Cloud Computing
(Building a Business Case)

Calculating the financial implications

Comparing in-house facilities to the cloud

Estimating economic factors downstream

Preserving business continuity

Selecting appropriate service-level agreements

Safeguarding access to assets in the cloud

Security, availability and disaster recovery strategies

Migrating to the cloud

Rearchitecting applications for the cloud

Integrating the cloud with existing applications

Selecting a vendor and avoiding vendor lock-in

Hands-On Experience Includes:

Deploying websites and data to Amazon IaaS

Assessing PaaS tools for building and deploying cloud applications

Experiencing SaaS real-time collaboration tools

Allocating and deploying resources on an OpenStack Private Cloud

Developing a business plan for cloud adoption and migration

Five reasons to consider SaaS

You want to lower expenses associated with software acquisitions in the near term.

You want to shift some of your IT budget from capital expense to operational expense.

You have limited IT resources to deploy and maintain needed hardware and software.

You need to refocus your IT staff from deployment and maintenance to high-priority projects.

You want to reduce energy consumption and expense.

Microsoft's offerings for SaaS

Microsoft offers a variety of online services to address your agency's most pressing needs:

Microsoft Business Productivity Online Suite delivers a suite of services for hosted communication and collaboration. Dedicated cloud offerings for U.S. government organizations can deliver integrated communications with high availability, comprehensive security, and simplified IT management.

Microsoft Exchange Online delivers your email with protection, plus calendar and contacts.

Microsoft SharePoint Online creates a highly secure, central location for collaboration, content, and workflow.

Microsoft Office Communications Online provides real-time, person-to-person communication with text, voice, and video, across agencies.

Microsoft Office Live Meeting delivers hosted web conferencing.

You want to reduce energy consumption and expense.

Microsoft Exchange Hosted Services are attached services that include filtering, archiving, encryption, and continuity.

Microsoft Dynamics CRM Online, with minimal configuration, offers constituent relationship management (CRM) and other extended CRM solutions to help you automate workflow and centralize information.

Windows Live services help developers connect their applications, experiences, and customers to more than 500 million Windows Live users. associated with software acquisitions in the near term.

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Microsoft offerings for PaaS

Microsoft offers a variety of online services to address your agency's most pressing needs:

The Windows Azure platform is the flexible, familiar environment in which you can create cloud applications and services without infrastructure limits.

Windows Azure delivers on-demand compute and storage to host, scale, and manage web applications through Microsoft data centers.

Microsoft SQL Azure Database is a fully relational cloud database solution built on SQL Server that offers highly available, scalable, multi-tenant database services.

AppFabric simplifies connecting to cloud services and on-premise applications.

Microsoft Codename "Dallas" makes it easy to find, purchase, and manage premium data subscriptions. You can consume the data from any platform, application, or business workflow.

Bing Maps for Enterprise combines complete viewing options—full-color imagery, aerial views, and three-dimensional terrain and city models—with mapping, location, and search to support open government projects.

Microsoft .NET helps developers build applications targeting the Windows platform by providing some common building blocks that make it easier to write cloud-based applications, helping to get them up and running quickly.

IaaS

On-demand data centers—also known as Infrastructure as a Service (IaaS)—provide compute power, memory, and storage, typically priced per hour, based on resource consumption. You pay only for what you use, and the service provides all the capacity you need, but you're responsible for monitoring, managing, and patching your on-demand infrastructure.

The biggest advantage of IaaS for government is that it offers a cloud-based data center without requiring you to install new equipment or to wait for the hardware procurement process—which means you can get IT resources that otherwise might not be available.

Microsoft offerings for IaaS

Microsoft offers a variety of online services to address your agency's most pressing needs:

Microsoft System Center has a free, partner-extensible toolkit that allows data centers to dynamically pool, allocate, and manage virtualized resources to enable IaaS.

Windows Server provides an architectural piece allowing communication, collaboration, and management between on-premises, private cloud, and public cloud computing.

Dynamic Data Center Toolkit for Hosters allows you to create a private or public cloud offering, including services for provisioning and managing different servers and server roles.

Cloud offerings of Amazon

AWS: Four Best Practices at no Charge

The following Trusted Advisor checks are now available to all AWS users at no charge:

Service Limits Check - This check inspects your position with regard to the most important service limits for each AWS product. It alerts you when you are using more than 80% of your allocation resources such as EC2 instances and EBS volumes.

Security Groups - Specific Ports Unrestricted Check - This check will look for and notify you of overly permissive access to your EC2 instances and help you to avoid malicious activities such as hacking, denial-of-service attacks, and loss of data.

IAM Use Check - This check alerts you if you are using account-level credentials to control access to your AWS resources instead of following security best practices by creating users, groups, and roles to control access to the resources.

MFA on Root Account Check - This check recommends the use of multi-factor authentication (MFA), to improve security by requiring additional authentication data from a secondary device.

Service Level Agreement:

This Amazon EC2 Service Level Agreement ("SLA") is a policy governing the use of Amazon Elastic Compute Cloud ("Amazon EC2") and **Amazon Elastic Block Store** ("Amazon EBS") under the terms of the Amazon Web Services Customer Agreement (the "AWS Agreement") between Amazon Web Services, Inc. ("AWS", "us" or "we") and users of AWS' services ("you").

Service Commitment

AWS will use commercially reasonable efforts to make Amazon EC2 and Amazon EBS each available with a Monthly Uptime Percentage of at least 99.95%, in each case during any monthly billing cycle (the "Service Commitment"). In the event Amazon EC2 or Amazon EBS does not meet the Service Commitment, you will be eligible to receive a Service Credit as described below.

Monthly Uptime Percentage	Service Credit Percentage
Less than 99.95% but equal to or greater than 99.0%	10%
Less than 99.0%	30%

Citizen services. Drive innovation with data services in the cloud that citizens can reuse. Offer your own data mashups on a portal.

Infrastructure. Get the IT resources you need, only when you need them. Seek a vendor that can manage your needs with a focus on security and predictability. And pay only for what you use. Agencies can reduce the need to build out and manage data centers, and IT can consolidate budget and facilities due to hardware efficiencies.

Flexibility. Adjust cloud-based resources up and down to meet real-time needs, or offload onsite data to the cloud as needed to improve operational efficiencies. And since the cloud is Internet-based, you can access these resources from anywhere, supporting remote work and continuity of operations.
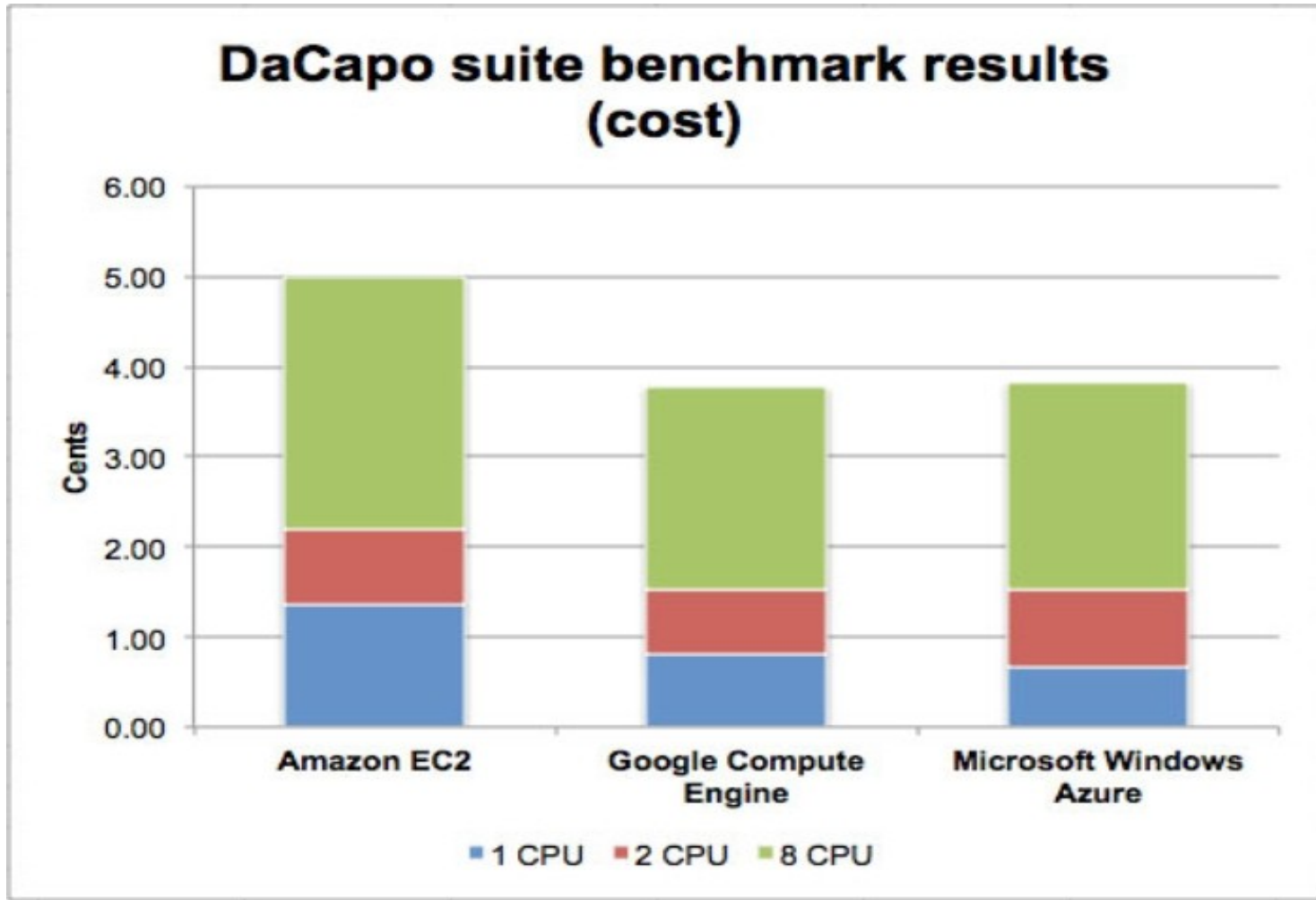
Cloud benefits to government

Disaster recovery / continuity of operations. With centralized data storage, management, and backups, data recovery in response to local business disruptions can be faster and easier.
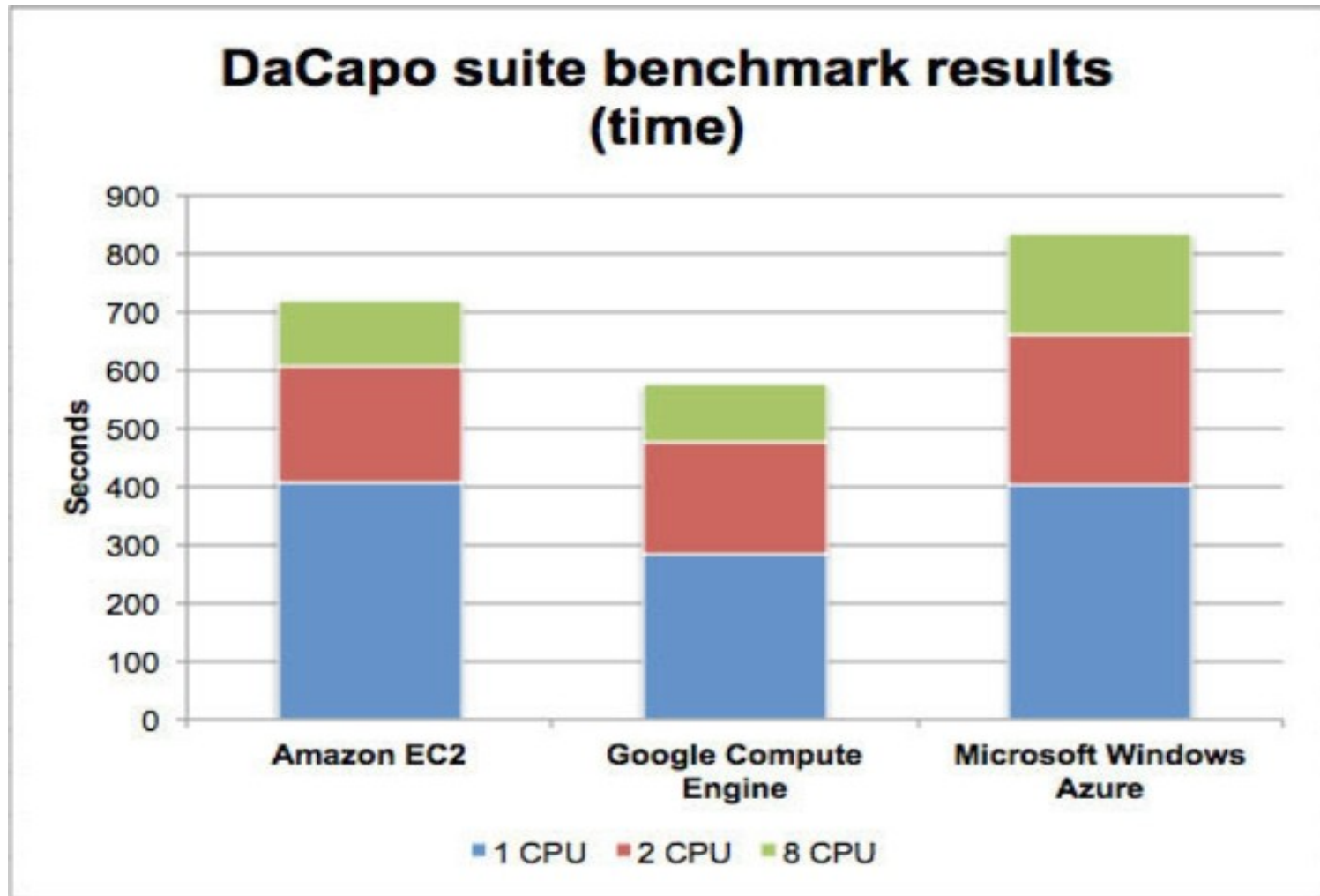
Applications and content. Rather than waiting in the software procurement line, get hosted software, datasets, and services as they are released so you can focus your mission.

Creative IT. Since cloud services can be centrally managed, IT workers are freed from a "keep-the-lights-on" approach, providing more time to foster creative problem-solving.

To be continued…

THANK YOU !