RETHINK, REINVENT, REALIZE.

How to successfully scale digital innovation to drive growth

AEROSPACE & DEFENSE

INTO THE NEW

SURVEY AT-A-GLANCE

n=1,350
companies with
1bn+ in revenue

60%
C-suite respondents

13 industries
and **17** countries

AEROSPACE & DEFENSE AT-A-GLANCE

n=63
companies
or major divisions
with
1bn+ in revenue

65%
C-suite respondents

13
countries

Source: Accenture 2019 Industry X.0 Survey

UNDERNEATH STEADY GROWTH, THE AEROSPACE AND DEFENSE INDUSTRY IS CHANGING AT AN UNPRECEDENTED RATE…

COMMERCIAL PASSENGER DEMAND

GLOBAL UNCERTAINTY

TECHNOLOGY DISRUPTION

NEW ENTRANTS/ BUSINESS MODELS

WORKFORCE TRANSFORMATION

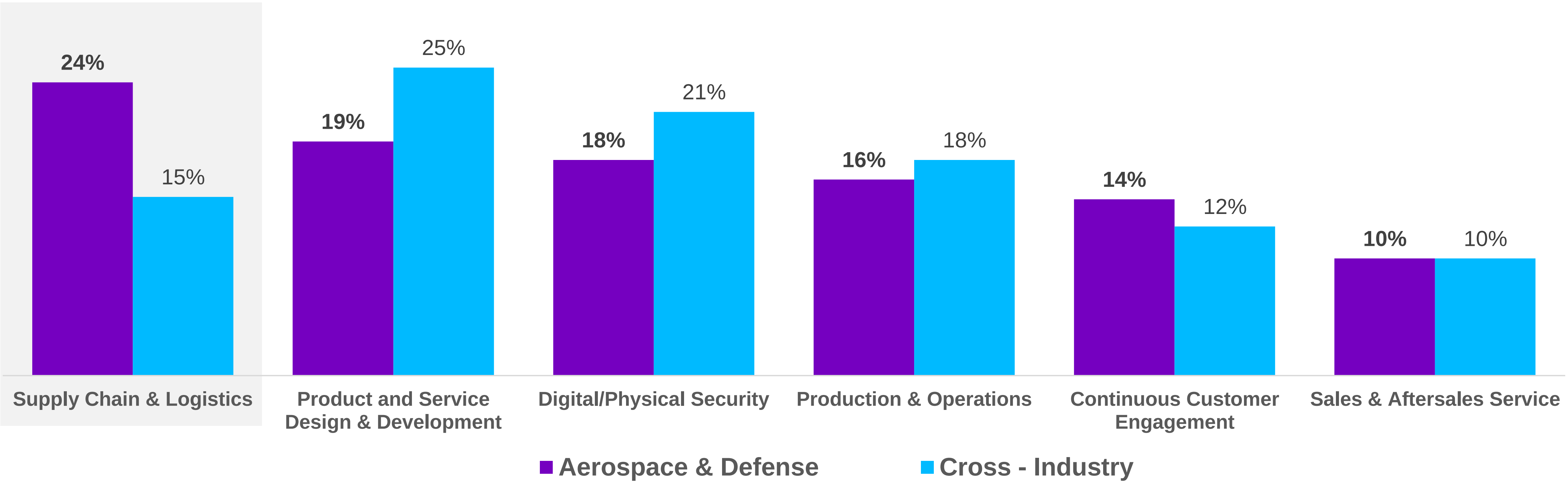
WE ARE AN INDUSTRY OF INNOVATION, BUT MUCH OF IT IS IN PILOTS AND PROOFS OF CONCEPT

of **aerospace and defense executives** cite the **inability to combine the power of humans and machines** as their top talent **challenge** for **building and scaling digital pilots.**

Source: Accenture 2019 Industry X.0 Survey, Aerospace and Defense respondents

SUPPLY CHAIN & LOGISTICS EMERGING AS TOP INNOVATION PRIORITY FOR AEROSPACE & DEFENSE COMPANIES

INNOVATION PRIORITY*

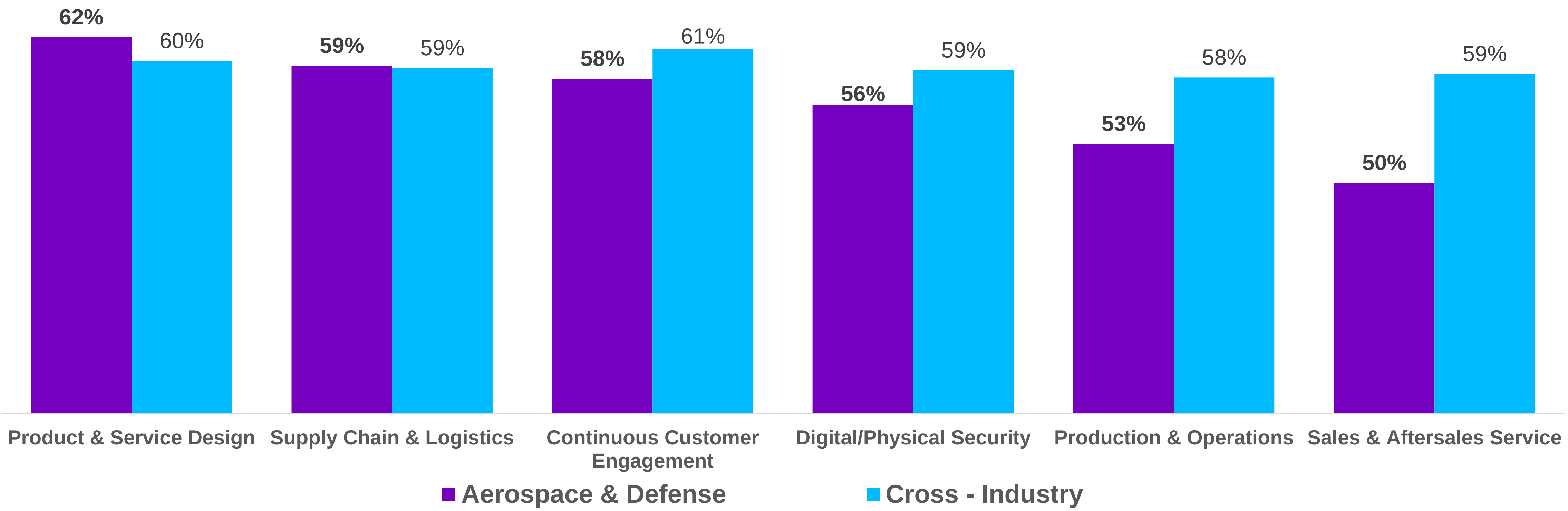


* “innovation priority” = percentage of respondents who are prioritizing digital innovation in these business areas

Source: Accenture 2019 Industry X.0 Survey

COMPANIES ARE SCALING DIGITAL PROOFS OF CONCEPT ACROSS ALL BUSINESS AREAS

SCALING INTENSITY*



* “scaling intensity” = ratio of avg. number of proof of concepts scaled to avg. number initiated in each business function, across discrete and process industries.

Source: Accenture 2019 Industry X.0 Survey

CHAMPIONS SET THEMSELVES HIGHER "RODI" TARGETS AND ACHIEVE THEM TOO

Aerospace & Defense Champions achieved more than 4 times the RODI* clocked by contenders; proving that its not how much you scale, but how you scale that matters

		AEROSPACE & DEFENSE	CROSS-INDUSTRY
CHAMPIONS Earn RODI higher than industry ROIC and industry RODI; scale more than 50% of their digital Proof-of-Concepts	19%	24,7% RODI expected 32,4% RODI achieved	22,2% RODI expected 25,4% RODI achieved
CONTENDERS Earn RODI lower than industry ROIC and lower than industry RODI; scale more than 50% of their PoCs	71%	8,8% RODI expected 8,1% RODI achieved	7,1% RODI expected 6,4% RODI achieved
CADETS Earn RODI lower than industry ROIC and lower than industry RODI; scale less than 50% of their PoCs	10%	10,2% RODI expected 8,3% RODI achieved	11,4% RODI expected 9,7% RODI achieved

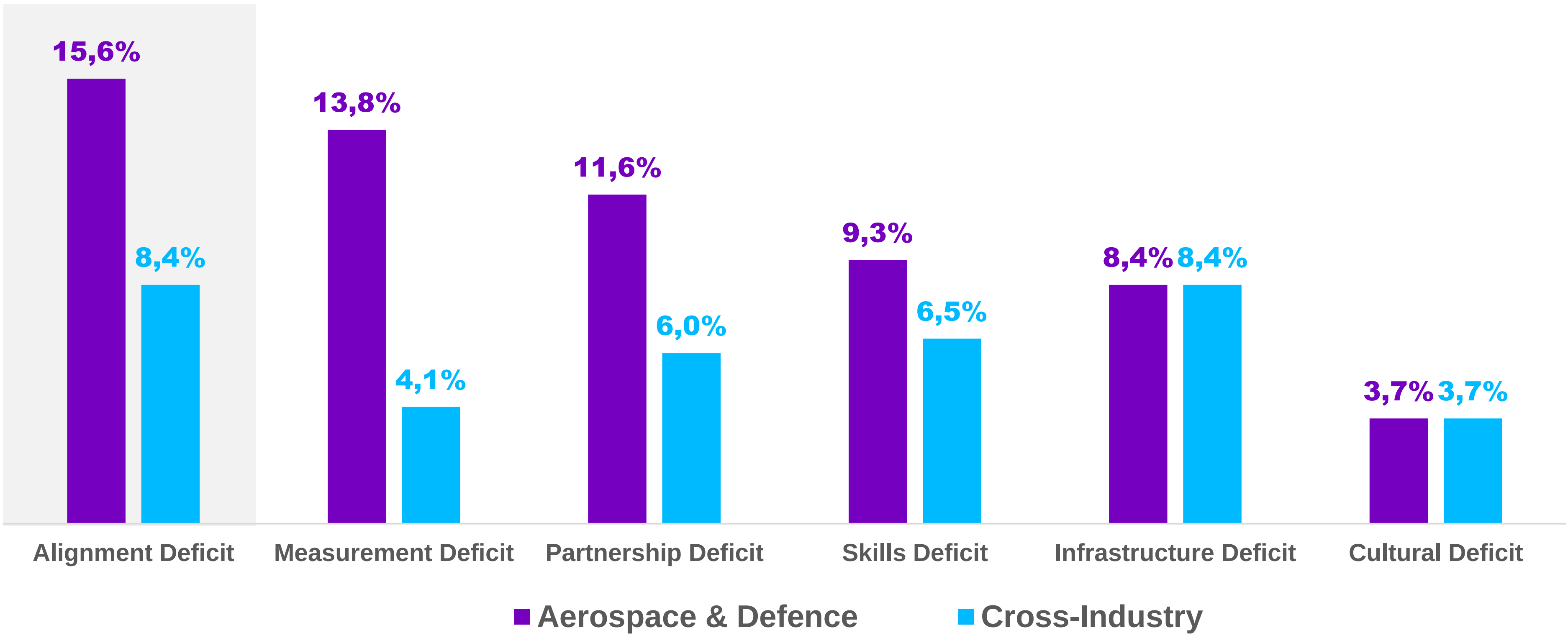
RODI = Returns on Investment (Net Gain/Total Investment) from scaled digital PoCs across all the key business functions.

Source: Accenture 2019 Industry X.0 Survey

HOW MUCH CAN COMPANIES GAIN IF THEY OVERCOME THESE DEFICITS?

Aerospace & Defense companies have an opportunity to unlock significant returns if they overcome deficits around digital metrics and measurement

INCREMENTAL RODI POTENTIAL IF DEFICIT IS OVERCOME



Source: Accenture 2019 Industry X.0 Survey

CHAMPIONS OVERCOME THESE CHALLENGES AND SCALE THEIR DIGITAL INNOVATIONS WITH 4 SPECIFIC BEST PRACTICES.

1. DEFINE THE VALUE THAT GUIDES INNOVATION EFFORTS

Champions assess the opportunities before them, and narrow in on the market opportunities they want to pursue. They then use that clarity to communicate with middle management and direct their innovation efforts to secure expected returns.

2. FOCUS ON INTERNAL CHANGE AND EXTERNAL VALUE

Champions prefer a measured approach to blend organizational change with digital transformation initiatives, creating what we call an ambidextrous organization. With a clear view of the customer value, managers and employees are less likely to feel blindsided by a digital learning curve that is too steep.

3. BUILD IN-HOUSE INNOVATION FACTORIES WITH TARGETED INFLUENCE

Champions recognize the enormity of integrating rapidly advancing technologies, along with talent and assets, back into their organization. In line with their ambidextrous approach, they take the vital step to re-rig the core of their organizations, seeding and growing new digital innovations organically within organizational boundaries.

4. MAP KEY INNOVATION ENABLERS TO APPROPRIATE BUSINESS FUNCTIONS

Most manufacturers use the same enablers to drive innovation, such as software applications to support operations, or analytics platforms to generate better insights. However, Champions alone are masters at matching the support to the function that needs it most and will use it best.

FULL EXECUTIVE SUMMARY

THE IDEA:
FIND INDUSTRY X.0 BEST PRACTICES!

OUR PREMISE AND RESEARCH QUESTION

When it comes to digital transformation, scaling innovation pilots is critical.

Yet many clients tell us that they are struggling with this very step – and feel that they might get stuck with “piecemeal projects” that don’t deliver significant value.

Can we find key best practices that could help them overcome their challenges, and drive real change, for real new growth?

THE RESULT:
IT'S ALL A MATTER OF MANAGEMENT!

OUR KEY FINDINGS

Companies are scaling over 55 percent of all digital PoCs, but only about two out of ten companies are doing it successfully.

A SURPRISE!
(we didn‘t expect to find that many companies trying to scale!)

What's the difference?
The leading 19 percent manage their scaling efforts differently.

Following the **four best practices** of these "Champions" is a recipe to **succeed at innovating for digital transformation**.

THE REASON TO READ!
(these best practices are what readers will come for)

Source: Accenture 2019 Industry X.0 Survey

Q:

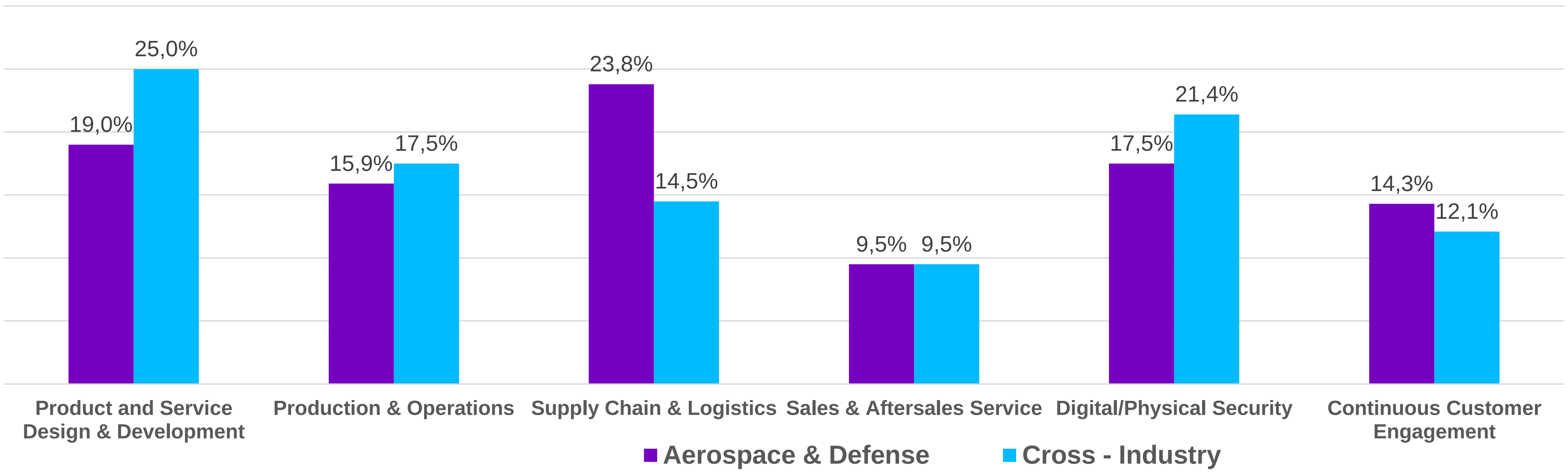
WHAT'S THE CURRENT STATUS IN SCALING DIGITAL INNOVATION?

A:

Things are speeding up – in surprising ways.

SUPPLY CHAIN & LOGISTICS IS THE TOP INNOVATION PRIORITY FOR AEROSPACE & DEFENSE COMPANIES

INNOVATION PRIORITY*



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Source: Accenture 2019 Industry X.0 Survey

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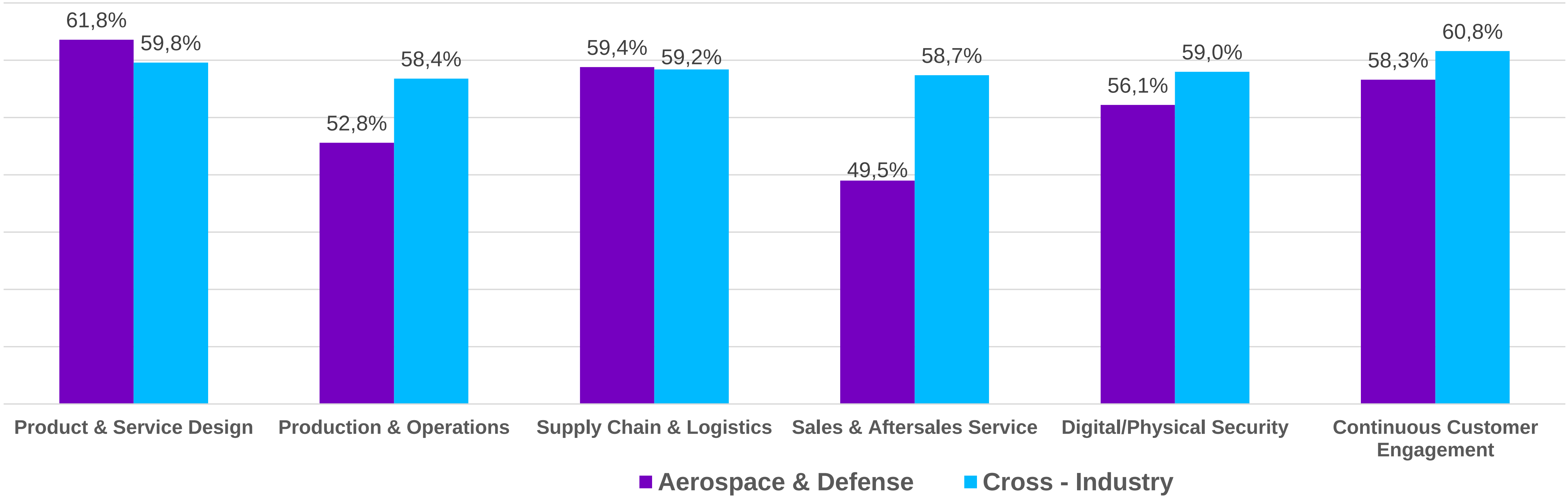


* “scaling intensity” = ratio of avg. number of proof of concepts scaled to avg. number initiated in each business function, across discrete and process industries.

Source: Accenture 2019 Industry X.0 Survey

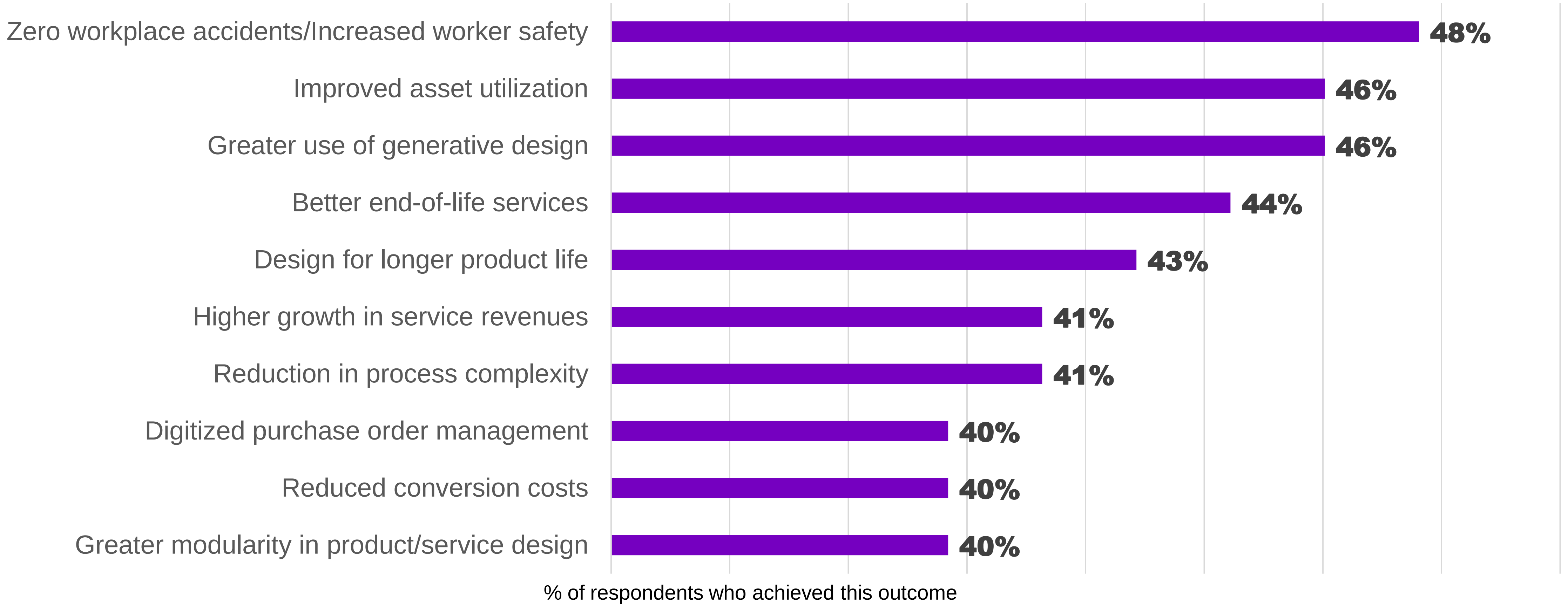
AEROSPACE & DEFENSE COMPANIES RECOGNIZE THE NEED FOR INNOVATING AT SCALE TO BUILD PRODUCTS AND SERVICES CAPABLE OF:

Delivering **exceptional customer experiences** with robust and efficient supply chain operations, and,

Delivering services that help **unlock new operational efficiencies**

WORPLACE SAFETY IS THE TOP OUTCOME FOR AEROSPACE & DEFENSE COMPANIES…

Top 10 outcomes targeted by A&D companies through scaling of digital PoCs



Source: Accenture 2019 Industry X.0 Survey

... AND THEY ARE CHOOSING BIG DATA, CLOUD AND AI TO DRIVE THESE OUTCOMES

Top 3 technologies leveraged to facilitate scaling, by function

	PRODUCT & SERVICE DESIGN	PRODUCTION & OPERATIONS	SUPPLY CHAIN & LOGISTICS	SALES & AFTERSALES SERVICE	DIGITAL/ PHYSICAL SECURITY	CONTINUOUS CUSTOMER ENGAGEMENT
AI/AI-powered Automation	RANK 2	RANK 1				RANK 2
AI Assistants		RANK 3				
3D printing				RANK 3		RANK 3
Mobility			RANK 1			
IIOT Sensors & Transmitters						
Immersive Experience						
Industrial Robotics	RANK 3					
Big Data Analytics	RANK 1					RANK 1
Digital Twin			RANK 3		RANK 2	
Cloud			RANK 2	RANK 2		
Blockchain				RANK 1		
Autonomous Vehicles					RANK 1	
Machine Learning/Deep Learning		RANK 2				
Quantum Computing					RANK 3	
Cyber Security Protocols						

Source: Accenture 2019 Industry X.0 Survey

Q:

WHAT ABOUT SCALING SUCCESS – DOES EVERYONE SEE IT?

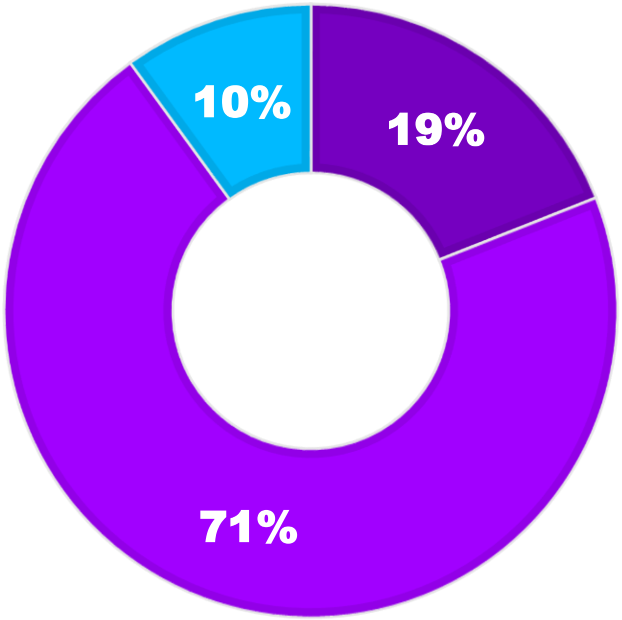
A:

No. Some companies race ahead, others struggle.

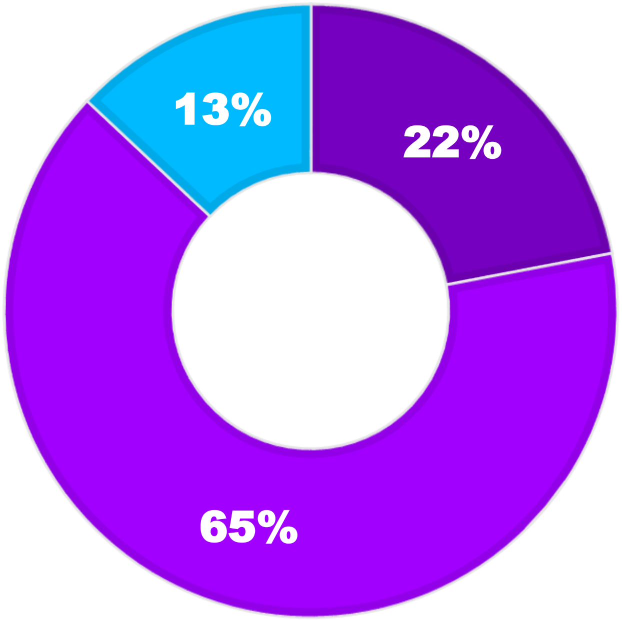
SO, WHO'S SCALING THE BEST?

The Aerospace & Defense has a lower percentage of Champions compared to the global average.

AEROSPACE & DEFENSE



CROSS-INDUSTRY



CHAMPIONS
Earn RODI higher than industry ROIC and industry RODI; scale more than 50% of their digital Proof-of-Concepts

CONTENDERS
Earn RODI lower than industry ROIC and lower than industry RODI; scale more than 50% of their PoCs

CADETS
Earn RODI lower than industry ROIC and lower than industry RODI; scale less than 50% of their PoCs

*Percentage of champions in each geography = 100 x (The number of champions in a particular geography)/(Total number of companies surveyed in that particular geography)
**Percentage of champions in each industry = 100 x (The number of champions in a particular industry)/(Total number of companies surveyed in that particular industry)

Source: Accenture 2019 Industry X.0 Survey

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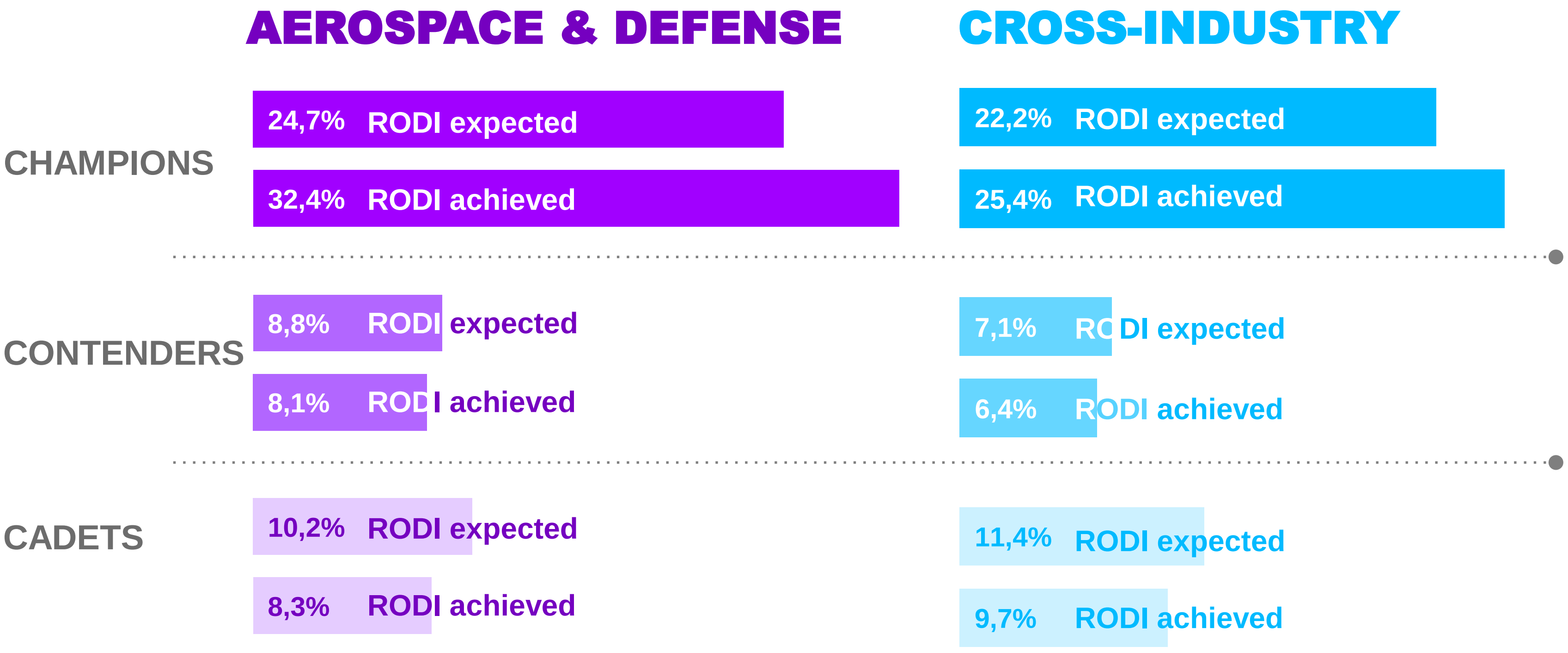
Returns on Digital Investment (RODI)

RODI = Returns on Investment (Net Gain/Total Investment) from scaled digital PoCs across all the key business functions.

We asked executives about the average RODI they expected before scaling digital PoCs, and the RODI they finally achieved.



Source: Accenture 2019 Industry X.0 Survey

Q: IN ADDITION TO RODI, HOW IS BUSINESS PERFORMANCE IMPACTED BY SCALING OF DIGITAL POCS?

A: Champions OUTPERFORM THE REST OF THE PACK ACROSS MOST KEY performance metrics.

AEROSPACE & DEFENSE CHAMPIONS ACHIEVE REDUCED CHANGEOVER TIMES AND BETTER EQUIPMENT EFFICIENCY

Change in key performance metrics for Champions vs. Others as a result of digital deployment in the Aerospace & Defense industry

		UNITS	CHAMPIONS	OTHERS	Comments
PRODUCT & SERVICE DESIGN	Engineering change order cycle time	Days	15.1%	-9.9%	
	Design update cost	Currency	33.3%	-5.2%	
	New product development cycle lead time	Months	21.1%	4.8%	
	Number of prototype iterations	Number	85.3%	14.0%	
	Design review cycle time	Days	5.6%	14.5%	
PRODUCTION & OPERATIONS	Percentage downtime/non-productive time	Ratio	8.6%	2.9%	
	Percent of unplanned downtime	Ratio	7.1%	2.8%	
	Average changeover cost or time	Days	-28.2%	12.4%	
	Overall Equipment Effectiveness (OEE)	-	16.0%	5.8%	
	Conversion cost	Number	10.4%	17.7%	

Source: Accenture 2019 Industry X.0 Survey

PREDICTIVE MAINTENANCE EFFECTIVENESS IS A KEY OUTCOME FOR AEROSPACE & DEFENSE CHAMPIONS

Change in key performance metrics for Champions vs. Others as a result of digital deployment in the Aerospace & Defense industry

		UNITS	CHAMPIONS	OTHERS	Comments
SUPPLY CHAIN & LOGISTICS	Customer fill rate	Ratio	5.8%	3.9%	
	Carrying cost of inventory	Currency	35.7%	18.6%	
	Freight cost per unit	Currency	15.6%	7.8%	
	Inventory days of cover by SKU	Days/Weeks	57.1%	41.3%	
	Supplier lead time for inventory replenishment	Weeks/Months	122.9%	37.6%	
SALES, AFTER SALES SERVICE	Timely delivery rate	Ratio	6.6%	3.4%	
	Predictive Maintenance Effectiveness	Number	56.8%	42.4%	
	Dead product sale ratio	Ratio	0.3%	1.4%	
	On-time shipping rate	Ratio	-4.0%	2.0%	
	Order fulfilment lead time	Weeks/Months	58.3%	3.3%	

Source: Accenture 2019 Industry X.0 Survey

CHAMPIONS HAVE DRAMATICALLY LOWERED TIME LOST DUE TO INJURIES WITH DIGITAL

Change in key performance metrics for Champions vs. Others as a result of digital deployment in the Aerospace & Defense industry

		UNITS	CHAMPIONS	OTHERS	Comments
DIGITAL, PHYSICAL SECURITY	Health and Safety Incidents	Number	-76.3%	18.4%	
	Near Misses	Number	11.4%	43.8%	
	Safety Audit & Inspection Scores	Score	3.2%	3.4%	
	Employee Safety Training	Number	-63.7%	44.1%	
	Lost Time Injury Frequency	Days	-66.7%	21.3%	
CONTINUOUS CUSTOMER ENGAGEMENT	Customer rejects/returns	Ratio	-5.6%	2.2%	
	On-time delivery to commit	Ratio	22.0%	4.7%	
	Perfect order rate	Ratio	1.4%	2.0%	
	Percentage sourcing (value) through eProcurement	Ratio	10.1%	3.2%	
	Service revenue as % of Total Revenue	Ratio	11.7%	4.2%	

Source: Accenture 2019 Industry X.0 Survey

Q:

WHAT'S STOPPING CONTENDERS AND CADETS FROM BECOMING CHAMPIONS?

A:

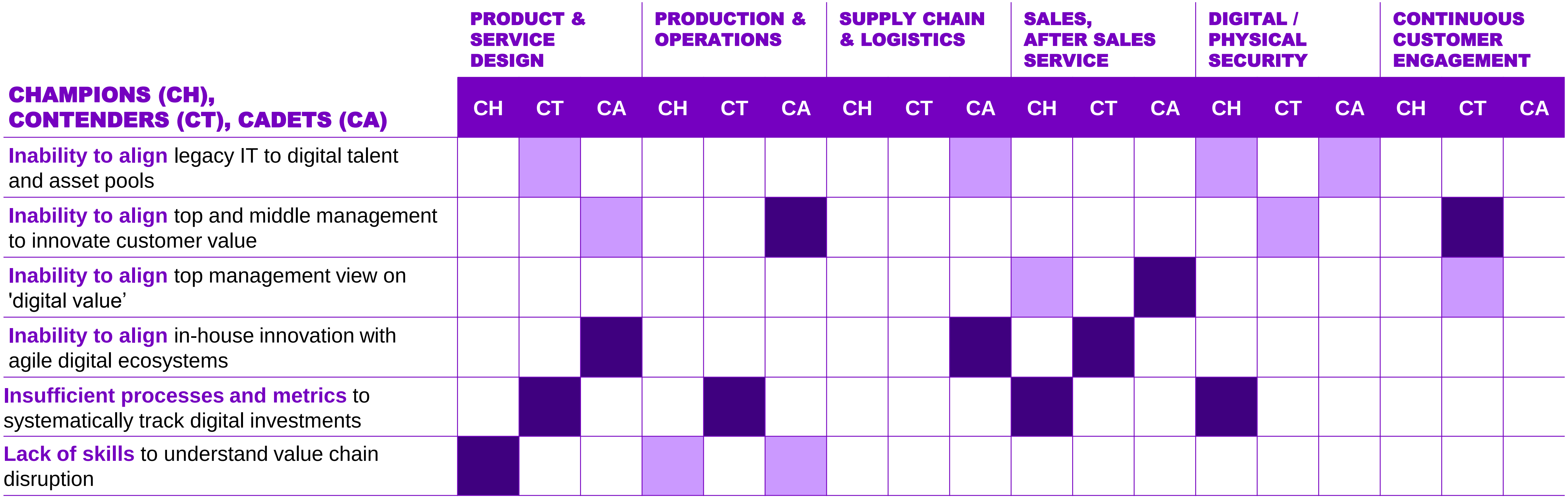
Like Champions, Contenders and Cadets TOO face alignment AND PROCESSES DEFICITS. WHILE Champions overcome these, others CONTINUE TO GRAPPLE with them.

INSUFFICIENT METRICS TO TRACK DIGITAL INVESTMENTS ARE OF PRIMARY CONCERN

Aerospace & Defense executives' top picks* for "biggest challenges to scaling digital PoCs"

Biggest challenge

Second biggest



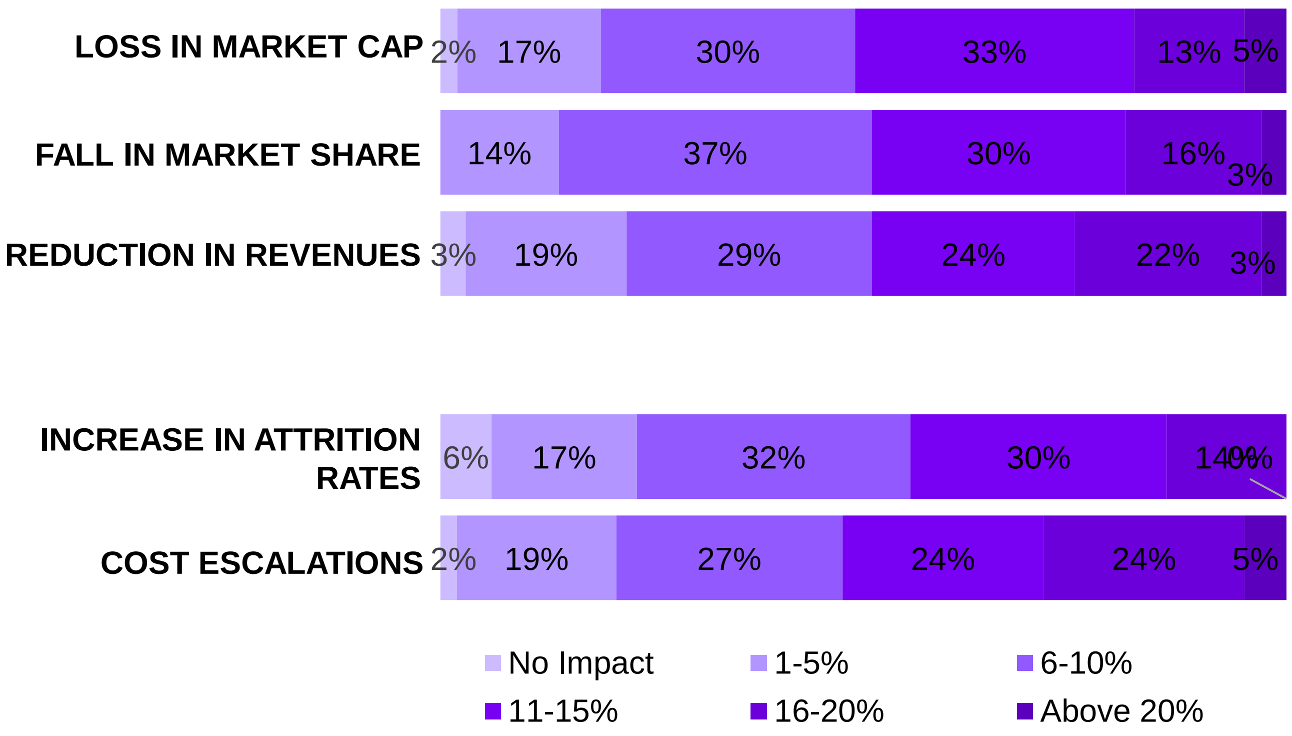
- other options which weren't picked and often included: "Inadequate infrastructure to manage complex integration of services channels and products to drive experiences in the 'new', "Inadequate infrastructure to promote collaborative innovation between the business and the enterprise", "Lack of culture to design, develop and deliver digital business models", "Lack of skills to identify and articulate business case for digital", "Absence of culture to drive on-time innovation of monetizable customer-relevant experiences", "Lack of partnerships to bridge digital talent shortfalls".

Source: Accenture 2019 Industry X.0 Survey

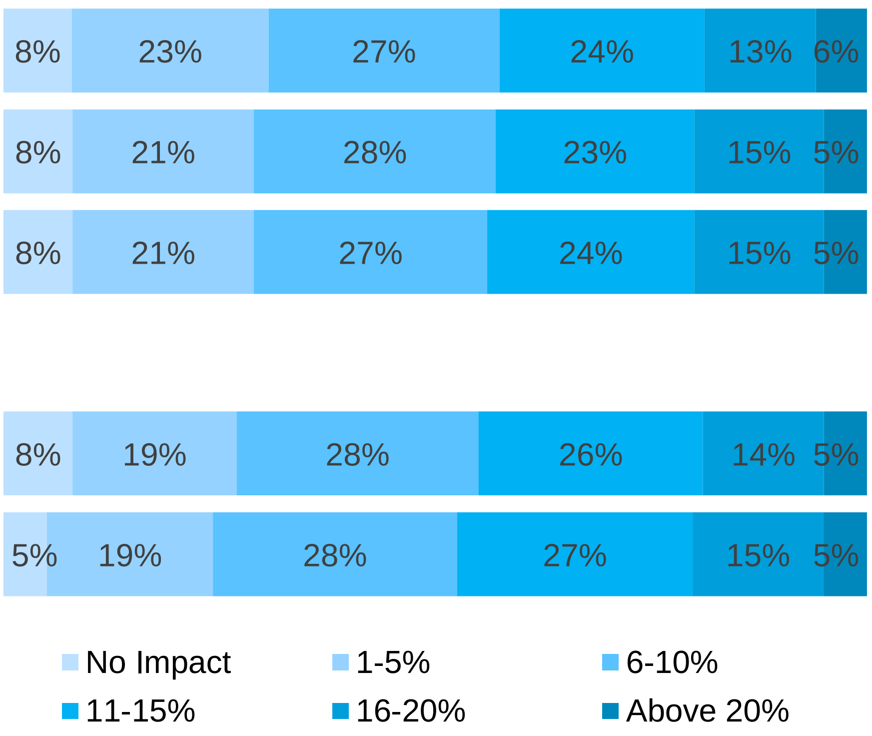
WHAT DO COMPANIES STAND TO LOSE IF THEY FAIL TO ORGANIZE FOR DIGITAL REINVENTION?

Over 80% of A&D leaders fear substantial escalations in cost (>5%) alongside losing significant market share (>5%), if they fail to overcome organizational challenges

AEROSPACE & DEFENSE



CROSS-INDUSTRY

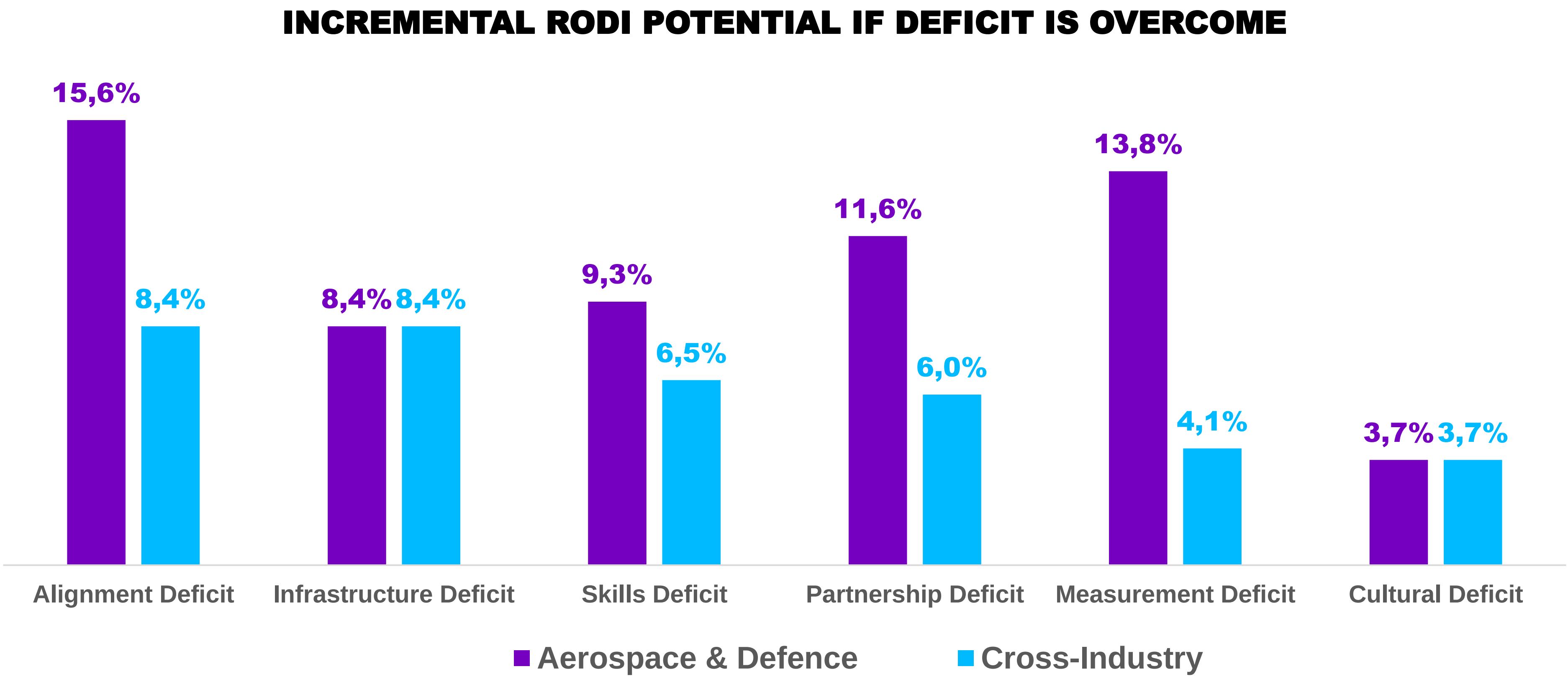


A&D- Aerospace & Defense

Source: Accenture 2019 Industry X.0 Survey

HOW MUCH CAN COMPANIES GAIN IF THEY OVERCOME THESE DEFICITS?

Aerospace & Defense companies have an opportunity to unlock significant returns if they overcome deficits around digital metrics and measurement



Source: Accenture 2019 Industry X.0 Survey

Q: HOW DO CHAMPIONS OVERCOME THESE CHALLENGES AND SCALE THEIR DIGITAL INNOVATIONS?

A: With 4 Specific Best Practices.

1.

DEFINING THE VALUE THAT GUIDES INNOVATION EFFORTS

Champions assess the opportunities before them, and narrow in on the market opportunities they want to pursue. They then use that clarity to communicate with middle management and direct their innovation efforts to secure expected returns.

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4.

MAP KEY INNOVATION ENABLERS TO APPROPRIATE BUSINESS FUNCTIONS

Most manufacturers use the same enablers to drive innovation, such as software applications to support operations, or analytics platforms to generate better insights. However, Champions alone are masters at matching the support to the function that needs it most and will use it best.

Q: IS THERE A ROADMAP TO MATURE AS AN ORGANIZATION TOWARDS SUCCESSFULLY SCALING DIGITAL INNOVATION?

A: Yes there is...

... WE HAVE BUILT ONE LEVERAGING FIVE KEY ORGANIZATIONAL LEVERS

LEADERSHIP & CULTURE

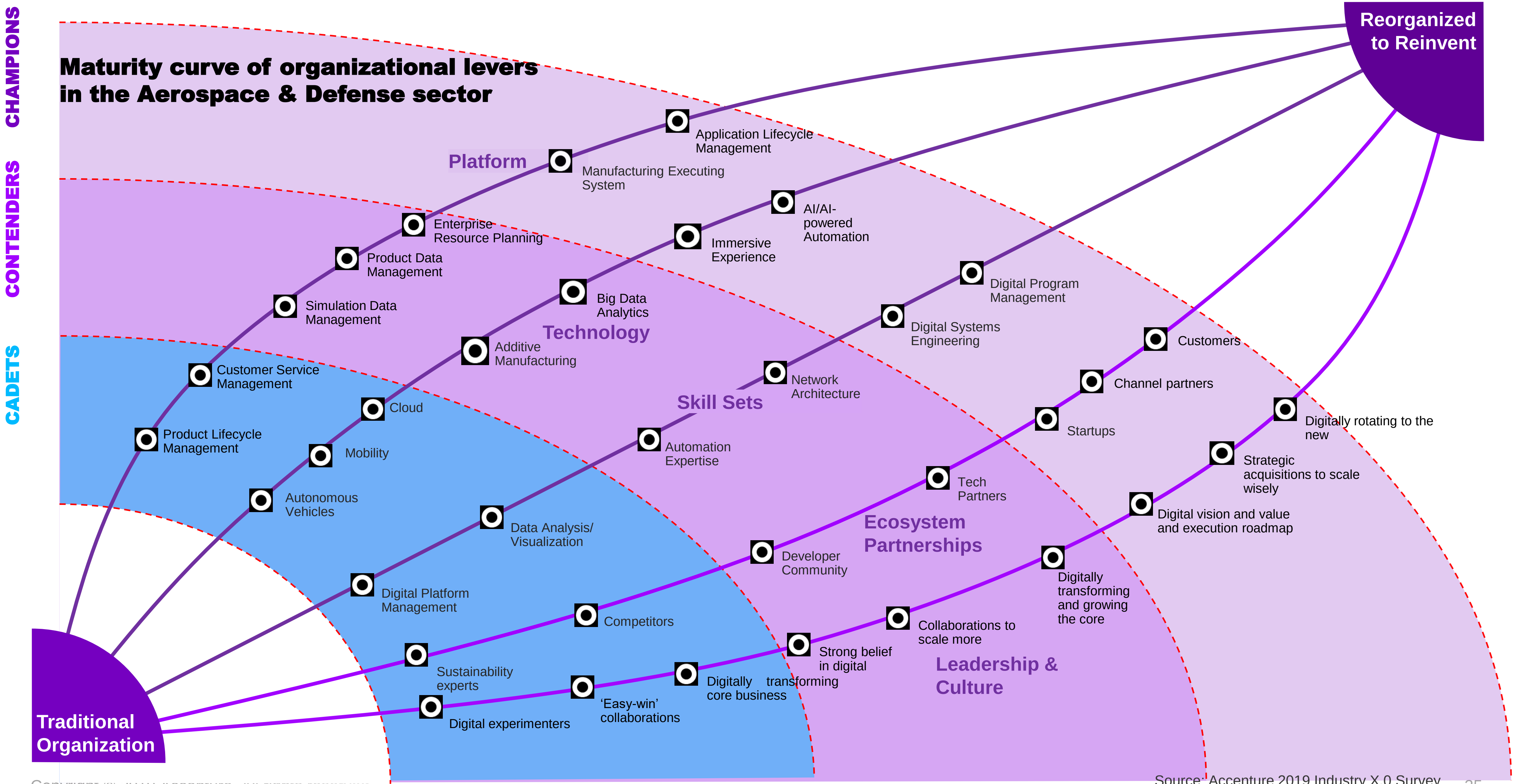
ECOSYSTEM PARTNERSHIPS

SKILLSETS

TECHNOLOGY

PLATFORM

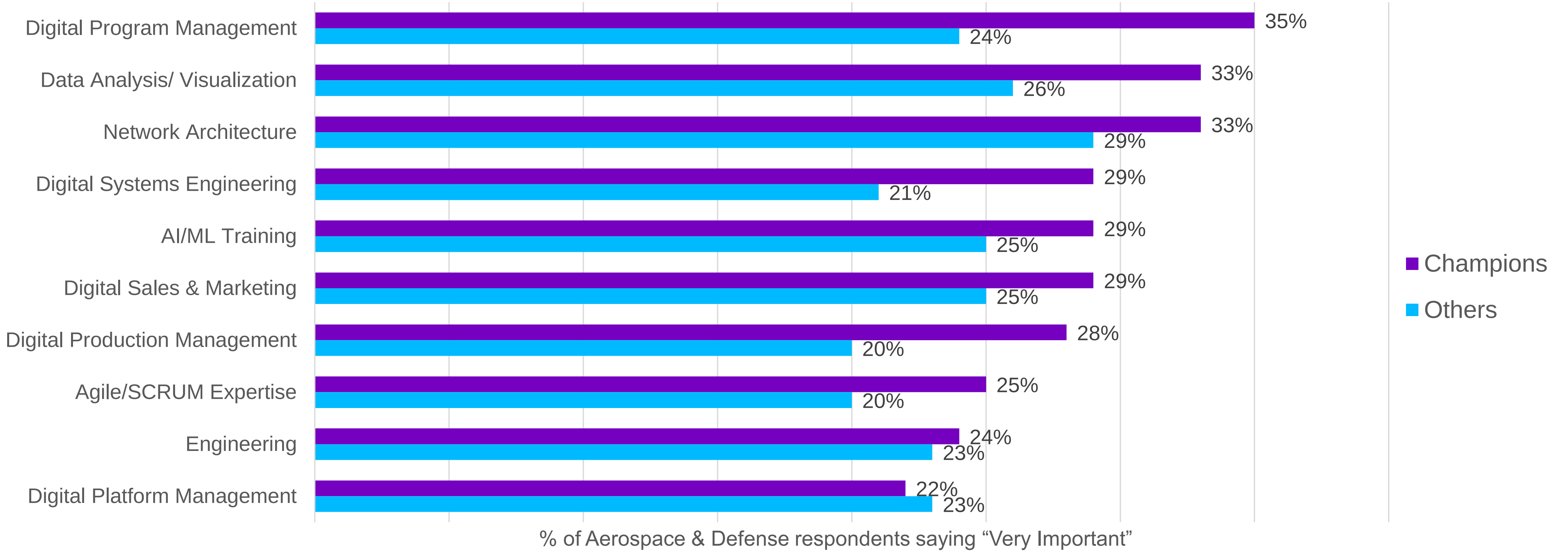
Maturity curve of organizational levers in the Aerospace & Defense sector



Source: Accenture 2019 Industry X.0 Survey

TOP 10 SKILL SETS FOR AEROSPACE & DEFENSE CHAMPIONS

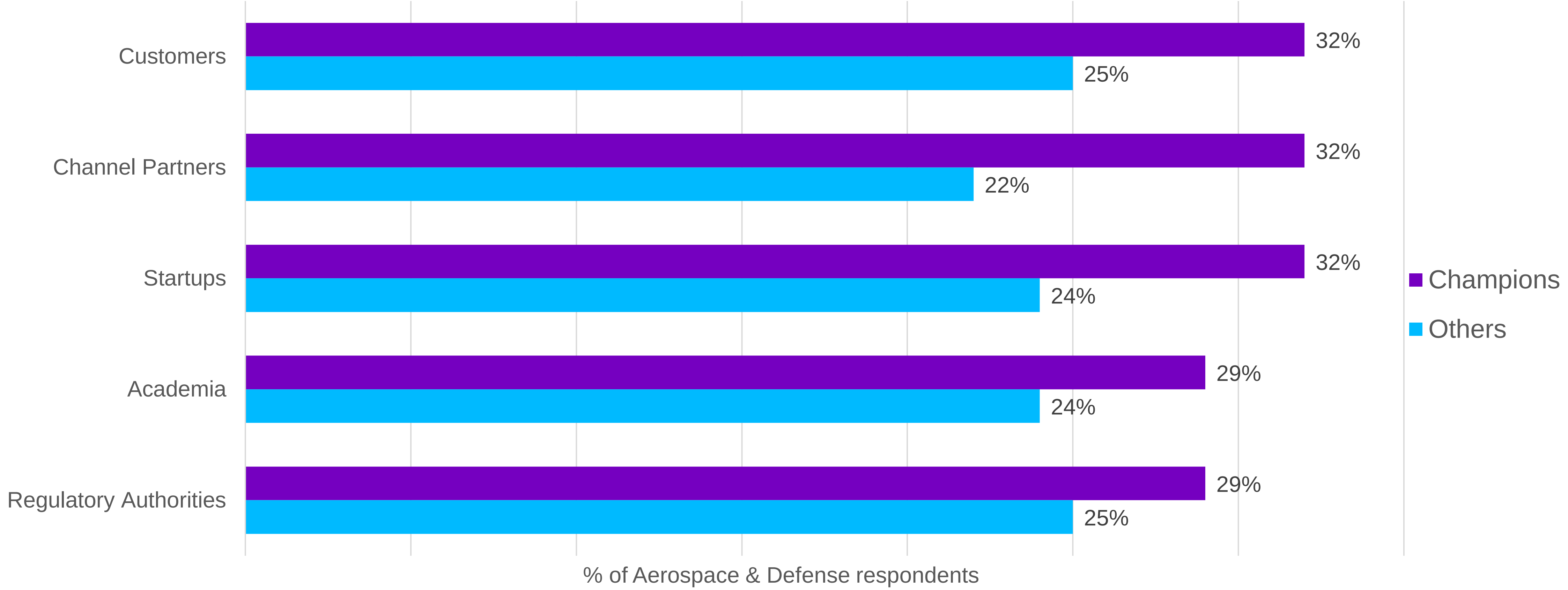
Digital Program Management along with Data analysis/visualization and Network Architecture are critical skills to build and scale digital PoCs



Source: Accenture 2019 Industry X.0 Survey

TOP 5 PARTNERSHIPS FOR AEROSPACE & DEFENSE CHAMPIONS

Customers and Channel Partners are critical partnerships to build and scale digital PoCs



A&D- Aerospace & Defense

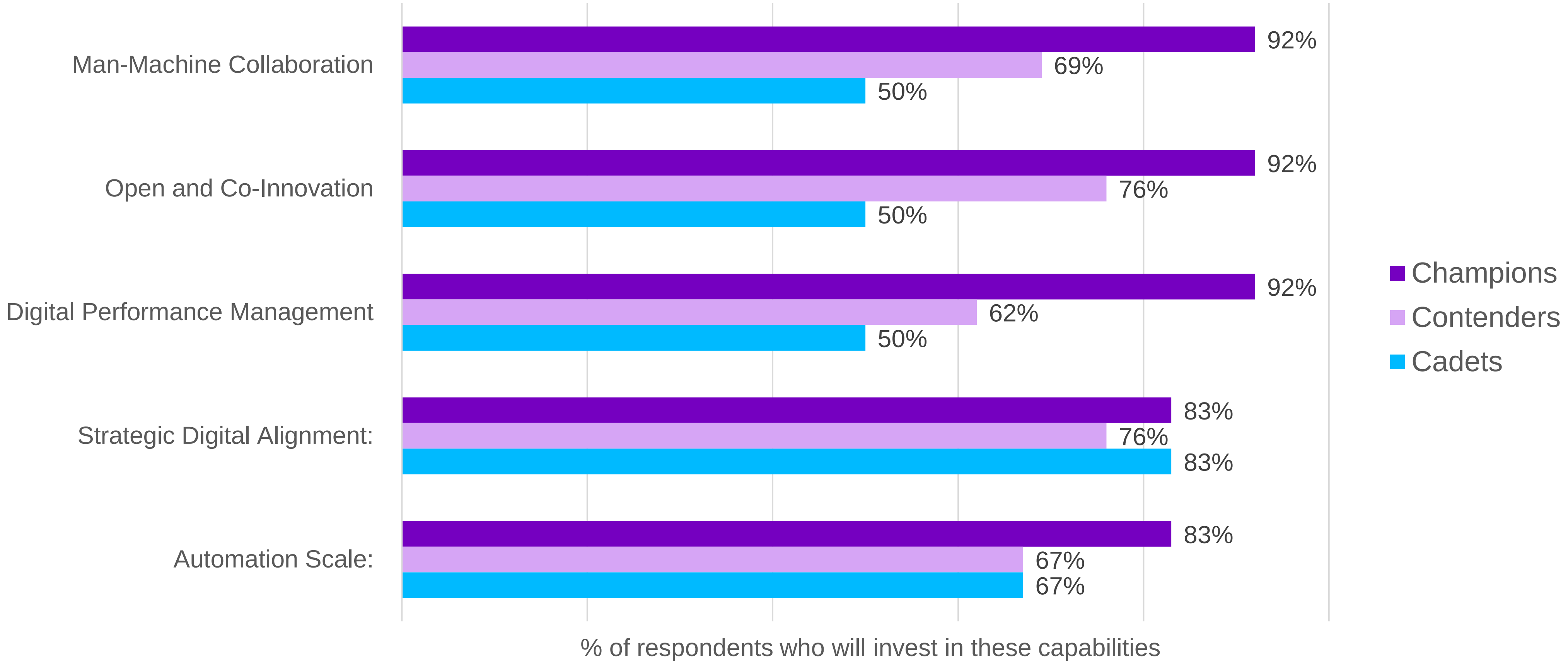
Source: Accenture 2019 Industry X.0 Survey

Q: WHAT CAPABILITIES DO AEROSPACE & DEFENSE COMPANIES NEED TO BUILD AS THEY NAVIGATE ALONG THIS ROADMAP?

A: CHAMPIONS PRIORITIZE CERTAIN CAPABILITIES, AND INVEST HEAVILY IN THEM

CHAMPIONS INVEST IN MAN-MACHINE COLLABORATION AND OPEN INNOVATION

Top 5 capabilities leveraged by Aerospace & Defense companies



Source: Accenture 2019 Industry X.0 Survey

Striving to scale your own innovations?

Get in touch!

Whether you are seeking to start new initiatives the right way, help with scaling those you already have—we are ready to help you improve your outcomes by putting our knowledge to work! Please reach out to **raghav.narsalay@accenture.com** or **aarohi.sen@accenture.com** at Accenture Research, or visit **accenture.com/scaling-innovation**

References:

David Abood, Aidan Quilligan, Raghav Narsalay, and Aarohi Sen (2019), Rethink, Reinvent, Realize, downloadable from here.

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APPENDIX

SURVEY AT-A-GLANCE

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C-suite respondents

13 industries and **17** countries

AEROSPACE & DEFENSE AT-A-GLANCE

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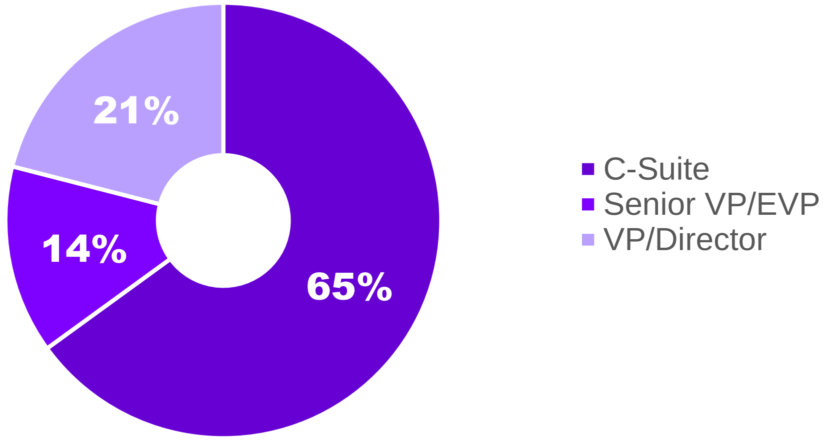
countries

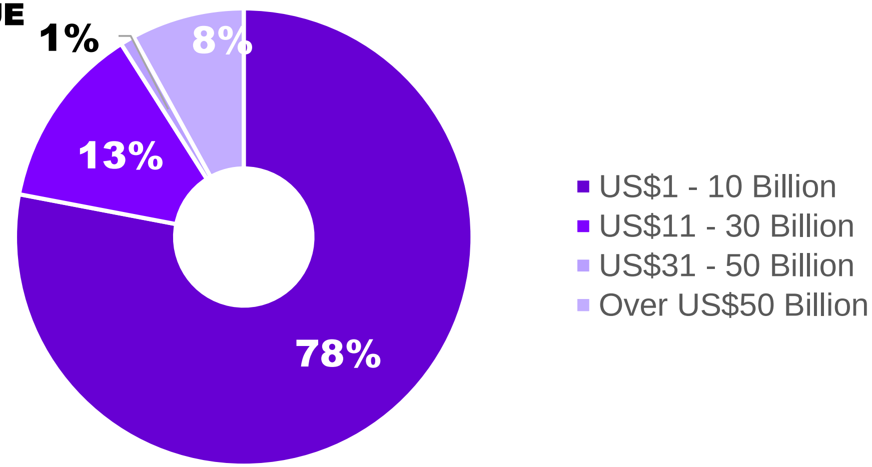
Source: Accenture 2019 Industry X.0 Survey

SURVEY DEMOGRAPHICS – AEROSPACE & DEFENSE (N=63)

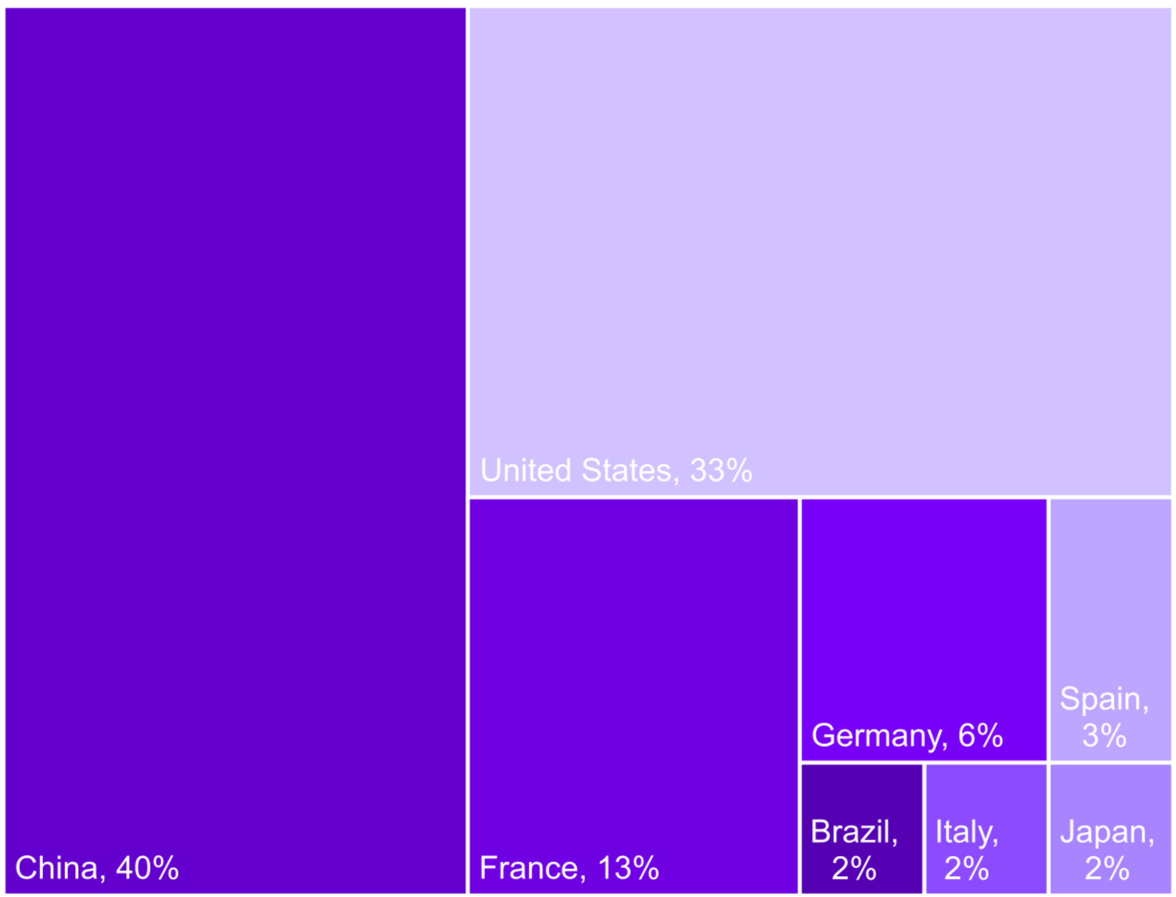
EXEC PROFILE



ANNUAL REVENUE

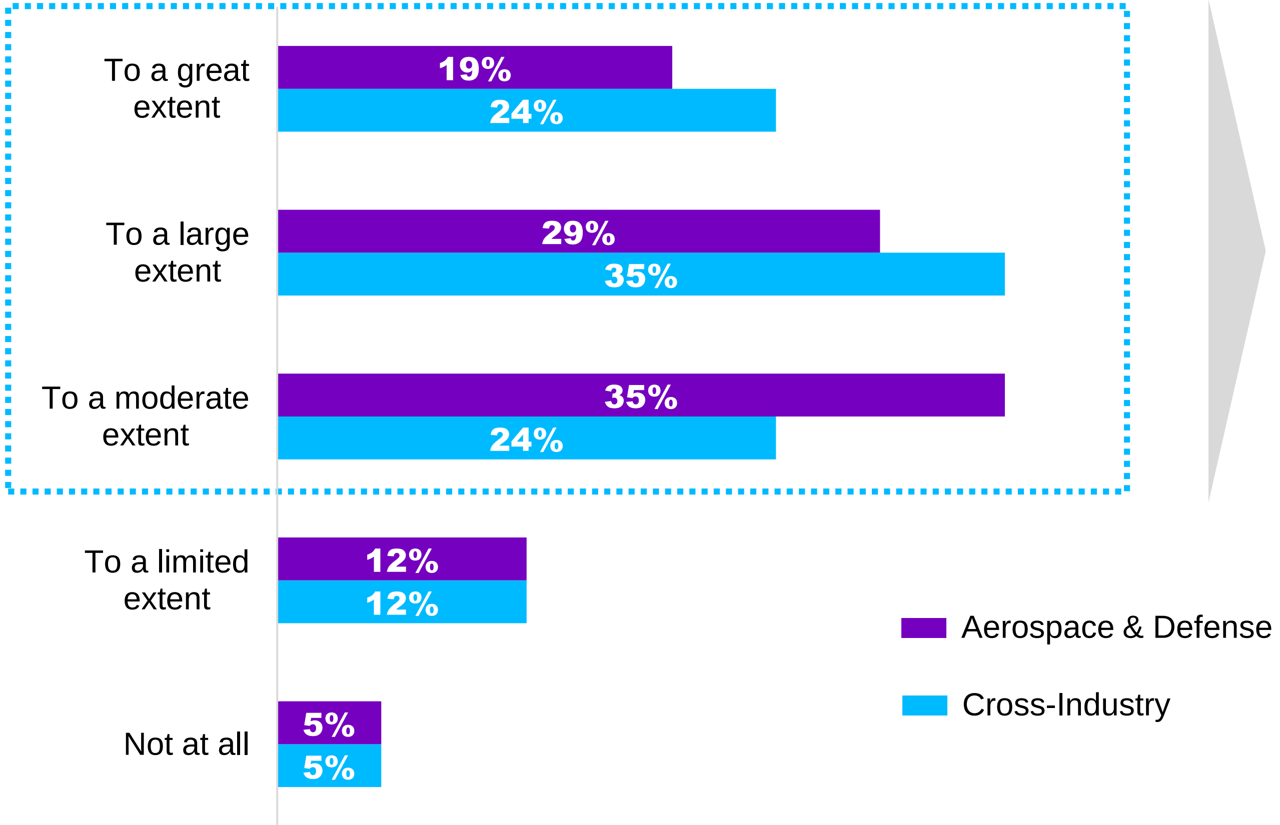


GEO-SPREAD



SECURING FUNDING FOR DIGITAL REINVENTION PROJECTS FROM THE BOARD IS STILL NOT EASY

Extent to which securing funding from the board for digital reinvention is a challenge



RANK	KEY REASONS WHY BOARDS OF AEROSPACE & DEFENSE COMPANIES REFUSE TO FUND DIGITAL REINVENTION
1.	Failure to scale digital proofs of concept (PoCs) in the past; Inadequate ROI from digital investments
2.	Poor understanding of digital reinvention within Top Management
3.	Shortage of and difficult access to digital skills
4.	Foreseen immaturity of technology
5.	Lack of a clear digital roadmap
6.	Shortage of budget for capital investments

Source: Accenture 2019 Industry X.0 Survey

CHAMPIONS THOUGH ARE MASTERS AT MATCHING ENABLERS TO THE FUNCTIONS THAT NEED IT MOST

	PRODUCT & SERVICE DESIGN			PRODUCTION & OPERATIONS			SUPPLY CHAIN & LOGISTICS			SALES, AFTER SALES SERVICE			DIGITAL / PHYSICAL SECURITY			CONTINUOUS CUSTOMER ENGAGEMENT		
CHAMPIONS (CH), CONTENDERS (CT), CADETS (CA)	CH	CT	CA	CH	CT	CA	CH	CT	CA	CH	CT	CA	CH	CT	CA	CH	CT	CA*
Engage ecosystems to co-innovate customer-relevant offerings																	□	
Orchestration of software applications and hardware				■				□										
Digital platforms to support opensource development			□											□				
System engineers & UX designers build smart products/services										■								
New models of functional collaboration and co-innovation						□						□				■		
'As-a-service' operations and offering model															□			
Flexible engineering/design teams to build software-led hardware											□							
Intelligent new measurement techniques					□													
Design Thinking' driven vision and digital roadmap	■						■											
Digitized processes for new savings to drive new growth		□											■					
Pervasive and preemptive security architecture									□									

■ Enabler for Champions □ Enabler for Others

*Cadets have not selected any of the top three choices of enablers for Continuous Customer Engagement function

Source: Accenture 2019 Industry X.0 Survey

About Accenture Research

Accenture research shapes trends and creates data driven insights about the most pressing issues global organizations face. Combining the power of innovative research techniques with a deep understanding of our clients' industries, our team of 300 researchers and analysts spans 20 countries and publishes hundreds of reports, articles and points of view every year. Our thought-provoking research—supported by proprietary data and partnerships with leading organizations, such as MIT and Harvard— guides our innovations and allows us to transform theories and fresh ideas into real-world
solutions for our clients.

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