



# 5G

## Ushering in the New Era of Mobility

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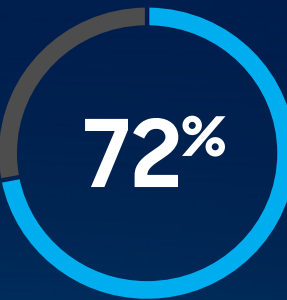
# Executive summary

Digital technology has quickly become an enabler of innovation and disruption. Innovation in the 3rd Platform technologies and innovation accelerators such as cloud, mobility, Internet of Things (IoT) and artificial intelligence (AI) — has created new opportunities to support and accelerate digital transformation (DX) that is already underway in the Asia-Pacific region.

**DX of the broader business impacts the workforce in several dimensions.** As businesses look to get the balance right between changes in the physical and digital workplace, they are also looking at not just getting the right tools to the right employees, but also increasing employee productivity and improving customer experience.

This evolution in the future of work (FoW) to support the Future Enterprise is further being fueled by the advent of 5G. The first wave of commercial 5G deployments has begun with much fanfare and drumbeating. **Organizations are actively exploring what 5G means for their business and how it can help them transform the way work is being done.**

**This IDC InfoBrief explores the role of 5G in ushering a new era of enterprise mobility and looks at some key use cases of how 5G can help transform the workplace.**



of organizations in the region are already evaluating the use of 5G, with the top aim of improving employee productivity and enhancing enterprise mobility (30%).

# The race to the Future Enterprise is on

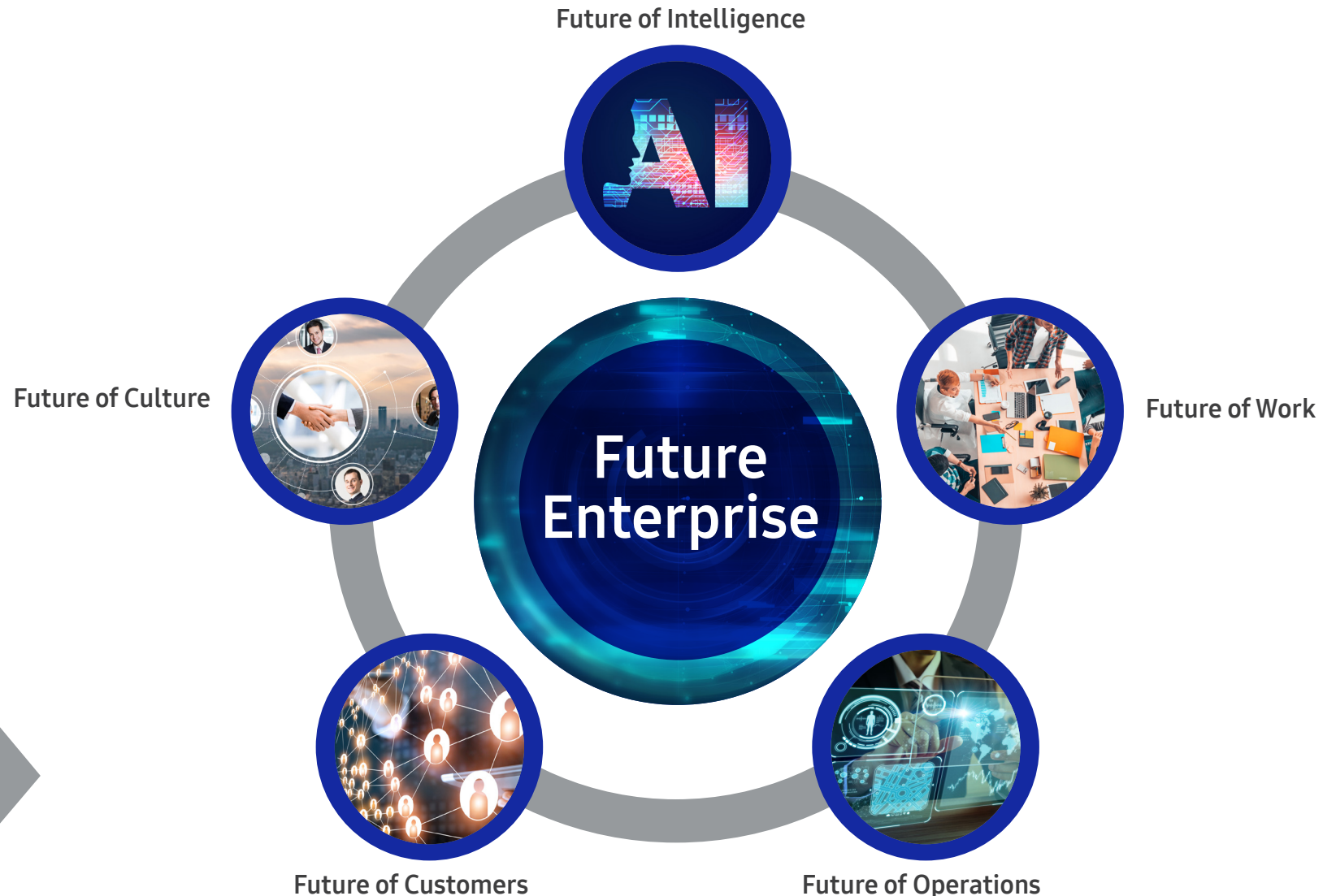
The push for digital transformation (DX) will not let up as 2020 ushers in the digital economy with vigor. **IDC predicts that at least 50% of Asia-Pacific GDP will be generated from digital products and services.**

Indeed, despite some high-profile failures and elusive ROI goals, organizations are rethinking their digital visions and tactics to operationalize DX to become a Future Enterprise.

FoW, a key tenet of the enterprise transformation journey, will continue to play an integral role.

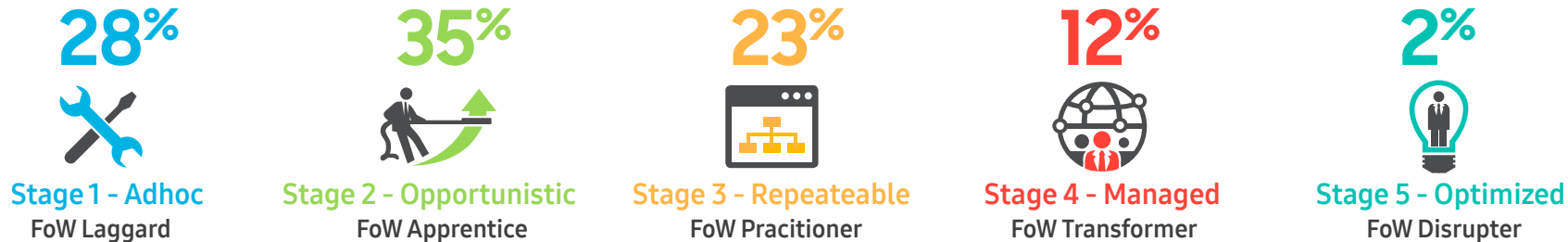
By 2021, new FoW practices will expand the functionality and effectiveness of the digital workforce by 30%, fueling an acceleration of productivity and innovation at practicing organizations.

So where are organizations today on their FoW journey?



# Enterprise mobility leading the charge to transform Future of Work

A majority of organizations are just about starting on their FoW journeys, with 63% of Asia-Pacific enterprises in the early maturity stages of 1 and 2. However, the progress differs by country.



Emerging markets such as Vietnam, Philippines and Thailand are still at the early stages.

Majority of Australia and New Zealand enterprises are at stages 3 and 4, well advanced in their journey.

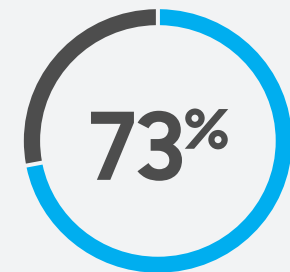


## What can drive the pace of digital transformation?

**Enterprise mobility is leading the charge**, along with next-generation technologies, such as augmented reality/virtual reality (AR/VR), AI, cloud and IoT, which are driving digital transformation (DX) within organizations and transforming work as we know it.

**5G networks will be a critical booster that will transform the way we work, live and play to a new level.**

## On the boardroom agenda



of CEOs in Asia-Pacific recognize the importance of FoW initiatives and, hence, focusing on:



Changing their work culture and workspace



Investing in key technologies to accelerate DX organizationwide

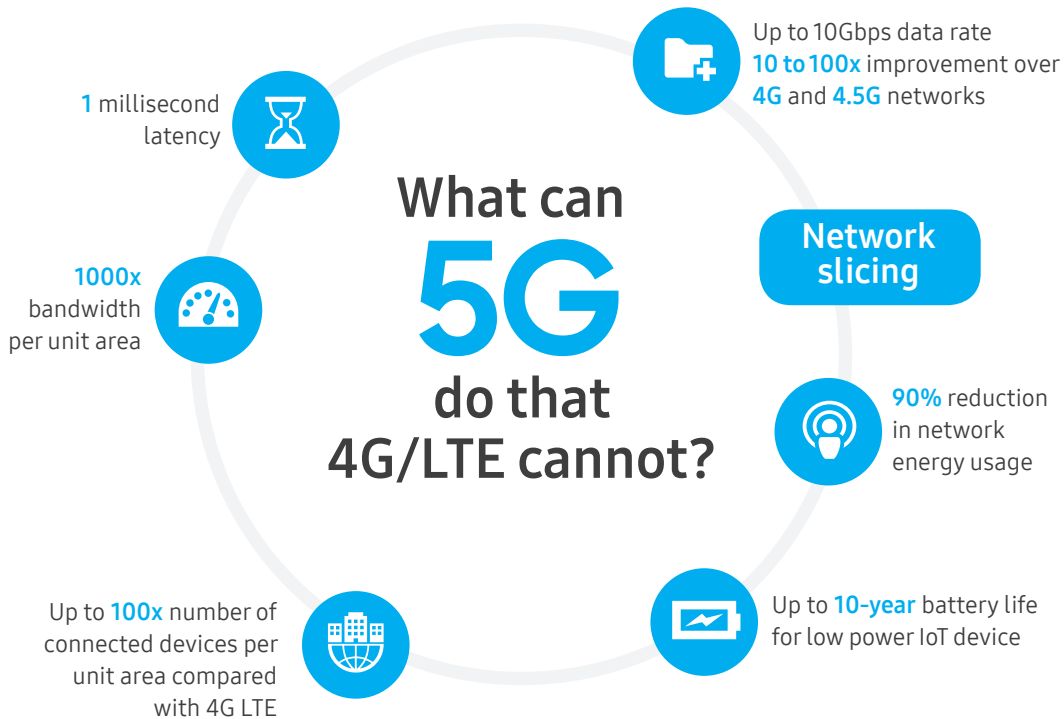


Accelerating their FoW initiatives with the help of 5G

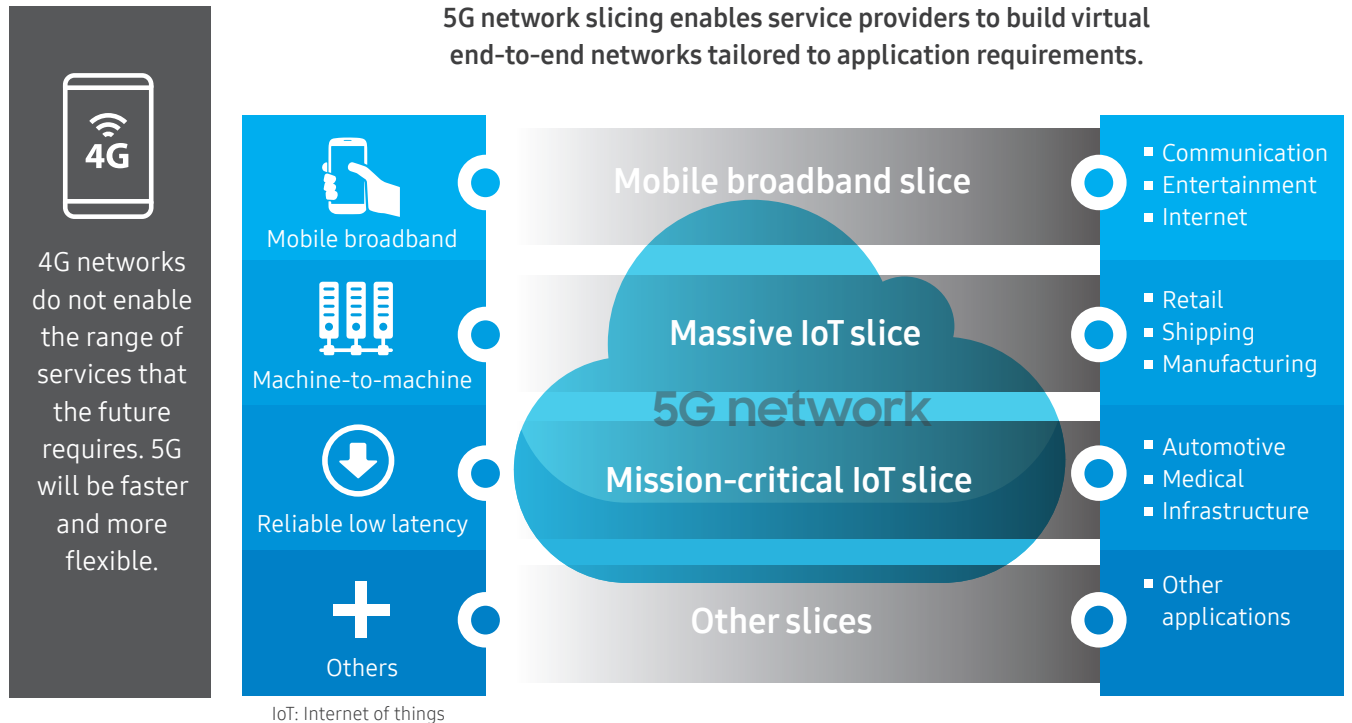
# 5G is a game changer, not just another mobile evolution

Every few years, a new “G” comes along, bringing a wave of new opportunities for mobile. 5G, the next generation of mobile communications, promises to be a game changer, providing ultrafast speeds, ultralow latency, massive device connectivity and advanced features, such as network slicing.

## How is 5G different to 4G/LTE?



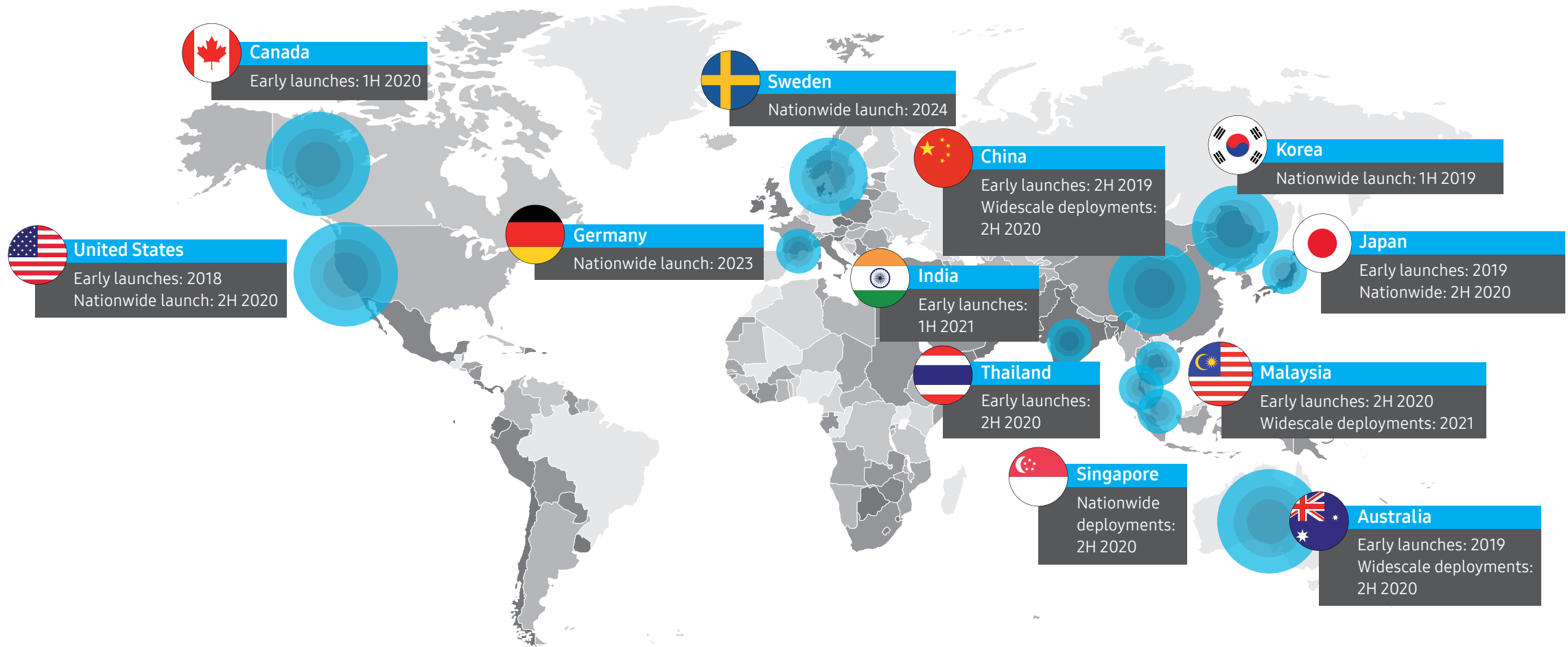
## What is network slicing?



5G will revolutionize the individual interactions with the world around them through augmented immersive experiences, create new opportunities for enterprises to improve business efficiency and transform how we work, communicate and collaborate.

# 5G deployments: when and where

5G is gaining momentum worldwide. The first 5G deployment in Asia-Pacific took root in South Korea in April 2019, with several other markets following suit with planned or deployed 5G networks. IDC projects that the number of 5G connections in Asia-Pacific excluding Japan (APEJ) will grow from just over 1.6M in 2019 to nearly 128M 5G subscribers by 2023.



# 5G – Transforming the way work is done

5G changes the game for everyone – the consumers as well as businesses. While the ultrafast speeds and low latencies will revolutionize consumer interactions, the benefits for enterprises are far greater.

5G’s promise of 10x speeds, ultralow latency (~1ms) and features such as network slicing add a completely new dimension to the enterprise workforce of the Future Enterprise. These features unlock a new paradigm of working. Here are some of the key areas (explored in detail in the next segment):



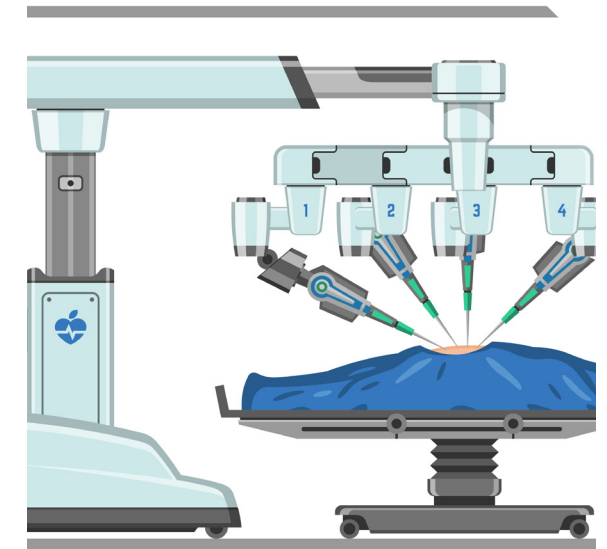
5G-powered enhanced business communication and collaboration



Autonomous connected fleet/cars in a 5G world



5G-powered immersive enterprise experiences



5G-enabled real-time remote-controlled operations

# 5G-powered enhanced business communication and collaboration

In today's economic environment, bigger is not necessarily better. Businesses are looking to get the balance right between changes in the physical and digital workplace to transform their work practices and the workplace through following:



- Reducing the size of offices through hot desking
- Promoting open environments and having more meeting rooms
- Allowing employees to work remotely
- Introducing other flexible work practices and themes like deskless workers

## Top 4 benefits reported:



Productivity boost



Cost savings



Increased business agility



Increased employee and customer satisfaction - lower churn rate

However, enabling a remote and flexible working environment can often be a huge challenge for organizations. 5G is expected to accelerate enterprises' adoption of FoW practices. 5G capabilities will:



## 5G as the catalyst of workplace change

Alleviate the enterprise concerns around unstable and unreliable connection in audio/video calls.

Address slow performance of enterprise applications and virtual desktop environments when accessed remotely.

Allow organizations to increasingly adopt devices as mobile computers while on-the-go, such as Samsung's DeX platform.

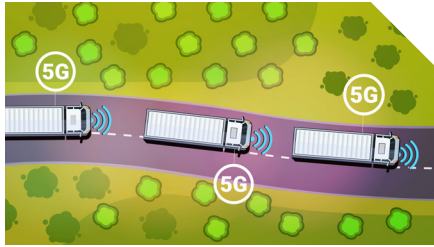


**IDC expects 5G to bring in major changes to the traditional workplace and completely transform the employee and customer experience.**



# Autonomous connected fleet/cars in a 5G world

The introduction of 5G capabilities such as ultralow latency, edge cloud and network slicing will enable applications that pave the way to fully autonomous vehicles and assisted driving, which will completely transform the transport and logistics industry.



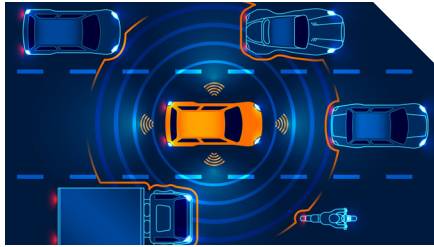
Increase productivity of drivers and trucks through efficient routing



Enable proactive maintenance, preventing hours of downtime



Monitor driver's safety through wearables that check on the driver's vitals



Fewer accidents, more on safety



Full visibility of fleet status (in case of logistics or fleet management)



Mobilize business processes – providing drivers/field employees with ruggedized devices for enhanced mobility

5G will revolutionize how autonomous vehicles and people in the field, like the fleet drivers, work. 5G will also significantly impact industries where employees are out in the field but have traditionally not been able to connect back to the HQ due to connectivity restraints.

## Industries where these use case is most applicable



Logistics



Public Safety



Smart Cities



Transportation



## Case example

In Germany, Fraunhofer ESK, Continental and Deutsche Telekom partnered together for the live transmission of safety-relevant data to vehicles using multi-access edge computing (MEC) on a 5G network for ultralow latency.

**Countries most relevant:** Australia, New Zealand, Singapore and Malaysia

# 5G-powered immersive enterprise experiences

5G overcomes quality and reliability issues seen in current wireless connectivity, supporting immersive experiences to ensure the safety of employees in high-risk areas such as mining sites. By enabling the use of augmented reality/virtual reality (AR/VR) and mixed reality technologies, 5G supports various industries in increasing worker training and productivity.

**AR/VR headset connected over 5G to simulate training environment for workers, doctors and so on.**



Recreate dangerous scenarios so that workers can safely practice their skills (e.g., firefighters).



Training employees to work in mines which increases safety and skill levels before entering the mine.



A surgeon honing their skills through a VR headset connected to a 5G network for ultra HD imagery and real-time interactions.

## Industries where these use case is most applicable



Public Safety



Manufacturing



Healthcare



## Case example

A Spanish manufacturing giant implemented remote monitoring of assembly work with MEC, video analytics and augmented reality on a 5G network across their shop floor, in partnership with Telefonica.

**Countries most relevant:** All

# 5G-enabled real-time, remote-controlled operations

High-performance 5G networks will further transform operations that benefit from remote-controlled machines, such as drones, cranes and robot arms, to boost operational efficiency; especially in hard-to-reach areas and increase safety by keeping workers out of hazardous environments.

The growing demand for remote-controlled machines is a key driver for the deployment of private wireless networks, and 5G will further accelerate that demand. Most of the machines that need remote control require low latency and reliable wireless connectivity often over long distances.



A worker operating a 5G-based truck remotely in an area with radiation and hazardous conditions.



A doctor conducting a remote surgery of a standard procedure through a 5G arm.



A tablet used for remote troubleshooting on a 5G-based solutions, where the factory is completely 5G-enabled.

## Industries where remote-controlled operations are most important



Manufacturing



Public Safety



Healthcare



Transportation and Logistics



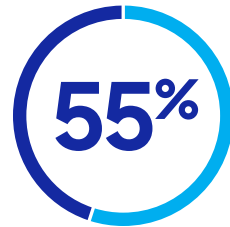
### Case example

- Bosch created 5G-connected robots that automatically stops the production line when an alarm is triggered.
- In Australia, a mining group created a 5G-based remote-controlled solution for drilling machines offshore.
- In Malaysia, a major hospital chain is exploring the idea of remote surgery – for non-critical operations.

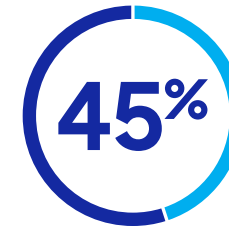
**Countries most relevant:** Australia, Malaysia, Thailand and New Zealand

# Concerns remain over security of 5G and device management

While 5G brings in a lot of opportunities for business needs, it also presents some challenges to organizations.



of organizations highlighted security of the network, devices and the data collected as their top concern. While 5G creates numerous business opportunities, it also introduces vulnerabilities in the network.



of organizations shared that deployment and management of the large number of devices on 5G networks as one of the top challenges.



Evaluate these critical components of a solution when exploring use cases.



Hardware and devices: robust and ruggedized 5G devices, AR/VR gear



Enterprise mobility and device management platform



Remote computing platform



Security platform to protect the solution including the devices, sensors and cloud

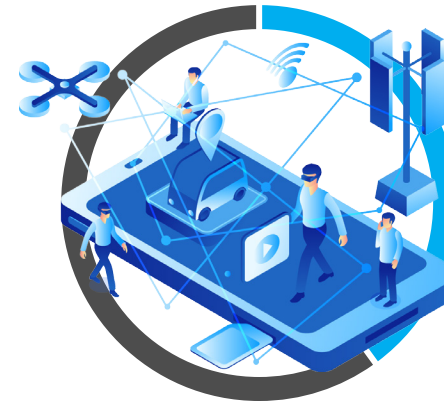
# Selecting the right partner

Today's workplace investments are being made for strategic, rather than tactical, reasons. Organizations are rethinking their workplace environment, processes and tools used to accelerate the FoW, and hence their DX journeys.

5G is high on the enterprise watch lists in Asia-Pacific region.



**72%**  
of organizations are already discussing the use of 5G technology



Over **40%**  
of organizations are unsure of how to go about integrating 5G into their mobility, FoW and IoT strategies.

Find a partner that understands your challenges and FOW strategies, as well as addresses these four key technology areas:



Devices



Enterprise mobility platform



Network



Security

# Message from the sponsor:

5G is set to change our lives and how organizations function. Samsung is at the forefront of bringing 5G mobile networks and technology everywhere through its vision of a connected world that brings together multiple technologies — 5G, artificial intelligence, IoT, cloud data and computing — to transform everyday enterprise experiences.



**Open**  
Flexible and collaborative ecosystem

## Capabilities expansion through acquisition

- Cloud service provider
- Artificial intelligence platform
- Design and engineering firm that produces connected automotive solutions

## Industry partners

- Partnered with wireless carriers and broadband providers to launch the network right



**Innovative**  
Innovative solutions and products to realize the benefits of 5G

## End-to-end 5G portfolio



## End to end 5G portfolio

- Chips
- Devices – Flagship Galaxy
- Note with S Pen, Ruggedized devices and wearables
- Networking

## Productivity Innovations

- Remote Computing with Samsung DeX



**Secure**  
Enhanced security in the 5G era

## Secure supply chain

- In-house manufacturing and assembly

## Military-certified mobile security platform

- Knox Platform for Enterprise
- Knox Configure
- Knox Manage



**“For Samsung, 2020 will be the year of Galaxy 5G and we are excited to bring 5G to even more device categories and introduce people to mobile experiences they never thought possible.”**

TM Roh, President and Head of Research and Development at IT & Mobile Communications Division, Samsung Electronics