



# The Promise and Perils of Change: Enterprise IOT Survey Report

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# Methodology

- Online survey conducted in March 2016 of 620 US-based individuals working for companies who are involved with Internet of Things applications for their companies
  - 50% (310) came from medium-sized companies (100-999 employees)
  - 50% (310) came from large companies (1,000+ employees)
- Respondents had to be involved with their company's IOT efforts
  - Departments covered include IT, Operations, Manufacturing, Business Strategy and more
- Wide range of industries were represented including Tech, Retail, Manufacturing, Education, Health Care and Transportation

# Definitions

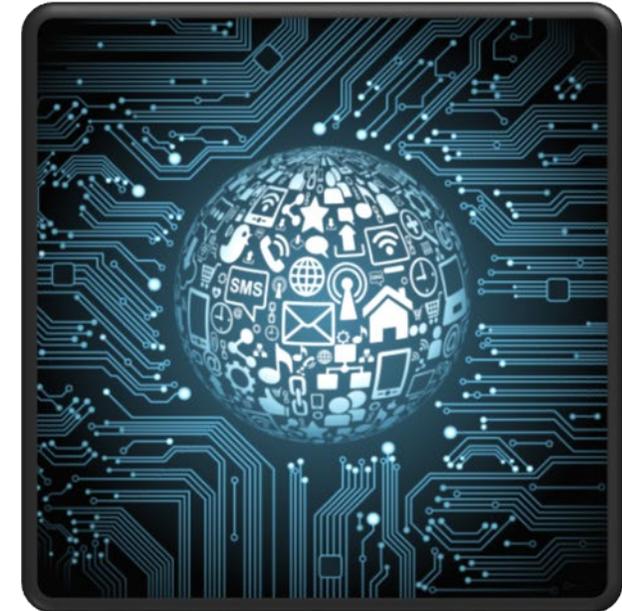
- IOT Definition provided to survey respondents was:

*IOT is defined as a network of non-traditional computing devices that are used to collect data on equipment, people or processes in an organization. Most systems consist of simple endpoints outfitted with a set of sensors that are connected together on a network and deliver data to a central point for additional analysis. Examples of IOT solutions range everywhere from smart lighting systems to vehicle tracking devices to factory production monitoring and beyond.*



# Key Findings

- IOT usage is reasonably widespread, but still most popular with tech-related companies
- IT is heavily involved in IOT, but operations is the group most typically responsible for IOT projects
  - Two-thirds of all IOT projects will be managed outside of IT
- Top three IOT applications are:
  - Employee monitoring
  - Security and identification
  - Energy savings
- Most organizations are more focused on improving processes than saving money
- Of those who do expect to save money, top three savings areas are:
  - More efficient operations
  - Monthly utilities
  - Saving employee time
- Nearly ½ of respondents expect to purchase and own all aspects of their IOT solutions
- Top three IOT elements to be purchased
  - Endpoints
  - Network
  - Onsite Analytics Hardware
- Connectivity/network elements considered the most important part of an IOT solution



## Key Findings, Page 2

- Just over ½ of respondents will use commercial grade endpoints
- Analytics locations spread out, but top choice is in data center, followed closely by near endpoints
- WiFi and Ethernet expected to make up nearly ¾ of all IOT connectivity options
- Top three IOT concerns are:
  - High capital outlay
  - Time necessary to deploy and evaluate
  - Security of IOT data
- IOT considered important or modestly important by 2/3 of respondents (but not essential)
- Top three partners for IOT projects are:
  - Large technology providers
  - Telecom carriers
  - Large system integrators
- Top three potential partners for IOT projects are:
  - Specialized systems integrators
  - Specialized facilities/operations integrators
  - Large building services providers
- Important differences for all these points across company size and industry



# IOT Opportunity Still Wide Open, But Still Developing

- Some organizations in full deployment, but many still in testing, proof-of-concept, limited installations
- Lots of challenges remain, including organizational
  - IOT will drive some tech out of IT
- Internal resistance and skepticism still a concern
  - As with many core technologies, needs high-level executive buy-in to be successful
- Early interest appears to be in technology companies, but greater opportunities from other industries may take longer to reach fruition
- Many companies focused on very specific solutions
  - Could be difficult and/or expensive to replicate
- Potential partners and co-collaborators still very broad
  - Opportunities for vendors across many areas
- Most companies definitely looking for/expecting help

*“We are still at the beginning stage of the whole [IOT] experience.”—*

*Survey respondent*

*“I think what were trying to do is very exciting but I am skeptical if the data that it will produce will be valuable or if it will show the same thing as our old data.”—Survey respondent*

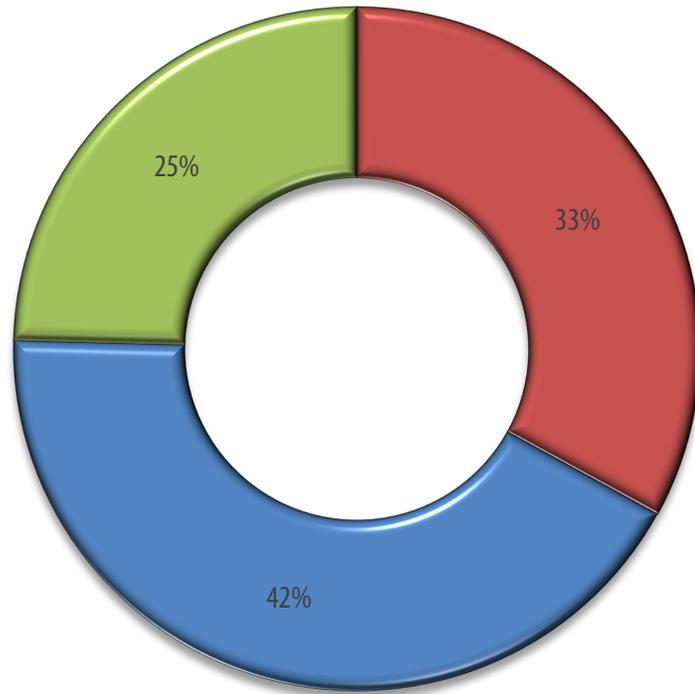
## Early IOT Focus is Tech

21.5%

Self-selected % of IOT  
survey respondents from  
the tech industry



# Most IOT Projects Managed Outside of IT



OT > IT

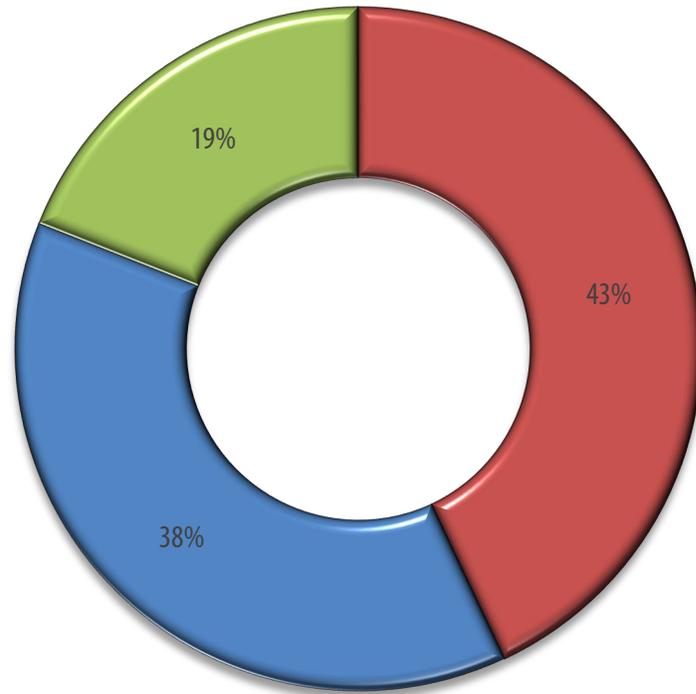
■ IT ■ Facilities/Operations, Manufacturing ■ Line of Business/Business Strategy

# Most Popular IOT Projects

1. Employee Monitoring
2. Security and Identification
3. Energy Savings
4. Monitoring and Alarming
5. Predictive Maintenance
6. Process Monitoring
7. Operations Analytics



# IOT Goals Are Varied



Process  
Improvement >  
Saving \$\$

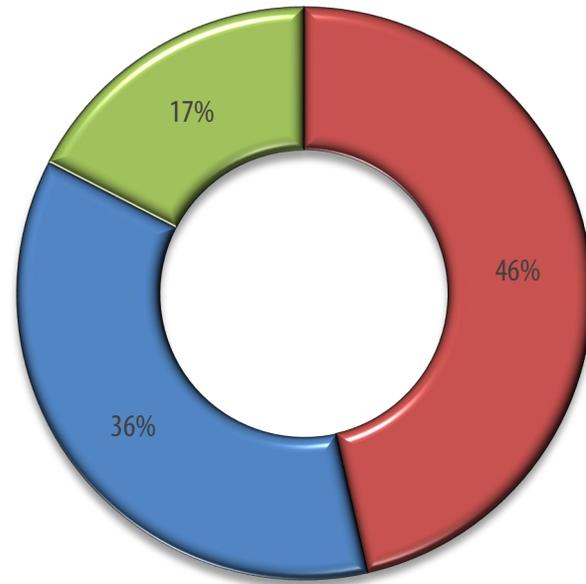
■ Improve Process/Innovation Quality   ■ Save Money   ■ Make Money

# Where Money Saved

1. More Efficient Operations
2. Monthly Utilities
3. Saving Employee Time
4. Reduced Downtime
5. Business Cost of Goods/Supplies



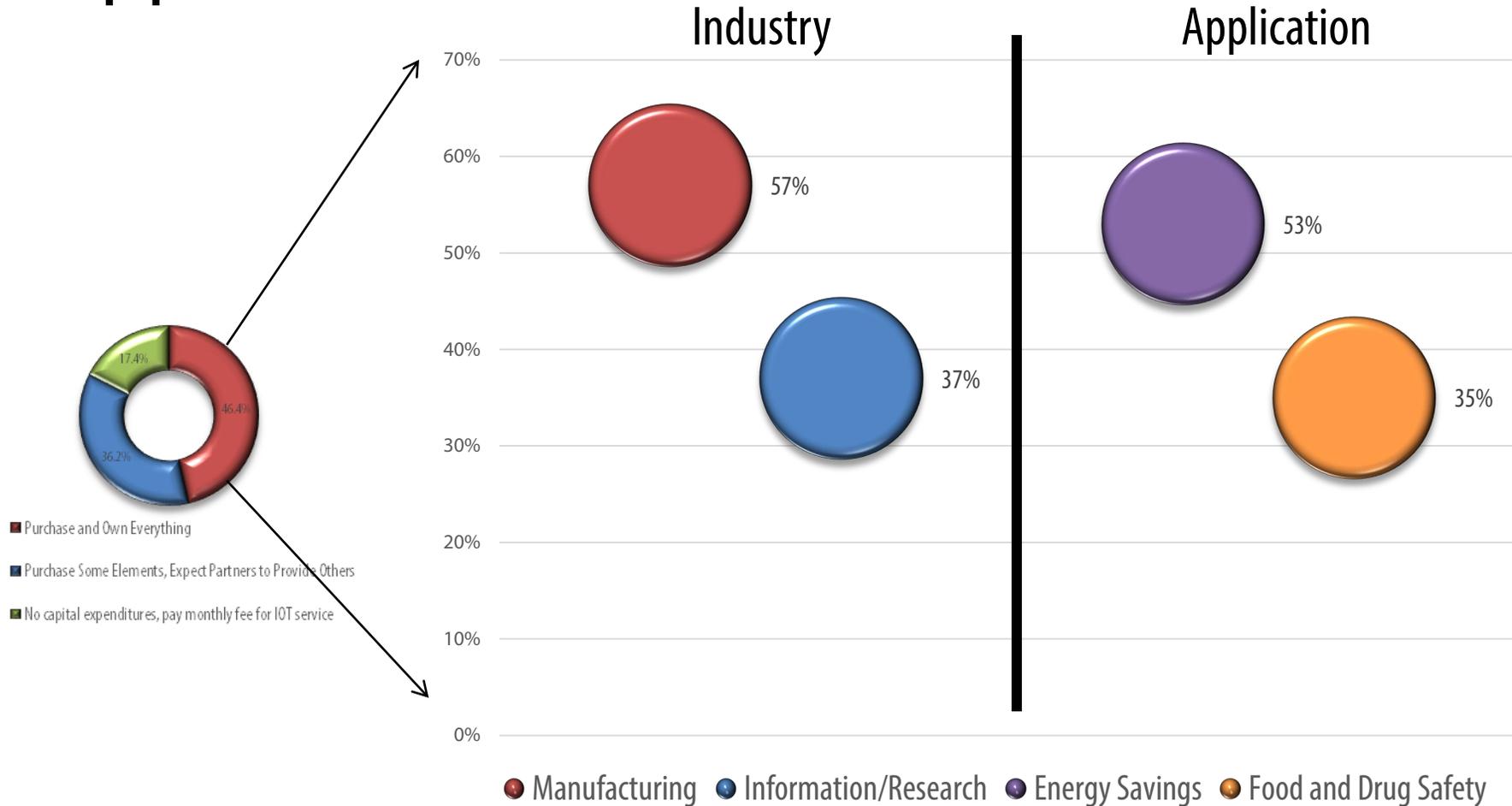
# Most Plan to Own IOT Elements



- Purchase and Own Everything
- Purchase Some Elements, Expect Partners to Provide Others
- No capital expenditures, pay monthly fee for IOT service

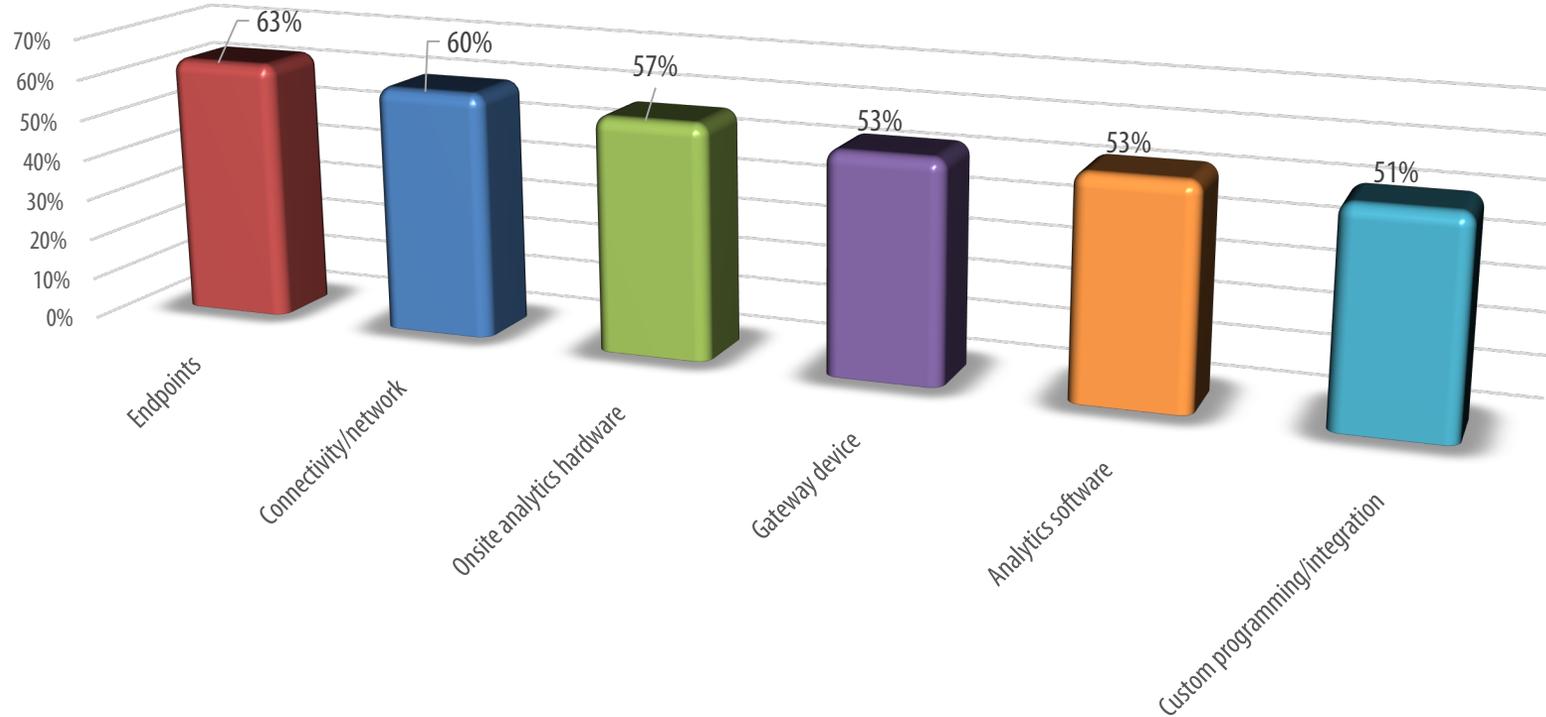
Organizations  
want to own IOT  
components

# Total IOT Ownership Interest Varies by Industry and Application



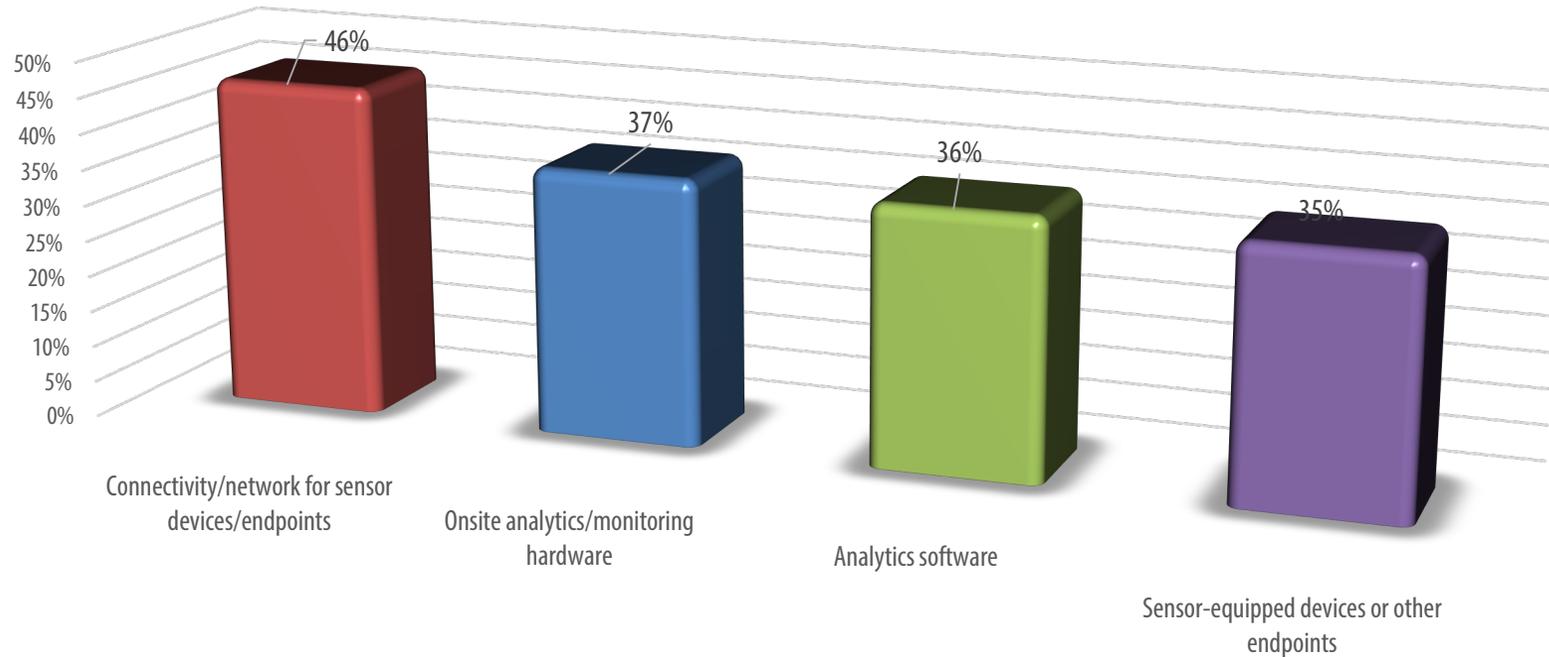
Nearly 20%  
gap from  
highest to  
lowest

# Hardware Trumps Software on Intended IOT Purchases



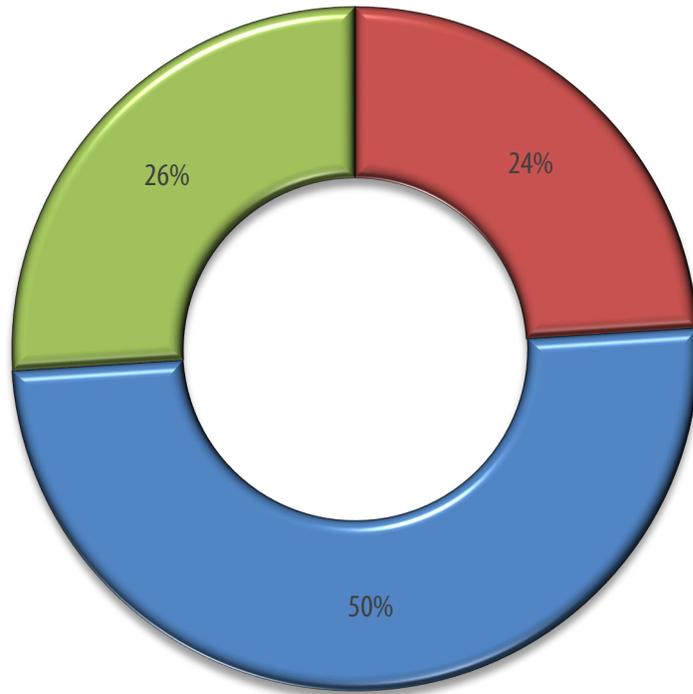
Getting  
necessary  
hardware still  
comes first

# Most Important IOT Component? Connectivity



Highlights strategic importance of network over hardware and software for IOT

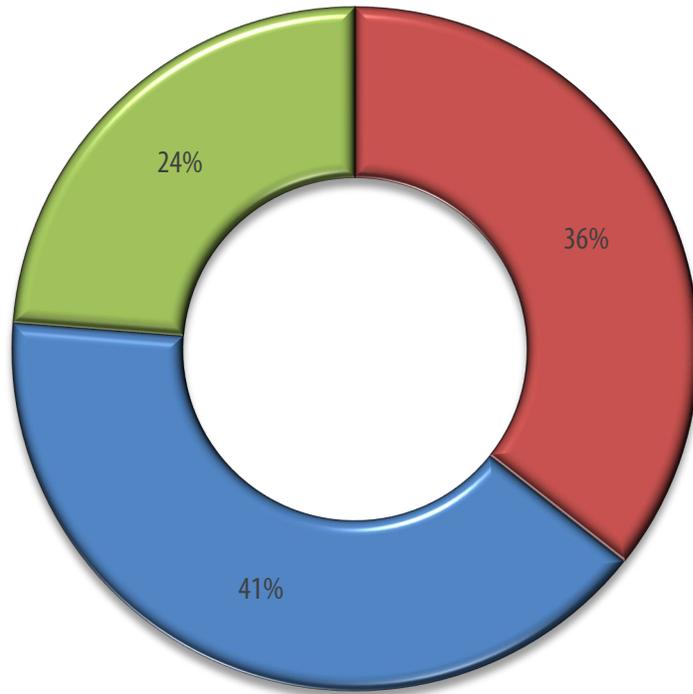
# Enterprise IOT Endpoints Not All Heavy Duty



■ Consumer ■ Commercial ■ Industrial

- Nearly one-quarter expected to be consumer-level
- One-half to be commercial

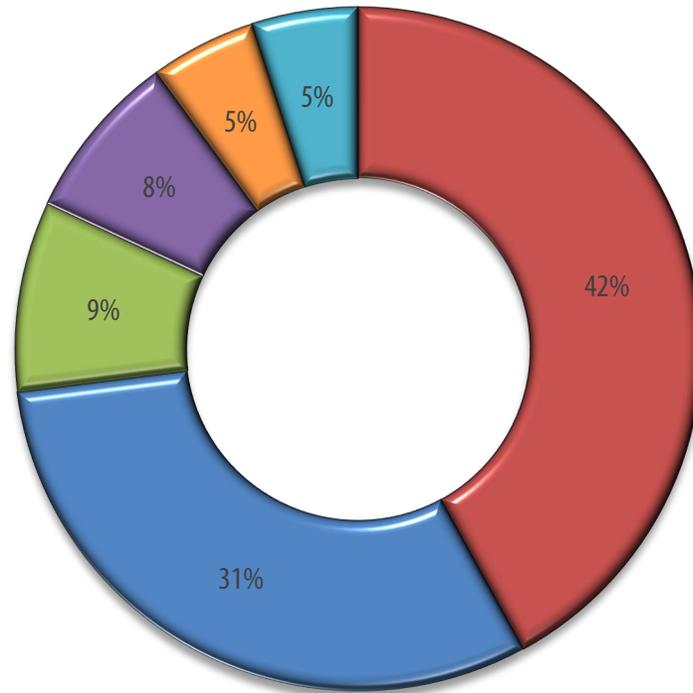
# IOT Analytics Happening Everywhere



In the cloud, in  
the fog, on the  
ground

■ Near Endpoint ■ Data Center ■ Cloud

# Traditional Connectivity for IOT Endpoints



Nearly three-quarters of connections are WiFi or Ethernet

WiFi Wired Ethernet LTE Bluetooth Low-Power Alternatives Other

# Costs Top Security as Top IOT Concern

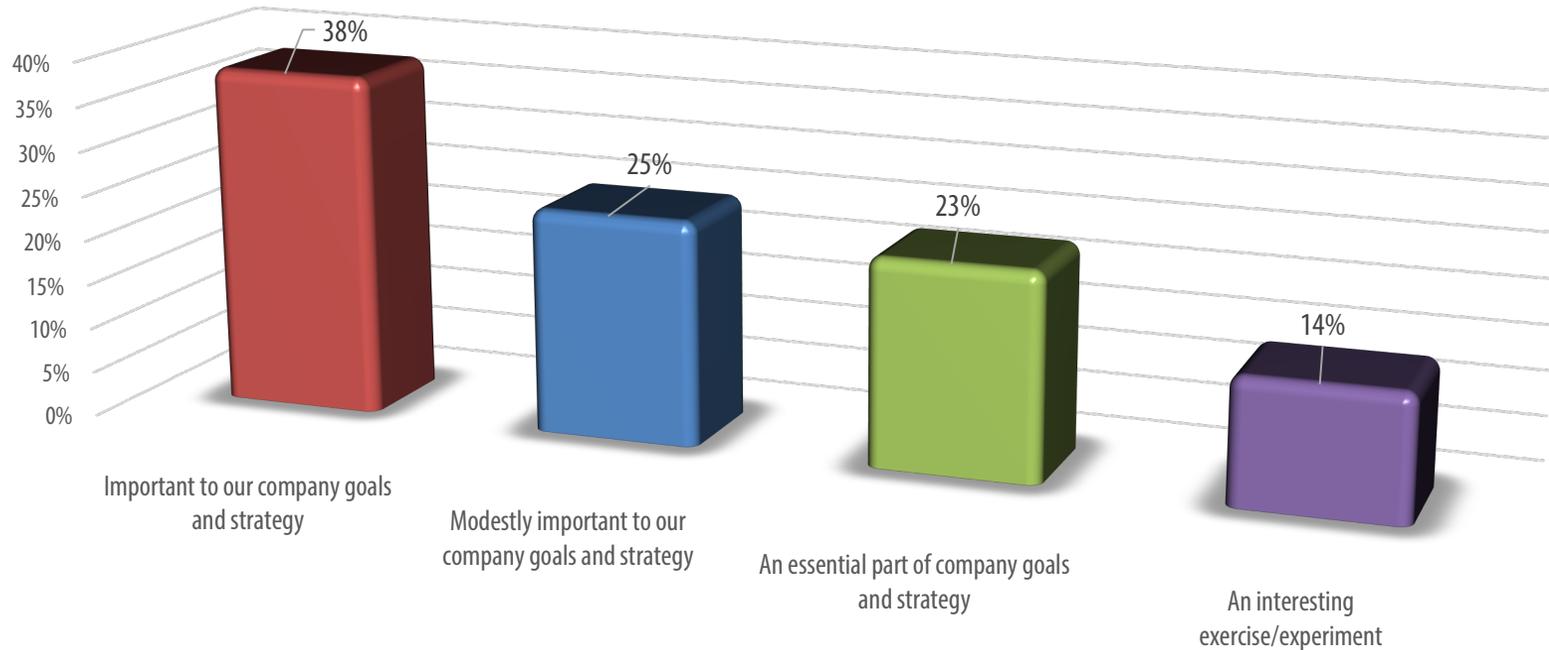
1. High Capital Outlay
2. Time to Deploy and Evaluate
3. Security of IOT Data
4. Limited Internal Skill Sets
5. Uncertain of Value/ROI



*"A lot of projects ongoing but no clear overall strategy or metrics for measuring ROI. Some projects could be very valuable but it seems like we're doing them just for the sake of doing them, not as part of a larger strategy."—Survey respondent*



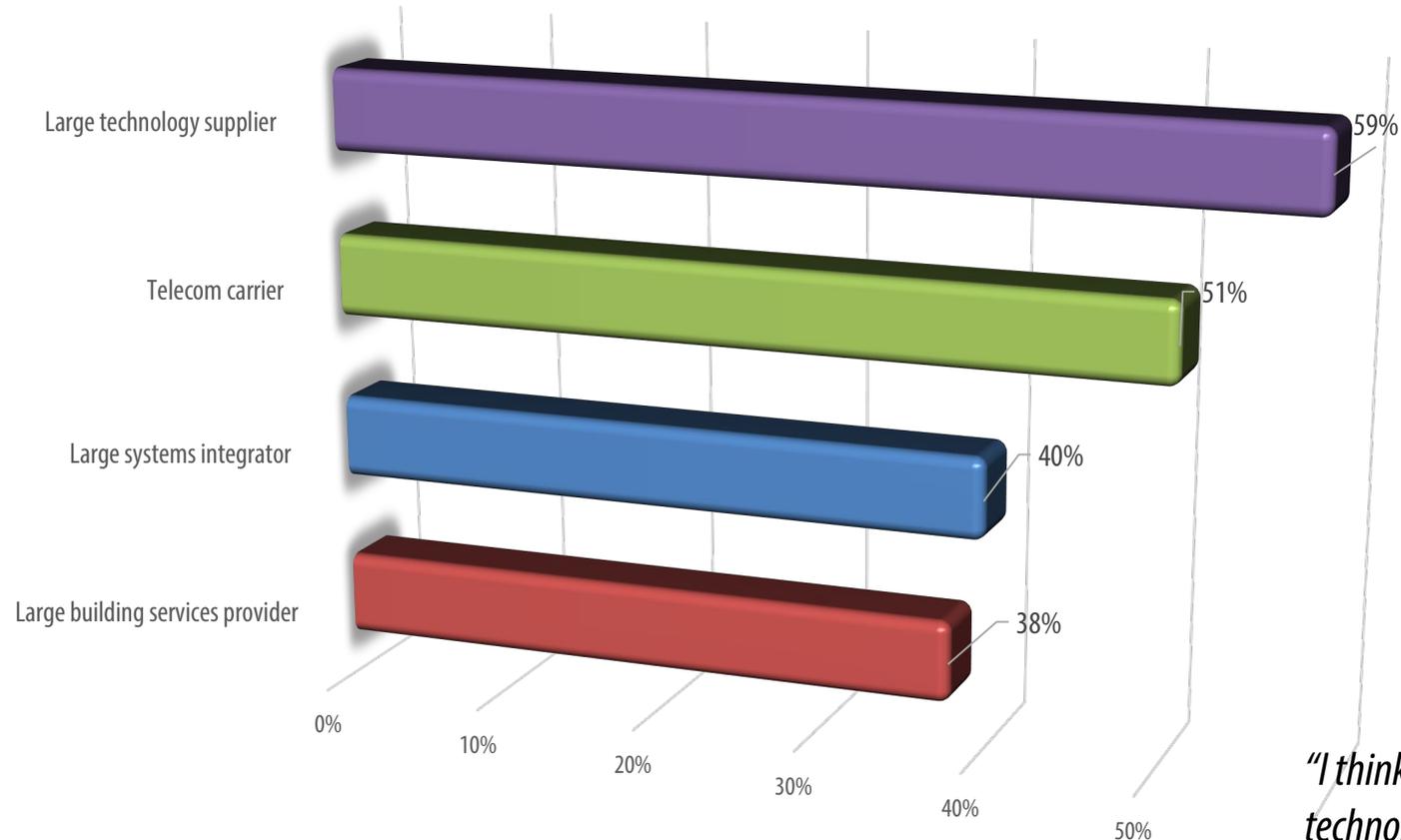
# IOT Important, But Not Essential For Most



Conceptually valuable, but waiting for proof

*“Although they will be installed with great costs to us all, these solutions have proven effective in our sector and we started to lose market share. We decided that we must evolve in order to survive. So that is what is what we are doing.”—Survey respondent*

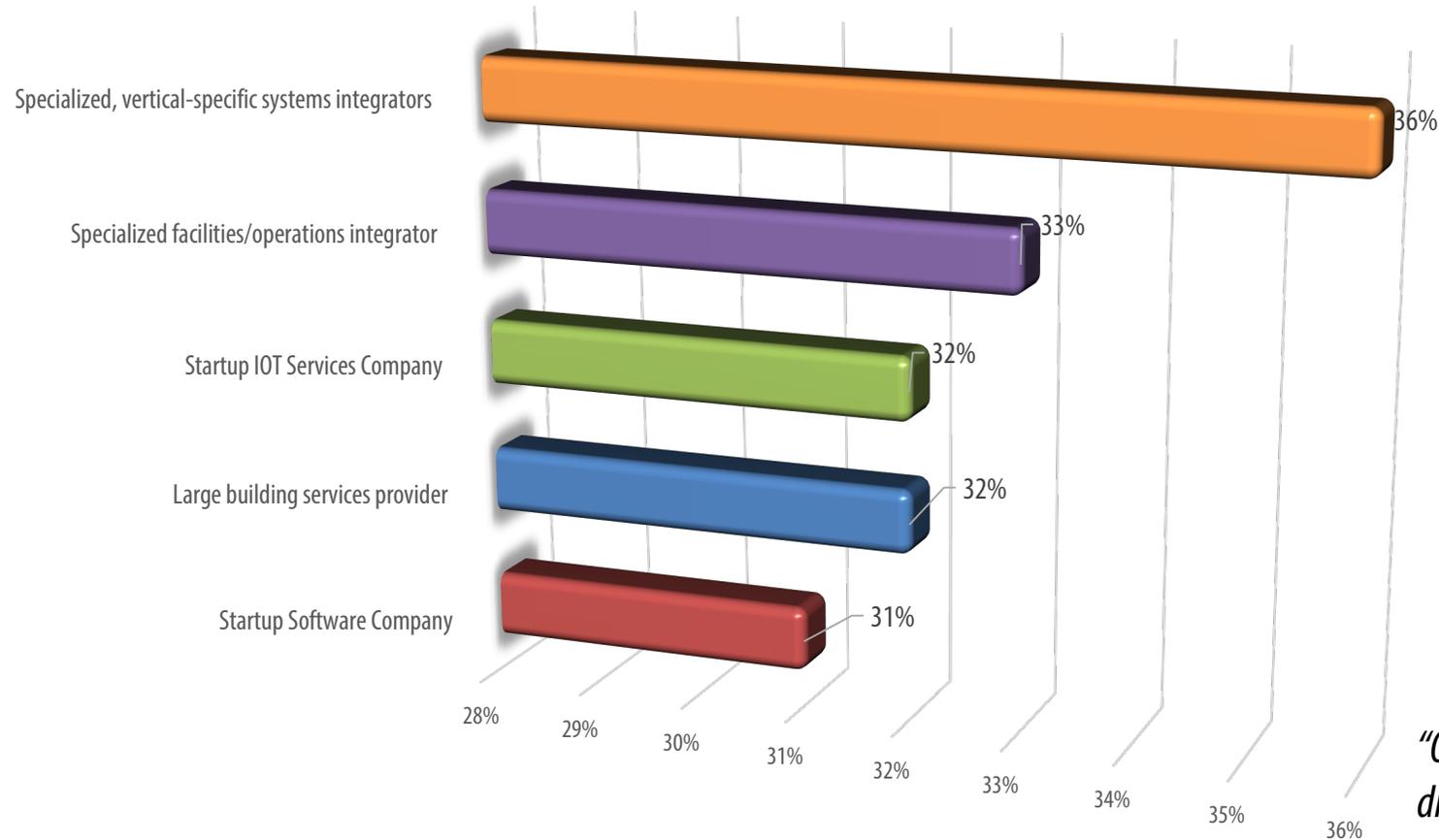
# Companies Deploying IOT Have Partners You'd Expect



Tech and Telcos  
have early  
advantage...

*"I think the number one reason more companies don't adopt IOT technologies is because it seems like a daunting, highly specialized task that requires high skilled workers. That's true to an extent but in our experience it hasn't been nearly as difficult to implement as we thought, granted we're getting help from companies that have decades of experience in the field."—Survey respondent*

# Moving Forward, They See Different Options



...But future partners are very different

*"Our company has really embraced IOT and [it] has paid real dividends to cost savings and effectiveness of our staff. It has been an incredible asset and as we continue to add IOT through more sectors of our operation, we are excited for the future and services they provide."—Survey respondent*

# Conclusions

*“Massive push back from workforce at every level, hard to implement, harder still to display positive signs of effectiveness. Acclimation time is probably 3 times the expected norm.”—Survey respondent*

- IOT has the potential to drive significant benefits across many industries, but many key challenges remain
  - Traditional battles between Operations and IT likely to intensify
- Integration with existing environments likely to be more difficult than many presume
- Most businesses want to own the components of their IOT solution, but concerns about costs mean they're willing to use consumer-level products and traditional connectivity options to keep capital outlays in line
  - Around 17% willing to consider IOT-as-a-Service, so potential is there for some applications and industries
- Each industry and application has different expectations for IOT, so messaging for each needs to be customized
- Opportunities exist for creating both edge and data center-based analytics tools
- IOT deployments may be slowed by employee or management resistance if the value of the project is not well communicated
- More solid proof points are needed to convince the many skeptics about IOT value
- Bottom line: IOT likely will take longer to have the expected outcome in most companies than many currently believe

*“We are one of the largest companies that are actually creating IOT devices, but interestingly we're very slow at implementing these devices to our own systems, mainly because of the difficulties in getting them to work with our existing equipment.”—Survey respondent*

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