



Open Government Innovation Network

Best practice case study

Make MiCloud Your Cloud

The Open Government Innovation Network best practices program is an ongoing review of real-world case studies of how leading government agencies adopting Open Government Cloud Computing, and distilling these into a repeatable consulting and solutions program.

<http://open-government.net>

Make MiCloud Your Cloud

A case study profile of the adoption of Cloud Computing by the state of Michigan, USA.

Data-center transformation

With a budget of over \$80 billion the US Government is the largest IT buyer in the world. Recently they have announced a “Cloud-first” policy for government agencies to choose Cloud Computing first as a delivery method. This is part of an overall strategy to utilize the technology to reduce these costs.

The major driving force is the [FDCCI](#), the Federal Data Center Consolidation Initiative.

The number of data-centers operated by the US grew from 432 in 1998 to over 1,100 by 2009, and this program intends to harness Cloud computing to reduce this number through a large-scale consolidation exercise, as well as delivering other strategic benefits:

- Promote the use of Green IT by reducing the overall energy and real estate footprint of government data centers;
- Reduce the cost of data center hardware, software and operations;
- Increase the overall IT security posture of the government; and
- Shift IT investments to more efficient computing platforms and technologies.

MiCloud

At the regional level each state is then responsible for achieving success against these goals.

Michigan has responded through developing their own '[MiCloud](#)' strategy (20-page PDF). Describing how they have been very hard-hit by the recession they paint a hard-nosed and practical use of Cloud computing to deliver improved service while reducing costs.

Amongst these business benefits a key goal is to tackle 'rogue cloud sourcing':

"Cloud services are extremely easy to adopt and use. A sophisticated user can stand up a fully automated business process without the ICT organization being involved or perhaps even being aware. Cloud services are often so inexpensive that, if purchased, they would not trigger a procurement review. Some are so inexpensive that staff may actually pay out-of-pocket just for the personal convenience."

It bluntly demonstrates the economic value of Cloud services but also the inherent risk due to uncontrolled use, and so the ideal result is that the trend is internalizing the same technologies and products to drive the same efficiencies in a structured manner.

Michigan is deploying a Cloud platform so that they can offer their users the equivalent options for Virtual Servers, Storage and Process Automation tools that they might obtain from Amazon or Google, but these are delivered behind the firewall for faster performance.

MiCloud storage is 90% cheaper than their current lowest-cost storage tier, and features include approval workflow, an online wizard that creates audit records as users manage permissions, an off-site copy option for business continuity purposes, usage-metered billing and storage pools in separate data centers, so it is significantly enhancing IT service delivery.

Government Cloud SDLC

They aren't limiting the use of external Cloud services, indeed the principle value of MiCloud is that it defines an overall procurement framework for Government cloud services, including a context for linking these technologies to specific business outcomes, the key to business/IT alignment.

They have established a MiCloud Delivery Method Decision Tree process where projects can be assessed for criteria like business criticality, security and privacy requirements, and then mapped on to a tiered service catalogue made up of internal government cloud (on-premises), external government cloud (off-premises, cross-boundary partners), external commercial cloud (off-premises vendors) and hybrid cloud (any combination) service options.

The process is supported by supported by contractual models for commercial providers that ensure they will be compliant with the governments unique needs with regards to data privacy and other legislation, so they are fully exploiting all aspects of Cloud, utilizing third-party providers as well as internal technologies.

In particular they are mastering the formula for clearing “Innovation Gridlock” – The MiCloud formula is engendering the IT organization with much greater agility. They can provide proof-of-concept infrastructure for new projects rather than entire ‘big bang’ purchases, and by outsourcing common functions they’re freeing up staff time as well as enjoying commodity market pricing:

“The emerging workforce demands challenging, varied and rewarding work. We have demonstrated that a successful cloud function automates routine tasks, freeing staff to pursue varie, high-value opportunities.”

Trusted Cloud Outsourcing

The MiCloud strategy is a powerful blueprint for Cloud adoption because it encompasses many of the strategic benefits of Cloud, such as enhanced Business Continuity, but does so within a very practical best practices program that includes tackling the most immediate concerns over outsourcing to Cloud providers.

It includes a model contract that specifies the goals for how Cloud service providers should configure their environments so as to be compliant with the unique requirements of Government, starting with the key point:

“There are no unique legal issues or constraints for cloud computing that are not present in other third-party hosting agreements. A template contract for both third-party hosting and cloud-sourcing contracts helps shape negotiations and ensure best practices are included from the outset.”

From there it stipulates a number of other key terms:

- Guarantee that Michigan will continue to own and control all access their data, and will surrender and purge on demand
- Ensure that data is replicated to other data-centre locations
- Auditable records of all data access events
- Compliance with Michigan Identity and Access Management (IdAM) standards
- SLAs: Define incident response metrics, MTTR with penalties etc.
- Stipulate that all provider contracts including telecom providers, are enforceable under US law, ideally Michigan law
- Define protocols for how to handle FOIA or e-discovery requests

In other words **Michigan is defining how they retain control** while outsourcing to Cloud providers, and as a result are maturing a critical capability: “Supplier dynamism”.

This means their IT service delivery is mature enough such that it can invoke, use and dispose of IT resource from third-party suppliers on demand, protecting them not only from systems downtime but also from commercial risks as well, like the provider going bankrupt.

There is no special concern of Cloud providers for them, they view and are able to use it in the same light as internal IT resource, it’s simply a matching process driven by a business decision.

Ultimately this is eloquently summed up through the capability it delivers:

“In a sense our annual DR exercise is a rapid re-sourcing rehearsal’

Conclusion - Solution profile

This strategy from Michigan can therefore be seen to define and address the following elements of a Cloud implementation:

- Federal-level policy to “Green” and consolidate data-centres.
- Eliminate “rogue cloud sourcing” – Prevent staff use of Google et al by offering in-house equivalents.
- MiCloud Storage – 90% cheaper than their current lowest-cost storage tier
- Automate user provisioning processes to further reduce costs, improve service delivery
- Freeing up staff to work on more innovative projects
- Integrate Cloud options into project SDLC process: Map from privacy requirements to best fit service option
- Trusted Cloud: Protect data through proactive definition of Cloud provider contracts
- Supplier dynamism: Achieve multi-supplier resilience and portability