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All About Cloud ROI

Business Strategies for Cloud Technologies



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As with most new technologies, cloud computing engenders many questions for IT managers and CIOs. What is it, and what are the benefits? How does this concept impact my organization? What does it mean for users, and the IT department? How will it change our approach to vendor relations? Is it secure? Should we embrace the cloud, or ignore it?

There is an abundance of discussion of these issues in the IT trade press. What is lacking, though, is a rational examination of the business cycle surrounding cloud – analysis, backed by real-world experience, of the issues involved in assessing and realizing the value of cloud technology.

Business triggers: The need for a new solution

Most IT solutions begin as an IT-enabled response to a business requirement – a need to implement a new business process, or to make an existing process better, faster, more secure, more responsive, more predictable, more scalable, et cetera. The key to a successful implementation is to find the “right fit” between need and capability. So - what are the triggers for cloud computing? What causes organizations to consider the architecture in the first place, or *should* prompt organizations to investigate the ability of cloud to offer an optimal solution to a current need?

For some, it's a matter of getting technology into the hands of users faster. For others, productivity is the key – the drive to deliver services faster.

“It’s interesting: cloud computing is coming to us at a time when we are recovering from a recession, so I find that a lot of clients are starting to look at cloud for the cost savings portion of it.” - Doug Jones, Business Unit Executive, Cloud Computing, IBM Canada

But these days, cost savings might be the number-one trigger. By its nature, cloud reduces the need for capital expenditures (CAPEX), by allowing organizations to “rent” access to hosted assets on an operational (OPEX) basis. The ability to match expenditures to actual usage – “pay as you go” – is appealing, especially in a cost-conscious environment, and is a major factor in the current interest in cloud.

“It's interesting: cloud computing is coming to us at a time when we are recovering from a recession, so I find that a lot of clients are starting to look at cloud for the

cost savings portion of it,” says Doug Jones, IBM Canada’s cloud computing business unit executive. “But, once they look at it closer they’re finding all the other business value.... Clients are saying, ‘Hmm, we can use this for more than IT. We can use this to transform our business, potentially reach clients in places

where we have never reached clients before, and apply new business models that we have never been able to do in the past.”

As this quote indicates, organizations that venture into cloud find a wide range of benefits beyond cost. Let’s consider some of the other business triggers that may drive consideration of a cloud solution. First: the need to deliver services faster.

Organizations often find that the cloud is initially used to benefit the IT department, providing a rapidly-configurable platform for test and development. The dynamic infrastructure enables organizations to quickly spool up and tear down servers, storage, and other IT resources to develop and test applications before putting them into production.

Asked to list specific cloud triggers, Mark Kovarski, senior business technology consultant for the Bank of Montreal, points straight to technology quality assurance. “Developing QA environments certainly is one of them. We are also looking at high-performance computing, where we have a base cloud solution built in-house today.”

Another potential trigger for cloud-based solutions – especially, for thin client deployments – is improved information security. At the Laval School Board, cloud computing forefends a data-privacy nightmare.

“Privacy is extremely important,” says Rene Marquis, the board’s IT director. “We have thousands and thousands of young students walking around with laptops, for example; then you may have a real case for privacy invasions – people losing their equipment, or equipment being stolen away from them.”

Laval implemented cloud computing with thin-client access – students use simplified workstations that draw processing power and applications from a centralized server and storage platform. (For a complete explanation of cloud computing architecture, see “How did ‘the cloud’ come to be?” on page 4.) Marquis says it’s easier to manage than the multiple-laptop scenario from a data-privacy perspective, because the data is contained in one place.

In Laval’s case, privacy was a complementary benefit, with CAPEX savings providing a primary trigger for cloud consideration. Thin clients are less expensive than traditional computers, especially on a depreciation basis, as they tend to last longer than traditional desktops or laptops.

About This Report

To explore the business basis for cloud computing, IT Market Dynamics - the research arm of the IT in Canada network - convened a panel of technology leaders, including two early cloud computing users, to investigate the issues involved in assessing and realizing value from an investment in cloud. Our panel included:

- Mark Kovarski, Senior Business Technology Consultant, Bank of Montreal
- Rene Marquis, IT Director, Laval School Board
- Doug Jones, Business Unit Executive, Cloud Computing, IBM Canada

We conducted in-depth interviews and discussions with the panellists, recording the sessions on video and presenting them on the IT in Canada ROI Innovation Web site (<http://roiinnovation.itincanada.ca/>).

Results are reported in a five-part series of articles describing the steps organizations need to consider for successful cloud deployments:

1. Business triggers: the need for a new solution
2. Sources: savings and new capabilities
3. Building the business case or RFP
4. Keys to a successful implementation
5. Downstream optimization/ increase ROI

In addition to these five issues, we created an “Extras” category on the ROI Innovation site to house important contextual/additional information. As of this report’s initial publication, the ROI Innovation Extras material included *(continued on next page...)*

A desire to reduce operational expenditure (OPEX) can also provide impetus for cloud evaluation. With thin clients (as was the case in Laval), the IT team might be motivated by a desire to streamline software licence management, to keep from over-spending on software. With a cloud-based thin client approach, the IT team spends less time scheduling software upgrades, because

the cloud infrastructure allows administrators to automate the update process without disrupting the users – and that spells better resource allocation in the IT department, less time wasted.

Another reason to consider cloud is a desire to increase business agility. The quest to create a nimble business is paramount for many companies, and may lead some to conclude that cloud computing can play a role in helping their organizations become more responsive to demands for new services, or support for new users in new locations.

“How do you go and have a reach in the global marketplace and not just Canada?” Kovarski asks. He explains that the cloud simplifies the process of supporting users around the world, reducing the costs that the organization faces with traditional distributed architectures.

“Offshore, we have scenarios where instead of hosting the virtual desktops yourself, why not spin up desktops for the duration of an engagement in the cloud and then tear them down and get the bill at the end of the day, just like a true utility?” he says.

Cloud computing might be the catalyst that finally propels IT into the role of the dynamic service provider – not a new idea in the IT industry, but one that might be finally coming to fruition. (For more about the history of cloud computing, see “How did ‘the cloud’ come to be?” on page 4.)

“I think we are moving from an era of ‘simply IT’ to an agile business technology era,” Kovarski says. “That’s where... I think cloud is very important.”

perspectives on cloud security and privacy (based on an interview with Ontario Privacy Commissioner Ann Cavoukian), use of cloud to support business continuity, application of cloud to development/test environments, and other cloud issues.

In this report, we’ve combined direct quotes from our video sessions with situational analysis of each of the five process stages, to provide readers with an understanding of cloud ROI issues rooted in real-world experience. At the conclusion of each section, we’ve assembled a checklist of key considerations that you can use to assess how - or whether - cloud can be a compelling option in your current business/IT environment.

Checklist: Business Triggers for Cloud Computing

You may be a candidate for cloud computing if one or more of these factors are important in your organization:

- ✓ You need to ensure data privacy and security on client devices.
- ✓ You need to scale up (and down) compute resources quickly.
- ✓ You want to avoid capital expenditures, and work with a “pay as you go” cost model.
- ✓ You are looking for ways to deliver new services quickly and cost effectively to users, especially those in remote locations, or who need to access data from more than one location.
- ✓ Your client devices are used by multiple individuals.
- ✓ You need to improve time to market by enabling more rapid development, test, quality assurance or application deployment.
- ✓ You are looking to streamline backup or new software updates for client devices.

Sources: Savings and New Capabilities

Once the business triggers for a new solution have indicated that there is potential for the deployment of a specific technology – like cloud computing – the next step is to build an understanding of the benefits that the technology can be expected to deliver to the organization. Generally, these analyses cover two main areas: the “hard dollar” cost savings associated with the new technology, and the “soft dollar” benefits of the new approach. The second stage of our cloud examination dealt with this issue – the potential cost savings and new capabilities associated with cloud deployments.

Proponents of cloud computing often point to cost savings, productivity improvements, and “green” benefits. But the cloud hides a number of less obvious – if no less important – opportunities that organizations need to keep in mind.

1. **Efficient information sharing:** Discussing one IBM client, Jones says that the firm realized it could use the cloud to consolidate its myriad business intelligence (BI) applications and databases across the enterprise, affording better information sharing and, in time, improved employee productivity. “The information in that cloud becomes a lot richer, the user experience becomes richer, and the costs drop.”
2. **Better partner relationships:** Kovarski says the Bank of Montreal has found that by making anytime/anywhere access possible, the cloud has alleviated downtown space shortages, making it easier for contractors working for the bank to access the company infrastructure, wherever they happen to be. This improves access to resources – although the institution did have to shore up the security infrastructure first. “That leads to the security being an issue, right now,” Kovarski says.
3. **Improved security:** The Laval School Board identified information security as a key driver for cloud computing in the first place. The organization wanted to make sure that sensitive information was protected – and the best way to do that was to implement a centralized information system. “All of this comes from a vision,” whereby eventually all of the school’s data would be available via Web browsers, although contained and controlled so only authorized people can access sensitive material, Marquis says.

How did ‘the cloud’ come to be?

Cloud computing is not a revolutionary new development, notes IBM in its white paper “*Seeding the Clouds: Key Infrastructure Elements for Cloud Computing.*” It’s an evolution that has taken place over several decades.

It began in the late-1980s with the concept of grid computing when, for the first time, a large number of systems were applied to a single problem, usually scientific and requiring high levels of parallel computation.

Utility computing followed in the 1990s, offering clusters as virtual platforms for computing with a metered business model.

More recently software as a service (SaaS) has raised the level of virtualization to the application, with a business model of charging not by the resources consumed but by the value of the application to subscribers.

The concept of cloud computing has evolved from the concepts of grid, utility and SaaS. It is an emerging model through which users can access applications from anywhere, anytime, through connected devices. These applications reside in massively scalable data centers where compute resources can be dynamically provisioned and shared to achieve significant
(continued on next page...)

4. **Bridging IT and business:** “There’s always been a natural tension between IT and business,” says IBM’s Jones. “Cloud computing... tends to break down those barriers.” Instead of a collection of confusing hardware and applications, IT is transformed into a service that the business can access as required, he explains, shrinking the gap between the IT department and business departments.

Another benefit has become one of the standard sources of savings for cloud computing implementations: reduced power consumption. It’s an important consideration. “We do come into problems when you put 30 desktops within a classroom,” Marquis says. “You just don’t have the resources to pull power potentially to drive all of these machines.... Thin clients will function between seven and 15 watts. That’s about one-tenth of a desktop.”

Looking specifically at hard dollar issues, we find cloud inducements in both CAPEX and OPEX:

- CAPEX savings can be significant. “The first driver for us was the dollars,” Marquis says. “We think a laptop will last about three years within the school system, a desktop about five years. We hope to achieve about 7.5 years with a thin client.... It is a very significant savings for us as a school with 10,000 units.”
- OPEX savings are tangible as well. “With thin client we can actually now upgrade overnight,” Marquis says. “Within 30 minutes, I can actually move from one [software] version to another.”

However, there are costs entailed in the migration *to* a cloud infrastructure, as well. Organizations looking build their own clouds need to consider investments in myriad technologies that might be all new to them, such as server virtualization and automation. Ramp-up costs can be high, Kovarski says.

“Our upfront costs [for a thin client device] might be today very close to a desktop,” he says, although he also points out that the extended lifespan of thin clients beside traditional computers does help offset costs in the long term.

It’s important to understand that while they’re connected, virtualization and the self-serve aspects of cloud computing – the infrastructure that enables users to provision cloud resources themselves, without calling the IT department first – offer different

economies of scale.

Companies can choose to share these resources using public or private clouds. Public clouds employ the Internet. Private clouds are generally restricted to use within a company behind a firewall.

The strength of the cloud is its infrastructure management, enabled by virtualization and automation to manage the underlying resources.

In “*Seeding the Cloud...*,” IBM explains its dynamic infrastructure model, which relies on aspects of Web-based and enterprise-based data centre access systems. From the Web world, the company uses anywhere access and shared resources for the cloud concept. From the enterprise, IBM borrows elements designed to support mission-critical transactions and controlled access.

The white paper dives into the building blocks of cloud computing, including virtualization, automation, self-service technologies, monitoring systems and tools for capacity planning.

For more information about this and similar resources, see the “Resources” section of this report on page 15.

sorts of benefits. “The virtualization part of a cloud really saves the hardware-software costs,” Jones says. “The automation of a cloud saves labour costs. It’s putting those things together that really creates a huge value proposition.”

Checklist: Identifying Savings and New Capabilities

Cloud computing value is found in many areas, including:

- ✓ Reduced CAPEX
- ✓ Reduced OPEX – significant savings gained from centralized management
- ✓ Improved compliance and privacy
- ✓ Reduced time to market for new applications
- ✓ Cloud enhances your ability to maintain focus on core business
- ✓ Reduced friction between IT and business users, focusing IT on delivering value to the business, and removing distractions from users

Building the Business Case and RFP

Step one: identify the business triggers. Step two: identify sources of savings and new capabilities. What’s the third stage in the IT/business cycle? Present to the C-suite and engage service providers. This is also the next step in our analysis: addressing the questions, “how can an IT manager communicate cloud benefits in financial terms to a senior executive audience?” and, “what’s the best way to translate these promises of savings and increased productivity into an RFP that commits suppliers to supporting these goals?”

Inasmuch as cloud computing helps to bridge the gap between IT and business – as Jones suggests it does – presenting the argument for cloud computing in business-specific terms goes a long way towards supporting the case for the technology from the senior executive’s point of view. Those terms also help organizations translate their cloud visions into RFPs that benefit both the IT managers and the business stakeholders.

The Business Case

Beginning with the executive decision makers, it’s important to provide metrics and explain how they impact the organization. Cost savings can be relatively simple to translate into terms that business leaders can appreciate. “I look at the CAPEX of the acquisition of hardware... from day one,” Kovarski says. “There’s hard numbers behind that.”

Yet, as Kovarski also points out, the initial costs of cloud computing can be high, especially for organizations starting from scratch – buying server virtualization software, implementing automation, and investing in staff training to learn how to operate IT as a utility. CAPEX may well translate into savings for some, but for other organizations it’s important to look beyond the upfront costs.

Software savings can count as an additional factor in hard-number cost justifications. “The first decision was to go thin client, and the second decision was to use open source for the students,” Marquis says. “Those two together are really significant, substantial savings over a regular environment. So it was an easy decision to make.”

Include operational savings in your executive presentation. By identifying reduced support requirements, IT managers can make a strong case for the cloud. “I’m now using about two technical people to support about 4,000 thin clients,” Marquis says. “Usually you find that we have about one employee per 500 desktops in my department.”

Once the hard dollar justifications are established, soft dollar issues can be used to buttress the executive presentation. Within the IT department, improved productivity in development/test/QA is a prominent attribute of a cloud architecture. Outside of IT, the ability to use a stable cloud platform to deliver new services to business users over time is seen as a benefit in some business situations; though this is difficult to quantify (or even accurately predict) prior to initial cloud deployment, it has proven to be a benefit in real-world adoption scenarios, as incremental applications become less costly to develop, test, and deploy than was the case in pre-cloud environments.

All of our panellists pointed to increased security as a key cloud attribute. Interestingly, while cloud *opponents* often cite the uncertainty of data storage locations as a reason to avoid using the cloud, our panellists suggested that the ability to document data security/management for compliance purposes is a *positive* outcome of a cloud solution – though it should be noted that this may vary, depending on whether an organization is planning to use a public or private cloud deployment, and its degree of control (if it opts for a public cloud solution) over data management policies.

Just as the triggers for cloud computing are unique to each organization, the business case can be different. “Some of the business cases actually don’t need to be so substantial,” Jones says. “Many clients already have in their environment all of the components that are needed in order to assemble a cloud. A lot of clients have already got virtualization running, for example, and they’re just missing the automation piece.... It’s really a ‘no brainer’ in some cases.”

Checklist: Building a Business Case

Items critical to a successful cloud business case include:

- Hard numbers
 - ✓ CAPEX savings on hardware purchases
 - ✓ OPEX savings through reduced support staff requirements
- Soft numbers
 - ✓ Improved security achieved through implementation of a cloud architecture
 - ✓ Productivity improvements – for example, through reduced time required to set up test and development environments

The RFP

In addition to an internally-focused business case, IT managers planning to deploy cloud technology need to develop requests for proposal (RFPs) to engage cloud suppliers. By honing the business implications of the technology, organizations create a standard vision that informs their outreach to product and service providers.

There are unique considerations that can influence an organization’s approach to cloud RFPs. However, our research has identified a set of common issues that should be considered by IT management when putting together a bid document. These common considerations include:

- Relevant references
- SLAs (and the ability to audit performance)
- The skills needed to support the new environment
- Demonstrated expertise in change management
- The core architecture used in the solution – and specifically, the ability to migrate from a public to a private cloud (or vice-versa), or from one cloud supplier to another

For some, service level agreements (SLAs) are the bedrock of the supplier agreement. “SLA becomes very, very important when dealing with a cloud provider,” Kovarski says. After all, the cloud enables IT or a third party to provide substantial aspects of the organization’s technology as a service. Server failures, application outages and network delays impact numerous users and processes in this scenario; if infrastructure uptime was a serious issue in the past, it’s even more crucial in the cloud.

Others pinpoint vendor skills as the primary consideration. The Laval School Board focuses on thin client expertise, the ability to provide direct access to product manufacturers, advanced network support and management skills, and project management depth as the main issues in cloud RFPs.

It’s also important to think about the vendors’ change management capabilities. How successful has the cloud provider been in the past, transferring knowledge from its implementation team to the client’s operations?

Does the vendor’s cloud platform integrate with the organization’s existing IT infrastructure? That question might prove prescient: ideally, individual cloud systems – though separate – would interoperate seamlessly, allowing organizations to integrate the private clouds they’re building today with powerful outside clouds in the future, so if a company needs even more cloud resources, the resources are available. Organizations can help prepare for that by investigating integration issues at the RFP stage of the project.

Checklist: Building a Cloud RFP

When preparing a cloud RFP, keep the following in mind for inclusion as supplier requirements:

- ✓ SLAs guaranteeing critical service issues, such as system uptime
- ✓ Supplier skill sets that are needed by your organization – access, and skills transfer if required
- ✓ Demonstrated capability in change management
- ✓ Ability to integrate cloud systems with current software systems
- ✓ Network skills
- ✓ Right to audit vendor claims
- ✓ Open environment – ability to migrate to/from public and private clouds, or to new cloud suppliers

Keys to a Successful Implementation

Because cloud is still a relatively new technology approach, there are few models that new adopters can use to guide their own implementations. To help address this knowledge gap, we asked our panel to highlight the factors that they found essential in building out their cloud solutions. We found that successful implementations hinge on a few key factors, including failover capabilities, a phased rollout, and access to appropriate skill sets. The composition of the project team is an additional consideration, with our panel recommending inclusion of non-IT staff to ensure that business objectives remain central to the project’s focus.

The importance of a phased approach is underscored by both the Laval and BMO examples. Laval’s Marquis states that his organization used a five-stage approach to cloud deployment, and BMO’s Kovarski emphasizes the importance of the proof-of-concept (POC) stage. “Start out small,” Kovarski says. “If you have a project that can give you quick results, quick wins... evolve from there.”

The caution regarding failover provisions is also endorsed by all of our roundtable participants. They stress that it’s important to avoid the temptation of putting all of your tech eggs into the cloud basket from the get-go. A careful approach usually yields the best results in any project, and cloud computing is no different.

“I would say one critical issue is to really make sure the solution that you’re going to be implementing will be truly benchmarked properly,” Marquis says. “Second, I would add that you prepare a plan B, just in case plan A doesn’t work properly.”

The most common hedge is to maintain existing systems until their cloud successors are fully tested. “You’ve got to make sure that you’re going to be able to maintain two different environments for quite some time,” Marquis says.

Once the cloud implementation is underway, adopters find that one of the challenges associated with adopting a leading-edge technology like cloud computing is a lack of hands-on implementation experience – not only within your own IT organization, but more generally across the IT industry.

“We realized that the people that should work on this project have to have higher skills than regular people, so make sure that you have people [that are] topnotch,” Marquis says. “When you have

“You can never outsource accountability.”

Dr. Ann Cavoukian, Information Privacy Commissioner of Ontario

Organizations of all sizes are considering cloud computing for compelling economic, environmental and management issues. Yet many firms are afraid to commit to cloud strategies because they are concerned about information privacy. IT in Canada interviewed Dr. Ann Cavoukian, Ontario’s Information Privacy Commissioner, to explore real-world options.

She says data management in the cloud hinges on three principles: minimize the data; protect the data while you have it; destroy the data when you don’t need it anymore.

The key, she believes, is to embed privacy and security into the design of the systems and processes used to manage information. This matters whether the organization runs its own cloud or uses another company’s infrastructure.

“You can outsource services, but you can never outsource accountability,” Cavoukian says. “You could arguably have greater security in the cloud than in your own home-based operations,” but ultimately, “you have to ensure end to end, full lifecycle protection of the data.”

For more on our interview with Dr. Cavoukian, see the Resources section of this report on page 13.

problems... you must investigate to find them and try and properly and quickly solve them.”

“The people skills need to come along,” Kovarski says. “People processes” – the ways in which the cloud technologies are integrated into business activities – “are the key to performance.”

Marquis adds that it’s important to extend this focus on “people processes” to the IT department itself, urging firms that are starting down the cloud path to be sensitive to the IT team’s thoughts and feelings as the cloud project develops. This technology automates some of the processes that individual skilled employees used to do. “They see that their services might be less required eventually,” Marquis says. Plan to explain how those workers fit into the cloud management paradigm.

IBM’s Doug Jones also elaborates on the “people processes” theme, asserting the importance of involving non-IT employees in the project. Business input is important, “to make sure that we get the business value, because the cloud really involves delivering services back to the business,” Jones says.

Successful implementations also hinge on the idea that this new technology changes the game for IT. “It’s an opportunity, I believe, for everyone, the business and IT, to deliver greater value to the organization,” Kovarski says.

Checklist: Implementing Cloud Solutions

When you are building your implementation strategy, remember to include these factors in your plan:

- ✓ Establish solid benchmarks against which to measure progress and performance.
- ✓ Conduct a proof of concept – start with a smaller initiative where you think you can deliver real value, and build from there.
- ✓ Plan on using a phased approach.
- ✓ Remember that the cloud rollout will require you to maintain parallel systems, and will require resources in both areas.
- ✓ Consider including non-IT businesspeople on the project team.
- ✓ Be ready for some resistance from IT staff who feel threatened by the cloud approach.

Post-Implementation Optimization: Increasing Return on Investment (ROI)

Although most achievement-lists focus on the launch of new technologies, often the real benefit comes from continued improvement and optimization after a solution is deployed.

There are different paths to optimizing cloud solutions, but most centre on ways of standardizing the services that are delivered via the cloud. Many organizations employ the best practices laid out in the Information Technology Infrastructure Library (ITIL) – concepts and processes developed by the U.K. government – to optimize technology implementations. Applying ITIL to the cloud, organizations ensure

that their careful investments in defining the business triggers, identifying the savings, presenting the technology to business executives, and implementing the system continue to provide positive returns.

“This is an opportunity to standardize services that are good – or bad – for business,” Jones says, indicating that it’s just as important to develop an optimization plan as it was to conduct all of the earlier steps. “Do it in a way that’s consistent, it’s automated; the quality goes up; the service goes up.”

Many sectors (including banking) rely heavily on ITIL to guide development, deployment, and ongoing IT management, but the connection between ITIL and cloud computing is often seen as somewhat problematic, since cloud implementations (particularly those based in the “public cloud”) do not easily lend themselves to structured control regimens. Nonetheless, many cloud proponents say ITIL disciplines can be applied effectively in a cloud environment.

ITIL plays an important role in the Bank of Montreal’s cloud project. “We are focusing right now on the processing side, and specifically the business and IT alignment,” Kovarski says. “ITIL Version 3... is an area of focus that’s drawing us forward now.”

Organizations often discover unexpected optimization opportunities. For instance, the cloud enables companies to address processes that were previously considered uneconomical to automate, such as processes associated with niche applications that just a handful of people use. Once the cloud platform is in place, there is little incremental expense incurred in delivering additional computing resources and related services, so they can be used to support small deployments cost effectively.

“Focus on the bigger picture - the process, people, technology as a whole - and continuously measure and benchmark.” - Mark Kovarski, Senior Business Technology Consultant, Bank of Montreal

Panellists say the cloud stimulates new applications as the computing resources become a service available for users to employ as required. “Once [the cloud is] in place and the business understands what can be done with it, it now untaps innovation,” Jones says.

But the practices that inform the RFP and implementation aspects of the project matter in the optimization phase as well. “Focus on the bigger picture,” Kovarski says, “the process, people, technology as a whole – and continuously measure and benchmark.”

Stay abreast of the OPEX measurements, which often contain straightforward savings that can be applied directly to the ROI formula, Marquis advises.

Jones recommends moving forward by always looking back. “Take the time to actually to go back and... define the services that are most important to the client and be able to standardize those services, and deploy them in a consistent manner.”

Ultimately, the cloud empowers organization in three ways: accelerating the ongoing IT standardization process; reducing the cycles required to maintain the infrastructure; and giving businesses the ability to quickly and cost-effectively deploy technologies that address real business needs.

Checklist: Optimizing Cloud Solutions

Once a cloud solution is in place, there are opportunities to enhance ROI through post-implementation optimization, including:

- ✓ Use the post-deployment period to revisit your definition of the services that are most important to users, and use the cloud infrastructure to standardize delivery of those services
- ✓ Take advantage of the opportunity to better align people and processes with technology capabilities
- ✓ Use the cloud platform to deliver solutions that would have been un-economical in the past, such as specialized line-of-business applications

Conclusion

There is little doubt that cloud computing will become increasingly important as an IT industry force in the years to come. With compelling economic and service delivery advantages in many different scenarios, cloud is an approach that IT management will need to consider as both an upgrade path for core infrastructure and as a deployment platform for new applications.

Our analysis shows that effective evaluation of the new options presented by cloud – and optimal business processes around procurement and deployment of cloud resources – requires a blend of “new think” and traditional IT business disciplines.

Because of the ways in which cloud reduces CAPEX and affects OPEX, the economics of cloud require a new approach to IT solution costing. Similarly, cloud deployment confers a unique set of migration and integration considerations that are best addressed with cloud-savvy strategies.

However, traditional IT management approaches also are important to successful cloud implementation management. Sound requirements evaluation is as essential for cloud solutions as on-premise systems, and the application of best practices in areas like security are (at least) as important in the cloud. Perhaps most of all, the management framework – moving from business triggers, through identification of value sources, the preparation of sound business cases and comprehensive RFPs, well-planned deployments, and ongoing optimization – applies equally regardless of where a solution is located. Here, the message is not that cloud allows for shortcuts through the process, but rather, that cloud expands IT management options.

Resources

This section contains links to the articles, videos, interviews and white papers we used to compile our report.

Article, video: **'More and faster' – Two words driving cloud deployments:**

http://roiinnovation.itincanada.ca/index.php?page=shop.product_details&category_id=375&flypage=shop.flypage&product_id=11698&option=com_virtuemart&bicc=55

Interview transcript: **Business Triggers for Cloud Solutions:**

[http://www.itincanada.ca/itpublic/Business Triggers for Cloud Solutions.pdf](http://www.itincanada.ca/itpublic/Business_Triggers_for_Cloud_Solutions.pdf)

Article, video: **Savings and new capabilities hidden in the cloud:**

http://roiinnovation.itincanada.ca/index.php?page=shop.product_details&category_id=375&flypage=shop.flypage&product_id=11677&option=com_virtuemart&bicc=15

Interview transcript: **Identifying Sources of Cloud Value:**

[http://www.itincanada.ca/itpublic/Identifying Sources of Cloud Value.pdf](http://www.itincanada.ca/itpublic/Identifying_Sources_of_Cloud_Value.pdf)

Article, video: **Building the Business Case for Cloud Computing:**

http://roiinnovation.itincanada.ca/index.php?page=shop.product_details&category_id=375&flypage=shop.flypage&product_id=11604&option=com_virtuemart&bicc=25

Interview transcript: **Building the Business Case for Cloud Computing:**

[http://www.itincanada.ca/itpublic/Building the Cloud Business Case.pdf](http://www.itincanada.ca/itpublic/Building_the_Cloud_Business_Case.pdf)

Article, video: **Implementing Cloud Solutions:**

http://roiinnovation.itincanada.ca/index.php?page=shop.product_details&category_id=375&flypage=shop.flypage&product_id=11559&option=com_virtuemart&bicc=35

Interview transcript, **Implementing Cloud Solutions:**

[http://www.itincanada.ca/itpublic/Implementing Cloud Solutions.pdf](http://www.itincanada.ca/itpublic/Implementing_Cloud_Solutions.pdf)

Article, video: **Optimizing Cloud Systems:**

http://roiinnovation.itincanada.ca/index.php?page=shop.product_details&category_id=375&flypage=shop.flypage&product_id=11428&option=com_virtuemart&bicc=45

Interview transcript, **Optimizing Cloud Systems:**

[http://www.itincanada.ca/itpublic/Optimizing Cloud Solutions.pdf](http://www.itincanada.ca/itpublic/Optimizing_Cloud_Solutions.pdf)

Article, video: **On Cloud Privacy – Interview with Dr. Ann Cavoukian:**

http://www.itincanada.ca/index.php?page=shop.product_details&flypage=shop.flypage&product_id=11427&category_id=385&manufacturer_id=0&option=com_virtuemart&Itemid=1

Interview transcript: **On Cloud Privacy – Interview with Dr. Ann Cavoukian:**

[http://www.itincanada.ca/itpublic/On Cloud Privacy.pdf](http://www.itincanada.ca/itpublic/On_Cloud_Privacy.pdf)

White paper: **Business continuity and resiliency services from IBM:**

[http://www.itincanada.ca/itpublic/Business Continuity Cloud.pdf](http://www.itincanada.ca/itpublic/Business_Continuity_Cloud.pdf)

White Paper: **Seeding the Clouds: Key Infrastructure Elements for Cloud Computing:**

[http://www.itincanada.ca/itpublic/Seeding the Clouds.pdf](http://www.itincanada.ca/itpublic/Seeding_the_Clouds.pdf)

White Paper: **Networking for a dynamic infrastructure: getting it right:**

http://www.itincanada.ca/itpublic/Networking_for_a_dynamic_infrastructure.pdf

Case study: ***IBM cuts turnaround time for image provisioning by 97% with a cloud:***

<http://www-01.ibm.com/software/success/cssdb.nsf/cs/LWIS-7ZPNNL?OpenDocument&Site=corp&ref=crdb>