

DRIVING INNOVATION AND AGILITY WITH THE CLOUD

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INTRODUCTION

The COVID-19 crisis has accelerated the use of cloud technologies as enterprises seek to access services remotely. Indeed, cloud computing has become essential for enterprises which have adopted the remote working operating model – rather than an option. The scalability, speed and agility offered by cloud technologies is now critical to the survival of many enterprises.

The remote working scenario is also forcing the migration of essential business workloads into the cloud. Mission critical activities that were previously kept on premises, are increasingly moving to the cloud, and the COVID-19 pandemic is acting as a catalyst for this

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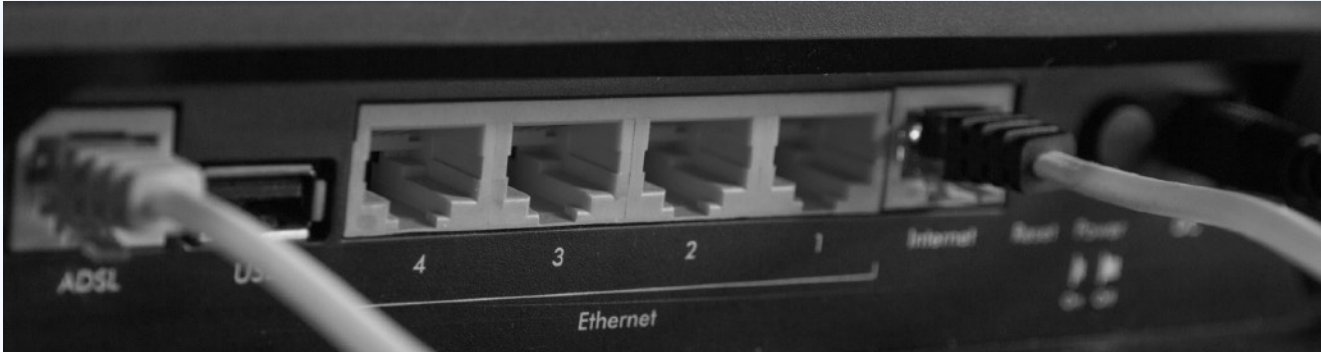
Against this background CIO Academy engaged with its community of technology practitioners through a series of executive roundtables and its [ASEAN Digital Transformation Council \(ADXC\)](#). The topic of driving innovation and agility with the use of exponential technologies was selected because it has been an area of focus for organisations that are seeing to emerge stronger and more resilient from the crisis. Valuable insights culled from CIO Academy's engagements with practitioners were used to develop this white paper.

The white paper focuses on the important role which cloud computing plays in making organisations more agile, innovative, resilient and future-proof. It is comprised of the following sections:

- The challenges faced by technology leaders in light of the COVID-19 crisis
- Migration and modernization: Cloud as the new normal
- Building resilience and workforce agility
- Business transformation with the cloud
- The future intelligent cloud
- Conclusion

CHALLENGES FACED BY TECHNOLOGY LEADERS IN LIGHT OF THE COVID-19 CRISIS

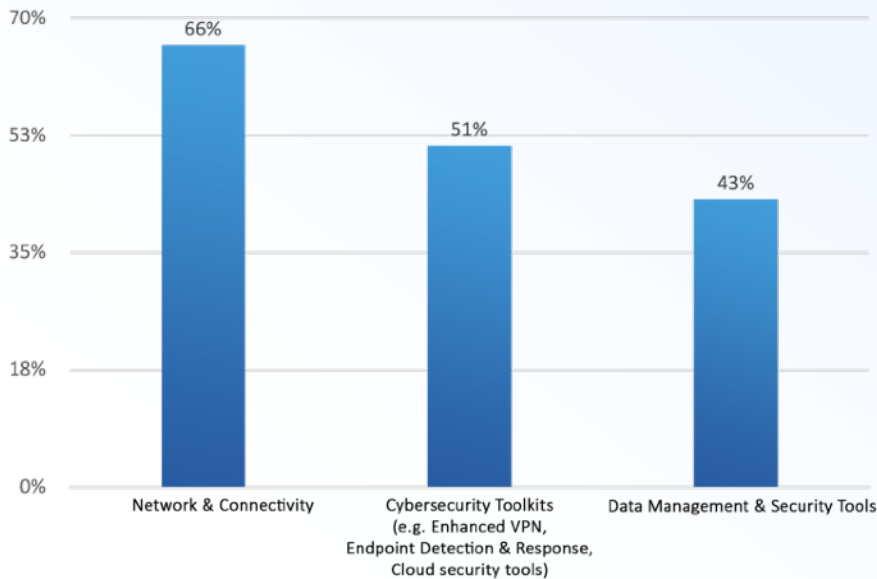
Lockdowns across the globe have created enormous challenges for all organisations. These challenges are particularly severe for industries in which face-to-face contact is a core activity such as hospitality and transportation. Other industries such as financial services and IT, are more fortunate in that much of their activity depends on their employees working with devices that can function equally well in remote locations. Most knowledge-based job roles can be continued from any location that has connectivity. For businesses that can operate key activities remotely, they must equip employees with the right technology tools to remain effective.



The immediate problem faced by enterprises was business continuity, so attention was placed on the role of technology in addressing this challenge. For the business to operate, enterprises faced challenges of restricted customer engagement, inadequate network connectivity for remote workers, scrambled supply chains, employees who were ill-equipped for remote working, inflexible and inefficient processes, and a lack of technology skills among employees as well as IT professionals. The move to remote working also greatly increases enterprise exposure to cybersecurity threats and makes compliance even more difficult.

CIO Academy Asia research shows that network connectivity and cybersecurity are the most critical technology areas for business continuity during the COVID-19 pandemic (see Figure 1).

FIGURE 1: MOST CRITICAL TECHNOLOGY AREAS FOR BUSINESS CONTINUITY PLANS DURING THE COVID-19 CRISIS



Q: What are the top 3 most critical technology areas for your Business Continuity Plan amidst the global COVID-19 situation? (Select top 3)
n=70

MIGRATION AND MODERNISATION: CLOUD AS THE 'NEW NORMAL'

The remote working operating model has seen a huge acceleration of cloud adoption. Enterprises need the automation, scale, agility, and ubiquity of the cloud, to grant access to business apps and data on any device, over any network, hosted on-premises or in a public cloud. They also need to be able to onboard and off-board employees rapidly.

Many enterprises have legacy applications at the core of their businesses. These legacy systems are often highly complex and making changes can risk business operations. Enterprises need a quick path to cloud which minimises risk.

Companies need to scale their cloud investments rapidly and must change their architecture to do this. This typically involves containerizing workloads for both on premises deployment and deployment across multiple clouds.

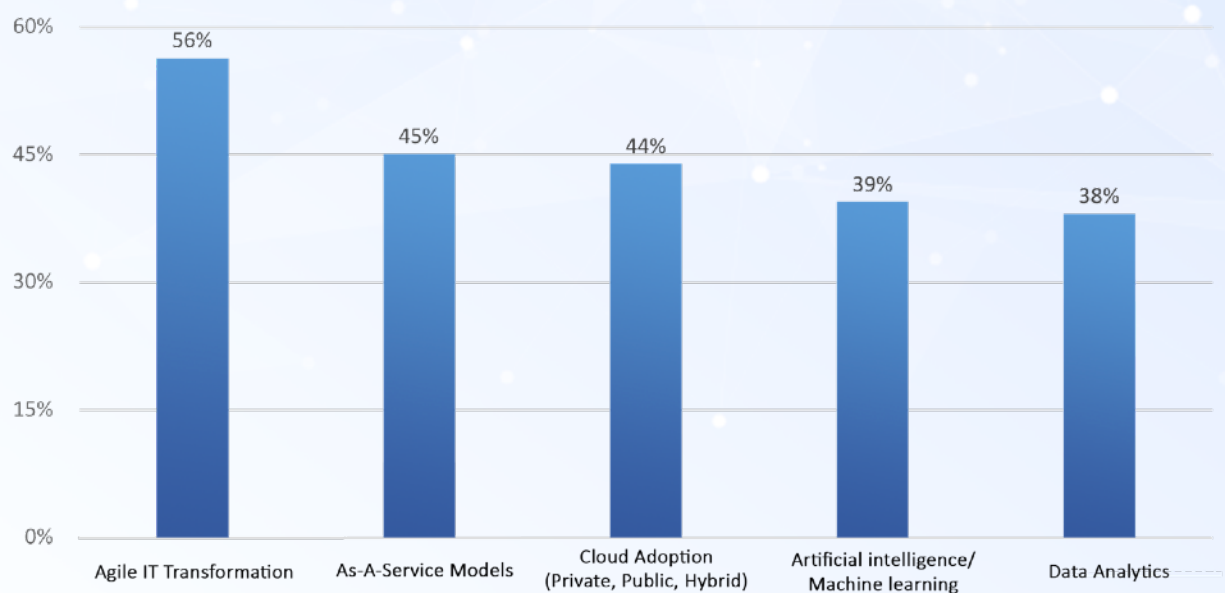
IT infrastructure agility is essential to times of crisis such as today's scenario. A flexible, centralised IT deployment and management solution, can enable enterprises to orchestrate IT plans which best align with immediate business needs and quickly pivot during times of disruption, while remaining resilient to security threats.



Image: Google

Before the COVID-19 crisis, CIO Academy research showed that data analytics and AI were expected to have the biggest impact on businesses. Projects that involve these technologies have been put on hold as businesses struggle to cope with more immediate essential needs. For example, projects involving early-stage business ventures have been delayed as businesses focus on maintaining operations. The COVID-19 pandemic crisis has injected major changes to operating models. Agile IT infrastructure, as-as-service models and cloud adoption have become the technology trends that are expected to have the biggest impact on businesses during, and after the COVID-19 pandemic (see Figure 2). These technologies give businesses the much needed 'agility' factor to remain operational while remote working is the norm.

FIGURE 2: FIVE TOP TECHNOLOGY TRENDS IMPACTING ASIAN BUSINESSES DURING AND AFTER THE COVID-19 PANDEMIC.



Q: What are the top 3 Tech trends which will have the biggest impact on your business during and after the global COVID-19 situation?

N=70



BUILDING RESILIENCE AND WORKFORCE AGILITY

Enterprises which have failed to migrate key workloads to the cloud have found managing the challenges created by COVID-19 much more difficult than companies which have migrated the bulk of their workloads to the cloud. This is reinforced by a recent CIO Academy focus group discussion, during which 40% of IT decision makers across ASEAN, re-have re-prioritised their IT strategies and initiatives to focus on cloud usage. They have found themselves on a 'burning platform' and been forced to migrate to the cloud more rapidly.



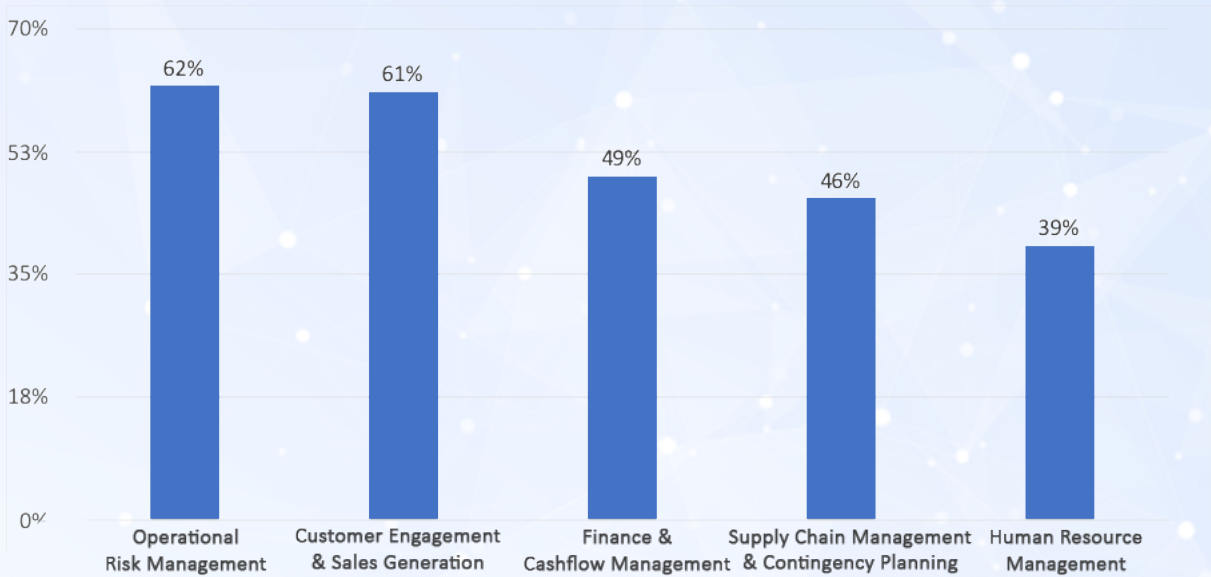
Cloud computing has enabled organisations to quickly adapt to the new reality. Organisations which have the bulk, or all of their workloads in the cloud have been more successful during the crisis. For example, Grab, which was born in the cloud, has found it much easier to continue operating and flourishing during the crisis. It succeeded in transitioning many of its drivers from transporting people to transporting food within days. This was only possible with the use of SaaS and other cloud technologies.

In common with Grab, some businesses, which already had most of their workloads in the cloud, seized opportunities to pivot and embrace new market realities. The challenge for many organisations has been the ability to make the changes fast enough. Only cloud can make this possible.

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CIO Academy research shows that ASEAN enterprises have prioritised operational risk management and customer engagement throughout the pandemic crisis. Figure 3 shows that operational risk management and customer engagement and sales generation are the most critical areas for business reliance plans during the crisis.

FIGURE 3: MOST CRITICAL BUSINESS AREAS FOR BUSINESS RESILIENCY PLANS DURING THE PANDEMIC CRISIS



Q: What are the top 3 most critical business areas for your Business Resiliency Plan amidst the global COVID-19 situation?

N=70

Ensuring operations can continue and managing the risk caused by disruption has been the major focus for organisations. The increased use of cloud resources has made it easier to continue business activities with minimal disruption. Another big challenge is customer engagement especially where face-to-face interaction is typical. Indeed, ASEAN enterprises highlight customer engagement and sales generation as a critical business area for their business resiliency plans. Again, digital engagement using cloud resources is now critical for customer interaction – sales too is becoming increasingly digital.

A lesson from the crisis is that businesses need to be both agile and quick in their response to disruption. The unique characteristic of the current situation is that it is not technology that is broken. The damage is caused by people not being able to go to work or interact with others, face-to-face. As mentioned, cloud computing provides the ability for organisations to remain operational. For some fortunate businesses that can operate without face-to-face interaction, cloud computing enables rapid growth. Online food delivery and other forms of online commerce are the best examples, as the cloud improves IT capacity to take more orders, plan more routes, onboard more delivery staff and provision employees with the resources that they need.

The crisis has accelerated the use of cloud as a platform for business innovation. Cloud technology is being viewed as a tool that enables enterprises to pivot to new business opportunities in times of crisis. It can be used to launch and remove services rapidly, onboard and offboard staff on demand and allow companies to 'shape shift' so as they can enter new markets using existing data and infrastructure.

BUSINESS TRANSFORMATION

WITH THE CLOUD



Cloud is the foundation for this new agile business world. It is necessary for agile application development. Cloud based infrastructure is critical for the flexible, on demand, delivery of resources. Cloud enables organisations to scale infrastructure as needed to support changing business priorities. At the same time, it reduces the risks of wasted IT resources that inhibited innovation or business transformation in the past.

When infrastructure is cloud-based and workloads reside in the cloud, organisations can experiment with new ideas much more cost effectively. For example, a food retailer may seek to offer the insurance services of a third party through its portal. The cost of launching this insurance offering using cloud technology is much lower than before. If the new initiative is unsuccessful, the food retailer has not made significant losses. If the initiative is successful, the food retailer can scale rapidly to meet demand.

Cloud infrastructure makes it much easier and more cost effective to launch new services, enter new markets and transform business models than before. It is noticeable how companies that are built in the cloud such as Gojek and Grab are able to seamlessly enter new markets. Note how both firms have swiftly moved from the taxi business into other markets including financial services and food delivery. Organisations that continue to use monolithic, legacy technology face much greater risk and much higher costs when they enter new markets, launch new services or experiment with new business models.

Migrating workloads to the cloud, not only enables existing businesses to become more agile and to scale as needed – it also allows business to pivot in the face of disruption and to transform their businesses with minimal risk.

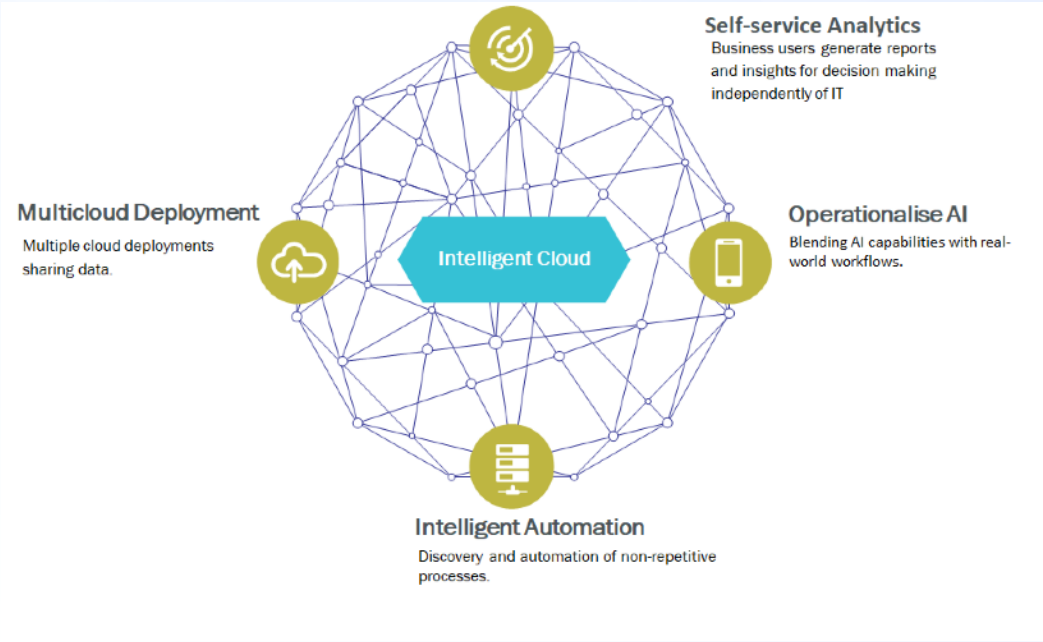
THE FUTURE

INTELLIGENT CLOUD

The intelligent cloud is a term that is used to describe the convergence of AI and cloud technology. Cloud technology allows enterprises to manage much greater volumes of data at greater speed than would be possible with on premises technology. To remain competitive and to innovate, enterprises must generate value out of the data they can access. Successful companies are able to use data not just to manage costs and increase efficiencies but also to enter new markets and transform business models. They are also able to use data to optimise customer experience on any device and in any market in which they operate. Unicorns such as Grab and Gojek in South East Asia have shown the power of intelligent clouds. Traditional companies with legacy technology investments must quickly pivot to leveraging AI in the cloud or risk becoming irrelevant.

Figure 4 illustrates the key characteristics of an intelligent cloud.

FIGURE 4: THE INTELLIGENT CLOUD



The pandemic crisis has exposed the burning platforms of legacy systems. It has not only accelerated the shift to the cloud but also the shift to the AI driven cloud. Other major trends are likely to accelerate demand for the AI-driven cloud services. IoT technology is leading to an explosion of data, much of which requires real-time decision-making. This is driving the increased need for AI to be part of cloud offerings. Greater adoption of 5G technology will further enable a huge increase in the quantity of data generated and the velocity at which it is generated. The manufacturing sector for example, is using IoT to a greater extent, as well as 5G technology. These technologies are important for the development of data driven, software-defined factories. These factories use real time data to make near real-time decisions around when and what to manufacture. 5G endows factory robots greater autonomy to manufacturing than they do today, creating ever more data, from which more value will be generated.

Scalable and flexible Cloud architecture will be crucial to offer support more seamlessly with emerging technologies such as 5G, IoT and AR/VR. Tech leaders will also need to make considerable investments into data-driven capabilities, integrated-by-design into new digital products. Thereby extending the value from their digital initiatives through valuable data collected across the organisation's new and existing workloads.

Conclusion

The pandemic crisis has rapidly accelerated cloud adoption. Cloud computing has enabled organisations to continue operating with resources deployed remotely, while continuing digital engagement with customers.

For some 'born in the cloud' organisations, the crisis is causing relatively little disruption. However, for most organisations that operate with a mix of legacy on-premise technology and cloud technology, and typically rely on face-to-face interaction, the disruption is severe.

The pandemic has ruthlessly exposed the 'burning platform' on which most enterprises continue to operate. It has made agile, and resilient cloud technology an urgent necessity for many. The pandemic has also accelerated digital transformation plans ranging from transforming customer experience to a digital experience to rapid adoption of AI. Enterprises are seeking cloud deployments which are at the core of their transformations. They want deployments which can allow the integration of other emerging technologies such as IoT, 5G and AI, more seamless.

Enterprises want secure multicloud deployments which enable AI, automation, AR/VR and IoT to be blended with real-world workflows. They also want their deployments to be agile and resilient, allowing them to leverage new technologies such as 5G, as they emerge.



This white paper is prepared by CIO Academy Asia

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