

Internet of Things Services 2020 RadarView™ – Report Excerpt

Unleash business value through
fast and secure connectivity

April 2020

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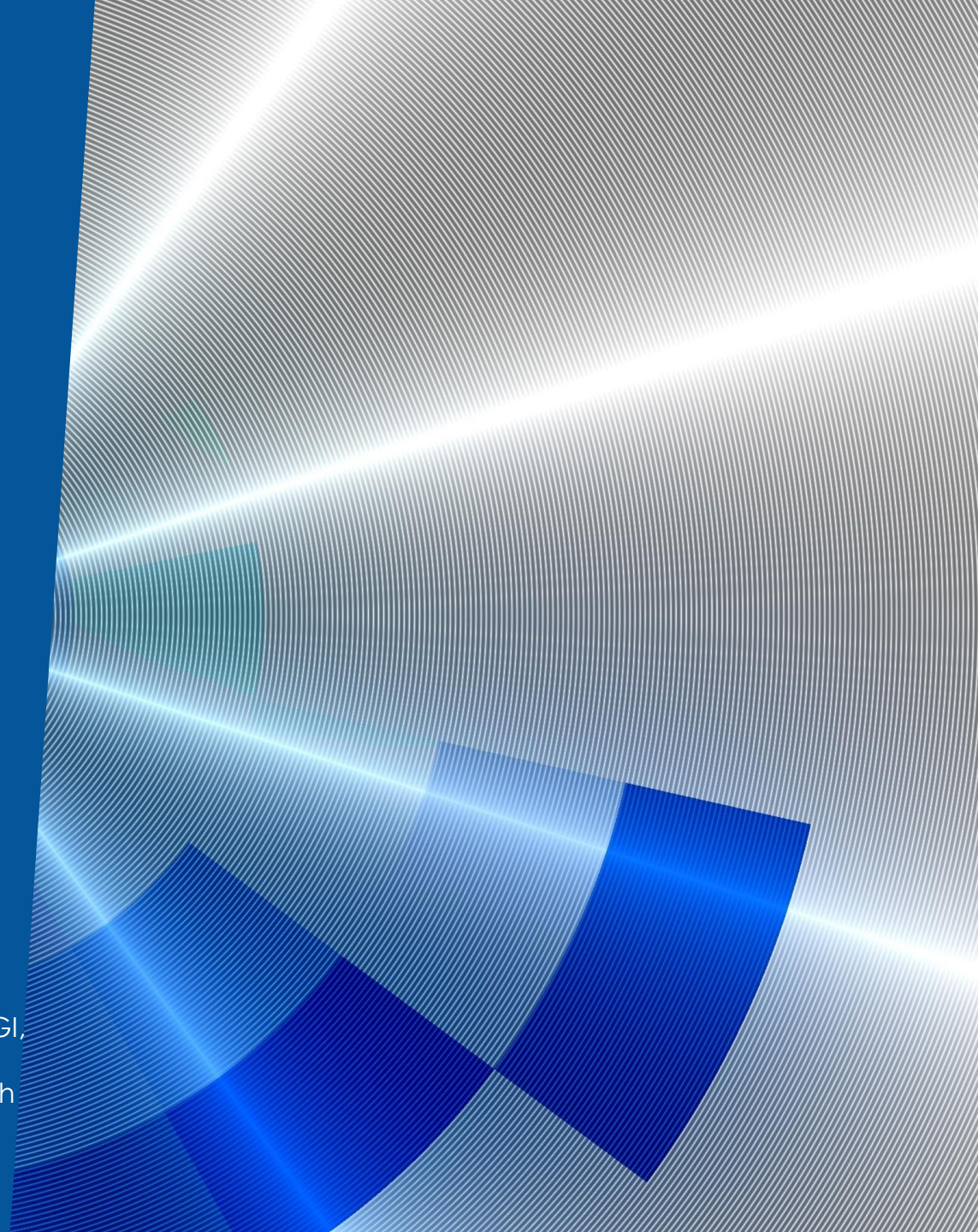
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- Reading the RadarView
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Executive Summary

Recommendations for enterprises

Develop clear strategies and operational plans to become 5G-ready

- Assess whether the business is constrained by limited bandwidth and slow data transfer. If it is, then actively study use cases that can create business value using 5G.
- For planning and budgeting, take note of the systems that are running fine at lower bandwidths. Conduct a comprehensive audit of existing IT infrastructure, hardware, and software that require upgrades or replacements for 5G.

Use cloud and telecom providers partnerships to build 5G edge solutions

- Telecom providers such as Verizon, AT&T, and Vodafone are actively collaborating with cloud providers such as AWS, Google Cloud, and Microsoft Azure for 5G edge innovation.
- The combined capabilities of telecom and cloud providers will enable enterprises to speed up data communications and processing by building ultra-low latency 5G edge solutions, thus enhancing experiences and optimizing the decision-making process.

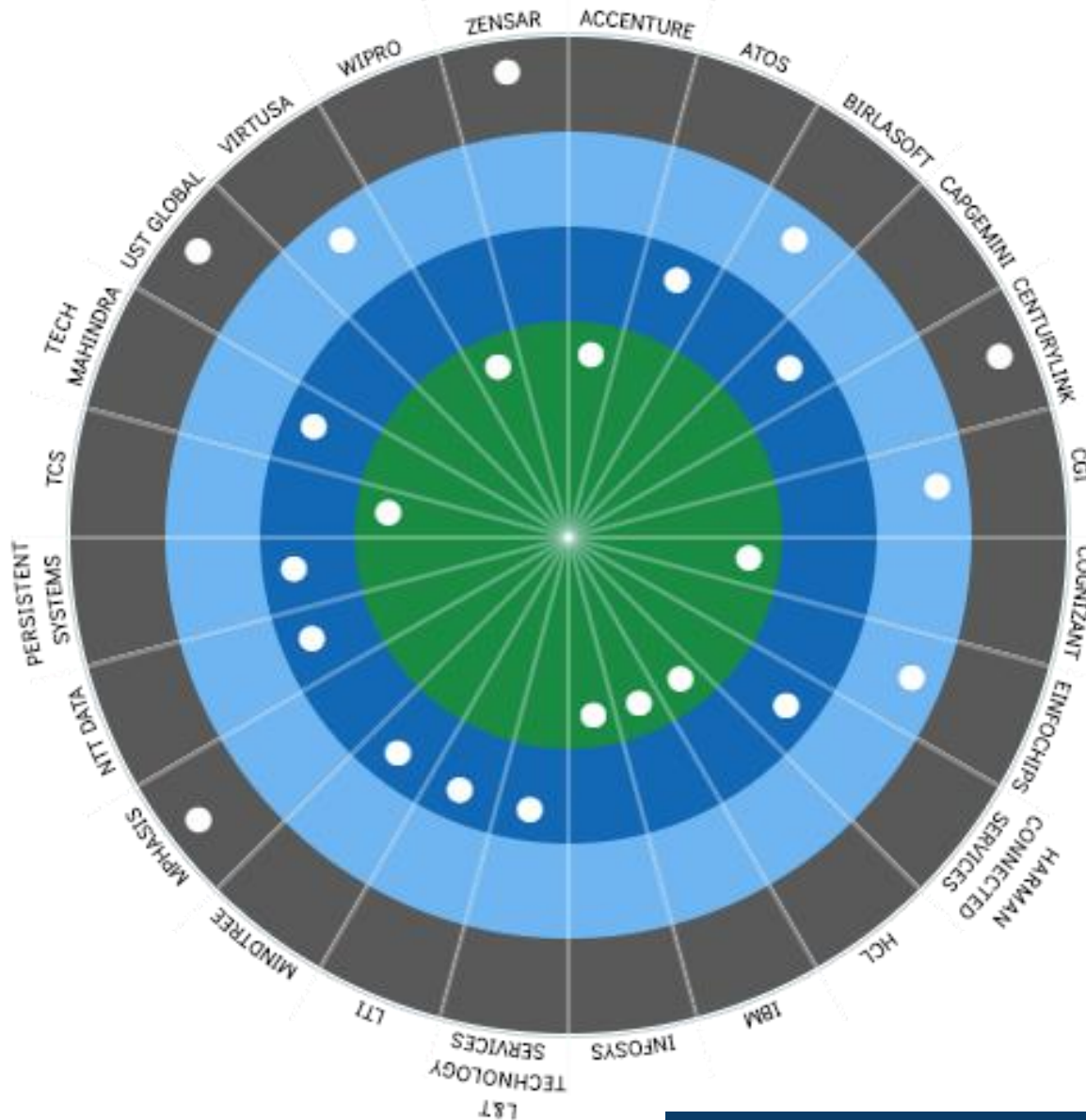
Co-innovate with service providers to leverage their IoT expertise

- 60% of service providers have significantly invested in building co-innovation capabilities such as business labs, centers of excellence (CoEs), and programs to jointly develop IoT solutions with their clients.
- Enterprises must collaborate and co-develop IoT solutions with service providers to gain access to their IoT capabilities.

Practice the takeaways from past IoT attacks.

- Enterprises must continually invest in security to identify and fix vulnerabilities proactively. Examine and learn from the IoT attacks in the past, such as Mirai botnet, Lemonduck malware, and many more.
- They must enforce strong password policy, create asset maps, network segmentation, and firewalls, lockdown tool access, and exercise hyper-vigilance.

Avasant recognizes 24 top-tier providers supporting the enterprise adoption of Internet of Things services



LEADERS

Accenture	Cognizant
HCL	IBM
Infosys	TCS
Wipro	

INNOVATORS

Atos	Capgemini
HARMAN Connected Services	L&T Technology Services
LTI	Mindtree
NTT DATA	Persistent Systems
Tech Mahindra	

DISRUPTORS

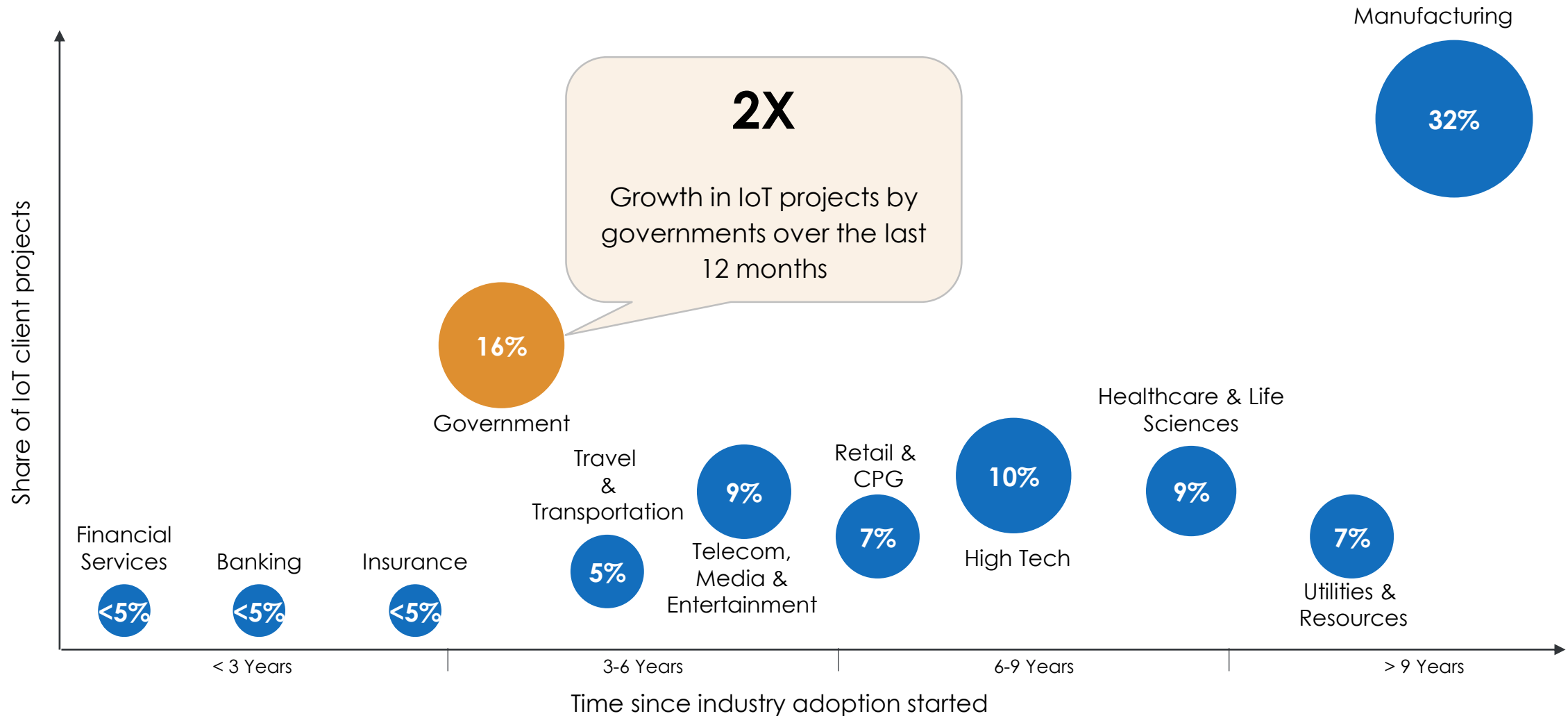
Birlasoft	CGI
eInfochips	Virtusa

CHALLENGERS

CenturyLink	Mphasis
UST Global	Zensar

IoT adoption by governments doubled; asset-intensive industries are still leading the way

IoT, as a key enabler of Industry 4.0 movement, optimizes workflows and processes in the manufacturing industry. Governments are also realizing IoT's potential in redefining public infrastructure.



Source: Avasant Internet of Things Services RadarView Survey November-December 2019

5G is set to redefine IoT connectivity to reduce costs and enhance experience over existing networks

7% of enterprises are already implementing or have 5G in place while 69% are already seeing a potential use for the technology in their organizations.

How 5G will strengthen IoT



Higher Data Speeds

5G can reach speeds up to 10 times faster than its predecessor 4G.



Lower Latency

5G can cut latency in communications to as low as 1 millisecond (ms) end-to-end, down from about 50ms on 4G.



Greater Bandwidth

5G can support around 1MN devices per square kilometer, while 4G can support around 4K devices per square kilometer.



Lower Power Consumption

5G can make the traffic software-defined and centrally allocated. This can reduce the power consumption by 70%, making it cheaper for the owner.



Private 5G Network Options

5G carriers are now shifting focus on providing enterprises and their ecosystems with strong secure private networks.

Q: Please indicate your awareness and/or plans for 5G.¹



1. Percentage of respondents (N=220)

Source: Technology Trends Study 2020 by Computer Economics, An Avasant company; Avasant Research

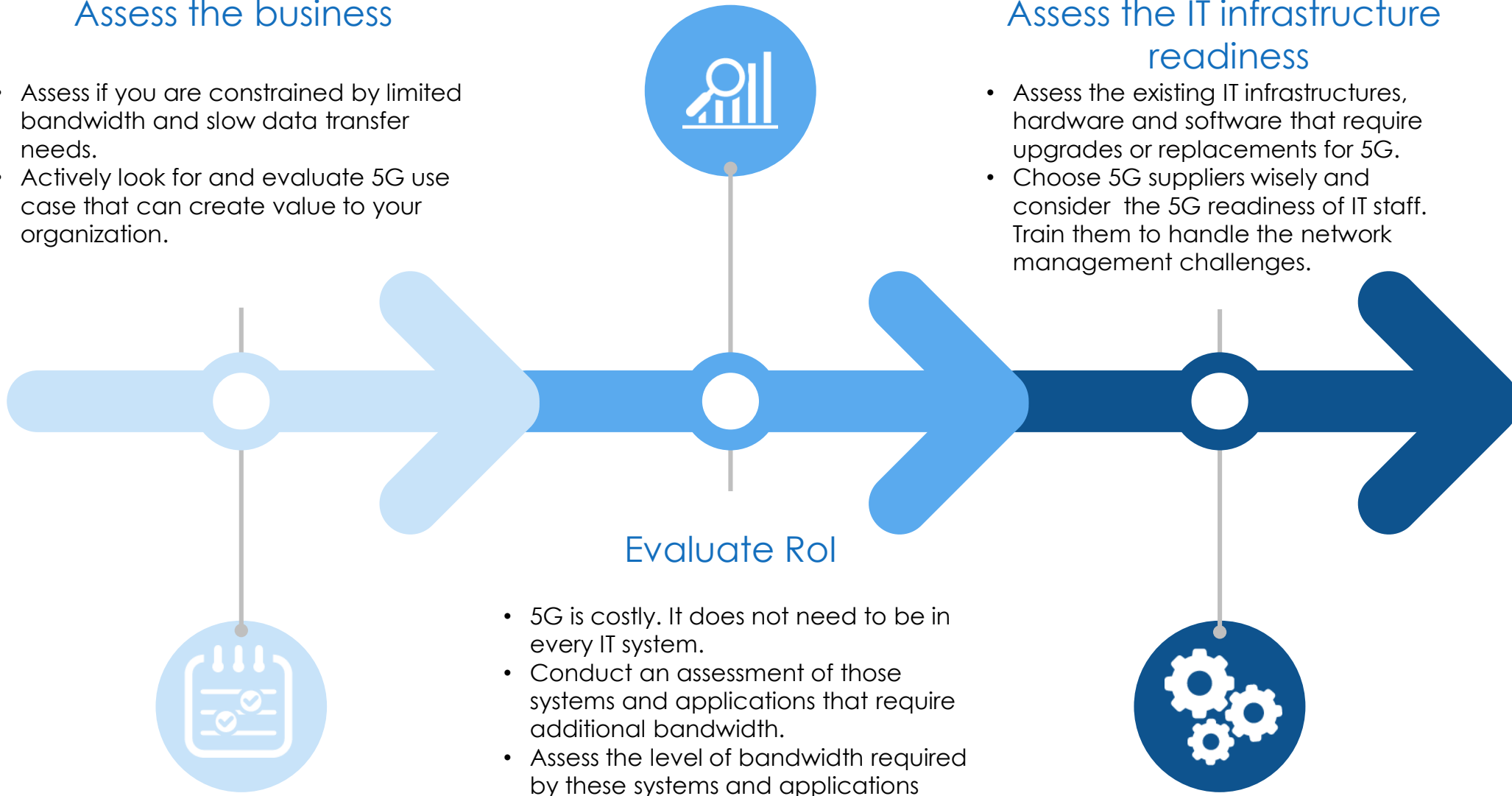
Enterprises should develop clear strategies and plans to incorporate 5G in the next 1-2 years

Assess the business

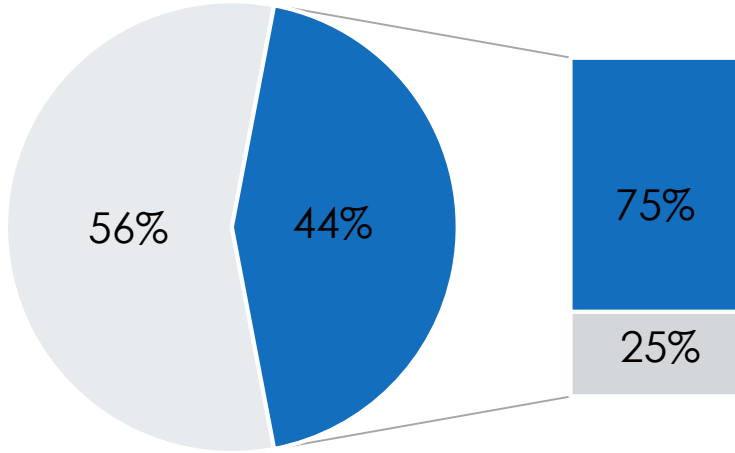
- Assess if you are constrained by limited bandwidth and slow data transfer needs.
- Actively look for and evaluate 5G use case that can create value to your organization.

Assess the IT infrastructure readiness

- Assess the existing IT infrastructures, hardware and software that require upgrades or replacements for 5G.
- Choose 5G suppliers wisely and consider the 5G readiness of IT staff. Train them to handle the network management challenges.







Integrating AI and Big Data Analytics with IoT has enabled enterprises to realize multiple benefits



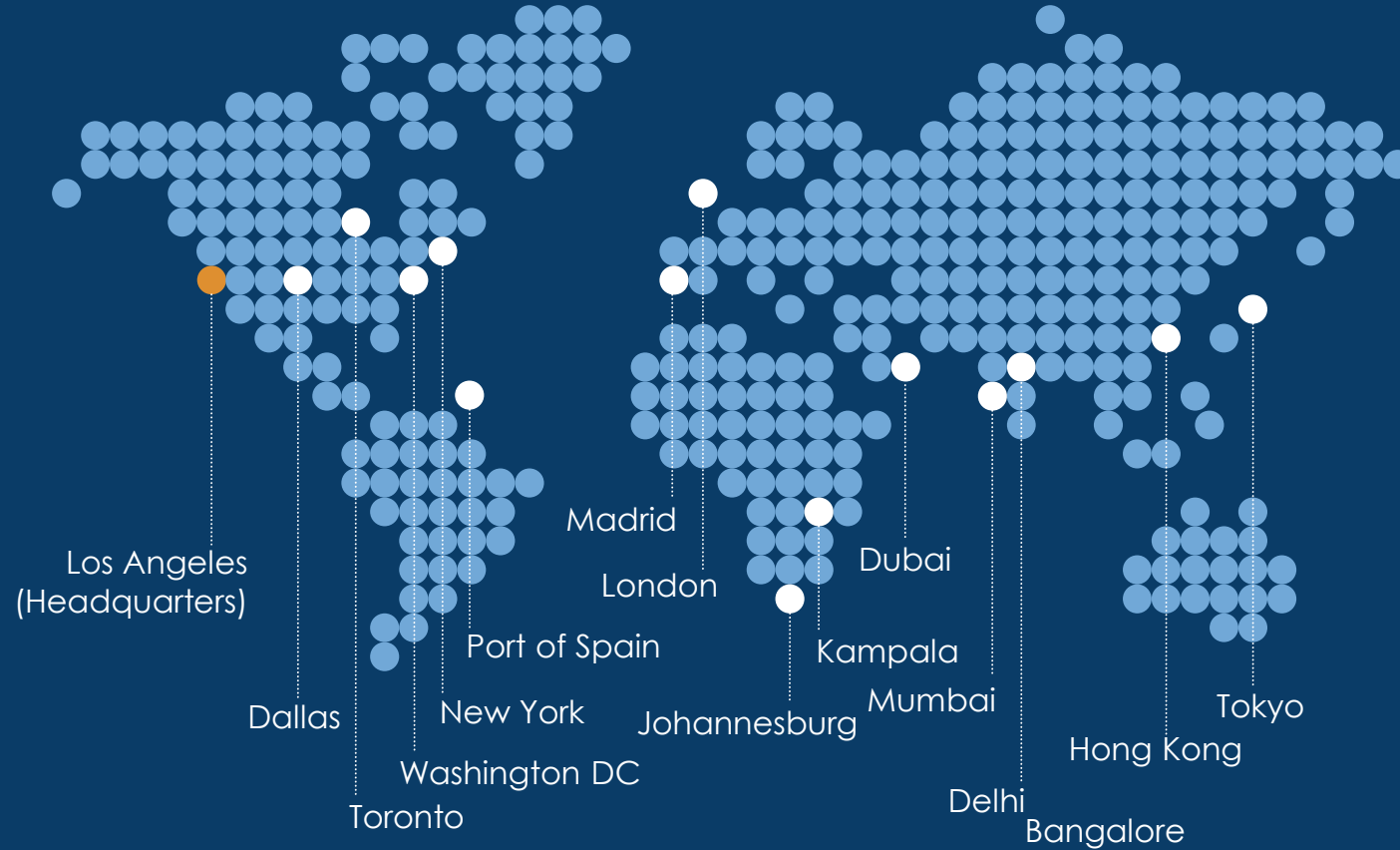
44% of IoT projects integrated AI and Big Data Analytics in last 12 months.

75% of these projects have resulted in transformation of business models to as-a-service models.

Sample projects that integrated IoT with AI and big data analytics

Company	How AI and Analytics integrated to IoT	Benefits realized
	<ul style="list-style-type: none"> Over 99% of BP's oil and gas wells have sensors that collect enormous amounts of temperature, chemicals, vibration data. The data is stored, processed, and acted upon by big data tools and AI that help BP locate and develop reservoirs, enhance how it produces and refines crude oil. 	<ul style="list-style-type: none"> Increased process automation Increased profits Improved operational efficiency
	<ul style="list-style-type: none"> Built a PoloTechshirt that acts as a sensor and gathers real-time data on the wearer's direction, movement, and biometrics. Data is transmitted from the shirt to the cloud and analyzed using algorithms. Buyers can use an app to track their own fitness. 	<ul style="list-style-type: none"> Enhanced customer experience New revenue streams Transformed business model
	<ul style="list-style-type: none"> Installed the AVATAR system on the US-Mexico border. The system uses sensors that scan the passenger's face and body language, picking up tiny variations of movement or clues which may raise suspicion. The data is compared against a database using AI and matched against factors to identify truths and lies. 	<ul style="list-style-type: none"> Increased border safety
	<ul style="list-style-type: none"> Installed sensors in machineries for its customers across every sector. The data generated is analyzed to provide information on how the machine is operating. Intelligent learning algorithms allow each machine to adapt its behavior to mimic nearby machines. 	<ul style="list-style-type: none"> Enhanced customer experience Reduced costs Reduced downtime and losses

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