# Fred Cohen **& Associates** - Analyst Report and Newsletter
## *Welcome to our Analyst Report and Newsletter*

## Moving to the cloud...

We've moved to the cloud – in some ways – and since I have written on the issues of moving to the cloud and security decisions related to it, I thought it would only be fair to tell all of my readers about our decision to do this.

### What's the tradeoff?

Like any reasonably rational business person, I recognize that there are tradeoffs in using cloud-based resources as opposed to resources hosted in our own physically controlled local facilities. I list them briefly here:

- Operational costs are down by more than a factor of 3 – in our case.

- Long-term outages are potentially worse – but in our case, the decision of providers is such that it is unlikely, and we have the potential to replace our provider in a few days if necessary.

- Moving to a hosted email service is a big win for us. Our provider took it over, filters most spam, provides all of the aliases and addresses we need, deals with the infrastructure issues, and we


*The decision to move to the cloud*

get more functionality with less hassle. The cost, in this case, was free! It's part of what we were already paying for annual domain name fees. We just had to enable the service.

- It turns out we get the same functionality as we used to have. This is because we chose to use hosting services and run an almost identical operating environment. All we had to do was move the content and software onto their virtualized server – a process that, after testing and all of the other necessaries, took about 24 hours.

- Integrity has always been a key concern of ours. We run custom server software, firewall to the max, limit public services, only allow control from certain locations, and so forth, all for the sake of preserving the integrity of public content. Loss of physical control over public content on the Web site and the server handling emails reduces our ability to assure integrity. So we added compensating controls to limit the time corruptions last unnoticed.

- Availability has always been a concern – but it's largely a matter of pride rather than business necessity. The provider gives 99.95% uptime guarantees and they have proven
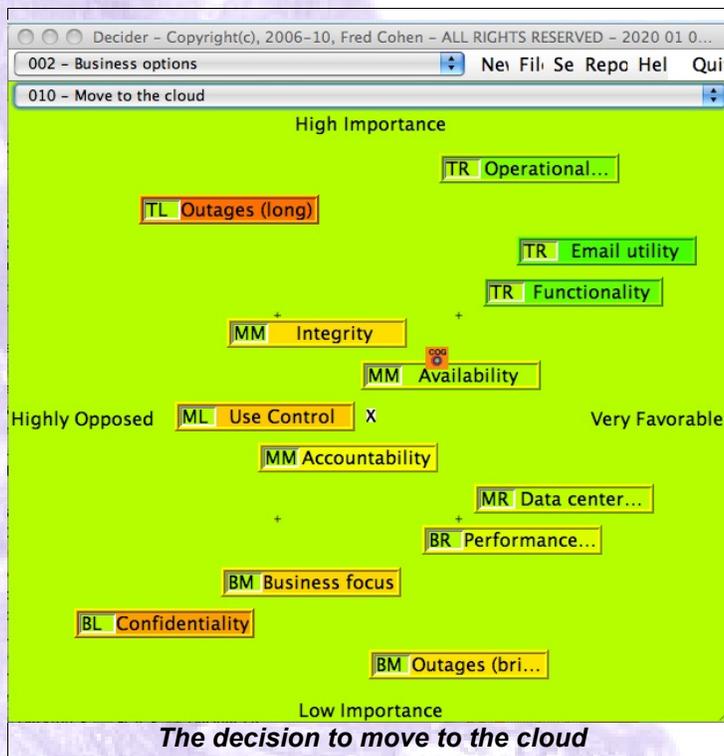
reliable over the period of years we have worked with them. And our business does not depend on that availability like some other businesses do for real-time requirements. We suspect availability will go up, and for an extra $20/month, we can get redundant servers on 2 continents. How are we ever going to compete with that for cost effectiveness?

- Use control is less than perfect. We are – in theory – in complete control over use of our virtual servers, but of course without physical control this can never really be true. Still, we administer them and the use control is nearly the same as it was in our facilities – other than the physical aspects.

- Accountability is a loss in the sense that we don't know what humans are involved in what aspects of all the minutia of how what is done for our public servers. But there is corporate accountability for our provider, which is a financially stable long-term going business. And in the worst case, we can transfer to a different provider or regain control of our own infrastructure in a matter of a few days. And of course, we are responsible for what we put there and how we handle it when it is there, so we remain accountable in that sense.

- Data center support at our cloud provider is likely far better than we will ever want to attain. They are likely more physically secure than we were as a data center, other than from government intrusions – which by the way, nobody is really secure from unless they are a government themselves. They likely have better power and infrastructure redundancy, have higher bandwidth, more support staff, and so forth. They are currently supporting more than a million domains and 40,000 virtual machines on two continents. We don't want to be in this business or try to compete in it.

- Performance is actually up – in some ways – down in others. Our access times to our Web sites are down by a few tens of milliseconds. But for almost everyone else in the World, there is more bandwidth. Performance has never been an issue on our servers because the way we operate them is scaled to assure service levels in excess of bandwidth. Now they run on 64-bit high speed systems which are far more expensive and higher performance that what we ran, and they support redundancy for hardware outages, etc. that we couldn't provide in nearly as effective a fashion.

- Business demands a lot of time and effort, and our focus is increasingly moving away from running publicly accessible data centers and toward other issues. As a result, by outsourcing the public side of our data center functionality, we can continue to run our isolated systems and servers with potentially better security and less complexity and cost than we could do before, allowing us to focus more clearly on what we do for our clients.

- Confidentiality for our publicly available content is not a substantial issue. After all – it is all publicly available! But we used to use our public servers for short-term transfers of confidential data over SSL links, and this we can no longer do with the same level of confidence. So we have moved to other techniques for confidential exchanges, and we will pay a small – likely unnoticeable – price for the difference.

- Last and least are brief outage issues. Because our offices are not at a tier 1 data center, we have suffered external access outages of up to a few hours more than once a year. It looks like this situation will be improved by our cloud provider.

**Are we different than you?**

Likely our business is not the same as your business, and as a result, you will have different tradeoffs than we have. Our decision to move to cloud-based services for our public Web server and email interfaces was, I think, a good one for us that matched well to our provider. But we are perhaps a special case.

- Our provider has provided our domain names for about 10 years and is an ICANN authorized top-level provider of such services. This gives us a lot of confidence.

- The things we are outsourcing to the cloud are essentially commodity items that can be easily replaced by other similar items elsewhere, and in short order.

- The "cloud" services are offered from Baltimore, Maryland (US) and Paris (France). As such, we actually know where they are.

- Our provider is legally bound by French privacy laws and had done a good job so far as we can tell at providing for proper controls over confidentiality for many years.

- Nothing we are putting in the cloud is substantially confidential other than content that was already flowing over the Internet. So we aren't trusting them any more than we already were and still are trusting top tier Internet service providers.

**We aren't putting everything in the cloud!**

Of course we aren't outsourcing everything. We are only putting a few things in the cloud. We aren't putting client confidential data in the cloud, or anything subject to court orders for confidentiality. Our business records, private financial information, trade secrets, and authoritative content copies remain in physically secured devices and locations not accessible to anyone not identified and authorized. Our client information, inventory controls, client list, business processes, and the rest of our business, continues to function as it did.

What we are doing is putting things in the cloud that the cloud can reasonably support. To quote from one of our standard security decision options, we have taken the approach: "Only commodity goods and services that are easily replaced and cost efficient are outsourced."

**Conclusions**

Cloud computing – in the sense of outsourced distributed resources – has an increasing role in the networked world of the Internet and the information age. As fairly conservative security-minded decision-makers, Fred Cohen & Associates has long resisted moving to cloud-based services, because we didn't think the time and circumstances warranted the decision. But after substantial consideration and thought, we looked at the tradeoffs for the specific decisions we were making, and moved to the cloud in what we feel is a reasonable way.

How will this all work out? Nobody really knows. But we think we have enough history and data to make a sound decision, and we think it's time for others to examine their use of the cloud using similar criteria.

We want to hear from you on this as well. After all, you are likely viewing this through our cloud service provider, and if you think the service is better or worse than it used to be, you should let us know. Have a good 2011!