GODFREY

UNDERSTANDING THE
**IT DECISION-MAKER
IN THE WORLD OF
INDUSTRY 4.0**

Executive Summary

Executive Summary

Godfrey commissioned AMG Research* to conduct a market research study on Internet of Things (IoT) initiatives. This study identifies decision-makers and roles, responsibilities and challenges related to implementing IoT initiatives within industrial and manufacturing environments.

*Learn more about AMG Research at AMG-Research.com

Executive Summary (cont.)

A total of 70 web surveys were conducted with the following roles and industry types:

Roles

- IT Director (38)
- Chief Information Officer (CIO) (12)
- VP or Business Director (8)
- Chief Technology Officer (CTO) (7)
- Chief Operations Officer (COO) (3)
- Others (2)

Industry Types

- Oil and gas (18)
- Food and beverage (10)
- Automotive (9)
- Manufacturing (7)
- Personal care (6)
- Life sciences (3)
- Pulp and paper (2)
- Others (15)

Based on the 70 web surveys, the following observations have been made:

Involvement

The majority of respondents are **users of IoT services** versus providers.

- **There is a variety of involvement in IoT by respondents' companies compared to other companies in the industry.** 41% of respondents think they are on par with similar companies. However, one in six respondents consider themselves to be a leader, and one in six consider themselves doing little or lagging behind.

Education and Content

- **Trade shows are very important for educating respondents on IoT-related information**, as it was one of the top contents and sources for learning about IoT-related information.

Executive Summary (cont.)

Implementation and Involvement

- About two-thirds of respondents have been involved in discussions about the best way to take advantage of IoT. **Two-thirds of respondents' companies have implemented strategies for IoT as well.**

- The **IT Director is the most involved** in initiating, advocating and approving IoT projects. The **CIO is also very involved** in initiating and approving projects, but not as much in advocating for them.

Impact/Goals

- Most respondents think IoT will **have an impact on their company**, and mostly in a **positive** way, by helping to increase productivity and improve efficiency.

- The two most desired goals for implementing IoT initiatives for respondents' companies **are improved access to customer data and improved operations and/or systems**.

Partners for Implementation

- **Cost and reputation/experience** are the most important considerations when selecting a partner to implement IoT projects.
    - The **overall experience** is by far the most important when selecting potential partners as far as information needed.

- **A variety of companies would be considered to implement an IoT project. IBM** was the company respondents said they would consider the most.
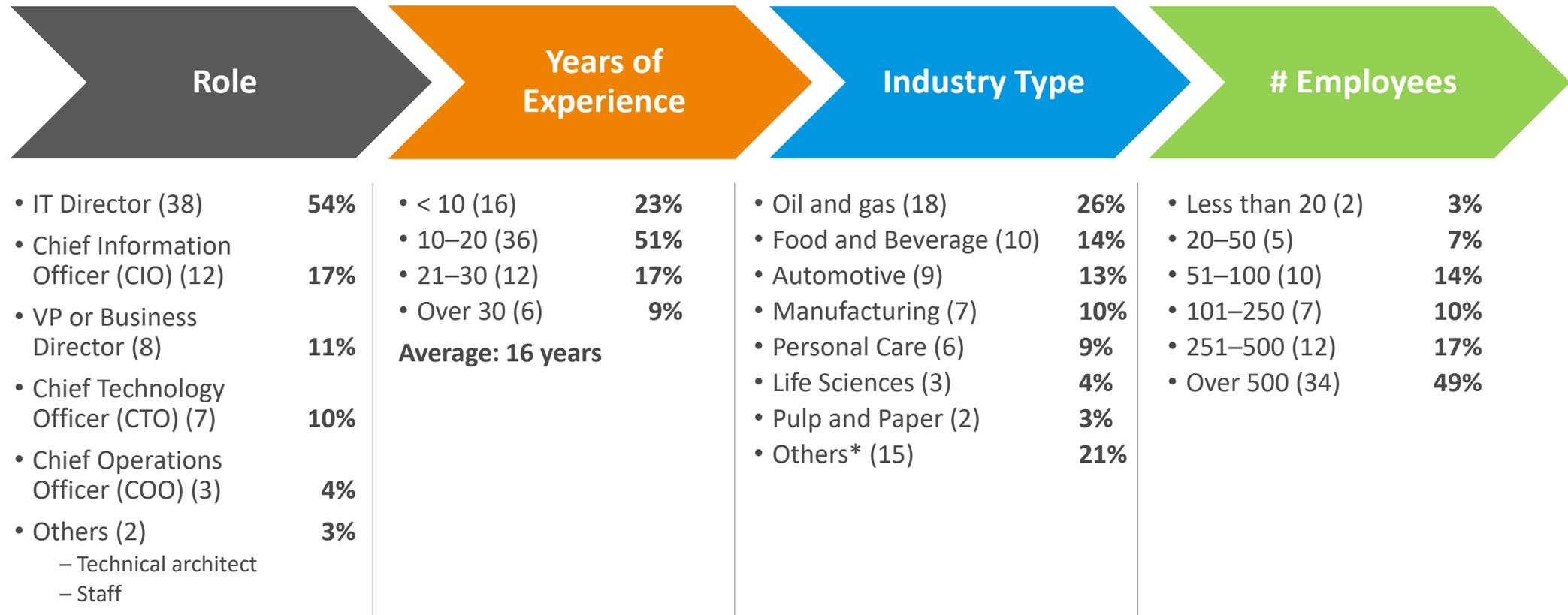
Current Progress

- **Two-thirds of respondents are very/extremely satisfied with the progress made** in capitalizing on the advantages of IoT. Only one respondent said they were dissatisfied.

- The main issue holding back companies' progress is the **lack of understanding/knowledge**.

# Results

Respondent Profile

Respondents who are likely involved in decisions about new technology initiatives were targeted, with over half being the IT Directors with an average of 16 years' experience. A mix of industries were surveyed.

70 Participants Representing a Cross-section of:

Role	Years of Experience	Industry Type	# Employees

Role		Years of Experience		Industry Type		# Employees	
• IT Director (38)	**54%**	• < 10 (16)	**23%**	• Oil and gas (18)	**26%**	• Less than 20 (2)	**3%**
• Chief Information Officer (CIO) (12)	**17%**	• 10–20 (36)	**51%**	• Food and Beverage (10)	**14%**	• 20–50 (5)	**7%**
• VP or Business Director (8)	**11%**	• 21–30 (12)	**17%**	• Automotive (9)	**13%**	• 51–100 (10)	**14%**
		• Over 30 (6)	**9%**	• Manufacturing (7)	**10%**	• 101–250 (7)	**10%**
• Chief Technology Officer (CTO) (7)	**10%**	**Average: 16 years**		• Personal Care (6)	**9%**	• 251–500 (12)	**17%**
• Chief Operations Officer (COO) (3)	**4%**			• Life Sciences (3)	**4%**	• Over 500 (34)	**49%**
• Others (2)	**3%**			• Pulp and Paper (2)	**3%**		
– Technical architect				• Others* (15)	**21%**		
– Staff							

*Others include: Construction (2), Energy (2), Hospitality (2), Consulting (1), Engineering (1), Farming (1), Healthcare (1), Insurance (1), Metals (1), Technology (1), Utility (1) and Waste Management (1)

Balance of Regions

West
(10)

Midwest
(19)

Canada
(1)

Northeast
(12)

Southeast
(11)

Southwest
(17)
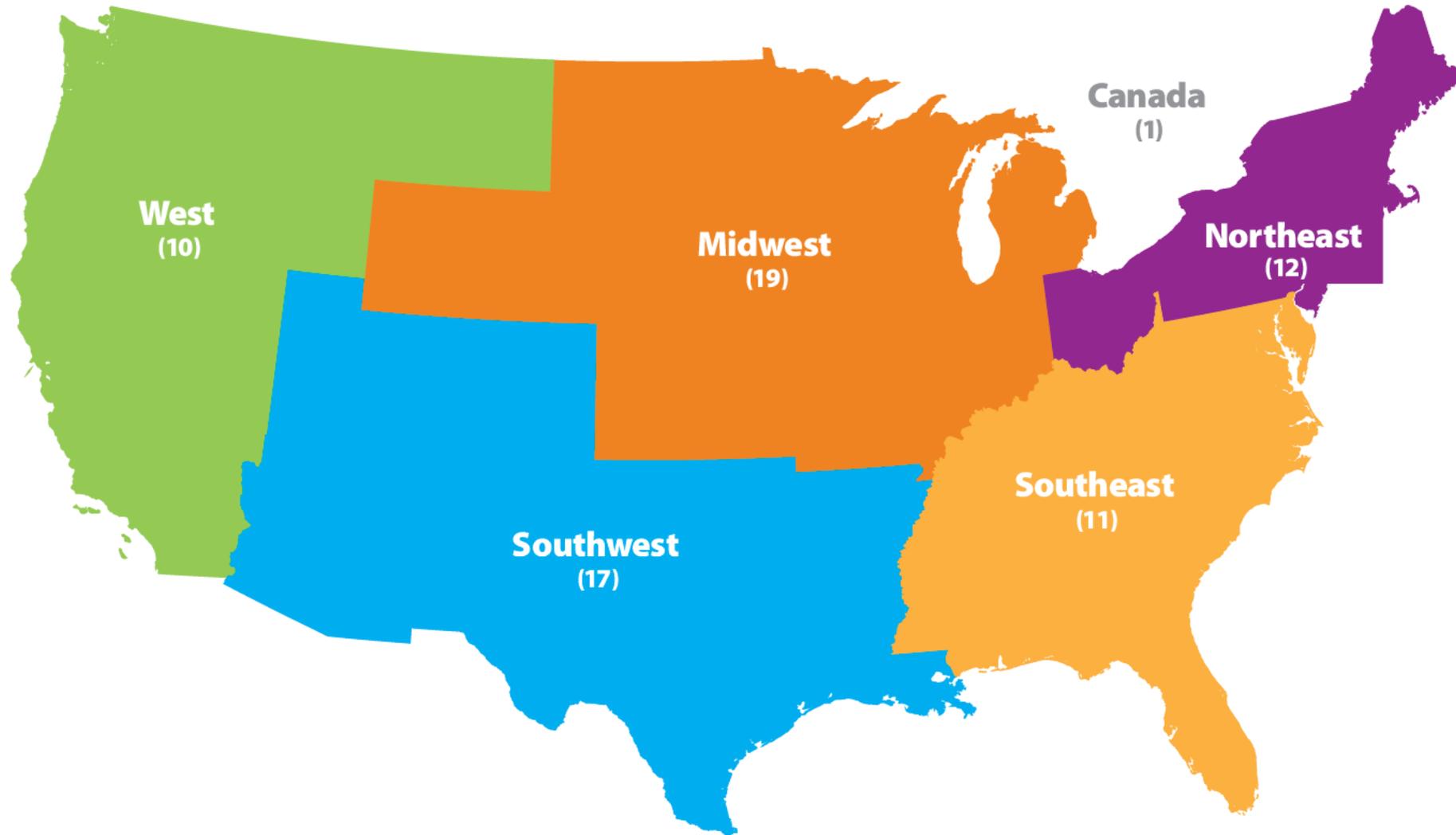
( ) = Number of respondents

The Meaning of IoT

Most respondents mentioned connectivity when asked what IoT things meant to them and their business. Others offered a few more specific examples.

> **?** Briefly describe what the Internet of Things (IoT) means to you as it relates to your business or industry. (70)

Connectivity (26)

- "Connectivity between devices."
- "Physical object that has IP address assigned and communicates with other network-enabled devices."
- "Factory production devices and machines networked, interconnected and connected to application systems."
- "Connecting multiple data sources to a single depository…"

Business Opportunities (6)

- "Online business opportunities."
- "It helps promote your business online."
- "…Using the data to drive business decisions."

More Information (5)

Tracking/Monitoring (5)

- "Vehicles are tracked with individual items placed on vehicles at an automobile auction."
- "Sensors and/or devices used to track and monitor."

Streamlining Processes (Online Ordering, etc.) (5)

- "Online use in restaurants and online ordering."
- "Optimize the delivery of guest services."

Exchanging Data/Data Sharing (4)

- "…fast and flexible data sharing for analytics."

Automation (3)

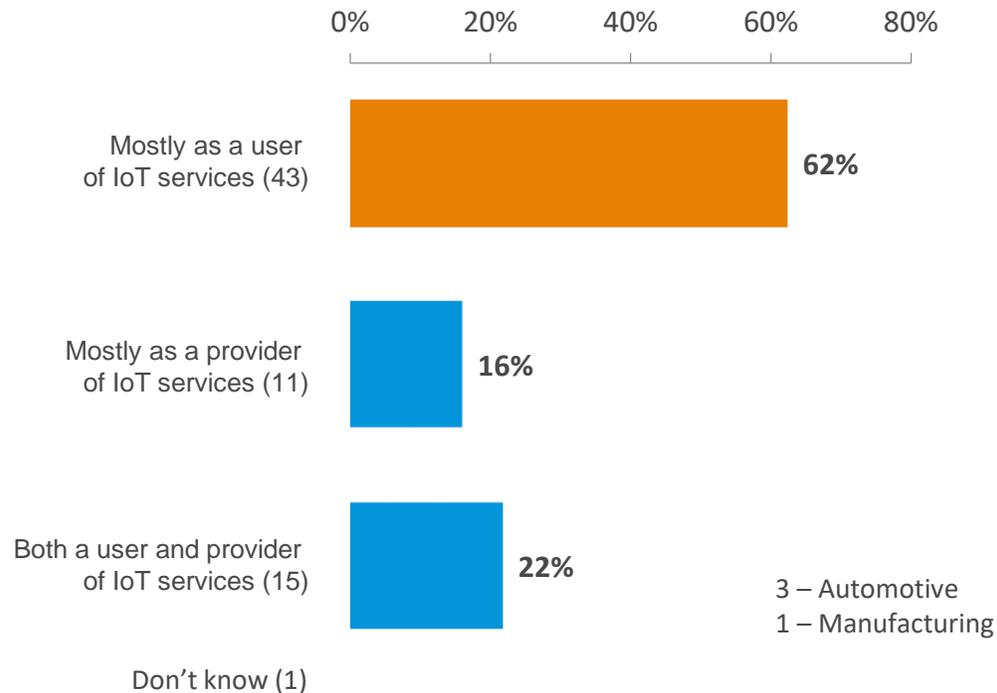## Others Mentioned Once (12)

Don't Know/No Responses (4)

"

Transformation to truly digital enterprise, improved efficiency of employees, improved accuracy of production estimation, better competitiveness
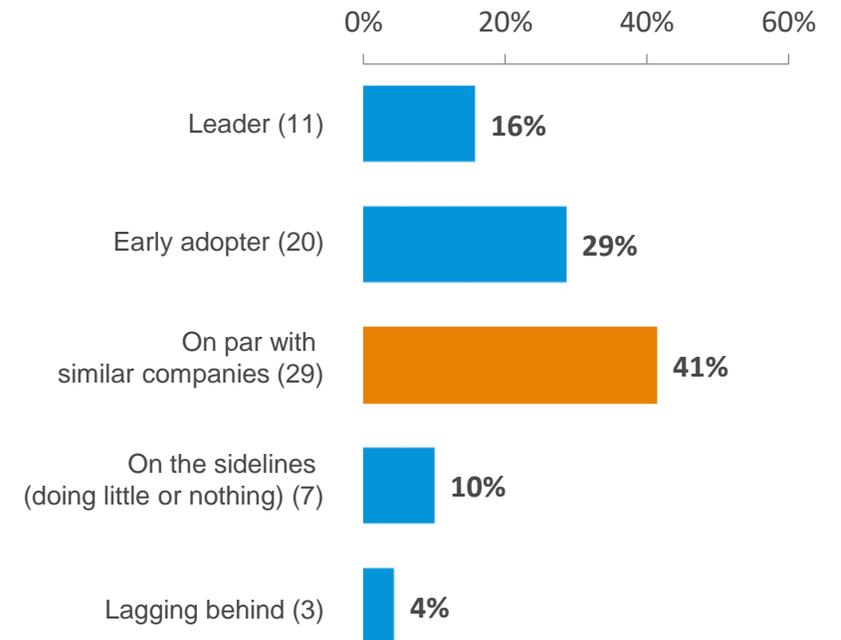
Involvement with IoT

Most respondents are users of IoT services. There is a variety of involvement by respondents' companies in IoT compared to other companies in the industry. 41% of respondents think they are on par with similar companies with involvement in IoT. However, one in six respondents consider themselves to be a leader, and one in six consider themselves doing little or lagging behind.

? How do you view your company in relation to IoT? (70)

? How do you view your company's involvement in IoT compared to others in the industry? (70)

Mostly as a user of IoT services (43) — 62%

Mostly as a provider of IoT services (11) — 16%

Both a user and provider of IoT services (15) — 22%

Don't know (1)

3 – Automotive
1 – Manufacturing

Leader (11) — 16%

Early adopter (20) — 29%

On par with similar companies (29) — 41%

On the sidelines (doing little or nothing) (7) — 10%

Lagging behind (3) — 4%

( ) = Number of respondents
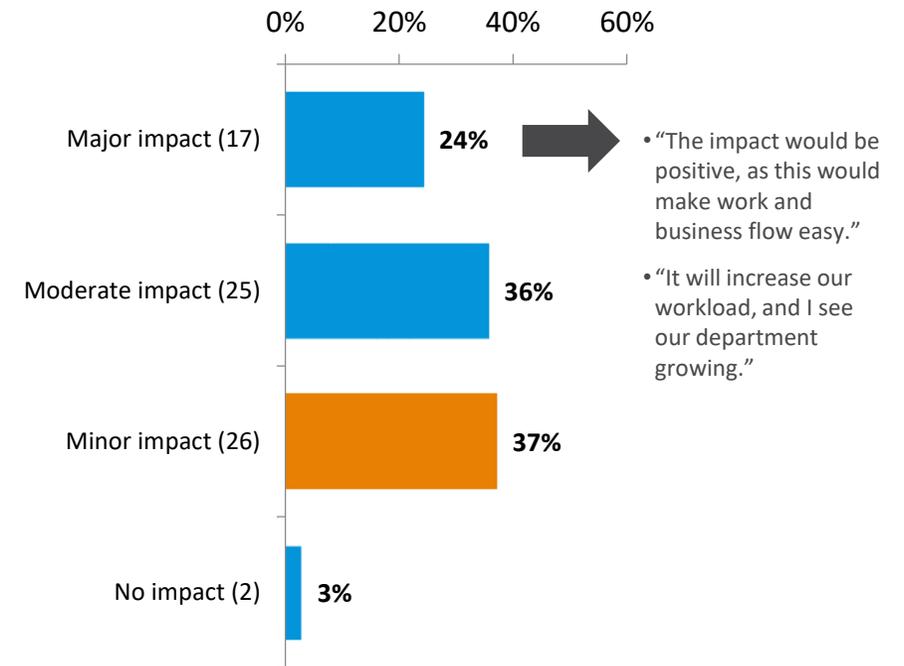
Involvement with IoT (cont.)

Most respondents think IoT will have an impact on their company, and mostly in a positive way, by helping to increase productivity and improve efficiency. The impact on their role was seen as positive as well, as it would help with workflow and help departments grow.

? Please rate the impact you think IoT will have on **your company** over the next few years. (70)
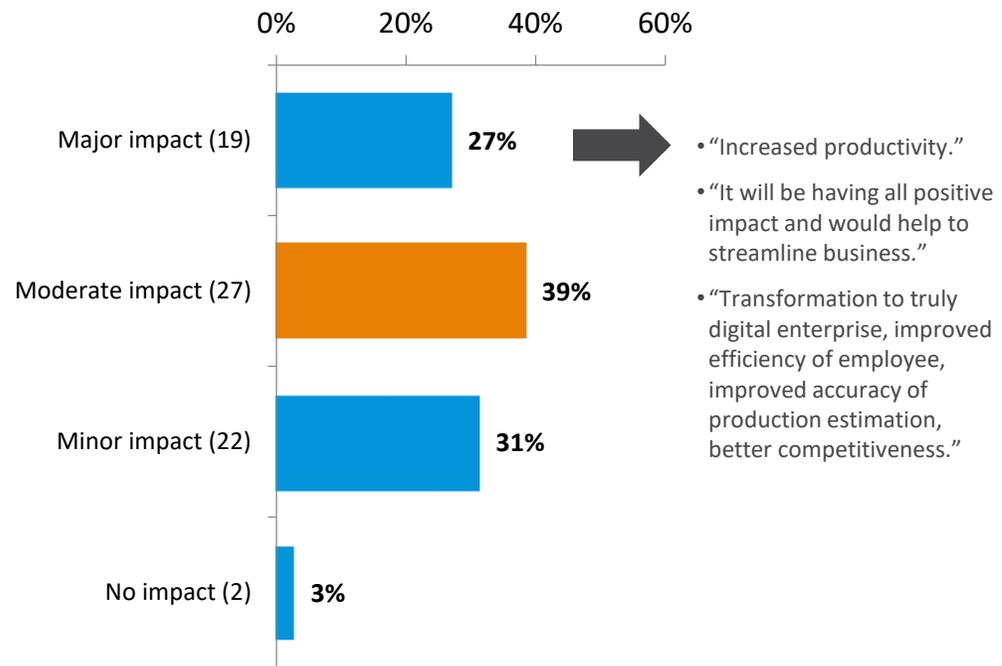
? Please rate the impact you think IoT will have on **your role and your responsibilities** over the next few years. (70)

Major impact (19)	27%
Moderate impact (27)	39%
Minor impact (22)	31%
No impact (2)	3%

- "Increased productivity."
- "It will be having all positive impact and would help to streamline business."
- "Transformation to truly digital enterprise, improved efficiency of employee, improved accuracy of production estimation, better competitiveness."

Major impact (17)	24%
Moderate impact (25)	36%
Minor impact (26)	37%
No impact (2)	3%

- "The impact would be positive, as this would make work and business flow easy."
- "It will increase our workload, and I see our department growing."
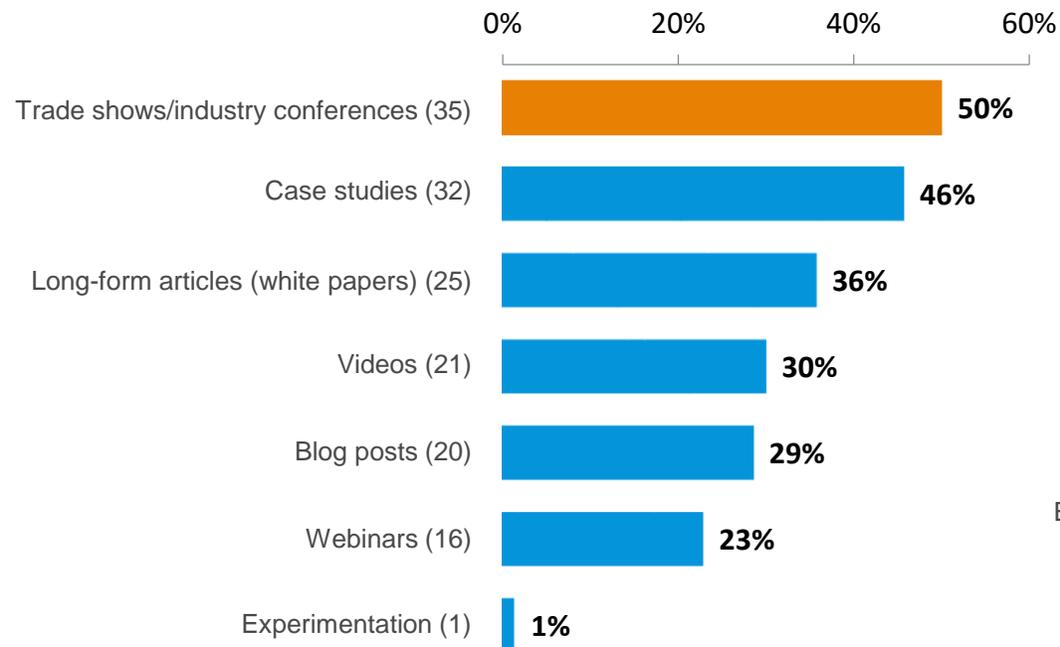
( ) = Number of respondents

Types of Content and Sources

Trade shows are very important for educating respondents on IoT-related information, as it was one of the top contents and sources for learning IoT-related information.

? What are the top types of **content** you use for IoT-related information in your industry? (Select up to 3) (70)

? What are the top **sources** for IoT-related information in your industry? (Select up to 3) (70)

Content	%
Trade shows/industry conferences (35)	50%
Case studies (32)	46%
Long-form articles (white papers) (25)	36%
Videos (21)	30%
Blog posts (20)	29%
Webinars (16)	23%
Experimentation (1)	1%

Sources	%
Industry publications and websites (37)	53%
Trade shows (34)	49%
Supplier websites and sales reps (29)	41%
Industry/professional organizations (27)	39%
Educational & training publications & websites (19)	27%
Online professional communities & forums (19)	27%

( ) = Number of respondents

Content and Sources (by role segmentation)

Some differences by role segmentation.

? What are the top types of **content** you use for IoT-related information in your industry? (Select up to 3) (70)

? What are the top **sources** for IoT-related information in your industry? (Select up to 3) (70)

	IT Directors (38)	C-Level (30)
Trade Shows/Industry Conferences	55%	43%
Case Studies	42%	50%
Long-form Articles	39%	30%
Videos	29%	33%
Blog Posts	21%	40%
Webinars	21%	23%

|	IT Directors (38)	C-Level (30)
Industry Publications and Websites	50%	45%
Trade Shows	45%	45%
Supplier Websites and Sales Reps	47%	26%
Industry/Professional Organizations	42%	26%
Educational and Training Publications and Websites	32%	13%
Online Professional Communities and Forums	24%	24%

( ) = Number of respondents

Implementation of IoT

About two-thirds of respondents have been involved in discussions about the best way to take advantage of IoT. In addition, two-thirds of respondents' companies have implemented strategies.

? Have you been involved in discussions within your organization about the best way to take advantage of IoT? (70)
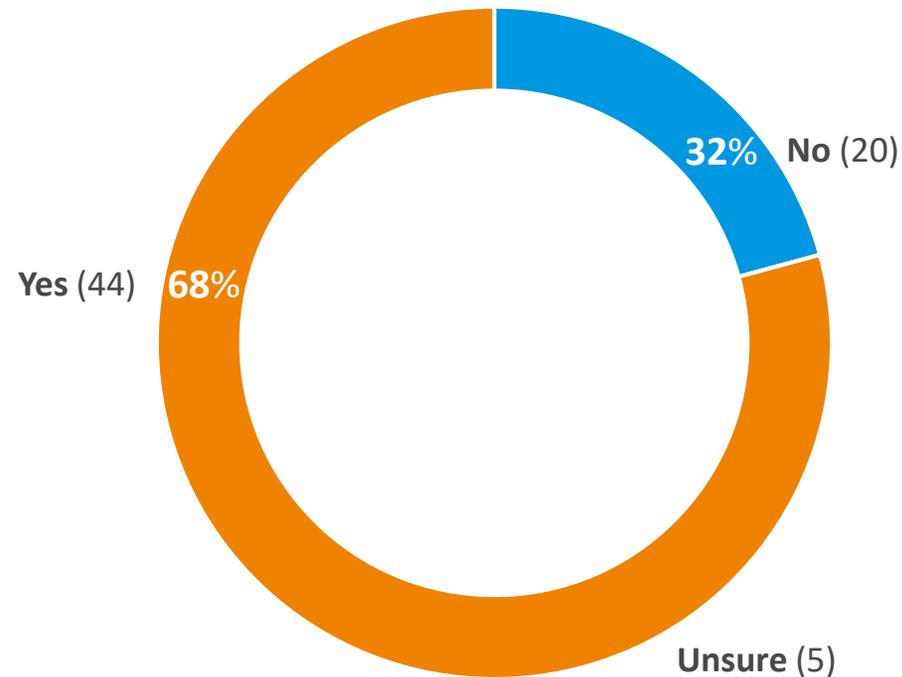
? Does your company have a strategy for IoT implementation? (70)

32% No (20)

Yes (44) **68%**

Unsure (5)

32% No (20)
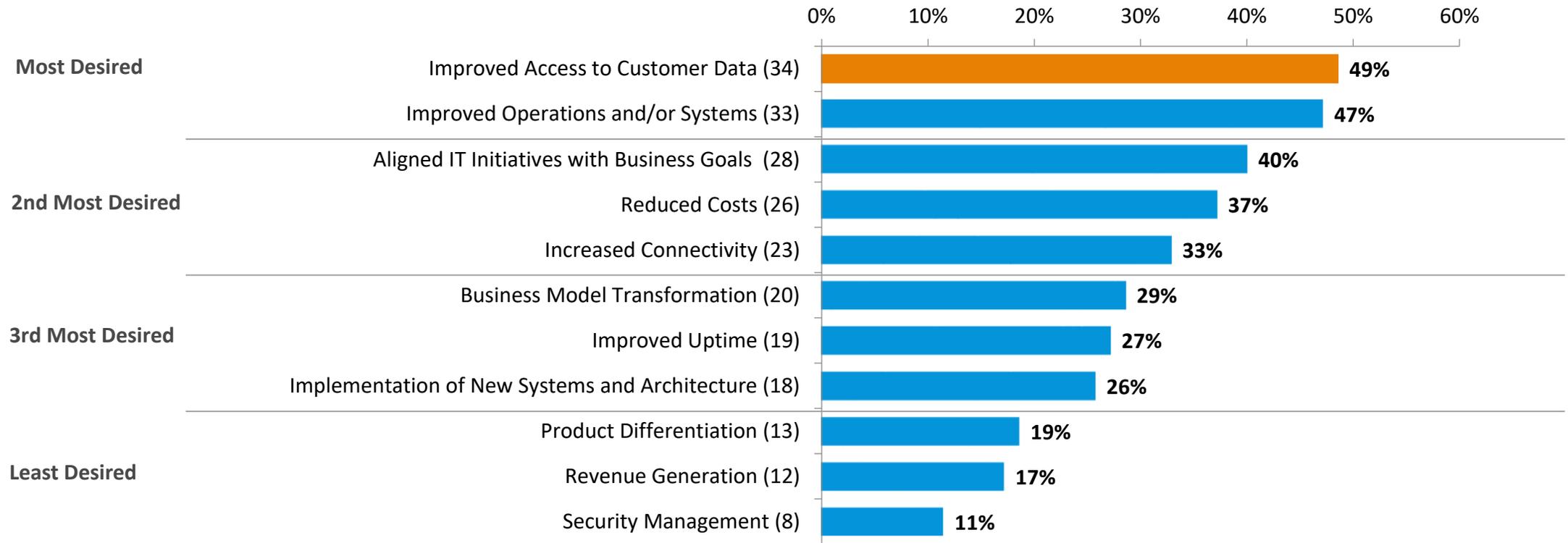
Yes (42) **68%**

Unsure (8)
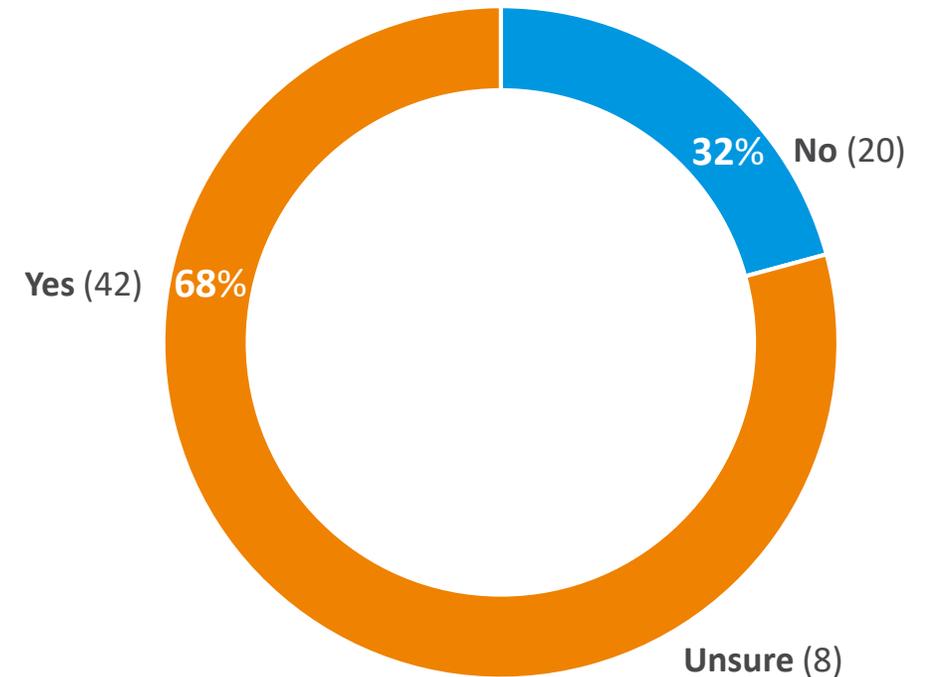
( ) = Number of respondents

Goals of IoT

Goals can be grouped into desirability rankings. Improved access to customer data and improved operations and/or systems are the most desired outcomes.

Which of the following would be a desired outcome/goal of implementing IoT initiatives at your company? (70)

Ranking	Goal	Percentage
Most Desired	Improved Access to Customer Data (34)	49%
	Improved Operations and/or Systems (33)	47%
2nd Most Desired	Aligned IT Initiatives with Business Goals (28)	40%
	Reduced Costs (26)	37%
	Increased Connectivity (23)	33%
3rd Most Desired	Business Model Transformation (20)	29%
	Improved Uptime (19)	27%
	Implementation of New Systems and Architecture (18)	26%
Least Desired	Product Differentiation (13)	19%
	Revenue Generation (12)	17%
	Security Management (8)	11%

( ) = Number of respondents; multiple responses accepted

IoT Desired Outcomes

49% Customer Data

47% Improved Operations/ Systems

40% Aligned IT with Business Goals

Goals of IoT (by role segmentation)

The top goal is different by IT Director and C-Level respondents.

? **Which of the following would be a desired outcome/goal of implementing IoT initiatives at your company? (70)**

	IT Director (38)	C-Level (30)
Improved Access to Customer Data	39%	60%
Improved Operations and/or Systems	50%	40%
Aligned IT Initiatives with Business Goals	42%	33%
Reduced Costs	39%	33%
Increased Connectivity	34%	33%
Business Model Transformation	29%	27%
Improved Uptime	32%	20%
Implementation of New Systems and Architecture	24%	30%
Product Differentiation	24%	13%
Revenue Generation	18%	17%
Security Management	11%	13%

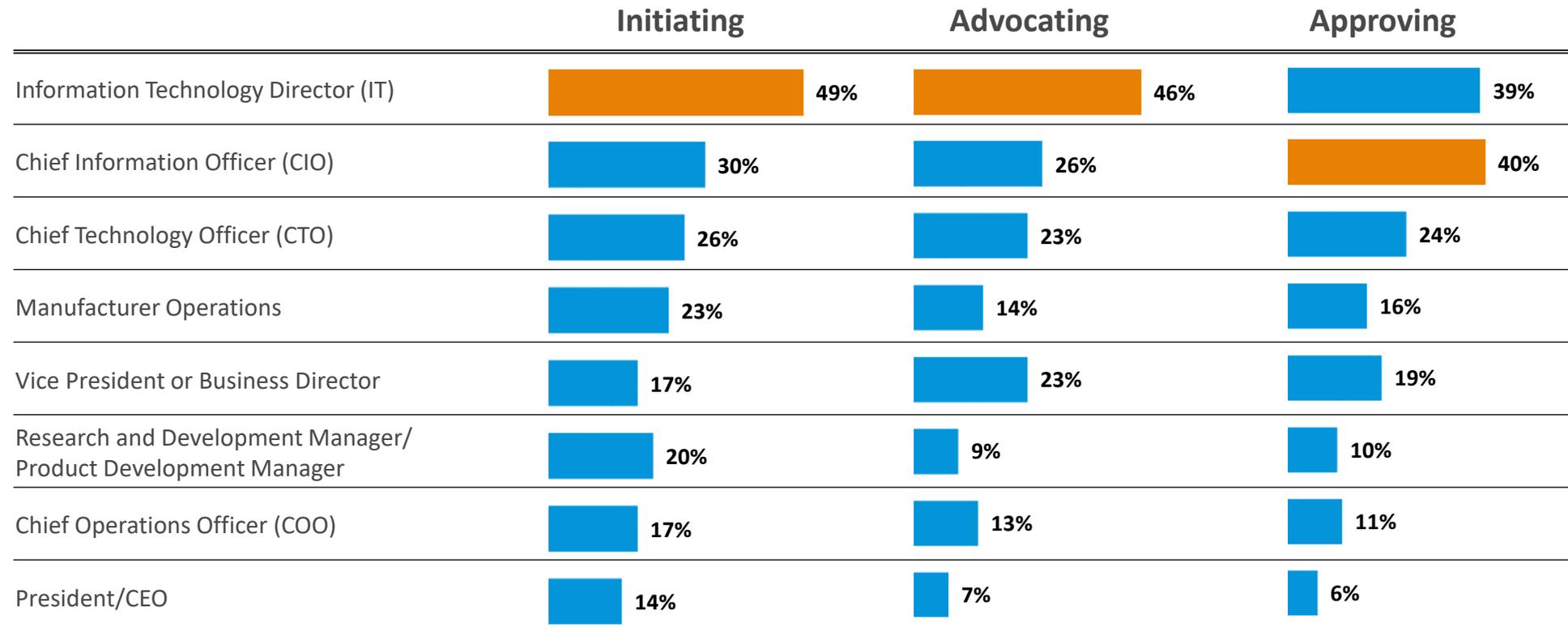( ) = Number of respondents; multiple responses accepted

Involvement in IoT Projects

The IT Director is the most involved in initiating, advocating and approving IoT projects.
The CIO is also very involved in initiating and approving projects, but not as much in advocating for them.

? Who is involved in [**action stage**] IoT projects in your company?

	Initiating	Advocating	Approving
Information Technology Director (IT)	49%	46%	39%
Chief Information Officer (CIO)	30%	26%	40%
Chief Technology Officer (CTO)	26%	23%	24%
Manufacturer Operations	23%	14%	16%
Vice President or Business Director	17%	23%	19%
Research and Development Manager/Product Development Manager	20%	9%	10%
Chief Operations Officer (COO)	17%	13%	11%
President/CEO	14%	7%	6%

( ) = Number of respondents; multiple responses accepted

Initiating IoT Projects

The IT Director is the most involved in initiating IoT projects. The CIO and CTO are far-out seconds.

? Who is involved in **initiating** IoT projects in your company?
Please rank the roles from most involved to least involved. (70)

Roles	% Involved	Ranking					Index Score
		1st	2nd	3rd	4th to 6th	Not Involved	
Information Technology Director (IT)	49%	34%	9%	1%	4%	51%	16.6
Chief Information Officer (CIO)	30%	20%	7%	—	3%	70%	10.1
Chief Technology Officer (CTO)	26%	19%	7%	—	—	74%	9.6
Manufacturer Operations	23%	6%	6%	10%	1%	77%	6.0
Vice President or Business Director	17%	10%	3%	1%	3%	83%	5.1
Research and Development Manager/Product Development Manager	20%	4%	9%	3%	4%	80%	4.9
Chief Operations Officer (COO)	17%	4%	9%	3%	1%	83%	4.9
President/CEO	14%	1%	10%	1%	1%	86%	3.9

*Index is based on the following scale:
  40 points – 1st ranked
  30 points – 2nd ranked
  20 points – 3rd ranked
  10 point – 4th–6th ranked

Advocating IoT Projects

The IT Director advocates in most cases, more than any other title.

? Who is involved in **advocating** IoT projects in your company?
Please rank the roles from most involved to least involved. (70)

Roles	% Involved	Ranking					Index Score
		1st	2nd	3rd	4th to 6th	Not Involved	
Information Technology Director (IT)	46%	33%	6%	4%	3%	54%	16.0
Chief Information Officer (CIO)	26%	19%	6%	1%	—	74%	9.4
Chief Technology Officer (CTO)	23%	16%	4%	3%	—	77%	8.1
Vice President or Business Director	23%	11%	7%	4%	—	77%	7.6
Manufacturer Operations	14%	7%	6%	1%	—	86%	4.9
Chief Operations Officer (COO)	13%	6%	1%	6%	—	87%	3.9
Research and Development Manager/Product Development Manager	9%	3%	4%	-	1%	91%	2.6
President/CEO	7%	1%	4%	1%	—	93%	2.1

*Index is based on the following scale:
40 points – 1st ranked
30 points – 2nd ranked
20 points – 3rd ranked
10 point – 4th–6th ranked

Approving IoT Projects

Both the IT Director and CIO are involved equally in approving IoT projects.

? Who is involved in **approving** IoT projects in your company?
Please rank the roles from most involved to least involved. (70)

| Roles | % Involved | Ranking | | | | | Index Score |
		1st	2nd	3rd	4th to 6th	Not involved	
Chief Information Officer (CIO)	39%	26%	9%	4%	-	61%	13.7
Information Technology Director (IT)	40%	20%	10%	6%	4%	60%	12.6
Chief Technology Officer (CTO)	24%	17%	6%	-	1%	76%	8.7
Chief Operations Officer (COO)	19%	11%	3%	1%	3%	81%	6.0
Vice President or Business Director	16%	9%	1%	4%	1%	84%	4.9
Manufacturer Operations	11%	7%	4%	-	-	89%	4.1
President/CEO	10%	7%	1%	-	1%	90%	3.4
Research and Development Manager/Product Development Manager	6%	1%	3%	-	1%	94%	1.6

*Index is based on the following scale:
   40 points – 1st ranked
   30 points – 2nd ranked
   20 points – 3rd ranked
   10 point – 4th–6th ranked

Partner Consideration

Cost and reputation/experience are the most important considerations when selecting a partner to implement IoT projects.

? From an IT perspective, what are the **two or three** most important considerations when selecting a partner for implementing an IoT project? (70)

- **Cost (27)**
- **Reputation/Experience (18)**
- Security (10)
- Prior Success (9)
- Reliability (9)
- System Integration (8)
- Expertise/Knowledge (7)
- History (5)
- Ease of Implementation (5)
- Quality of Services (5)
- Customer Service (4)
- Return on Investment (4)

- Technical Capability (3)
- Usefulness (2)
- Financial Backing (2)
- Speed (2)
- Resources (2)
- Features (2)
- Ability to Collaborate (2)
- Vision (2)
- Others Mentioned Once (16)
- Don't Know (6)

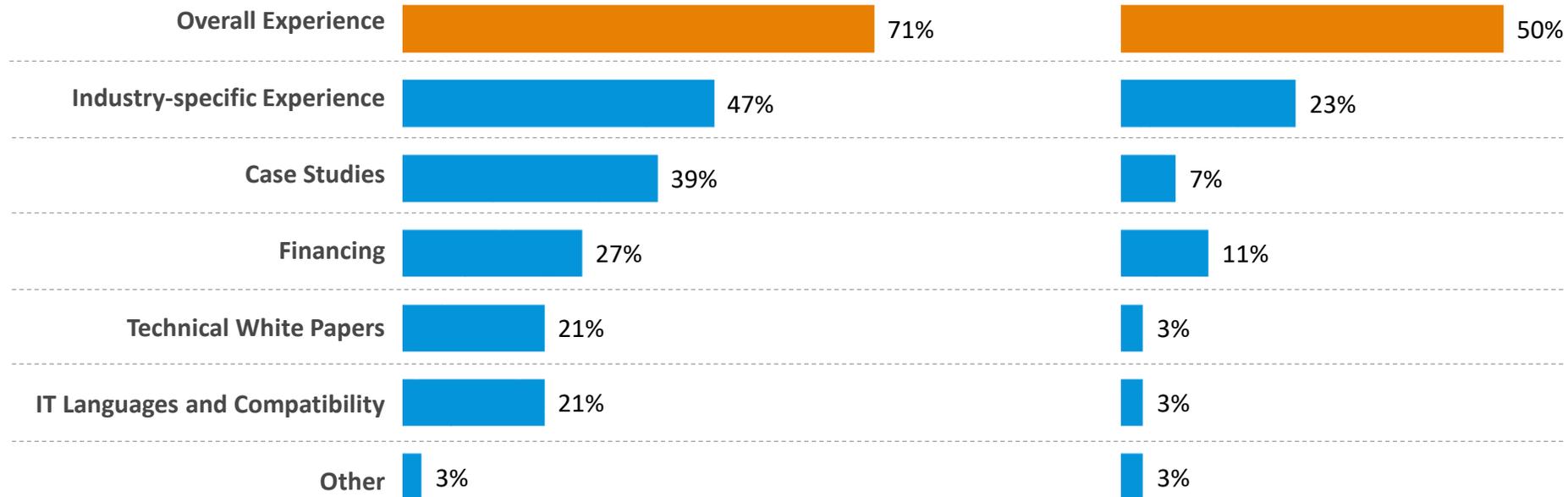( ) = Number of respondents; multiple responses accepted

Information

Overall experience is by far the most important when selecting potential partners.

? From your perspective, what information do you need to select potential partners for IoT initiatives? (70)

? From your perspective, what is **most important** to select potential partners for IoT initiatives? (70)

|	Need	Most Important
Overall Experience	71%	50%
Industry-specific Experience	47%	23%
Case Studies	39%	7%
Financing	27%	11%
Technical White Papers	21%	3%
IT Languages and Compatibility	21%	3%
Other	3%	3%

Others include: Infrastructure and Market Demand

Budget for IoT

Two-thirds of respondents think it's the IT budget that would likely be used for implementing IoT initiatives.

? Which budget is most likely to be used for implementing IoT Initiatives? (70)

Operations (16) **23%**

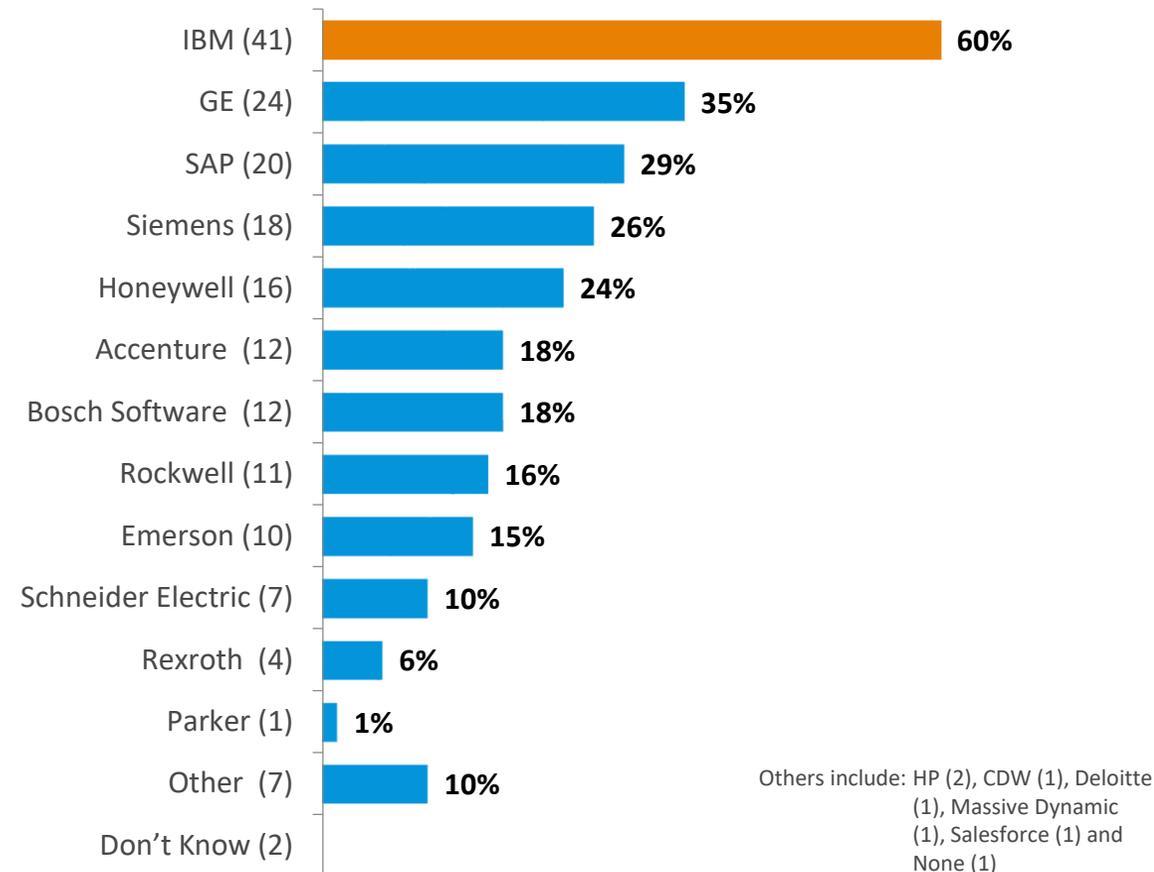**16%** **Capital Investment** (11)

61% **IT** (43)
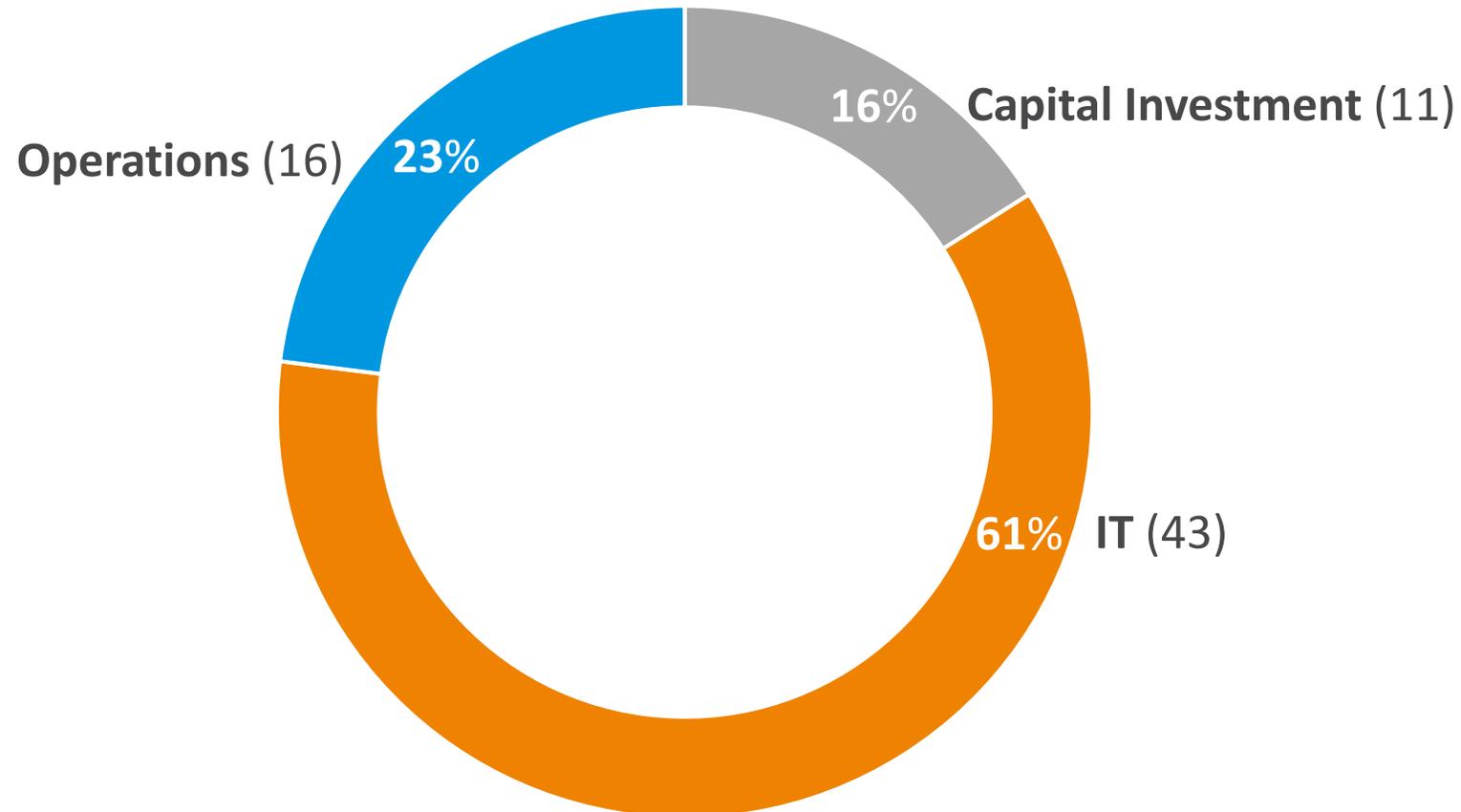
Companies Considered for IoT

IBM was the company said to be considered the most, by 60% of respondents. Although, a variety of other companies would be considered as well.

? If you were planning, designing and implementing an IoT project, which of the following companies would you likely consider working with? (70)

Company	%
IBM (41)	60%
GE (24)	35%
SAP (20)	29%
Siemens (18)	26%
Honeywell (16)	24%
Accenture (12)	18%
Bosch Software (12)	18%
Rockwell (11)	16%
Emerson (10)	15%
Schneider Electric (7)	10%
Rexroth (4)	6%
Parker (1)	1%
Other (7)	10%
Don't Know (2)	

Others include: HP (2), CDW (1), Deloitte (1), Massive Dynamic (1), Salesforce (1) and None (1)

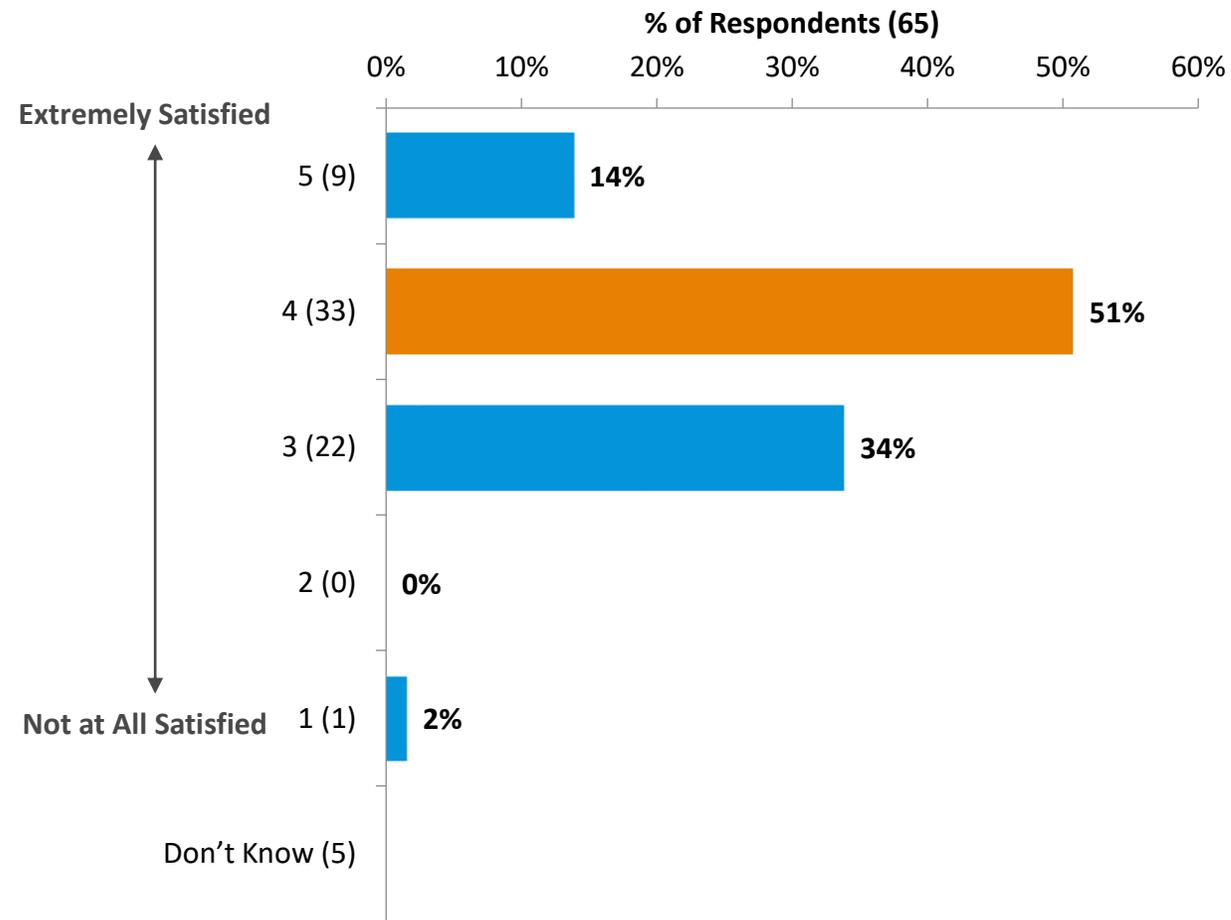( ) = Number of respondents

Satisfaction in Progress

Two-thirds of respondents are very/extremely satisfied with the progress made in capitalizing on the advantages of IoT. Only one person was very dissatisfied.

How satisfied are you with your company's progress in capitalizing on the advantages of IoT? Please use a 5-point scale where 5 is extremely satisfied and 1 is not at all satisfied. (70)

% of Respondents (65)

Extremely Satisfied

5 (9) — 14%

4 (33) — 51%

3 (22) — 34%

2 (0) — 0%

Not at All Satisfied

1 (1) — 2%

Don't Know (5)

( ) = Number of respondents

Satisfaction with IoT Progress

14%
Extremely Satisfied
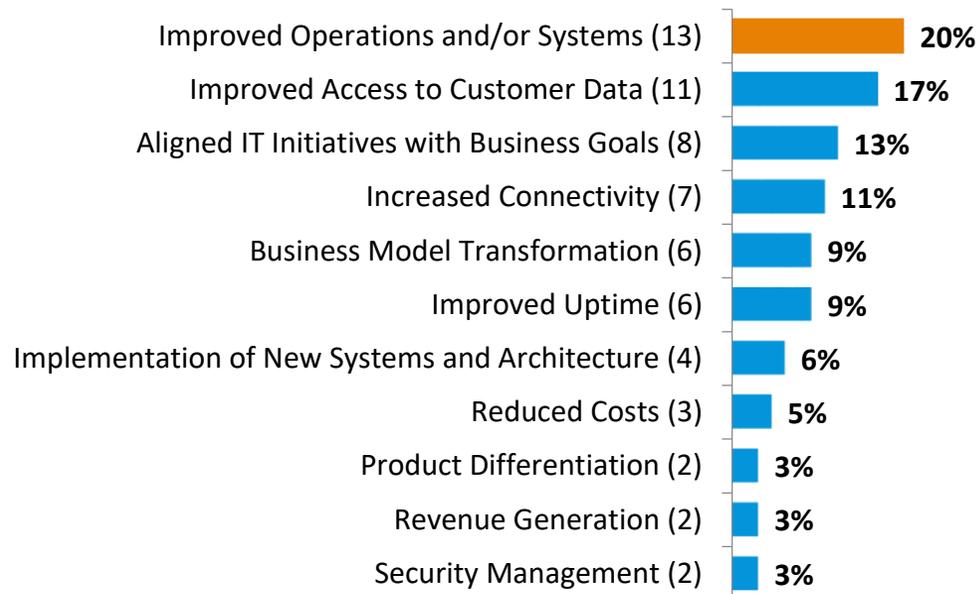
34%
Satisfied
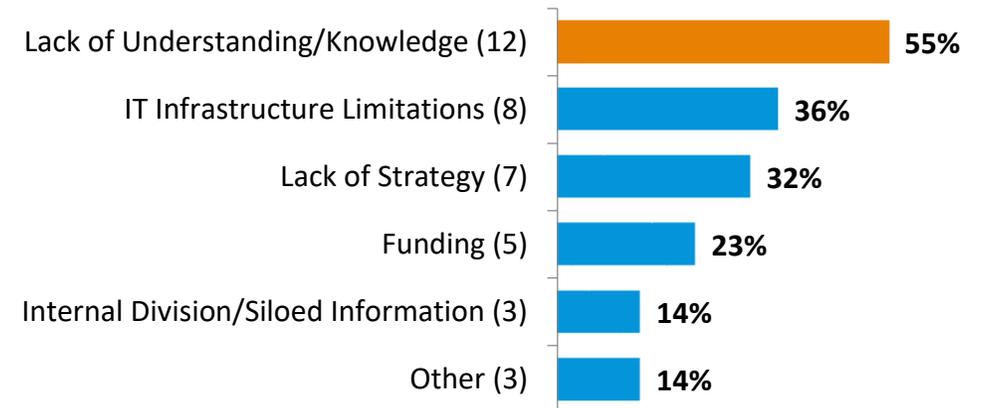
51%
Moderately Satisfied

Satisfaction in Progress

Most respondents think that a lack of understanding/knowledge is the main issue holding back progress in companies.

? What is the greatest benefit you have seen from your company capitalizing on the advantages of IoT? (23)

? Which of the following do you think is holding your company back from capitalizing on the advantages of IoT? (23)

Benefit	Percentage
Improved Operations and/or Systems (13)	20%
Improved Access to Customer Data (11)	17%
Aligned IT Initiatives with Business Goals (8)	13%
Increased Connectivity (7)	11%
Business Model Transformation (6)	9%
Improved Uptime (6)	9%
Implementation of New Systems and Architecture (4)	6%
Reduced Costs (3)	5%
Product Differentiation (2)	3%
Revenue Generation (2)	3%
Security Management (2)	3%

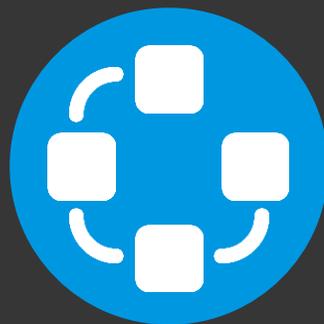| Issue	Percentage
Lack of Understanding/Knowledge (12)	55%
IT Infrastructure Limitations (8)	36%
Lack of Strategy (7)	32%
Funding (5)	23%
Internal Division/Siloed Information (3)	14%
Other (3)	14%

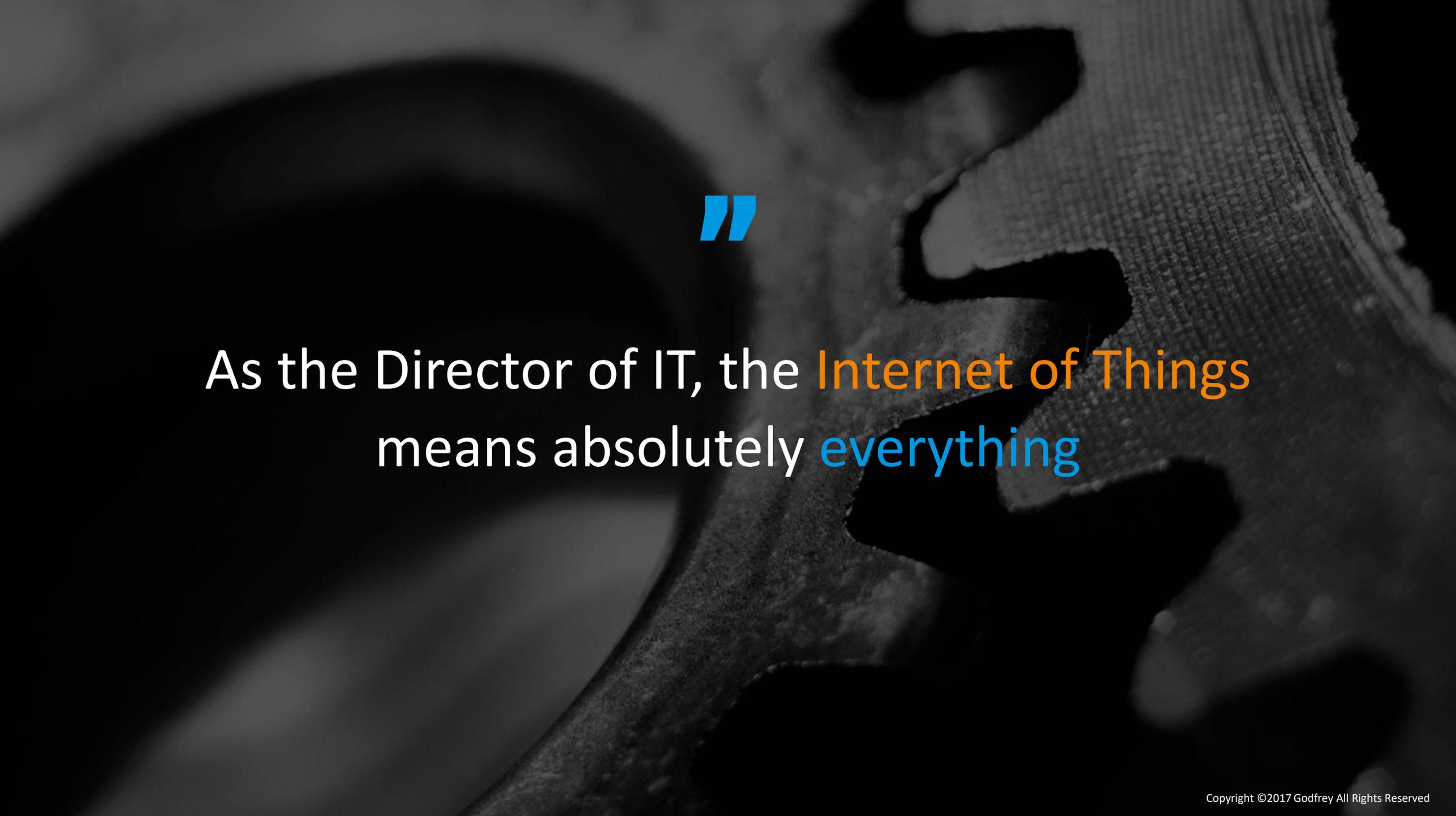# Obstacles to IoT Success

55%
Lack of Understanding

36%
IT/Infrastructure Limitations

32%
Lack of Strategy

As the Director of IT, the Internet of Things means absolutely everything

If you're marketing complex products to an ever-changing audience,

THERE'S AN AGENCY FOR THAT.

GODFREY

Meet us at Godfrey.com/engineers