

Cloud resilience at what price?

What factors should businesses consider, and what questions should they ask prospective providers, to ensure their operations and their business critical data stay safe in the cloud?

BY CHRIS BELL

The Canterbury earthquake recovery operations are driving home to New Zealand businesses that no amount of preparation guarantees the safety of data and applications in the event of a *force majeure* – the “superior forces” usually exempted from insurance policies. But working in the cloud, at least theoretically, separates your data and applications from your physical infrastructure and places them on a remote platform.

As discussed in previous iStart features, there are multiple definitions for cloud computing. We'll simplify matters here by giving cloud services the umbrella definition of any model of computing where services and applications are hosted securely and accessed through the internet.

New Zealand organisations weren't among the respondents to the Acronis Global Disaster Recovery Index, but our Australian neighbours emerged as laggards, ranking poorly on their ability to avoid downtime in the event of a serious incident, suggesting we'd have fared little better. However, if stated intentions are anything to go by, the ability to quickly recover IT and systems following a disaster is of growing concern. More than two-thirds (71 per cent) of all businesses surveyed by Acronis expect to include cloud computing as part of their backup and disaster recovery

(DR) strategy by the end of the year.

Many onshore providers offer infrastructure as a service (including but not limited to Datacom, Entrada, Gen-i, IBM, ICONZ, OneNet and Revera), and even more of them offer hosting in the cloud, including Appserv, Datacom, Fronde, Fujitsu, Gen-i, IBM, ICONZ, Intergen, Maxnet, OneNet and Revera. Before you even begin to evaluate your provider's resiliency in the event of the unexpected, you need to ask yourself how quickly you really need to be able to recover your data in the event of a disaster – the answer will have a direct impact on the cost of the service.

Business (almost) as usual

For some Christchurch businesses, having cloud services as part of a DR strategy pre-earthquake meant being able to continue operating uninterrupted, lessening the impact on their earnings. Brett Roberts, a partner in BusinessIQ, knows of at least one such example. “We've got two people in Christchurch working out of a small serviced office in the CBD. They haven't been able to get in there for weeks and they're still working. They don't have a server down there; it's all in the cloud.”

The Christchurch earthquakes shunted businesses around the country to think more carefully about data





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recovery and backup. CEOs are evaluating risks that are normally obscured by the day-to-day minutiae of running a business. As a result, at least one of our interviewees predicts a boom-time for disaster recovery experts.

It's worth bearing in mind that a cloud provider's scale and existing infrastructure can potentially offer resilience of a kind you could never afford to provide yourself. Gen-i's 12 data centres are co-located in Telecom's exchange buildings, which were built to withstand natural disasters. Due to the vital contribution telecommunications make to recovering from a civil defence emergency, telcos receive priority assistance at government level.

Neil Osmond, strategy manager, technology, is on the team developing Gen-i's cloud strategy. He says the emphasis of conversations with customers, particularly since the Christchurch events, isn't so much on technical features as it is on trust, reliability and availability. He underscores the importance of infrastructure resilience: "Our data centres have seismic bracing and a lot of backup systems, batteries and diesel generators. In a large event like Christchurch,

diesel is immediately rationed. Some areas are zoned-off and you can't get people in. But being a telco, and being part of the civil defence response, we have access to the buildings and diesel, and we're escorted into the buildings immediately to keep communications for the emergency services open. In thinking about resilience, you're obviously going to rely on providers who are able to act in extreme circumstances."

Seismic mindshift

Steve Matheson, chief operating officer of Datacom New Zealand, says the earthquakes highlighted an eventuality people hadn't fully recognised. "People have always thought that if the power went off, they'd just move their computer somewhere else. This has also rammed home, from a vendor's perspective, a *force majeure* situation on a customer."

Datacom had fortunately invested in strengthening its capabilities prior to the earthquake. Its new Christchurch data centre had been seismically engineered, and even though it's situated inside what became the red zone, it ran continuously without customer outages. "We had the power go off on us and all the facilities and the bracing on the racks all worked."

The provider also had a dual fibre link; one half of which was lost during the earthquake when a building it passed through collapsed. Matheson says network resilience proved its worth: "We were still able to access all the sys-

tems in Christchurch from Auckland. In fact, we used staff in Auckland to manage the systems for some time during the earthquake.”

Cameron McNaught, executive general manager solutions, Fujitsu Australia and New Zealand, says plans for a New Zealand data centre have firmed up since we last spoke to him in October 2010, when he predicted it would open one this year, subject to customer demand. “We now have internal approval. We’re doing some work with our current facilities to be able to offer services out of Wellington.”

Fujitsu views this as “a starter service”, but it’s also seeing interest from its New Zealand customers in having their data and applications hosted on Australia-based cloud platforms. McNaught says one New Zealand government department is already using a Fujitsu platform for its development test services, as a pilot to evaluate the cloud for larger scale projects. McNaught says he hopes expansion of Fujitsu’s Wellington facility on Taranaki Street will allow it to offer cloud-based services from August or September.

Predictably unpredictable

As Chris Quin, CEO of Gen-i Australasia, says, moving apps and data into the cloud is not as simple as plugging them in: “There are existing ICT assets that have residual value, and

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Chris Quin, CEO, Gen-i Australasia

critical data and systems to move, with many not suitable for moving to the cloud. The returns may be in business-as-usual cost savings, but will often be in flexibility, value and robustness.”

Cost predictability makes cloud services particularly attractive to some organisations. Current pricing models used by providers of cloud services vary from per-concurrent user to per-gigabyte-of-data, charged usually on a monthly or, at least, recurring basis. Accountants appreciate being able to nudge much of their organisations’ IT costs from capital expenditure over into operating expenditure, and IT managers and CIOs like the transparency of pricing based on user numbers or data volume, in contrast with the fuzziness of investing in and maintaining physical infrastructure – and hiring and retaining staff to run it. Monthly subscription models are good for cash flow, but you keep paying forever, so businesses need to factor in the total cost of ownership.

While applications and systems can usually be restored following a critical failure, what price would you be willing to pay for 100 percent resilience of your data? The proportion



WHAT TO ASK PROSPECTIVE PROVIDERS

The most common concerns about cloud computing resilience can be overcome by researching cloud providers before signing up. *iStart* asked its interviewees what customers should ask providers to ensure resiliency. This is a shortlist of their responses, using Eval-Source’s *ERP Cloud Computing and SaaS Buyer’s Guide* as a reference.

What’s your track record? While cloud continues to mature, it’s moved from ‘explore’ to ‘deploy’ mode. There’s an abundance of case studies, so look for a proven deployment history, methodology, credentials and references. These should satisfy you the provider has a reputation for security, performance and reliability.

Can I pilot this before committing to the long haul? Where possible, try before you buy. A pilot, trial or proof of concept helps you to understand performance levels.

Can you integrate network delivered services with my onsite infrastructure? Make sure you can still leverage the best of your existing infrastructure assets.

Where will my data reside? Find out where your data will be located and whether there’s local support and accountability.

Are my applications running on exclusive or shared architecture? Look at the type of cloud: is it a multi-tenant (one-to-many) or a single tenant (one-to-one) model? Each has advantages, risks and trade-offs.

What’s your business continuity plan if the primary data centre is cut off? Understand your data’s risk profile: if your business would potentially cease operations if you lost it, ask if it provides an option for onsite and offsite replication. Look closely at the risks – and true costs.

Where is backup data stored? Find out when the provider last tested its DR. Ask to see the results.

What does the SLA say about uptime and downtime? If there’s any lack of clarity, seek an explanation.

Which carriers supply internet connectivity to your data centres? What’s connecting you to the cloud is important. Make sure it’s a resilient network, with a provider that can keep its systems available and secure.

What happens when there’s an outage? What type of data protection services does it provide to mitigate the risk of data loss?



WHAT'S HOLDING YOU BACK?

With the myriad benefits of using cloud technology – what makes business fail to make the leap?

While cloud computing continues to mature, an Eval-Source Sept 2010 study—“Cloud and SaaS Computing – Buying Behaviour” identified the key sticking points for businesses that wanted to make the leap but failed to do so.

According to the survey, the top five SaaS/Cloud adoption concerns were security, hidden implementation costs, integration, TCO, and migration. Not fully understanding the intricacies of cloud computing and the necessary service level agreements required for proper cloud implementation added to the decision of not adopting a cloud or SaaS computing model.

- Enterprise-size organizations consisted of 20 per cent of the survey set and cited data migration as the main reason they did not implement a cloud-based solution.
- Medium-size organizations consisted of 29 per cent and cited hidden implementation costs and data migration as their obstacles for not implementing a cloud-based solution.
- Small-size organizations consisted of 51 per cent and cited security, integration, TCO, and hidden implementation costs for not implementing a cloud-based solution.

of the fee you're paying for that confidence will depend on your service level agreement (SLA) and how long you're willing and able to operate without the data (and possibly the applications) in an emergency.

“A lot of people's DR used to involve making a backup tape,” says Matheson of Datacom. “They knew they could restore their system if their computer failed and they'd go and buy a new computer and restore it. Sometimes that's good enough and they're happy for it to take 10 days. You get a range of requirements, so it's difficult to characterise cost – you can't generalise.”

The shorter the time organisations are willing to be without their data, the more that resiliency is likely to cost them. IDC estimates that less than one third of Asia-Pacific organisations interviewed would be able to restore more than 50 percent of their applications in real-time if disaster struck. But Matheson of Datacom says even that percentage is probably overstated.

“The key there is ‘real time’ and that means more or less instantaneously. I don't believe many organisations are in that position. I'd expect most of the banks would have their Eftpos systems set up so if a single device failed there was a relatively quick crossover to the other applications. But I can't see most organisations having double their capacity sitting

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around, waiting to be used.”

McNaught of Fujitsu agrees that the critical factor is how quickly a business needs to be able to recover. “Data protection is where customers do need to take the time to understand the risk.”

What does your SLA say about recovery?

Roberts says negotiating an agreement with a cloud services provider shouldn't differ radically from negotiating a standard contract. “You want to understand what service and support is in place, what happens if there's a screw up and, if there's a major screw up and they can't fix it, what recompense is there? But changing the server's location shouldn't make a huge difference to the SLA.”

Datacom offers disaster recovery advice and suggests options based on customer requirements, Matheson says; recent events have altered customer priorities. “When there hasn't been an earthquake for 60 years, people aren't prepared to pay very much. When it's fresher in their minds they're a little more receptive to that.”

He says customers are segmenting applications to provide the highest level of DR to the business critical ones and data recovery for the rest. Matheson predicts, as provisioning costs fall further, more comprehensive offerings will become available. "We'll get to a point where every single thing has some level of DR built into it as a matter of course."

The Amazon cloud services outage on 21 April caused Thorsten von Eicken, CTO and founder of Right Scale (itself a cloud management platform provider), to describe it as the "worst outage in cloud computing history". It was, he claimed, a "wake up call" to the industry. Customers found themselves locked in to Amazon, as its product doesn't allow customers to failover to third party providers. But while being able to failover to another cloud provider might seem like insurance in the event of a critical outage, cloud specialists say it's fraught with problems.

"When you have two providers, you've always got this issue of who's responsible for what, where the demarcation line is, and it's just more difficult to deal with it," says Matheson of Datacom. Datacom has three data centre locations in New Zealand and further sites in Australia, and Matheson says it can place copies of your data wherever you want it, subject to your SLA.

Osmond says the conversations Gen-i is having with prospective customers about resiliency are around dual-site, virtual data centre capabilities, rather than multiple providers. "People are a little more comfortable with that because it's been around a little longer."

But McNaught of Fujitsu can see a market for multiple providers. "I'd like to think customers would put everything

in Fujitsu and trust us with everything but, as interoperability between clouds starts to evolve, organisations will select a multi-source approach to cloud."

For the time being at least, DR based on multiple sites managed by a single provider remains the more popular option.

Seeing is believing

Nothing replaces seeing your prospective provider's data centres for yourself. "Looking at the layers of backup, hot standby generators, the rows of batteries, all the seismic bracing; it's quite evident when you look at something like that that it's been purpose-built," says Osmond of Gen-i. "You've got to have the right infrastructure."

Matheson says most new Datacom customers also want to see where their data is held and it gives them an added sense of security. "You get a sense of whether what you've been told is correct."

Elsewhere, there are indications that the data centre of the future will be even more remote, as computing capacity becomes truly commoditised. The Economist reported recently that computing capacity has become a tradable commodity. The launch of SpotCloud in February represents what's considered the world's first spot market for cloud computing, in which firms with excess computing capacity in their data centres can sell it.

The Economist says the big question is whether there's enough demand for it, but *iStart* disagrees. The big question is whether enough customers will pay for capacity when it makes resiliency even less certain than it was before. **f**

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