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Cloud definitions, strategies, and marketing messages continue to shift. What is **most** important is the business problem you are trying to solve and the solutions available. We will continue leveraging cloud resources throughout the rest of this decade and beyond. We expect a blend of local resources and cloud resources will be needed for the foreseeable future.

For example, Microsoft Office 365 is a blend of storage in Microsoft public cloud data centers, applications that can be run through a browser, and traditional Microsoft Office that can work locally or connect to the cloud storage. You can extend local resources over the internet, commonly referred to as a private cloud. You can share computing capability with others in the public cloud.

So what capabilities are working well and should be considered? Where are the risks? How about the costs? When should you choose SaaS, private and public cloud offerings? Who does the implementation work? Why should you consider these strategies? Although a complex topic, hopefully this article will serve as a summary of your choices.

Private Cloud, Public Cloud?

In prior columns, we have explained that software applications can run in a browser. This is called Software as a Service or SaaS. Examples include: AccountantsWorld (among the first!), CCH Axcess, GoFileRoom, GoSystemRS Tax, Intuit Online Tax, XCM, ADP Run, Avalara, Concur, QuickBooks Online, Xero, Wave, SageOne, FreshBooks, Kashoo, Intacct, SAP Business By Design, ShareFile, and SmartVault.

Productivity applications that are SaaS include the Microsoft Web Apps and Google

vendors' approach of hosting applications should be considered **public cloud.** Your files can be private or shared, but you are still using resources that are publically available with supporting hardware infrastructure components shared by more than one company. When security is set up correctly, your private data will be secure. Some vendors would argue that even though you are sharing common data center and applications, your firm's data is kept private, and they'll refer to their offering as a private cloud.

We prefer to think of private cloud offerings where you build and maintain a private cloud in-house or in hosting centers that provide a completely separate infrastructure using offerings like Citrix XenApp, Citrix XenDesktop or VMware View. You may find the long-term costs to be less to build a private cloud in-house and you will typically see greater speed and flexibility. For most CPA firms, Microsoft's Hyper-V and App-V aren't as fast for CCH, Thomson or Intuit products today. When a virtualized network is extended with these technologies, whether the network is in your firm or in a data center, you provide users the ability to run from anywhere, anytime with similar performance to the office.

This approach is a **private cloud.** A few vendors, Cloud 9 Realtime and Xcentric for example, will build a separate private cloud for you at a premium charge. The key benefits to a private cloud are more flexibility, integration and customization, and in most cases greater security but at a premium price.

So, What Should Be Your Strategy?

You should look at what you are trying to accomplish as a firm. If you are in public practice, think about the interfaces to your clients first. If you are in industry, think about how you interface with your customers and suppliers. The technical tools today allow you to work anywhere, anytime, and anyplace. You should look at the software that fits your needs the best.

If the solution you need is only available as an in-house or network based

of the applications that you need and want to run. If you have a mix of in-house and SaaS applications, or a hybrid solution, then you have to make sure your hosting provider can support all of the applications you desire.

Model all of the costs for a ten year period. This will help you see the cost/benefit of being in the cloud or remaining in-house. The reason for using ten years in the model is that traditional servers and Storage Area Networks (SANs) need to be scheduled for replacement every five years. One of your largest unexpected costs will likely be on software licensing and upgrades if you have an in-house implementation. Cloud vendors factor in hardware infrastructure and upgrades in their monthly costs.

You will continue to have technology local resources that have to be maintained whether you are in the cloud or have an in-house "private cloud" implementation. These technologies include: a next generation firewall, good cabling (CAT 6af), 1GBps switches with Jumbo Frame and Power Over Ethernet support, Phone service (VOIP), copiers/MFP, end user computers including UltraBooks or desktops, multiple monitors, scanners, printers, smartphones and encryption everywhere. Optionally, you may want to have: redundant internet lines, wireless (public/private), tablets, cellular data, portable monitors (MMT, HP U160), conference room displays or projectors connected with an Apple TV or McTivia appliance, a well thought out web site, and digital signage.

The advantages to being in a data center include: redundant communication lines, generators for backup power, SLA (Service Level Agreements) of 99.999(9)%, physical security and control, command centers, SOC/SSAE 16 certifications (often inherited), and probable BC/DR preparedness. The issues for private cloud implementations include: sufficient local expertise, Microsoft licensing, on-going maintenance and managed services costs, software updates, the capital expense of

replacing server, SANs and backup appliances every five years, power outages,