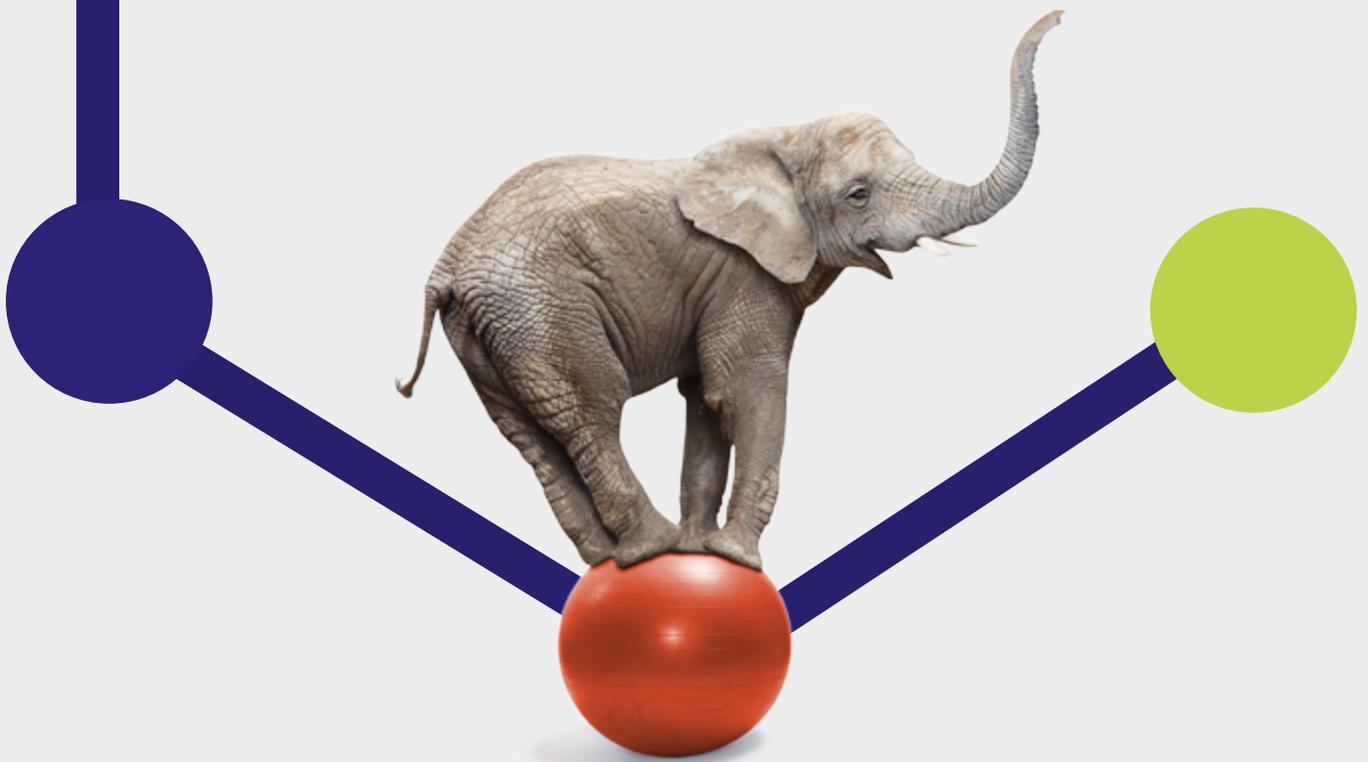




CLUSTRE
THE INNOVATION
BROKERS



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01

The need for speed

Innovation has been around since the dawn of time so why has it suddenly become such a high priority for senior executives?

The answer lies in one unstoppable dynamic: Speed.

Thanks to technology, a new business can be spawned and launched in a matter of months. In only a few years, that fledgling business can grow exponentially to become a dominant global power...

Take Uber for example. In the space of just seven years, this start-up has gone from a twinkle in two peoples' eyes to a global business worth an estimated \$62.5bn. Uber now ranks as one of the most valuable companies in the world. Most traditional businesses could not hope to achieve this valuation after 70 years of sustained success.

The warp-speed acceleration of these new companies is enough to knock many established market leaders off their perches. Especially since speed is often matched by a stealth ability to enter markets virtually unseen. Many start-ups slip under the radar of traditional companies which leaves little or no time to respond to threats.

And the really bad news is that reaction times are getting progressively shorter. In truth, Uber could have lifted off even faster. They went from raw concept to prototype in just a few months. Then they went live in San Francisco about a year later. And just five years after that, Uber is now available in 58 countries and over 300 cities. However, this growth could have been even more dramatic. Had it not been for legal protests that mired the company in court actions, Uber might well have shaved 12 months from their vertical take-off.

What's more, Uber is not an isolated success. Companies such as WhatsApp, eBay and Airbnb are also 'overnight' phenomena. Airbnb is the prime example of a start-up that instantly disrupted an established and seemingly impregnable market. Less than 8 years after its launch, it is now worth more than the entire Hilton Group.

By contrast, traditional companies often take months just to mobilise a project team to study innovation opportunities! It can then take many years for anything to emerge from this cumbersome process. It's a classic hare and tortoise contest... only in this race, the tortoise always loses.

02

How can traditional businesses become more agile?

Big businesses can be likened to giant cruise liners. They have both been around for a long time and, every year, they seem to grow ever bigger.

They are massively impressive and can certainly carry a lot of people (including passengers!). But they are also cumbersome and ponderous – taking an age to manoeuvre or to stop. They also have a leisurely, self-indulgent, almost superannuated air about them.

Internet businesses, on the other hand, are highly tuned racing yachts. They are superfast and supremely agile – the ultimate extreme machines. However, they are also unforgiving and vulnerable in heavy seas. They can be becalmed by capricious winds. And, in wrong or inexperienced hands, they can be deadly dangerous.



Big businesses are like giant cruise liners... massively impressive but very difficult to manoeuvre and stop

So what should big businesses do? Well, there are three fundamental approaches a large business can adopt to improve agility...

- A.** Commit to a corporate diet and slim down
- B.** Set up a stand-alone innovation team
- C.** Rebuild the business from the ground up

Let's review each of these options...

A. Commit to a corporate diet

It is possible for a large company to 'lose weight'. Giants can become leaner, fitter and much more agile. However, this is not a trivial undertaking. It requires the commitment of the CEO and a large transformation team (often with an equally large budget).

As with most diet and fitness regimes, there is no single 'magic pill' to achieving corporate agility. Instead, there is a combination of eight factors that, together, deliver impressive results...

- 1. Shed weight** and lose ballast. The lighter you are the faster you will go. To be specific you will need to:
 - Outsource non-core functions
 - Drop DIY in favour of DDIY (Don't DIY)!
 - Remove all un-necessary complexity from the business
 - Jettison poor performing products and services
- 2. Change the design** to make your company cut through choppy business waters quicker. Reduce the number of decks – the management layers – to improve communications and share knowledge more widely. When every employee is wired to everyone else, the whole company benefits. Experience can then be drawn from all levels; not just from the top deck!
- 3. Raise yourself out of the water** by forming alliances with best of breed practitioners and suppliers in every area, e.g. product design.
- 4. Acquire better radar** to identify new threats and opportunities before your rivals. Interestingly, this is one of the special skills of the Clustre innovation community.
- 5. Develop alternative route maps** so you can plot a new course for any contingency. Business scenarios need to be created and action plans developed for all possible eventualities.
- 6. Give the young guys – and girls – a turn** at the wheel. You will be surprised at what you can learn from them.
- 7. Take more care of your valued customers** – stop them opting for an adrenalin ride on a racing yacht!
- 8. Overhaul your IT engine** so you can accelerate through the water more quickly. The latter part of this paper will give some concrete advice on this topic.



Internet businesses are highly tuned racing yachts... superfast and supremely agile but unforgiving and vulnerable in heavy seas

If you decide to take this particular journey you might like to read a very helpful 'navigation' guide. 'The Last Days of the Giants?' describes the corporate diet programme in fascinating detail.

But let us close this section with a word of warning: a leaner enterprise is not necessarily an agile enterprise.

We know of several organisations that have embraced the need for agility. They have trained hard and trimmed their bureaucratic layers. They have enthusiastically pushed accountability and responsibility down the decision-making line. They have bought into the whole concept of empowerment.

But that's about as far as it goes. It's just an empty concept. Nothing is implemented because senior management has bought into the idea; but not the intention of ever devolving power. Lower management decisions are either cynically ignored or arrogantly countermanded. So, what started as a laudable initiative ends up as a bitter legacy of frustration and lost opportunity.

Get it right and you will have a fitter, faster-performing business. Get it wrong and you will be crushed on the rocks.

B. Set up a standalone innovation team

In the last few months we have seen the emergence of many new 'skunk works' teams. Modelled on the legendary Lockheed Martin initiative this shows not only the commitment to push boundaries but also the way in which management is responding to the imperative of change...

Recognising that most large institutions are too ponderous to drive innovation, Boards are now entrusting the radical thinking to small, agile, independent groups. They are taking key thinkers out of the mainstream and giving them responsibility for delivering true innovation. It's a sign of things to come.



Get it wrong and you will be crushed on the rocks

Case study 1: Global loyalty card operator

We have been helping one skunk works team to show what a focused and dedicated team of change-drivers really can deliver. And it's impressive...

Established just over a year ago with a tiny team (and an even smaller budget) they have delivered a steady stream of new product ideas, prototypes and new disruptive businesses into the market place. Ordinarily it would have taken this global leader (in the loyalty card space) eight months to deliver even a simple change to an existing product. Now, via their skunk works team, they can conceive, prototype and test launch a new product in a little over eight weeks!

Now that's a whole new definition of 'fast'.

How have they done it? Well, rather than try to build the new digital products themselves (or with the help of a large systems integrator), they turned to one of Clustre's most agile firms to produce bespoke code in a matter of weeks.

This firm has deliberately modelled its operations on a formula developed by the Special Forces. They create small, multi-skilled teams comprised of 4 – 6 people. Each member is an expert in a particular skill area and, equipped with the best tools, they are a truly remarkable task force. An army of regular programmers could never match or catch them.

When interviewed about the lessons he had learnt as leader of the skunk works operation, our client came up with this candid (but utterly unexpected) comment:

"We were given just a handful of staff and a laughably small innovation budget. But this forced us to focus minds and think in new ways. It certainly made us very inventive. In truth, I honestly believe that, given an even smaller budget, we might have achieved even more!"

It's a fascinating observation. For many project managers whose budgets have been savaged by austerity cuts, it may also be extremely contentious. However, there's no denying: sometimes less does deliver more.

C. Rebuild the business from the ground up

Decades ago, a senior member of our Clustre team had a revealing conversation with the CEO of a leading and highly regarded building society. Arriving for a meeting, he caught sight of the CEO staring out of his office window at a small piece of wasteland across the road from his HQ.

When asked what he was doing, the CEO replied: "I was just wondering if we should buy that bit of land and rebuild the society from the ground-up. Then we could have fewer people, all on one floor, each with a set of dials and levers in front of them. We could watch those dials like hawks and act instantly on their information by pulling one or more of the levers".

It was a remarkably prescient vision. However, the most remarkable thing about this comment was that it came from the CEO of a hugely successful business. This particular building society was already very profitable. It had one of the lowest cost-income ratios in its sector and the highest customer satisfaction scores in the industry. So why was the CEO even contemplating such radical change?

His answer to that question was even more revealing...
“Sometime in the future someone will do just this and then they will beat us on profit and customer satisfaction. Should I let them steal a march on us or should I move first?”

Nearly thirty years after that conversation with the CEO, this question remains just as critical and relevant. Right now, we have the very real prospect of four challenger banks ready to take on the established providers of financial services. It’s a classic David versus Goliath battle – agile innovators against powerful giants.

Who will win? Well, the adversaries are still squaring up but the formbook indicates that David is the odds-on favourite.

Take a look at these case studies...



Case study 2: An inspired idea born out of the fierce heat of competition

Let’s turn the spotlight on one of the UK’s most competitive industries: real estate. Rewind to the year 2000. Big Ben had barely struck in the millennium when four, far-sighted estate agencies launched their new vision for the house-buying market. Seeing the internet’s potential as a public portal, they created Rightmove – the definitive web-based service for home buyers and sellers.

It was an inspired idea born out of the fierce heat of competition. By loading the site with details of their combined property portfolios, they created an instant and massive database. It was an immediate success...

In 2006, Rightmove listed on the London Stock Exchange and is now worth over £3.5bn. To put that in perspective, these four estate agencies created something that is now worth more than their combined value!

There have been many copycats since but none has come close to matching the success of Rightmove – literally the first mover in the property market.

giffgaff

Case study 3: Mobile phone operators watched the web revolution very anxiously – they were acutely vulnerable

Now travel forward another ten years. The web revolution has now taken grip and mobile phone operators are nervously watching its rising popularity... and feeling acutely vulnerable. Without the burden of costly cellular networks and high street branches, an internet-only operator could overturn the mobile market virtually overnight.

One of those worried mobile operators was O2. However, rather than fear the future, they chose to write it. Management decided to seize the moment and establish its own online competitor. In late 2009, Giffgaff was launched – and the rest is, to borrow a cliché, history...

- *In 2010 – when still less than twelve months’ old – Giffgaff won two major industry awards. It was also nominated for the prestigious Marketing Society’s ‘Brand of the Year’, but just lost out to The John Lewis Partnership.*
- *In June 2012, Giffgaff was named: ‘Best MVNO’ (Mobile Virtual Network Operator) in the Mobile Industry Awards.*
- *In 2014, Giffgaff picked up the ‘Which? Best Telecom Services Provider’ award.*

A volatile cocktail of opportunism, vision and very genuine fear had created the perfect launch pad for Giffgaff. This disruptive play was born out of necessity and delivered by a management with the courage to grasp the future.

Established companies should embrace disruptive innovation. BUT, this is often best nurtured, tested and proven in a separately branded company with no obvious connections to the parent company. This creates the freedom to innovate without incurring any external or internal backlash.

Keep to this independent mantra and disruption could be just the shot in the arm that your company needs.

Do it under the auspices of the parent company and you could well be shooting yourself in the foot.

Do nothing at all and you might as well stand passively in front of a firing squad and await your inevitable fate.

03

Overhaul the IT engine to make it more powerful

As we know, it can take a considerable time for a large corporation to slim down sufficiently to make rapid decisions (and act upon them). However, this doesn't mean that everything has to be put on hold while the diet takes effect... far from it.

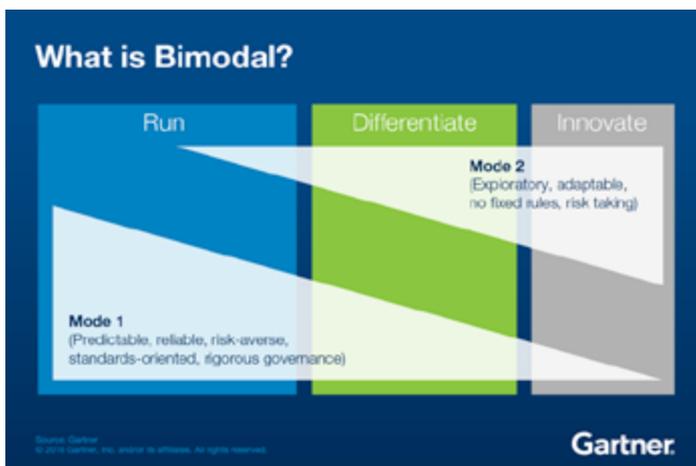
If you put a more powerful engine in a heavy car it will definitely go quicker (at least in a straight line). The same dynamics apply to IT. In this highly digitised world, IT is the power unit for most large organisations... a unit that can be tweaked and tuned to maximise performance.

Here are three essential steps to optimising the power of your IT engine:

- A. Separate old and new
- B. Adopt agile methods
- C. Embrace the cloud

A. Separate old and new

This is not a new idea but it is a well-proven one. The first piece of practical advice which all IT departments should accept is that they have two main tasks – running/maintaining their existing apps and building the new ones. This so-called bi-modal IT model is simply illustrated in this Gartner chart:



Fine-tuning the engine management will deliver instant IT improvements to Mode 1. Things will run more smoothly. Efficiencies will be found. Productivity – power output – will be increased. But will all this tweaking and tuning to Mode 1 make a significant difference to the overall performance of the company?

Well, to be bluntly honest, it is debatable. Certainly, any economies in Mode 1 will cut costs and free up funds for Mode 2. That is undeniable. But it doesn't answer the key

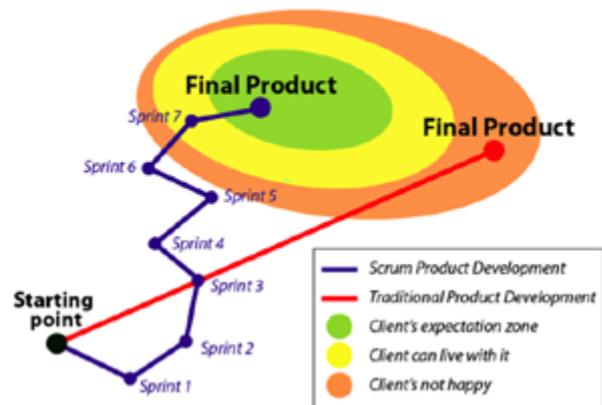
question: how should increased investment and IT power be used to differentiate, innovate and radically improve a company's performance?

This critical consideration now becomes the prime focus of our paper...

B. Adopt agile (scrum) methods

Do agile methods work? Do they deliver better result in less time than more traditional methods? The chart below provides the interesting answer:

Scrum vs. Traditional



Whilst an agile approach may look haphazard and unpredictable, case study evidence shows - time and again - that users end up with a much more satisfying outcome when an agile approach is (successfully) pursued. Yet, in our experience, surprisingly few organisations adopt agile methods across the board – a diffidence that is strangely at odds with the agile evidence...

We know a number of CIOs who genuinely want to implement a fully agile IT process across their business. They can see the big picture. Sadly, they don't have the confidence and conviction to deliver it. Fearing a pushback from their less visionary senior colleagues, they opt for a diluted version. So the brilliant big picture slowly becomes blurred and distorted by compromise and political expediency.

But sometimes, when you least expect it, someone triggers a crisis which creates the perfect opportunity to pursue the agile path.



Case study 4: Never waste a good crisis

One such crisis was created by George Osborne. In the 2014 Budget, he announced that from April 2015 “no-one need ever buy an annuity again”. Pension-holders would be free to withdraw their entire savings - at a stroke - if they so wished. Fearing a catastrophic haemorrhage of funds, this unexpected and totally unheralded announcement shook the financial services industry to its core.

Our client was one of the many that felt pole-axed by the announcement. But, as the initial shock dissipated it was replaced by a curious sense of opportunity. As President Obama’s Chief of Staff remarked on learning about the Wall Street meltdown: “never waste a good crisis”. This surprise news had suddenly created a new pensions landscape - one from which our client was uniquely positioned to benefit.

As their CIO said at the time...

“We were in a unique position in that we already offered a wide variety of ‘at retirement’ products including enhanced annuities, drawdown and equity release. We quickly realised that if we could find a way of presenting the various options in one easy-to-understand product platform we would be well positioned to take advantage of the new opportunity - this was a hugely attractive goal. Unlike many of our competitors we could see these changes not as a threat but as a starting point for a better way of meeting customer needs.”

To gain the edge on rivals, the CIO and his team needed to deliver this new product platform within the absolute deadline set by George Osborne. The snag was that the precise set of requirements was still unclear. Indeed, the only certainty was that traditional methodologies couldn’t deliver against such an imprecise set of requirements and certainly not in the desperately limited time available. For the CIO, this was the perfect storm. He had wanted to introduce a fully agile method to his company for some time but his business colleagues were reluctant to abandon their more traditional ‘waterfall’ approach to systems development. But time was now the enemy. There was an immutable delivery date of April 2015. The only way to develop a bespoke solution was to adopt an agile methodology.

Since the insurance company had very little agile experience they turned to Clustre for help. We introduced them to the acknowledged world specialists in agile delivery. A firm that had successfully completed nearly 8,000 agile projects – all of them highly complex, time-starved and mission-critical.

We won’t go into detail in this paper to describe the process – that is the subject of a separate case study we have written. However, we can reveal that (as far as we can ascertain) our client was the only UK insurance company to have a system ready and fully tested before the new legislation came into effect on April 5th 2015. So successful was the whole process that the insurance company is now committed to the use of agile methods on all new bespoke systems.



Case study 5: Agile for mission critical systems

Some companies question whether agile can be used to develop mission critical, high throughput and high performance systems, yet this is exactly what ITV did.

ITV's corporate strategy is to maximise revenue from its UK broadcasting business, whilst building an international content production and distribution business. However, the systems underpinning this strategy were old, operationally inefficient and difficult to change.

A couple of years ago, that was the stark reality inherited by Mark Smith. ITV's newly appointed CTO had no illusions: "The old systems used a patchwork of inherited technologies and platforms. The languages were older than Sanskrit. They were hugely costly to maintain and dangerously fragile."

To use Agile techniques for in-house systems development is still unusual. Using them to develop complex, business-critical systems goes against all conventional wisdom.

But Mark is definitely not a conventional thinker. "A traditional waterfall processes simply wouldn't have worked for us. We had some complex problems to solve and the broadcasting landscape is constantly evolving. We needed new sophisticated systems that could deliver on multiple levels. And we needed them urgently. It just had to be Agile."

There were many doubters. Highly-focused, target-driven sales teams were nervous about change and senior finance managers were equally risk averse. Mark and his team were under intense pressure to deliver.

"The 'Show and Tell' sessions were the breakthrough," Mark explains. "Suddenly, Ops teams and senior executives could actually see the developments happening in-front of them. They also had a powerful 'say' at every stage. The very people who had been reluctant to buy-in were actively building their own system. The enthusiasm was contagious."

Here are some more of the insights that Mark gained through following the agile path:

- Engage and empower all stakeholders. This fosters a new synergy between technology and business-facing teams.
- Work with the best Agile partners. Finding the right external experts will deliver the complex engineering faster and also foment a fantastic sense of shared endeavour.
- Be pragmatic. Be prepared to adapt to changing user needs. And never preach the Agile gospel; promote its benefits instead.
- Create your own IP and competitive advantage by building bespoke apps around a proven proprietary core system.

Two very compelling agile case studies. Hopefully, these will inspire other organisations to take the plunge.

C. Embrace the cloud

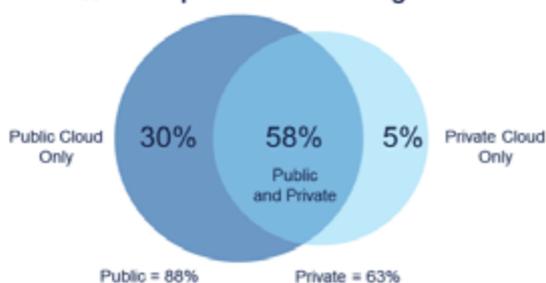
By contrast, few businesses need to be persuaded about the merits of cloud computing. The majority of businesses are now using the services of cloud providers and/or CDNs. A recent survey by RightScale revealed that 93% of respondents are now using the cloud with 58% operating a hybrid model (see diagram below).

The same RightScale report also shows that 82% of organisations with over 1,000 employees have a multi-cloud strategy. Similarly, businesses that operate 24x7 globally-accessible websites are increasingly using CDNs (cloud providers in essence) to give their users fast, low-cost, uninterrupted content.

No longer are we querying whether to use cloud services. The questions now are which service providers and CDNs should we use and how do we make the most cost-effective use of them?

But is this picture just too perfect to be true? Does the promise of uninterrupted, responsive, hassle-free cloud services really stack up? That is the question we need to ask and the answers are both revealing and worrying...

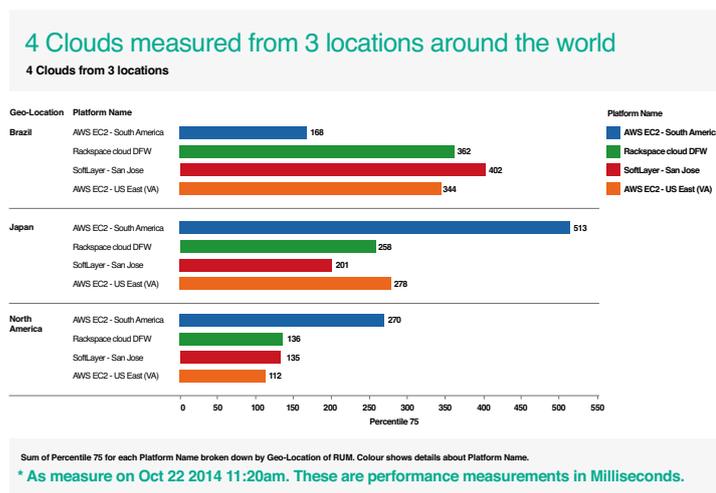
93% of Respondents Are Using Cloud



Source: RightScale 2015 State of the Cloud Report

Performance varies by geography and vendor

Just because you have signed up with multi-cloud and/or CDN providers doesn't mean that your problems are instantly solved. Far from it. Different providers deliver very different levels of performance. And this wildly fluctuating performance is largely dictated by geography. Where vendors can afford to be sited close to their clients, the service is often consistently good. But when funding pressures stretch that link, the results can be seriously alarming...



The diagram above shows the cloud performance experienced by users in three different geographies – Brazil, Japan and North America. Four clouds in three locations – and the stats speak for themselves. The performance varies by a factor of 2 (or more) and the drop-off is almost entirely triggered by geography...

Availability is also far from guaranteed

And the problem isn't confined to just drop-off. There's only one thing worse than a poorly performing application... one that's not even functioning. Despite the reality of Active-Active DR there is still an unacceptable level of total outages. And believe us, no-one is infallible. Even the mighty Amazon Web Services (with four times more business than any other cloud provider) recently managed to take down Vine and Instagram for over an hour!

And paying top dollar can be an expensive mistake

One of the key reasons enterprises use multiple vendors (apart from ensuring availability) is to avoid vendor lock-in. Negotiations can get ugly when your vendor knows you have no viable choice. But then again, how can you be certain you're buying the best and most cost-effective service at any one time?

The simple truth is that few – very few – users need the fastest service all of the time. That is an extremely high-speed, high-cost strategy. Equally, companies need to avoid excessive penalties for exceeding usage agreements. Frustratingly, a high proportion of these penalty charges are unnecessary since users are often well under the threshold with other vendors. That is a very costly own-goal!

Now let's play a game of 'What if?'

Just imagine that you could automatically – and in real time – move users between cloud service providers, private clouds and CDNs. Imagine that you were totally free to optimise performance, availability and cost. Now suspend imagination and think reality...

- PaaS architectures and frameworks – such as Docker – now allow enterprises to extrapolate away from cloud specific architectures and deploy across multiple regions and heterogeneous clouds.
- Cloud broking software also exists. Clustre knows of one company that takes billions of daily measurements on end-user performance around the globe. It then uses this real time data to re-direct end-users – instantly and automatically – to achieve a consistently high level of service. Remarkably, switching can be achieved in a matter of seconds.

In summary...

Hybrid Cloud orchestration has arrived. It provides active management of a cloud-aware application across multiple content and hosting environments – including combinations of public and private resources.

Unlike their traditional counterparts, cloud-aware applications can be optimised – in real time – to adapt to changes in usage, traffic and resource contention. What's more, these application architectures are miraculously self-healing. They self-correct around network, bare-metal server, cloud and platform outages.

Mind you, self-healing calls for traffic shaping across clouds, content delivery networks (CDNs) and private data centres. It's not a trivial task. And there's no denying, this can be tricky.

However, the pay-back in terms of robust applications with incredible fault-tolerance and extremely low time between failures is enormous. What price would you pay for virtual fail-safe security?

Automated, real-time decisions need to be made with data representing the holistic health of your complete cloud and data centre infrastructure. If done well, these architectural elements can also perform the dual purpose of making an application perform at its optimum performance potential.

No-one can guarantee it will never rain – but at least you can now be certain it will never be more than a momentary shower.

04

Practical first steps

There is no doubt in our mind that companies have to be agile to remain competitive and stay in business. Adopting a defensive position behind the ramparts of historic market domination is not a strategy for survival. New agile forces will either over-run you or leave you isolated and impotent in a changed world.

If you accept this reality, then there is only one question left to answer: how do you become agile?

Putting your company on a serious diet is an excellent strategy - in the long run. However, corporate dieting is a slow process and rarely delivers results quickly enough to ensure survival in an increasingly agile world. Our advice, therefore, is to combine dieting with these additional key steps...

a. Set up a skunk works innovation team as a bare minimum.

If you have the appetite and budget, you can certainly opt for something more ambitious. However, be selective... focus

efforts on priority goals... and keep your enthusiasm in check. There is a contagious disease - known as 'InnovationLab-itis' - that can spread through organisations and result in ever increasing effort and investment for ever diminishing results.

b. Start using agile methods to build your new apps...

And use agile to develop your core systems, not just for sexy mobile apps. But please seek the help of agile experts (and here we would make an unashamed commercial for Clustre because we do have world-leading experts in this field). Finally, *please* resist the temptation to create a hybrid mix of waterfall and agile methods. You truly will get the worst of both worlds.

Follow these simple guidelines and even the biggest elephant can walk a tightrope.

And that's not a vague promise; it's a fact...

**“And during the reign of Tiberius,
an elephant walked on a tightrope
across the Circus Maximus.”**

The Elephant Story by Les Harding



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