TOWN OF PERTH ASSESSMENT REPORT FOR COUNCIL

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AGENDA

INTRODUCTION

The Town of Perth has engaged ITI to assist in the creation of an IT Transformation Roadmap. The findings will be used to create a clear direction on how to get from the current state to a future state based on long term sustainability as well as specific Business Goals and Objectives.

ITI is honoured to have this opportunity as this is our core-competency. At ITI, we empower organizations to foster collaborative thinking to further drive workplace innovation. By closing the loop and leveraging agile frameworks, we help business grow organically and foster a consumer-first mindset

EXECUTIVE SUMMARY

The Corporation of the Town of Perth is a dedicated team who serves its community and partners by delivering exceptional services and support in a consistent and professional manner. Within that Mission, the Town realizes technology is a business enabler and is exploring options for services delivery that match the Towns long term sustainability goals.

Organizations looking to improve services delivery and reliability are investigating the use of cloud technologies for delivering their services. This strategy eliminates the need to replace aging infrastructure and systems, and realizes the well-described common benefits of cloud adoption:

- Agility – the ability to respond quickly to increases and decreases in business demands for use
- Scalability – the ability to rapidly scale capacity with on-demand provisioning of environments
- Cost Transparency – the ability to see a direct correlation between use and expenditure
- Procurement – the ability to move from a capital to an operational expenditure model

These are just the highlights, and we will discuss the Cloud benefits in detail a little further.

BUSINESS GOALS & OBJECTIVES

The Town of Perth has very clear Goals and Objectives in mind that they would like to achieve. These goals and objectives are the criteria against which the operational transformation will be measured to declare any solutions success. Listed below, are those goals and objectives.

1. Minimize number of Workstations for each User
2. Facilitate Any-time, Anywhere access to Systems
3. Minimize Interventions required
4. Host systems remotely in Canada
5. Ensure appropriate risk management
6. Maximize use of Microsoft software licenses.
7. Provide efficient and effective customer support systems.

CURRENT STATE

The Corporation's server infrastructure consists of 7 virtual servers, hosted at Town Hall with an offsite backup solution. There are other applications critical to the business that are hosted elsewhere.

Furthermore, the Corporation operates approximately 25 vehicles. Many are equipped with laptops, and these connect to the Town network via hotspots.

Function	Location	In-Scope of this exercise
File storage	hosted locally	Yes
Email, MS Office	hosted remotely	Yes
Booking Software	hosted remotely	Yes
Council Documents	hosted remotely through iCompass	Yes
GIS	hosted remotely through CGIS	Yes
Website	hosted remotely	Yes
Great Plains	hosted locally	Yes
IBM POA	hosted locally	Yes
VOIP Phone System	hosted locally	Not Included
Fire Systems –	hosted remotely	Not Included

CHALLENGES

To be successful in delivering exceptional services and support, the Town relies heavily upon technology. They have invested in infrastructure to support their systems which includes, but is not limited to the following:

- ❑ Real-estate
- ❑ Electricity
- ❑ Hardware
- ❑ Software/licenses
- ❑ Cooling
- ❑ Security (physical and logical to ensure only authorized access)
- ❑ Workforce (for its maintenance)

Onsite systems require ongoing investments in hardware, software, and projects to remain current. There are investments in skillsets and systems to manage them, and their average replacement cycles are every five years.

Cloud computing gets rid of the hassles of systems refresh cycles and management and provide stable and reliable services platforms.

CLOUD TRANSFORMATION

WHAT IS CLOUD COMPUTING?

Let’s discuss what Cloud computing is without any tech jargon. Picture for a moment a really cramped office space where;

- ❑ You and a few coworkers sit in tight quarters with disheveled desktops buried in mounds of files and paperwork.
- ❑ There is absolutely no room for storage. And it will be years before you’ll be able to afford a larger office space.
- ❑ Your building manager offers to rent you an empty file cabinet in the basement. Although this basement space is shared with other tenants, only you and your team will have a key to this locked file cabinet to store and retrieve documents and files as you wish.
- ❑ Your rent is relatively cheap compared to other tenants since you’re only paying for the file cabinet and not the larger storage areas they’re renting.

Suddenly, those once cluttered desktops are cleared, leaving some actual physical space to work. Work can be done much more efficiently without the complications that once hindered it. *This is close to what the cloud does for the backend of small business IT infrastructure.*

CLOUD TRANSFORMATION

THE CLOUD ISN'T NEW, YOU'VE BEEN USING IT FOR YEARS

- The cloud is a Cool buzzword, or at least the next evolution of the Internet.
- Many Small and Medium Businesses (SMBs) don't even realize that they're already in the cloud and have been for more than a decade.
- Anyone that has ever used a hosted email provider such as Gmail has already had sensitive data stored, accessed and exchanged in the cloud.

Cloud-based email hosting was one of the first and most broadly adopted cloud services used for both personal and professional use. If you're using social media sites like Facebook, Twitter, LinkedIn, or photo sharing sites like Instagram, you're already part of the public cloud. Do you shop at Amazon or order movies through Netflix? You're again in the cloud.

TYPES OF CLOUD DEPLOYMENTS

Private Cloud

- Works best for larger enterprises with their own in-house IT support, infrastructure and data center

Public Cloud

- Game changer for SMBs. Lower cost. More Agility. Managed off-premises and accessed online

Hybrid Cloud

- Combines both public and private cloud allowing some data to be kept internally and other to be hosted off-site

TYPES OF CLOUD SERVICES

Platform as a Service (Build)

- Think of this as an empty datacentre with cabling, cooling etc. all done. You buy hardware (also provided by the Cloud Service Provider and start building your infrastructure in Cloud

Infrastructure as a Service (Deploy)

- This is one step further from Platform as a Service where everything up to Hardware is done for you, you simply user the number of servers you need and build your environment from there in the Cloud.

Software as a Service (Buy)

- Here we simply buy a Remote services accessed online predominantly used for office processes such as email, file storage/sharing, communication, bookkeeping - Examples: Salesforce's CRM, Citrix's GoToMeeting, Google Apps, Box.net, Dropbox

BENEFITS OF CLOUD COMPUTING

Reduction of Costs: Significant savings can be achieved since the cloud's mass scale computing minimizes onsite physical storage hardware and internal IT staffing.

Anytime, Anywhere Access: Since data access is no longer restricted to a solitary employee or physical device, users can access, share and collaborate in the cloud whenever and from wherever they please. Examples of cloud-based applications include Google Drive (Docs), CGIS, Finance Software and Microsoft Teams.

Better Collaboration: The cloud is available on-demand to computers and other devices from any location at any point of time. This allows for better collaborative efforts among teams given today's increasingly dispersed mobile workforce. Today's SMB can share data and collaborate across their organization in a way that was once only possible with a highly competent System Administrator and Microsoft SharePoint.

BENEFITS OF CLOUD COMPUTING

Greater Scalability: Cloud-based services offer SMBs greater flexibility to scale IT needs up or down as the varying business environment demands.

Faster Deployment: Cloud-based services can be deployed within just an hour or a few days rather than the weeks or months it often takes to strategically plan, buy, build and implement an internal IT infrastructure.

Environmental Friendliness: The cloud's energy efficiency is attractive to any company conscientious about the environment and wanting to be "green." The Berkeley Lab conducted a six-month study that determined that shifting 86 million U.S. office workers to the cloud reduced energy usage by 87 percent. That's enough left-over electricity to power the city of Los Angeles for one year.

Risk Mitigation:
Workloads are not tied to local physical infrastructure systems availability which may have hardware or power failures.

BENEFITS OF CLOUD COMPUTING

Improved Security: Although many SMBs cite security concerns as the reason they're reluctant to move to the cloud, there are very few data breaches involving cloud providers. Of the reported 404 data breaches in the U.S. in 2013, roughly 270 of them were due to lost, stolen, or discarded devices and paper records, rogue employees, payment fraud, and unintentional employee error. Data in the cloud may be more secure than data stored on computers, laptops, and company servers with an array of security vulnerabilities. Unlike a laptop, the cloud can't be left behind in a hotel lobby. Most SMBs cannot secure their datacenter with the advanced tools, encryption methods, frequent testing, and third–party certifications used by cloud service providers.

Business Continuity: Data storage and backup is one of the most frequently used cloud-based services amongst SMBs. Many cloud service providers offer SMBs unlimited storage capability, automated data sync and backup processes that reduce or eliminate downtime events.

ALIGNMENT OF SOLUTION TO BUSINESS NEEDS

It is critical to align any technical solutions to business goals and objectives to ensure successful services transformation or delivery. This chart depicts the Cloud Solutions alignment to the Town of Perth's stated Organizational Goals.

#	Organization's Goals and Objectives	Technology Used	Goals Met?
1	Minimize number of Workstations for each User	Microsoft Virtual Desktop Solution, enables user access from anywhere and any time; reduces the number of physical workstations (hardware) to manage, upgrade and maintain. Furthermore, the resources can be increased or decreased as business needs change.	
2	Facilitate Any-time, Anywhere access to Systems	The recommended Microsoft Azure solution has over 100 Datacenters across the planet. End users can access resources from wherever they have an internet connection.	
3	Minimize Interventions required	Once setup, minimal intervention will be required other than to make end user changes. Even updates/reboots can be scheduled to occur automatically.	
4	Host systems remotely in Canada	Yes	
5	Ensure appropriate risk management	Microsoft Azure has a Built in Risk assessment tool called scorecard with Dashboard that assesses the Cloud environment. It ranks your environment and compares it with other organizations and the systems maturity level.	
6	Maximize use of Microsoft software licences.	Switching to M365 Bus. Premium will improve security and reduce overall licensing costs.	
7	Provide efficient and effective customer support systems.	The move to cloud-based systems will eliminate systems support requirements. End user and application support, although still required, will be minimal.	

MICROSOFT 365 BENEFITS

High level benefits of M365:

- ✓ Available from anywhere
- ✓ Reliable
- ✓ Flexible
- ✓ Easy to management
- ✓ Long term solution
- ✓ Secure File Sharing
- ✓ Multifactor Authentication
- ✓ Sharepoint & OneDrive

COST COMPARISON AND ANALYSIS

A cost analysis of cloud or data centers includes calculations and predictions for CAPEX and OPEX expenses.

CAPEX (capital expenditures) occurs when an organization spends money to invest in new equipment, software, infrastructure, etc. On-premises data centres must take on all these expenses to get a service launched, and then they need to keep refreshing the infrastructure every three to five years. This cash drain may take away from other initiatives.

OPEX (operating expenses) occur regularly as part of the company's daily operations, like paying a utility bill. Running Infrastructure in the cloud will be billed per usage monthly, providing a relatively fixed expense the Town can budget for in advance.

KEY POINTS ON EVALUATING TOTAL COST OF OWNERSHIP

- How easy/expensive will it be to maintain reliability for the life of the system?
- What will it take to uphold our desired level of service?
- How easy and what cost is required to improve performance and enable new features and evolutions to advanced technologies?
- When will the system outgrow the location? What would a bigger site cost to rent and operate?

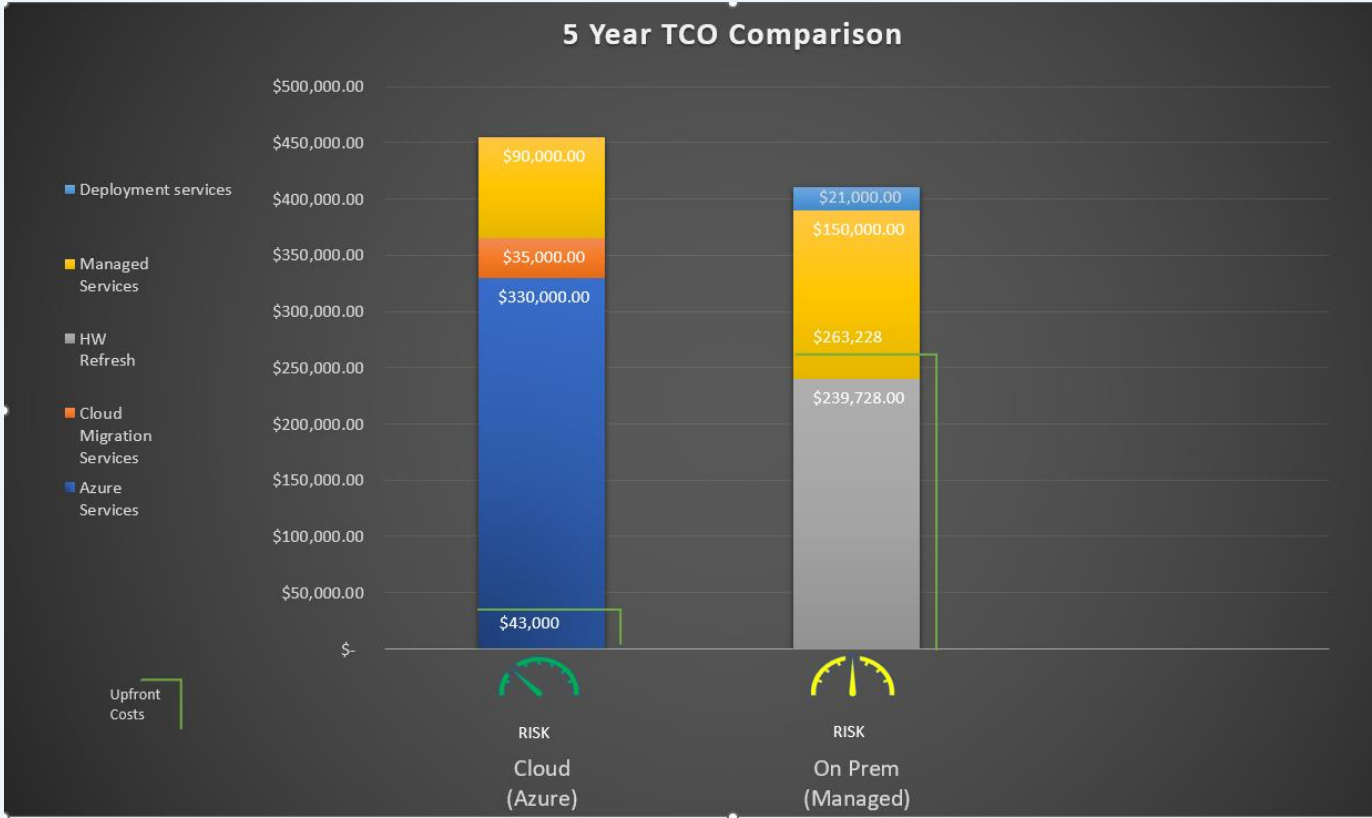
When comparing cost between on-premise and cloud infrastructure, there are a wide range of technical, operational, and financial considerations to be discussed, some of them are presented in the table at right.

Services	On-Prem Infrastructure	Cloud based Infrastructure
Maintenance Cost		
Reliability	Cost Prohibitive	Built-In
Disaster Recovery	Cost Prohibitive	Built-In
Accessible to Remote employee	Cost Prohibitive	Built-In
Elasticity	Cost Prohibitive	Built-In
Scalability	Cost Prohibitive	Built-In
Renting/paying for building space and insurance		X
Utilities for electricity, cooling, UPS		X
Adding multiple server racks		X
Upgrades: adding memory and RAM to each individual server, replacing outdated CPUs with more powerful ones, software updates, etc.		X
Refresh after year five		X

HIGH LEVEL 5-YEAR TCO COMPARISON

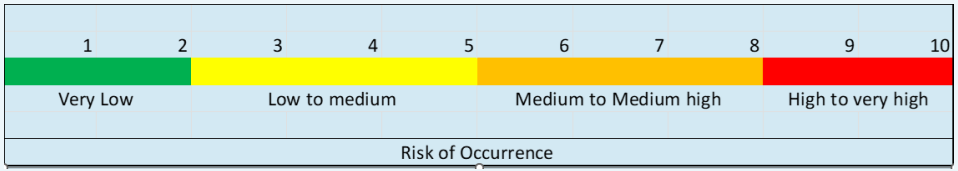
Excluded from analysis are the following areas. These areas are not currently being tracked onsite. Please note that these factors would increase the 5-year TCO and change the risk factors associated to On Premise scenario only.

- Floor space
- Power and cooling
- Onsite resources
- Hourly cost per outages



RISK EVALUATION FACTORS

Outage Factor
Hardware failure
Misconfiguration
Security incidents
Unplanned downtime
Access to sites
Human Error
Parts replacement delays
Skilled onsite labour availability



CONCLUSION

Understanding the Town of Perth's overall goals and objectives, Microsoft Azure Cloud services becomes a convincing choice. Azure solutions make modern services delivery more resilient and competitive, enabling cost savings, increasing business agility, and provides heightened data security.

The use of cloud services, such as Software as a Service Office 365 by corporations today, is a strong example of how cloud-based installation can reduce costs and increase productivity. Moving to an OpEx IT infrastructure cost model from CapEx will provide significant and improved change for the town of Perth, and will remove the need for expensive upfront investments, replacing them with predictable monthly fees.

The solution will help the Town achieve their sustainability goal, while reducing overall support requirements moving forward.

We see this transition as Win-Win scenario for the Town of Perth.