

Cloud Computing – Benefits & Risks

IT Strategy & Management

Author: Christian Reina, CISSP
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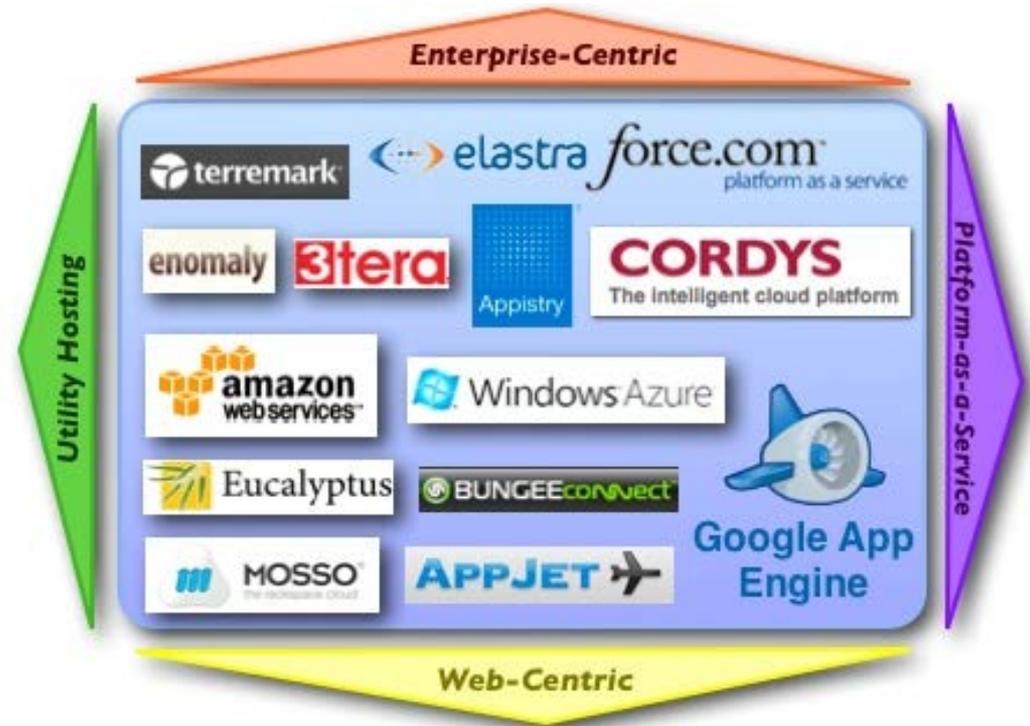
Highlights of the Cloud Computing Landscape

What is cloud computing?

- A way to delivering efficiency
- Accessing resources remotely
- A way to provide value with computational devices
- Extracting Services from servers and networks
- Advantages of computing without one

What is driving the trend?

- Depending on a system administrator to configure what you need will take years.
- Free competition and diversity
- The cloud as a utility.



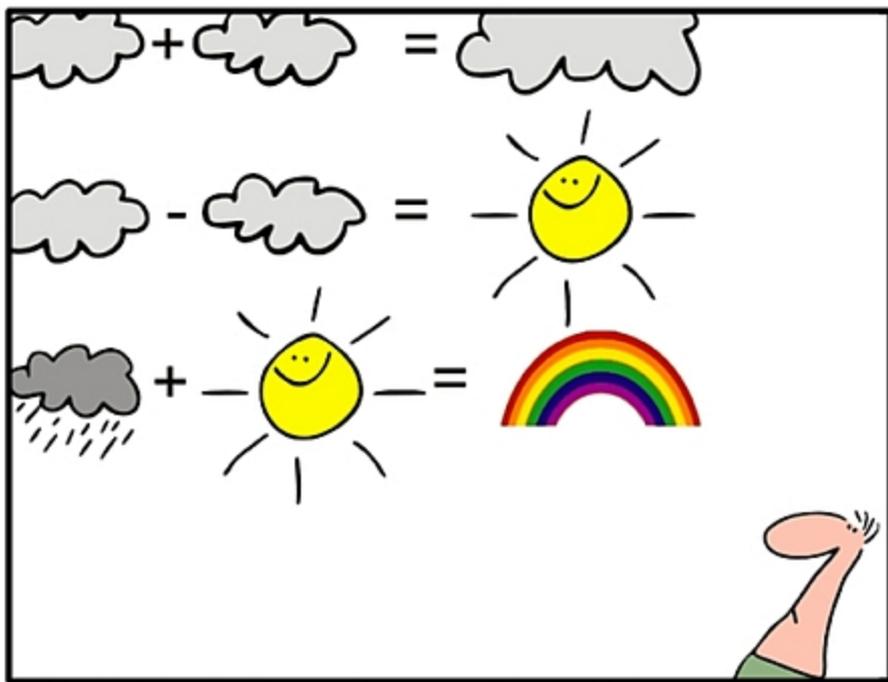
From <http://blogs.zdnet.com/Hinchcliffe>



Cloud Computing Economics

Frequency of innovation	More consumer-like user interface
Pay for actual usage	Lower integration costs
Analytics included – no separate charge	No/Minimal upgrade costs
Faster time to deploy	No maintenance fee increases
No server costs	No data center impact
Infrastructure savings	No database costs
No storage costs	Lower IT staffing costs
No hardware/DB provisioning	Easier customization
Mobile support	Overall end user experience

Enterprise Cloud Computing Competency Areas



geek and poke

**SIMPLY EXPLAINED - PART 17:
CLOUD COMPUTING**

- Ability to standardize and compare economic models for IT/cloud services.
- Effective prototyping and vendor selection processes.
- Technical ability to adopt and execute with cloud computing services.
- Incorporation of cloud computing into strategic IT planning.

Cloud Computing Growth: An Operational Model

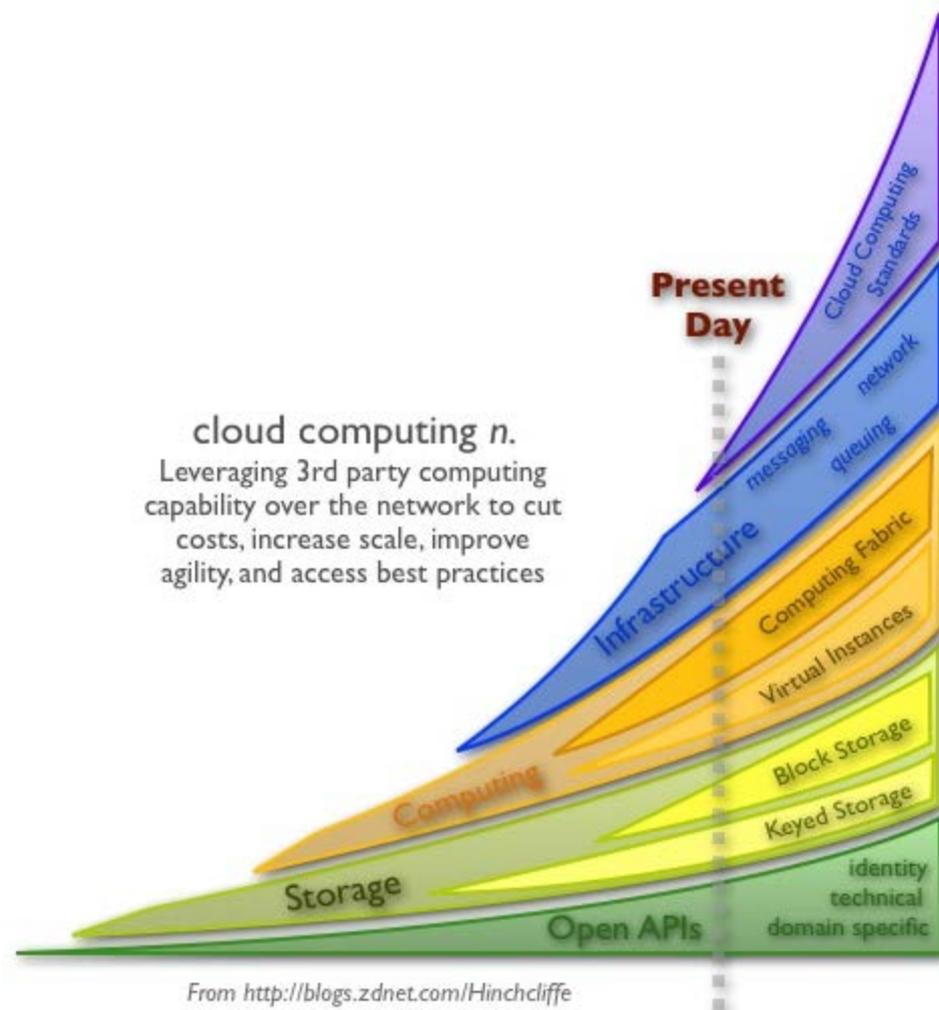
ISP 1.0: Provided access to the Internet (Dial-up, ISDN, T1)

ISP 2.0: Access to servers at the Internet access point

Colo (ISP 3.0): Racks for your equipment at the Internet access point

ASP (ISP 4.0): Hosted Software as a Service (SaaS) at the Internet access point

Cloud (ISP 5.0): Dynamic, Internet-optimized Infrastructure for hosting your applications





Problems, Solutions & Providing Opportunities

Problems

Packaged Software: Large early investment before any business benefit

Project Prioritization: IT focuses on process rather than outcome. IT departments are responsible for non-critical applications.

Solutions

Pay-as-you-go: Low initial investment. Cash flows better match total system cost.

Outsourcing: Outsource non-critical applications and allow IT to focus on critical applications and outcomes.



How Cloud Computing Will Change Enterprise Business Systems

- The creation of a new generation of ERP, CRM, and SCM
- A new lightweight form of real-time partnerships and outsourcing with Enterprise Business Systems suppliers
- A new awareness and leverage of the greater Internet
- A reconciliation of traditional SOA with the cloud
- More tolerance for innovation and experimentation from businesses
- The slow-moving, dinosaur firms will have trouble keeping up more nimble adopters and fast-followers

ERP in the Cloud?

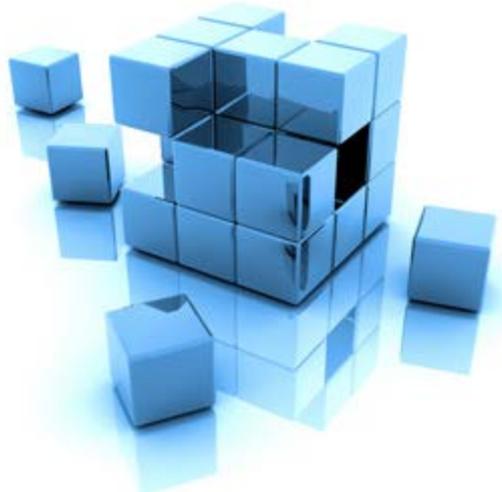
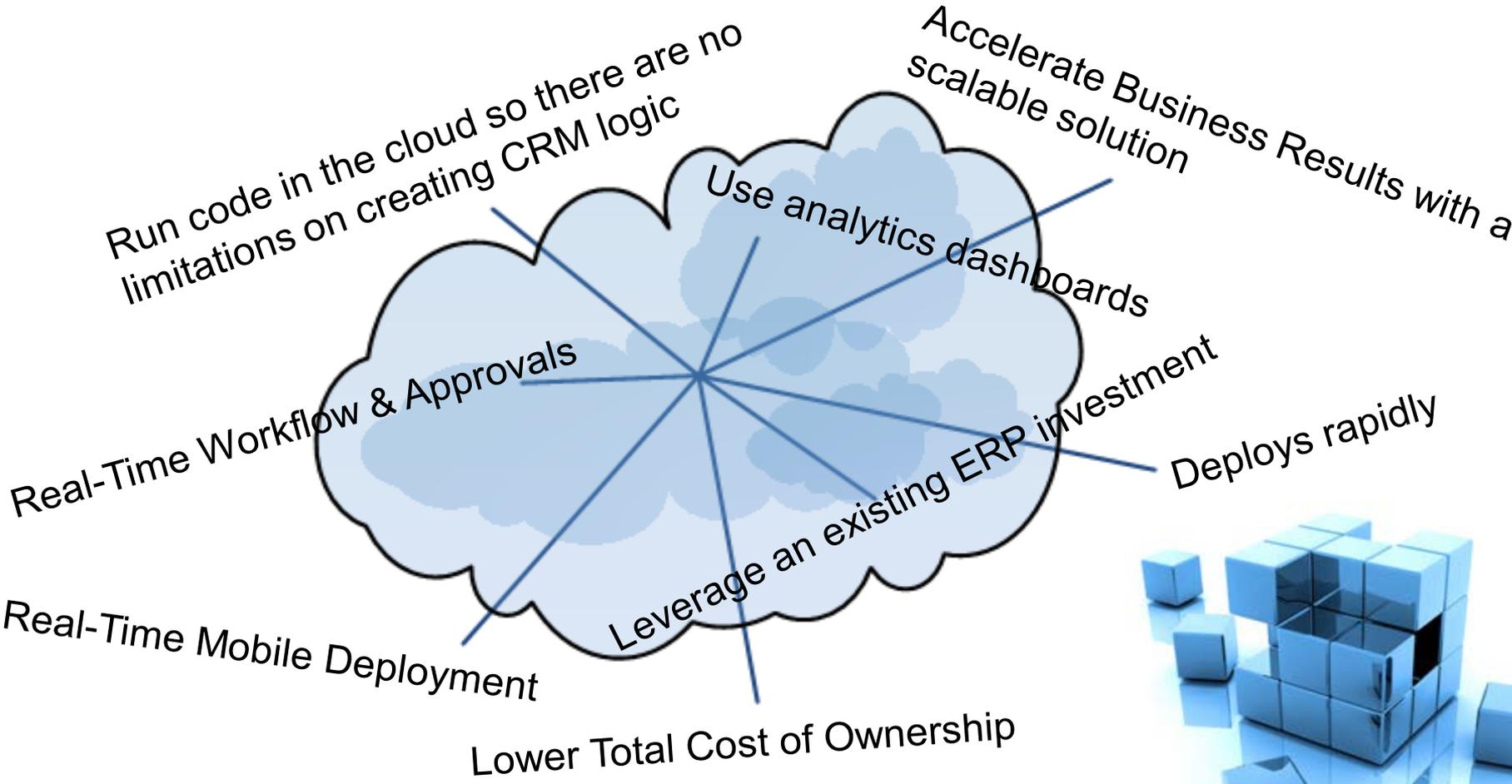
Epicor True SOA™: Provides a configurable global ERP platform, and far-reaching functionality, we are redefining the enterprise application software experience.

QAD On Demand: A Web-based, software as a service (SaaS) solution that provides a flexible deployment alternative for QAD Enterprise Applications.

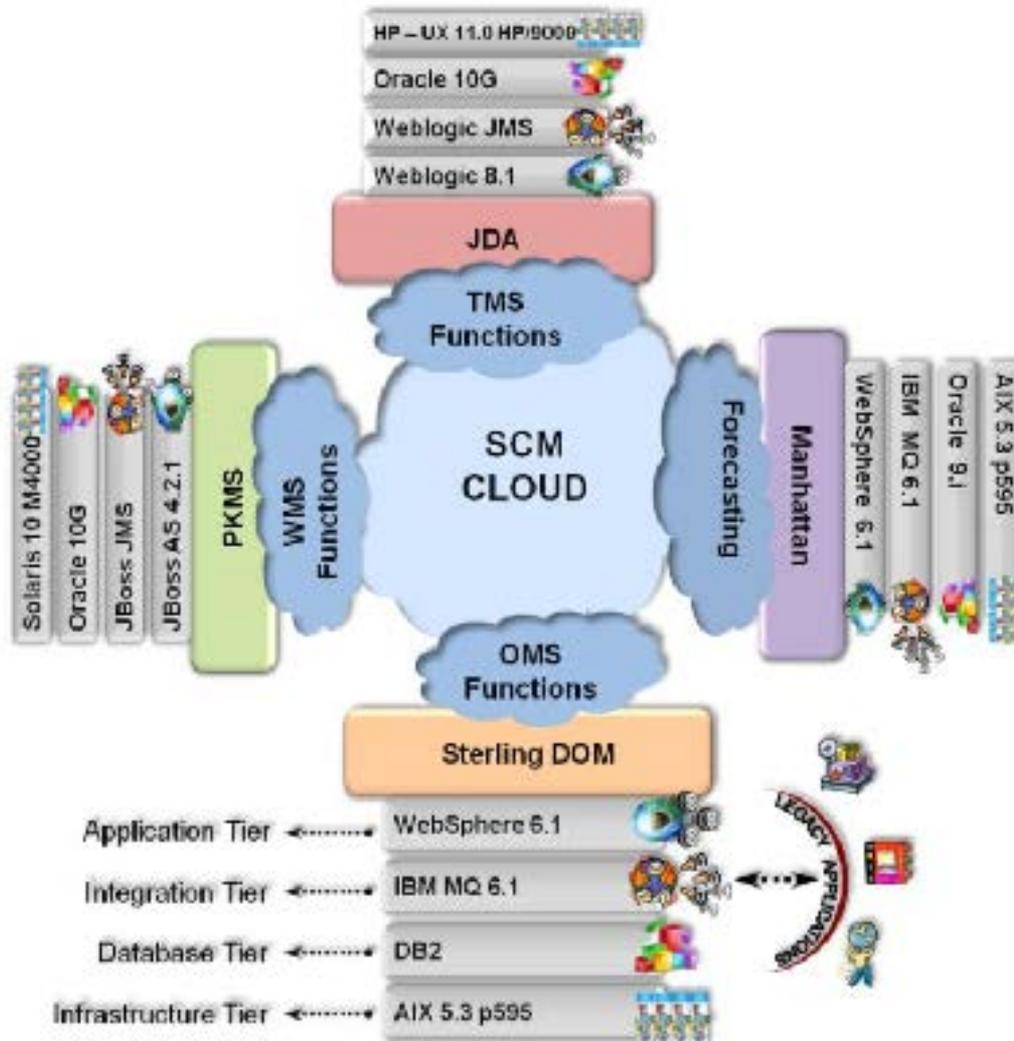
NetSuite: SuiteCloud is a comprehensive offering of on-demand products with the benefits of cloud computing.



CRM and Cloud Computing



Agile SCM Cloud



Cloud Computing: Balancing risks and opportunities

“The promise of cloud computing is arguably revolutionizing the IT services world by transforming computing into an ubiquitous utility.”

“In an environment where privacy has become paramount to enterprise customers, unauthorized access to information in the cloud is a significant concern.”



From <http://blogs.zdnet.com/Hinchcliffe>

“...by outsourcing portions of information management and IT operations, enterprise workers will be free to improve processes, increase productivity and innovate...”

Cloud Computing Essential Characteristics

Characteristic	Definition
On-demand self-service	The cloud provider should have the ability to automatically provision computing capabilities, such as server and network storage, as needed without requiring human interaction with each service's provider.
Broad network access	According to NIST, the cloud network should be accessible anywhere, by almost any device (e.g., smart phone, laptop, mobile devices, PDA).
Resource pooling	The provider's computing resources are pooled to serve multiple customers using a multitenant model, with different physical and virtual resources dynamically assigned and reassigned according to demand. There is a sense of location independence. The customer generally has no control or knowledge over the exact location of the provided resources. However, he/she may be able to specify location at a higher level of abstraction (e.g., country, region or data center). Examples of resources include storage, processing, memory, network bandwidth and virtual machines.
Rapid elasticity	Capabilities can be rapidly and elastically provisioned, in many cases automatically, to scale out quickly and rapidly released to scale in quickly. To the customer, the capabilities available for provisioning often appear to be unlimited and can be purchased in any quantity at any time.
Measured service	Cloud systems automatically control and optimize resource use by leveraging a metering capability (e.g., storage, processing, bandwidth and active user accounts). Resource usage can be monitored, controlled and reported, providing transparency for both the provider and customer of the utilized service.

Cloud Computing Service Models: Risks and Benefits

Service Model	Definition	To Be Considered
Infrastructure as a Service (IaaS)	Capability to provision processing, storage, networks and other fundamental computing resources, offering the customer the ability to deploy and run arbitrary software, which can include operating systems and applications. IaaS puts these IT operations into the hands of a third party.	Options to minimize the impact if the cloud provider has a service interruption
Platform as a Service (PaaS)	Capability to deploy onto the cloud infrastructure customer-created or acquired applications created using programming languages and tools supported by the provider	<ul style="list-style-type: none"> • Availability • Confidentiality • Privacy and legal liability in the event of a security breach (as databases housing sensitive information will now be hosted offsite) • Data ownership • Concerns around e-discovery
Software as a Service (SaaS)	Capability to use the provider's applications running on cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a web browser (e.g., web-based e-mail).	<ul style="list-style-type: none"> • Who owns the applications? • Where do the applications reside?

Cloud Computing Deployment Models: Risks and Benefits

Deployment Model	Description of Cloud Infrastructure	To Be Considered
Private cloud	<ul style="list-style-type: none"> • Operated solely for an organization • May be managed by the organization or a third party • May exist on-premise or off-premise 	<ul style="list-style-type: none"> • Cloud services with minimum risk • May not provide the scalability and agility of public cloud services
Community cloud	<ul style="list-style-type: none"> • Shared by several organizations • Supports a specific community that has shared mission or interest. • May be managed by the organizations or a third party • May reside on-premise or off-premise 	<ul style="list-style-type: none"> • Same as private cloud, plus: • Data may be stored with the data of competitors.
Public cloud	<ul style="list-style-type: none"> • Made available to the general public or a large industry group • Owned by an organization selling cloud services 	<ul style="list-style-type: none"> • Same as community cloud, plus: • Data may be stored in unknown locations and may not be easily retrievable.
Hybrid cloud	<p>A composition of two or more clouds (private, community or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds)</p>	<ul style="list-style-type: none"> • Aggregate risk of merging different deployment models • Classification and labeling of data will be beneficial to the security manager to ensure that data are assigned to the correct cloud type.

A Balancing Act



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