The business case for cloud computing

A journey through the cloud:

Cloud computing has rapidly become the most talked-about IT concept of the day. For some, it is yet another new label for the well-worn concept of 'utility computing', and therefore amounts to a marketing gimmick. For less cynical observers, it is a powerful set of technologies based on Infrastructure as a Service (IaaS) that is delivering genuine business advantage. For mid-sized organizations who aim to compete with large enterprises on customer service, efficiency and innovation, but until now have been unable to afford the necessary on-site IT infrastructure, cloud holds enormous promise.

What is the cloud?

There are a variety of definitions of the cloud floating out there. Claranet defines the cloud as: a computing infrastructure, sitting in a remote data center, accessible via the internet or a Wide Area Network (WAN). The platform is owned and managed by a third-party organization, purchased predominantly on an annuity revenue model and contracted on a short-term basis.

Infrastructure as a Service (IaaS): The flexible provision of CPU capacity, data storage, network bandwidth and basic operating system. Each customer is responsible for running their software stack on top and is able to re-size the underlying Cloud Infrastructure (CI) on demand.

Platform as a Service (PaaS): This adds to CI a complete software stack; for example, LAMP (Linux, Apache, MySQL, PHP/Perl). Each customer is then able to write or load applications into this known environment, with the provider responsible for expanding or contracting the CI and/or the software landscape to meet changing demands.

Software as a Service (SaaS): This takes CI and Cloud Platform (CP), then adds a complete preconfigured application environment, for example salesforce.com or Google Apps. The customer simply consumes the application as a service, usually on a per-user basis, and has no long-term commitment (but equally almost no control).

Why consider the cloud:

In organizations of all sizes, IT leaders are under intense pressure to do more with less. Cloud is a highly attractive proposition in this economic landscape, offering the promise of both immediate ROI and longer-term strategic benefits. The immediate promise is for significant operational cost savings, enhanced flexibility and scalability and, where this is seen as a benefit, the ability to move capital expenditure (CapEx) to operational expenditure (OpEx). In the longer-term, moving to cloud will increase every organization's ability to focus on its core strategic competencies, by outsourcing generic IT services that can be better and more cost-effectively delivered by a specialist cloud provider. Even for the internal IT function, this will ultimately be beneficial, as it will help IT to become the enabling interface between the business and the technology, rather than leaving it mired in the day-to-day challenges of running a complex IT infrastructure.

How is cloud computing different from virtualization?

There is a misconception that virtualization is the same as cloud computing. However virtualization is really an "enabler" for cloud computing and not cloud computing itself. Companies that have invested in virtualized servers are "80% of the way there" to creating a cloud computing environment. The 20% that is "net new" can be characterized by incorporating end-user provisioning capabilities which allow infrastructure, applications and services to be consumed and charged on a flexible charging model with the cloud management services layer applied.

How is cloud computing affecting my competitors?

The cloud rebalances the competition equation for SMEs. The inherent economies of scale advantages that larger companies have traditionally had over smaller competitors, such as large numbers of technical staff and over-provisioning to cope with peaks and troughs, are eroded by the cloud. When it comes to IT, smaller companies now have access to the same, or potentially greater, resources as their larger competitors. Cloud computing models are interesting to all organizations irrespective of their size as business leaders are under intense pressure to do more with less. However, cloud computing can be of particular interest and deliver real advantages to small and mid-sized organizations who want to compete with large enterprises in terms of customer service, efficiency and innovation, but cannot afford to maintain the scale of on-site IT infrastructure required to do so.

How important is my network provider?

Without a network, there is no cloud service. Performance is wholly reliant on a third party. If the network isn't optimized for cloud services, then application performance will be marred and in some cases, organizations may have to contend with disruptive downtime. Network optimization and moving to the cloud will almost always involve increasing bandwidth and introducing Quality-of-Sale (QoS). Complete reliance upon the network for access and application performance makes it essential to find a cloud provider that has expertise in networking and IT security. If things go wrong, finding the root cause can be a complicated task, illustrating the importance of a qualified cloud provider with experience of both hosting and networking. The importance of the network to cloud services means that a strong Service Level Agreement (SLA) and appropriate monitoring are vital. A cloud service provider with equal expertise in networking can provide the necessary assurances and visibility of performance, help drive costs down and offer added value to a project.

Outcomes:

Improved agility All organizations want the ability to quickly scale up to accommodate new customers, new product or service launches, or new promotions. To manage unpredictable

fluctuations, some businesses set up their infrastructure to cope with predicted peak demand. At all other times, they must simply swallow the high cost of paying for underutilized hardware and over-provisioned software licenses. Even then, they can miss out on commercial opportunities if their predictions of peak demand are too low. When lacking capital, many other businesses simply attempt to stretch their existing resources, which will expose any weaknesses - whether with personnel, budgets or infrastructure. In both cases, a fixed IT infrastructure will typically be unable to contract and reduce its cost base if revenue loss causes the business as a whole to contract. Cloud services largely eliminate the need for detailed forward planning, making it possible for businesses to expand or contract their IT service provision precisely in line with business requirements.

The cloud frees up internal resources allowing in-house technical staff to focus on adding new value to the business by refining and re-architecting business processes, by creating innovative products and services, and by building new business services in the cloud. Scalable computing resource accessible through flexible, reliable SLAs managed and delivered by a specialist cloud hosting provider also offers the opportunity to align computing resource more closely in support of the business processes and flex in response to the changing environment and future requirements. Cloud computing, particularly for IT intensive industries, represents a source of potential competitive advantage and can stimulate business innovation and growth.

Operational resilience: As organizations become ever more dependent on IT services, the resilience and availability of the IT infrastructure are becoming absolutely mission-critical. With budgets in decline, most organizations, particularly mid-sized businesses, can no longer fully justify the business cost of protecting themselves adequately against IT disasters. Top-tier cloud providers will offer state-of-threat managed backup & firewalls, 24/7 real-time monitoring, fully redundant hardware and services that are mirrored across several highly robust physical locations - ensuring that even the complete loss of a data center will not cause service interruptions or loss of data. This degree of protection will be far beyond the economic reach of all but the very largest enterprises, yet the economies of scale made possible by the cloud model can deliver total resilience at mid-market pricing.

Operational efficiency: The IT department is often expected to be the organization's technology R&D lab, evaluating products and services for their suitability in the business. It is also roped in to monitor Service Level Agreements (SLAs) and contracts where systems are outsourced. The more open and heterogeneous the infrastructure, seen as an advantage to prevent lock-in by a single proprietary vendor, the greater the number of suppliers that need managing, and the greater the resulting burden on the IT department. With cloud computing, the organization typically needs only to manage the cloud service provider, who then separately manages its own relationships with the vendors providing the full stack. As the economic situation remains uncertain, the need to 'make do and mend' will further increase the proportion of the IT budget that goes on fixing and patching the existing technology, leaving little left for innovation and meeting new business requirements. Adopting cloud eliminates the entire maintenance headache and all associated costs. In most organizations, IT also requires a constant sometimes unpredictable drip-feed of capital expenditure (CapEx). Server and desktop hardware is typically

refreshed on a three- to five-year basis, software licenses are continually refreshed or upgraded, and so on. Moving to cloud will turn CapEx into operational expenditure (OpEx), providing predictable regular billing directly related to usage, and minimize or eliminate the need for overprovisioning.

Sustainable IT: Energy consumption of IT systems and the associated real estate can be significant and prove an issue from both a cost and availability perspective, as well as adding to the size of a company's overall carbon footprint. Virtualization can mitigate this pressure somewhat, but future increased demands are likely to outstrip these gains. Moving from an in-house infrastructure to cloud-based services can deliver real environmental benefits. It means using only the IT resources - and the related power and cooling - you actually need; reallocating or reducing the real estate previously employed to host this infrastructure; and outsourcing the choices about the equipment, handling and disposal of it to a specialist provider. The associated reduction in the carbon footprint can potentially boost a company's public profile and help with their Carbon Reduction Commitment (CRC) compliance. The CRC will directly affect the top 5,000 or so companies. The regulations are designed to target indirect emissions caused by the creation of the energy you use, and the direct emissions which result from running the business. Even if your own business is not required to comply with CRC, you may be expected to report environmental figures if you supply goods or services to a CRC-listed company.

5 things to consider when selecting a cloud supplier:

1. Disregard any cloud provider that claims to offer 100% uptime
   Some cloud providers claim to offer 100% uptime on the network, but their definition of the network will probably not include the internet connection. If they are unrealistically claiming 100% uptime, what other expectations are they setting that they do not intend to live up to.

   Read the Service Level Agreement (SLA) cover-to-cover, line-by-line. It is your way to hold your provider to account for their service. One of the first things to check is the scope of the SLA. Beware of those that do not hold up to scrutiny against your business requirements. Any service must be delivered with a SLA that is appropriate for your business, with every exception clearly stated and agreed at the outset.
   Claranet is unusual in that we offer both hosting and networking expertise in a single Service Level Agreement (SLA) and act as your one point-of contact for all network and application hosting requirements. This makes for an easy and cost-effective way of managing IT. Claranet's Managed Application Hosting SLA guarantees the end-to-end availability of the application using synthetic transaction monitoring to test like a live user.
2. Select a cloud provider that can deliver high service levels

It is important to select a partner with a dedicated team of highly trained support desk personnel and that can monitor the infrastructure around the clock and fix issues before they have a chance to impact on service levels.

Claranet brings together the best people, processes and technology to provide flexible, secure and cost-effective managed services that guarantee network and application performance. We allow customers to focus on their core business, not IT management. Our managed services, with integrated security, range from internet access to private networks and from colocation through to application hosting. We have 16 data centres, 6 Gb/sec traffic, and our own core network.

Quality and innovation sit at the heart of Claranet's offer. We are ISO 9001:2008 accredited and have ITIL processes across all business operations. Claranet was also the 1st UK service provider to offer IPv6 enabled networks.

3. Don't under-estimate the importance of network infrastructure security

   As organizations move toward a more cloud-based infrastructure, they will also need to consider that mission-critical applications may potentially be delivered over the public IP infrastructure. They will need to keep a close eye on network availability, security, quality of service, and compliance. Third-party network service providers can have a significant impact on the effectiveness of a cloud strategy. The importance of the network to cloud services means that a strong Service Level Agreement (SLA) and appropriate monitoring are vital.

   Because of our heritage, Claranet can uniquely combine the management of the network with server platforms and applications and take full responsibility for availability. We understand that being responsible for the availability of our customers' business critical applications is not a responsibility that should be taken lightly. Claranet can provide cloud computing over a private network, avoiding the need to deliver computing power over the public IP infrastructure, and enabling your workforce to communicate securely and efficiently between your sites, staff, suppliers and customers.

   Claranet also has the ability to prioritize your business critical cloud applications over a private MPLS network so that they receive the resources they need to deliver. For example, real-time applications such as video conferencing can be given priority over email traffic, ensuring that the user does not experience any loss of quality in the video data stream.

4. Be clear on how flexible and scalable the offering is

   It is important to know whether your provider can support your future business needs. Find out how easy it is to scale the service and the related cost structure. How easy is it to build in additional services from the same supplier? How wide is their partner network?

   Claranet's cloud hosting services can deliver hosting services within days rather than weeks and you can scale your hosting requirements up or down at any time within your contract period. Claranet offers three levels of service management, from standard to advanced, and opting for cloud hosting rather than traditional dedicated hosting can enable you to consolidate/ reduce your existing operational costs.

5. Check out their resiliency and data security credentials

It is important to select a provider who takes a proactive approach to data security. Protection of your most valuable asset - data - needs to be core to their proposition. Few organizations can replicate the levels of resiliency and around-the-clock 24/7 monitoring that is available in a professionally managed data center. Find out what systems they use to provide realtime monitoring of all systems and how often they conduct routine system checks. Compliance with UK data protection laws should also be factored in to your decision, and it may be sensible to ensure that your data is stored in a UK data center.