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Be the Cloud – Making the Case for Copying Amazon (and the CIA)

By Chris Ford

What would you think if someone said to you, “Hey, you can trust me, the CIA does!” Most of us would be, uhh, skeptical, to say the least. But in the case of cloud computing and Amazon, apparently it’s true. In an opinion piece for Computerworld, writer Stephen J. Vaughn-Nichols brought to light a news story by Frank Konkel in FCW: The Business of Federal Technology that seems to be flying under the radar of many media outlets. Konkel reported on March 18, 2013 that the CIA has contracted with e-commerce giant Amazon to the tune of up to \$600 million over 10 years to help them build a cloud computing infrastructure.

Say what? On the face of it, the CIA’s shift to cloud computing seems utterly counterintuitive to its own data security. And boy, do they need security. But ... Amazon, really? The more cynical among us would warn the CIA and other big data proponents who dare to dream that Amazon began by selling books online. However, we can also trace the trajectory of Amazon’s growth to its current position as the premier online retailer throughout the world. Topping that feat in the past few years, Amazon has rolled out a pretty impressive — and arguably unmatched — cloud infrastructure. According to Vaughn-Nichols, “One reason the CIA started moving to cloud-based computing in 2009 was that it saw the cloud as being more secure than conventional IT systems. Back then, Jill Tummler Singer, who was the CIA’s deputy CIO at the time, said, ‘By keeping the cloud inside your firewalls, you can focus your strongest intrusion-detection and -prevention sensors on your perimeter, thus gaining significant advantage over the most common attack vector — the Internet.’”

Hey, if the CIA is willing to try it, why not us? What is it about Amazon Web Services that has the rest of us believing we wouldn’t be able to emulate their model on behalf of our business and our own clients? Absolutely nothing, I would contend. Google, Microsoft and others have already taken a crack at it. Whether you’re a bank, an insurance company, a petroleum producer or whatever, it’s worthwhile to remember how Amazon grew from its humble origins as a simple bookseller. Yes, Amazon has a good head start pioneering cloud computing. For enterprises with willing hearts, however, there’s still plenty of time to get a jump on cloud computing that would be on par with Amazon’s cloud services.

It’s pretty clear that IT has become a huge expenditure for most organizations, not just the CIA. For example, if your



business is toward the bottom of the Fortune 1000, it’s still generating nearly \$2 billion in revenue per year. That means it may be spending \$30 million per year on IT. For some firms, it wouldn’t be that big of a stretch for them to be spending \$100 million annually. Organizations that can control these costs while getting the most out of their huge investments in IT will be able to compete best. The next 20 years are certain to shape the future of IT, at a pace and on a creativity level unlike that which we have ever seen -- and cloud computing is at the forefront of this technology push.

The business world has drawn many parallels, comparisons, analogies and illustrations related to the evolution of cloud computing, including the waterworks, the electrical grid (especially the power plants tied to the grid) and the airwaves (AM/FM radio). I’d rather offer a more concrete example, however, to persuade corporate leaders who are currently on the fence that building their own clouds will, in fact, benefit them over the life of their business .

Between 1917 and 1928, Ford Motor Company built the River Rouge Complex in Dearborn, Michigan. When it was completed, it was the largest integrated factory in the world, with a power plant included as part of the automobile manufacturing complex. Ford knew its infrastructure was going to be big enough to enjoy the benefits of: 1) the cheaper electricity it produced on its own, at the scale necessary to run the factory rather than buying it from the electric company; as well as 2) its inherent stability, understanding that if the electric company was near its generation capacity, Ford wouldn’t experience any disruptions to its ability to manufacture. However, Ford also created an

additional lucrative benefit: It could sell its excess electricity capacity back to the electric company for a profit. While Ford was not an electric company, its large scale allowed it to venture into that business. This is the mindset most major companies should embrace as standard business practice, finding ways to reap the same financial benefits that Ford achieved nearly a century ago by leveraging and selling their own innovative business solutions, their own “clouds.”

If your enterprise were to build out your own IT infrastructure on a similar scale as that of Amazon, what would it require and what would it return to your organization? It's fairly easy to find information on how Amazon and Facebook and their ilk have created (or are creating) data centers off the beaten geographic paths (e.g., Oregon, Iowa, etc.), incorporating innovative, environmentally and financially sound approaches to new data centers. Look for opportunities to do that with your organization. How many computer rooms do you currently support? How many servers? How many of those are configured suboptimally?

Developing appropriate solutions around these challenges and opportunities involves key tasks. First, create your own centralized data centers at the proper scale, ensuring these centers can be utilized as standalone entities in geographies with optimal real estate costs, great tax incentives, economic opportunities for its citizens and advantages for economical cooling — obligatory air conditioning shouldn't present a huge expense on your budget. It's also important to duplicate these centralized data centers in other geographical areas, especially as most organizations see the need for a global footprint.

The next step within these centers involves creating massive virtual computer infrastructures in preparation for implementing computer room and data center migrations. Migrating your existing computer rooms and data centers to these central data centers will have a domino effect in terms of the following:

- Reclaiming valuable real estate in high-value real estate areas and office buildings.
- Reducing the need for electricity expenditures where the prices are highest.
- Eliminating excessive computer cooling costs in environmentally unfriendly climates with a higher cost of living index.
- Consolidating servers and improving processing times as well as security.
- Giving certain offices/geographies development advantages because of proximity to servers.
- Creating excess capacity for sales to external entities,

especially those within the same industry that can benefit from your industry-specific applications. (Amazon provides services to numerous retailers, their competitors.)

- Moving externally managed and hosted applications back in-house.

It's also crucial to remember the lesson that Ford Motor Company's River Rouge Complex offers: Selling cloud services to external users with your extra capacity will end up funding huge chunks of your IT budget. One of the great opportunities for some early adopters of the above will be that they can simply buy their way in – they won't have to build it from scratch like Amazon. There are some firms other than Amazon out there that are already really good with the cloud. Picking them off early will be a jump-start for organizations that choose that approach.

The last, and I think most important, point to present is that big data is revealing ever-improving techniques and frameworks to cope with the information age. Your organization can be at the forefront of making its move in this direction, and all the above fits as a logical part of that push. Or, your organization can worry about it later. The real benefit your organization will reap will be the ability to compete most effectively and efficiently. Worrying about it later will simply mean your organization cannot find any of the people it needs, because they will all be where the action is.

One can appreciate the CIA's bold approach toward improving safety and security on behalf of the United States by working with the pioneers of big data and cloud computing. As the CIA is learning, the only way to compete in the new world and reap the benefits of big data will be to achieve the expertise and infrastructure to process it. For the rest of us, creating our own cloud will be a significant investment, but one that I'm confident will pay off. Once your infrastructure is up and running, your enterprise will gain advantages over your more cynical competition and other detractors who remain doubtful that adopting their own cloud will derive future rewards and business success.

Trust me, the CIA does!

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