Gathering Clouds

Cloud computing and your cash flow

By Bill Simpson

In 1851, an industrial pioneer named Henry Burden built a gigantic water wheel in Troy, New York. The wheel stood 60 feet tall, and it provided plentiful power for the Burden Iron Works to run its machinery. The great value of the wheel was that it enabled the company to produce more goods with fewer workers and in less time than its rivals, and those advantages created production levels and profits that Burden’s rivals couldn’t match.

Because of its superior capabilities, the company flourished. It was able to secure a contract for almost all of the horseshoes that the Union Army used during the Civil War, and in the factory’s busiest year, it made more than 51 million horseshoes. The Burden Iron Works also produced millions of spikes that railroads used as they laid tracks across the country, as well as many other iron products that the growing country needed.
Mr. Burden’s water wheel made him a very rich man, and 50 years later, it was no longer turning. Weeds had grown over it, and rust was eating it. The wheel was just as efficient and as powerful as it was when it was new, but its usefulness had passed. A completely new method of power production had drastically reduced the cost of electricity and made it affordable for every business and home.

Municipal electric utilities made the water wheel obsolete. With the flick of a switch, businesses could receive their electricity from their local utility, and that meant they no longer had to operate as both manufacturers and as power generation companies. They could leave the power generation to the utilities and put all their efforts into their core business operations. One immediate effect of the development of local electric companies was the elimination of the position of chief electrical officer, the man who oversaw a business’s power generation and delivery operations.

Now, a century later, a somewhat similar scenario is coming to the world of information technology, and while the switch to a municipal electric company was a simple choice to make, the issues surrounding cloud computing make this a much more complex decision for business leaders.

Businesses that once filled their basements with servers to power their IT operations now have the option of turning to the clouds for their computing power, and cloud computing has the potential to change IT in the same way municipal utilities changed the production and delivery of electricity. Businesses can now get rid of their servers and receive their computing power from an outside source.

Of course, the biggest question surrounding cloud computing is the most basic question of all: Will this either save us money or enable us to make more money? Attached to that question are several directly related ones, such as: Will cloud computing shift IT costs from Capex to Opex, just like a light bill? Will cloud computing make the modern equivalent of the chief electrical officer, the chief information officer, obsolete?

Tom Malesic, president of IT provider EZ Solution, said, “Cloud makes IT a service instead of an expenditure. You’re leasing it instead of buying it. It also has a tax advantage because it allows a current year write-off.

“But there’s such hype and promotion around cloud. The owner really has to do the math. Does it make sense financially? Does it make sense as a solution?”

Asked if CIOs have reason for concern, Jason Abel, co-founder of IntermixIT, a Harrisburg-based technology company that focuses on cloud computing, said, “No way. Businesses still need people to run stuff. They still need tech support. They still have an infrastructure.” Of course all of that could be outsourced—much like electrical contractors handle electric tools.

So the salary of the CIO may not disappear, but cloud still offers the possibility of savings. “You don’t have to buy hardware, and maybe you don’t have to buy software,” Abel said. “You don’t have to drop 20Gs for a server and Microsoft fee. Cloud changes IT from a capital expense to an operating expense.”

Buying servers means that a business is paying in advance for services that it won’t actually use for years, while using the cloud allows a business to pay for that same service only when it actually uses the service. In that way, the cloud makes money available for other efforts that may have a much greater effect on profits than IT does, such as marketing campaigns or a huge water wheel that will boost production.

Joe Noll, partner and department head of RKL’s Information Technology Consulting Group, doesn’t advise switching to the cloud simply in the hope of saving a few dollars. “It’s not cheaper. It shouldn’t be your only reason for switching. Over 5 years, the cost will be the same.”
Noll said that in order to decide if switching to the cloud is the right move, “everybody should do an evaluation. You have to ask a lot of questions. Do you have an IT guy or don’t you? Can you pay now? Is your business 8 to 5 or 24/7? Anybody who’s switching just for money hasn’t thought it through enough.

“You have to do the math, or it can bite you. Be sure you check all the options you need at first, or the actual price may turn out to be much higher than it first appears. It’s like buying an airline ticket and then seeing all the extra charges.

“I’ve been a member of an IT roundtable for 8 years, and we’ve switched many businesses to the cloud, but it’s definitely not for everyone.”

In a June 2011 article entitled “What CFOs Need to Hear about Cloud Computing and Consumer IT”, CIO.com looked at the Capex vs. Opex issues of the cloud. (Bill Bulkeley, “What CFOs Need to Hear about Cloud Computing and Consumer IT,” CIO, June 14, 2011, www.cio.com/article/684314/What_CFOs_Need_to_Hear_about_Cloud_Computing_and_Consumer_IT) In the article, Joe Drouin, senior vice president and CIO at Kelly Services, recounted that when he joined the company in 2008, Kelly was suffering from what he termed a “depreciation hangover” whose cause was the company’s costly implementation of PeopleSoft. That project, whose total cost will be more than $100 million, will last until 2014.

Kelly’s huge spending on servers and software had tied up all that money and left the company with little flexibility to make new investments when business plummeted during the recession.

The recession’s slump in revenues was devastating for many companies with high fixed costs, and like Kelly, many of them discovered that they’re vulnerable to big operating losses when their gross profits shrink because fixed costs and cyclical revenue are a risky combination.

In reaction to those issues, Kelly switched many of its IT operations to the cloud, and the experience provided a way for Drouin to curtail his IT department’s heavy capital spending.

In the same article, Bill Bowers, CFO of Newline Products, said that in 2008, his company was planning a $250,000 expenditure for an ERP (enterprise resource planning) system. But after doing a thorough cost analysis, he chose a cloud-based ERP system with an up-front cost of $85,000 and a $99 per user per month fee.

Bowers’s overall analysis of the costs was that “maybe from a payback analysis, it’s a toss-up. When you’re in the cash-flow world, cloud is the way to go.”

But what exactly is cloud computing? The term is a nebulous one, and the simplest answer is that it means the delivery of computing capabilities as a service instead of a product. Or instead of buying servers, which may be the equivalent of a business’s power generation plant of a century ago, a business can now buy its computing power from a utility, which is the equivalent of a municipal electric company.

A more formal definition of cloud computing comes from the National Institute of Standards and Technology: Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (for example, networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

This cloud model is composed of five essential characteristics, three service models, and four deployment models.

Essential Characteristics:
• On-demand self-service. A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider.

• Broad network access. Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (for example, mobile phones, tablets, laptops, and workstations).

• Resource pooling. The provider’s computing resources are pooled to serve multiple consumers using a multitenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. There is a sense of location independence in that the customer generally has no control or knowledge over the exact location of the provided resources but may be able to specify location at a higher level of abstraction (for example, country, state, or datacenter). Examples of resources include storage, processing, memory, and network bandwidth.

• Rapid elasticity (scaling). Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be appropriated in any quantity at any time.

• Measured service. Cloud systems automatically control and optimize resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (for example, storage, processing, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and the consumer of the utilized service.

The first thing that all of this means is that any business leader who doesn’t have a thorough understanding of IT and its own semi-foreign language should have a trusted staff member or consultant who can translate these esoteric terms into understandable English. It also means that businesses can gain a variety of benefits from the cloud, but they also face issues of security and consistency of service.

For young businesses without a lot of up-front money to spend on servers and software, the appeal of spending a few thousand every month instead of making a large outlay at the beginning is obvious. But cloud isn’t without risk for this type of business, and when Amazon’s Elastic Compute Cloud (EC2) web-hosting service crashed on April 21, 2011, it knocked popular social sites such as Foursquare, Quora, and Hootsuite down with it.

Amazon’s most visible presence is its online shopping networks, and it has also become the largest cloud computing provider on the internet. Low rates (the company describes its service as “inexpensive”) make Amazon a favorite for many recently launched websites, but that crash showed the danger of relying too heavily on a single provider. That’s why most consultants recommend redundancy, but redundancy can mean higher costs.

When the Amazon crash occurred, one interesting reaction was the failure of other cloud providers to bash Amazon for its vulnerabilities. Their silence seemed to indicate their awareness that their systems could also suffer such crashes.

Security is a major concern, and some countries have laws that require companies in those countries to store all their data within their borders. The United States has no such regulation, and one of Tom Malesic’s clients told him, “I’d never stick my financial planners in the cloud.”
Location is another concern for the speed of service. That old real estate adage of “location, location, location” also holds true in cloud computing. A study done by CloudSleuth found that the farther away a user is from the physical location of an application, the longer the response time is. (“Performance in the Cloud,” Compuware Corporation | compuware.com, https://cloudsleuth.net/sites/default/files/19237_EntprCloud_WP_c_FINAL.pdf) The obvious conclusion of that test is that if businesses have a choice of service providers, it is best to choose one that is nearest to their users and/or customer base.

So should your business switch to the cloud? Joe Noll offered, “The answer depends on your size, the number of users, what you’re doing with it. It’s a lot about education at this point. It has made our job different. It’s turning us into advisors.”

Tom Malesic suggested, “It’s just another tool, and it’s no different from any other technology. Our job is to help our clients get the best solution, whatever that is. So run the numbers.”

A century ago, turning on the electricity from a municipal system was an easy choice with clear benefits. Today, the factors surrounding the cloud make the decision much more complex, and Tom Malesic summed it up this way: “In the long run, the cloud could be cheaper, but that’s not always the case. Switching to the cloud may just mean that you’ve transformed whom you yell at.”
As the Clouds Gather

A mighty storm may soon hit the IT industry

By Ted Byrne

Over the past dozen years, we’ve watched the wires coming into our shops melt together just like the machines they serviced melded down to just a few. Then we saw those wires get snipped. Communications convergence, or the commvergence of data, audio, video, storage, and processing into fewer inputs and devices, is taking another structural change. As cloud utilities replace in-house servers, the Apple model comes immediately to mind. At the moment, cloud providers are principally selling off-site computer storage. However interaction demands at least minimal software at the interface—software that works suspiciously like a primitive operating system.

Just as Apple has found proprietary extensions of its interface with its various computer, sound, and video devices, cloud providers face the obvious opportunity of selling, leasing, or even giving away a whole universe of apps as deal sweeteners.

Right now there are any number of word processors that can output in the industry-standard Microsoft Word format. Ditto applications that mimic the other components of the Microsoft office suite with outputs that are similarly compatible. How long until competitive cloud services seek competitive advantage by bundling these apps with their storage fees? And how long until they bundle an operating system as well that will service dumb terminals in businesses? How long until even dumb mobile laptop, smartphone, and pad devices will operate with virtually zero RAM and very little hard memory—with all of their hearts and souls residing on some cloud along with the totality of corporate or personal storage?

The big software houses will then, like the great music, book publishing, and movie companies have now, become vassals to the folks who control the gates. In fact, many will become M&A targets to those cloud providers. Apple has clearly clawed its way into a dictatorial oversight position over the content providers. Soon the largest cloud companies will have equal power over the software industry. He who rules those skies can rule the IT world!

To the business purchaser, this will make life and cash flow a lot more comfortable. Many key business software applications that levy individual user licensing will disappear. Software fees will become scalable … subject to use as opposed to lump payments. And competition among the cloud utilities will bring the overall costs of software use down. Just look at what gateway bottlenecks have done to music and book pricing.

And as everything but dumb terminals leaves the business site, the IT silo’s walls will become porous and its functions increasingly outsourced, just as telecommunication services are today. As the clouds gather, the software, and even the IT industry as a whole, seems poised upon the same precipice that the world’s great daily newspapers peered into 15 years ago.