



# Rethinking the business benefits of the cloud

by Joe Weinman

# Contents

<b>Rethinking the business benefits of the cloud</b>	1
<b>Revenue growth</b>	2
<b>New business models</b>	3
<b>Global market expansion</b>	4
<b>Business agility and accelerated innovation</b>	5
<b>Enhanced user experience</b>	7
<b>Cost reduction</b>	9
<b>Risk mitigation</b>	11
<b>Summary</b>	12
<b>Author bio</b>	13

# Rethinking the business benefits of the cloud

Cloud computing is interesting as both a technology and operations model, but what impact does it have on the business? The traditional answers have been cost reduction and business agility, but the cloud offers a wide range of additional benefits, including revenue growth—through new business models, global market expansion, accelerated innovation, and enhanced customer experience and satisfaction—as well as risk mitigation. Moreover, while the cloud can reduce the cost of IT, the way in which it does so is more nuanced than the simplistic argument that “the cloud is cheaper due to economies of scale” would suggest.

# Revenue growth

Research from the University of Maryland has shown that investments in IT, on average, result in an almost two-to-one return. This return is greater than that from several other investments that businesses can make, such as in R&D or in marketing.

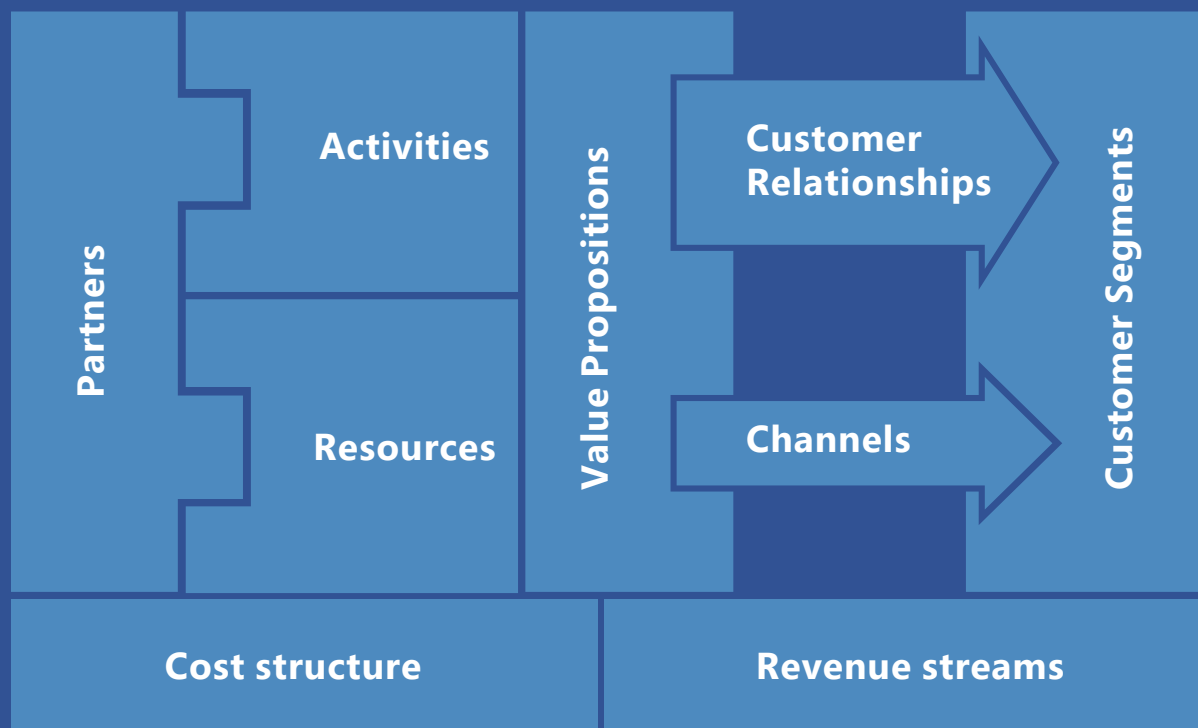
***We find that IT investments have a positive impact on revenues and profitability. In addition, IT-enabled revenue growth has a greater impact on profitability than IT-enabled reduction in operating expenses.***

Mithas et al., MIS Quarterly Vol. 36 No. 1 / March 2012, p217

Perhaps surprisingly, this same research shows that the return on investment in IT comes mostly from revenue growth, not cost cutting. Cloud computing can help grow revenues in several major ways.

# New business models

Emerging, often disruptive, business models such as purely digital services are inherently cloud-centric, as are connected digital products. Examples of the former are search and social networking. Examples of the latter abound across industry verticals: tablets and smartphones connect to cloud-based app stores and digital services such as messaging, customer relationship management, and social games; vehicles connect to cloud-based navigation, entertainment, concierge, and emergency services; wearables connect to activity tracking services; medical devices connect to health management and urgent care services. These new business models often exploit new pricing models, such as “freemium,” advertiser-supported, or two-sided monetization.



Business model graphic per Business Model Generation, Osterwalder, 2013.

# Global market expansion

The world is becoming more interconnected. According to the McKinsey Global Institute, global flows, i.e., international trade, now account for almost a third of the global economy, and “knowledge-intensive” flows, such as business communications and smart products, make up over half of global flows and are growing faster than capital-intensive or labor-intensive flows. It used to be that a ticket on an ocean liner or international fax services were all that was required to expand into global markets, but today’s interconnected, digital economy relies on the cloud. As examples, consider global collaboration to develop those smart products or commerce networks and websites for selling globally, which require various cloud services, such as video and voice over IP and content delivery.



## Data and communication

21.2 million megabits per second

52%

1 Measured by cross-border migrants; values from 2000 and 2010.

2 Measured by cross-border Internet stock traffic; values from 2005 and 2013.

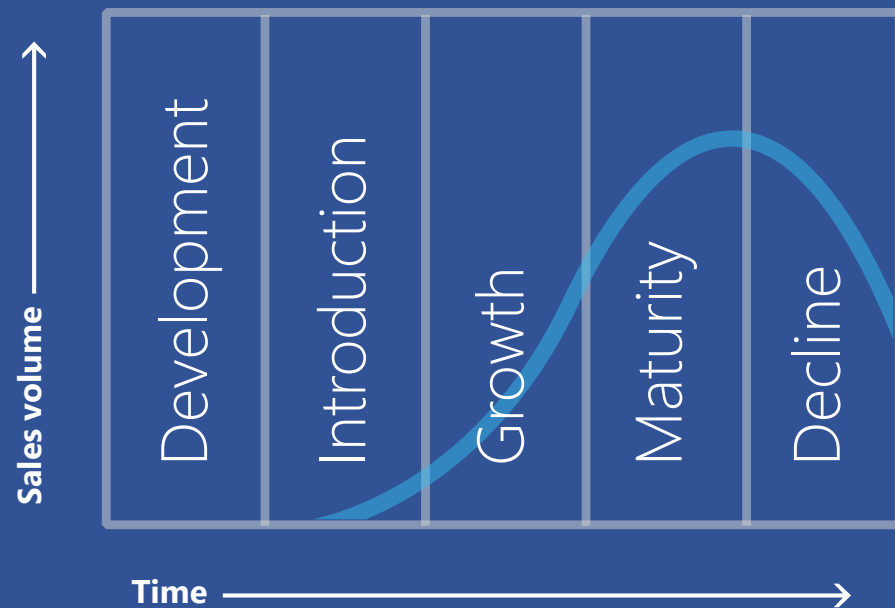
SOURCE: Comtrade; IHS Economics & Country Risk; World Bank; Bank for International Settlements; IMF Balance of Payments; Telegeography; Web of Science, Thomson Innovation; McKinsey Global Institute analysis

# Business agility and accelerated innovation

Time is a critical dimension of global competition: market share and profits often accrue to the first mover with a new product category, new features, new manufacturing processes, or new distribution channels, or the company best able to predict or respond to shifts in customer demand, macroeconomic conditions, or competitor moves.

Time to market—the interval between idea conception and product launch—is important because being first to market confers multiple advantages, such as higher margins before competitors enter and engage in price wars that erode industry profitability. Platform as a service is an essential ingredient in reducing time to market for today's digitalized products and services, ranging from wearables such as sneakers with pressure sensors that link to activity tracking services to e-commerce websites. And component reuse means that quality can be enhanced even as time is compressed.

Time to volume—the interval between product launch and production at scale—is also critical because it doesn't help to be first to market if most prospects can't acquire—and pay for—your product or service. The inherent elasticity of Infrastructure as a Service is key to supporting rapid, unpredictable growth in demand for pure digital services, the back end for connected products, and even basic ordering and billing systems for traditional products.





# Enhanced user experience

Customers expect their digital experiences to offer rich and responsive interactions, which in turn depend on processing, storage, and network capabilities and architecture. Preferably, computing resources should be located close to their users, and while companies could invest in a global digital infrastructure themselves, it is financially advantageous to leverage the dispersed resources of a global cloud provider.

The business value of better user experiences is clear: studies have shown that greater interactivity correlates to higher revenue, because customers find the experience more engaging and because they are less likely to give up in frustration and switch to a competitor.



Users



Data centers

# Latency reduction through global dispersion



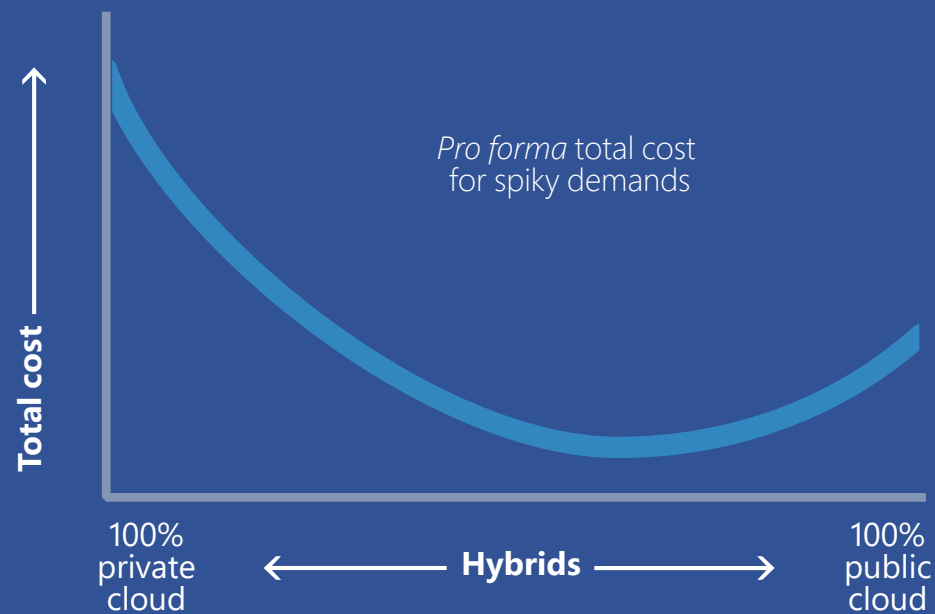
# Cost reduction

Businesses can reduce their costs by leveraging cloud computing in two ways. One way is when cloud providers can offer services more cheaply than a firm can “do it itself.” There is a widely held view that cloud providers “must” be cheaper due to their huge economies of scale, but reality is more nuanced than that.

First, the extent to which a cloud provider can offer a unit of compute or storage more cheaply than you can obviously depends on the relative cost structure of your IT organization. How efficiently run is your organization? How much purchasing power do you have? Are you operating at scale? Are you using the latest open server designs? Is your data center built where land and electricity are relatively inexpensive? Did you get tax breaks for construction?

For many companies, the cloud will offer an unbeatable price. However, for well-run enterprise IT shops, their internal cost may well be lower than a provider’s price, especially once additional elements such as providers’ sales, general, and administrative expenses are factored in. Moreover, today’s complex applications can perform differently on different physical and virtual infrastructure architectures, so merely comparing unit costs is often insufficient.

However, unit cost comparisons don’t tell the whole story, because it is the total cost that matters as well as strategic factors, such as a company’s desire to focus on its core business.



In determining total cost, application demand variability is the key factor, and the pay-per-use billing model of the cloud is the key driver of cost savings versus an IT shop's need to build to peak. By analogy, a rental car is likely to cost more per day than the same car would cost per day to lease or finance. However, rental cars can still save one money: the salient factor is not that a rental car costs more per day than an owned car does, but that renting a car for two days is less expensive than buying a car and then discarding it.

The same way that most businesses rent cars and rent hotel rooms frequently rather than buying cars or houses when their employees need them, businesses can also benefit by "renting" computing resources via the cloud. And, at a high level, the same way that businesses use a combination of debt and equity, car fleets and rental cars, owned, leased, and rented assets, a hybrid architecture typically will achieve the best mix of cost and performance.

# Risk mitigation

Reduced risk is another important benefit of the cloud. Variability and uncertainty seem to be inexorably increasing, whether from natural disasters such as hurricanes and earthquakes or human causes such as terrorist attacks and geopolitics.

In addition, the interconnectedness of the global economy amplifies shocks which otherwise might remain remote such as financial crises, but also can enable exponential growth in the uptake of new services, such as mobile games or streaming entertainment.

While demand forecasting has never been an exact science, it is even more challenging today, with increased penalties for wrong guesses. Without the cloud, unexpected customer demand can lead to poor user experiences due to insufficient capacity, yet excess capacity causes economic loss due to the opportunity cost of the deployed capital.

***Due to the inherent elasticity of the cloud, however, sufficient pay-per-use resources are always available. In this way, cost is continuously aligned with revenue, minimizing risk.***

On-demand resources also play a key role in support of business continuity and disaster recovery. Data can be continuously backed up in the cloud, and applications can be migrated from impacted data centers to the cloud.

# Summary

Cloud computing offers a new business model for computing that exploits innovative technologies. But more importantly, it can positively impact the business, through greater revenue, global market reach, and customer satisfaction, at lower cost and risk.



# Author



Joe Weinman is the author of *Cloudonomics: The Business Value of Cloud Computing*, and the forthcoming book *Digital Disciplines*, which explores four business strategies to exploit emerging digital technologies such as cloud computing. He has held a variety of executive management positions at organizations such as Bell Labs, AT&T, and HP. He has been awarded 20 patents in various information and communication technologies.



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