Future of Work:
Device Convergence Empowering Next-Generation Mobile Workers

IDC | ANALYZE THE FUTURE

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Executive summary

Technological advancements, the rise of smart devices, and fast-changing demographic shifts are driving organizations to rethink their workplace strategies. As digital workers make up a growing share of the total workforce, organizations must not only adapt to a labor force that is multigenerational but also task oriented, target focused, and gig based. Future-ready organizations will be those that empower employees with the latest devices and create a work culture that delivers sustained competitive advantage.
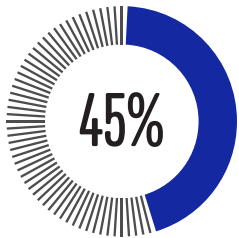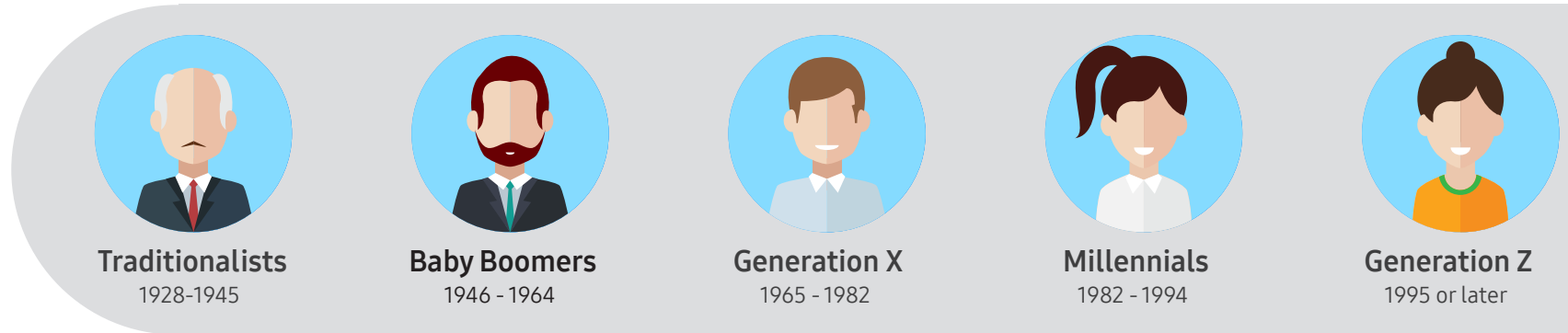
IDC defines the future of work (FoW) as a fundamental change to the concept of work that transforms employee behaviors and skills as well as organizational culture. It supports a dynamic work environment not bounded by time of day or physical space, empowers teams and a diverse workforce, and fosters
human-machine collaboration. The FoW is an enterprisewide imperative that applies 3rd Platform technologies and innovation accelerators (IAs), such as augmented reality/virtual reality (AR/VR), artificial intelligence (AI), and Internet of Things (IoT) to transform the concept of work and how it is done.

In this InfoBrief, we discuss the key trends driving FoW with a particular focus on mobility and device convergence.

Impact of today's multigenerational workforce

For the first time in history, five generations are working together, with millennials and Gen Z workers exerting influence on employers' technology and device investment choices.

Asia Pacific (AP) organizations are creating policies and changing business models to suit today's younger workers who prefer mobile-digital channels.

Traditionalists
1928-1945

Baby Boomers
1946 - 1964

Generation X
1965 - 1982

Millennials
1982 - 1994

Generation Z
1995 or later

45% of organizations recognize the need to bring changes in the workspace, work culture, and technologies.
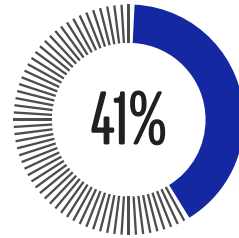
41% of organizations are making policy changes that are millennial-friendly.
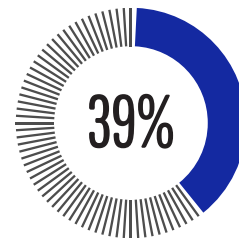
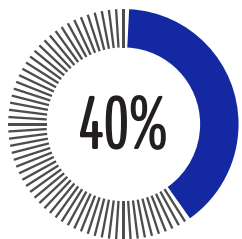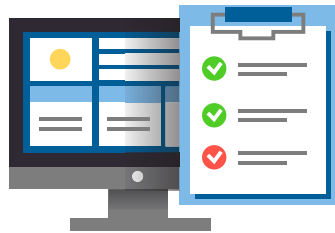**39%** of organizations have increased or are planning to increase more flexible work options.

Case example: Tata Steel

This Indian conglomerate has implemented several policies, including implementing new technologies and increased digital communication, to attract millennial and Gen Z talent.

Organizations are also deploying new workspace practices

These trends further reinforce the need for better connectivity and remote collaboration technologies.

Coworking is a rapidly growing trend, driven by competition to spearhead innovation and boost talent attraction and retention.

40% of AP enterprises have increased or are planning to increase flexible working and anytime-anywhere working policies.
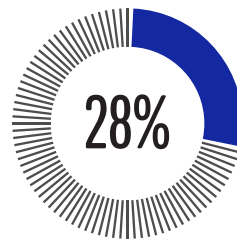
28% of AP enterprises have already started embracing the coworking/shared working spaces culture and have started shifting their employees to shared workspaces.

Industries embracing shared workspaces culture

| Manufacturing	Telecommunications	Retail	Healthcare
33%	32%	29%	24%
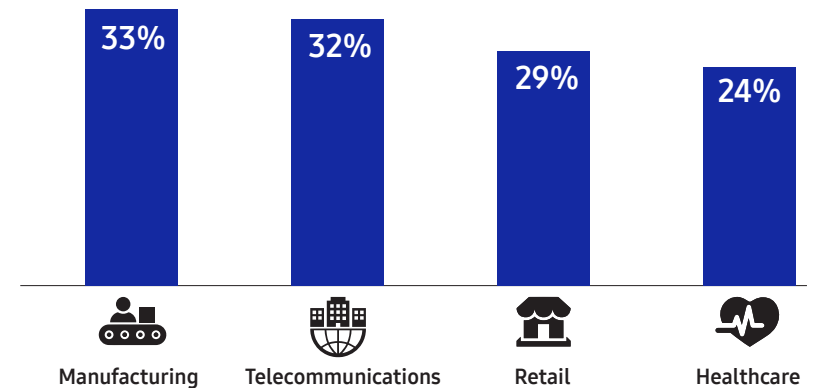
Case examples

Large organizations such as Tata Motors, HSBC and Amazon are also using coworking spaces.

# Future workforce comprising humans and machines

The future workforce will increasingly be a mix of humans and bots working together. Artificial intelligence (AI), AR/VR, and robotics are augmenting, enhancing and expanding human capabilities to enable human and machine collaboration like never before.
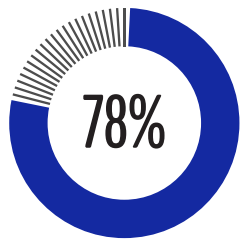
78% of AP organizations agree AI and cognitive systems such as robotic process automation (RPA) and bots are most important to drive topline revenue growth in the next 2-3 years.
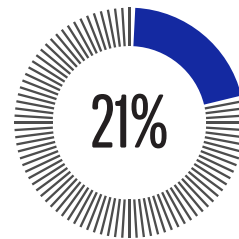
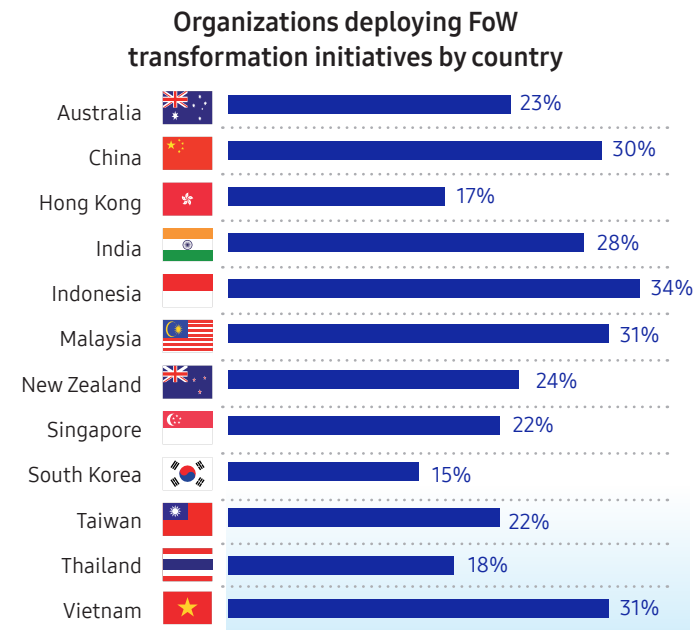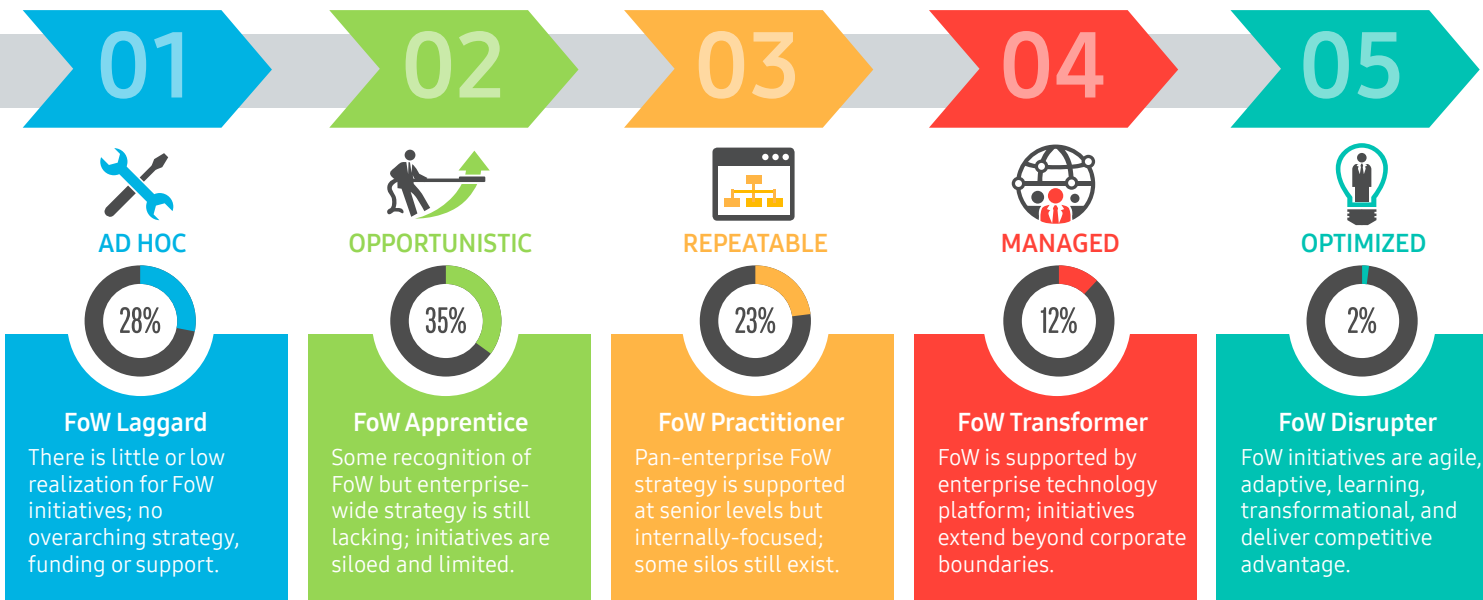**21%** of AP organizations have deployed chatbots.
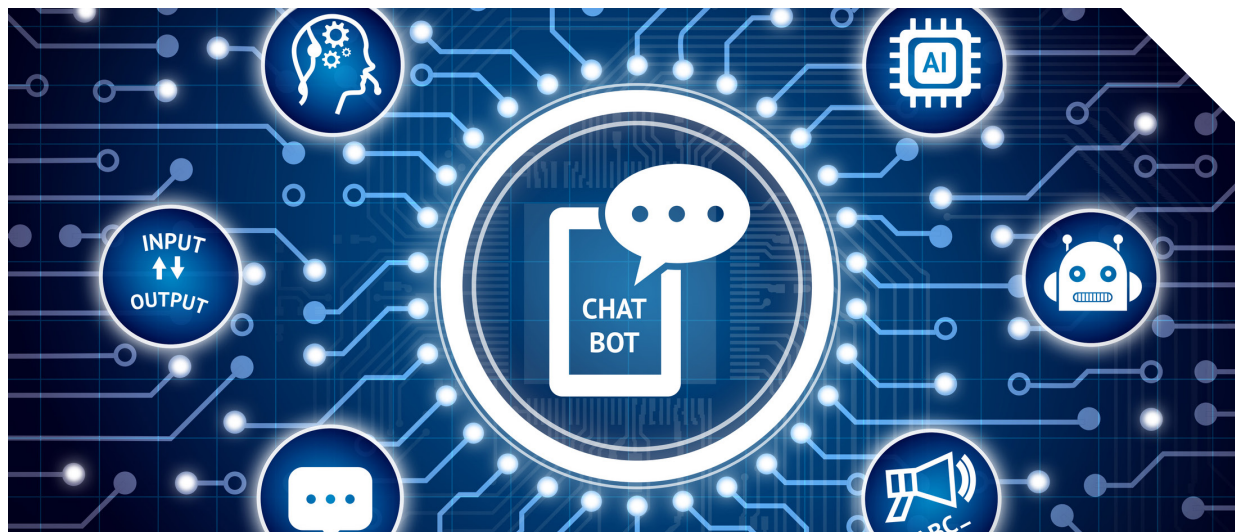
Case example: HDFC Bank

Since its launch in March 2017, HDFC Bank's AI-based chatbot Eva has addressed over 1.2 million customer queries across multiple channels.

Majority still navigating the future of work

FoW transformation initiatives are well underway in AP organizations, but it is still early days. Significant gaps remain as organizations struggle to create a strategy that overcomes silos of innovation to deliver superior customer experience and retain the best digital talent. More than half of AP organizations are still in the early stages of FoW maturity.

01
AD HOC
28%
FoW Laggard
There is little or low realization for FoW initiatives; no overarching strategy, funding or support.

02
OPPORTUNISTIC
35%
FoW Apprentice
Some recognition of FoW but enterprise-wide strategy is still lacking; initiatives are siloed and limited.

03
REPEATABLE
23%
FoW Practitioner
Pan-enterprise FoW strategy is supported at senior levels but internally-focused; some silos still exist.

04
MANAGED
12%
FoW Transformer
FoW is supported by enterprise technology platform; initiatives extend beyond corporate boundaries.

05
OPTIMIZED
2%
FoW Disrupter
FoW initiatives are agile, adaptive, learning, transformational, and deliver competitive advantage.

Organizations deploying FoW transformation initiatives by country

| Country	Percentage
Australia	23%
China	30%
Hong Kong	17%
India	28%
Indonesia	34%
Malaysia	31%
New Zealand	24%
Singapore	22%
South Korea	15%
Taiwan	22%
Thailand	18%
Vietnam	31%

Case example: Mitr Phol Group

Mitr Phol Group embarked on a digital transformation (DX) journey to change its agricultural business and to establish its leadership in Thailand's sugar and bio-energy industry. In line with Thailand's 4.0 initiative, Mitr Phol implemented new technologies to support its agricultural business models and enforced policies that guide its digitalized operations and talent management.

As organizations plan their future of work journey, mobility is pervasive

With the advent of technologies and constantly changing workspace demands, mobility is considered as a pivotal facet of the FoW. The demographic shifts, changing workspace practices, and nature of work demands anytime, anywhere working policies. Organizations are increasingly adopting and implementing mobility solutions as they see mobility as one of the key initiatives to gain a competitive edge as they plan their FoW strategy.
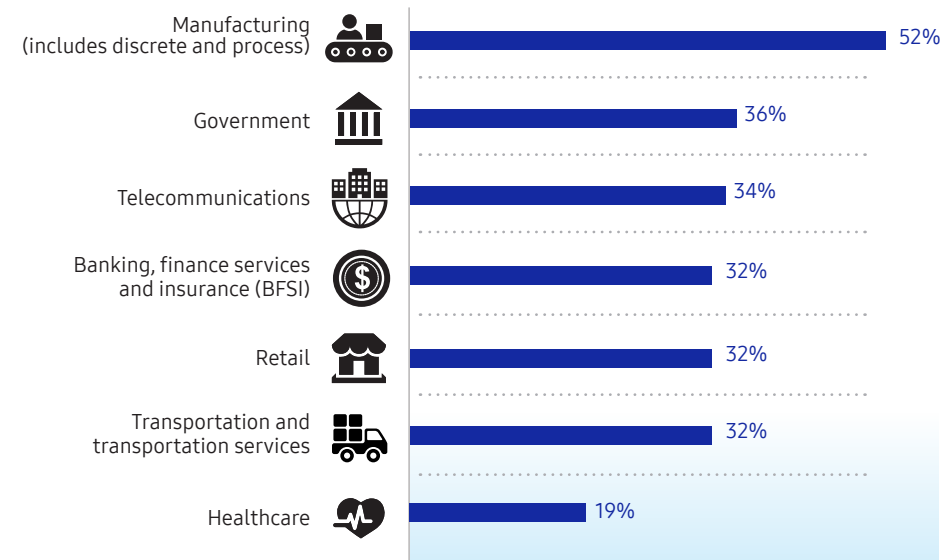
Running the modern business on mobility and devices

AP mobility solutions spending is expected to grow.
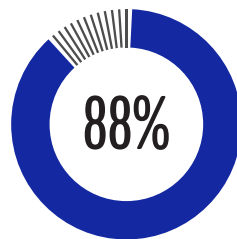
88% of organizations plan to invest the same or more on mobility over the next 12-18 months.

Top industries already implementing enterprise mobility solutions

Industry	Percentage
Manufacturing (includes discrete and process)	52%
Government	36%
Telecommunications	34%
Banking, finance services and insurance (BFSI)	32%
Retail	32%
Transportation and transportation services	32%
Healthcare	19%

Corporate-liable (CL) device deployments are gaining favor over individual-liable device deployments in enterprises. While bring your own device (BYOD) helps reduce cost, corporate liable devices - with the help of mobile device management - enables IT administrators to easily control and manage an organization's diverse set of mobile devices.
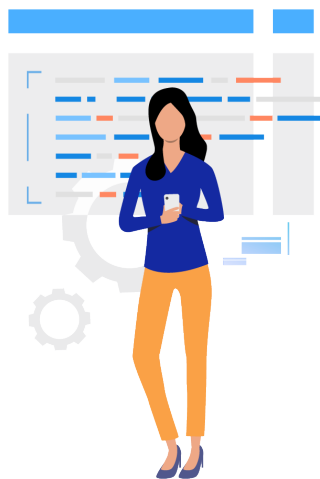
Thai retailers turn to mobile for better customer experience

Retailers in Thailand are utilizing mobile capabilities as solutions to focus on productivity gains and to drive their overall digital transformation efforts.

Thai retailers have deployed mobile tech for:
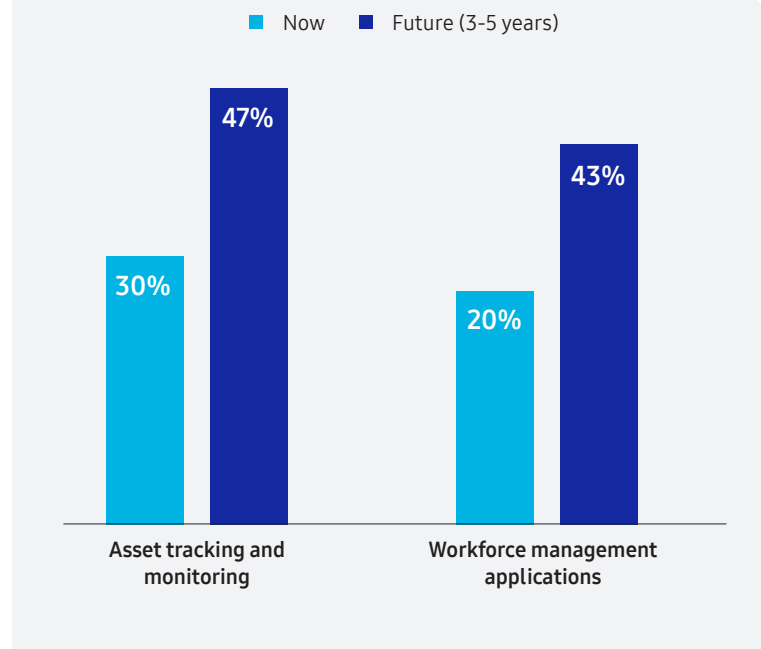
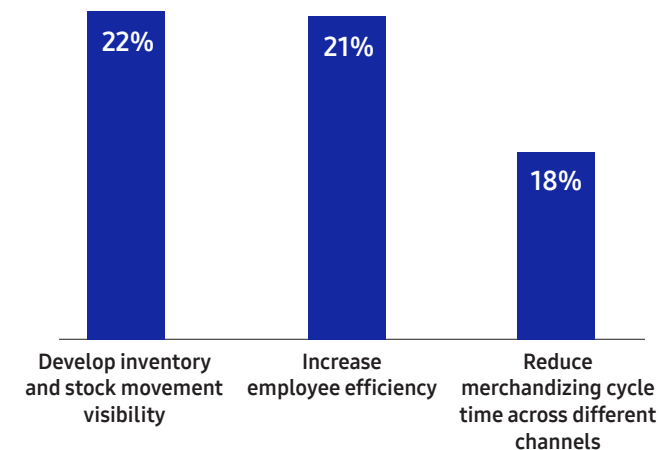- Networking and communications
- Marketing automation
- Customer engagement
- Access information and dashboard

Where mobility adoption will spike

■ Now   ■ Future (3-5 years)

	Now	Future (3-5 years)
Asset tracking and monitoring	30%	47%
Workforce management applications	20%	43%

Drivers to improve retail operations

Develop inventory and stock movement visibility	Increase employee efficiency	Reduce merchandizing cycle time across different channels
22%	21%	18%

Thai retailers have plans to invest in ERP software, to manage the entire retail operations in a single integrated system, which includes:
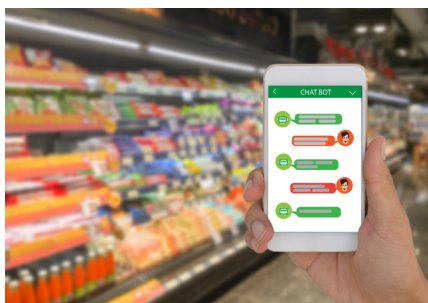
- Managing employees, suppliers and warehouses
- Point of Sale system
- Accounting
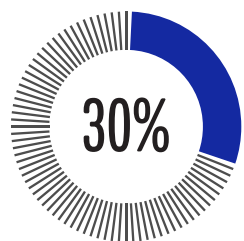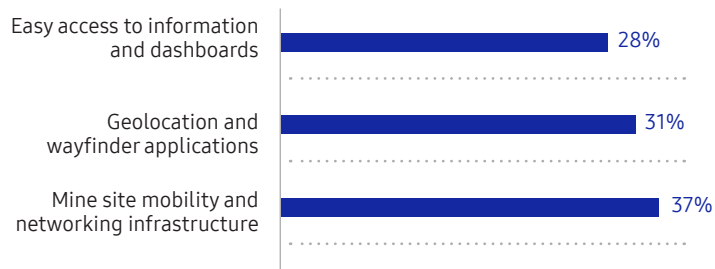- Consistent customer experience

Case example: Big C

- Thailand's second-largest hypermarket has partnered with Symphony Retail AI to build a new program to deliver personalized digital offers via text, mobile app, and its website.
- The plan is to enhance its mobile capabilities by leveraging a geofencing mobile app that interacts with shoppers at the right moment and in the right place, delivering timely and relevant messages.

# Australian miners eye new digital capabilities

Australian miners rely on mobile phones to collect and assess data, which enable safety tracking and manage operations and assets in real time.

Mining companies' top priorities:

- Easy access to information and dashboards — **28%**
- Geolocation and wayfinder applications — **31%**
- Mine site mobility and networking infrastructure — **37%**

30% of mining companies will have workforce strategies for the delivery of dynamic and real-time work allocation across optimized people/ machine (cobot) systems by 2024.
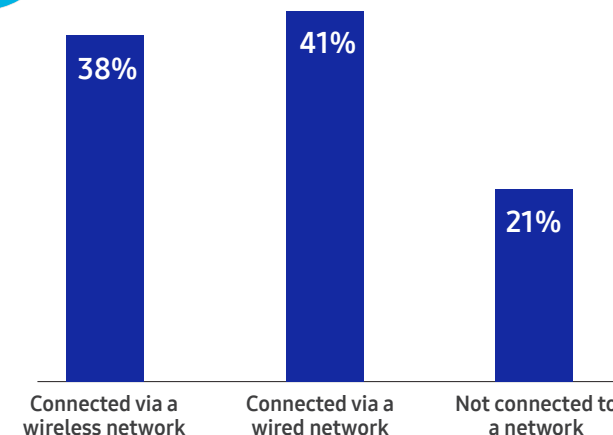
Deployment of mobile technology
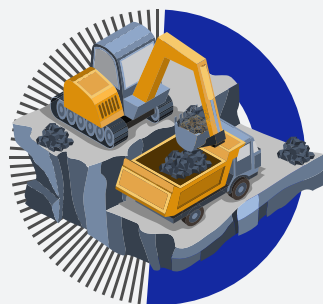
51% of mining equipment across fixed and mobile equipment are instrumented (i.e., have programmable logics controllers and distributed control systems).

The number 1 priority for companies was to improve mobility of business processes and reduce the overall cost structure.

Drivers to improve mining operations

- Connected via a wireless network — **38%**
- Connected via a wired network — **41%**
- Not connected to a network — **21%**

Benefits of gaining digital capabilities:

- To automate equipment
- To create operational visibility through data
- To create agile mining operations that will enable responsiveness through the execution of the mine plan and the flow of all the related activities across the organization

Case example: BHP (formerly BHP Billiton)

BHP, an Australian multinational mining company, has announced to automate 500 haul trucks across Western Australia Iron Ore and Queensland coal sites. The autonomous haulers are expected to reduce risk exposure and safety incidents, as well as enabling longer operational hours; which in turn will enhance productivity.

Indonesian financial institutions seek payment innovation

Fintechs are driving adoption of mobile wallets in Indonesia to deliver a convenient, secured, and user-friendly experience to customers.

>30%

have invested on mobility, cloud and analytics to drive DX in 2019.

Bank Negara Indonesia (BNI), Bank Rakyat Indonesia (BRI), Bank Mandiri and Bank Tabungan Negara (BTN) have collaborated with Telkom Indonesia and Pertamina to launch "Link Aja." The QR payment platform will enable users of Alipay and WeChat to transact in the country, taking into account the large inflow of Chinese tourists in Bali in recent years.
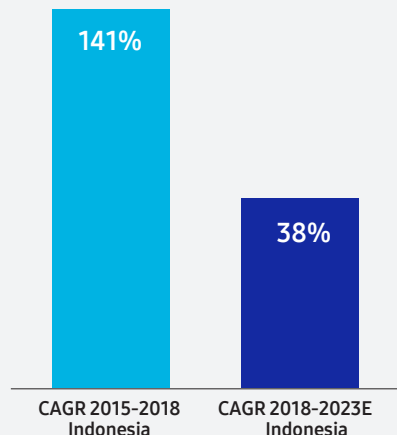
Where mobility adoption will spike

Indonesia experienced the highest sustained growth for mobile wallet* usage at

141%

from 2015 to 2018; with growth slowing to an estimated **38%** by 2023.

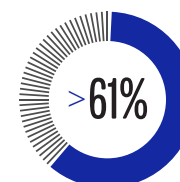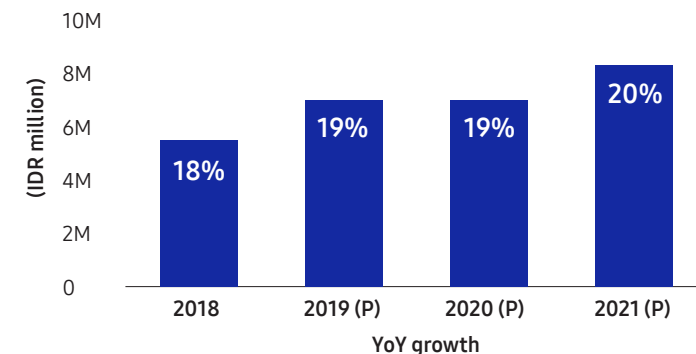|	
141%	38%
CAGR 2015-2018 Indonesia	CAGR 2018-2023E Indonesia

*__Mobile wallets__: A virtual wallet that stores payment information using the mobile phone as the primary method for both access and fulfilling transactions.
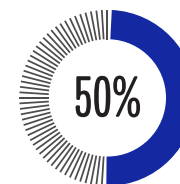
Case example: Bank BTPN – A MEMBER OF SMBC Group

- Its Jenius App is banking reinvented for customers to have a full control in managing life and finances in a simpler, smarter, and safer way - all from a smartphone. This is aligned to its vision to become Indonesia's first life finance application and maintaining its customer-centric value.

- 12,000+ customers used the Jenius App in less than two months after its launch, which contributed to more than 26,000 added transactions.

Drivers to improve FSI operations

Finance sector spend in IT services - 2H18

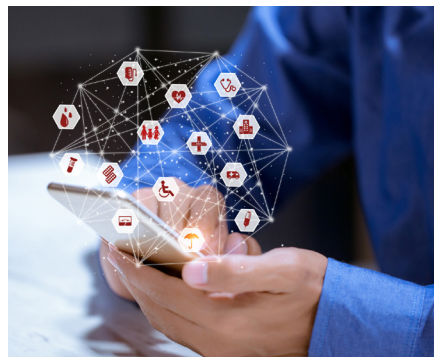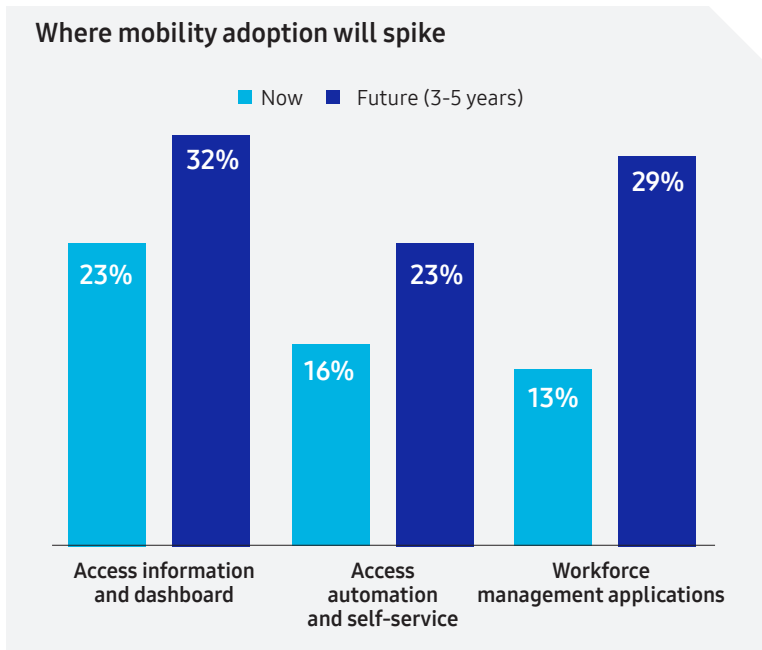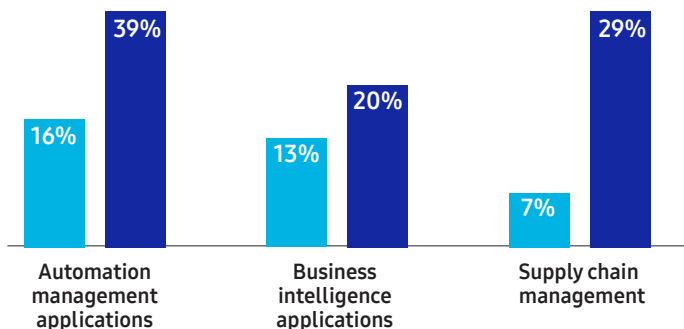|	2018	2019 (P)	2020 (P)	2021 (P)
(IDR million)	18%	19%	19%	20%

YoY growth

>61% of Indonesia's GDP will be digitalized, with growth in every industry driven by digitally-enhanced offerings, operations, and relationship by 2022.

50% of all IT spending will be on 3rd Platform technologies, as over 50% of Indonesian enterprises build "digital-native" IT environments to thrive in the digital economy by 2022.

Note: Finance includes banking, insurance, securities and investment services.

Malaysian manufacturers implement automation platform

Malaysian manufacturers are opening up on mobility adoption, especially in areas including automation and transformation of their business processes, accessing information, and managing workforce applications.
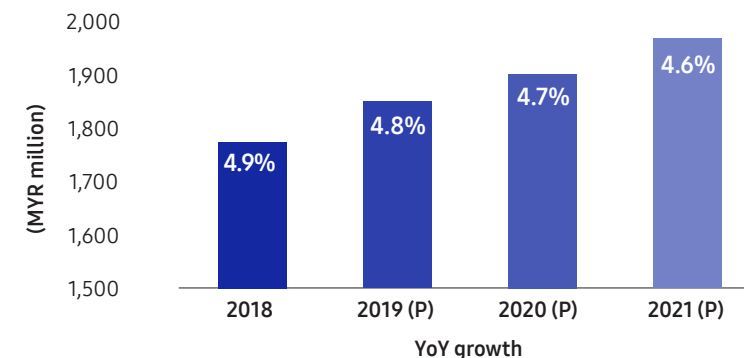
Digital transformation (DX) journey

▶ Manufacturers are looking to implement smart manufacturing and explore platform solutions that will facilitate automation within their manufacturing plants using RPA* and IoT technologies.
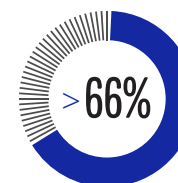
▶ In 2017-2022, we will see increase in:

Automation management applications: 16% → 39%
Business intelligence applications: 13% → 20%
Supply chain management: 7% → 29%

Where mobility adoption will spike

Legend: Now | Future (3-5 years)

Access information and dashboard: 23% (Now), 32% (Future)
Access automation and self-service: 16% (Now), 23% (Future)
Workforce management applications: 13% (Now), 29% (Future)

Drivers to improve manufacturing operations

Manufacturing and resource sector spend in IT services

(MYR million) — YoY growth

2018: ~1,775 (4.9%)
2019 (P): ~1,850 (4.8%)
2020 (P): ~1,900 (4.7%)
2021 (P): ~1,960 (4.6%)

>66% of Malaysia's GDP will be digitalized, with growth in every industry driven by digitally-enhanced offerings, operations, and relationship by 2022.

70% of all IT spending will be on 3rd Platform technologies, as over 50% of Malaysian enterprises build "digital-native" IT environments to thrive in the digital economy by 2022.
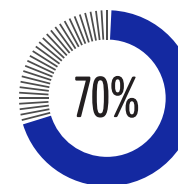
Case example: Smart Modular Technologies

Smart Modular Technologies (manufacturer and supplier of electronic subsystems to original equipment manufacturers [OEMs] in the computer, industrial, networking, telecommunications, aerospace and defense markets) has deployed collaborative robots (cobots) in Penang, Malaysia. The company uses AI-based systems to spot product defects. Using cobots, the company has automated the testing capabilities. The cobots automatically spots defective products and remove them from the production line before it reaches the packaging station.

* Robotic process automation (RPA) is a class of software designed to automate or augment manual repetitive tasks. Those tasks may be individual tasks executed by a knowledge worker outside the context of a business process or may replace a task that is currently manually performed by process participants in an enterprise application or a custom business process.

Enterprise mobility to further drive business outcomes

Enterprise mobility enables anytime, anywhere working; giving rise to the always-connected worker. However, mobility has moved beyond BYOD/choose your own device (CYOD) discussions.

AP organizations continue to embrace and implement **enterprise mobility solutions** to maximize the opportunity it presents.
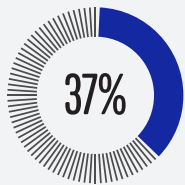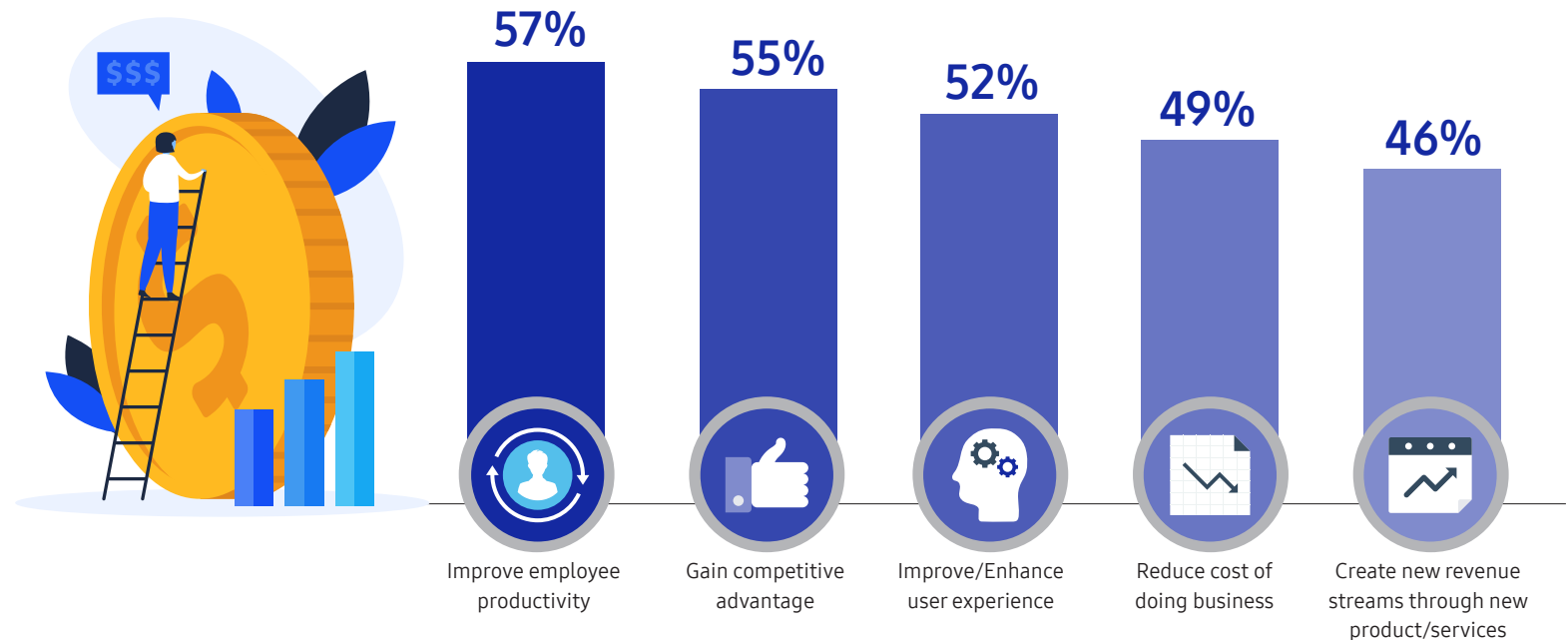
37% of organizations have already implemented enterprise mobility.
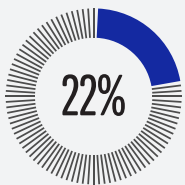
22% of organizations are planning to implement enterprise mobility in the next 12-18 months.

Key outcomes driving mobility investments

57%	55%	52%	49%	46%
Improve employee productivity	Gain competitive advantage	Improve/Enhance user experience	Reduce cost of doing business	Create new revenue streams through new product/services

Leading organizations are focusing on mobilizing business processes and workflows to drive business outcomes as smartphones become more powerful, and faster networks enable truly anytime, anywhere experiences.

Mobile-PC convergence will enable smartphones to take on new roles and workflows in the enterprises

As the mobility focus shifts toward mobilizing workflows and business processes, this will proliferate the adoption of smartphones as the preferred choice for 3-in-1 device.

60% of global enterprises will be testing smartphones as their company's singular IT-supported 3-in-1 device* and 15% will have adopted it already by 2021.
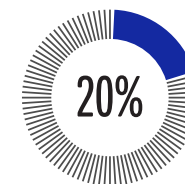
For AP, 4% of enterprises have already deployed smartphones as their company's 3-in-1 solutions. While the percentage of smartphones as singular 3-in-1 device for AP is low, the number of mobile apps and use cases will only increase with ubiquitous connectivity.

36% of organizations are using employee/partner facing mobile apps.

* 3-in-1 device is a device that replaces or takes on more of the tasks that have traditionally been performed on a PC or laptop.

Docked smartphones are gaining attention and are augmenting the mobile-PC convergence.

20% of U.S. enterprises have already deployed smartphones connected to docking stations, and another 22% are planning to implement in the next 12-18 months.

Case example: Chicago Police Department

Chicago Police Department is running a pilot of Samsung's DeX in Vehicle Solution, which enables the officers to dock their Galaxy smartphones to get access to all policing application including computer-aided dispatch (CAD) and other systems to run background checks. Using their smartphones, the participating officers can also immediately attach photo and video evidence to their reports.

Empowering the workforce raises security concerns

A majority of organizations have already instituted a BYOD policy, which now includes new connected devices like AR/VR headsets, wearables, smartwatches, and so on. The adoption of these devices is likely to grow in 2020. The increasing connected endpoints with diverse devices entering the enterprises also raises security threats.

50% of AP organizations

are willing to deploy unified endpoint management (UEM) solutions to manage and secure their diverse devices from a single pane of control.

- Organizations are required to build ubiquitous mobility platform stressing on an all-in-one device approach.

- Deploy UEM to manage diverse device and OS types and protect critical data from a single pane of control.

A three-phase approach for a mobile-first strategy
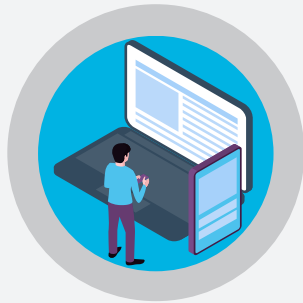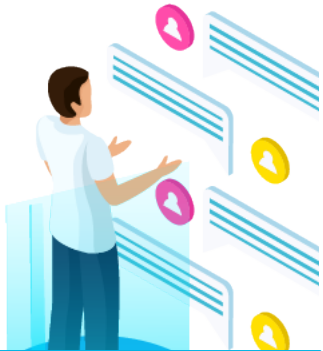
Mobile friendly

A separate device type for desk and mobile work. Complex computing tasks are majorly done on laptops and PCs, while mobile phones are used only for non-complex tasks like checking emails, setting up calendars, and others.

Mobile ready

A mix-environment where smartphones co-exists along with other computing devices like laptops and PCs. However, critical applications are slowly ported on to smartphones using docking system that offers a multidevice experience to users.

Mobile only

Smartphones to replace laptops and desktops to deliver a complete computing solution — one that not only offers performance and applications but also addresses the security concerns of the enterprise.

Essential guidance

FoW should be considered as an opportunity to deliver experiences for both employees and customers alike. In order to provide superior experiences, it is critical to empower your workforce. The following points can help organizations support their vision for the empowered future workforce:

Evaluate carefully the current state of workplace and worker strategies, policies, procedures, and technology infrastructure to develop an FoW roadmap.
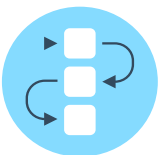
Use the roadmap to clearly define an FoW strategy and ensure that it is not siloed to individual business units, locations, or functions.
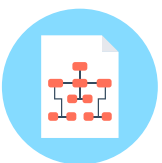
Create an agile architecture, which is easy to scale up and is flexible to accommodate new technology, policies, and talent requirements.

Message from the sponsor:

The three core values that enable our vision to bring mobile-first technology to businesses to help them achieve digital transformation.

Why SAMSUNG

Samsung's suite of innovative and collaborative products can help businesses pave the way for new business models and new ways of working.

As the Next Mobile Economy partner, Samsung's mission is to prepare all businesses for this digital transformation by setting new and ever higher standards in mobile products, solutions and innovations for the businesses of tomorrow.

**Samsung for Business.
Built for the new way business is done.**

samsung.com/business

Open

Extensive B2B ecosystem of partners

- Samsung Knox partner program
- Knox Service Plugin
- Fit-for-purpose
- Enterprise Tech Support
- NFC Payment

Innovative

Innovative mobile solutions

- 5G/WiFi6
- Smartphones and tablets
- Samsung DeX
- Ruggedized devices
- Wearables
- AR/VR
- S Pen

Secure

Advanced security solutions

- Samsung Secure Supply Chain
- Knox Platform for Enterprise
- Knox E-FOTA
- Knox Manage
- Samsung Pass
- Biometric authentication

SAMSUNG