Connectivity Benchmark Report

Digital Transformation in Today's Enterprise

January 2017

Executive Summary

- 88% of IT decision makers (ITDMs) say they are either executing on digital transformation now or will be in the next 3 years.

- ITDMs are having issues delivering all the projects asked of them; only half say they were able to complete all the projects asked of them last year.

- 69% say there is a disparity between business and IT about what can be achieved with a digital initiative.

- The top outcomes that organizations want to achieve with digital transformation are: improving business processes, creating great customer experiences, and improving workforce productivity.

Executive Summary

- Organizations have fully bought into the importance of an API strategy. 90% say they either have an API strategy in place or will by the end of the year, and 94% say they are realizing major benefits from that API strategy.

- ITDMs say the most important technologies for the future of their companies are: cloud computing, mobile computing, remote sensors/IoT, and AI/machine learning.

- ITDMs are confident in their ability to prevent or withstand security attacks, but the emergence of shadow IT could present unforeseen threats.

- ITDMs believe their businesses will change more in the upcoming five years than in the past five.

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Digital transformation in 2017

The majority of ITDMs are undertaking initiatives that will digitally transform their organizations.

But they are held back by time constraints and misaligned priorities.

88% of IDTMs are currently or are planning to undergo digital transformation

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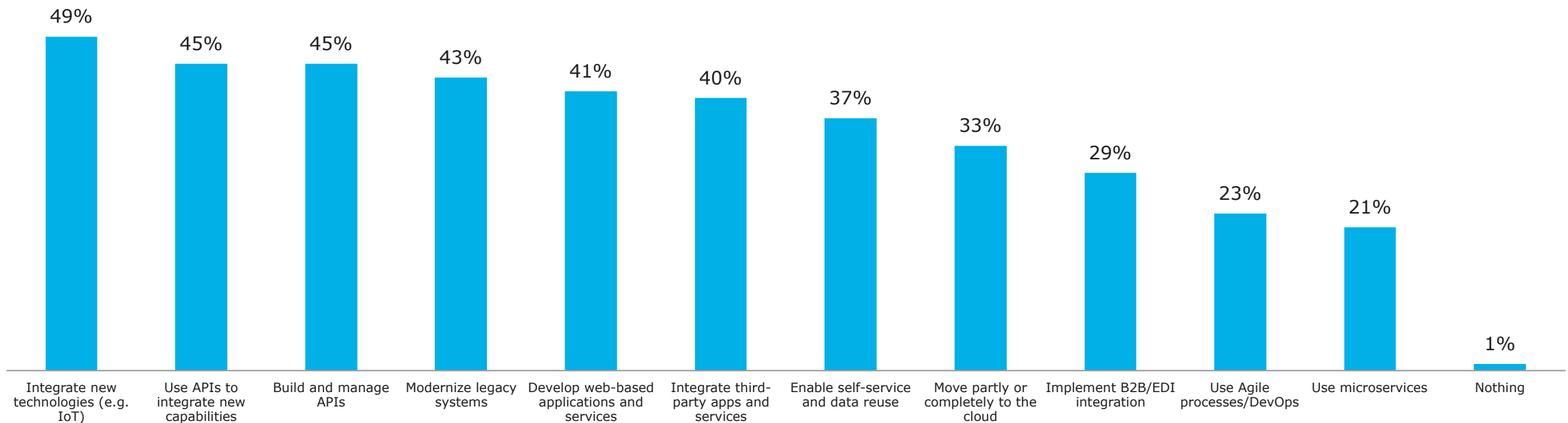## Is your company currently undertaking digital transformation initiatives?

One-third of ITDMs are currently executing on digital transformation; two-thirds of ITDMs say they are planning to initiate digital transformation in the next 3 years.

3%

6%

22%

66%

- Yes
- "Not yet, but plan to in the next 3 years"
- "Not yet, but plan to in the next 3-5 years"
- No
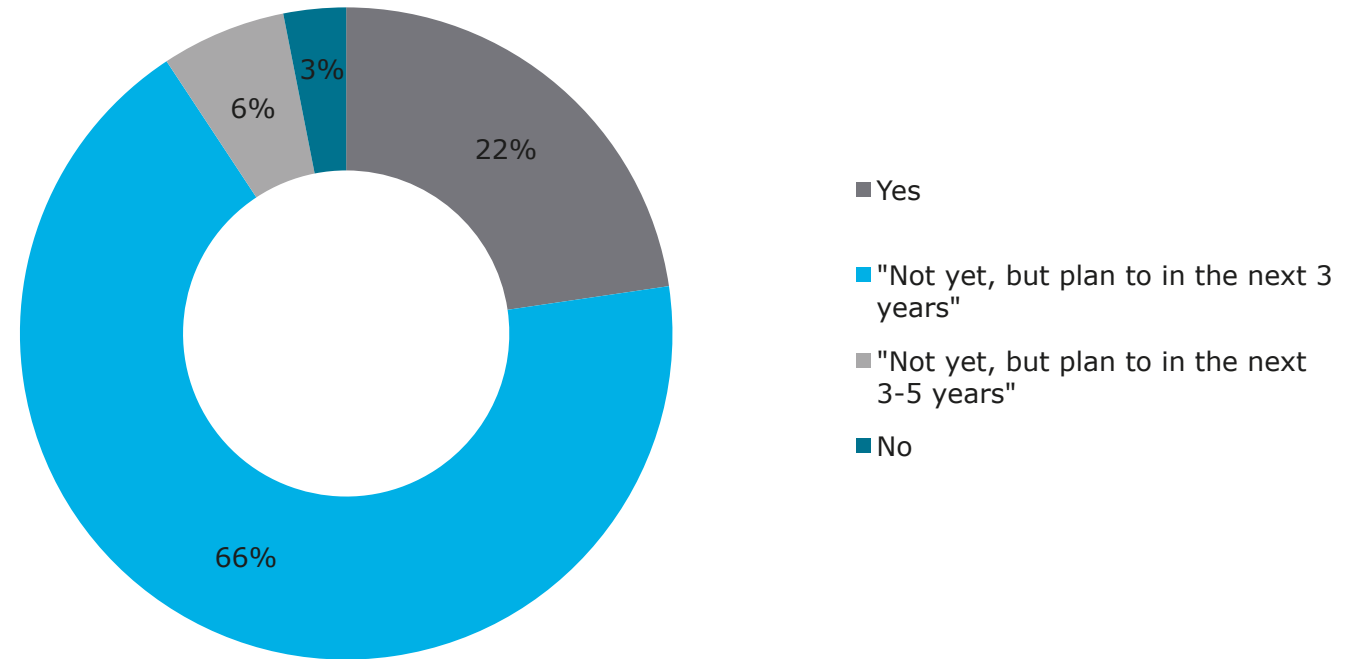
ITDMs are executing on transformative initiatives to improve business outcomes

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What are you doing on the technology side to achieve digital transformation more quickly?

- Integrate new technologies (e.g. IoT) — 49%
- Use APIs to integrate new capabilities — 45%
- Build and manage APIs — 45%
- Modernize legacy systems — 43%
- Develop web-based applications and services — 41%
- Integrate third-party apps and services — 40%
- Enable self-service and data reuse — 37%
- Move partly or completely to the cloud — 33%
- Implement B2B/EDI integration — 29%
- Use Agile processes/DevOps — 23%
- Use microservices — 21%
- Nothing — 1%

The top technologies ITDMs are adopting to achieve their transformative goals are integrating new technologies, building and managing APIs, and using those APIs to integrate new capabilities.
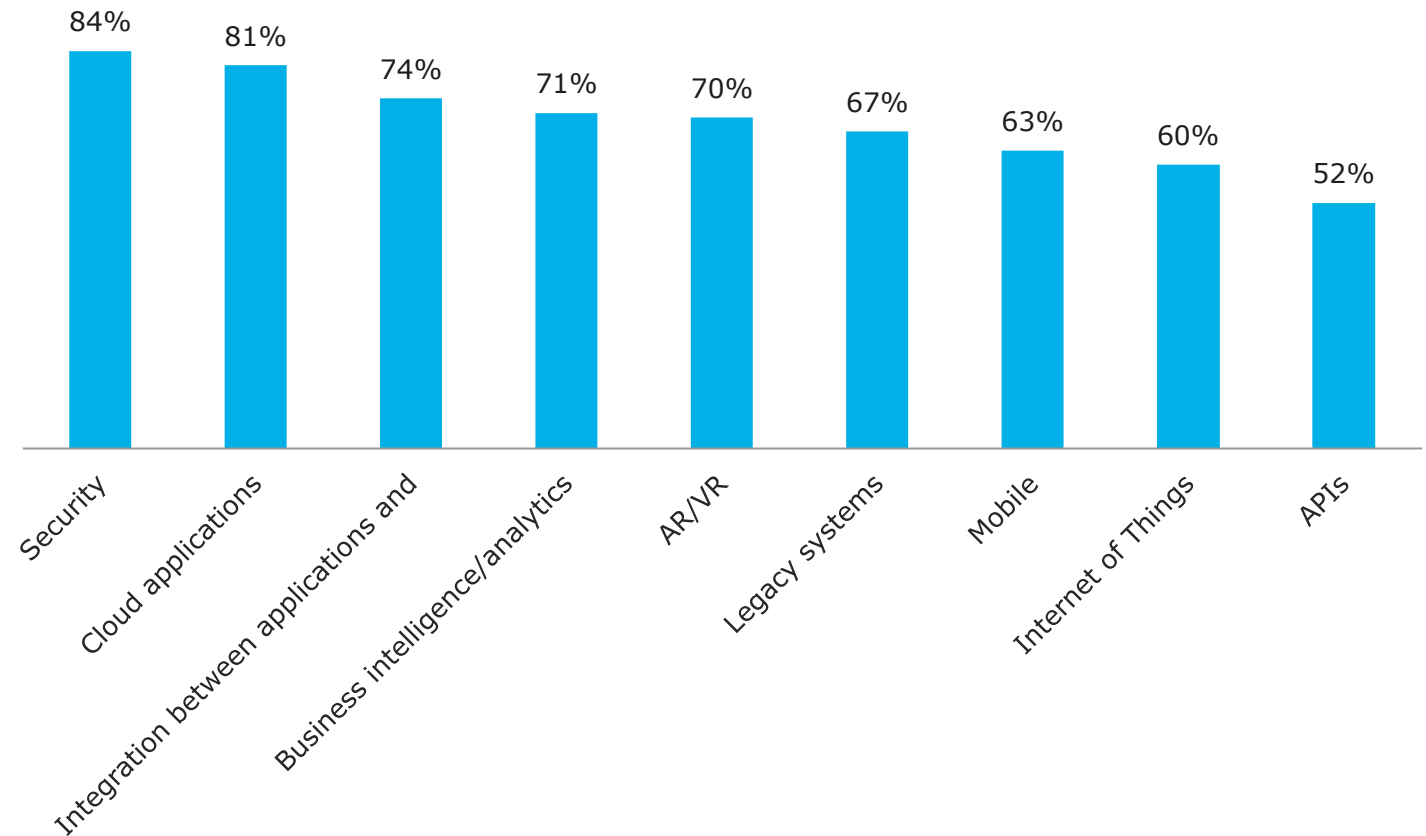
ITDMs place greater priority on security and the cloud

Please rank each of the following elements by level of its importance as an IT priority in 2017
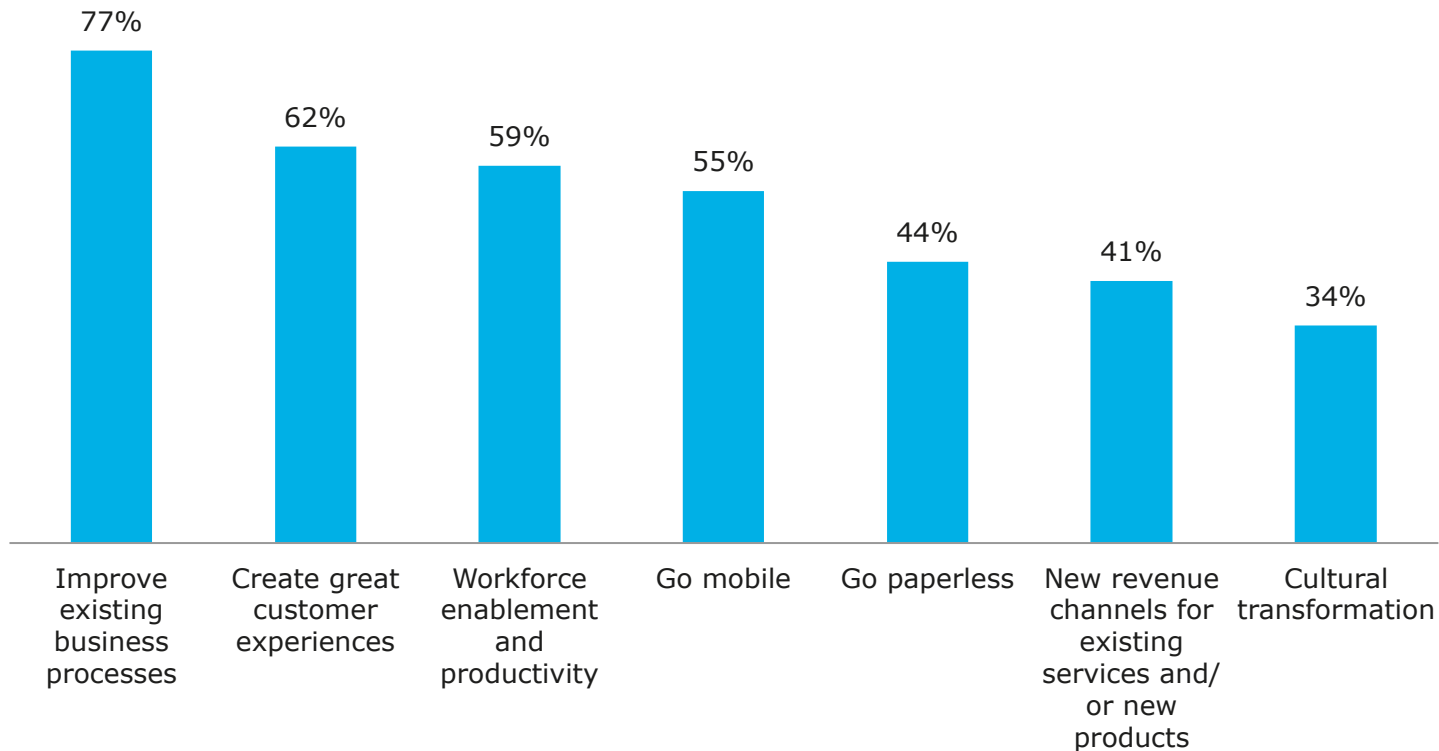
ITDMs say that security and cloud applications are "very" or "extremely" important IT priorities.

Maintaining legacy systems is less of a priority, suggesting there is more time to innovate.

Category	Percentage
Security	84%
Cloud applications	81%
Integration between applications and	74%
Business intelligence/analytics	71%
AR/VR	70%
Legacy systems	67%
Mobile	63%
Internet of Things	60%
APIs	52%

ITDMs are looking to digital transformation to improve current business functions

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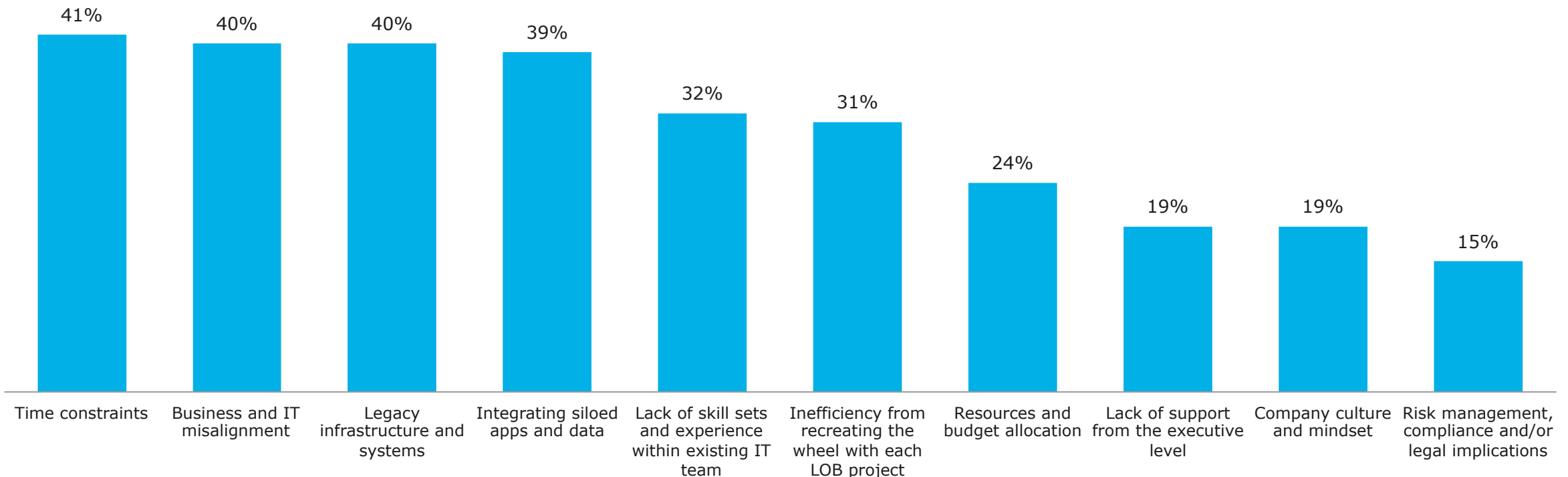## What business outcomes are you trying to achieve with digital transformation?

Outcome	Percentage
Improve existing business processes	77%
Create great customer experiences	62%
Workforce enablement and productivity	59%
Go mobile	55%
Go paperless	44%
New revenue channels for existing services and/or new products	41%
Cultural transformation	34%

The top outcomes that ITDMs want to achieve with digital transformation are improving business processes, creating great customer experiences, and improving workforce productivity.

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Digital transformation is hampered by misalignment between IT and the rest of the organization

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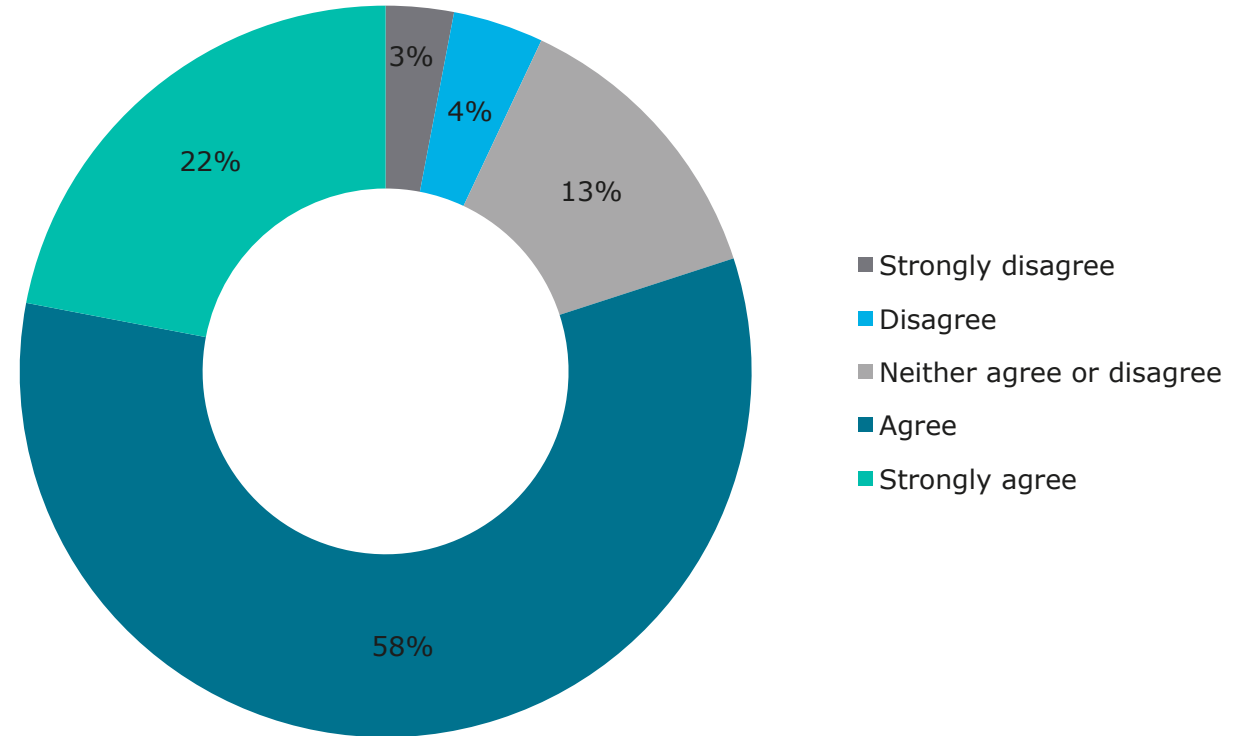## What are the top obstacles to completing digital transformation?

Obstacle	Percentage
Time constraints	41%
Business and IT misalignment	40%
Legacy infrastructure and systems	40%
Integrating siloed apps and data	39%
Lack of skill sets and experience within existing IT team	32%
Inefficiency from recreating the wheel with each LOB project	31%
Resources and budget allocation	24%
Lack of support from the executive level	19%
Company culture and mindset	19%
Risk management, compliance and/or legal implications	15%

The most commonly cited obstacles to achieving digital transformation goals were time constraints, business and IT misalignment, and legacy infrastructure and systems.

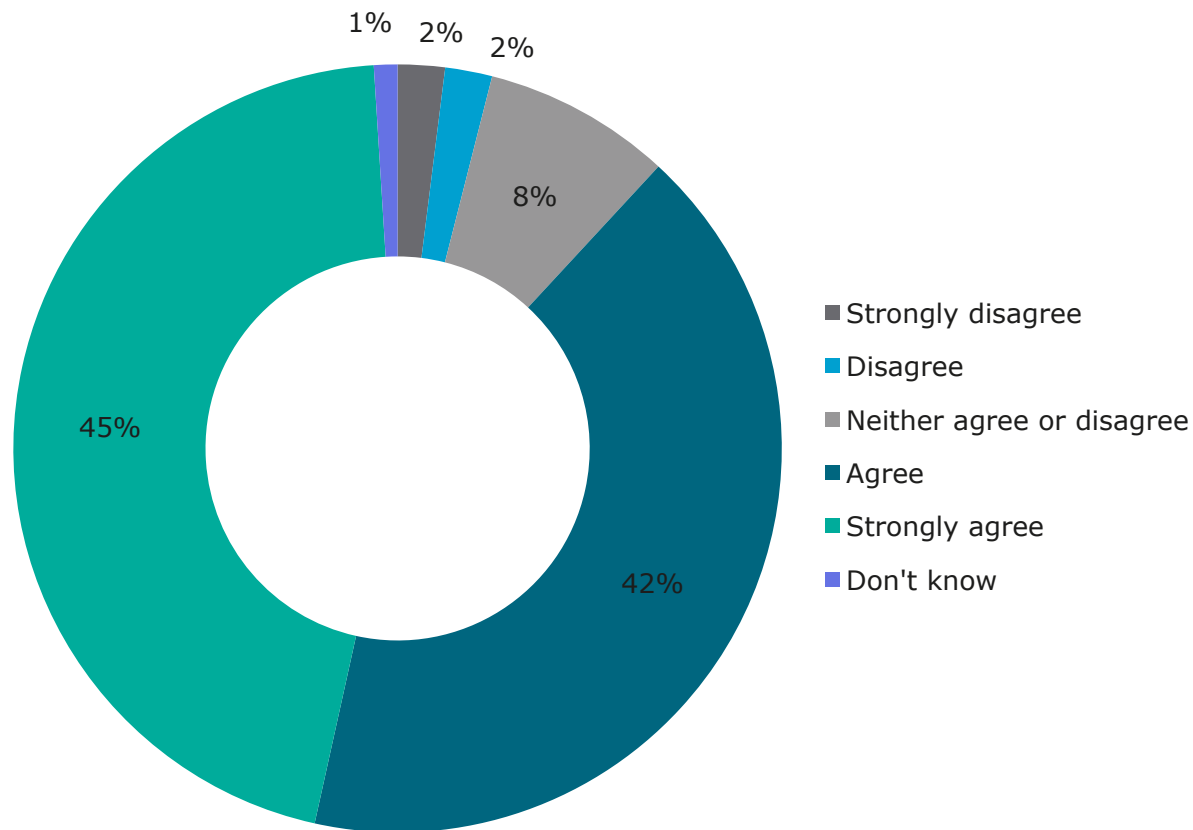# ITDMs feel more responsible for business outcomes

Do you agree with the statement: I believe I am driving business outcomes more than I did 12 months ago.

80% of ITDMs "agree" or "strongly" agree they drove business outcomes to a greater degree this year than last year.

- Strongly disagree
- Disagree
- Neither agree or disagree
- Agree
- Strongly agree

3%
4%
13%
22%
58%

ITDMs are charged with addressing change

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I believe my business will change more in the next five years than in the past five.

1% 2% 2%

8%

42%

45%

- Strongly disagree
- Disagree
- Neither agree or disagree
- Agree
- Strongly agree
- Don't know

87% of ITDMs agree or strongly agree that their businesses are changing rapidly.

The IT delivery gap

IT decision makers face serious obstacles to project delivery
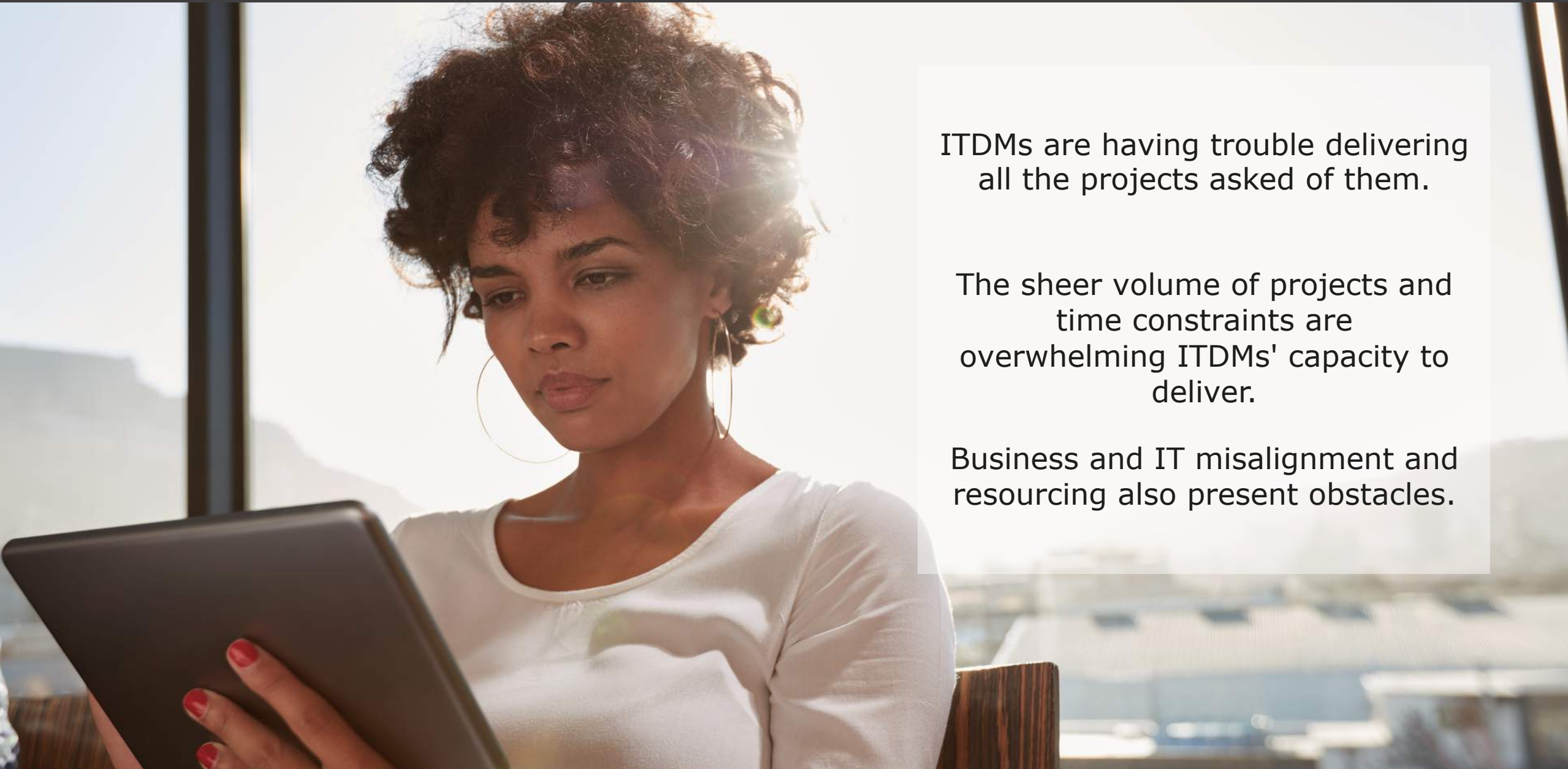
ITDMs are having trouble delivering all the projects asked of them.

The sheer volume of projects and time constraints are overwhelming ITDMs' capacity to deliver.

Business and IT misalignment and resourcing also present obstacles.

Only half of ITDMs say they could deliver all the projects asked of them last year

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Were you able to complete all projects asked of you last year?

Yes

"No, but we completed nearly all"

"No, but it was because of factors outside of my work"

"No, we just didn't have enough time and resources"

"No, the plans were unrealistic"

Don't know

1% 1%
4%
12%
49%
32%
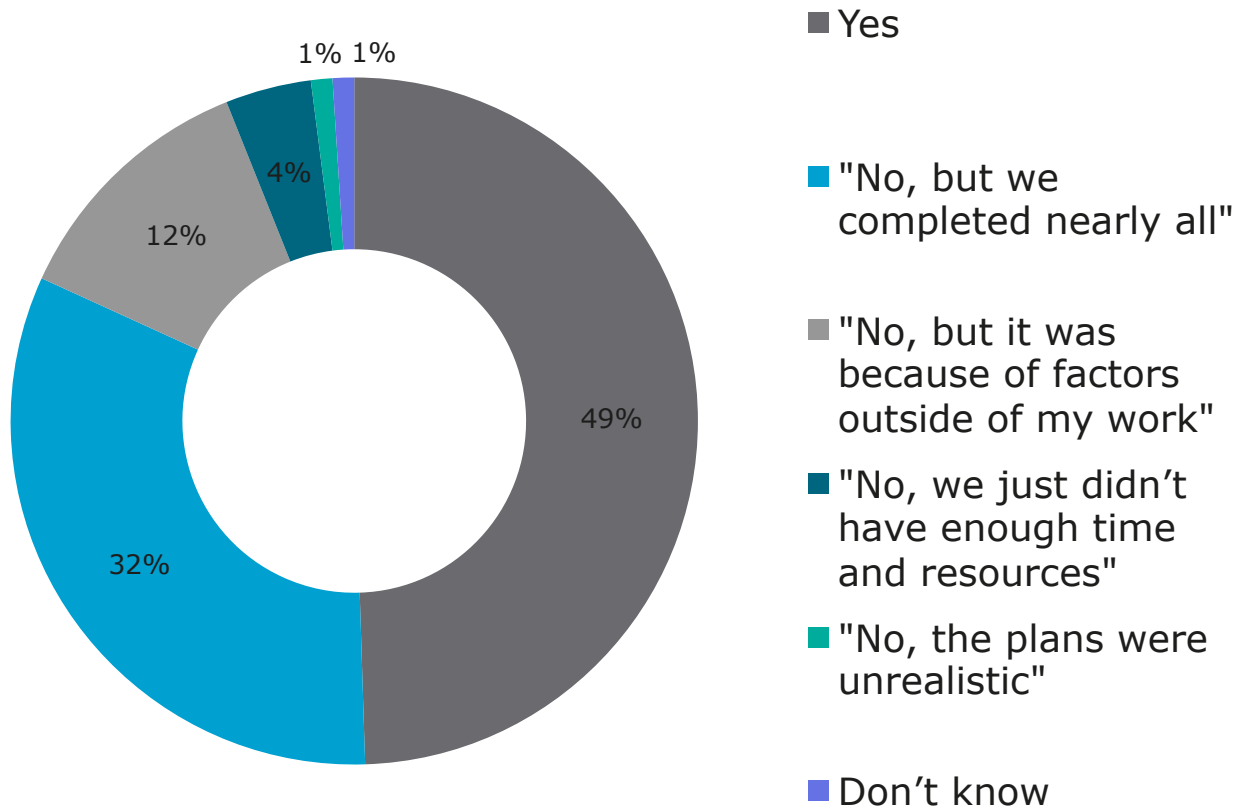
An additional 32% say they completed "nearly" all their projects, but were hampered by additional constraints like lack of resources and business/IT misalignment.

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ITDMs say they are held back by two key obstacles

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I believe there is a disparity between what business executives are expecting will be achieved from a digital initiative and what can actually be achieved.
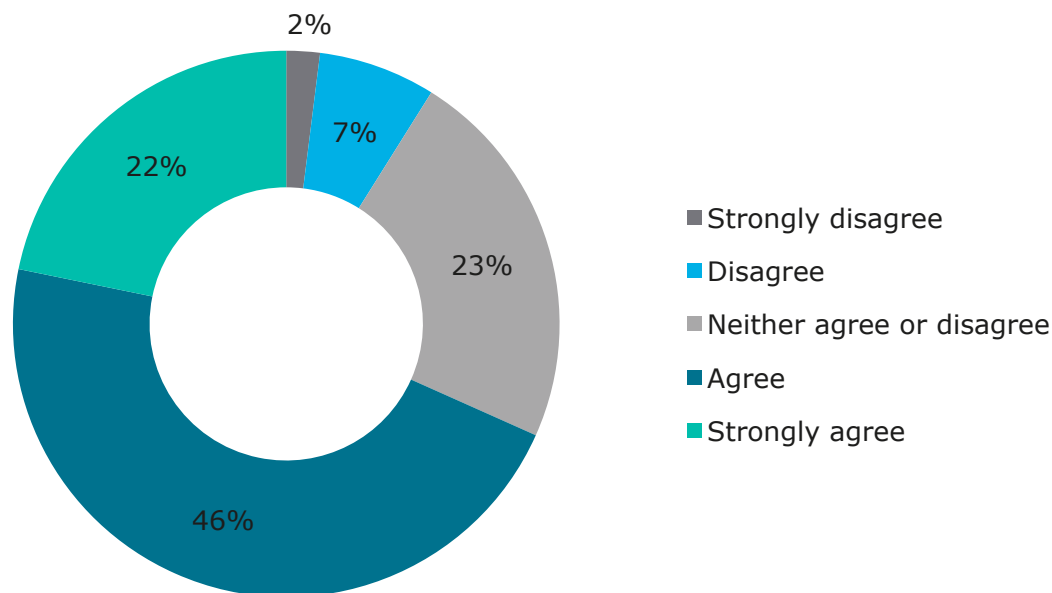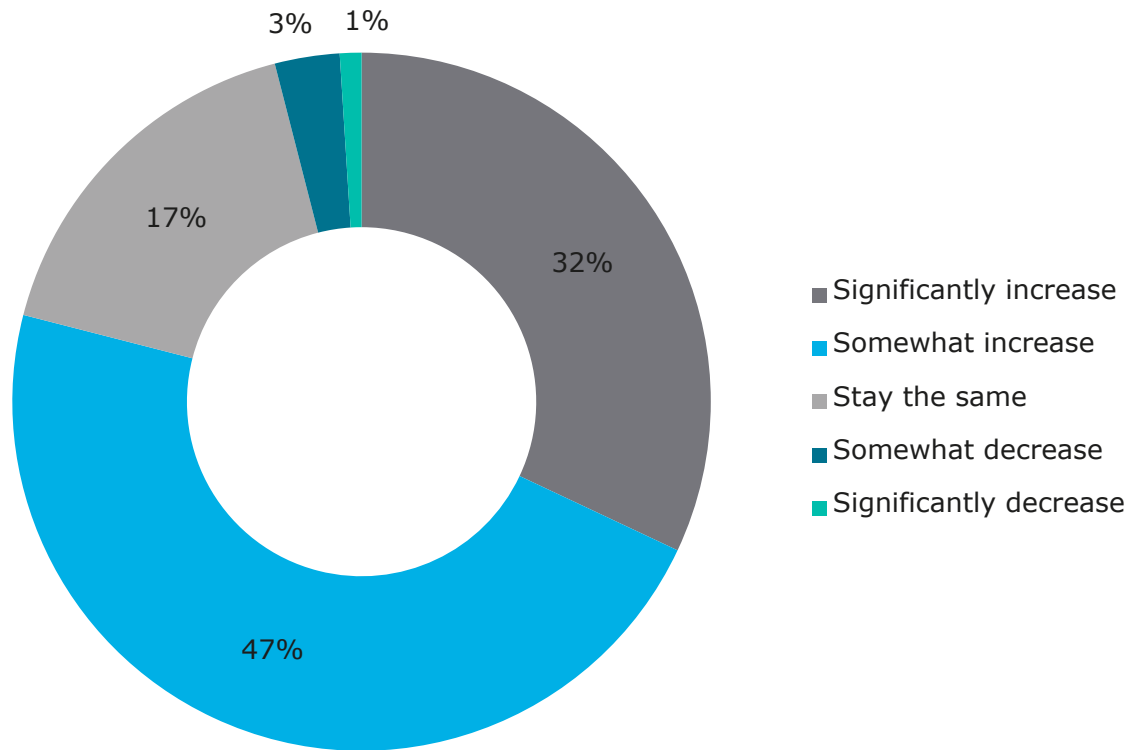
- 2% Strongly disagree
- 7% Disagree
- 23% Neither agree or disagree
- 46% Agree
- 22% Strongly agree

There are currently not enough resources to achieve my organization's digital initiatives.

- 6% Strongly disagree
- 20% Disagree
- 23% Neither agree or disagree
- 35% Agree
- 16% Strongly agree
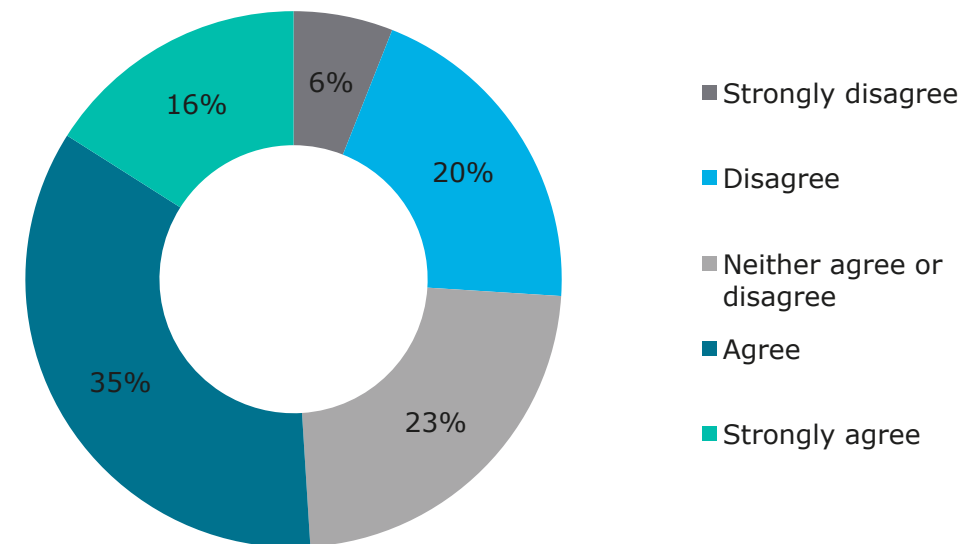
69% of ITDMs say there is a disparity between what business executives think can be achieved from a digital initiative and what actually can be accomplished.
51% of ITDMs "agree" or "strongly agree" they are not adequately resourced to meet their company's digital goals.

ITDMs will not see big budget increases in 2017

How will your IT budget change this year?

3%   1%

17%

32%

- Significantly increase
- Somewhat increase
- Stay the same
- Somewhat decrease
- Significantly decrease

47%

47% of ITDMs will see their budgets increase by less than 10%, whereas 32% of ITDMs say their budgets will stay the same.

78% of survey respondents can launch a new product or service in 6 months or less

On average, how long does it take your organization to launch a new product or service?

- Between 1 and 4 weeks
- Between 1 and 3 months
- Between 3 and 6 months
- Between 6 and 9 months
- Between 9 months and a year
- More than a year
- Don't know
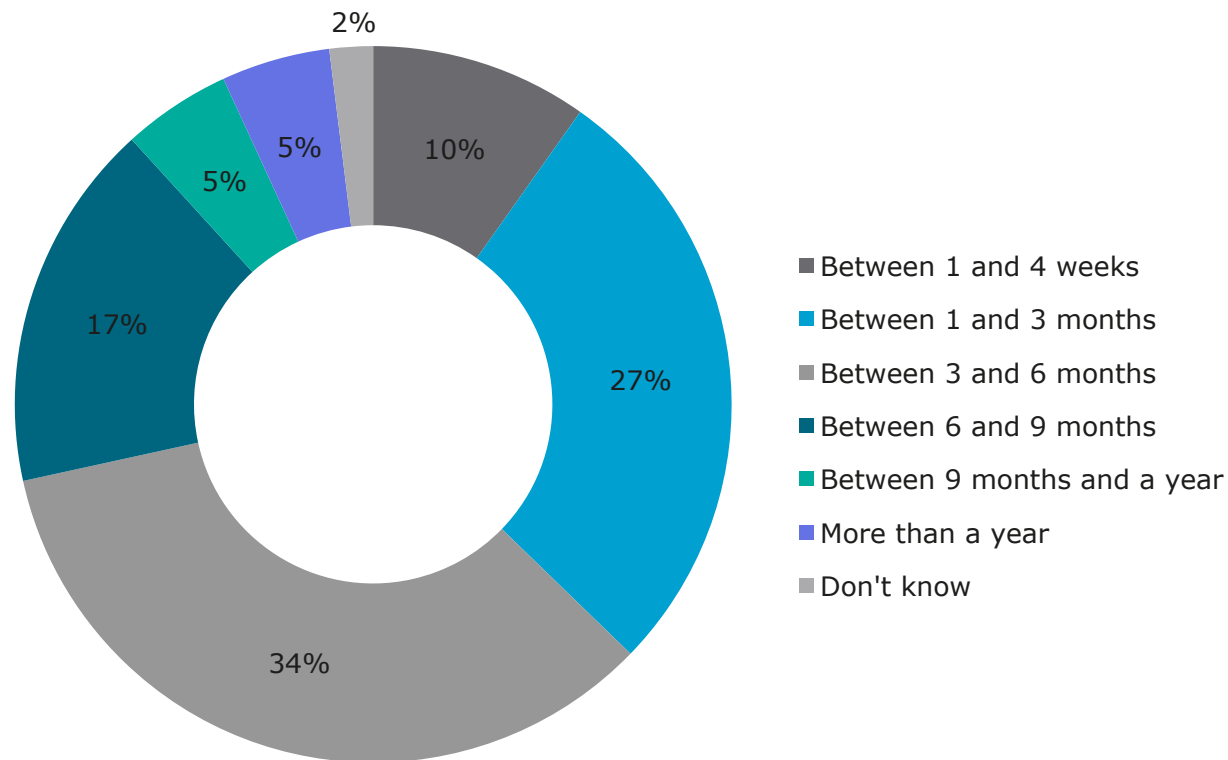
61% of ITDMs say they can deliver a new project in 1-6 months.

ITDMs believe obstacles to digital transformation could have a major affect on company revenue

Will your organization's revenue be impacted if these obstacles can't be resolved?

If obstacles to digital transformation aren't met, 59% of ITDMs think the impact will be felt within 6 months.

- 2%
- 1%
- 5%
- 4%
- 14%
- 11%
- 18%
- 18%
- 27%

Legend:
- Yes, immediately
- Yes, within the next 3 months
- Yes, within the next 6 months
- Yes, within the next year
- Yes, in 1-2 years
- Yes, in 3-5 years
- Yes, in more than 5 years
- No
- Don't know
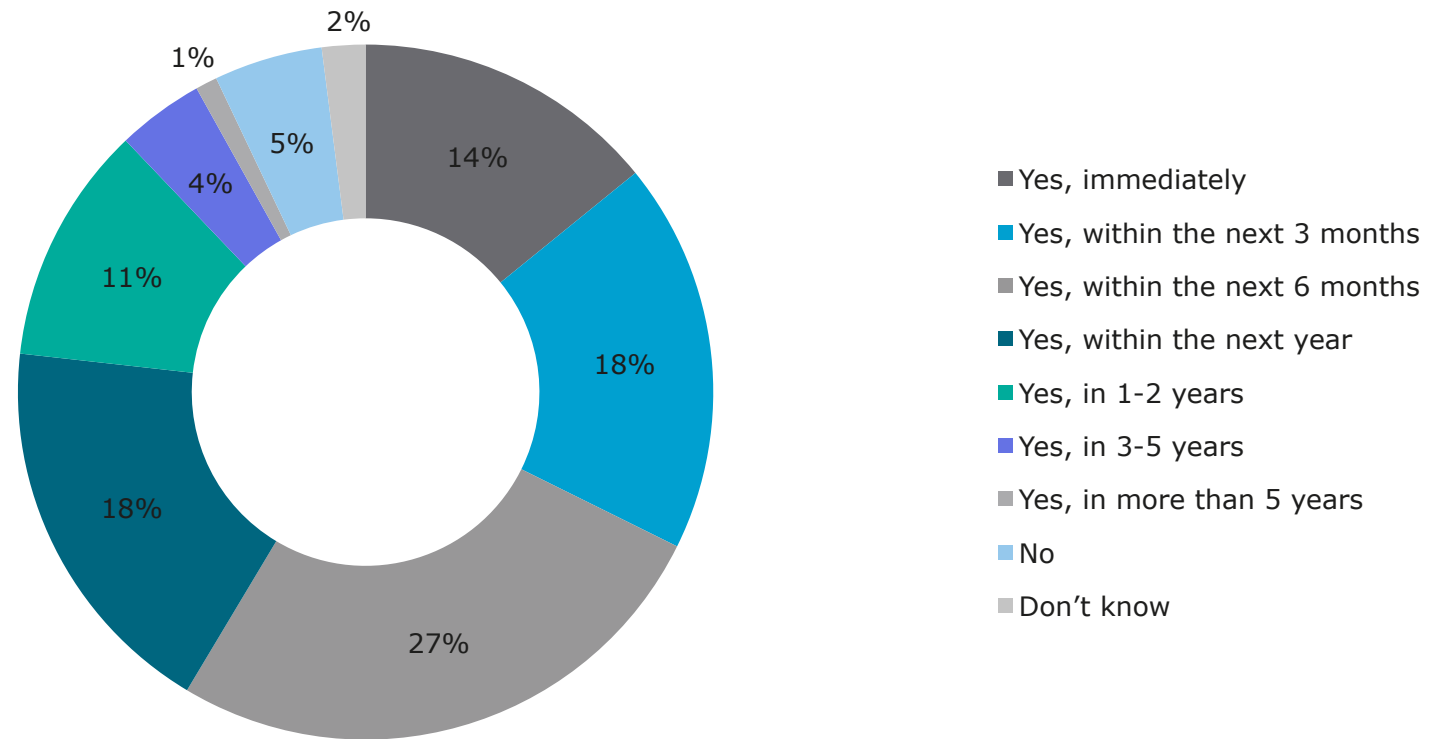
ITDMs are tasked with integrating numerous apps throughout their organizations

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Approximately how many applications does your organization currently integrate?

62% of ITDMs say they are integrating 50 or more apps.

35% say they are integrating 100 or more apps.

Large numbers of apps that need integrating can create a great deal of additional work for an IT organization.

2%

13%

23%

27%

18%

10%

7%

- 1-20
- 21-50
- 51-100
- 101-200
- 201-500
- 501 or more
- Don't know
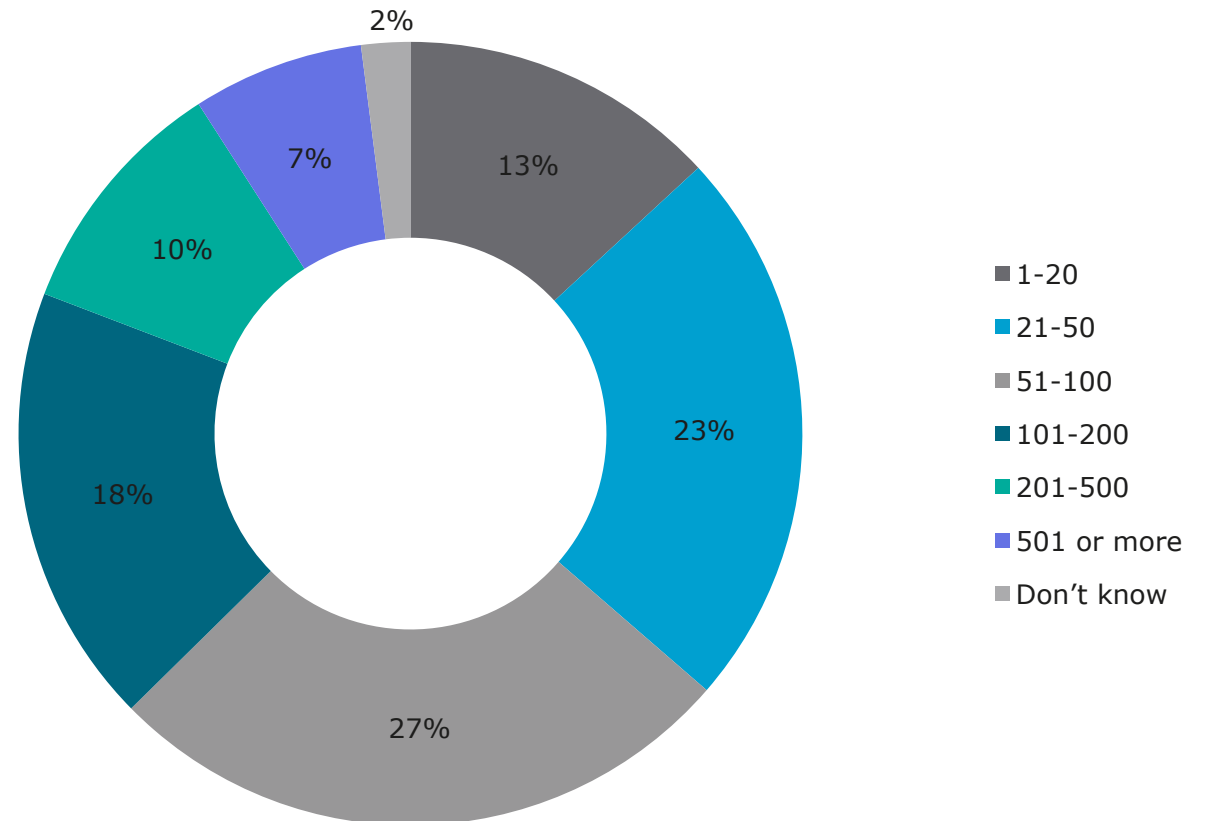
Enterprise API strategy

Survey respondents almost universally are seeing positive business outcomes from their API strategies.
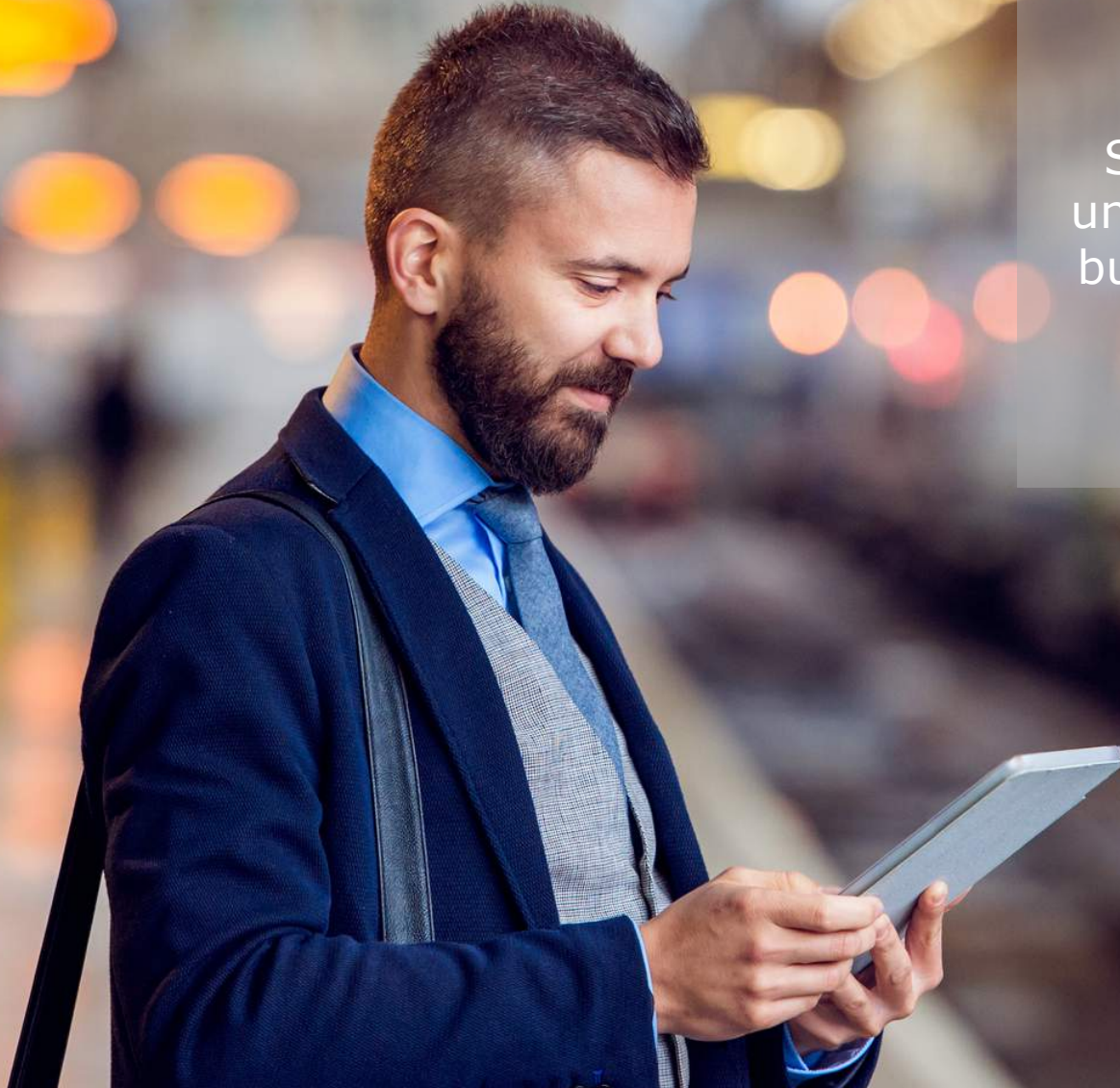
An API strategy is becoming universal

Does your company have an API strategy?

90% of say their companies either have an API strategy in place or plan to by the end of the year.

- Yes — 54%
- "Not yet, but we plan to have an API strategy by the end of 2017" — 36%
- No — 9%
- Don't know — 2%
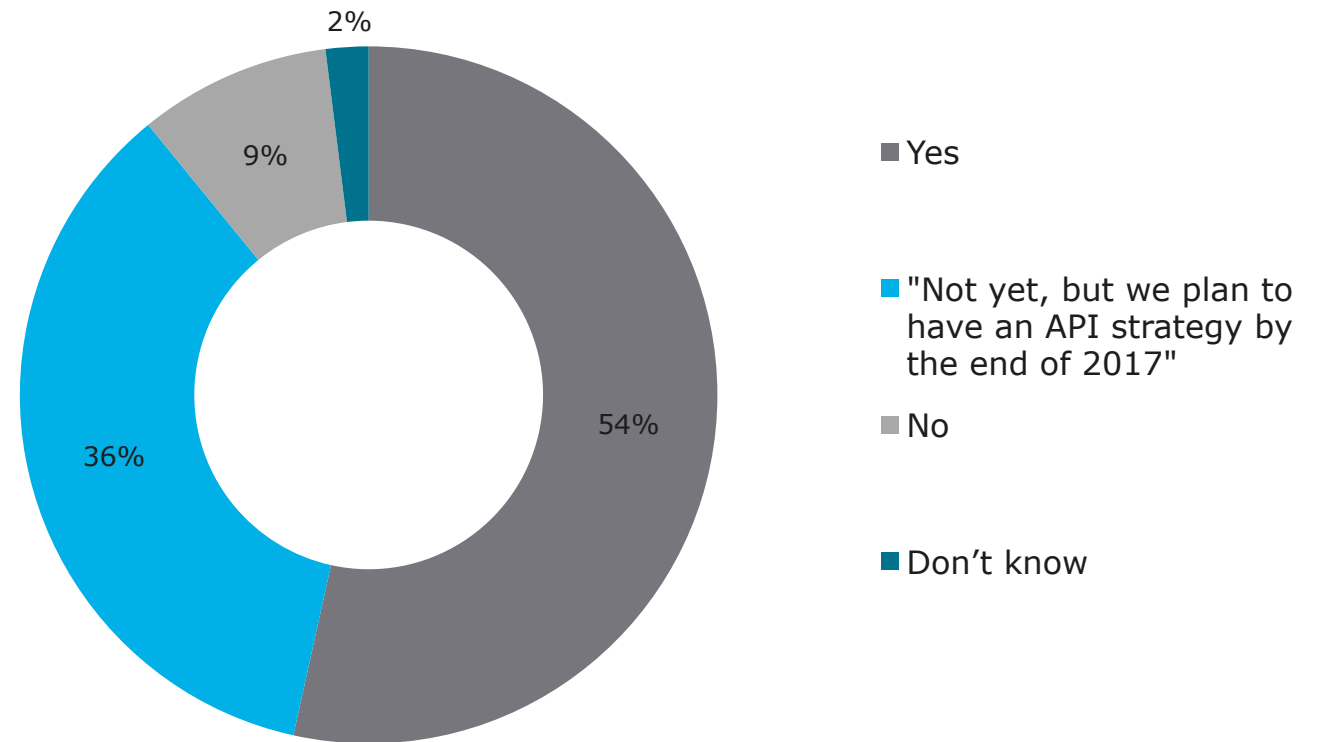
Integration and increasing speed are creating the need for an enterprise API strategy

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What business needs are driving your company's API strategy?

Category	Percentage
Integrate new software with existing systems and applications	60%
Increase speed and enable business teams to self-serve IT	57%
Create more value from existing IT and business (unlock data silos)	54%
Enable mobile applications	48%
Enable IoT services	45%
Enable innovation	45%
Develop new revenue channels	27%
Enhance partner ecosystems	25%
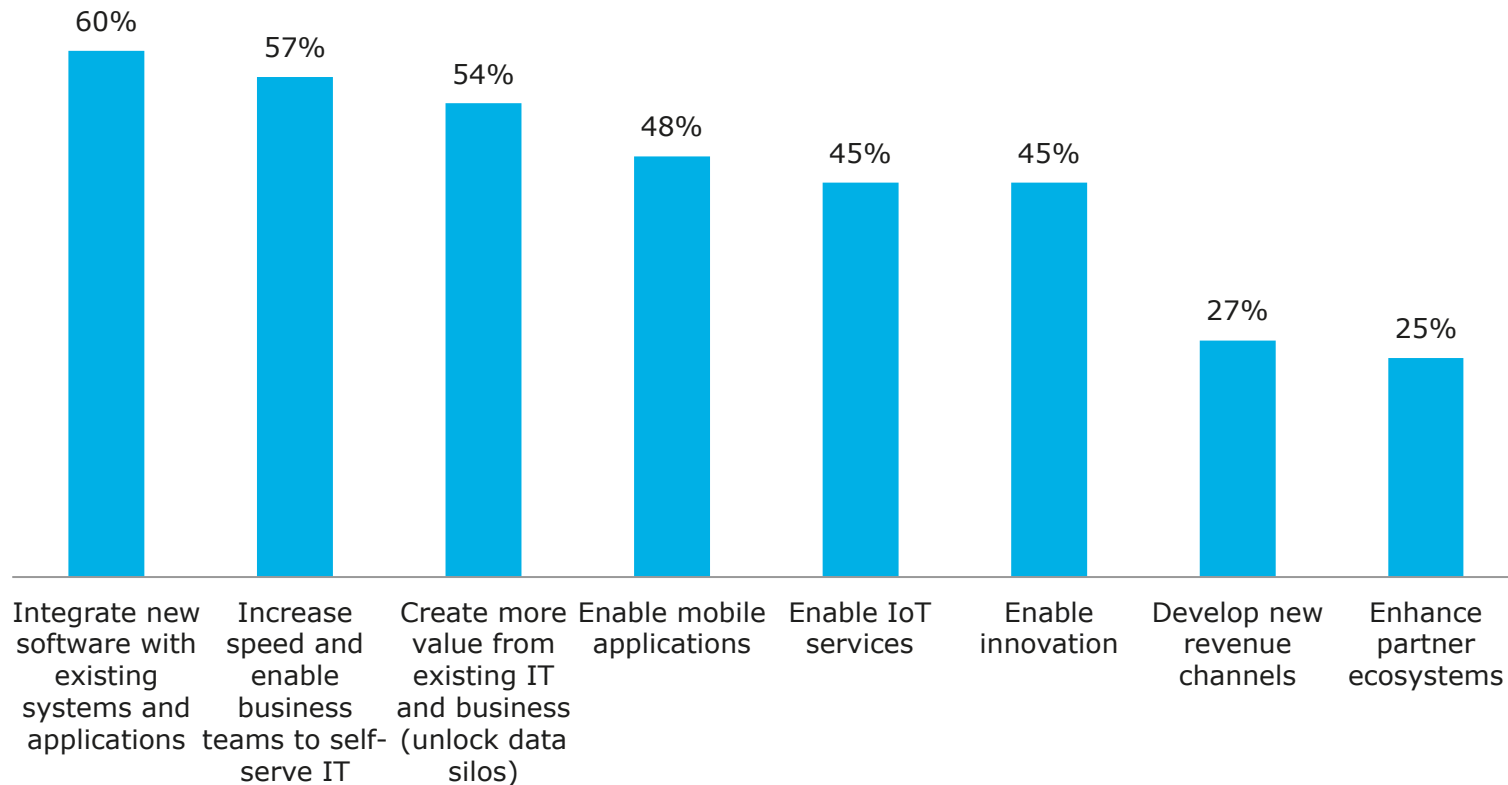
Over half of ITDMs say their company's API strategy is driven by the need to integrate new software with existing systems and apps, or to increase speed and enable IT self-service, or to create more value from existing IT assets.

More business benefits from an API strategy

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Does your API strategy allow you to release new products and services faster?

- 5%
- 1%
- 94%

■ Yes
■ No
■ Don't know
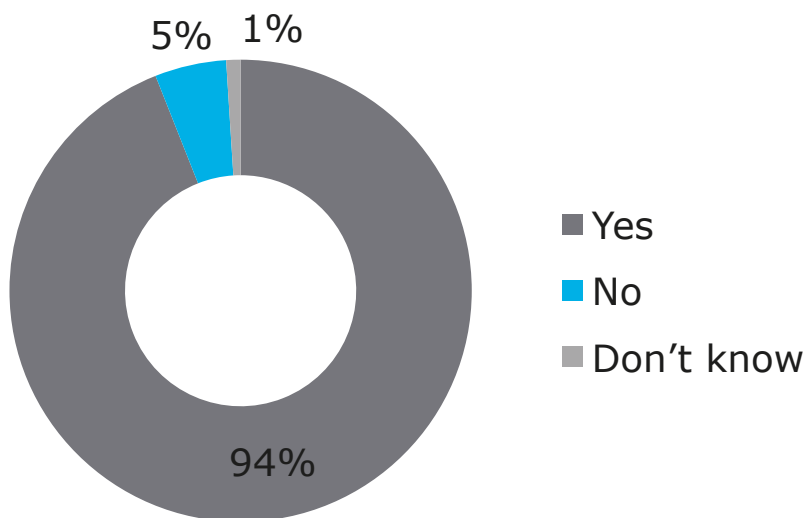
What business benefits do you get from your company's API strategy?

64%	62%	47%	44%	43%	26%	24%
Increased productivity	Increased innovation	Increased employee engagement and collaboration	Experienced revenue growth as a direct result	Increased speed in meeting LOB demands	Decrease in operational costs	Greater agility across teams to self-serve IT
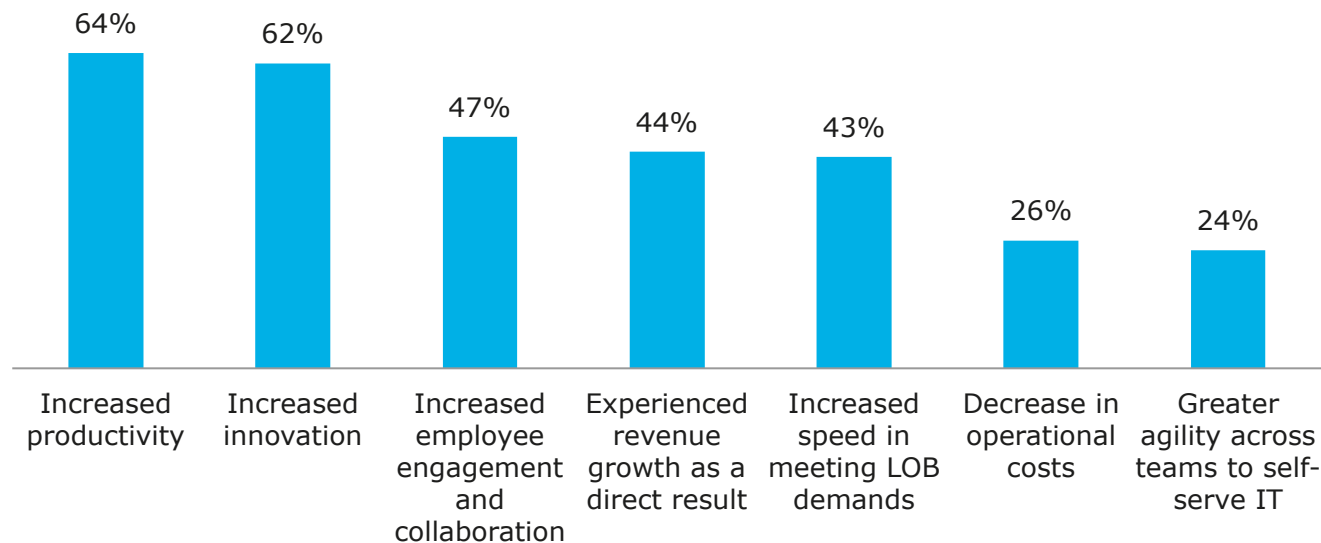
Nearly all businesses say their API strategy allows them to release new products and services faster. Other benefits include increased productivity and innovation.

Revenue from APIs

How much revenue does your company generate through APIs and API-related implementations?
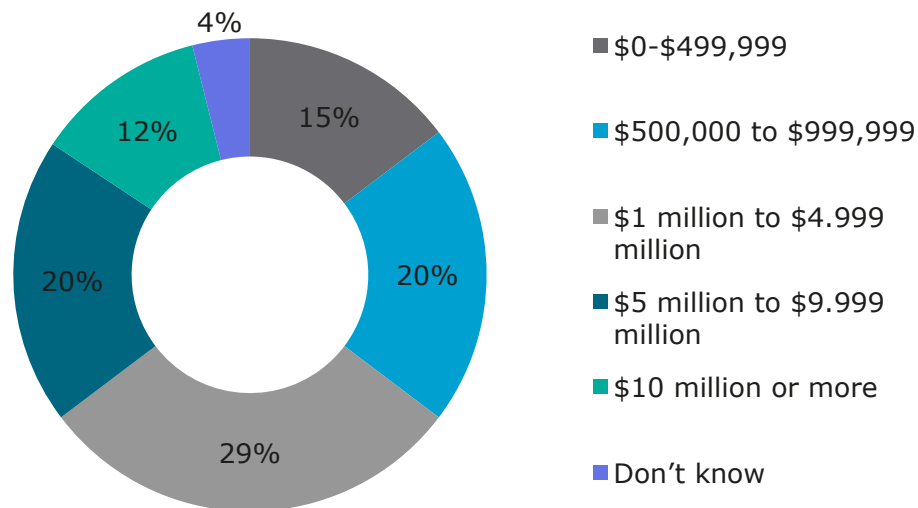
What percentage of your company's revenue is generated from APIs and API-related implementations?

- $0-$499,999
- $500,000 to $999,999
- $1 million to $4.999 million
- $5 million to $9.999 million
- $10 million or more
- Don't know

15%
4%
12%
20%
29%
20%

- 0-10%
- 11% to 24%
- 25% to 50%
- 51% to 74%
- 75% to 100%
- Don't know

3%
7%
12%
28%
21%
29%
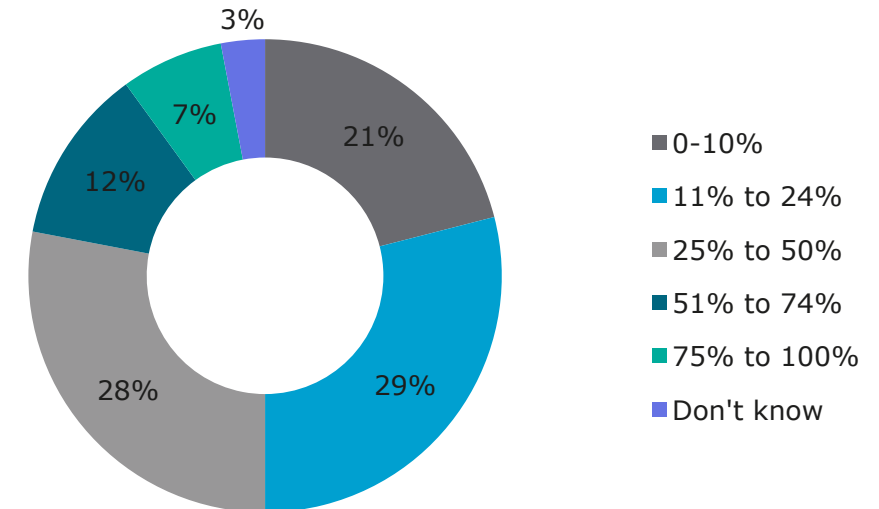
Nearly half of ITDMs say their companies generate 1-10 million dollars from APIs. 40% say their companies generate 25-75% of their revenue from APIs.

The security imperative

ITDMs are investing more in security and are confident they can withstand or protect against a security attack.

But the shifting nature of security threats and the emergence of shadow IT can pose unforeseen problems.
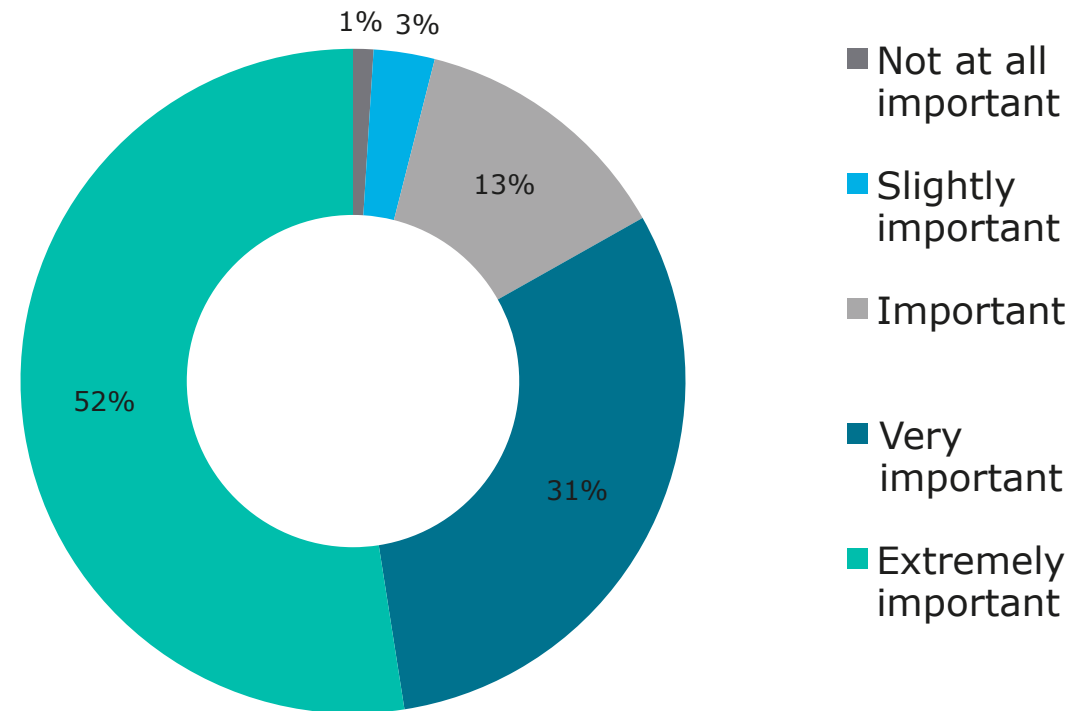
ITDMs are concerned about security, yet confident they in their InfoSec capabilities

MuleSoft

How concerned about any IT security threat is your company?
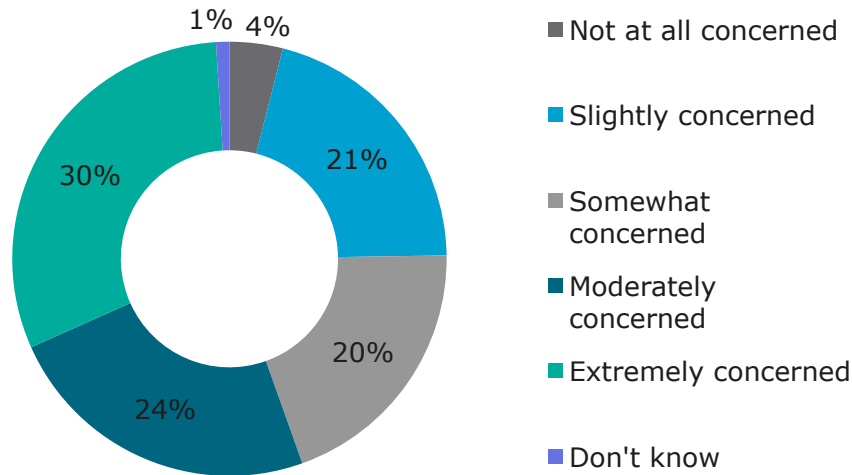
How confident are you that your company could prevent, withstand, or stop any security threat today?

1% 4%
21%
30%
20%
24%

- Not at all concerned
- Slightly concerned
- Somewhat concerned
- Moderately concerned
- Extremely concerned
- Don't know

1% 1%
18%
18%
26%
36%

- Not at all confident
- Somewhat confident
- Moderately confident
- Very confident
- Extremely confident
- Don't know
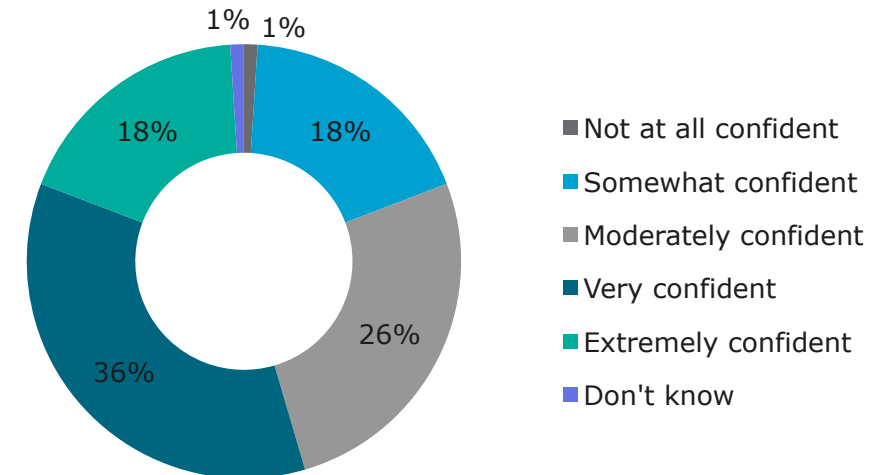
74% of ITDMs say that they are concerned about security, but over half also say they are "extremely" or "very" confident they can prevent or withstand a security threat.

ITDMs will be investing a great deal into security this year

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Approximately what percent of your IT budget will be spent on each of the following categories in 2017?
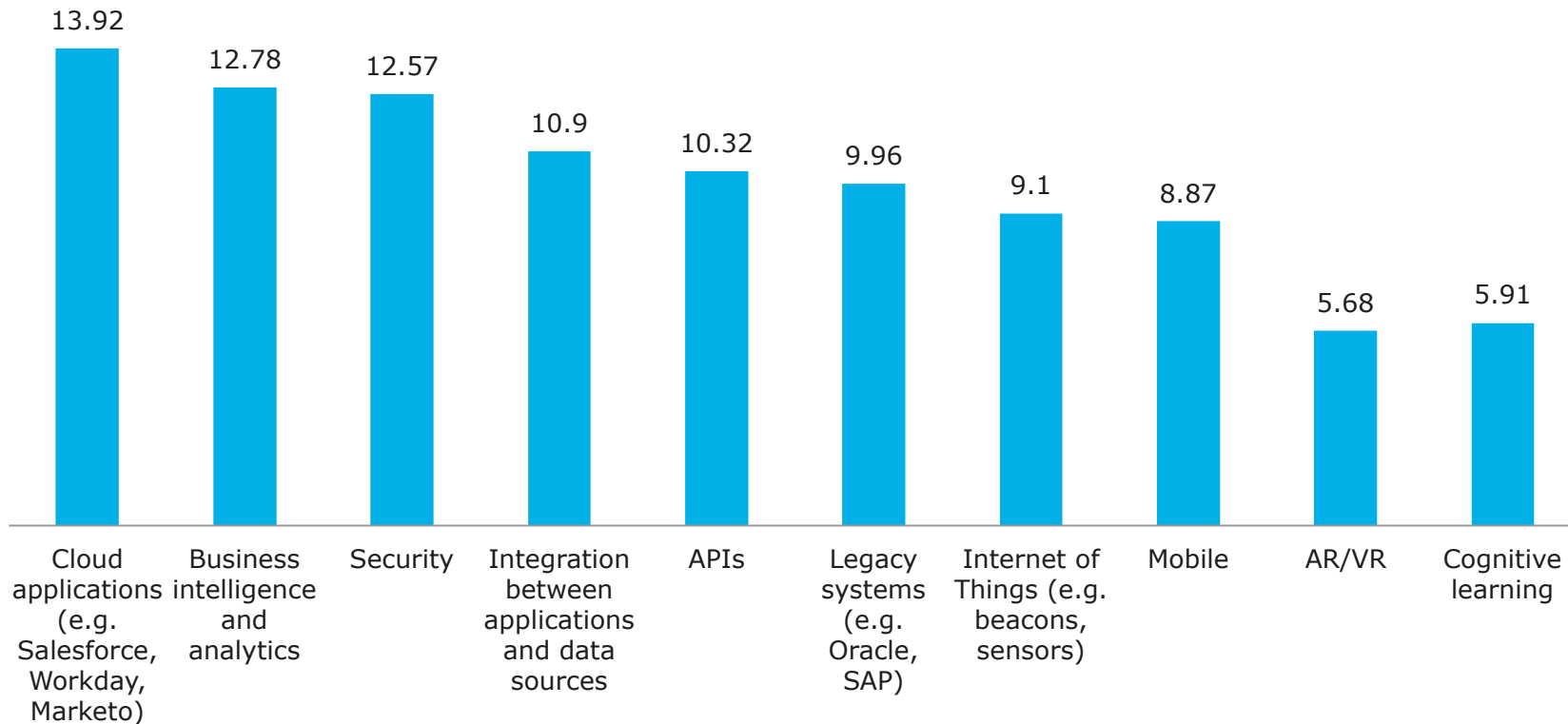
The top three IT budget categories are on cloud applications, business intelligence, and then security.
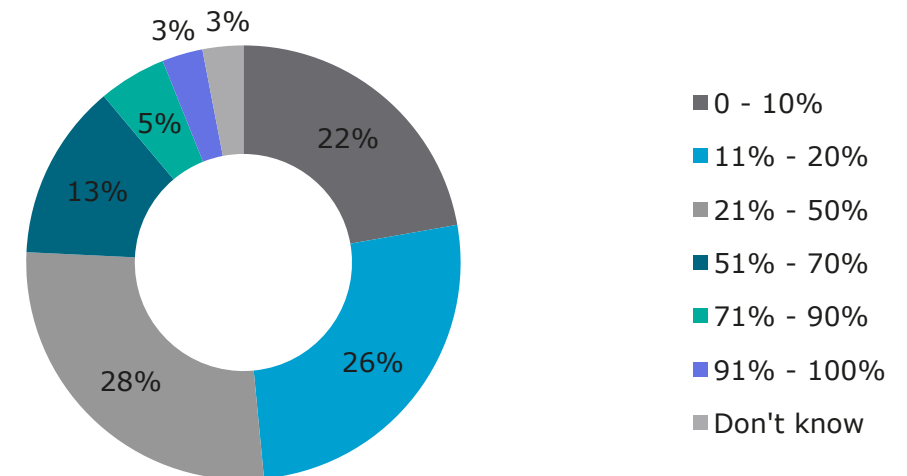
Applications outside the IT department can lead to loss of visibility and control

MuleSoft

How many applications are currently adopted outside your IT department?

- 0-10 — 20%
- 11-20 — 20%
- 21 - 50 — 21%
- 51 - 70 — 17%
- 71 - 90 — 6%
- 91 - 100 — 5%
- More than 100 — 7%
- Don't know — 4%
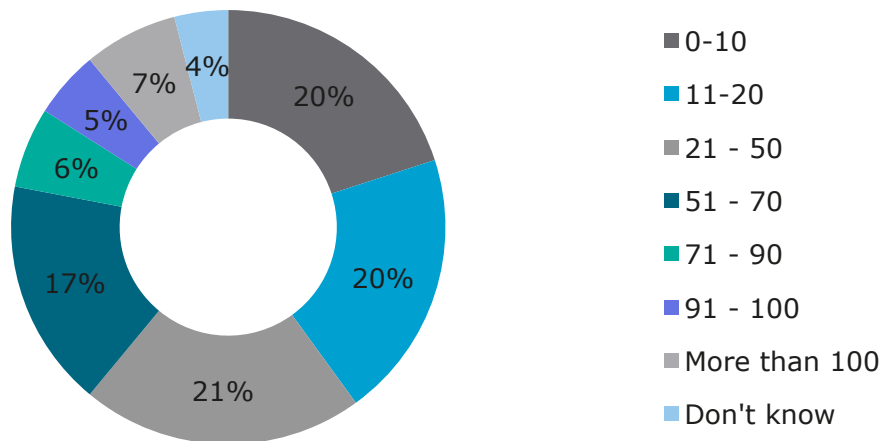
Approximately what percentage of technology spend comes from outside the IT department?

- 0 - 10% — 22%
- 11% - 20% — 26%
- 21% - 50% — 28%
- 51% - 70% — 13%
- 71% - 90% — 5%
- 91% - 100% — 3%
- Don't know — 3%

More than half of ITDMs say their companies have adopted more than 20 applications outside the IT department, and 49% say more than 21% of the tech budget comes from outside IT.

The nature of security threats is constantly shifting, and IT initiatives from outside the IT department can present threats to an organization that IT cannot anticipate.

4

The future of enterprise technology

Cloud and mobile computing are seen as key to the future

Established technologies like cloud and mobile computing are considered more important to the future of business than technologies like IoT or virtual reality.

ITDMs see cloud, mobile, IoT, and AI as key to the future of their organizations

MuleSoft

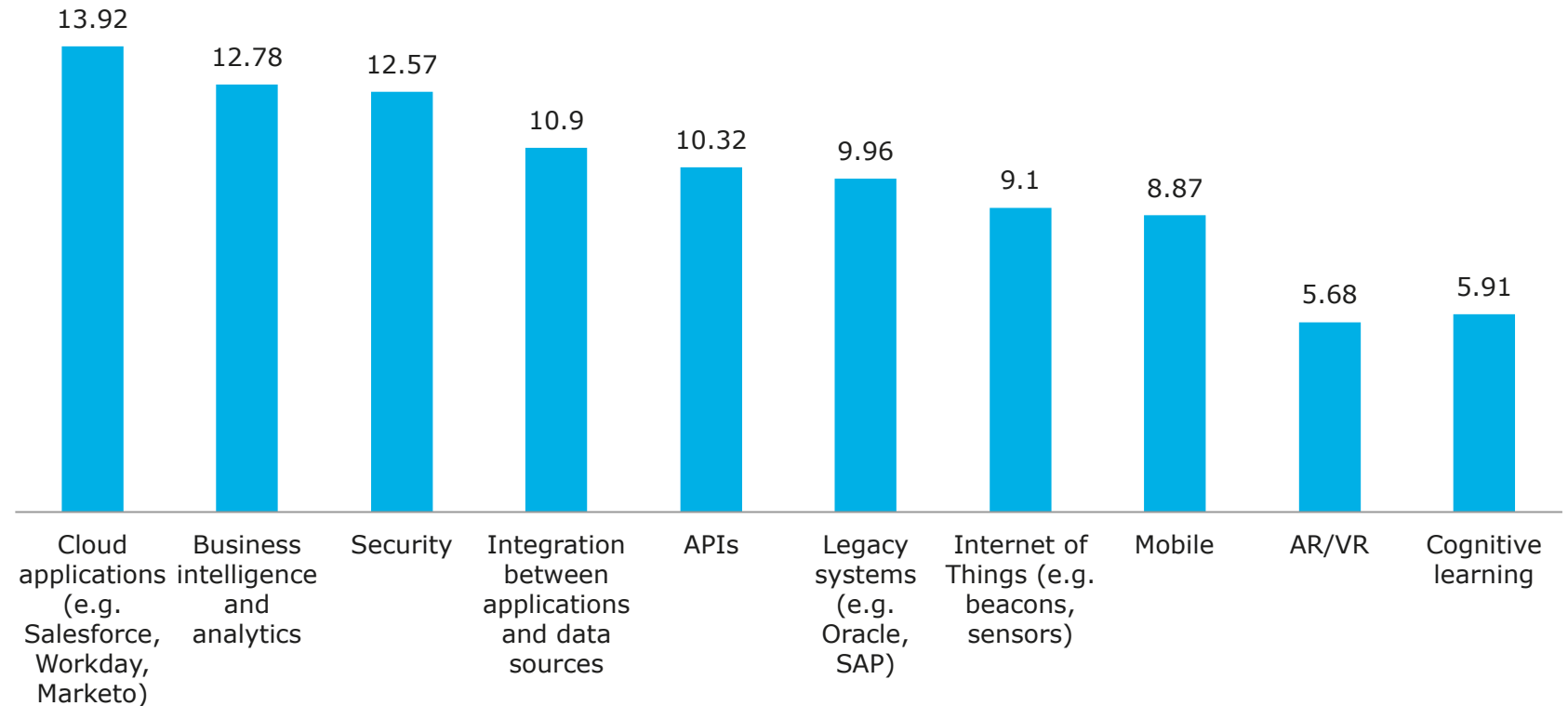How important are the following technologies to the future of your business?

Cloud computing	75%
Mobile computing	69%
Remote sensors (IoT)	57%
AI/machine learning	53%
3D printing	50%
Advanced robotics	47%
Nanotechnology	46%
Blockchain	40%
Drones	39%
Chatbots	38%
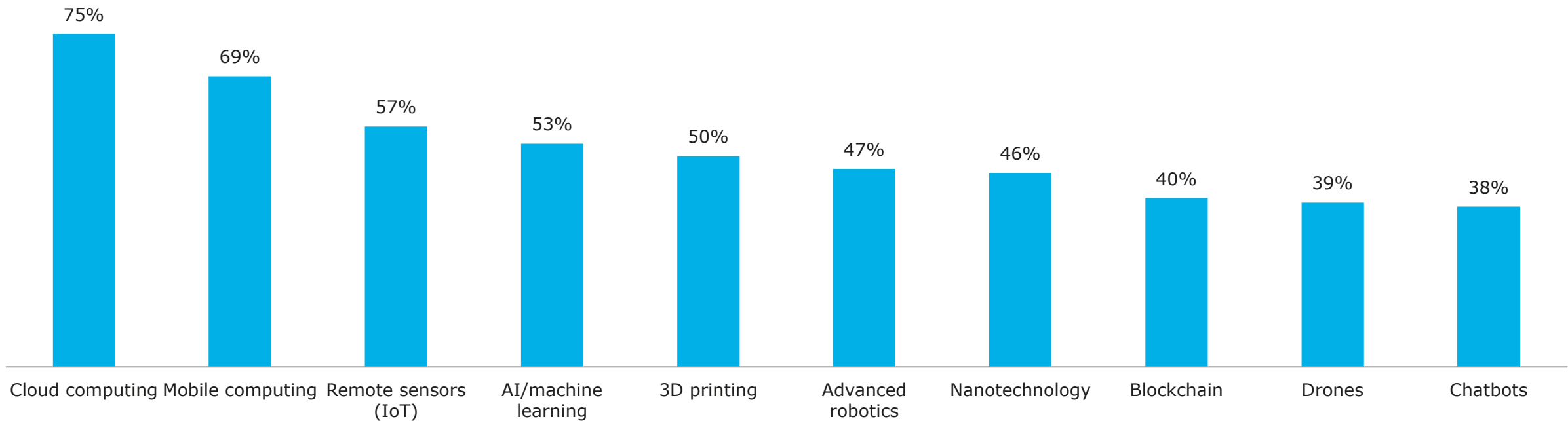
ITDMs identified cloud and mobile computing, IoT, and AI as "important" or "very important" to the future, and showed a strong preference for 3D printing.

IT budgets reveal key priorities for the upcoming year

MuleSoft

Approximately what percent of your IT budget will be spent on each of the following categories in 2017?

ITDMs are spending a sizeable portion of their budgets today on emerging technologies like IoT, almost as much as established tech like legacy systems and mobile initiatives.

Category	Percent
Cloud applications (e.g. Salesforce, Workday, Marketo)	13.92
Business intelligence and analytics	12.78
Security	12.57
Integration between applications and data sources	10.9
APIs	10.32
Legacy systems (e.g. Oracle, SAP)	9.96
Internet of Things (e.g. beacons, sensors)	9.1
Mobile	8.87
AR/VR	5.68
Cognitive learning	5.91

Digital transformation depends on new technologies and new capabilities

What are you doing on the technology side to complete digital transformation more quickly?
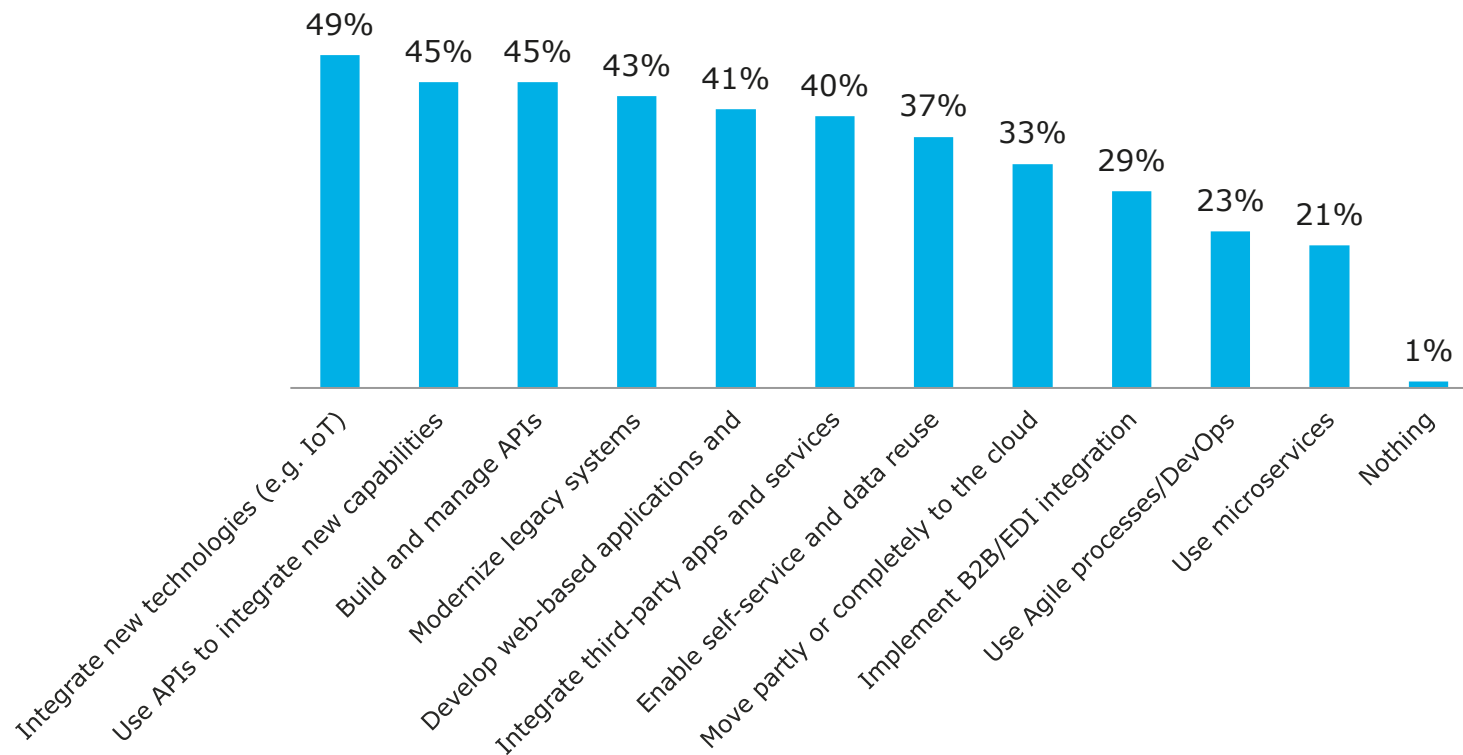
The most often cited actions were integrating new technologies and building and using APIs to integrate new capabilities.

How prepared is your IT team to address these technologies today?

Two-thirds of respondents say they are "fully" or "very prepared" to accomplish these items, with peaks in building APIs and integrating apps and services.

68% Build and manage APIs
68% Integrate 3rd party apps and services
67% Implement B2B/EDI integration
64% Move partly or completely to the cloud
63% Enable self-service and reuse
63% Use APIs to integrate new capabilities
62% Modernize legacy systems
62% Use microservices
61% Integrate new technologies
60% Use agile processes/DevOps
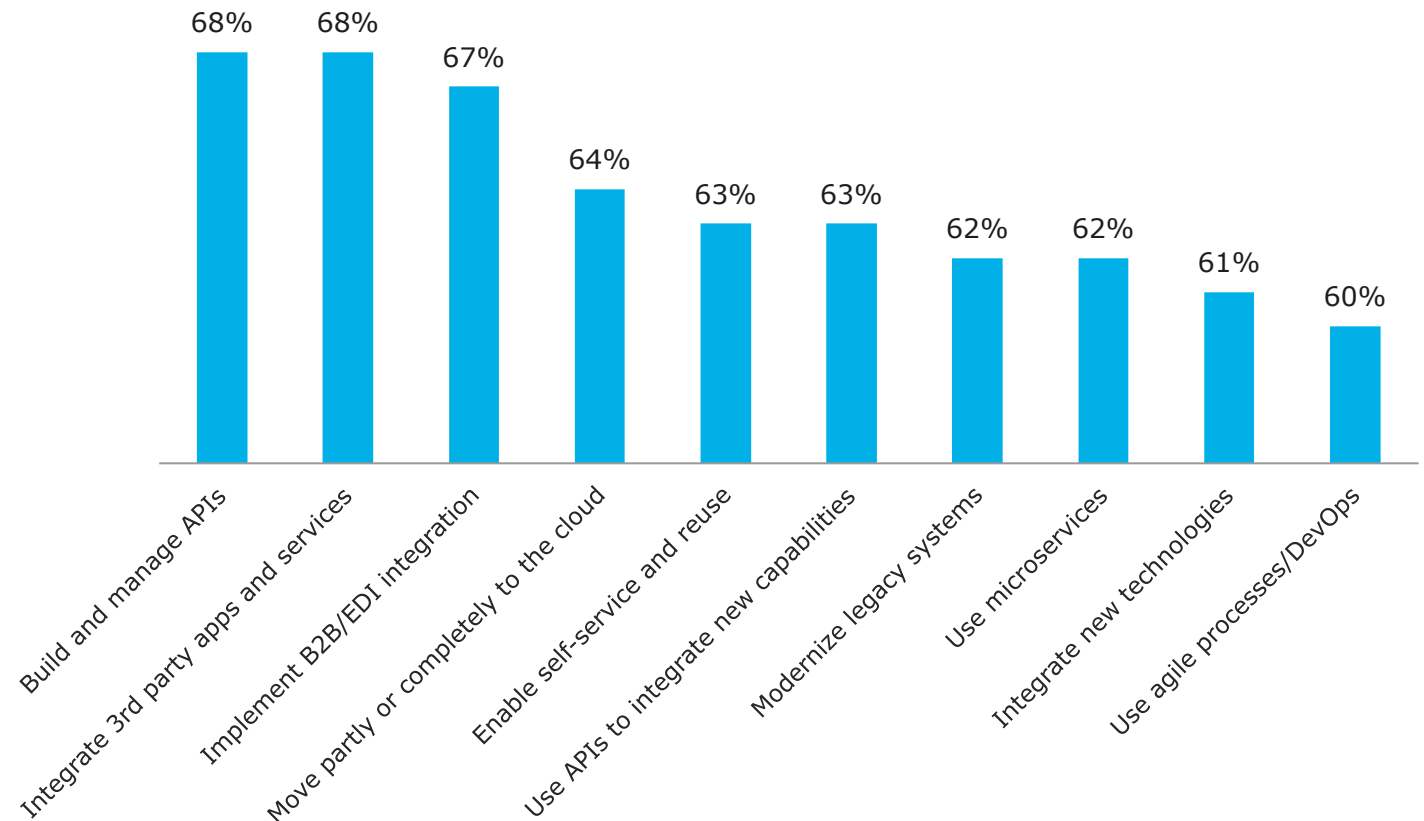
Year-on-year comparisons

Digital transformation is more transformative

MuleSoft

ITDMs say they have made more progress on digital transformation this year, and integrating new capabilities has grown in importance.

How much progress has your organization made on digital transformation?

MuleSoft

2016 survey

None

Limited progress (1-25%)

Some progress (25-50%)

Significant progress (50-75%)

Complete (100%)

Don't know

1% 1%

16%

5%

36%

41%

2017 survey

None

Limited progress (1-25%)

Some progress (25-50%)

Significant progress (51-99%)

Complete (100%)

4%

25%

16%

50%

5% 0%
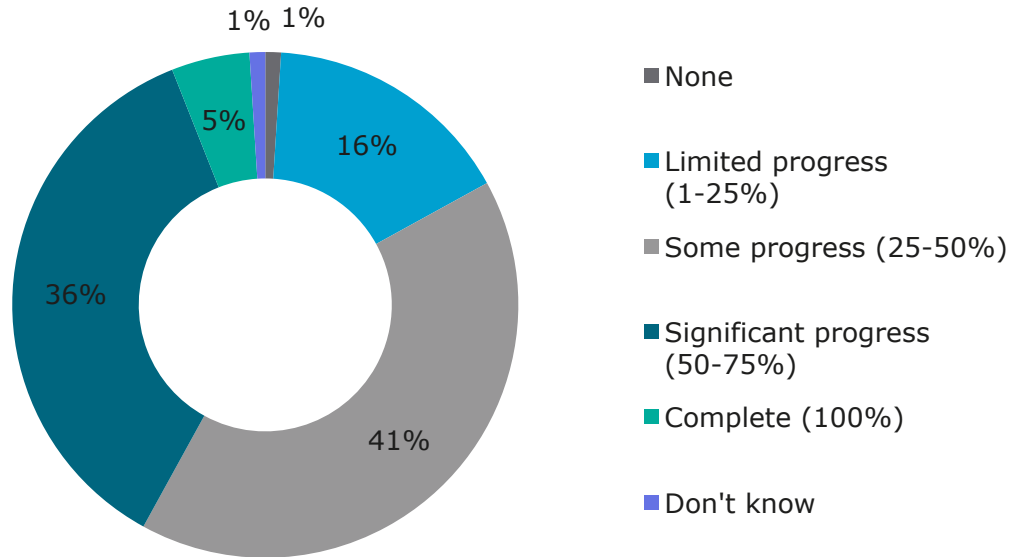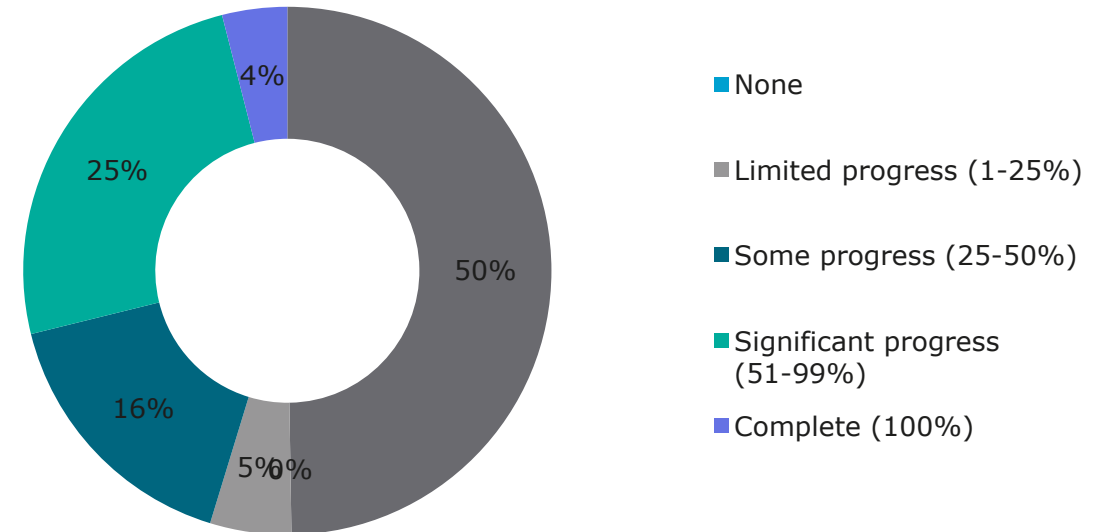
50% of ITDMs have made "significant" progress on digital transformation, up from 36% percent last year.

What are the top 3 challenges to digital transformation?

MuleSoft

2016 survey

- Business and IT misalignment: 45%
- Legacy infrastructure and systems: 39%
- Time constraint: 43%

2017 survey

- Business and IT misalignment: 40%
- Legacy infrastructure and systems: 40%
- Time constraints: 41%
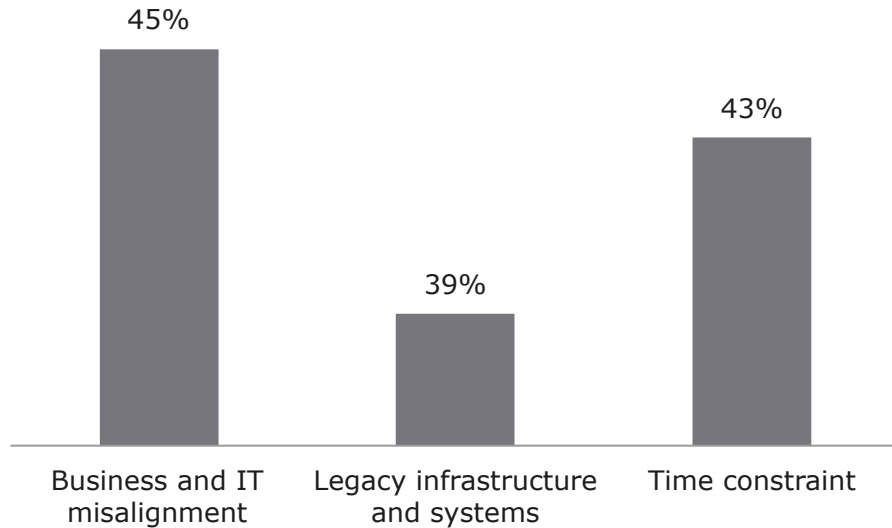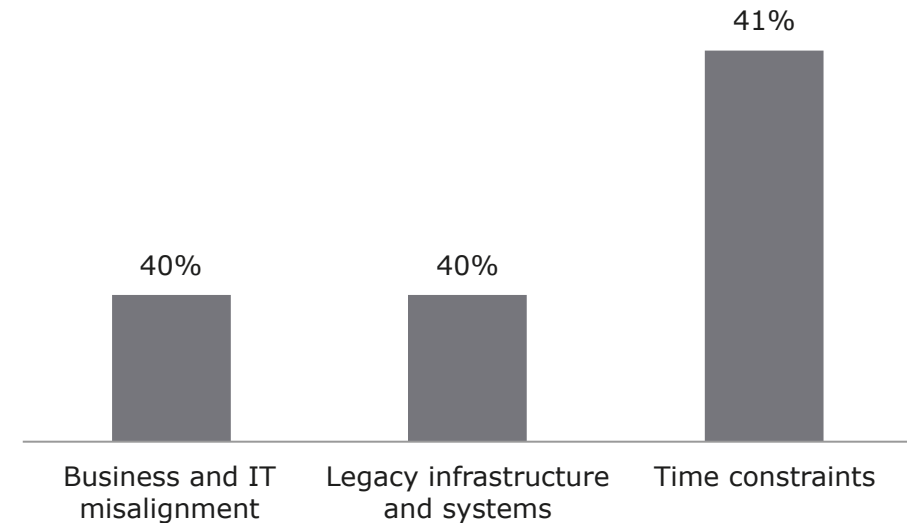
Not much has changed year on year – the three biggest challenges to digital transformation are business and IT misalignment, legacy infrastructure and systems, and time constraints.

What is your IT team doing to complete digital transformation projects more quickly?

2016 survey

Category	Percentage
Modernize legacy systems	46%
Move partly or completely to the cloud	50%
Integrate third-party apps and services	42%
Build and manage APIs	44%
Integrate new technologies (e.g. IoT)	42%

2017 survey

Category	Percentage
Modernize legacy systems	43%
Build and manage APIs	45%
Use APIs to integrate new capabilities	45%
Develop web-based applications and services	41%
Integrate new technologies (e.g. IoT)	49%

Integrating new technologies and using APIs to integrate new capabilities seem to have grown in importance to ITDMs tackling digital transformation.

What are the top 3 technologies IT teams use to fulfill line-of-business requests?

2016 survey

- Business intelligence and analytics: 56%
- "Cloud applications (e.g. Salesforce, Workday, Marketo)": 68%
- Integration between applications and data sources: 44%

2017 survey

- Business intelligence and analytics: 48%
- "Cloud applications (e.g. Salesforce, Workday, Marketo)": 65%
- Security: 40%
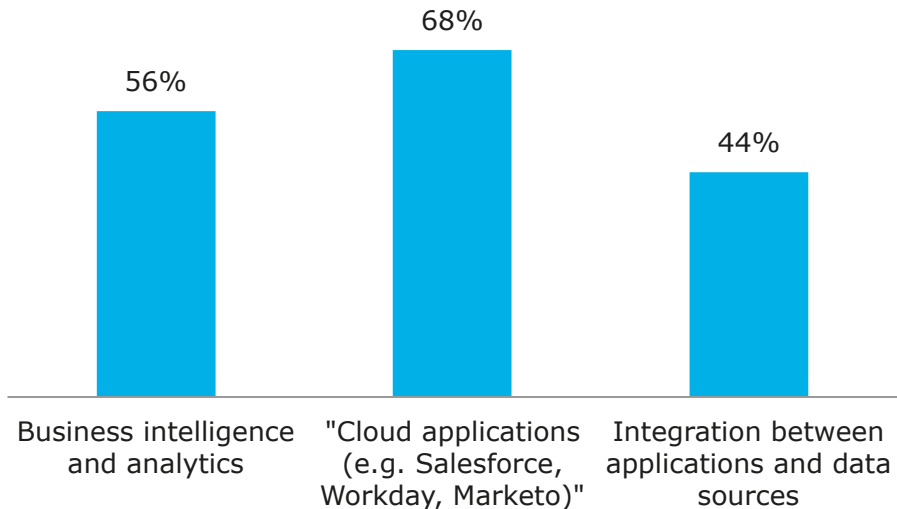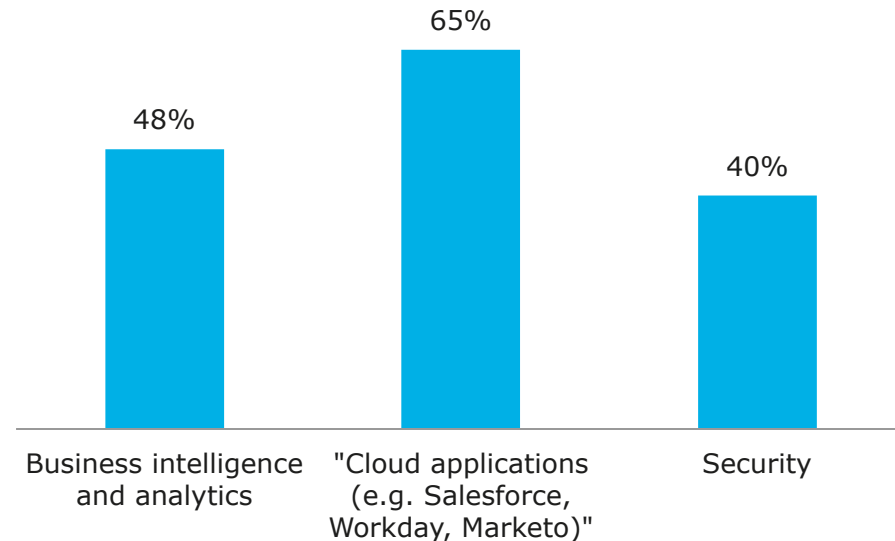
IT teams are incorporating security into fulfilling LOB project requests in 2017.

What are the business drivers behind your company's API strategy?
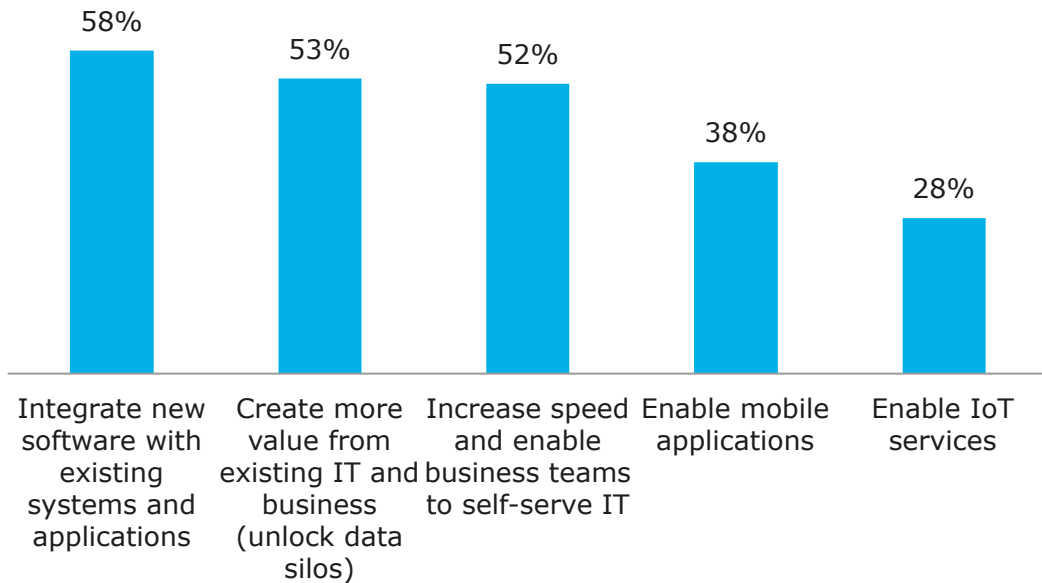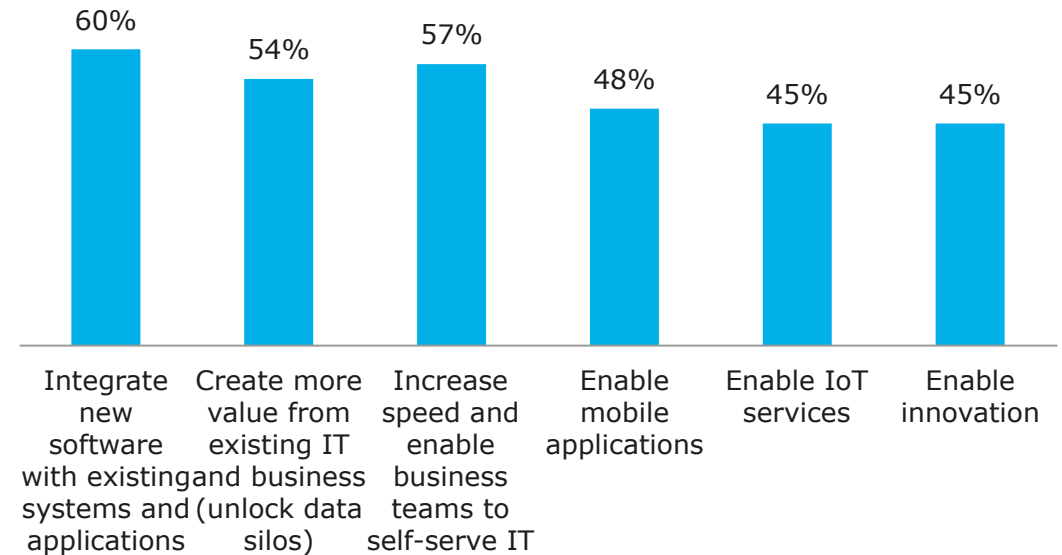
How will your IT budget change over the upcoming year?

2016 survey

- Significantly increase — 23%
- Somewhat increase — 50%
- Stay the same — 24%
- Somewhat decrease — 3%
- Significantly decrease

2017 survey

- Significantly increase — 32%
- Somewhat increase — 47%
- Stay the same — 17%
- Somewhat decrease — 3%
- Significantly decrease — 1%
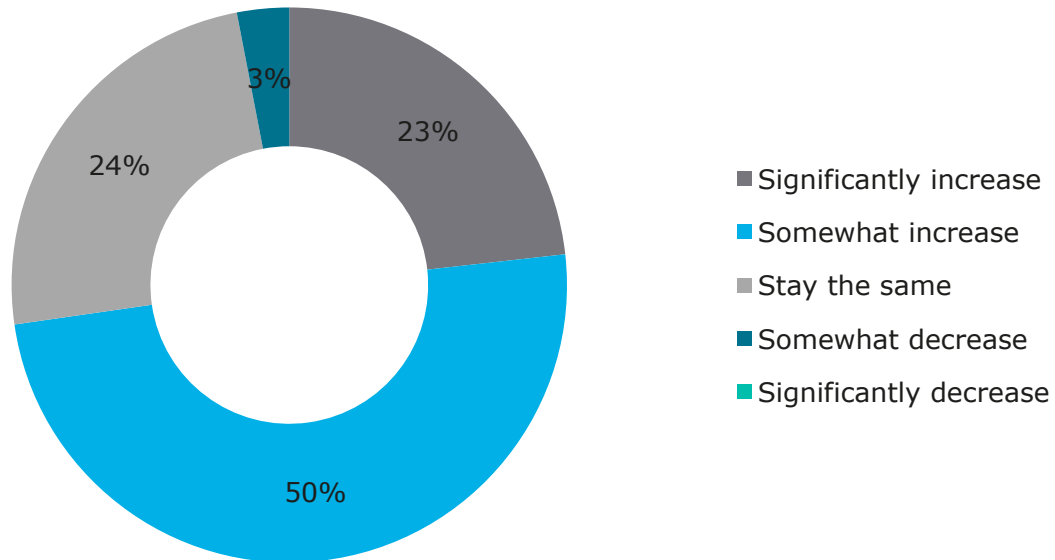
There has been a sharp rise in the number of ITDMs who say their budget has increased "significantly"; 32% in 2017 versus 23% in 2016.

Please rank the importance of legacy systems as an IT priority

MuleSoft

2016 survey

1%
6%
39%
54%

- Very important
- Somewhat important
- Not important
- N/A

2017 survey

2%
7%
25%
26%
40%

- Not at all important
- Slightly important
- Important
- Very important
- Extremely important
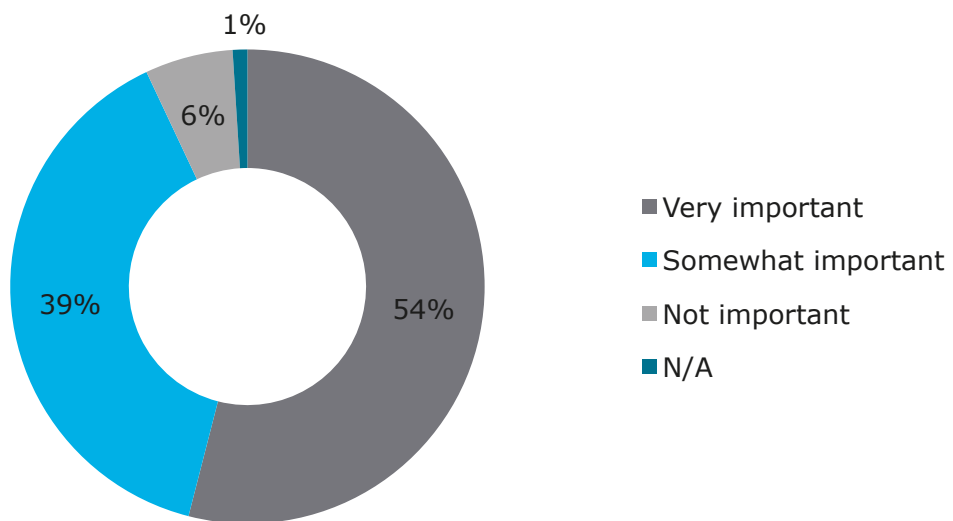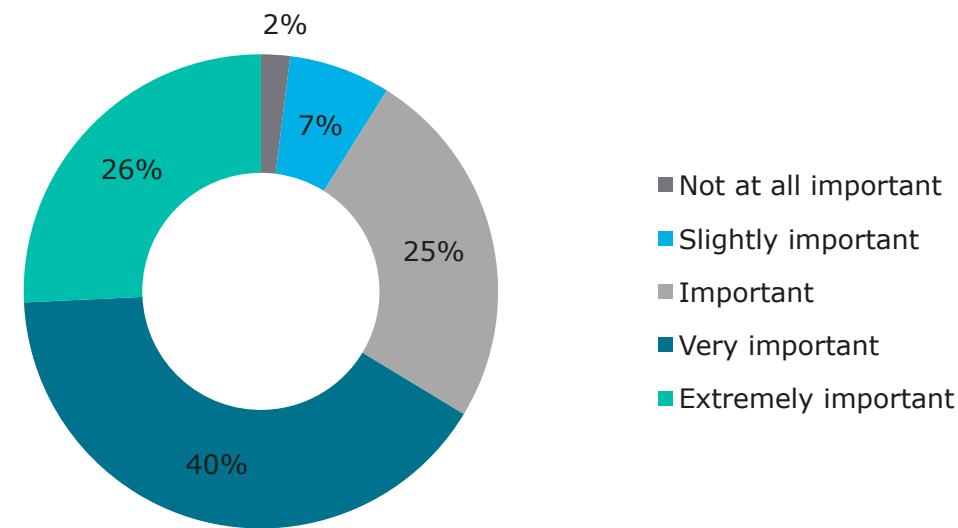
The 65% of ITDMs who consider legacy systems "very" or "extremely" important in 2017 outnumbers the 54% who considered them "very important" in 2016.
Digitally transforming while maintaining legacy systems is critical for ITDMs.

Further insights

How key industries are tackling digital transformation

Will your company be undertaking digital transformation initiatives?

Two-thirds of ITDMs in key industries say they will be undertaking digital transformation in the next 3 years.

Legend: ■ Yes ■ Not yet, but plan to in the next 3 years

Financial Services: Yes 29%, Not yet 61%
Retail: Yes 23%, Not yet 67%
Healthcare: Yes 18%, Not yet 69%
Government: Yes 21%, Not yet 62%
Technology: Yes 17%, Not yet 71%
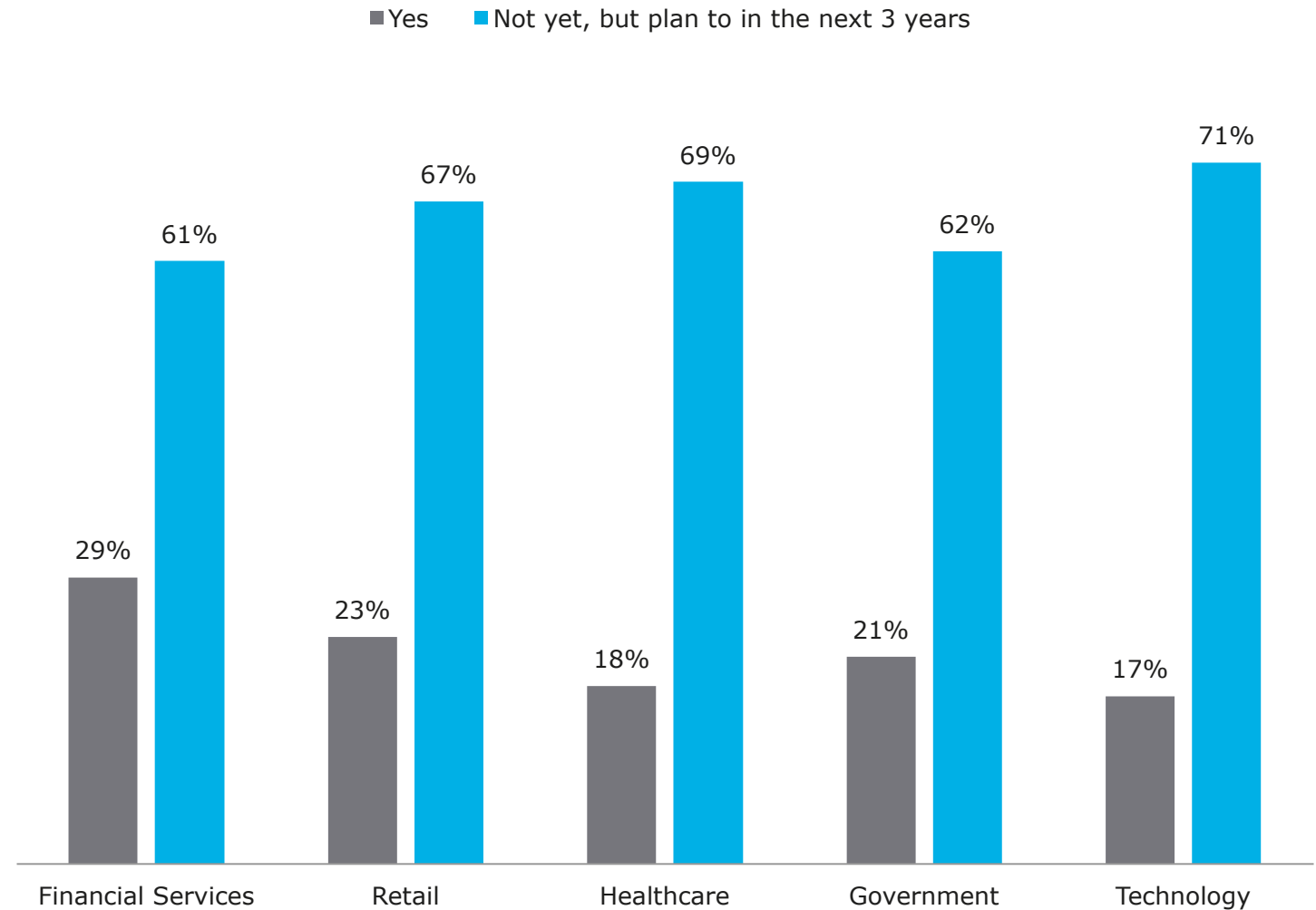
What business outcomes are you hoping to achieve with digital transformation?
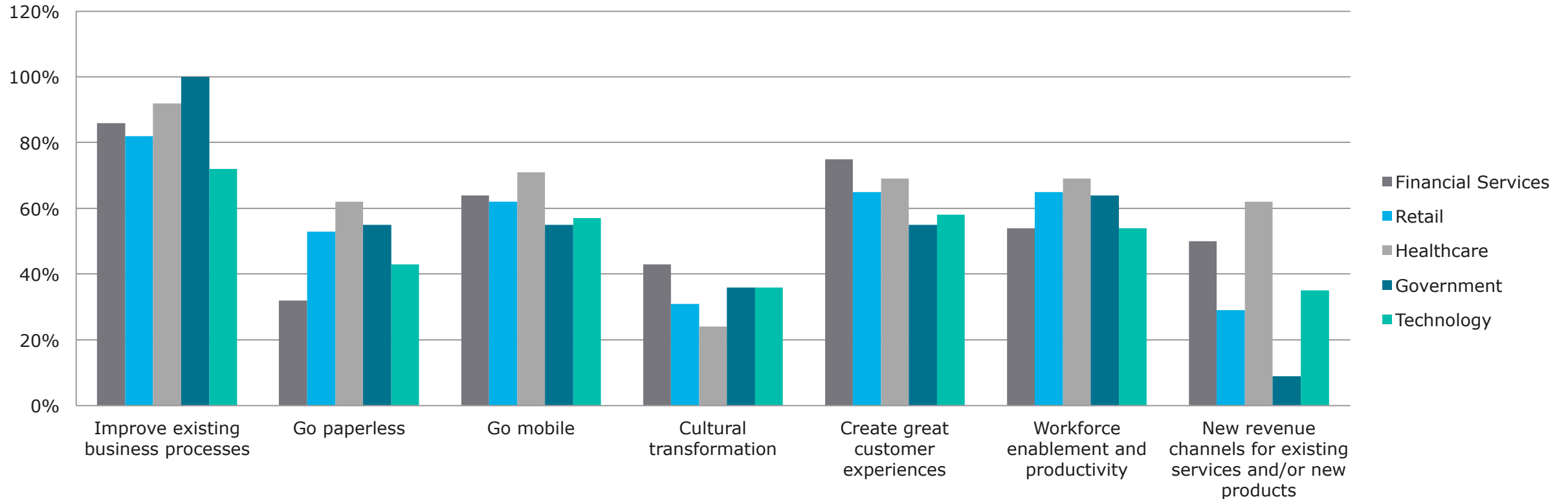
The interest in creating great customer experiences and improving workforce productivity is striking in the financial services and healthcare industries, whereas 100% of government ITDMs want to improve existing business processes.

Obstacles to digital transformation

■ I believe there is a disparity between what business executives are expecting will be achieved from a digital initiative.

■ There are currently not enough resources to achieve my organization's digital initiatives.

	Financial Services	Healthcare	Government	Retail	Technology
Disparity	74%	73%	56%	78%	69%
Not enough resources	58%	41%	65%	42%	47%
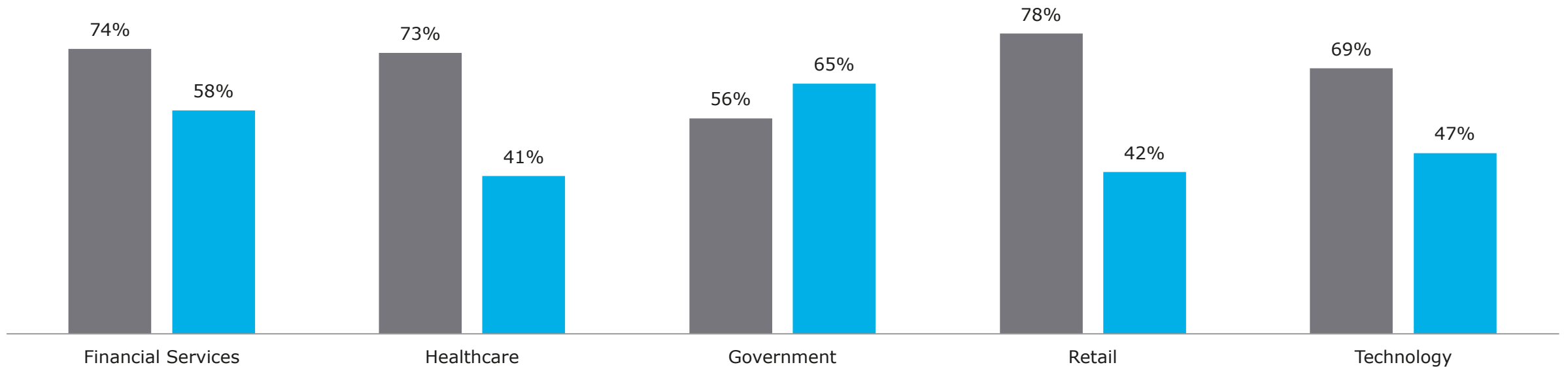
The obstacles to digital transformation seem most striking in the financial services industry, and the business/IT misalignment is most pronounced in the retail industry.

Have you made significant progress towards your digital transformation goals?

The largest number of ITDMs in healthcare say they have made "significant progress" (51-99%) towards their digital transformation goals.

33%	29%	67%	50%	49%
Financial Services	Government	Healthcare	Retail	Technology
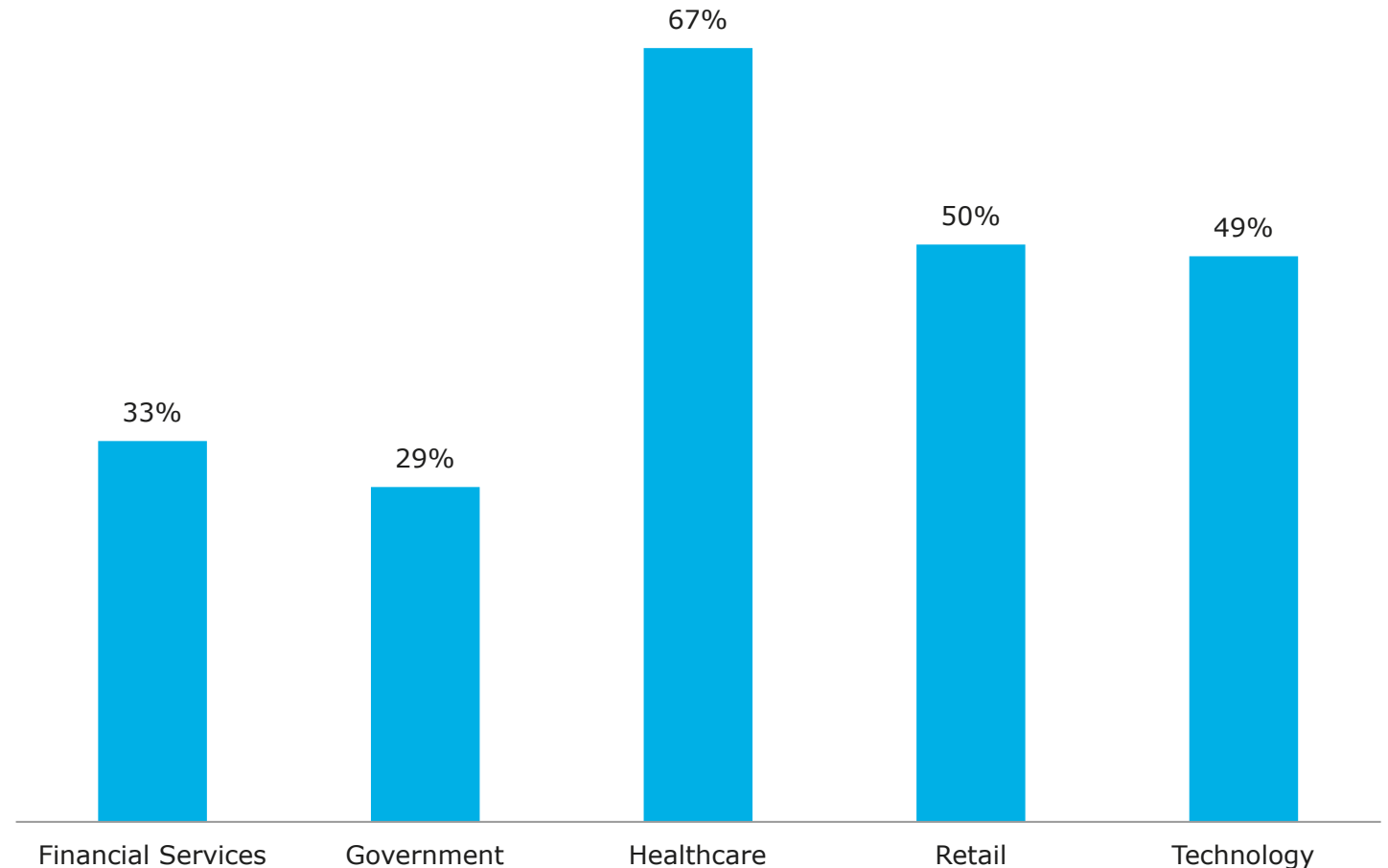
What is the average time to launch a new product or service last year?

MuleSoft

Can launch a product in 1-6 months

Financial Services	Government	Healthcare	Retail	Technology
54%	38%	66%	75%	61%
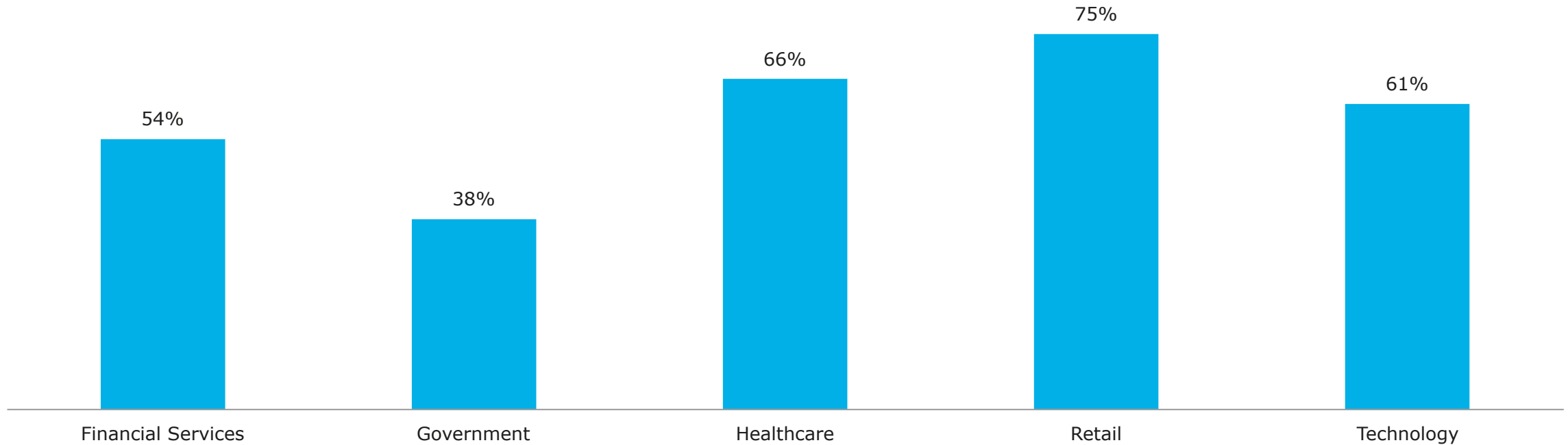
75% of retail ITDMs say they can launch a new product or service in 1-6 months, whereas only 38% of government ITDMs can.

Everyone agrees that change is constant

MuleSoft

86% 74% 92% 89% 85%

Financial Services | Government | Healthcare | Retail | Technology
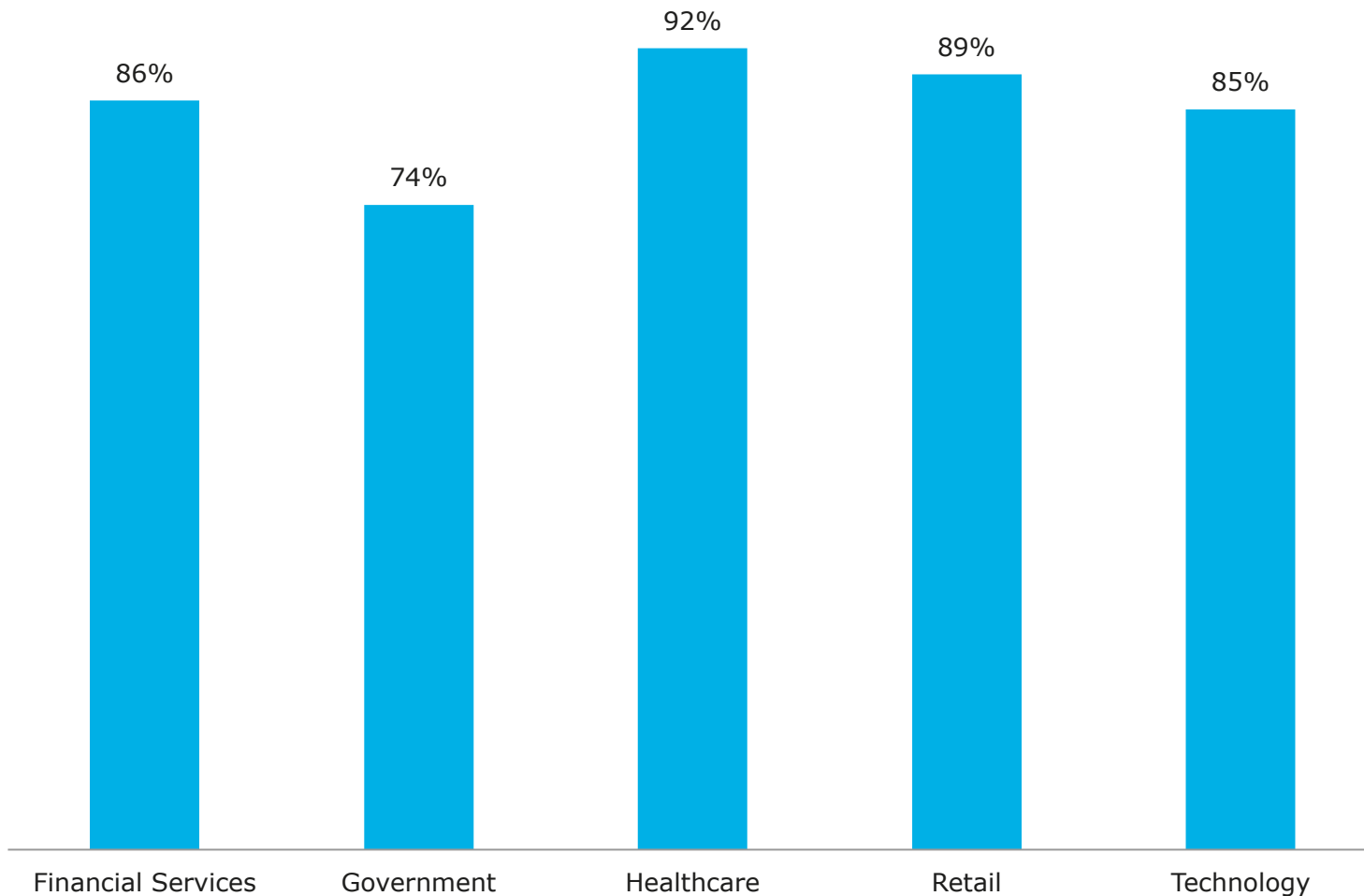
Overwhelming majorities in all key industries think their companies will change more in the next five years than they have in the previous five.

Geographic insights

Is your company planning to undertake digital transformation initiatives?

The US has the largest number of ITDMs who are currently undertaking digital transformation, while China has the greatest number of those planning to do so.

■ Yes　■ Not yet, but plan to in the next 3 years

	Yes	Not yet, but plan to in the next 3 years
US	32%	62%
UK	25%	57%
Rest of Europe	15%	68%
ANZ	19%	66%
Singapore	17%	72%
China	11%	84%

59

What business outcomes are you trying to achieve with digital transformation?

All countries want to improve existing business processes, whereas customer experiences are important in the US, UK, and China and workforce productivity is important in Singapore.

What technologies are you adopting to achieve digital transformation more quickly?
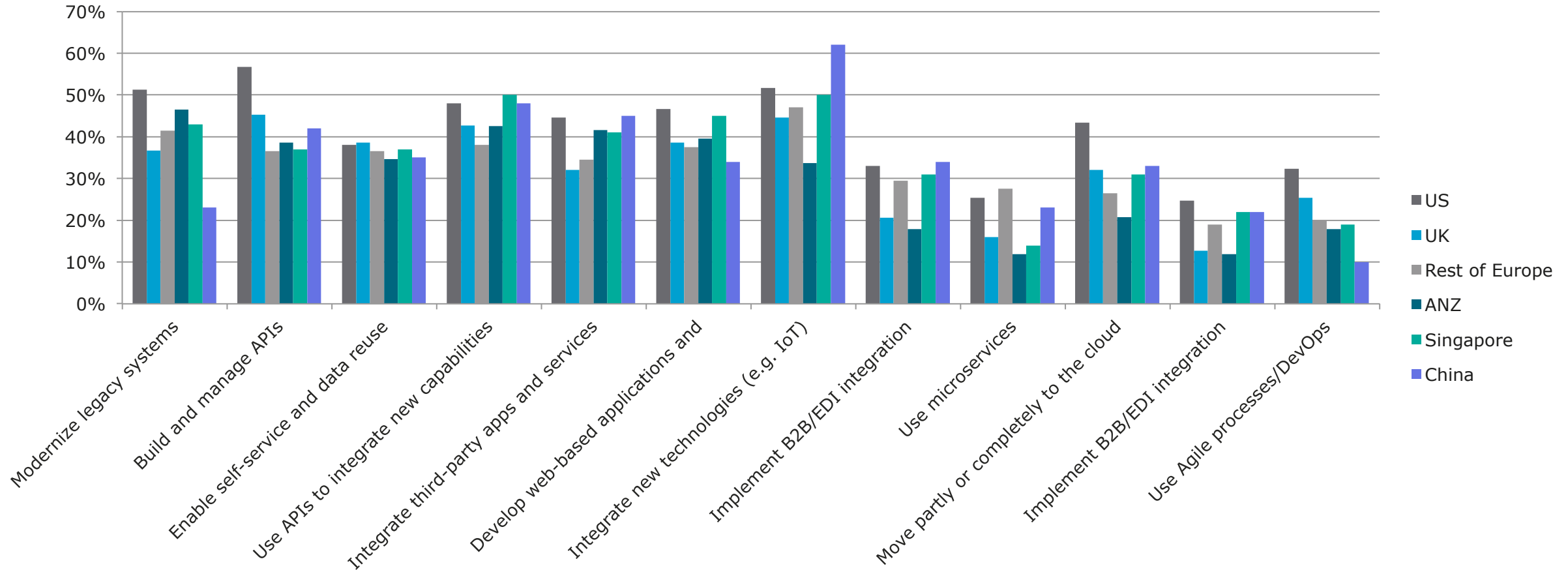

The US and UK is building and managing APIs to achieve digital transformation quickly, whereas China is integrating new technologies to do so.

What are the top obstacles to achieving digital transformation?
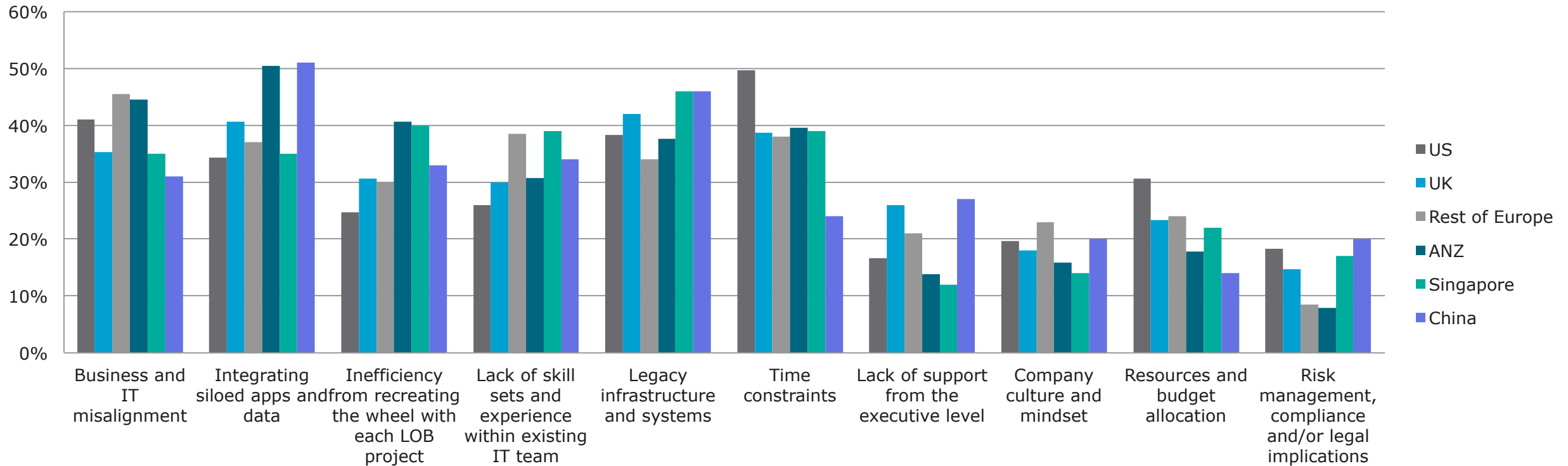
The US' top obstacle to achieving digital transformation is time constraints, whereas the UK struggles with legacy systems, as does China and Singapore.

How important are the following technologies to the future of your business?
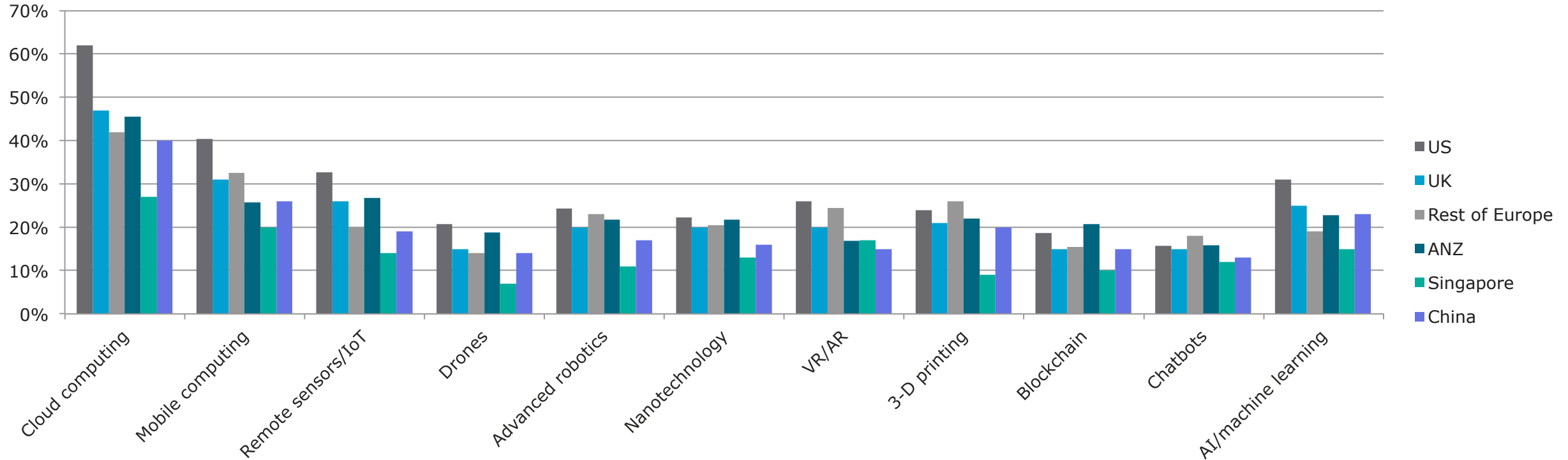
The US and the UK place importance on cloud computing to the future of their business, whereas Chinese ITDMs are interested in AI and machine learning, and Europe is interested in advanced robotics.

About this survey

About the survey

The Connectivity Benchmark Report is based on a survey from an independent and random sample of IT decision makers from Precision Sample.

- Survey Instrument: 14 minute online survey (approximately 47 total questions)

- Target: IT Decision Makers at companies with 500 or more employees

- Geography: United States, United Kingdom, Germany, France, Netherlands, Sweden, Australia, Singapore, China

- Field Dates: November 16-November 29, 2016

- Total Responses: 951

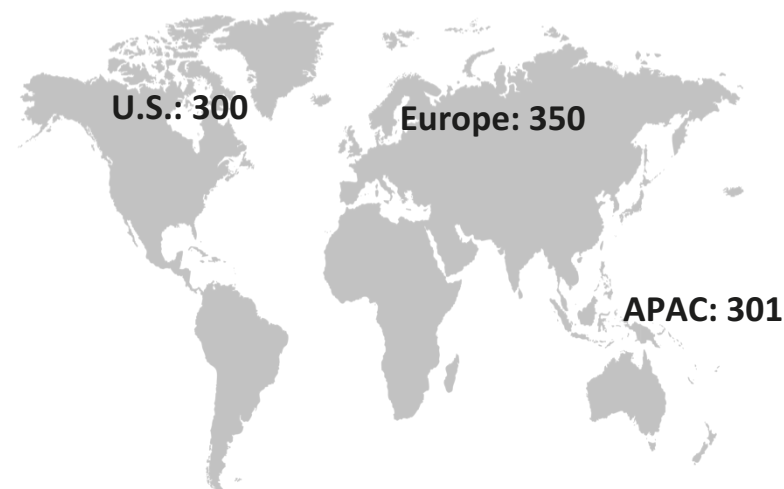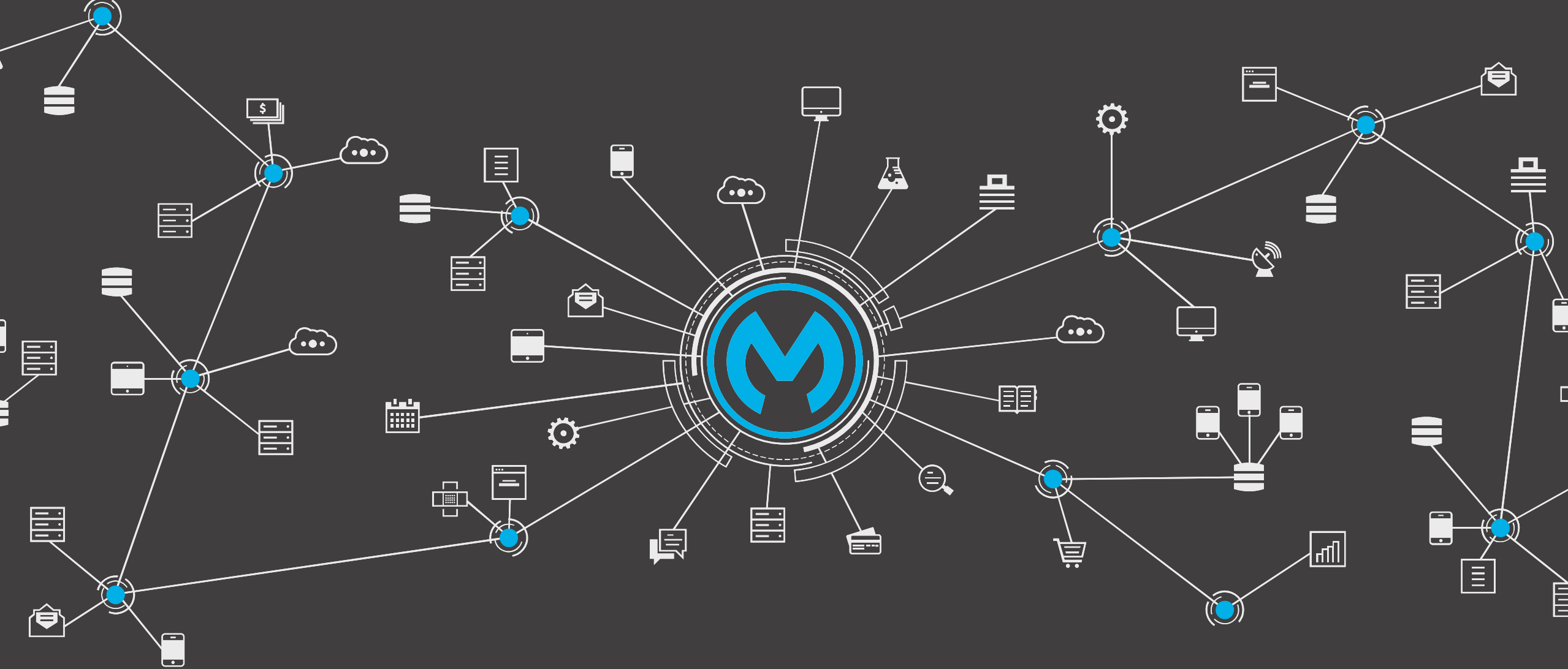- Margin of Error: 3.10% at a 95% Confidence Interval
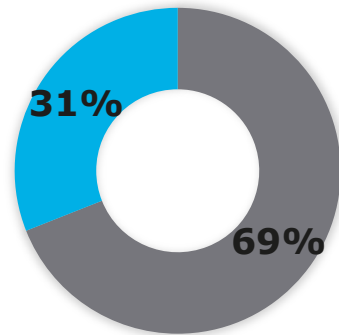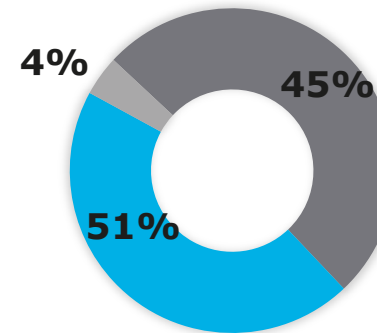
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