< Technology Trends

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Cloud Workspace is defined as a work environment that provides employees with access to their own applications, files and services located in the cloud.

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Business Brief

It provides all necessary tools for an employee to remotely perform their regular work duties without being present in the office. It can fully replace local desktop workspace capabilities or workspace settings otherwise only available through conventional network connections or secure channels.

Cloud Workspace represents a major shift in how work is done, as well as how a workspace configuration is managed. The promise of Cloud Workspace is to resolve or overcome some issues and shortfalls of other concepts and technologies currently or previously being utilized for a non-

centralized and globally distributed work force. This is achieved through a Cloud Workspace independent from the underlying technology, devices, connectivity or user location. Almost any device with access to the internet should be sufficient to perform work duties using a Cloud Workspace configuration.

Cloud office applications (e.g., Office 365 and G Suite), a subset of digital workplace applications, have the greatest impact on IT operations, because they represent a large amount of the digital workplace core.

A further benefit of Cloud Workspace is the resolution of the ever-growing complexity of local workspace management, especially in (possibly globally) distributed company offices. By using a Cloud Workspace solution, this problem can be completely outsourced to the service provider or managed and tuned partially in the cloud domain, independent of local constraints.

Technology Brief

The concept of the remote office, the 'office on the go', has been around for many years, with a variety of solutions introduced in the past. Starting with laptops as mobile pieces of equipment, shared network drives, secure Virtual Private Network (VPN) connection technologies and cloud computing all represent mainstream attempts to enable a workforce to work productively remotely or when temporarily away from the office.

While these and similar initiatives have been a move in the right direction, none of them represent an end-to-end solution: an employee being able to work remotely and having access to a full set of work tools and capabilities almost identical to what they have in their physical office. Meanwhile, the previously mentioned solutions have generally failed to provide organizations with the necessary controls and options to easily manage distributed employee working environments. The Cloud Workspace has the potential to resolve these considerations.

In a sense, the Cloud Workspace is really not a new technical solution, but rather a different way to offer and manage (as a service provider), or to use (as the client) cloud solutions that fulfill IT requirements of a user (both the enterprise and its employees). In other words: Cloud Workspace is most commonly a Software-as-a-Service (SaaS) cloud offering, packaged as a virtual desktop for each employee and includes all necessary tools and applications customized for a specific customer.

In theory, the Cloud Workspace enables an employer to fully set up local or remote employees for work, by providing them with a single URL access to their Cloud Workspace. As long as the necessary credentials in the corporate cloud are set, the employee will be able to do his or her work regardless of location or device used. This represents a great simplification compared to setup and configuration of a conventional/physical workspace.

In reality, most organizations will either provide some equipment to employees, or at least give an option to use some or all of the company equipment. Since all the work is happening on the server side (in the cloud), the system requirements for the processing power, storage, and network connection capabilities of the local device become almost nonexistent compared to system requirements of a workstation in the physical workspace. As such, the concept can represent a major financial benefit.

Apart from the major convenience this concept provides to employees, all workspaces can be managed centrally from one location. This means that the need for local IT helpdesk personnel can be greatly reduced. Even managing the different desktop operative systems (e.g. Windows or Linux) based on user preferences can easily be achieved. As the amount of local hardware is reduced, Cloud Workspace helps eliminate the complexity in managing hardware inventory, whereby operating system versions and patches can be installed without any interruption to the end user.

Industry Use

In reality, most organizations will either provide some equipment to employees, or at least give an option to use some or all of the company equipment. Since all the work is happening on the server side (in the cloud), the system requirements for the processing power, storage, and network connection capabilities of the local device become almost nonexistent compared to system requirements of a workstation in the physical workspace. As such, the concept can represent a major financial benefit.

The Open Government Portal (open.canada.ca) officially launched in 2014 and aims to provide one-stop access to the GC's searchable Open Data and Open Information, together with Open Dialogue, as part of the GC's commitment to enhance transparency and accountability. The data published on the Open Government Portal is made available by GC departments, agencies, and Crown corporations. While each of these entities is responsible for managing their own data, the Treasury Board of Canada Secretariat (TBS) is responsible for the governance, including guidelines and policies, applicable to the data.

It is also worth noting the concept of Cloud Systems versus Cloud Workspace. The cloud system is another common cloud vendors offering that can be purchased and used as part of Cloud Workspace or on its own. Generally cloud systems are centered on performing a certain group of tasks, as opposed to the Cloud Workspace that is customized towards a specific user group. Some examples of cloud systems are Office suites such as Microsoft Office 365, Google drive and other google applications that are part of the Google drive platform.

Cloud computing in general, as well as its more specific offerings such as the Cloud Workspace, are also the reason for the appearance of a new computing model called Zero Client[1] that has emerged in recent years. With data storage and information processing happening in the cloud, the local computing devices required significantly less processing power and storage capacity. Instead, they only require a connection to the Ethernet and/or Wi-Fi, as well as the ability to plug in input devices such as mouse, keyboard and a screen. In essence, the Zero Client consist of miniature boxes that enable cloud users to communicate to the cloud applications.

Another emerging industry trend related to Cloud Workspace is Bring Your Own Device (BYOD).[2] Computing device affordability has increased in recent years, with many employees already possessing one or more personal devices capable of performing their work duties. There are different potential financial benefits to the employer when adopting this concept, and some studies indicate that employee productivity can increase.

However, there are also many concerns, mostly regarding the security and potential data breaches. As personal devices are often shared with partners and family, data privacy is a major concern, as is the security of data should a personal devices be sold or given away, with the employer having

no control or oversight over whether an employee has removed all previous corporate information from that device.

Canadian Government Use

Following the trend toward optimization of its IT infrastructure and offerings, the Government of Canada has introduced many physical and virtual components over the past decade that form the basis for the Cloud Workspace.

Blueprint 2020, launched in 2013, set out a vision for a world-class public service equipped to serve Canada and Canadians now and into the future. Focused on themes of agility, collaboration and the smart use of technology, Blueprint 2020 aims to make the Government of Canada a modern workplace that makes smart use of technology so that it can meet citizens' continuing demands for more IT enabled services and for these services to be available through new channels such as social media.

The concept of Cloud Workspace is compatible with the goals of Blueprint 2020. For employees, Cloud Workspace empower them to choose where and how to work to be most productive, while providing flexibility and greater variety of spaces and fostering. It also offers the potential for increased personal productivity by providing better technology and work processes. For the Government of Canada, Cloud Workspace assists with meeting the strategic goals of providing better service to Canadians, contributing to sustainability goals through data-informed decision making on better ways to work, design, use and manage the workplace, allowing the Government to attract retain the best talents, optimizing efficiency of facilities and creates less waste, and fulfilling its commitment to the digital office.[3]

In April 2019, the Honourable Carla Qualtrough, Minister responsible for Shared Services Canada, announced a new agreement to acquire Microsoft Office 365 licenses for all federal government departments.[4] The acquisition of such a major cloud system represents a major shift from doing work on local workstations towards working in the cloud.

The major driver for the Cloud Workspace adoption in the Canadian Government is the Treasury Board of Canada directive on Government of Canada Cloud Adoption.[5] Those guidelines are the key factor for adoption of various cloud services for the Government of Canada, including the Cloud Workspace. With its clear direction of the "cloud-first" adoption strategy, in which cloud is the preferred option for delivering IT services in the Government of Canada, the path has been set for exploring the Cloud Workspace capabilities.

Implications for Government Agencies

Shared Services Canada (SSC)

Value Proposition

Cloud Workspace is a concept that may be of great interest and benefit to the Canadian Government. The Government of Canada has been continually seeking ways to optimize the management and delivery to employees of its workspace hardware and software. Keeping local workspace equipment up to date, keeping corporate inventory accurate, and pushing updates to the local workstations, are some of the tasks that are increasing in their complexity.

The Cloud Workspace concept promises some major benefits to its adopters from which the Government of Canada can benefit:

- **Providing centrally controlled workstation resources** such as memory, CPU and storage space.
- **Minimizing or eliminating desktop lifecycle tasks** to remove the need for managing the same or similar workstation stack.
- **Delivery of identical workspace to multiple devices** such as office workstation, laptop, tablet, phone, thus achieving economies of scale in purchasing.
- **Minimizing local data security threats –** with no local data processing there is no need for local data storing, eliminating security risks.

Challenges

Switching from in-house built, hosted and stored solutions to cloud-based products and offerings represents a major shift in the way work is undertaken in any organization. With the continually increasing complexity of IT systems, the benefits of bringing a new and promising concept into the enterprise can easily be overshadowed by unexpected challenges[6] for the cloud adopters is seen in the requirements needed to fully integrate the new approach:

- **Adoption of the new skills** personnel needs to build experience in consuming and operating technology as a service.
- **Changing internal corporate process** such as company billing systems.
- **Introduction of a more agile approach** to adopt and use cloud services.
- **Transforming corporate culture to become more "cloud compliant,"** ensuring employee buy-in.

Cloud Workspace poses other significant organizational challenges. Although it offers greater flexibility for the communication and work with clients, external stakeholders and citizens, uptake of the technology can severe connections between employees within the organization making communication and workflow less effective. With the ability of anytime, anywhere and any device usage, Cloud Workspace is also a potential security nightmare, owing its effectiveness to the security of local wifi networks and devices often outside of organizational control. There is also the potential, as employer increasingly rely on employee-owned devices, for employees to be burdened by the cost of such devices and their security.

Additionally, SaaS platforms such as Office 365, are constantly being updated by the vendors. These updates often occur at a faster rate than the IT organization can react and ensure changes are appropriate for the network. While users generally benefit from rapid updates, infrastructure and operation team leaders find it challenging to support their users, appropriately test, and can't control whether to accept the changes.

Considerations

The Cloud Workspace is a concept that has the power to shift employee workspace, work habits, and work culture in a new direction. This concept also promises major financial and work effort benefits to the employer. Cloud computing is no longer a question of if or when – it is here to stay and will continue to grow. Cloud Workspace as a cloud computing offering is now in the on-boarding phase.

While remote access to work tools and the work environment by employees won travel status or working off-site is already available, the Government of Canada is increasingly adopting working from home as a valid option for its employees. Enabling employees to access and use the same workspace, no matter where they are located and potentially no matter what device they use, may produce major benefits and efficiencies for both employees and the organization.

While this concept comes with new opportunities, it also brings new constraints, challenges, security and privacy questions that need to be considered carefully prior to full adoption by the Government of Canada. A successful digital workplace program must align with digital transformational goals, requiring thoughtful establishment of effective governance practices of the new applications and the data they create. Moreover, it must be responsive to the employee experience, as any digital transformation will ultimately fail without a willing, informed, well-equipped and engaged workforce.[7]

SSC leaders responsible for transforming IT operations to support digital workplace applications should consider creating a SaaS digital workspace applications product team focused on SaaS applications, such as Office 365 or G Suite to build expertise in-house. Additionally, SSC should consider staffing the digital workplace SaaS applications support team with a combination of technical and nontechnical personnel, as changes in how employees work (traditional to digital) will need to be managed via communications and formal change management processes targeting employee work and culture behaviour.

SSC will need to consider the priorities and foundational aspect of Office 365 for architectural coherence. While Office 365 will become a foundational core element of digital workplace, SSC will need to remain agile and flexible enough to deploy situational deployments to address certain business requirements. SaaS and digital workplace applications (e.g., Office 365 and G Suite), in particular, force IT infrastructure and operations leaders to transform the way they manage IT infrastructure, implement changes, handle incidents, support users, and provision training. This is because the SaaS vendor controls the changes made to the SaaS application and the rate at which they are made. The dynamic nature of the SaaS environment means the organization must have an agile approach to supporting SaaS applications. Bolstering SSC's change management processes and staff understanding of change principles is advised for critical success in deploying cloud workplace.

Lastly, SSC will need to consider how it handles remote work and telework options for its employees. As the office tools become more accessible away from the main headquarters, SSC will need to undergo a culture shift in accepting employees who wish to work from a wide variety of locations. Trust will need to increase in SSC employees and managing by performance and output is essential for success. In parallel, some employees will require training on how to use distributed-type technology such as video-teleconferencing, collaboration tools, instant messaging etc. A clear and visible senior executive will be required to lead this change for cultural shift to occur in SSC and embrace Cloud Workplace and digital working.

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