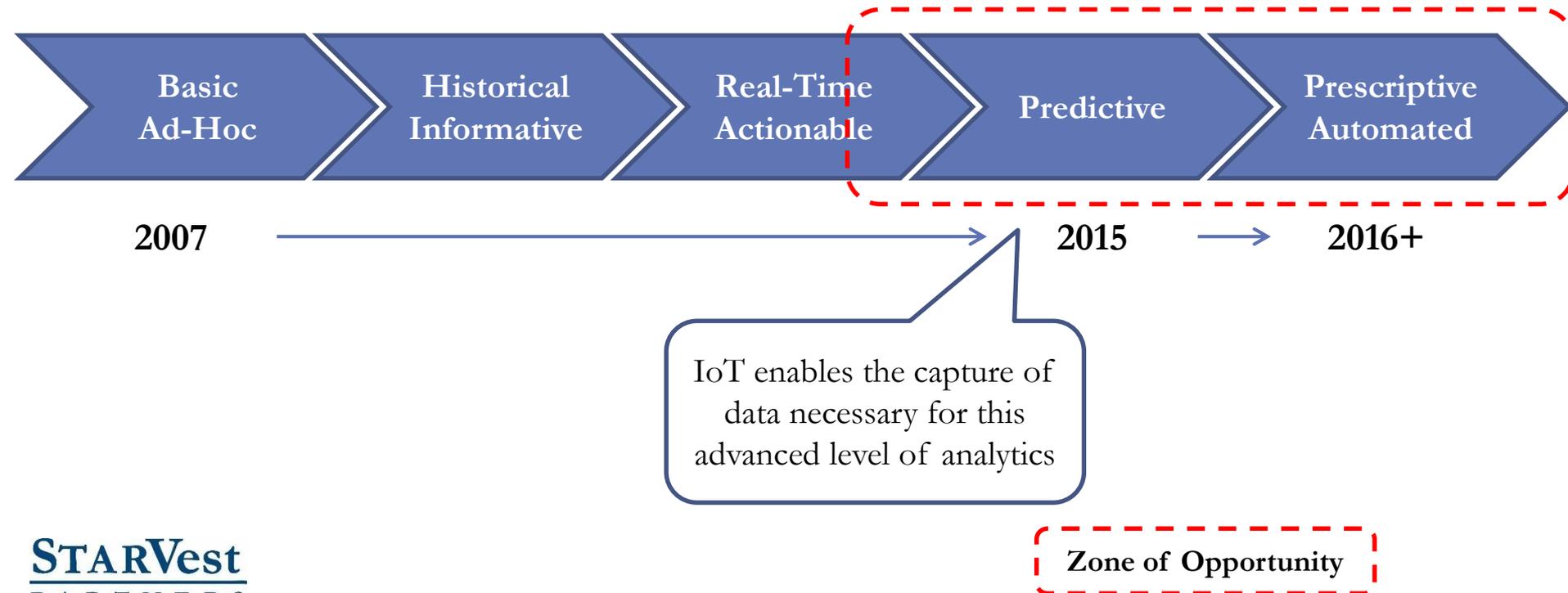
# Current IoT Tech Landscape



# Investment Opportunities Created

*Current implementations of IoT consist of asset monitoring, diagnostics, and fundamental analysis, but the future and where investment dollars are being spent now is on predictive analytics and optimization for decision-making*

## Degrees of Analytics – Timeline



# Risks to IoT

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	Risks	Mitigation Factors
Interoperability	<ul style="list-style-type: none"><li>• McKinsey finds that in order to unlock 40% of the potential value of IoT there must be more interoperability and companies need to find a way for devices to communicate across various different platforms</li></ul>	<ul style="list-style-type: none"><li>• Standards and protocols are currently being established</li><li>• Companies are beginning to create horizontal platforms and middle-ware to bridge platforms</li></ul>
Intellectual Property	<ul style="list-style-type: none"><li>• With all the data being captured and collected, there is some question as to who owns the data and has a right to use it</li></ul>	<ul style="list-style-type: none"><li>• Clarity on what data is collected and who has access will avoid IP issues with data</li></ul>

For full access to the white paper, please contact [info@starvestpartners.com](mailto:info@starvestpartners.com)