a K2 Advisory study

SaaS-enabling the application estate: product innovation for the Cloud

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K2 ADVISORY

1 Introduction

In June K2 Advisory held an exclusive CIO/CTO dinner to discuss product innovation via the Cloud. It was held in association with sponsors Ness Software Product Labs and SCC. Attending organisations at The Ritz included: Argility, CD Adapco, City Networks, Fusis, Into, MessagePad, NB Real Estate, Netmotion Wireless, Serena, Simbiottik, Symbian and Unilever.

Cloud Computing is the latest phrase used to encapsulate the radical impact that the Internet has on the delivery of digital products and services. This change is most disruptive for those working in industries with digitalised products such as software, media, and entertainment. For these sectors it represents a Copernican shift because it makes a significant difference in the the way in which their business model operates. For others, who sell non-digital products, it offers another sales channel, eg: traditional publishers making use of Amazon. And for all sectors it provides a new way to engage with customers and citizens that is new(ish) but not inherently disruptive to the basic business model.

It is for this reason that it is frustrating when people refer to Cloud Computing and SaaS as hyped technology looking for a business case. Cloud Computing and SaaS are the IT industry's response to providing the most efficient and effective means for enabling organisations to create and deliver digital services, to take goods and services to an online global market and to communicate with customers, suppliers, citizens and partners.

In sum, Cloud Computing and SaaS are currently the IT industry's best effort to provide the solutions required in the era of the Internet.

2 Executive Summary

Everybody that attended the dinner agrees that Cloud Computing and SaaS are developments that are highly relevant to their businesses. The majority of attendees represented industry sectors with digital products with a particularly high presence of ISVs, but there were also some CIOs and business strategists present from property management, manufacturing and education.

Experience of Cloud Computing and SaaS varied from those who were still investigating the new deployment model and how to adopt it within their businesses, to others with far greater adoption experience who wanted to share some of the challenges they were facing.

The discussion ranged over two key themes:

2.1 Security and the cloud

Those investigating the Cloud Computing model were most interested in discussing security with others at the table that had more experience of the delivery model. They had a suspicion that security was an insincere objection put forward either by board-level decision-makers internally, or, for the ISVs present, an excuse masking reluctance for existing users to migrate to SaaS. This suspicion was confirmed as the discussion got under way and the main conclusion was that cloud and security is more of a market maturity issue than a technical issue.

2.2 Migration of application estates

The other main area of discussion during the course of the evening was the migration of applications to SaaS. Some attendees were interested in exploring which application areas it makes most sense to trial for SaaS, while others were concerned about the long term future of ISVs in an industry dominated by Cloud Computing and SaaS. There were two main conclusions from this discussion thread: firstly, that desktop solutions and business productivity applications are probably a good starting point for adoption of the model, and secondly, that ALL applications will eventually be delivered via SaaS.

3 Is security a genuine cloud issue

3.1 Key discussion findings

- ISVs moving to a SaaS model are getting push-back from clients on the grounds of “security issues”
- Security is used as an objection to moving to cloud as a way of articulating a fear of change
- Security is more of a marketing issue than a technical issue for cloud
- Marketing needs to address what Cloud brings in terms of the balance between cost and risk

Identified in many surveys as the key hurdle for adoption of cloud computing, security is an interesting and important issue. Enisa (The European Network and Information Security Agency) doesn’t dismiss Cloud Computing as a no go option, but does recommend that close attention be paid to certain critical aspects. Buyers need to consider the governance implications of loss of control over data, difficulties proving compliance, and additional legal risks as data moves from one legal jurisdiction to another. Other areas of concern include failure of mechanisms separating the data of different companies, management interfaces that get accessed by hackers, data not deleted properly and malicious insiders.

However, it is also fair to point out that client-server computing hardly provides a fool-proof secure IT environment and it is possibly the case that we simply feel more comfortable with the computing model or devil we know. For example, it is equally plausible to reference the scale and flexibility of Cloud Computing as providing a security edge: in a cloud environment service providers can instantly call on extra defensive resources like filtering and re-routing. They can also roll out new security patches more efficiently and keep more comprehensive evidence for diagnostics. Misplaced or stolen thin client devices can be locked down and access denied, whereas proliferating PCs and memory sticks in the client-server world typically have data held on them.

3.2 Security requires a hearts and minds strategy

K2 Advisory has recently conducted some research into the issue of cloud computing and perceptions of its security risk.* As might be expected the largest number of respondents believe that cloud computing is more of a threat to data security than client-server computing (42%). However, it is interesting that a significant number (33%) believes that cloud computing offers neither a stronger or weaker risk to data security than client-server computing and 13% believe that cloud computing is a more secure environment for data than client-server computing. If you dig underneath these figures an interesting trend emerges: those that have no experience of using cloud computing are most likely to believe that it is more of a security risk than client-server computing; while those that are using cloud computing already believe that it is either no bigger a security risk

than client-server computing or is safer than client-server computing. This finding was echoed by people's experiences around the table and it was felt that, "security is predominantly a marketing issue, people will buy these services, but we need a hearts and minds strategy to encourage adoption."

The main issue for those that have not yet achieved a level of comfort in using cloud computing is that while the model gives you access to the data, you may fear that you have no way of ensuring that no one else has access to the data. How can you protect your organisation from a security breach somewhere in the cloud?

3.3 Sensible steps

There are sensible steps that can be taken to work out if cloud service providers can be trusted. For example, for high value assets you will need to know how data will be encrypted and stored, how e-discovery can be conducted if required and whether the cloud provider has passed a SAS-70 audit. For lower value assets this level of governance is not necessary, and the key to peace of mind is spending time up-front to decide how valuable different assets are and therefore which cloud deployment model makes most sense for them.

As one IT Director put it: "External suppliers take security more seriously than your own IT department. We've moved our file servers into the cloud and security is way higher than it was. You need to do your homework to find out who is not utterly useless. The bigger issue is around data location."

Given the requirements of the UK Data Protection Act, usage of cloud computing is challenging because of being unable to identify the location of the data centres delivering the service. However, it is possible to comply with EU data protection laws and use US data centres that are operated by service providers that have signed up to the European Union Safe Harbor Policy. However, the consensus around the table was that for many organisations use of a data centre within national boundaries was a real requirement.

4 Which applications make sense to move to a cloud infrastructure?

4.1 Key findings

- All applications can be moved to the Cloud (regulatory requirements aside)
- Introduce Cloud gradually through your replacement cycle e.g.: at point of desktop refresh – a virtualisation approach here addresses consumerisation of IT devices as well
- Most organisations are happy to move stand-alone apps to the Cloud eg: CRM
- Cloud will only be mainstream when you can run your back office from the Cloud
- People are stopped from migrating back office by two things: not wanting to be the first and the cost of transition
- If Cloud is to be accepted at the point of refresh for big ERP system functionality, then acceptance will be gradual and take another decade.

Around the table the conversation began by considering whether some applications are more suitable for migration to the Cloud than others. It was suggested that some applications may not be relevant for migration to the cloud because of regulatory issues, requirements for data protection or because their structure requires persistent relational data. While there was agreement that organisations can only adhere to regulation - so

where an authority such as the Financial Services Agency (FSA) in the UK, stipulates that data must reside in a certain location - then only a private or community cloud deployment approach may be relevant. However, the consensus around the table was that all applications, irrespective of architecture can eventually be migrated to a Cloud infrastructure.

Having established that all applications were fair game for migration to the Cloud model, the attention of the attendees turned to the best approach for introducing the model into organisations. The question was asked as to which applications are currently using Cloud and, in a nutshell, the applications most suited to cloud deployment are those that experience sudden peaks in transactional activity and have difficult to forecast variable traffic flows. For these reasons testing, gaming, events and online retail are classic fits for cloud deployment.

4.2 Put Cloud solutions into your replacement cycle

Moving on to consider how Cloud might be adopted within organisations the point was made that one way to bring Cloud solutions into the enterprise is to "slowly put it into your replacement cycle." For large organisations one of the largest constraints was the cost of transitioning the application estate to Cloud, which means that the change has to proceed in phases. Some organisations are starting with stand-alone applications, and have concerns about migrating bandwidth-heavy application traffic off-premise. The point was also made that there are a lot of key back office applications for which there is no Cloud versions yet available.

It was agreed that one of the best starting points for migration was via desktop solutions at the point of refresh. Desktops are expensive to support and replace so desktop virtualisation makes a lot of sense, especially as it also enables organisations to access organisational data from anywhere, as well as beginning to address some of the challenges businesses face in terms of requests to use high-spec consumer devices. It was agreed that with a corporate virtualised desktop you can closely control the workplace environment while enabling access from different locations using many different types of devices. This area of investment for migration to cloud computing and SaaS generated a lot of interest in all types of organisations represented at the dinner.

The discussion then turned to address the impact that cloud deployment models and SaaS is having on software development.

4.3 Which type of software development platform is best?

Within the industry there seems to be two schools of thought on this issue: On the one hand there are those who believe that cloud creates a software development environment where the software developer does not know which environment the application will ultimately run on, how many users will log on, or how much data might be crunched by the algorithms. Further, the developer doesn't need to know because in the same way as electricity supply is handled automatically when plugging appliances into the socket, access to cloud resources required at runtime will be managed at runtime, by scheduling, load balancing, clustering, virtualisation and whatever other infrastructure and management is required. On the other hand there are those that believe that developing for the Cloud requires more serious attention to software engineering skills around system architecture and the ability to leverage massive scale.

Some Cloud platforms only provide basic design assistance for developers. For example, with Google App Engine, scaling is automatically implemented for a restricted set of applications, while in other cases, design patterns can be used to horizontally scale applications. And Amazon.com Elastic Compute Cloud (EC2) provides Multiple Availability Zones, so developers can distribute an application across multiple locations, while a capability called Elastic IP in EC2 allows for rapid remapping of an Internet address from a failed instance to a working one. Other platforms such as Azure and Force provide a higher level of sophistication in terms of the software plumbing provided. The view at the table was that the level of risk of writing to Amazon or Google might be lower because they are providing a more basic set of development utilities, whereas to write to more sophisticated platforms implies a greater commitment to that platform. There was a similar view regarding

applications: it was felt that CRM was a safer bet for SaaS than say a full ERP system because it is a relatively stand-alone application and can be ripped out and replaced relatively easily.

As one CIO said, “we’re not looking to buy an application, we are looking to buy a service and we will phase these services in first in stand-alone business or function areas.” One perspective was that while we are just at the start of the Cloud journey, you can only afford to risk stand-alone applications, which you can pull back in-house, if necessary. Others felt that it would be very difficult to justify bringing a big IT project back in-house.

4.4 Business Service Brokers

There were concerns expressed by both ISVs and CIOs about the impact Cloud and SaaS will have on their future. As one ISV put it: “in the fullness of time with cross-platform, single sign-on access to services, what will ISVs actually be selling?” At K2 Advisory we take the view that there will be new revenue opportunities emerging to provide platform-based brokered services to large buy-side organisations or to communities.*

The basic premise of the Business Service Broker model will be to provide pre-integrated SaaS solutions from a variety of ISVs writing to the APIs of the IT service provider’s platform, or to an open source platform managed by the IT service provider. This type of approach is unlikely to be generic, i.e. analogous to current ERP suites. It is more likely to be delivered around a horizontal business function area, or cater to a specific vertical industry domain, i.e. it will be the platform for community cloud services. This is because it will cater for the requirements of lines of business within the organisation. Some platforms will be developed to support the specific requirements of industry verticals, others will service cross-industry function areas supplying shared services. CIOs and business managers can help shape the development of these platforms and brokerages by working with or commissioning brokered solutions.

The services themselves will probably be provided by a subscription type of service and the community that is being catered for will need to operate as a community with shared interests based on interaction and discussion. Without this “sense of belonging” there will be little incentive for participants to stay and for the community to grow. This changes the dynamic of IT service provision quite dramatically from an emphasis on account management to the emergence of a new community convener type of role. For example, this role will need to correlate the management, maintenance and release of software with end-user community feedback loops. While such an approach is part of the culture of technology product companies, it is not part of the traditional IT service ethos of IT service providers. It will be interesting to see which type of vendor will be better business service brokers.

The other departure for IT service companies preparing for this outcome is that the market advantage for business service brokers will not necessarily lie with signing up big enterprise software vendors, especially as they are likely to be emerging as business service broker competitors in their own right. The key to success will lie with process specialisation and sector expertise, and so smaller, lesser-known ISV logos may well prove more useful to the development of the “IT Service” Business Service Broker brand. Most of the value will lie in the IT service brand recognition within the targeted market.

*”Cloud Computing – A step-change for IT services” Offered as part of the K2 Advisory Research Forum. http://www.k2advisory.com/research/cloud-computing-step-change-it-services

4.5 Seven to 10 years away from mainstream adoption

Given all the agreed benefits of cloud computing and its likely dominance of the market the question was posed as to why it has not yet been taken up en-masse. The two main responses around the table was that the amount of existing investment in client-server systems was applying a brake on uptake while a common refrain was that, “we want to let someone else get the battle scars first.”

So while there are a growing number of references for use of Salesforce.com, Microsoft BPOS, Google Docs and so on, the real chasm-crossing moment will be when organisations begin to migrate the back-office ERP

systems to the Cloud. At that point most round the table felt that Cloud and SaaS could be described as mainstream. However, the general view was that we are probably seven or more years away from that tipping point and the pace of change comes back to the refresh cycle.

5 Ness Perspective on Cloud Computing

Dr. Ring touches on many of the key issues companies are facing today and draws out the essence of the discussion that took place during the Executive Leadership Briefing, "SaaS-Enabling the Application Estate: Product Innovation for the Cloud." What we clearly heard at this event, in the companion events running in the United States, and in our ongoing conversations with clients is that "The Cloud" represents both a substantial opportunity, it also poses risks – many of which must be managed in how software is architected, designed, and developed. Whether you're a consumer or creator of Cloud services, significant attention is being paid to identify how to take advantage of the opportunity, and mitigate the various risks.

From Ness perspective there are three things that all organizations must consider when determining how best to move forward.

1. Your actual business needs
2. Your current business model
3. The benefits and risks associated with the many available solutions

The discussion in London touched on these issues as well. For ISVs and product centric companies, the ability to reduce product costs, open new business models, lower distribution costs, accelerate time-to-market, and reduce maintenance costs are real. The innovations, however, have only just begun.

6 Call to Action

Our overall findings from the dinner suggest that there is a clear requirement for best practice guidance on migration to the cloud delivery model. A repository of shared experience needs to be created to document application migration case studies and references.

If you are interested in sharing your experiences or have questions on the topics discussed you can join the K2 Advisory Forum www.k2advisory.com. For more information on how Ness can assist with the migration of applications to the Cloud delivery model see www.ness.com/spl.

Join the K2 Advisory Research Forum

Executive Leadership Briefings form part of the K2 Advisory Research Forum where CIOs, CTOs and IT directors can network and learn more about the most important issues for key business stakeholders. The Forum is a select, invited community of technology buyers, senior business managers and executives from the vendor community. It is based around the research topics from the independent K2 Advisory research programme, with the emphasis on learning, debate, interaction and networking

About Ness

Ness Software Product Labs is a Strategic Business Unit of Ness Technologies. It is focused on providing R&D and software product engineering and consulting services that extend software development capacity and drive innovation for independent software vendors and product-centric firms. www.ness.com/spl.

About K2 Advisory

K2 Advisory is a Sift Media business. Its analysts apply a Horizon Scanning methodology to research in order to help organisations develop strategies for possible future scenarios. We focus on the essential areas for the future success of organisations and their IT service delivery capability. In 2010, these areas of focus are Cloud Computing, Sustainability, Innovation, Skills, Outsourcing and Software Satisfaction.

The K2 approach to analysis is underpinned by its links into the professional communities run by parent company, Sift Media. This eco-system of professionals and senior executives in Finance, Public Sector and Human Resources provides us with unrivalled connections into decision-making and budget-holding roles within organisations, such as CFOs, Finance Directors, HR Directors and Procurement Officers. In addition, K2 draws on 30 years of experience advising the CIO community.

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A renowned analyst, Katy was previously a Principal of Bathwick Group before founding K2 Advisory. Katy also set up NelsonHall's ITO research capability. Prior to that she spent 12 years at Ovum leading research into the opportunities for emerging software and services markets as well as developing the company's Outsourcing Practice.

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