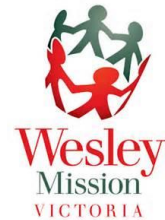


LEVERAGING THE CLOUD WITH MICROSOFT AZURE

Matt Walton – Consulting Services Manager

14th June 2018

Infoxchange is a not for profit organisation that has supported hundreds of non-profits to use both cloud and infrastructure technologies:



Common not-for-profit challenges

Effective ways for staff & volunteers who work out of the office to access systems and information

Reliable, cost-effective online systems or backups

Consistent funding for ICT

Access to affordable technical resources and knowledge



IT should help you achieve your mission



Flexible IT

Maximize technology investments, minimize complexity and cost



Optimized business processes

Enable more efficiency and faster decision making



Business continuity and security

Protect against unexpected interruptions, data loss and modern security threats



Building the business case for moving to the Cloud



Reduce or eliminate server upgrades and refreshes

saving costs of servers, software and IT support



Provides scalability and flexibility

which allows you to respond to opportunities and only pay for what you need



Defend against hardware failure

with cloud solutions so there's no need to worry about your server failing and your data is protected in the cloud



Single location for information for all staff to collaborate

across all locations leading to increased efficiency

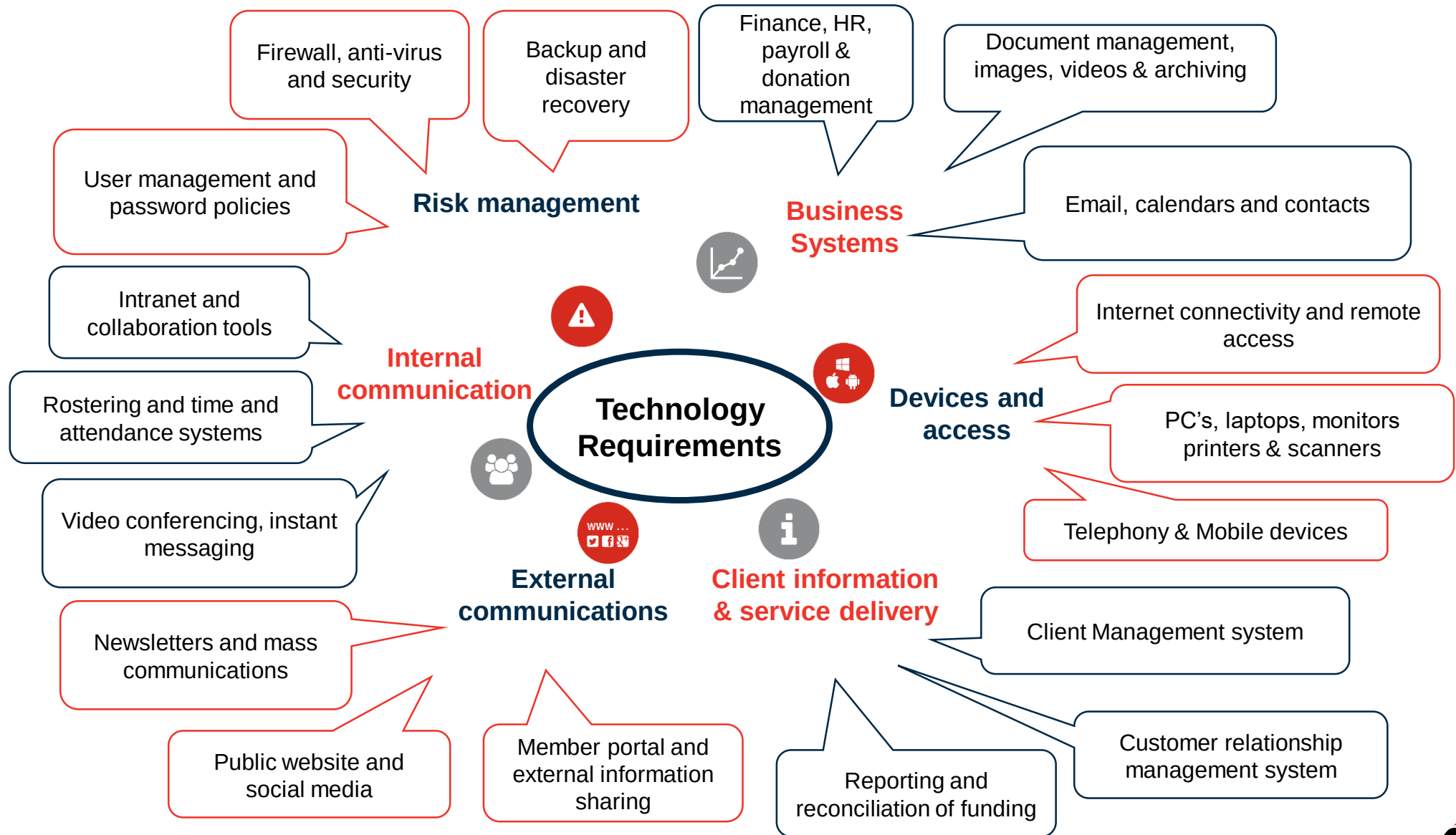


Access systems and information from any location or device

which provides flexibility and reduce travel costs



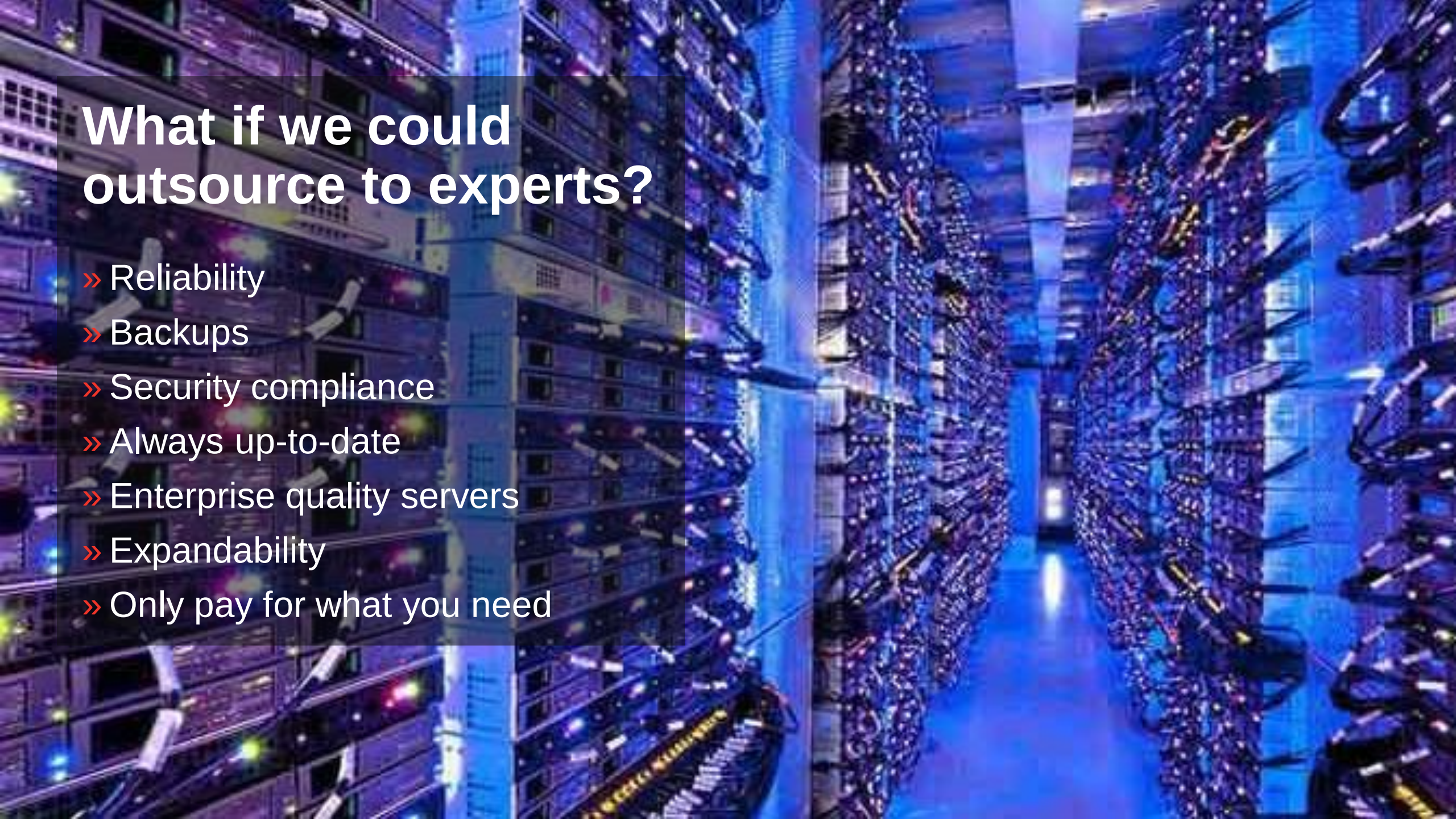
Common technology requirements of NFPs.....



A photograph of a server room with a dense, chaotic network of multi-colored cables (red, blue, yellow, green, white) hanging from the top and connecting to server racks. In the foreground, a small round table holds a salt shaker, a blue container, and some papers. The background shows server racks with various components.

When we own the technology

- » Regular maintenance
- » Install upgrades
- » In-house expertise
- » Limited scalability
- » Disaster recovery
- » Up-time requirements



What if we could outsource to experts?

- » Reliability
- » Backups
- » Security compliance
- » Always up-to-date
- » Enterprise quality servers
- » Expandability
- » Only pay for what you need

The Cloud or local infrastructure



VS

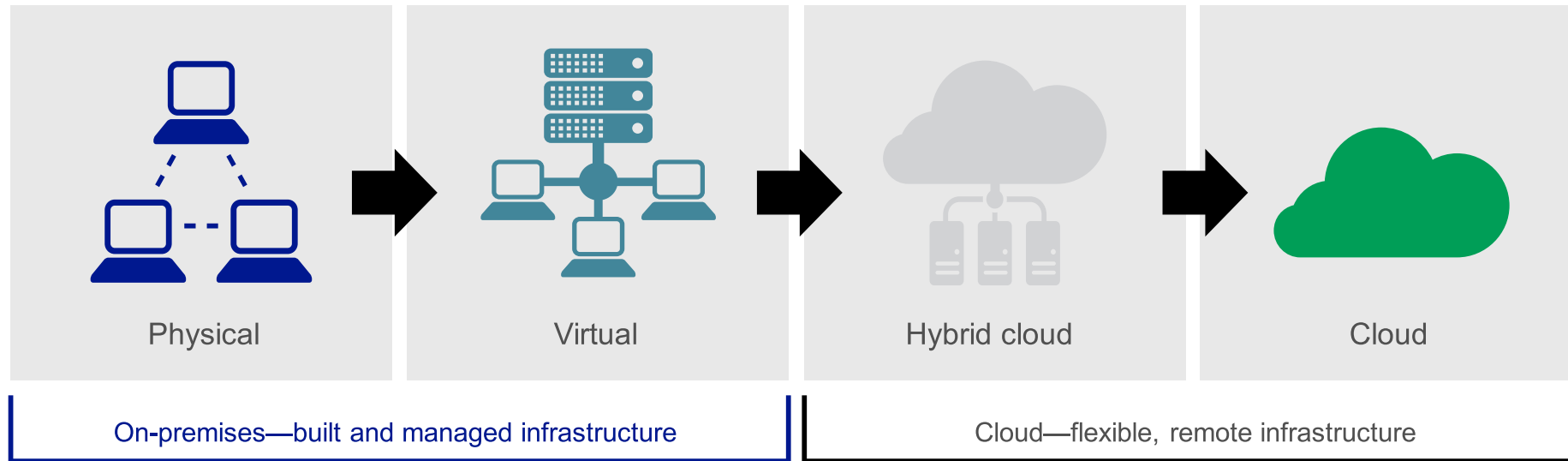


- » Ongoing monthly costs
- » Reliant on internet
- » Hosted externally
- » Automated updates
- » Combined software/hardware
- » Consider offline access
- » \$5000 Azure credit

- » Initial upfront capital purchase
- » Reliant on local network
- » Stored locally
- » Ongoing maintenance required
- » Purchase software and hardware
- » Offsite Backups required
- » Donated software/licenses through Connecting Up



Trends in Infrastructure design



What is Microsoft Azure?

(in Microsoft marketing terms)



Microsoft Azure is a technology platform that allows you to develop compute or data storage tasks in the cloud at any scale and on-demand using a pay-as-you-go plan.

Some examples include web applications, backup and storage, disaster recovery, mobile applications, and virtual machines.

What this means for a small business is that you now have the computing power of a much larger business without having to invest in a large IT staff or server hardware. You can dream bigger than you have before.



What is Microsoft Azure?

(in real practical terms for NFPs)



Microsoft Azure is a paid service for IT infrastructure or server hosting that some community organisations may use instead of using on premise servers.

Microsoft host their servers in data centres all around the world including in Sydney and Melbourne so your data can be stored in Australia.

Azure is a flexible platform that allows you to pick and choose what services and infrastructure you require so generally each organisation will use it differently and pay different costs.

It is accessible over the internet so will require a good quality network connection if you want to store information in Microsoft Azure and you will probably also need new routers to connect via a VPN.



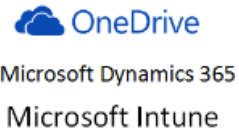
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- 

Microsoft Cloud Options



SaaS



PaaS

Your PaaS application

Your business logic and code

Web and mobile backend

Compute and integration

Data and advanced analytics

Media and content delivery

Event streaming and messaging

Developer tools

Azure IaaS

On-premises

Your virtual network

Active Directory & DNS

Your line-of-business application

Move-in ready

See topic 2 for more information and resources

Use these prepackaged solutions that are bundled with existing services. Use immediately and with minimal configuration.



Office 365

Microsoft Intune



OneDrive for Business



Dynamics 365



Visual Studio Team Services



Azure Site Recovery



Yammer file sharing



Azure Backup

Some assembly required

See topic 3 for more information and resources

Use these existing services as a starting point for your storage solution with additional configuration or coding for a custom fit.



Azure Content Delivery Network



Azure Media Services



HDInsight



Azure Redis Cache



Azure SQL Database



SQL Server on an Azure VM



Azure Cosmos DB



StorSimple



Azure SQL Data Warehouse



Azure Data Lake Store

Build from the ground up

See topic 4 for more information and resources

Use these storage building blocks, along with coding, to create your own storage solution or apps from scratch.



Azure Storage (files)



Azure Storage (blobs)



Azure Storage (queues)



Azure Storage (tables)



What you don't need Azure for?

Many community organisations have hosting or software services for systems or applications that means they don't need Microsoft Azure for these purposes:

System type	Online service example
Email	Office 365 or Gmail
Documents	OneDrive/SharePoint or DropBox
Finance System	Xero or MYOB online
Website	SquareSpace or Wordpress hosted
Client Management System	Supportability or SRS
CRM	Salesforce or Dynamics CRM Online
eNewsletter or survey tool	Mailchimp
Social Media	Facebook or Instagram



Application hosting options

Type	Local server infrastructure	Public cloud SaaS	Hosted Azure infrastructure	Hosted Azure web app
Example	Windows Server 2012	Salesforce, Dynamics, Xero	RDP server, Azure SQL, SQL Server	Website in Azure with .net apps or templates
Login	AD and VPN	Cloud based at provider	Rely on local AD	Either
Data storage	Local server storage	With provider	In Azure	In Azure (e.g. Azure SQL, flat files)
Advantages	Familiar Not as reliant on internet	Pay per user. Provider manages updates	Fixed rate Control of data storage	Pay for what you use Scalable
Disadvantages	Not easily accessible remotely Requires management	No control over data storage country or format Can be expensive to migrate	Largest server requirements, highest cost	Largest development costs



Internet connectivity scenarios

Example Scenarios	Connection	Performance & Comments
Small office of 5 staff wanting to use Microsoft Azure to host a server - Email in Office 365 but wanting to remove local server - Cloud hosted application for finance, CRM	ADSL 10/.9	 Poor performance on ADSL
Organisation of 30 staff, 20 in central office, other 10 across 3 remote offices. Central has symmetric 20Mb ethernet link, others have business grade ADSL2 with Annex M for improved upload. VPNs. QoS prioritisation - Email in Office 365 and SharePoint Intranet - Cloud hosted client management and finance systems - Hosted server in Azure for domain controller and file archive - Managed VPN on high grade router	Ethernet 20/20	 Should perform appropriately depending on amount of data transfer. May require upgrade to 50mb or fibre if performance degrades
Multi site organisation of over 100 staff accessing central systems from cloud based applications and video conferencing - Office 365 for email, SharePoint Intranet - File server at head office for large files (marketing department) - Central client management system - Cloud hosted finance system - Managed site to site VPNs at each location with high grade routers - Hosted VOIP system - Fibre connection 100mb/100mb at key offices /4G at remote locations	Fibre 100/100	 Should perform adequately at main offices with fibre however performance may be unreliable at remote locations on 4G



Case Study – National NFP using Azure

Organisation

National not for profit organisation with over 100 staff with main offices in Melbourne and Sydney and small office in Brisbane and Perth and mobile workforce.

Preferences

The organisation had a strong preference to not have server infrastructure and to use cloud based applications and laptops for all staff

Requirements

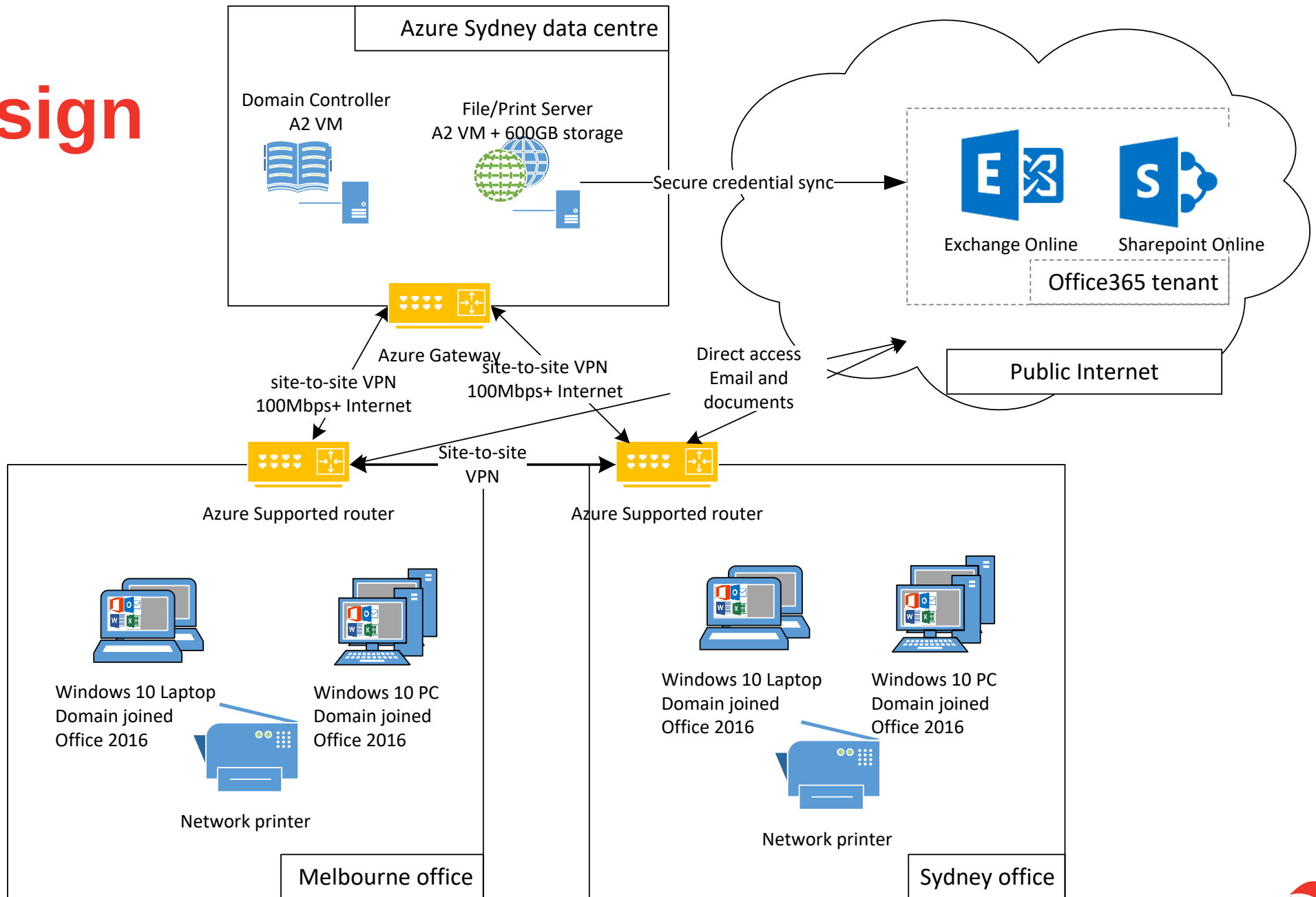
The organisation mostly used online systems such as Office 365 and Salesforce however also required a central management of PCs, print management, storage of archives and backups

Solution

Microsoft Azure was implemented for a domain controller, site to site vpn, storage of backups and file server archive



The Design



Sample Azure cost summary

Service Type	Description	Purpose	Estimated monthly cost
Virtual server	2x Standard virtual machine(s), A2 (2 cores, 3.5 GB RAM, 135 GB disk, \$0.288/hr) size: 744 hours	Hosted Domain controller, file archive, print, AAD connect	\$428.33
VPN Gateway	Standard tier, 744 gateway hours, 100GB outbound internet	Manage secure data transfer between Azure and Office	\$191.51
Storage	600Gb storage. Basic tier, LRS redundancy, 100000 transactions	Storage of 600Gb of files and backups	\$61.14
Microsoft support	Support	Ongoing support from Microsoft team	\$36.94
		Monthly Total	\$717.92
		Annual Total	\$8,615.08
		Annual Total minus \$5000 credit	\$3,615

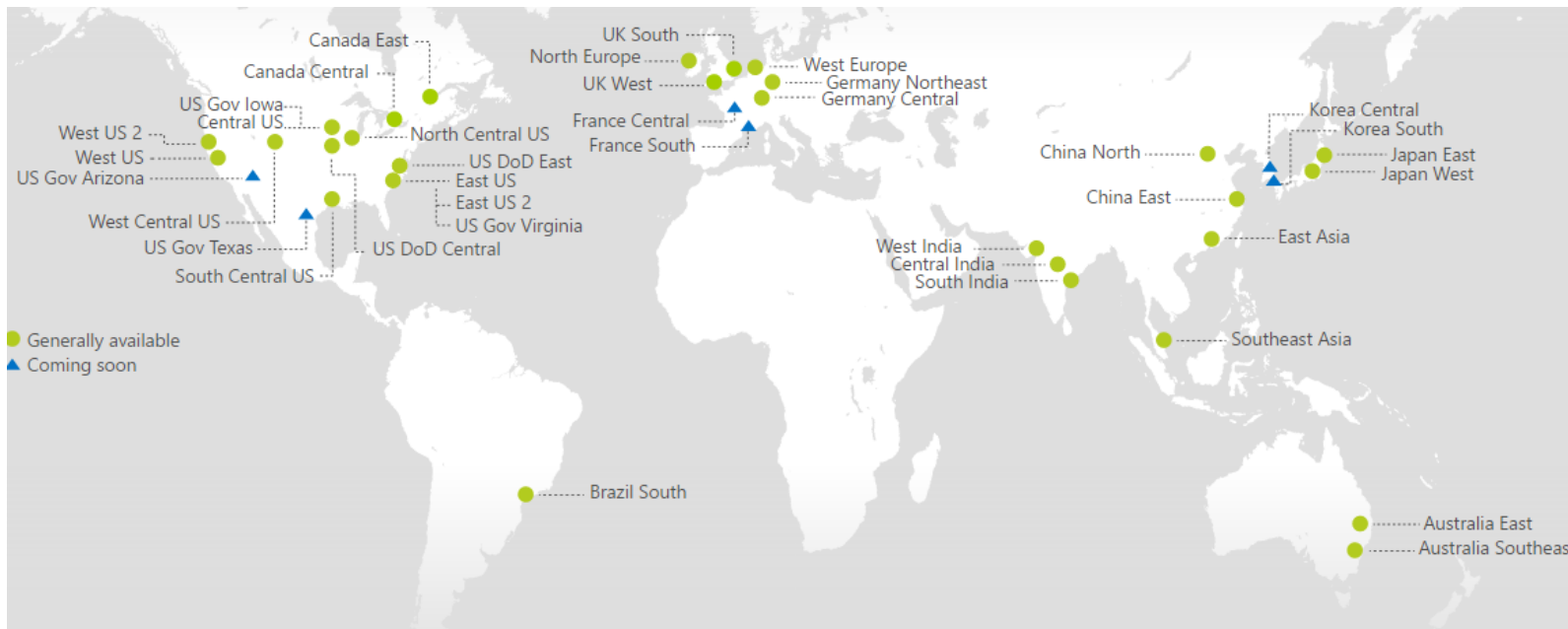
All prices shown are in Australian Dollar (\$). This is a summary estimate, not a quote. For up to date pricing information please visit <https://azure.microsoft.com/pricing/calculator/>



Select your region

Each region requires the following to support VMs

- » Resource Group
- » Virtual Network and local subnet
- » Gateway for VPN
- » Storage account with or without geo-redundancy
- » Virtual Machines



Microsoft Azure New > Storage > Create storage account

Create storage account

The cost of your storage account depends on the usage and the options you choose below. [Learn more](#)

* Name

Deployment model ☒ Resource manager ☐ Classic

Account kind

Performance ☒ Standard ☐ Premium

Replication

Access tier ☐ Cool ☒ Hot

* Storage service encryption ☒ Disabled ☐ Enabled

* Subscription

* Resource group ☒ Create new ☐ Use existing

* Location

☐ Pin to dashboard

[Create](#) [Automation options](#)



Virtual machine sizing and options

- » Set a default local username and password
- » Choose a size from pre defined options showing monthly cost estimates
- » Usage billed by hour and can be changed (reboot required)
- » Other options available

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

DS1_V2 Standard	DS2_V2 Standard	DS3_V2 Standard
1 Core	2 Cores	4 Cores
3.5 GB	7 GB	14 GB
2 Data disks	4 Data disks	8 Data disks
3200 Max IOPS	6400 Max IOPS	12800 Max IOPS
7 GB Local SSD	14 GB Local SSD	28 GB Local SSD
Load balancing	Load balancing	Load balancing
Premium disk support	Premium disk support	Premium disk support
79.60 AUD/MONTH (ESTIMATED)	159.20 AUD/MONTH (ESTIMATED)	318.40 AUD/MONTH (ESTIMATED)

DS4_V2 Standard	DS5_V2 Standard	DS11_V2 Standard
8 Cores	16 Cores	2 Cores
28 GB	56 GB	14 GB
16 Data disks	32 Data disks	4 Data disks
25600 Max IOPS	51200 Max IOPS	6400 Max IOPS
56 GB Local SSD	112 GB Local SSD	28 GB Local SSD
Load balancing	Load balancing	Load balancing
Premium disk support	Premium disk support	Premium disk support
637.76 AUD/MONTH (ESTIMATED)	1,339.95 AUD/MONTH (ESTIMATED)	189.53 AUD/MONTH (ESTIMATED)

Storage

Use managed disks ☐ No ☐ Yes

* Storage account ☐ (new) a2dempdisks747

Network

* Virtual network ☐ ixjlrepo-SP_net

* Subnet ☐ default (10.10.10.0/24)

* Public IP address ☐ (new) A2Demo-ip

* Network security group (firewall) ☐ (new) A2Demo-nsg

Extensions

Extensions ☐ No extensions

High availability

* Availability set ☐ None

Monitoring

Boot diagnostics ☐ Disabled ☒ Enabled

Guest OS diagnostics ☐ Disabled ☒ Enabled

* Diagnostics storage account ☐ ixjlrepostore

OK



Sign up process for existing Office 365 customers

1. Activate your Azure AD subscription from Office 365 Admin Center (If you are using Office 365. It is recommended you add the Azure grant to the Office 365 Azure AD tenant)
2. Login to Connecting Up portal to obtain validation token (<https://www.connectingup.org/blog/microsoft-azure-credits-now-available-eligible-not-profit-organisations>)
3. Enter token into eligibility portal (<http://eligibilityweb.azurewebsites.net/#/ngohome>)
Use the Office 365 Admin email as **Account Owner LiveID**. This is where the confirmation email will be sent containing an activation link.
4. Ensure you are signed in as Office 365 admin when clicking the activation link to access the Azure credit (Credit Card required)
5. Log in to the Azure portal to start creating (<http://portal.azure.com>)



Roadmap and what's next?

The screenshot displays the 'Cloud Platform roadmap' page. At the top, a blue header contains the title and a brief description: 'The Cloud Platform roadmap provides a snapshot of what we're working on in the Cloud Platform business. Use the roadmap to find out what we've recently made generally available, released into public preview, are still developing and testing, or are no longer developing. Learn more about the types of updates you can expect to find on the Cloud Platform roadmap [here](#).' A 'Give us feedback >' button is located in the top right corner.

Below the header, there are five tabs: 'Recently Available', 'Public Preview', 'In Development', 'Cancelled', and 'Archive'. The 'In Development' tab is currently selected.

On the left side, there is a 'Filter by Product' dropdown menu with a list of categories: 'Cloud infrastructure', 'Enterprise mobility', 'Data management and analytics', 'Application development', and 'Internet of Things'. The 'Enterprise mobility' category is currently selected.

The main content area shows the details for 'Azure Active Directory B2C'. It includes a description: 'Azure Active Directory B2C is a comprehensive, identity management solution for your consumer-facing applications that can be easily integrated to any platform, and accessible from any device. It is a highly available global service that can support hundreds of millions of consumer identities.' A 'Learn more >' link is provided below the description.

To the right of the text is a graphic featuring a cloud with various icons inside, and below it, a series of icons representing different platforms (Microsoft, LinkedIn, Facebook) and a group of people icons.

At the bottom, there is a list of related items under the 'Azure Active Directory B2C' heading:

- > Azure Active Directory Conditional Access
- > Azure Active Directory Domain Services
- > Azure Active Directory Identity Protection
- > Azure Active Directory Privileged Identity Management

<https://www.microsoft.com/en-us/cloud-platform/roadmap-in-development>



Top considerations prior to moving to Azure

- » Does the system you need have a hosted option? (eg MYOB online or Office 365) If so how do the costs compare with self hosting?
- » Is what you are trying to move compatible with Azure?
- » Are your routers compatible with Azure?

<https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpn-devices>)

- » Do you need to upgrade your internet connection? If so can you upgrade and what will be the cost?
- » Are you eligible for the \$5000 credit?
- » What will the total cost of moving your infrastructure to Azure be (including VPN) and how does that compare with buying a server?



Top tips for designing your technology solution

1. Base your design on your future business model
What will your organisation look like in 5 year? How will your staff work? Will you grow?
2. Determine your requirements for applications
What systems do you need? Are these systems available in the cloud?
3. Know how your staff need to work
Are staff accessing information from remote locations or home or on mobile devices?
4. Stage the transition and do what adds most value first
When does your current infrastructure reach end of life? What system is most urgent?
5. Consider a hybrid model of both cloud and infrastructure
What local infrastructure do you need in the short term? What cloud systems can I move to easily?
6. Get expert advice
Do you have a staff member, board member or support provider that has expertise in this area?
7. Build the business case and compare with local server and hosted options?
How can you justify any costs, effort or change – reduce risk, decrease costs, improve performance?



THANK YOU

PLEASE GET IN TOUCH



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