



Cloud Migration Management

Best practices in transforming legacy IT for the Cloud

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Executive Overview

Problem Statement

Cloud Computing can be an ideal solution when customers find themselves faced with a number of pressing issues:

- Long-time delays to secure IT resources, resulting in a growing backlog of service requests
- Explosive growth of unstructured content driving demand for more and more storage
- Poor utilization and cost optimization - There is an unnecessarily expensive growth of IT costs due to mismatching the right services
- The current data centre platform doesn't support the new application architecture
- Lack of budgeting and cost controls - There is no awareness of what IT is costing and how this breaks down

These are all pain point scenarios that Cloud services are ideal for addressing.

ITaaS – IT as a Service

Cisco explain this effect in their recent white paper [Enabling IT as a Service](#) (11-page PDF), most critical point right at the start:

"Organizations strive to be able to instantly respond to change or dramatically improve a specific business process. This is not lost on IT—in fact, many organizations are beginning to change their investment justifications to ensure that any new technology purchase or operational initiative is geared toward business process improvement, a primary justification for new IT expenditures over the past few years."

Business Process Management software that leverages Cloud technologies. The types of functions these apps will offer will include:

- Conversion of paper-based workflow forms
- Imaging and document management
- E-Payment, check processing and funds transfer facilities
- Legacy application data integration
- Multimedia
- Email and Sharepoint file archiving



Customers can adopt Cloud Computing as a point solution for a specific need, or embrace it for a holistic transformation of their IT estate.

Business Transformation

Enterprise Cloud Level 5 – Maturity Model

The primary business benefit of Cloud computing is that it can enable organizations to achieve a ‘Level 5’ BPM maturity (Business Process Management).

BPM stands for Business Process Management, and how effectively an organization has mastered this science can be quantified on a maturity scale, ranging from 1-5.

The details involved at each level and how to progress through them is detailed by the uber-guru of BPM himself, [Michael Hammer](#). Michael invented the concept of Business Process Re-engineering in the 80's, setting the scene for an entire industry of related consulting and enterprise software to implement it.

Most recently the Hammer team has invented the ‘PEMM’ – The [Process and Enterprise Maturity Model](#) (PEMM), a framework for assessing and improving BPM capabilities. How these process sophistications enable High Performance is described in his [Harvard article](#).

PEMM describes a matrix that make this science repeatable, including sections such as process design, change management, decision-making authorities, management metrics, leadership, culture and organizational process expertise. Each can be moved along the scale of 1-5 maturity so that overall the organization improves.

For Cloud computing it is the ‘Infrastructure’ element we’re particularly interested in. It begins with *“fragmented legacy IT systems”* and concludes with a level 5 ranking of:

“An IT system with a modular architecture that adheres to industry standards for interenterprise communication support the process.”

The move to Cloud computing represents this same maturation process. Virtualizing applications and integrating them into a broader Cloud ecosystem moves them from an isolated, legacy platform to an agile environment where software is far more flexible, it can be deployed and re-deployed quickly and effectively, and is inter-connected through open Cloud standards.

Furthermore the applications that Cloud platforms are able to run, like UCC: Unified Communications and Collaboration, can further advance this agenda. In the Leadership section of Hammer’s PEMM it describes how the start of the journey is Level 1, where:

“the senior executive team has started shifting from a top-down, hierarchical style to an open, collaborative style.”

This same journey is described in the [UCC Maturity Model](#) (9 page PDF) we developed at BT, to provide a frame of reference for organizations considering adoption of UCC.

Through a software platform, collaboration strategy and architecture that includes expertise location, social networking, RSS feeds, content, document and records management, UCC applied across four key categories of people, processes, organizations and technologies, enables this transformation from hierarchical organization to a more dynamic, emergent structure, where the Level 5 conclusion to this journey is “self-organizing value networks”.

Architecture-Driven Modernization

For organizations considering a move to Cloud services, it’s first helpful to consider there are different levels of Business Transformation that can be engaged.

This is succinctly explained in this OMG program [ADM](#) (Architecture-Driven Modernization). In the white paper ‘[Transforming the Enterprise](#)’ the author describes how transformations, moving from one system to another, can have three different dimensions: 1) for technical reasons where the underlying IT pieces are moved around but the business doesn’t change (**T**echnical Architecture, 2) re-engineering the software architecture (**A**)pplication Architecture, through to 3) a full reinvention of the whole organization and business model (**B**)usiness Architecture.

Moving to Cloud can actually represent activity on all three fronts:

1. **(T)** Virtualizing the platform to simply improve the underlying hardware usage.
2. **(A)** Re-architecting apps – Re-writing the software to some degree to take advantage of the Cloud features.
3. **(B)** Transforming business model - The business process itself can be moved online to harness “Crowdsourcing” models.

These different levels of scope define the level of transformations possible, and dictate the strategy, stakeholders and other elements that would be impacted and thus need involved in the project.

It also helps quantify to the sponsoring executive team what the possible ROI motivations might be and therefore how best to approach the Cloud and what they might hope to gain from investments in this area.

They might have a perception where option #1 is the only benefit when actually the biggest ROI will come from the larger #3 project, equally they can treat isolated projects simply as a #1 process to deal with the specific technical requirements of one aging platform.

IT Value Transformation – Cloud Maturity Model

Key Cloud vendors like VMware propose a similar scaling process to manage the acquisition of Cloud into the enterprise.

In their white paper '[IT Value Transformation Roadmap](#)' (24 page PDF), they offer a blueprint for a Cloud Maturity Model, engineering High Performance Organization through business transformations, where:

“This cloud computing strategy brief presents a virtualization- and private-cloud-centric model for IT value transformation. It combines key findings from several primary research studies into a three-stage transformation road map.”

A 3-Step maturity model is proposed that begins with virtualization and grows into full utilization of Cloud computing across three stages of:

- i) IT Production,
- ii) Business Production,
- iii) ITaaS.

Most importantly it quantifies this in terms of the IT organization becoming more mature in terms of their 'Business Transformation' abilities, their ability to quantify and exploit IT in terms of ROI and value for money.

Make MiCloud Your Cloud

The State of Michigan's '[MiCloud](#)' strategy is a comprehensive framework for adoption of Cloud Computing by a government agency, one that can act as a best practice blueprint for others to emulate.

Most notably they opt not to use the centralized Apps.gov store. Instead they define their own role as a full-service solution provider for their clients, and handle all the supplier negotiations and in a manner that enables cross-provider switching and avoids vendor lock-in.

Through their Delivery Method Decision Tree they integrate various tiers of Cloud service into an overall IT service delivery program. This means they don't opt for only one flavour of Cloud computing, but instead use the 'right tool for the right job'.

Where there is appropriate opportunity to utilize low-cost commodity public Cloud service they do so, and where their security and compliance requirements dictate they opt instead for their own in-house [Government Community Cloud](#).

Service Delivery Transformation

Ultimately this is enabling them to transform the role of IT and how they deliver services.

This is headline by a punchy theme: “The Cloud Computing paradigm says “The client can have something simple, proven and cheap immediately, or they can have something complex, unproven and expensive in six months.”

Michigan sets themselves a top-level priority of **securing tangible benefits for citizens and businesses**, achieved through a number of specific business transformation benefits:

- **Imperative to maximize efficiency** - Government is under fierce pressure to reduce staff, capital and operating budgets. In categories like storage Michigan have delivered options at 90% cheaper rates.
- **They have eliminated “rogue sourcing”**, where consumers go around the IT department to order Cloud applications like Google directly, by offering their own in-house alternatives for lower costs, and through rapid, self-service tools.
- **User empowerment** - Through self-service catalogues and Process Automation tools they are empowering users to embrace and benefit from IT without their direct involvement. A process orchestrator function that enables business users, regardless of ICT skill level, to create process definitions which are published to the service catalogue. This serves as a foundation for process transformation.
- **Cloud sourcing** - Migrating commodity ICT functions, like messaging, to outsourcing providers, to free up staff to work on higher level activities that add real value. Not only does this reduce cost but it meets their need to provide staff with more innovative and challenging work.

They offer a catalogue of services that includes virtual servers, storage, and hosting for web, apps and development, and have also defined a framework for integrating SaaS applications, building an SOA Enterprise Services bus to integrate the applications, and where they overcome the client dependency problem through encapsulation:

“Negotiating virtual machine-friendly licencing rates is critical to deliver encapsulated software platform functions successfully. Delivering encapsulated software platform functions is, in turn, critical to eliminating client dependencies and reducing business complexity.”

At the heart of the MiCloud strategy is the recognition that “the Cloud Computing paradigm is a startling shift in the thought process behind ICT sourcing methods”.

Where “government once saw itself as a unique business domain demanding unique ICT functions and custom solution, but now these business processes are converging with those of industry. Workflows such as staff recruiting and the ICT functions that support them, are now becoming standardized commodities.”

They’ve recognized that adding custom software and proprietary COTS applications greatly increases the complexities they have to manage, and so commodity ICT via the Cloud acts to reduce this, adapting common IT services to the needs of government.

Typically major up-front investment is often needed to achieve the economies of scale to make government IT projects cost effective, and Cloud can mitigate this risk.

Through a framework of Cloud sourcing methods like RFP and policy templates, what they call ‘MiDeal’, they are also acting as a Cloud Service Provider: Enabling other units of government to purchase using their contracts and maximize the cost savings that all parties enjoy.

Statement of Work

The Consulting Engagement work for Cloud Migration Management.

Cloud Readiness Assessment

- Executive Strategy workshop: Architecture-Driven Modernization review
- Identify readiness of applications for Cloud Migration

Cloud/Virtualization Support Services

- Virtualize existing legacy applications

Cloud VPN Implementation

- Establish secure VPN between corporate data centre and Cloud Provider
- Cloud Deployment Security Audit
- Cloud Active Directory Configuration Services

About the Authors

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