Biz4Afrika

Microsoft

# THE CLOUD TOOLKIT

## A Guide for Small and Medium Enterprises

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# 01 THE CLOUD COMPUTING TOOLKIT

This cloud computing toolkit has been developed by Microsoft to provide non-technical entrepreneurs and small businesses the understanding as well as practical know how on adopting cloud technology.

## CONCEPT OF CLOUD COMPUTING

Although cloud computing is not a physical object, it is made up of a series of tangible elements. It is a massive network of remote servers around the world which are linked together and work as a single ecosystem.

These remote servers store and manage data, run applications, deliver content or a service such as streaming videos, web mail, or social media. Cloud computing means that you are not accessing files and data from your local or personal computer, but that you are accessing them online from any internet enabled device.

Information that is stored in the cloud is available anywhere you go and anytime you need it, giving entrepreneurs access to data wherever they have an internet connection. It is important that in today's fast-moving business climate, small business owners get what they need right when they need it, whether they're on their computers, tablets or mobile phones – or in the office, out in the field or on the road. This is exactly the convenience that cloud computing provides entrepreneurs. You don't have to be at your desk to access your work.

Cloud computing is an evolving concept which continues to optimise IT performance of small and medium enterprises because of the low cost on infrastructure. It is an on-demand computing service which provides pay per use opportunities to small and medium enterprises.

**Where have you possibly used cloud computing services before?**

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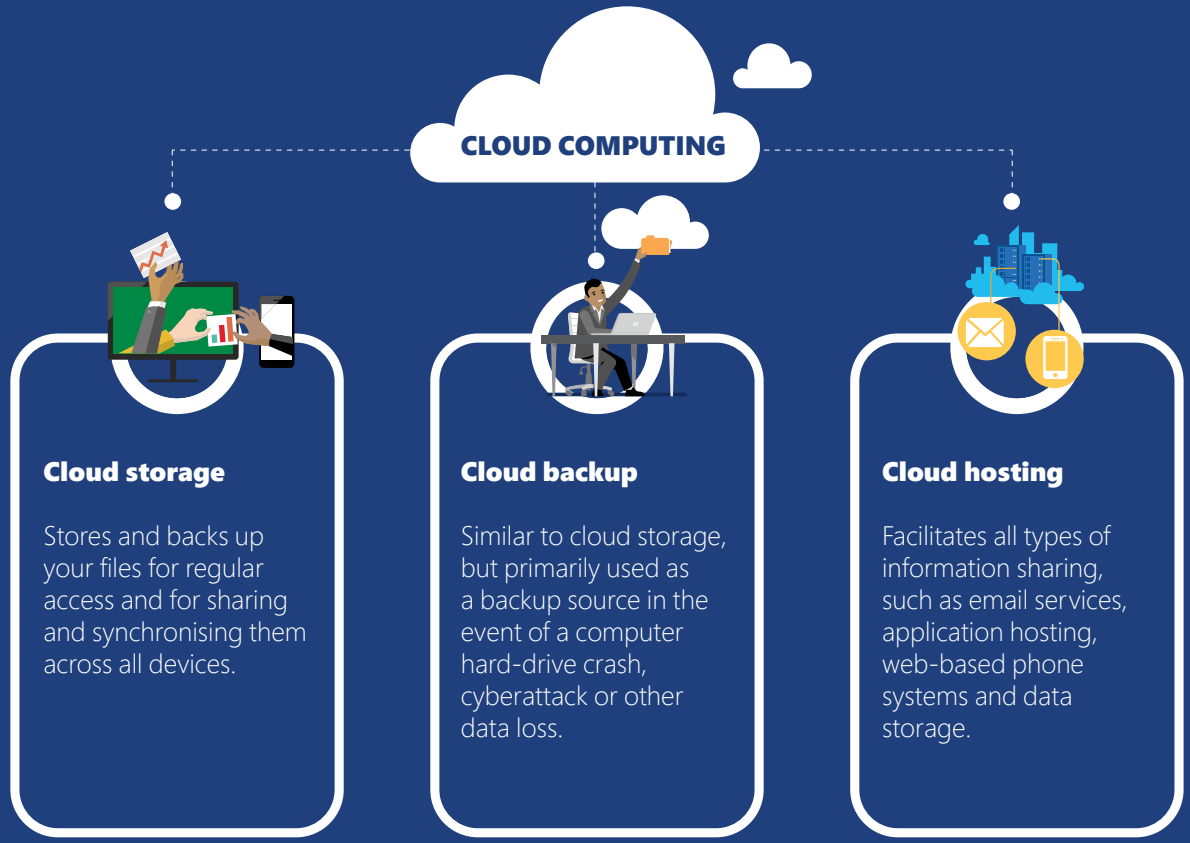
**Think about it.....**

Whenever you travel using a bus, you get a ticket for your specific destination and sit in your seat until you reach your destination. Likewise, other passengers also get tickets and travel in the same bus with you, and you don't worry about where they are going. When your stop comes, you get off the bus and thank the driver. Cloud computing is just like that bus, carrying data and information for different users, and allows users to use the service at minimal cost.

Cloud computing is a phrase used to cover a wide range of services, including:




**Cloud storage**

Stores and backs up your files for regular access and for sharing and synchronising them across all devices.

**Cloud backup**

Similar to cloud storage, but primarily used as a backup source in the event of a computer hard-drive crash, cyberattack or other data loss.

**Cloud hosting**

Facilitates all types of information sharing, such as email services, application hosting, web-based phone systems and data storage.

## CHARACTERISTICS OF CLOUD COMPUTING

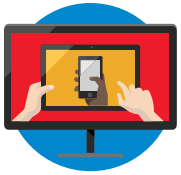
It is important for entrepreneurs to understand the basic characteristics of cloud computing so that they can use its services properly. Basically, cloud computing enables entrepreneurs to increase their capacity by offering remote management and control of information. The following are some important characteristics of cloud computing:


### Low Costs

Small businesses will save in rack space, power usage and IT requirements, such as hardware and software installations, maintenance, upgrades and support. For small businesses, especially, those savings are invaluable.

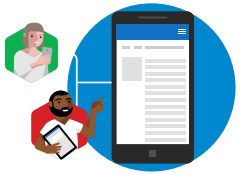
### Greater Collaboration

Ability to save files using collaboration tools enables better teamwork for example the editing of documents.



### Increased Flexibility

Ability to access work-related files and information from any device, anywhere and at any time.



### Greater Integration

Small businesses can take advantage of specialised services that fit in with back-office operations, from human resources to marketing or accounting.

It is important for entrepreneurs to have a full understanding of how to implement and use cloud computing services. It enables entrepreneurs to understand the services available in the cloud computing market and how to use these services to achieve organisational goals.

**Check out Microsoft's tips on how to choose a Cloud Service Provider**

**Think about it.....**

Based on the characteristics of cloud computing, how could implementing these services be beneficial to your business?

# 02

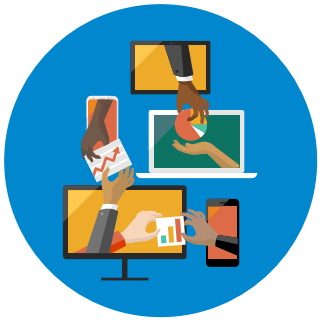
# CLOUD COMPUTING STRUCTURES FOR SMALL AND MEDIUM ENTERPRISES

Three basic categories of cloud computing services are available for small and medium enterprises. Entrepreneurs should determine which of the basic cloud computing services would best fit their IT requirement. These services can meet every IT requirement of small and medium enterprises with constant support from the telecommunication and IT industries.

## TYPES OF CLOUD SERVICES AVAILABLE

The three major cloud computing offerings are:

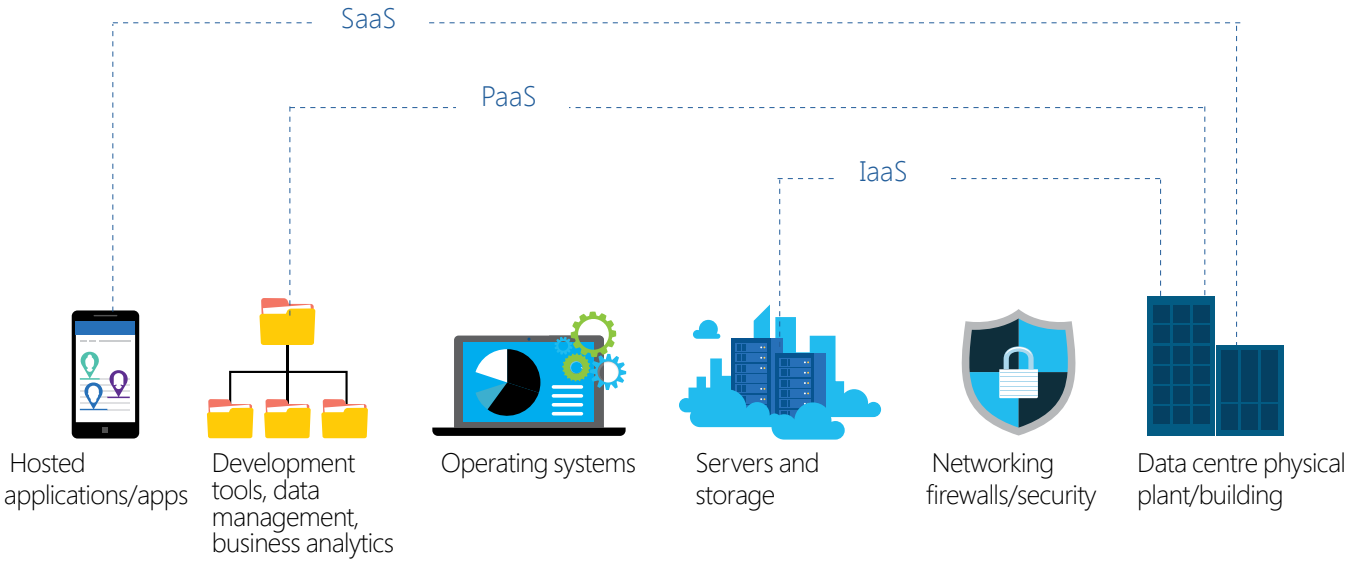
**Software as a Service (SaaS)**



**Platform as a Service (PaaS)**

**Infrastructure as a Service (IaaS)**

Different businesses use some or all these components according to their different requirements.

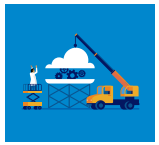


## Software as a Service (SaaS)

Software as a service (SaaS) provides small and medium enterprises with the option to purchase a complete software solution on a pay-as-you-go basis from a cloud service provider. Entrepreneurs rent the use of an app for their organisation, and their users connect to it over the Internet, usually with a web browser. All the underlying infrastructure, middleware, app software, and app data are in the service provider's data centre.

The service provider manages the hardware and software, and with the appropriate service agreement, will ensure the availability and the security of the app and data. SaaS allows the business to be operational quicker with an app at minimal upfront cost.

### Typical functions for businesses using SaaS include:



#### Web-base email service

These are free services for personal use. With these services, entrepreneurs log into their account over the Internet. The email software is located on the service provider's network, and messages are stored there as well. Entrepreneurs can access email and stored messages from a web browser on any computer or Internet-connected device.

#### At a glance

Examples are email, calendaring, and office tools (such as Microsoft Office 365).

What SaaS services are you currently making use of?

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**Subscribe**

**Think about it.....**

Traditionally, software applications needed to first be purchased and then installed onto your computer. SaaS users can now, instead of purchasing the software, subscribe to it, usually on a monthly basis, via the internet. They have access to it immediately.

**Find out about Microsoft SaaS products here**

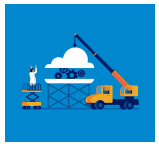
## Platform as a Service (PaaS)

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications.

Like IaaS, PaaS includes infrastructure servers, storage, and networking — but also middleware, development tools, business intelligence (BI) services, database management systems, and more.

PaaS allows entrepreneurs to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware or the development tools and other resources. You manage the applications and services you develop, and the cloud service provider typically manages everything else.

### Typical functions for businesses using PaaS include:



#### Development framework

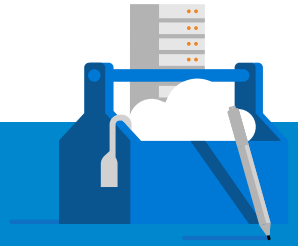
PaaS provides a framework that developers can use to customise cloud-based applications. Cloud features such as scalability, high-accessibility, and multi-user capability are included, reducing the amount of coding required.

#### Analytics or business intelligence

Businesses can use PaaS to analyse and research their own data. This allows them to find insights and predict outcomes to improve forecasting, product design decisions and investment returns.

#### Additional services

PaaS offers other application enhancements such as workflow, directory, security, and scheduling.



**Think about it.....**

To understand PaaS in a simple term, let us compare it with painting a picture, where you are provided with paint colours, different types of paint brushes and paper by your school teacher. All you must do is just draw a beautiful picture using those tools.

**In a nutshell**

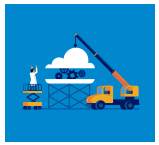
PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

## Infrastructure as a Service (IaaS)

Infrastructure as a Service (IaaS) is the least disrupting cloud computing service adopted by small and medium enterprises. IaaS is an instant computing infrastructure, supplied and managed over the Internet.

IaaS eliminates the need to invest in and manage your own physical servers and other data centre infrastructure. Each resource is offered as a separate service component, and it is only necessary to rent what you want and for the period that you need it. The infrastructure is managed by the cloud computing service provider, while you purchase, install, configure, and manage your own software operating systems, middleware, and applications

### Typical functions for businesses using IaaS include:



#### Test and Development

Teams can quickly set up and dismantle test and development environments, bringing new applications to the market faster. IaaS makes it quick and economical to scale to environments.

#### Website hosting

Operating websites using IaaS can be less expensive than traditional web hosting.

#### Storage, backup, and recovery

IaaS can assist entrepreneurs in handling unpredictable demand and steadily growing storage needs, while also eliminating the need for capital expenditure for storage and storage management.

#### Web applications

IaaS provides infrastructure to support web apps, including storage, web and application servers, and networking resources. Web apps can be easily scaled up and down when demand for the apps is unpredictable.

**Think about it.....**

IaaS provides access to computing resources in a virtual environment, "the cloud" on the internet. It provides computing infrastructure like virtual server space, network connections, bandwidth, load balancers and IP addresses. The pool of hardware resource is taken from multiple servers and networks, distributed across many data centres. This provides redundancy and reliability to IaaS users. Think of the cost savings you can have in your small business.

**Watch this video to find out more**

## TYPES OF CLOUD COMPUTING DEPLOYMENTS AVAILABLE

### Public Cloud

Public clouds are the most common deployment of cloud computing. A third-party cloud service provider owns and operates the cloud resources (servers and storage). All hardware, software, and other supporting infrastructure is owned and managed by the cloud provider. Microsoft Azure is an example of a public cloud.

Cloud "tenants" share the same hardware, storage, and network devices with other cloud "tenants." Entrepreneurs access services and manage accounts using a web browser. Public cloud deployments are frequently used to provide web-based email, online office applications, storage, and testing and development environments.

**At a glance**

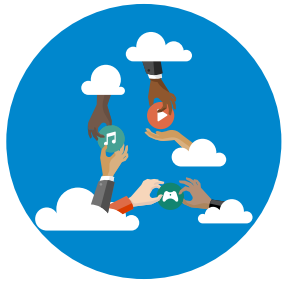
Google Cloud Engine
Salesforce.com
Amazon AWS
Microsoft Office 365

### Advantages of Public Clouds

**Lower Costs**
No need to purchase hardware or software, and you pay only for the service you use.

**No Maintenance**
Your service provider provides the maintenance.

**Near-unlimited Scalability**
On-demand resources are available to meet your business needs.



**High Reliability**
A vast network of servers ensures against failure.

Public cloud is usually used for B2C (Business to Consumer) type interactions. Here the computing resource is owned, governed and operated by a third party.

## Private Cloud

Private clouds are often used by government agencies, financial institutions, any other mid-to-large sized organisations with business-critical operations seeking enhanced control over their environment.

As the name suggests, the private cloud is used exclusively by one business. The private cloud can be physically located in the organisation's on-site datacentre, or it could be hosted by a third-party service provider. The hardware and software are dedicated solely to the organisation.

**At a glance**

Private cloud offers agility, scalability and efficiency of the public cloud, but provides higher levels of security and control. This makes it ideal for larger companies or those with strict data regulations.

### Advantages of a Private Cloud

#### Flexibility

The cloud environment can be customised to meet specific business needs.

#### Enhanced Security

Resources are not shared with others, so higher levels of control and security are possible.

#### High Scalability

Private clouds afford the scalability and efficiency of a public cloud.

## Hybrid Clouds

Hybrid clouds are a combination of private clouds and public clouds, so organisations can reap the advantages of both. Data and applications can move between private and public clouds for greater flexibility and more deployment options.

For instance, the public cloud could be used for high-volume, lower-security needs such as web-based email, while the private cloud could be used for sensitive company operations like financial reporting.

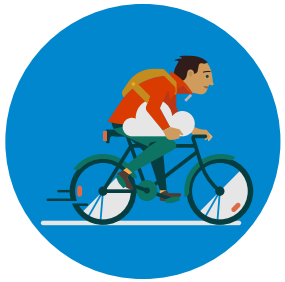
**At a glance**

Organisations can have their HR and CRM data in a public cloud like Azure but have confidential data in their private cloud.

### Advantages of Hybrid Clouds

#### Control

The organisation can maintain a private infrastructure for sensitive assets.



#### Flexibility

The public cloud can be used when demand requires it.

#### Cost-effectiveness

With the ability to scale to the public cloud and pay for extra computing power only when needed.

**CONSIDER PUBLIC CLOUD SOLUTIONS IF:**

- Growth is dynamic and computing demand will fluctuate over time
- Keeping costs low by taking advantage of economies of scale is appealing

**CONSIDER PRIVATE CLOUD SOLUTIONS IF:**

- Growth is predictable and computing demand is stable over time
- Accepting higher, but predictable costs to ensure dedicated resources is strongly desired

**If you need more help deciding, check out the Microsoft Cloud Adoption Guide**

Which solution do you think is right for you?

# 03

# USE OF CLOUD COMPUTING IN SMALL AND MEDIUM ENTERPRISES

## WHY IS CLOUD COMPUTING IMPORTANT IN A SMALL BUSINESS?

Cloud computing is convenient and keeps people productive. Apps and data can be accessed at any time from any internet-connected device. It is also cost effective as the organisation only pays for the services they use. You're probably already using cloud computing at work, just like your personal email, and your business email may also be cloud-based.

Other uses of the cloud include collaboration and communication, productivity, file backup, data analysis, tools for developing software, and more. Cloud computing can also enhance business processes as data can be replicated at multiple redundant sites on the cloud provider's network.

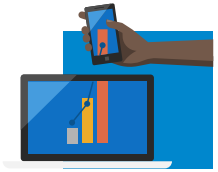
Below are some examples of how businesses use cloud computing:

## Communication

Communication and collaboration tools like email, calendaring, messaging and voice and video calling apps like Skype all take advantage of the cloud. The messages and information are located on the service provider's network rather than on personal devices.

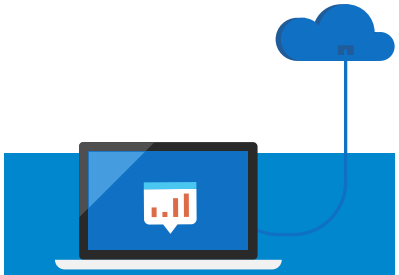
## Productivity

Office tools (like Microsoft Office 365) can be cloud-based, which allows you to connect to your most-used apps over the Internet. You can work in your document, presentation, or spreadsheet software from virtually anywhere. With your information securely stored in the cloud, you don't have to worry about losing your data if your device fails.



## Business processes

Many sophisticated business applications such as customer relationship management, enterprise resource planning, and document management can be rented from a cloud service provider. This ensures the availability and security of the organisation's business-critical resources.



**Think about it.....**

Based on the examples on this page and the next, do you think your business should employ cloud computing?
Which of the six areas above do you think cloud computing would benefit you the most?

**After listing your areas, get started using Cloud Computing today using Microsoft Azure.**

## File storage

Many cloud services automatically synchronise your files from your desktop. Your stored files can be retrieved from another computer or device. Organisations pay only for the storage used, and don't have to maintain the infrastructure—the cloud service provider does this.

## Backup and recovery

When utilising cloud services for backup and recovery, the organisation avoids capital outlay for infrastructure and management. The cloud services provider is responsible for managing data and meeting legal and compliance requirements.

## Big data analytics

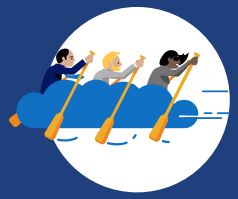
Cloud computing enables data to be analysed for trends and insights, and to make other business decisions. Cloud services can provide your organisation with sophisticated tools for data mining, as well as the ability to quickly scale your environment as your data grows.

## CLOUD COMPUTING ADVANTAGES

Cloud computing is highly beneficial for mid-sized and large companies, but now smaller firms are also adopting and using its benefits to grow their businesses.

### Cost

Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacentres such as the racks of servers, the round-the-clock electricity for power and cooling, and the IT experts for managing the infrastructure. Costs can add up fast.



### Speed

Most cloud computing services are provided as self service and on demand services, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

### Global Scale

The benefits of cloud computing services include the ability to scale elastically, in other words, the ability to grow or shrink your deployment on demand. This refers to delivering the right amount of IT resources, for example, more or less computing power, storage, bandwidth, exactly when its needed.

### Productivity

On-site datacentres typically require a lot of "racking and stacking" including the hardware set up, software patching, and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

**Performance**

The biggest cloud computing services run on a worldwide network of secure datacentres, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacentre, including reduced network latency for applications and greater economies of scale.

**Reliability**

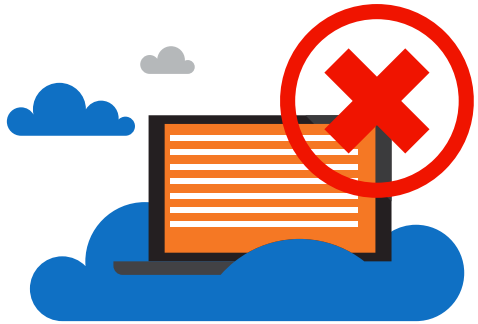
Cloud computing makes data backup, disaster recovery, and business continuity easier and less expensive, because data can be mirrored at multiple redundant sites on the cloud provider's network.

**Maintenance**

Cloud computing is easy to manage as it is not required to be physically installed on your computer and can be reached from any location with an internet connection. A feature of cloud computing is that it allows service providers to maintain, host, develop, and test applications in the cloud. In this way, developers can modify and launch different programs as compared to setting up systems and infrastructure themselves.

**Continuously Evolving**

Cloud computing, storage, networking, and interface requirements of the customers are continuously evolving, meaning that you will always have access to the latest software versions.



## CLOUD COMPUTING DISADVANTAGES

Cloud computing is highly beneficial for mid-size and large companies, but now smaller firms are also adopting and using its benefits to grow their businesses.

### Lack of Control

Cloud computing is fully owned, managed and monitored by service providers and thus end users have minimum control over it. End users only have control over services, data, and applications that they pay for. Further, customers do not have access to servers to perform administrative tasks such as upgrading of firmware and managing updates.

### Network Dependency

Cloud computing is a completely internet dependent service. In the event of unstable, unreliable or total outage of the internet, service delivery by the company could be compromised. Service interruption can occur during transactions, file transmission, or other tasks and as a result tasks can be delayed.

### Risk

Every cloud computing component is highly accessible from internet servers. While every effort is made to secure data, cyber-attacks and hard security breaches may possibly occur.

### Migration Issue

Migration to cloud computing is not without its challenges with the selection of suitable cloud vendors, effective management of cloud resources, and transitions of IT hardware and investments being the foremost.

**Think about it.....**

Now you know the advantages and disadvantages of using cloud computing.
Make a list of elements which could affect your business.

# 04 CLOUD COMPUTING ADOPTION COSTS

## TOTAL COST OF OWNERSHIP

The total cost of ownership is a financial estimate to guide entrepreneurs to identify some of the direct and indirect costs involved in adopting cloud computing in the business. Below are a few cost elements to consider in cloud adoption:

### Investment costs

Cloud computing infrastructure costs include charges related to software licenses, hosting, support and other service components. Sharing these costs with other organisations using public cloud is what makes IaaS a cost-effective option.

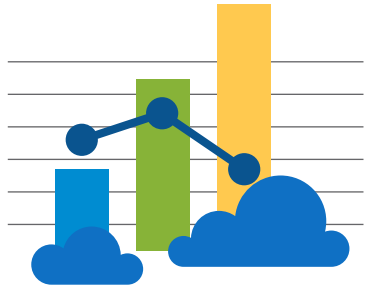
### Migration

When utilising cloud services for backup and recovery, the organisation avoids capital outlay for infrastructure and management. The cloud services provider is responsible for managing data and meeting legal and compliance requirements.

### Monthly/yearly cloud fee

Cloud computing enables data to be analysed for trends and insights, and to make other business decisions. Cloud services can provide your organisation with sophisticated tools for data mining, as well as the ability to quickly scale your environment as your data grows.

## INCREASED RETURN ON INVESTMENT (ROI)

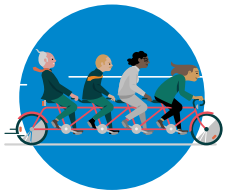


ROI is the proportionate increase in the value of an investment over time. It can be measured in a variety of ways. There are four basic ways to improve ROI, they are: to decrease the investment, increase revenue, decrease costs, and make the return faster.

There are several fundamental drivers that impact ROI in cloud computing, namely; productivity, speed, size, and quality.

### Productivity

Cloud computing contributes to ROI through improved speed of operation.



### Time to Deployment

Cloud computing provides an increase in speed, which enables small and medium enterprises to access the resources they need faster.

### Size

The combination of low costs and fast delivery makes products and services more competitive, generating more business and larger scale of operation.

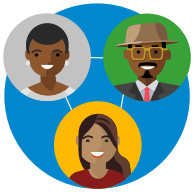
### Quality

Productiveness resulting from better asset use and faster operation deliver lower costs. This results in improved margins and more profit.

## OTHER COSTS TO CONSIDER

### Bandwidth

This refers to the data transfer capacity of a network. Internet providers typically denote bandwidth speeds in millions of bits per second, or megabits (Mbps), and billions of bits per second, or gigabits (Gbps). The rate paid for bandwidth varies across countries in Africa.



### Training of staff

To calculate staffing changes when adopting cloud computing, entrepreneurs must first identify staffing requirements. Develop tools that measure existing service management capabilities, including staff, processes, tools, and values, when evaluating cloud adoption. Entrepreneurs will likely need to adjust IT talent within the business.

### Updates in technology

This will not cost the business as the cloud service provider has the responsibility of upgrading the technology. For them to maintain their business and provide the best service, the service provider will continually update services.

### Support services

A business may not have all the skills and resources necessary to execute a cloud computing strategy. An outsider's perspective can be helpful in several areas including mapping a strategic approach, developing a cloud architecture, or executing the migration process. A consultant's knowledge and experience could be very valuable.


**Think about it.....**

Make a list of the costs and prices that you expect to incur when you adopt cloud computing.

**Use the Microsoft pricing calculator to estimate your cloud costs**

# 05 CLOUD COMPUTING: CONSIDERING POLICIES AND GOVERNANCE

## GENERAL DATA PROTECTION REGULATION

The General Data Protection Regulation (GDPR) was implemented in May 2018 by the European Union (EU). This act governs consumers' private information and it could have a big effect on how businesses handle privacy. This level of regulatory overview of personal data is unprecedented and will require companies to ensure the highest levels of privacy protection or suffer dire financial consequences.

This data protection legislation has been adopted in seventeen counties in Africa. Additionally, the African Union (AU) has adopted the AU Convention on Cybersecurity and Data Protection, which is pending approval by fifteen of the fifty-four AU members.

The data protection legislation adopted by African countries share many principles with the GDPR. There are however a few areas in which they differ. Some authorities might require businesses to register with a data protection authority while others may not. Some countries may be very prescriptive on cross-border data transfers , while others may have little or no requirements. It is very important to understand the requirements that are set out in each country to ensure that the business complies and operates within these regulations.

Entrepreneurs need to make sure that they have a high data protection standard in place when adopting cloud computing services. If a higher standard is used, in conjunction with a country's legislative requirements, compliance efforts will be streamlined.

## Think about it.....

Make sure you comply with the GDPR by following the steps below:

| STEP | ABOUT | CHECK |
|---|---|---|
| Get Informed | Know all you need to know about GDPR. | |
| Audit data collection practices | Consumers need to be informed regarding data collection practices. Let them know why you collect data, and what the data will be used for. | |
| Review how you get consent | A core pillar of GDPR is getting consent from consumers to receive emails or even simple communications. Make sure you include this in your communications with your customer. | |
| Refresh your privacy policy | Update your privacy notices to provide the additional information required by the GDPR. | |
| GDPR is a reality | Businesses need to train employees in best practice when it comes to handling data in accordance with the GDPR. This will also apply to third parties who are employed to process data on a business's behalf. | |

**Complete the GDPR Compliance Checklist**

**Take the detailed Microsoft GDPR assessment here**

## POLICIES

The Information and Communications Technologies (ICT) environment is dynamic and rapid technological development is changing how we communicate and access information and services. Cloud computing has a huge impact on the rate of change and is one of the main reasons why this environment keeps changing. It is important that your business operates within the policies and regulations set out by each country.

Familiarise yourself with the ICT Policies in your country and make sure you comply with all the regulations in place. If you are operating across Africa, you will need to familiarise yourself with the policies and regulations of those countries as well.

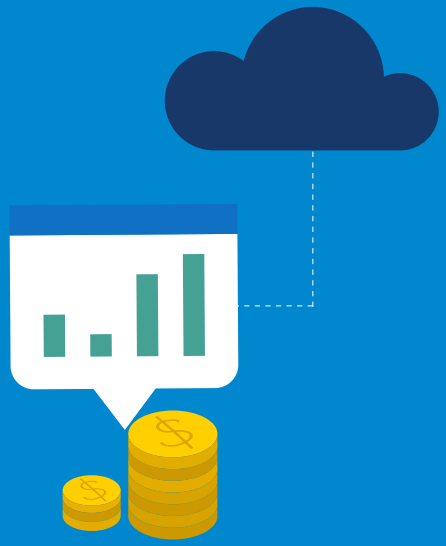
| COUNTRY | ICT POLICY | RELEVANCY TO YOUR BUSINESS |
|---|---|---|
| South Africa | ICT White Paper | |
| Kenya | National ICT Policy | |
| Ghana | Ghana ICT Policy | |
| Nigeria | National ICT Policy | |
| Egypt | ICT Strategy | |

**Think about it.....**

In which countries do you operate?

Make a list of the policies and regulations you will need to familiarise yourself with.

# 06 CLOUD COMPUTING IN BUISNESS: PRACTICAL CASES

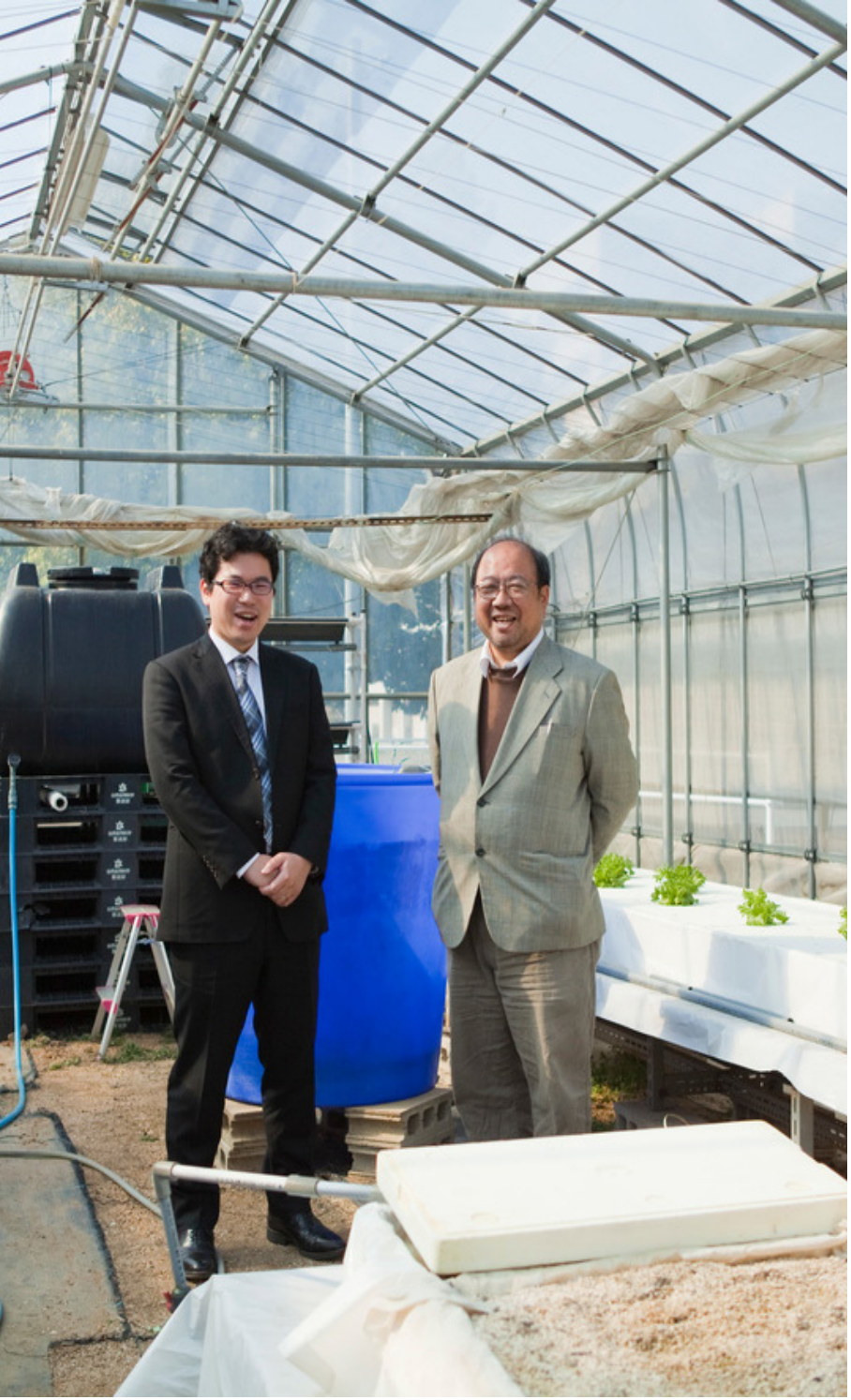


## FARMING AND AGRICULTURE

Farmers and others in the agricultural sector spend most of their time trying to control the uncontrollable. The seasons, climate patterns, and precipitation levels are in constant change, and the effects of climate change are being felt globally.  But farmers could take more control of the uncontrollables with the help of technology.

Cloud computing could be used to gather data from tools like soil sensors, satellite images, and weather stations to assist farmers in making informed decisions about crop management. The cloud's analytic capabilities could also assist farmers to comprehend their production environment.

This wealth of information can be uploaded to the cloud, which has enough storage, speed, and processing power to analyse the collected data and package it in a form that would be useful to the agricultural sector. Timely processing of data would allow producers to act within the growing season and address issues before they become harmful in harvesting seasons.



## SMART AGRICULTURE SOLUTIONS– CASE STUDY

Japanese university uses cloud software to develop smart agriculture solutions

"Osaka Prefecture University is helping lead the development of smart agriculture technologies, including plant factories where crops can be grown indoors under carefully controlled conditions. The university is using Midori Cloud, developed by Seraku and built on the Microsoft Azure cloud platform, to help manage these environments. With access to detailed climate, soil, vegetable image, and facilities data provided by Midori Cloud, farmers can produce more and better crops and help rejuvenate the Japanese agriculture industry.

Smart agriculture aims to improve production efficiency by establishing an environment that can be managed in an integrated fashion by more easily monitoring conditions inside a greenhouse, such as changes in temperature and humidity. In March 2015, the Plant Factory Research Center adopted the Midori Cloud remote monitoring system for greenhouse environments to facilitate such advanced management.

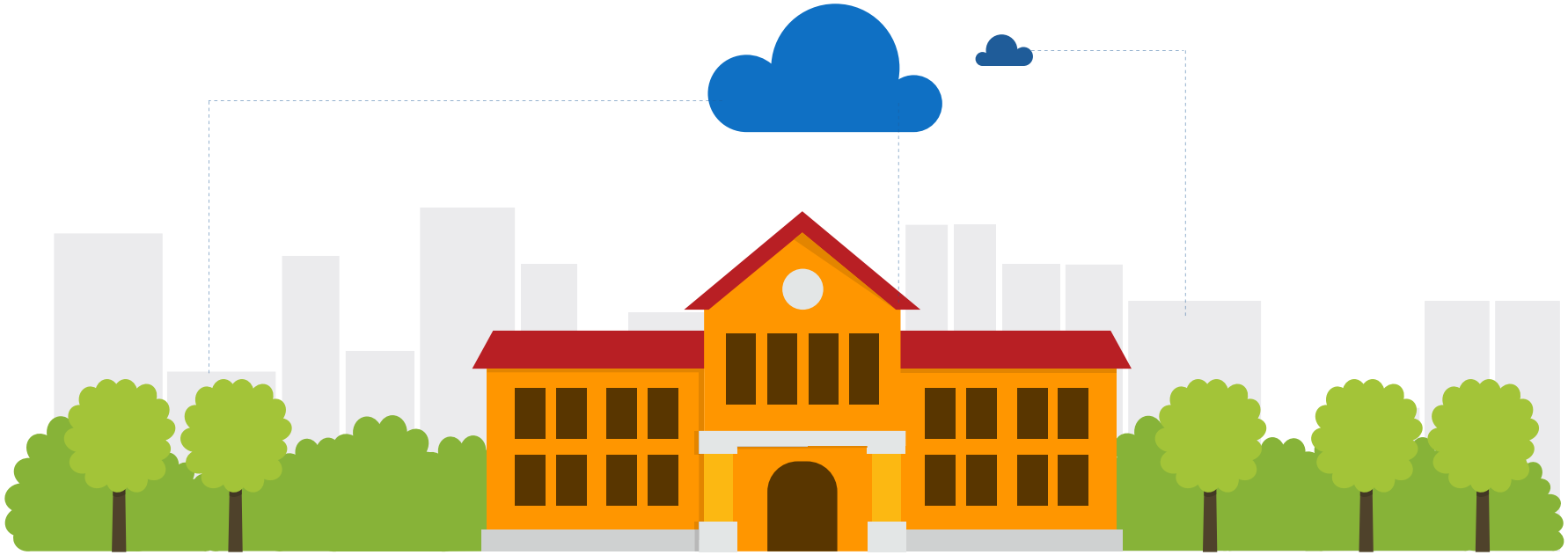
"Among the farmers who are actually using Midori Cloud, there are some cases in which the webcam has been used to help monitor parts of the facility, such as the windows in a greenhouse," says Mochida. "There would be major damage if some problem occurred with the automatically opening and closing windows and they became stuck while open. In addition, there was an actual case in which a customer had their heating stop when the greenhouse circuit breaker suddenly shut off one night. But thanks to an alert from a terminal connected to a sensor, the customer rushed to the site and was able to avoid a loss of close to 30 million yen."

**Read the full case study here**

## EDUCATION AND TRAINING

Cloud computing ensures that learning institutions concentrate more on research and learning, and less on implementing complex IT infrastructure. The cloud computing applications relating to education will soon strengthen the foundations of educational IT infrastructure.

To ease the pressure and meet the high demand associated with the information explosion, high data processing speed is essential and is made possible by integrating resources through cloud computing. This will ensure development in education by employing the rapid changes in IT.




## PHILIPPINES UNIVERSITY – CASE STUDY

Lyceum of the Philippines University powers education with Microsoft

"LYCEUM of the Philippines University (LPU) has partnered with Microsoft Philippines to upgrade its educational system for more than 1,000 faculty members and staff throughout its five LPU campuses.

New solutions rolled out by Microsoft for LPU include Office 365, which combined the Microsoft Office desktop suite that faculty, staff and students have long been used to, with cloud-based versions of today's latest collaboration and communication tools. Office 365's cloud platform has also been able to provide users with more secure email and Office services, specifically real-time communications using Microsoft Exchange Online and Office Online that allows users to accomplish more tasks, whether independently or with a group.

LPU has also been benefitting from Microsoft Azure for DreamSpark, a program that supports technical education by providing access to Microsoft software for learning, teaching and research purposes. The program equips students with professional-level developer and designer tools, and helps educators teach the latest technologies and experiment in research. Since Microsoft Azure is available in an open, flexible, enterprise-grade cloud computing platform, LPU staff and students can get a head start with the services they need to develop in the cloud.

Through their new partnership with Microsoft, LPU gained access to solutions that provide efficiencies to manage administrative and operational functions with an Active Directory, that is available in both desktop and Wi-Fi accounts of LPU employees and students. An Access Control Server provided for in-house redirection and E-books server for student access and downloads. And lastly, the payroll system was upgraded with HR biometrics monitoring."

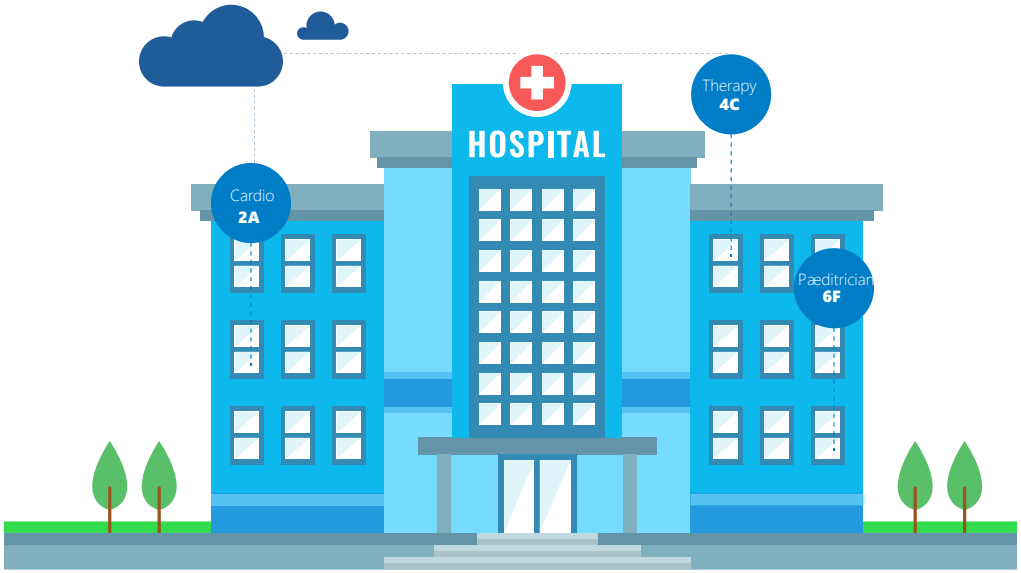
**Read the full case study here**

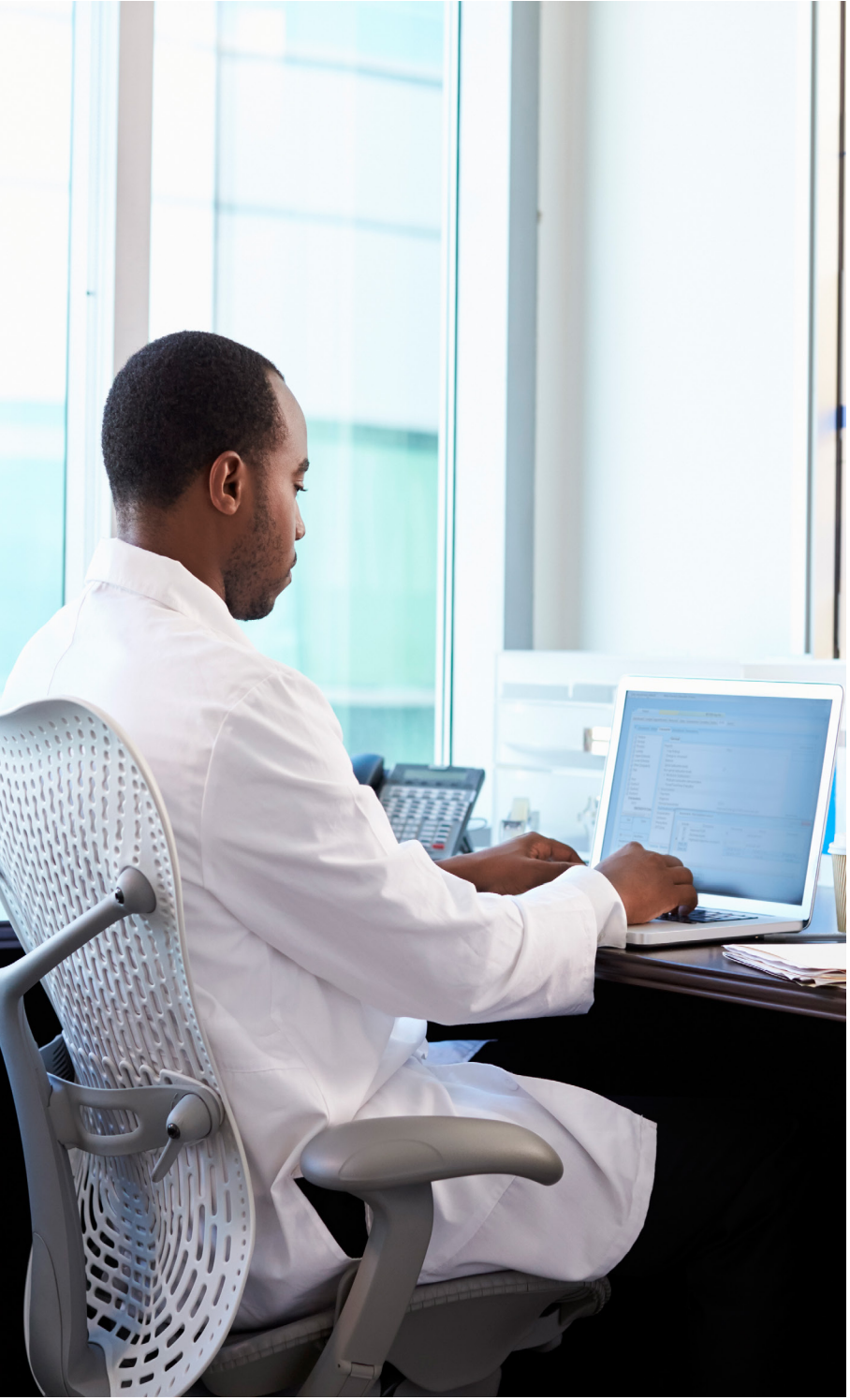
## HEALTHCARE

The principal driver for the adoption of cloud computing in the healthcare industry is the continual change in both supply and demand, driven by a fast-growing youth population with an increased awareness of the concept of wellness. It is anticipated that this will influence the role of IT in the industry, and, by association, the role of cloud computing.

Some of the most advanced analytic services cloud computing gives to healthcare providers is to access an enormous amount of medical knowledge. The potential for such an advanced analytical service has not been realised to date owing to the cost and complexity of analytics solutions that cloud computing can provide.

The abilities offered by health cloud computing services can be expected to facilitate personal health maintenance, improve diagnoses, obtain better case outcomes, optimise healthcare delivery operations and facilitate the transformation from volume- to value-based care.





## HOSPITAL CIMA – CASE STUDY

Hospital Institution Obtains High Availability and Cost Savings After Migrating to the Cloud

"Hospital CIMA San José, located in San José de Costa Rica, has been rated as one of the best private hospitals in the region. With the goals of optimizing its operations, empowering its employees, and offering a better service to the community via up-to-date technology, the hospital migrated its infrastructure to the Azure cloud. It was looking to acquire a platform that would allow it to scale the business in a fast, effective, secure and reliable way, while obtaining benefits such as high availability and significant savings. As part of this strategy, the company also implemented Office 365 to increase the productivity of its approximately 500 employees.

The cost savings offered by the Azure solution were one of the driving factors in CIMA's decision to completely migrate its systems to the cloud.

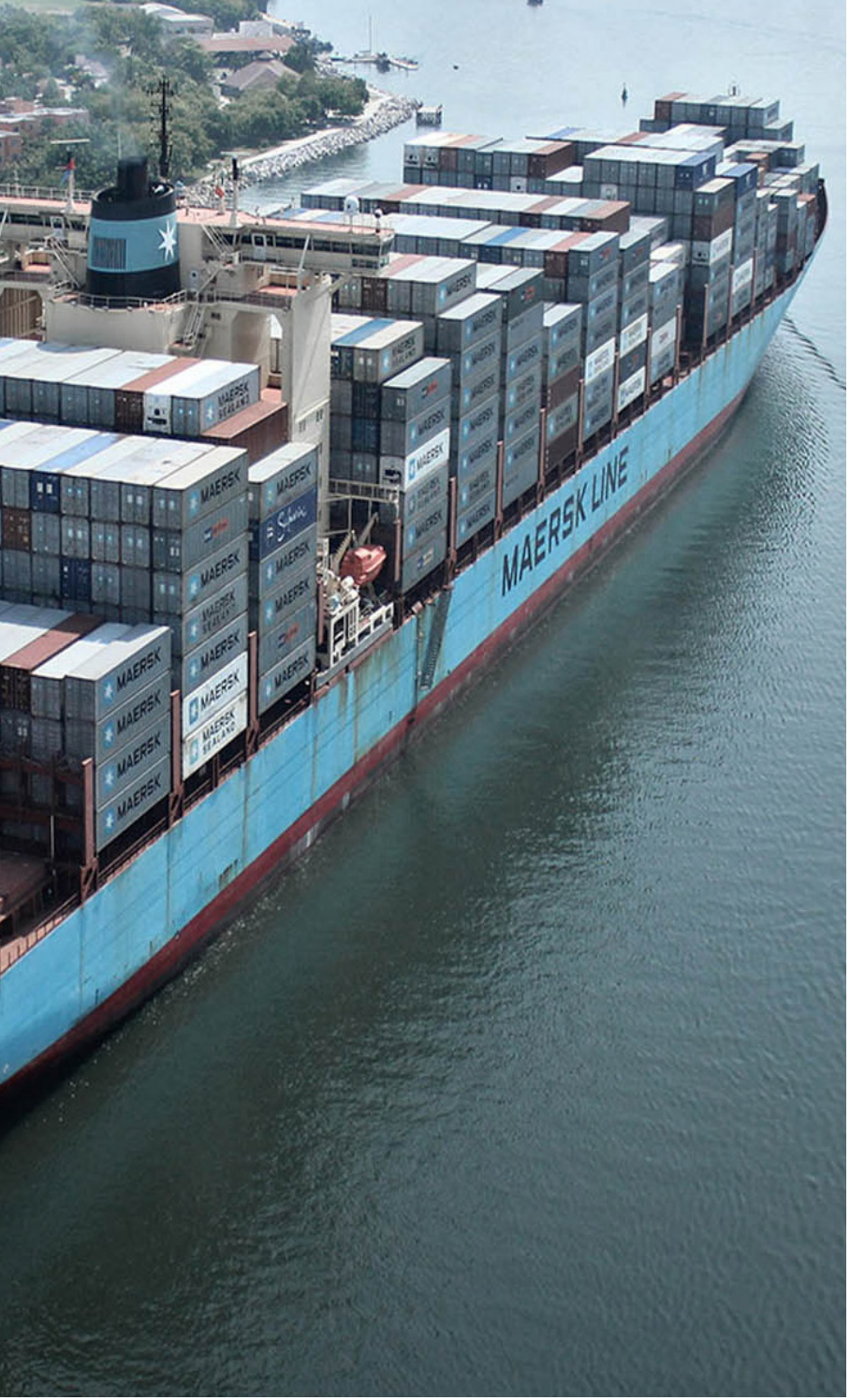
The company is currently implementing an improved system in Azure, which will allow it to modernize the process of medical imaging, including taking, displaying and distributing the images. This will be accomplished thanks to greater supply agility within the hard disk. As Portugués explains, a challenge in finding the right solution is having a platform without space restrictions and possible outages. "With Azure, challenges that include platform, capacity and availability are no longer a concern. Also, the cost is lower in comparison to executing these processes in a local datacentre."

**Read the full case study here**

## LOGISTICS AND TRANSPORTATON

Supply chain management based on cloud computing provides effective scheduling , forecasting accuracy and inventory optimisation information for logistics and transportation to have total insight into the business state and it's moving parts. With better insight of the state of operations, corrective actions can be taken timeously to address negative trends that could be harmful to the growth and survival of any company.

Cloud computing systems enhance efficiency as it enables the creation of critical checkpoints. This helps to minimise risks and threats and to create the opportunity to respond appropriately to any issue. This is crucial for any alerts or important news that freight forwarders must relay to their clients in case of anything that may go wrong.




## MAERSK LINE – CASE STUDY

Global transport and logistics company goes digital to transform its operations

"Maersk is an integrated transport and logistics company with multiple brands, and a global leader in container shipping and ports. The company is partnering with Microsoft Enterprise Services on its digital transformation journey, moving five regional data centres to Microsoft Azure to improve performance and reduce its operational risk. Maersk recently selected Microsoft as its preferred cloud partner as it works to transform its operations, bolster its customer service, and generate new revenue streams.

By moving its regional data centres to the Azure platform, Maersk has ended its reliance on obsolete hardware, while significantly decreasing operational costs. It has also mitigated its on-premises security risks, taking advantage of the tight physical and operational security that Microsoft data centres provide. "We now have disaster recovery and failover, which we lacked before," Laurence says. "We're in a much better position."

Maersk also enjoys far better performance and scalability, which has improved employee productivity and positioned the company for future growth. "With the Infrastructure as a Service (IaaS) model, we can easily scale up and down based on the needs of the respective business unit," Weissbeck says. "We now have much more flexibility to serve our customers' needs."

**Read the full case study here**

# 07 ROADMAP FOR CLOUD COMPUTING

Now that you are familiar with what cloud computing is all about, how do you go about evaluating your needs and selecting what cloud architecture is best suited to your needs? You will also be wondering what implementation approach to adopt, are you going to use in-house staff, cloud vendor(s) or maybe a combined approach?

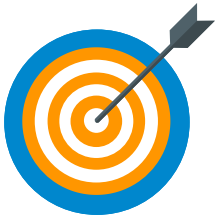
Unfortunately, there is no magic wand that can be waved here, and like people, each organisation has their own unique goals, expectations and timelines. While the cloud is extremely flexible to the point of being almost like a candle in the wind as far as design choices go, enterprises still look for the tried and tested methodology for the adoption of cloud computing technologies.

Adopting cloud computing technologies may not be a linear process as this depends on how far your organisation has evolved on the migration to the cloud. You may have few or various teams or divisions, some of your teams may have high workloads and there may be a need to modernise their processes and efficiency by adding cloud technologies, or even by migrating them to the cloud completely.

Some teams may be in their infancy, so you can immediately start in the cloud. There may be teams that are not ready for the migration, but don't close the door on cloud yet, rather learn and experiment with the cloud in anticipation of future growth and opportunities.

Next, we discuss the steps you could follow to introduce cloud computing into your small or medium enterprise:

Define the Vision



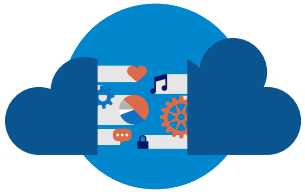
Develop Business Case and Strategy

Evaluate and Short List Cloud Services

Selection of Implementation Strategy

Determine Who Will Develop, Test, Deploy and Maintain the Cloud Services

Assess and Resolve Security Risks



Manage the Cloud Environment

## STEPS FOR SUCCESSFUL STRATEGIC DEPLOYMENT

### Step 1: Define the vision

Once you have decided that cloud computing is the way forward, it is important to define and commit a vision to paper. This will ensure you stay focused and on track and will also help you guard against scope creep. Defining a vision should not be a one-person show as it is better to establish a team who can develop and approve the future cloud strategy. Depending on the size of your business, you could for example make use of a business coach, senior employees, subject matter experts in the departments that will be affected, or trusted suppliers to help you formulate your plan.

You should view the adoption of cloud computing as a strategic business decision that will improve efficiencies within your business and allow your business to grow.

During this first phase you and your team will define the overall vision for cloud computing adoption. It is important to get collaboration and buy-in to the vision from those who will be impacted by it. The vision should address the future needs of the business and align with the overall business strategy.

Define your terms of reference to ensure that you stay focused on the target business goals. Your terms of reference should address key issues such as objectives (what do you want to achieve), guiding principles (your company's values and ethics), roles and responsibilities (who is responsible for what), and rules of engagement of the teams (how often do you meet, how do you communicate, timelines etc.) involved in forming the cloud computing vision and strategy.

Provide guidelines to the team. These will provide high level requirements and ensure that your team are all on the same page.

#### At a glance

Get management tools to help your staff manage and run the administration on Microsoft Azure **here**

**Think about it.....**

Based on the discussion alongside, what would the vision of cloud computing for your business be? And who would you need on your cloud computing adoption team?

## Step 2: Develop the business case and strategy

Cloud computing offers stimulating opportunities to organisations of all sizes. Developing a business case and strategy that defines how cloud computing will transform key business processes like procurement, marketing, customer acquisition and support, product development, and accounting practices will set you on the right track.

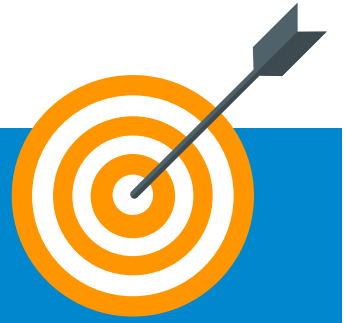
Identify business problems that could be potentially addressed by implementing cloud computing. Try to quantify the potential benefits of adopting the cloud computing solution, for instance, cost savings, rapid deployment, flexibility, access to advanced capabilities, etc.

Obtaining support and buy-in from your department heads or senior employees for the initiative is critical. Getting them on-board early in the process will help alleviate potential issues down the line, and they are a valuable source of information.

When developing your strategy, there are some fundamentals to be kept in mind:

| Element of Strategic Planning | Strategic Planning Activities |
|---|---|
| Educate your team | • Inform them of cloud computing technologies capabilities<br>• Establish a common definition of cloud computing (including terminology), so everyone is speaking the same language<br>• Cloud computing should be used as a collaborative process in which new services are built onto legacy services to improve their functionality |
| Establish short and long-term plans | • Create a plan and roadmap for adoption.<br>• Spell out the benefits of cloud computing vs. existing problems/bottlenecks<br>• Prepare for potential problems post implementation, and how to deal with these problems so have a contingency plan<br>• Reduce the risk of being locked into a vendor by taking a long-term view. Consider interoperability, portability and ease of integration upfront. |

| Element of Strategic Planning | Element of Strategic Planning |
|---|---|
| Understand the desired services and functionality | • What Return on Investment are you going to get and are there potential new revenue opportunities.<br>• Use your knowledge of standards and industry frameworks to assist you with collecting service information. |
| Do a detailed cost analysis | These are some of the costs that need to be considered, if applicable:<br>• On-going cloud service costs<br>• Service management<br>• License management<br>• Application re-designs<br>• Application deployment and testing<br>• Application maintenance and administration<br>• Application integration<br>• Cost of developing cloud computing skills<br>• Human resources and talent management implications<br>• Additional tools/ services/ processes |
| Consider and evaluate the impact on your service levels | For each cloud computing application being evaluated, always consider the following elements as they could impact on your service delivery:<br>• Application availability<br>• Application performance<br>• Application security<br>• Privacy<br>• Regulatory compliance<br>• Data residency |
| Consider your existing IT environment | • Focus on integrating and leveraging existing technologies and standards.<br>• Ensure that any existing services that are migrated to cloud computing will continue to comply with your desired standards. |
| IT environment | • Determine what skill are available, and what is needed.<br>• Develop a plan to upskill to address potential gaps.<br>• Consider external skills as an option for addressing gaps. |



**Think about it.....**

Based on the elements shown here, what are some strategic actions that immediately spring to mind that you need to consider or can implement in your business?

## Step 3: Evaluate and short list cloud service providers

When it comes to selecting a service provider, there is no standard rule that will apply to all businesses. All businesses are unique and will have their own evaluation criteria and requirements. There are however some common areas of focus when selecting a service provider.

Always remember that it is advisable to consider hard and soft factors when evaluating and short listing your cloud service providers. It is important that you check what

certification and standards they adhere to, but equally it is important to check what their customers say about them.

Always plan for the long-term and avoid lock-in contracts where possible. Do not blindly agree to terms and conditions, rather take time to establish workable Service Level Agreements (SLA's) and contractual terms.

Small and medium enterprises and new companies that do not have existing infrastructure should consider public cloud deployments versus the private cloud option. Small and medium enterprises have much to gain in terms of cost savings, IT capacity, lower skill requirements and improved application functionality not available to them previously.

### At a glance

Microsoft Azure is an ever-expanding set of public cloud services to help your organisation meet business challenges. It offers the freedom to build, manage, and deploy applications on a massive, global network using various tools and frameworks. **Check out Microsoft's tips on how to choose a Cloud Service Provider**

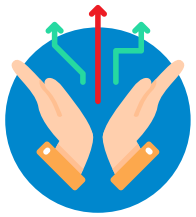
**Think about it.....**

Make a list of possible service providers that you could make use.

## Step 4: Selection of implementation strategy

Before making the final selection, the question needs to be asked – what implementation strategy is envisaged, a hybrid deployment or a "big bang" deployment where the business implements the IT solution on a public cloud outside the organisation.

The potential benefits and issues of each model must be carefully considered. The IT maturity of the organisation as well as its size also impacts significantly on this decision.



### At a glance

Is this the approach for you?

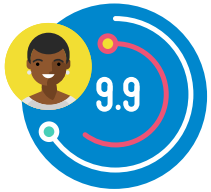
**Discover the advantages of SaaS.**

## Approaches for Adoption of SaaS

Entrepreneurs may not have made significant investments in IT because of the cost factor involved as well as the complexity of managing an in-house deployment. Subscription-based SaaS offerings now make it possible for entrepreneurs to adopt SaaS solutions for business needs which were not previously possible.

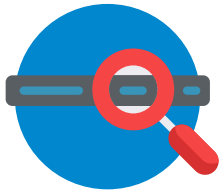
Analyse SaaS offerings

Define a SaaS strategy for both private and public implementations before adopting specific SaaS offerings.




Re-evaluate your business processes and identify those that can be re-engineered to be leaner and more effective

Identify availability of SaaS offerings for these specific processes.



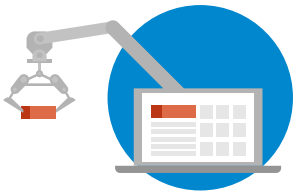
Evaluate the various SaaS offerings from a business and technical perspective.

## Approaches for Adoption of PaaS

Smaller organisations can benefit from the already running software stack requirements of a custom application, such as databases and messaging infrastructure, removing the need to have skilled staff to set up, run and maintain what can be complex software.

Small and medium enterprises do not have the resources to develop and run platforms and they lack the in-house skills to develop and test home-grown applications. As many entrepreneurs are dependent on Independent Software Vendors (ISVs) to deliver their application functionality, they are likely dependent on a cloud service provider to support a PaaS environment that is consistent with their ISV's applications.

Analyse PaaS offerings



Define a PaaS implementation strategy adopting specific PaaS offerings

Determine if there's enough in-house development resources to justify the use of PaaS. If not, SaaS may be the best alternative.

### At a glance

Is this the approach for you? **Discover the advantages of PaaS.**

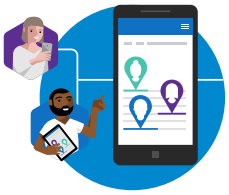
## Approaches for Adoption of IaaS

The primary motivation for an entrepreneur to consider IaaS is capital expense reduction and access to IT capacity that would otherwise not be available.

Entrepreneurs may not be able to make significant investment in IT services, it is therefore beneficial to consider infrastructure services that are delivered and managed by an external cloud service provider.

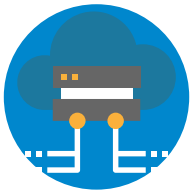
Analyse IaaS offerings

Define an IaaS strategy



Private (On-premise) deployment model may not be viable because of insufficient ROI associated with consolidating a relatively small number of existing IT assets, therefore it is advisable to consider a public deployment model that will provide access to computing and storage capacity at the lowest cost.

Consider the application migration and administration costs for Public and Private (Outsourced) options.



Be aware of Disaster Recovery capabilities

**Think about it.....**

Based on the three implementation strategies discussed, which do you think would be best suited to your business?

### At a glance

Is this the approach for you? **Discover the advantages of IaaS.**

## Step 5: Develop, test, deploy and maintain the cloud services

The needs and capabilities of the organisation will determine the most effective method to design, develop, deploy and maintain new cloud applications.

For most entrepreneurs, there are three options to consider:

- Cloud provider development and deployment (if available)
- Independent cloud service development provider
- Off the shelf purchase of a cloud application service

| Options | Skills | Startup considerations | Updates to services | Testing, deployment and support |
|---|---|---|---|---|
| Cloud provider development, deployment and support | The cloud provider's area of expertise is cloud computing. This implies a shorter development and deployment timeline. | Details of all products and systems (APIs, data formats, security, etc.) must be provided by the Cloud provider to be considered in development and deployment. | Change request process and associated costs must be known if the provider does the maintenance. | Coordination between the organisation's development and operations teams and the cloud provider development and test teams are required. |
| Independent cloud service development provider | Must have proven experience and expertise on the specific cloud application service thus reducing development, testing and deployment costs. | Must be provided with production knowledge of the services and infrastructure which will be linked to the cloud service. | Coordination and structured engagement between the organisation's implementation team and the cloud provider's implementation team in order to test and deploy the cloud service | Testing could take longer as more teams are involved. |

| Options | Skills | Startup considerations | Updates to services | Testing, deployment and support |
|---|---|---|---|---|
| Off the shelf purchase of a cloud application Software as a Service (SaaS | Ensure that the service is fit for purpose and meets all the specified requirements | Determine changes to business processes and the complexity to implement the changes. | Determine responsibility for modification, testing deployment, and maintenance activities. | Ensure that the total cost of ownership of the off the shelf service offsets the costs for modification. |

The skills available within small and medium enterprises are typically geared to support existing applications so it may be beneficial to contract resources from a cloud service provider or skilled independent development firm.

**Think about it.....**

Based on the needs and capabilities of your organisation, what is the most effective option to design, develop, deploy and maintain new cloud applications?

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## Step 6: Assess and resolve security risks

Adopting a cloud solution does not imply that the provider is solely responsible for security, privacy, and data residency issues. Security and privacy are risk management issues and need to be treated using the following formal approaches:
evaluate the probability and the impact of the potential threats, prioritise the risks accordingly, design and implement mitigation measures, test them, and monitor the situation.

**This is why Microsoft is the best Cloud Security choice**

### POTENTIAL CLOUD SECURITY RISKS


**Think about it.....**

What security risks immediately come to mind when you think about adopting cloud in your business?

## Step 7: Manage the cloud environment

The technical and customer support requirements can be determined based on the service model, deployment model and hosting option selected.

- Private Cloud: Management of the cloud will be consistent with the management of the existing services within the organisation.
- Public Cloud: Responsibility for management of the cloud service will be outlined in the Cloud Service Agreement. The Cloud Service Agreement will outline processes for identifying a problem, indicate who is responsible and depending on the impact of the problem, what resources will be used to solve the problem.

Risk management processes need to be implemented to protect the organisation and its digital assets. Responsibility for this process will be different according to the nature of the service. For example, for a SaaS service, it is often the cloud service provider's responsibility, while for IaaS services, it will be the responsibility of the business.

**Think about it.....**

How will your organisation manage the cloud environment once you have adopted it?

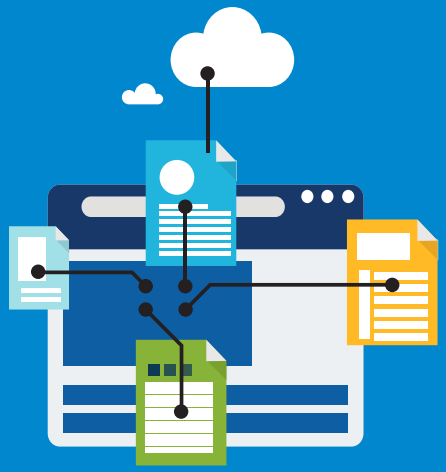
## KEYS TO SUCCESS

Below are a few of the keys to success for any organisation starting their cloud computing journey.

| Key to Success | Summary |
|---|---|
| Establish organisational support and commitment | • The management team needs to understand and take full responsibility for the successful adoption of cloud services.<br>• Staff members should be informed and educated about the business value offered by cloud, and how the adoption of cloud will change their daily activities.<br>• The organisation must be fully committed to developing and executing a strategic plan for cloud computing within the business. |
| Address organisational change management | • Management must understand and address employees that will feel pressured by the pending changes. Therefore cultural transformation management will be required when introducing cloud computing.<br>• Cloud computing will introduce change to the normal business processes, breaking down many organisational barriers and norms.<br>• At the heart of change is fear of loss of control. The change process must be well-managed, highlighting the significance of a shared responsibility model with an external cloud service provider. Embracing change is critical to success. |
| Evaluate cloud service agreements to ensure critical business needs are addressed | • Buy a service, not servers. Look for a complete managed service where the business can rely on the cloud provider to join all parts into a complete solution.<br>• A service agreement needs to be negotiated properly to ensure that there is a partnership between the business and provider for the overall success of the service. |
| Handle security and privacy | • At the heart of security is trust. Cloud providers will have deeper awareness into what is needed to provide security features. The business should work closely with the cloud service provider to build a solid trust relationship and share responsibility to build the best security and privacy environment possible. |

# 08

# NEXT STEPS: GETTING CLOUD COMPUTING FOR YOUR BUSINESS



It is obvious that the advantages of cloud computing far outweigh the limitations. The biggest benefit of adopting cloud computing is that it can provide small and medium enterprises significant savings.

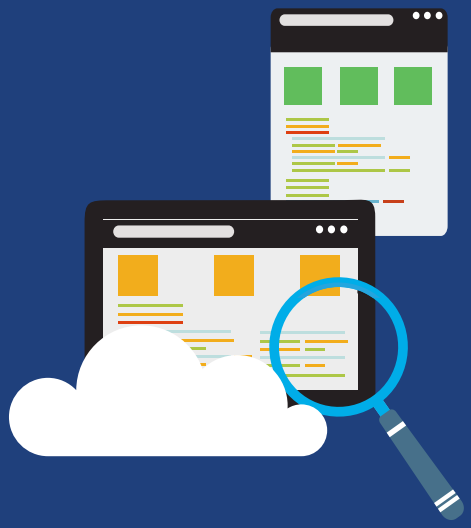
The ability to save and access files through the cloud enables employees to easily work from the same master document, be it from home, office or travel. Entrepreneurs can use specialised services that integrate with back-office operations, from human resources to marketing or accounting, giving them the opportunity to focus on the more critical areas of business.

Don't let this be the end of your cloud computing journey. Find out more and register today to get cloud computing implemented in your business today.

| Cloud computing options | Find out more |
|---|---|
| Learn more about Microsoft 365 for your business | https://www.microsoft.com/en-us/microsoft-365 |
| Learn more about Office 365 for your business | https://products.office.com/en-us/business/office |
| Learn more about Office 365 for your business | https://azure.microsoft.com/en-us/ |
| Join Microsoft's Cloud Society. Complete assessments and courses to become a Cloud Expert. | https://cloudsociety.microsoft.com/ |
| The Cloud Practice Development Playbooks provide the essential blueprints to develop, manage, and secure an effective cloud practice. | https://partner.microsoft.com/en-us/campaigns/cloud-practice-playbooks |
| Start your own cloud business - This Business Plan Template is designed to assist in raising finances to pursue cloud business opportunities. | https://assets.microsoft.com/sk-sk/Cloud-Business-Plan-Template.docx |

## Notes

# 09 MICROSOFT CLOUD COMPUTING DICTIONARY



**Business analytics tools**
Tools that extract data from business systems and integrate it into a repository, such as a data warehouse, where it can be analysed. Analytics tools range from spreadsheets with statistical functions to sophisticated data mining and predictive modelling tools.
**Learn more about business analytics tools.**

**Business intelligence (BI) tools**
Tools that process large amounts of unstructured data in books, journals, documents, health records, images, files, email, video, and so forth, to help you discover meaningful trends and identify new business opportunities.
**Learn more about business intelligence tools.**

**Cloud**
A metaphor for a global network, first used in reference to the telephone network and now commonly used to represent the Internet.
**Learn more about the cloud.**

**Cloud bursting**
A configuration that's set up between a private cloud and a public cloud. If 100% of the resource capacity in a private cloud is used, then overflow traffic is directed to the public cloud using cloud bursting.
**Learn more about cloud bursting.**

**Cloud computing**
A delivery model for computing resources in which various servers, applications, data, and other resources are integrated and provided as a service over the Internet. Resources are often virtual.
**Learn more about cloud computing.**

**Cloud computing types**
There are three main cloud computing types, with additional ones evolving—software-as-a-service (SaaS) for web-based applications, infrastructure-as-a-service (IaaS) for Internet-based access to storage and computing power, and platform-as-a-service (PaaS) that gives developers the tools to build and host Web applications.
**Learn more about cloud computing types.**

**Cloud service provider**
A company that provides a cloud-based platform, infrastructure, application, or storage services, usually for a fee.
**Learn more about cloud service providers.**

**Cloud storage**
A service that lets you store data by transferring it over the Internet or another network to an offsite storage system maintained by a third party.
**Learn more about cloud storage.**

**Computer grids**
Groups of networked computers that act together to perform large tasks, such as analysing huge sets of data and weather modelling. Cloud computing lets you assemble and use vast computer grids for specific time periods and purposes, paying only for your usage, and saving the time and expense of purchasing and deploying the necessary resources yourself.
**Learn more about grid computing.**

**Elastic computing**
The ability to dynamically provision and de-provision computer processing, memory, and storage resources to meet changing demands without worrying about capacity planning and engineering for peak usage.
**Learn more about elastic computing.**

**Hybrid cloud**
A cloud that combines public and private clouds, bound together by technology that allows data and applications to be shared between them. A hybrid cloud gives businesses greater flexibility to scale up and down and offers more deployment options.
**Learn more about hybrid cloud computing.**

**Infrastructure as a service (IaaS)**
A virtualised computer environment delivered as a service over the Internet by a provider. Infrastructure can include servers, network equipment, and software. Also called hardware-as-a-service (HaaS).
**Discover the advantages of IaaS.**

**Microsoft Azure**
The Microsoft cloud platform, a growing collection of integrated services, including infrastructure as a service (IaaS) and platform as a service (PaaS) offerings.
**Learn more about Azure.**

**Middleware**
Software that lies between an operating system and the applications running on it. It enables communication and data management for distributed applications, like cloud-based applications, for example, the data in one database can be accessed through another database. Examples of middleware are web servers, application servers, and content management systems.
**Learn more about middleware.**

**Platform as a service (PaaS)**
A computing platform (operating system and other services) delivered as a service over the Internet by a provider. An example is an application development environment that you can subscribe to and use immediately. Azure offers PaaS.
**Discover the advantages of PaaS.**

**Private cloud**
Services offered over the Internet or over a private internal network to only select users, not the general public.
**Learn more about private cloud computing.**

**Public cloud**
Services offered over the public Internet and available to anyone who wants to purchase them.
**Learn more about public cloud computing.**

**Software as a service (SaaS)**
An application delivered over the Internet by a provider. Also called a hosted application. The application doesn't have to be purchased, installed, or run on users' computers. SaaS providers were previously referred to as ASPs (application service providers).
**Discover the advantages of SaaS.**

**Virtual machine**
A computer file (typically called an image) that behaves like an actual computer. Multiple virtual machines can run simultaneously on the same physical computer.
**Learn more about virtual machines.**

**Virtualisation**
The act of creating a virtual rather than a physical version of a computing environment, including computer hardware, operating system, storage devices, and so forth.
**Learn more about virtualisation.**

# Cost savings guidance
# Small companies

## SMALL COMPANIES ARE SAVING – EXAMPLES

Forrester estimates the average small to midsize company should save about $16,000 per year on administration.

*based on the Forrester TEI of Office 365 for SMB report

By opting for Microsoft Office 365 and Microsoft Project Online, Mapps Master Appraisal avoided an initial investment of more than $12,900 for server purchase and configuration.

## MOST COMMON AREAS FOR VENDOR DISPLACEMENT

Security – Advanced Threat Protection, Exchange Online Protection and Windows Defender can replace products such as Proofpoint, Symantec, McAfee, Bitnine, Carbon Black, FireEye, etc.
Identity – Azure Active Directory can replace products such as SiteMinder, PING, Okta, Centrify, RSA, etc.
BI – Power BI can replace products such as Tableau and Qlik
Voice – Phone System can replace solutions like Cisco PBX, Cisco Spark, Avaya, Nortel, Shoretel, etc.
MDM – Intune can replace products like AirWatch, Good, MobileIron, XenMobile, etc.
Team Collaboration – Teams can replace solutions like Slack, Jabber, Jive, etc.
File Shares – OneDrive for Business can replace products like Box and Dropbox
Audio Conferencing – Audio Conferencing can replace ACP solutions like Intercall, AT&T, Verizon, Cisco, CallMe, etc.

## COST SAVINGS FOR SMALL COMPANIES

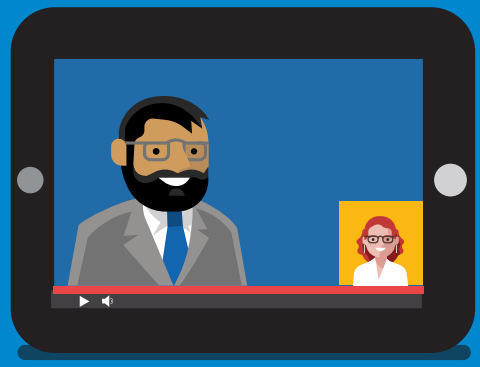
$6,000 – per year in server, storage and datacenter costs
$1,000 – in hardware and software deployment costs annually
$16,000 – annually in administration costs
$5,000 – in security breach detection and remediation cost savings annually
$14,000 in cost savings from vendor displacement across security, compliance, identity, communications, BI, MDM and file shares
$2,800 – in cost savings on eDiscovery legal reviews
$6,000 – in spending on on-premises Microsoft software across CALs, Windows and Office
*based on a typical 20-seat company

## NEXT STEPS

Work with your Microsoft representative or a partner to determine the cost impact based on your environment.

## MICROSOFT VIRTUAL ACADEMY RECORDINGS

The following recordings have been made to help you along your cloud computing adoption journey. You can access the recordings by clicking on the links below.



| Topic | Link |
|---|---|
| What is cloud, and why is it important | |
| The benefits of using the cloud | |
| How to go about and where to start | |
| Costs associated with cloud | |
| Cloud products | |

## Notes

## Notes

## Website Resources:

https://azure.microsoft.com/en-us/case-studies/?service=cloud-services

https://azure.microsoft.com/en-us/overview/cloud-migration/

https://docs.microsoft.com/en-us/azure/architecture/cloud-adoption-guide/

https://azure.microsoft.com/en-us/overview/cloud-computing-dictionary/

https://azureinfo.microsoft.com/AP-Azure-WBNR-FY15-16Oct-AU-WhyandHowCloud-Registration-Page.html?ls=Website

https://azure.microsoft.com/en-us/overview/what-is-iaas/

https://azure.microsoft.com/en-us/overview/what-is-paas/

https://azure.microsoft.com/en-us/overview/what-is-saas/

https://partner.microsoft.com/en-us/campaigns/cloud-practice-playbooks

https://partner.microsoft.com/en-US/asset#/?type=Campaign%20and%20Product%20Guide%7CProduct%20and%20Solution%20Demos%7Cproduct info%7CTo-Customer%20Pitch%20Deck%7CVideo&page=3&search=cloud&sort=updated

https://www.salesforce.com/what-is-cloud-computing/

https://www.entrepreneur.com/article/245784

https://www.ibm.com/cloud/learn/what-is-cloud-computing

https://www.businessnewsdaily.com/4427-cloud-computing-small-business.html

https://searchcloudcomputing.techtarget.com/definition/public-cloud

https://searchcloudcomputing.techtarget.com/definition/private-cloud

https://www.datamation.com/cloud-computing/cloud-price-comparison-aws-vs.-azure-vs.-google.html

## Website Resources:


https://azure.microsoft.com/en-us/overview/choosing-a-cloud-service-provider/

https://www.researchgate.net/publication/237078099_Costing_of_Cloud_Computing_Services_A_Total_Cost_of_Ownership_Approach

https://www.expedient.com/blog/private-vs-public-cloud-whats-difference/

https://customers.microsoft.com/en-us/story/osaka-prefecture-university-education-azure-cloud-services-machine-learning-notification-hub-en

https://customers.microsoft.com/en-us/story/lyceum-of-the-hilippines-university-office365-azure-cloud-services-philippines

https://customers.microsoft.com/en-us/story/hospital-cima-azure-cloud-services-office365-health-costa-rica-en

https://customers.microsoft.com/en-us/story/maersk-travel-transportation-microsoft-services

http://www.cloud-council.org/deliverables/CSCC-Practical-Guide-to-Cloud-Computing.pdf

https://www.theseus.fi/bitstream/handle/10024/101464/Khan_Imran.pdf?sequence=1

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679

https://www.htxt.co.za/2018/05/07/six-steps-african-business-can-take-to-prepare-for-gdpr/

http://icta.go.ke/pdf/National-ICT-Policy-20June2016.pdf

https://thecloudcalculator.com/

https://assets.microsoft.com/en-us/gdpr-detailed-assessment.zip

https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE1YTTC?wt.mc_id=aid642608_qsg_pd_scl_250123

https://docs.microsoft.com/en-us/

https://www.microsoft.com/en-us/learning/azure-training-certification.aspx

https://www.microsoft.com/en-us/learning/browse-all-certifications.aspx?technology=Microsoft%20Azure