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## Business Payoff to the Cloud

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# Midwest Association for Information Systems MWAIS 2018 Saint Louis, Missouri

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## ABSTRACT (REQUIRED)

The question, “What is the business pay-off to the cloud?” is first and foremost on the minds of IT industry leaders, chief information officers, and business leaders. “Cloud services” supporting IT range from infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), and software-as-a-service (SaaS). The factors motivating moving IT services to the cloud include the ability to outsource IT services at a cost-effective rate as compared with trying to “run IT” –including the IT infrastructure and IT application portfolio internally. The “war for talent” in the IT marketplace further motivates decision-makers to use cloud services as a way of supporting IT.

The purpose of this article is to compare theory with practice. The theory of cloud computing consists of a review of the literature from case studies developed by academic professionals. This article is divided into these sections: (1) the theory of the benefits of cloud computing; (2) the review of literature based upon case studies in cloud computing; (3) the practice of cloud computing based upon the Post Holdings case; and (4) the similarities between theory and practice. The summary and conclusions provide some lessons learned and recommendations for business leaders who are interested in the business payoff to the cloud.

## Benefits of Cloud Computing

Cloud computing offers capabilities which offer considerable potential benefits. These capabilities can be broken down into 7 categories:

1. Controlled interface. Cloud computing can provide an IT infrastructure that is responsive and scalable to user requirements and changing requirements.
2. Location independence: Using the cloud, end-users have access to information services and information assets from any location.
3. Sourcing independence: Using cloud service providers, organizations have the flexibility to switch service providers easily.
4. Virtual business environment: With cloud computing, end-users have seamless access to applications and software.
5. Ubiquitous Access: Cloud computing means that end-users can access information services from any platform or device: anytime, anywhere.
6. Addressability/Traceability: Cloud services enable organizations to keep track of uses of information services.
7. Elasticity: Cloud services are “self-service” services which can be scaled up or down transparently and automatically.

These benefits motivate every business leader to consider migrating IT to the cloud. Yet, having knowledge of risk factors, obstacles, and challenges associated with buying cloud-based IT services will help every business leader make intelligent decisions. This paper will share a series of actions which companies have taken to achieve the benefits of cloud computing.

## Review of the Literature: The Business Payoff to the Cloud

### Case 1: Mohawk

A number of case studies address the question, “What is the business payoff to the cloud?” In a case study of Mohawk (U.S.), the transition to the cloud platform had significant payoffs in terms of generating new sources of revenue and reducing internal operating costs. Cloud services enabled Mohawk to transition from a traditional manufacturing business to a service-oriented enterprise. First, by contracting for IT cloud services, Mohawk increased profitability and decreased overhead from transactions processes. Second, Mohawk added over 100 new business partners, including suppliers, manufacturers, warehouse and logistics partners. Third, the company changed from a distribution model to a direct-selling

model to customers via e-commerce and cloud platforms and launched new business ventures beyond its core premium paper line of business (Stamas, Kaarst-Brown, Bernard, 2014).

In a nutshell, Mohawk used the cloud platform to launch new lines of business and access new markets with an expanded portfolio of high margin products. Mohawk was able to improve service levels, extend market reach, and reduce operating costs. At the end of two years, the company's earnings before interest and taxes had increased by 200%.

The case study of Mohawk demonstrates that the cloud services model facilitated connectivity between company's internal systems and processes and their customers, suppliers and service providers. The integration of cloud services made it possible to implement inter-enterprise processes and information flows via cloud integration platforms connecting disparate systems. In their experience, Mohawk was able to gain a sustained competitive advantage by digitally connecting partners to a value network. The role of IT professionals changed into roles as business process architects, responsible for designing and orchestrating the cloud services platform for doing business.

#### **Case 2: Bayer HealthCare**

The Bayer HealthCare Case addresses the business benefits of the cloud. The advantages to the cloud which Bayer HealthCare pursued were (1) high cost advantages; (2) short implementation times; (3) limited customization; (4) ability to focus on core business competencies; (5) lesser dependence on internal IT; and (6) acceptance of compliance and security risks. In Bayer's roll-out of cloud services, they discovered factors that both supported and inhibited the cloud strategy. (Winkler, Benlian, Piper, Hirsch, 2014).

Large multi-national companies like Bayer face complexities which complicate the migration to the cloud and which require strategies to cope with the inhibitors. One "lesson learned" from the case study of Bayer HealthCare is to deploy a multi-platform cloud strategy combining in-house systems and selected cloud solutions. When SaaS (software-as-a-service) cannot meet unique requirements, then PaaS (platform-as-a-service) can be used to complement internal IT. In migrating to the cloud, business leadership is needed to prioritize the investments in the cloud and to oversee the change management process. IT leaders play an important role in serving as "expert buyers" and catalyst in vetting shared requirements among business units.

#### **Case 3: Commonwealth Bank of Australia**

In their migration to cloud, services, Commonwealth Bank of Australia (CBA) moved toward a pay-as-you-go IT model which not only reduced infrastructure and maintenance costs by as much as 40%, but also reduced the time-to-market of new applications. The pay-as-you-go approach to buying IT services on the cloud provided flexible, scalable IT resources, created greater reliability, and reduced development time for IT-enabled products and services (Schlagwein, Thorogood, and Willcocks, 2014).

In their experience, CBA shared a number of success factors. First, CBA designed and enforced client-defined cloud standards that enabled integration among various cloud services providers. By negotiating flexible contracts, they avoided getting "locked into" dependencies on suppliers and made it possible to switch providers, as needed.

In CBA's case, not every application was "cloud-ready." Certain legacy applications were "non-cloud-able" and the right time to move them to the cloud needs to be assessed to sync with hardware/software upgrade paths. As in the other cases, internal IT capabilities need to be retained with the cloud, and IT people play important roles in evaluating cloud systems and integrating multiple cloud suppliers with non-cloud applications.

#### **Case 4: Multiple SME's (Small and Mid-Sized Enterprises)**

In their analysis of four Small and Mid-sized Enterprises (SME's) migrating to the cloud, Reynolds and Lacity (2014) learned that SME's gain business value from cloud services, including cost reduction, scalability, rapid deployment, and better resiliency as compared with in-house IT (Reynolds and Lacity, 2014).

Each case study company adopted cloud services, including SaaS (software-as-a-service), IaaS (Infrastructure-as-a-Service), and PaaS (Platform-as-a-Service). Rather than build its own IT infrastructure, the Chief Technology Officer of a gift card supplier leveraged Amazon Web Services (AWS) as its primary cloud provider. By so doing, the company was able to re-direct its IT staff to building new customer products and services in the cloud, thereby deriving a competitive edge.

In the second case, an intermediary between art dealers and art collectors viewed the cost of creating an IT infrastructure and IT staff to be cost-prohibitive. The business drivers for cloud computing included "pay-as-you-go" and scalability. Their cloud services include Gmail, Google docs, and line of business applications running on Amazon's infrastructure. By using

cloud services, the company reduced IT cost by 30 to 40%, improved reliability and security, and re-focused on cloud add-on's for analytics, database services, and performance tracking.

A third case of a non-profit organization supporting research illustrates the same business case for the cloud. Management cited cost-savings, data management, disaster recovery/business continuity and simplicity as the drivers of the decision to migrate IT to the cloud. By using Office 365 and Salesforce.com for contact management, the organization leveraged SaaS applications and eliminated a single point of failure.

In the fourth case, a fleet fueling company moved IT to the cloud in order to keep up with rapid growth. After a disaster struck, the executives realized that keeping IT up-and-running 24/7/365 was more feasible in the cloud. Cloud infrastructure services provided multiple data centers with 100% availability, including data redundancy and disaster recovery. As the company grew, management did not believe that it could gain access to scarce technology skill sets (Unix, web services, SQL services) in-house. The bottom-line was that cloud services enabled the business to grow without "killing the staff" and "killing end-user and customer satisfaction."

Summing up the business benefits of cloud services from the standpoint of these SME's, the benefits are cost-reduction, rapid deployment, increased security and resiliency, and management simplicity. An over-riding advantage is the ability to re-focus IT staff on more strategic IT initiatives which benefit customers and enable better marketing analytics. IT professionals in the cloud era must be able to architect the cloud solutions, evaluate cloud supplier performance, and communicate cloud capabilities to both users and customers.

### **The Case Study: Post Holdings**

The objective of the case study of Post Holdings is to compare their experience with the prior case studies dealing with the business payoff to the cloud. The case study of Post Holdings tells the story of a \$1 billion company which outsourced its IT services to the cloud over a period of 18 months. Between July, 2013 and November, 2014, the company migrated IT to the cloud. Today, the company partners with over 100 cloud providers to run IT for the business.

#### **Questions for the Case Study:**

The case study of cloud services at Post Holdings is based upon these questions:

- What is the actual business pay-off to the cloud?
- What opportunities does moving information technology applications to the cloud create?
- What are the lessons learned?
- What challenges are faced when using cloud services and how are these challenges overcome?

#### **Motivation and Business Payoff to the Cloud:**

In July 2013, Post Holdings was spun off from Ralcorp and became an independent corporation. Ralcorp was acquired by ConAgra at that time. As an independent corporate entity, Post Holdings was in a good position to grow its business through acquisition.

Post Holding's IT strategy supported its business strategy. In order to fuel growth, the company dis-banded its legacy IT infrastructure and application architecture and migrated IT services to the cloud.

The measurable business results which Post achieved:

- Reducing the cost of IT from \$225/user/month to less than \$100/user/month.
- Acquiring IT services through flexible spending, using the subscription model.
- Reducing IT headcount to 4 individuals--mainly focused on the business of IT services.

The most compelling business impact for migrating IT to the cloud was that the company was able to spend fewer dollars for IT compared with the competition. Its "lean" IT approach provided a competitive edge from a cost-standpoint, and enabled quicker business acquisition. Since migrating IT to the cloud, the company has acquired 10 companies and has opened 3 new distribution centers. The growth and acquisitions would not have been possible in the "bricks and mortar" IT environment.

#### **Best Practices and Lesson Learned**

The portfolio of cloud services applications which Post Holdings acquired included IaaS, SaaS, and PaaS cloud support. The IaaS platform, supported by the IBM Cloud, runs its enterprise system, J.D. Edwards. The SaaS platform is operationalized

through Office 365. The PaaS service supports its Salesforce.com application. All of these applications are enabled through OKTA, and users have access to IT services via an “app-store” interface.

The company’s cloud portfolio is summarized in Figure 1:

**Figure 1: The Company’s Cloud Portfolio**

Application	Type	Cloud service provider
Mail	SaaS-software-as-a-service	Office 365
Phone	Hosted VOIP	8x8
ERP (JD Edwards)	IaaS-infrastructure-as-a-service	IBM cloud
Document storage	Hosted document management	BOX
CRM—Salesforce	PaaS-platform-as-a-service	Salesforce.com
<b>Single pane of glass: OKTA</b>		

The lessons learned from the migration to cloud services address changes in technology, the management of IT, the roles and responsibilities of IT professionals, and ongoing challenges associated with supplier management. In their view, the following lessons offer useful guidelines for organizations moving to cloud services.

- **Combine and condense:**

Before moving applications to the cloud, condense the server infrastructure. In Post’s case, they reduced 200 servers to 61 virtual servers before migrating to the IBM infrastructure.

- **Create enthusiasm for the change:**

Transitioning to the cloud is facilitated by the role of the champion to “lead” the initiatives and to clearly communicate the business benefits of cloud computing and its applications. This means energizing the team to plan, design, implement and maintain the cloud portfolio.

- **Make the business case:**

Deploy a 3 year roadmap to migrate to the cloud, moving from AS IS cost of IT and systems to the TO BE cost model. Making the business case for cloud services means making a comparative analysis between the current cost model and the proposed cloud-based cost model. The cloud-based model offers subscription-based pricing and an outsourced IT and application services infrastructure, which creates a less-cost alternative to on-premise computing.

- **Make continuous changes in technology:**

When the organization needs a new app, ask: “Why not put this on the cloud?” The cloud offers opportunities for continuous process improvement. For example, one of the cloud providers which Post Holdings uses offers marketing data analytics to assess the value of various marketing promotional strategies. The expertise, data analytics and reporting would take 12-18 months to develop internal competencies to support, but the application is immediately available on the cloud.

- **Create the role of the Business Architect.**

The role of the business architect is a significant change in the role of IT people. The business architect focuses away from fire-fighting to procurement of IT services from cloud providers. The role of the systems engineer, responsible for keeping the IT infrastructure up-and-running 24/7/365 is a “thing of the past” in the cloud environment. This not only decreases the number of IT professionals which are needed, but changes the role of IT to professionals responsible for procuring cloud-based IT services. These new responsibilities include contract management, supplier evaluation, and ongoing supplier performance management.

- **Be current:**

Succeeding in the cloud marketplace means constantly learning and exploring cloud opportunities. In a highly volatile marketplace, research and discovery is a constant. The IT team needs to continuously assess, evaluate, and deploy “best of breed” cloud systems. This process entails “vetting” cloud providers and avoiding the “fly-by-night” providers.

#### **Similarities in Theory and Practice:**

##### **Cloud Capabilities:**

In the experience of Post Holdings, most of the capabilities of cloud computing identified in the research hold true. Specifically:

- Controlled interface. Cloud computing have provided Post Holdings with IT infrastructure that is responsive and scalable to user requirements and changing requirements.
- Location independence: Using the cloud, end-users have access to cloud services from any location.
- Sourcing independence: While cloud computing offers the flexibility to switch service providers easily, Post Holdings seeks to identify cloud services partners which can support their business needs over time.
- Virtual business environment: Users at Post Holding have access to IT via a single-pane of glass operationalized through OKTA.
- Ubiquitous Access: Users have access to information services from any platform or device: anytime, anywhere via the internet.
- Addressability/Traceability: Post Holdings can manage and monitor application use, by end-users.
- Elasticity: Post Holdings is able to scale IT services up or down transparently and automatically.

##### **Business Payoffs to the Cloud:**

While the architectural benefits of the cloud are a part of the story of cloud computing at Post Holdings, the major lesson-learned is how Post Holdings was able to achieve a competitive advantage by migrating IT to the cloud. The business payoffs are based upon three outcomes:

- Reducing the cost of IT support by end-user.
- Ability to quickly get acquisitions up-and-running.
- Spending less on IT compared with the competition.

These measurable business outcomes contradict the perception that the “cloud” costs more. An advantage which Post enjoyed was the freedom to explore, plan, design, and deploy as a free-standing corporate entity. If they had to migrate IT from an existing legacy IT infrastructure, the change may have been substantially greater.

##### **The Role of the Business Architect:**

In each case study, the role of IT in the cloud services environment is transformed from keeping the IT infrastructure up-and-running to managing the design, evaluation and procurement of cloud-based IT services. The role of the Business Architect is present in all of the case studies (Mohawk, Bayer HealthCare, CBA, and Post Holdings).

##### **Business Implications:**

The case studies and the experience of Post Holdings demonstrate the business payoffs to the cloud. The challenge posed by all of the case studies is the need to build the business case, by comparing the AS IS computing infrastructure with the TO BE computing infrastructure in the cloud. The cloud environment offers scalability and flexibility but calls for new roles and responsibilities in managing IT and incentivizes IT leaders to drive business outcomes.

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