
Thinking Beyond the Clouds

Supply, demand and service-centric IT

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A number of trends are having an impact on the supply, deployment and operation of corporate IT facilities. Currently, the impact is being felt most directly within the IT supplier community, but over the coming years the fruits of their labours will more strongly influence the way companies source and integrate IT services. In this report we look at what's driving the trends and ask how should end-user organisations prepare to make the most of how IT services are delivered?

MAIN POINTS

These are interesting times for how IT services are procured, delivered and managed

This is a period of great change for information technology, through the coming together of a number of parallel trends including platform commoditisation, service-centric IT delivery and developments in the hosted service space. The most direct impact is currently on IT suppliers, as they re-organise to take advantage of the new business models that result.

However, it can be difficult for end-user organisations to separate the signal from the noise

For end-user organisations competitive advantage is indeed to be had from the resulting models of IT delivery. However, and as so often happens at times of change, many organisations are jumping on the bandwagon and adapting the story to meet their own agendas. For example, we can see the way the term 'cloud computing' has been used to mean many different things. Rather than being distracted by the hype, for companies to maximise the benefits they need a clear picture of what is behind it all and the impact it might have on their own organisations.

Competitive advantage comes from balancing platform efficiency with service effectiveness

Many elements of IT are subject to commoditisation, driven by standardisation in the platform and the more widespread adoption of technologies such as virtualisation. Competitive advantage comes from the services built on top of this platform layer, and how they are delivered. Organisations looking to maximise the value of IT need to differentiate between the commodity elements which favour more utilitarian economics, and service elements which are more about maximising returns.

Now is the time for end-user organisations to review how to benefit from emerging IT supply models.

The IT supplier ecosystem is undergoing massive change, and several new models of IT supply and delivery are emerging. The exact shape of the landscape is still to play out however, and a number of gaps remain including data protection, contractual frameworks and skill sets. Rather than rushing headlong into the cloud, organisations need to develop a clear, unbiased view of what is available, and what combination of internal and externally hosted services, appropriately architected, integrated and managed, will be most appropriate for their existing and future needs.

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Introduction

These are indeed interesting times for Information Technology. The way that computer systems are packaged, supplied and used, by both businesses and individuals, are all undergoing some fundamental shifts, for a number of reasons that we shall articulate briefly in this paper. Not least:

- IT commoditisation and lowering of hurdles at a platform level
- Service-based architectures and more flexible models for IT sourcing
- Evolution in hosted services, their integration and delivery

These drivers are absolutely not to be ignored, as they really are changing the way IT is done. Slowly but surely over the past years and decades, organisations have been moving towards what one could refer to as more service-centric approaches to IT, that is, organisations and individuals are increasingly demanding technology to be delivered as finished services that they can pay for as they use them, rather than individual products or application silos. Service centricity also plays into how services are then managed, secured and provisioned to users, and there is much to be gained by adopting best practice around service-centric approaches.

However, as happens so often in times of great change, plenty of noise is adding to the signal. In particular we are facing a deluge of industry hype around the term 'cloud computing'. Such a situation is nothing new during times of innovation, when the thousands of vendors, integrators, resellers and other players look to maximise their own gains. The last time we saw such a wave of hype was during the dot-com boom: today, as back then, players are doing their best to ride the wave and promote their own agendas.

While this jockeying is understandable, it leads to much confusion, particularly when amplified through the lens of marketing and PR, industry analysts and the mass media. The generally-adopted keyword is of course 'cloud computing', but each supplier and commentator seems to have a different take on what this means, depending on their own interests and perceptions.

Forward-thinking end-user organisations will also want to make the most of innovation, but for senior decision makers it can be difficult to separate the reality from the hype. It is ironic perhaps, that the confusion over what is meant by cloud computing is in fact getting in the way of conversations about the underlying developments and where they might have an impact.

Rather than add to the noise, in this paper we strip things back to what is going on in evolutionary terms, reviewing each of the trends above and considering what the resulting architectures and capabilities can provide.

First we review the impact being felt by hosted service providers, integrators and others in the IT services supply chain. Right now, IT suppliers are in the midst of a storm of their own making. Just as with e-commerce, such organisations have to take bets on visions of the future that (hopefully) play to their strengths, and their competitors' weaknesses. The result of these machinations will be a new service landscape, with older and newer players in the IT supplier community offering their wares in a more service centric manner. These are early days however, and a number of hurdles remain to be overcome.

For the new delivery models to work, they will also need to be embraced successfully by the end-user organisations they furnish. We also look at how such organisations might benefit from the resulting landscape, and turn our attention to where organisations need to start if they are to maximise the returns on their efforts.

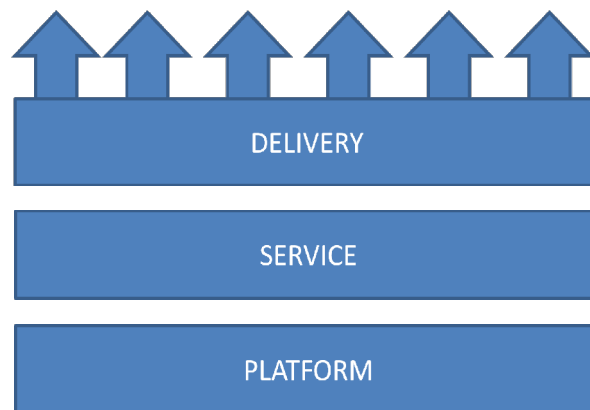
We don't have all the answers, but one thing is clear: there is still a way to go before the situation stabilises and organisations can make the most of the new service delivery models that are emerging. So, when the fog clears, the dust settles, the waves recede or whatever is your preferred analogy, what exactly will the service delivery landscape look like, and what should IT organisations be thinking about today to maximise the benefits?

How did we get here?

The IT industry as we know it today has developed out of wartime cryptography and telegraph systems through advances such as the discovery and continued evolution of semiconductors, magnetic storage and communications technologies, all of which have enabled the globally distributed computing models we see today. Looking back over the decades, we can identify a number of continued trends, three of which are of particular interest when we consider how IT products and services are sourced, deployed and managed in mainstream businesses today, namely:

- Platform commoditisation in general, and the virtualised infrastructure layer in particular.
- The evolution towards service centricity from both an application architecture and operational management perspective.
- Hosted services and sourcing models, and their impact on IT service delivery.

As shown in the figure below, these three trends can be considered in terms of layers, each of which interacts with the others. First we have the underlying platform, then the services being built on top, and finally, the mechanisms by which they are delivered.



Let's have a look at some of the implications of these underlying trends, in the platform, service and delivery layers respectively.

Platform commoditisation and the virtualised infrastructure layer

The first, which will be familiar to most who have worked in IT for any length of time, is the propensity of technology to commoditise. New innovations develop on top of, or joining together elements of what has gone before, but as they become more widely adopted, they tend to be subsumed into the 'platform' – that is, the layer of IT that is expected to be provided at low cost to the majority. Consider a couple of recent examples:

- Deduplication in storage – a relatively recent innovation, but one which is increasingly becoming part of what storage arrays deliver.
- GPS on mobile devices, which again started as something exceptional, but which is fast becoming the norm.

The natural tendency is for the “platform layer” to offer a coherent set of standardised services at the most appropriate cost – you might be prepared to pay extra for specific features or higher service levels for example, but you would expect to have a choice of suppliers, each with its own differentiators including price. It's the platform layer that Utility Computing advocates (such as Nicholas Carr, in his book *The Big Switch* [1]) refer to, when they say that IT services could/should be delivered like electricity or water services. The ultimate goal of Utility Computing is that IT 'just works' – meeting expectations with the minimum of intervention or configuration.

One recent innovation that is itself commoditising at the same time as having quite an impact on the platform layer, is virtualisation in all of its forms. The principle of virtualisation has been around since the days of the mainframe, but it is only now becoming an appropriate technology for use in the commoditised world of “industry standard” servers based on the x86 architecture. This is largely thanks to computers being powerful enough to allow for an additional layer to be incorporated between operating systems and hardware. This layer, known as the hypervisor, enables multiple virtual computers to run on a single physical server – enabling levels of flexibility and control that many organisations are appreciating. Similar benefits are to be had with storage and desktop virtualisation.

As virtualisation offers abstraction between hardware resources and the tasks they undertake, it also brings a great deal more versatility and flexibility into the platform itself. This is further encouraging commoditisation particularly in the hosted services space as we shall see below. Virtualisation is also an enabler for more dynamic use of internal IT systems, as multiple systems can be consolidated onto a reduced set of servers which can then be managed more flexibly [2].

Technically speaking, there is nothing to stop an organisation running any virtualised workload on a server of its choice, be it internally or externally hosted. The challenge, as we will discuss later, is how to manage both external and internal resources, particularly when it comes to information management and data protection.

Evolution in service centricity

The word ‘service’ has been used throughout the history of mainstream IT. Back in the 1960’s and 1970’s for example, service bureaus managed payroll on behalf of other companies and were some of the first adopters of computer systems. Meanwhile of course, Service Level Agreements (SLAs) will be familiar to anyone who has worked in an IT department. In both cases, IT is the enabler of services, providing or supporting the delivery of services to business users.

While IT has been about services since its inception, it has been just as much, if not more about individual products and technologies. Without delving too deeply into best practice, a common theme among forward-thinking IT organisations has been the use of the ‘service’ concept across IT systems, as well as between IT and the business [3]. To see individual elements of IT in terms of the services they provide, rather than in terms of products, is generally regarded as the best starting point for effective IT delivery.

In the late 1990’s, the term “Service Oriented Architecture” was coined as the latest in a series of terms to describe this approach from an application architecture perspective. While the principles of SOA remain sound, a number of practical difficulties appeared, not least how to deliver SOA enterprise-wide. Additional distractions included attempts to standardise interfaces between Web-based applications through so-called Web services, and the industry itself gerrymandering the acronym ‘SOA’ in order to sell asynchronous messaging technologies such as Enterprise Service Bus (ESB).

In parallel, the ‘service’ concept has appeared in terms of how services are delivered and managed. IT Service Management (ITSM) for example refers (broadly speaking) to automating the activities of IT operations staff, and Business Service Management (BSM) refers more to the services themselves, and whether they are meeting criteria set for them such as scalability, availability and so on. Products exist to support both ITSM and BSM activity – once again, the danger is to see such principles from the perspective of the

It's interesting to consider how IT history has followed an evolutionary model similar to the "Punctuated Evolution" as articulated by Stephen Jay Gould. That is, certain principles and practices are evolving constantly and continuously, but they can appear almost glacially slow in their progress. Meanwhile, certain events tend to punctuate this slow progress - we can point to such things as the advent of the Web, the use of SMS on mobile phones, the adoption of virtualisation and the popularity of social networking sites as manifestations of this phenomenon.

Such events tend to take the IT industry unawares, and leave the majority scrambling to catch up. In business there is a principle that if you can't be number one, it's best to be number two - so of course, whenever a company rises to the fore in some 'new' domain, a number of others spring up to attempt to replicate its success.

tools alone, rather than the practices they are designed to support.

If we consider services back to back with the ideas of commoditisation in the platform, we end up with some interesting discussions. Yes indeed, IT has a tendency to commoditise as certain facilities become more widely used and baked into the infrastructure – this is as true for lower level technologies such as virtualisation, as higher level capabilities such as data analytics and Business Intelligence. However much is pushed down into the platform, it is only by seeing IT from a services perspective that its real value can be reaped.

It's not just us saying that. From the research about forward-thinking IT organisations mentioned above, we know that organisations that get the 'service' concept also tend to be the ones that see IT as a source of competitive advantage. It is here that the business of IT moves beyond straight utilitarian economics, and towards more of an investment model in which IT is seen as a portfolio of services, each offering different levels of return [4]. Where 'Utility IT' is about driving out costs, the service centric model is more about maximising returns.

Both models exist side by side – in some situations it will be important to drive out costs, and in others, to maximise benefits. What's important is that the appropriate model is applied at the appropriate time. It is no coincidence perhaps that the models bear comparison to how utility companies tend to be organised, as two very different divisions:

- the parts that manage power stations, sewage works and the like, where cost is the driving factor: there is little competitive advantage to be had.
- the parts that deal with customers – where service is the more important element, and the business margins are higher for value-added services such as maintenance and insurance deals.

While more front-foot organisations may appear to be at the vanguard of benefitting from IT, this illustrates that there is still a place for less IT-oriented businesses – or parts of businesses – for whom IT will never be any more than a necessary cost. We need to be very careful how we categorise less 'mature' organisations – for some, IT really doesn't need to be any more than tools of the trade.

For businesses that do want to use IT to succeed against the competition however, it is clear from a number of studies that embracing the service concept is a good place to start, not as a precursor for some overbearing architectural exercise, but more as a philosophy that needs to thread through how applications are designed, delivered and subsequently managed.

Such organisations also appear to be more likely to use outsourcing effectively, balancing their own core business with skills they can bring in from outside from appropriate suppliers. This starting point becomes particularly relevant when we consider models of hosted service provision, which is where the service concept comes full circle.

Hosted service delivery – the history of a 40 year old idea

As mentioned in relation to the service bureau, hosted services are nothing new. However they too have continuously evolved from the rented 'time share' services in the 70's, when computers were too expensive for most companies to afford. As computers diversified and prices dropped during the 80's, organisations did start to acquire their own compute facilities. Meanwhile, hosting and financing models didn't go away: on the contrary, these evolved in parallel. For example, vendors or their channel partners often managed or hosted a mini-computer allocated to a specific customer, on a service contract.

It wasn't until the 90's that we saw the first real wave of companies outsourcing their IT capabilities to third parties. Beyond some organisations throwing their entire IT department over the wall to an outsourcer, a move that many later regretted, we also saw more bespoke hosting deals around dedicated infrastructure running both packaged and custom applications. As with the 80's style hosting model, this allowed businesses to pass the burden and cost of running systems to a third party, and to take advantage of the provider's ability to handle things like resilience and security.

Until the arrival of the Internet, such models were dependent on the availability of often-costly leased lines and private networking, which restricted where systems could be located and how they

were accessed. As IP networking moved into the mainstream towards the end of the 90's, we saw a new model emerge around Application Service Providers (ASPs). The idea was to get away from having a bespoke environment for each customer, moving to an approach in which customers rented access to shared infrastructure in the provider's data centre – the so called 'multi-tenancy' model.

On paper, this provided a lot more consistency, efficiency and flexibility for providers to manage systems and resources optimally. In turn, this meant a more cost effective service for customers, particularly smaller organisations who could be given access to solutions they would not be able to afford (or indeed cope with) if they had to buy, install and manage everything themselves.

Unfortunately the idea didn't really take off in a big way, for a number of reasons. Internet-based communications were still not fully trusted, and there were also hang-ups around data security with regard to the multi-tenancy model: having your processing and data co-residing with everyone else's on a shared infrastructure was a step too far for many. Some ASPs fared better by taking the middle ground of setting up an environment in which each customer was allocated their own instance of the application software, but with each instance being identical – the so called 'cookie cutter' approach.

Many ASP start-ups struggled from a go-to-market perspective, particularly those targeted at smaller businesses that tended (and often still do) to go to their existing suppliers for their ongoing needs. Such resellers and integrators saw ASP activity as in conflict with their existing business model, so were disinclined to support it. Some ASPs turned to the Telco sector, signing up big operators as resellers, but that model largely failed because of a mismatch in sales culture and capability.

Post-millennium, a couple of interesting developments took place. Firstly, one ASP vendor in particular – Salesforce.com – discovered that the hosted delivery of a discrete point solution, that required minimal integration with other applications, was fundamental to making the ASP model work. The key was to keep things simple, and sales force automation fit the bill. Unlike its predecessors, Salesforce.com also appreciated the magnitude of the go-to-market challenges, so right from the outset, the company made sure it had the funding to invest heavily in outbound telesales.

On the back of this success, other suppliers launched their own horizontal point solutions (email, project management, etc). While it would be an exaggeration to say that this impetus unblocked the market, it did mark tangible progress, and together with some fresh positioning around the term 'Software as a Service' (SaaS), and the rise of hosted services in the consumer space (most notably in the areas of content sharing and social media), the ASP model was given a new lease of life, particularly from the all-important marketing, PR and media perspective.

Bringing things right up to date, service providers have more recently been able to benefit from the kinds of commoditisation we have seen lower down in the stack. The reduced cost of physical servers, followed closely by the arrival of virtualisation, enabled Internet Service Providers (ISPs) to extend their traditional connectivity and Web hosting businesses to offer hosted server capability. For a monthly fee, customers could now rent access to either a dedicated or virtual server that the ISP configured and ran for them, loaded up with Windows or Linux, and whatever other platform software they required in the form of database management systems, Web servers, e-commerce frameworks, development tools and so on.

So, while not all of the activity over the past few decades has been a roaring success, many hosting options have gathered momentum and are now well-established parts of the IT landscape. These continue to evolve, as the cost of reliable Internet bandwidth continues to fall and service providers continue to innovate. Coming right up to date for example, we can consider the hosted offerings from the likes of Amazon, Google, Microsoft, and so on. While it would be a mistake to see such things as in any way eclipsing what has gone before, we can nonetheless recognise where they fit in the heritage of hosted services.

Which brings us, of course, to cloud computing.

So, isn't this all about cloud computing?

Cloud computing is clearly taking its share of the headlines at the moment. Without dwelling on the whys and wherefores, perhaps its biggest issue is that 'it' is being discussed without any real definition or agreement of what 'it' is. Indeed, while quasi-official definitions of cloud computing do exist, many if not all vendors are adopting their own variation on the term to best fit their own agendas. The inevitable consequence [5] is that from an end-user organisation perspective, nobody knows what is being talked about. At best, IT decision makers can hang onto some loose ideas around internet-based delivery, external sourcing, elasticity, multi-tenancy and so on, which appear in most definitions in varying proportions.

Meanwhile, the industry hype machine is doing a great job of reaching the most senior executives and getting their buy-in to the brave, cloudy world, to the extent that we are now talking to CIOs who are being asked by their CEO's, "When can we get some cloud?" without the CIOs really knowing what they are being asked to deliver. This is not through any lack of knowledge or intelligence on the part of the CIOs, we hasten to add – more that they are being asked for what could be a multitude of things, each with its own benefits and risks.

Trying to explain this situation would only add to the noise. Rather, we concur that evolutionary trends such as those described above are causing some fundamental shifts in IT service delivery. The organisations most impacted today are the vendors, their partners and service providers, as they look to adopt new delivery models and avoid being outflanked by new players.

For end-user organisations meanwhile, it is very important not to rush into decisions. Given that most, if not all flavours of cloud computing are dependent on the areas of platform commoditisation, service centricity and hosted services evolution as described above, and are therefore limited by the same set of constraints, we would urge caution to any organisation who sees benefit to moving their core IT assets into the hosted arena without full and detailed due diligence. As in other sourcing scenarios, the ability to differentiate between what is 'core' and what is 'non-core' will likely be a fundamental element of success when considering cloud offerings.

Seeing past the confusion, let's first look at how the service landscape is shaping up. Then, recognising that smarter IT organisations stand to gain the most from these evolutionary trends, let's look at what end-user organisations can do to give themselves the best chance of success.

The new service landscape

The changes that we are seeing in IT are inexorable, but they will have an impact on the supplier community as a whole before they start to have any mainstream effect on the demand-side. From a supplier perspective, inaction is not an option: while there exists of course the potential for new business, even more important is the risk of being outflanked by new providers, or by the latest forms of provision. The threat is once again one of disintermediation, a word last used in anger ten years ago during the dot-com era.

So service providers and integrators are changing how they go to market, and with reason. A number of business opportunities exist, notably around delivering new, innovative services to existing customers. We list the main potential categories of services in Appendix 1.

While we already seeing direct activity by incumbent hosting companies, a lot of success will depend on different players in the market working together effectively to deliver a supply chain of IT services. Examples of this include:

1. Major hosters of applications and IT infrastructure providing service resale opportunities for incumbent providers, including the traditional IT channel, telcos and even ISPs looking to deliver higher value services outside of their current core competence. Various commercial models are relevant here, including simple 'finder' or 'sign-up fee' arrangements, through to ongoing margin splits on annuity services revenue.
2. Hosted service providers making available a platform upon which other players can build and run their capabilities. Whereas in the first scenario, the big player behind the scenes would be delivering pretty much all functionality on a turn-key basis, this model is based on the partner

loading their own solutions onto the platform. Such a model might be appealing to integrators developing bespoke applications to deliver on a hosted basis, or ISVs looking to offer a hosted version of an application package. An important part of the platform in this context is not just the physical hosting and access management, but also the billing and provisioning systems into which the partner can plug the solution(s) they want to offer.

3. Major hosters of applications and IT infrastructure providing a 'virtual service provider' opportunity for the IT channel, telcos and ISPs based on 'white branded' service offerings. The difference between this and scenario 2 is that from a customer perspective, the reselling partner delivers its own branded service to the customer that is fulfilled by someone else behind the scenes. Portal branding capability, billing tools, management tools, etc are an important part of this.
4. Service and application aggregators using a variation of scenario 3 to develop a suite of hosted offerings based on someone else's platform, for delivery into a particular market segment – e.g. an industry vertical. Some of the capability offered could be based on application services that 'pass through' from other providers, while some applications might be installed and run on the hosted platform specifically to support the proposition at hand.
5. From an internal cloud perspective, corporate, "private cloud" construction and operation is also an opportunity for service hosters and systems integrators alike. In this model, similar services to the above can be offered using equipment running on a customer site, potentially using billing, provisioning and management tools running elsewhere.

This is clearly not an exhaustive list, but it does illustrate some of what we see as the major plays over the coming three years as the market evolves. The success of these models is not a 'given' however. A number of challenges remain in the way, based in part on the dependencies between underlying trends which are making the new service landscape plausible. These include:

- Competition from new players which may prove a distraction in terms of the services offered, particularly if they appear compelling at the outset. New entrants typically have less to lose and may rely on different revenue models such as advertising, so they can undercut the incumbent players.
- Revenue from traditional business models could be eroded through commoditisation, hence there is an incentive to look for new ways to add value. This reinforces competition and potentially price erosion, putting some players at financial risk if their margins become too small.
- Data protection and privacy fears and issues exist, particularly with regard to cross-border data handling. Current legal frameworks are already proving inadequate, and tougher legislation may undermine the economic value of proposed business models.
- Older procurement models from end-user organisations, and incompatibilities with the risk/reward/incentive models used by vendors and providers, may stifle progress: good business is based on an understanding of value delivery from players on both sides, at all levels.
- Meanwhile, the contractual and licensing frameworks to support the above are still evolving to support the kinds of environments that are developing.
- A lack of skills in-house compared to contractors and provider-based consultants may lead to poor decision making on the part of end-user organisations. Skills in information architecture, identity management and data security and privacy are seen as particularly important.
- A number of gaps exist in the online puzzle, including best practice and compatible, manageable technology solutions in areas such as identity management, data protection and service assurance.
- Standards (de facto or de jure) are currently lacking in a number of areas, including for example shared service definitions for service assurance.

Based on these criteria, it is unclear how precisely the market will evolve, and whether it will be dominated by a few players that manage to address the issues and gain the lion's share of IT service delivery revenues, or whether it will form more of an ecosystem. In the shorter term at least, and despite the best efforts of several incumbent players, the ecosystem scenario is more likely, particularly as the goalposts are moving all the time. At the time of writing for example, the European Commission announced new measures around privacy of hosted data; meanwhile the management tools vendor CA kicked off the 'Cloud Commons' initiative to support the creation of shared service definitions for management. All such events can stimulate changes across the entire landscape.

Examples such as these are good indicators of just how far there is to go. Clearly there is plenty of work to be done, across the entire supplier community before the landscape as a whole could be seen as mature enough to be considered for more than one-off deployments of niche products. The key to success is the development and maturing of the ecosystem, which by definition needs to include the traditional incumbent suppliers as well as any newer entrants. Based on experience of the individual trends, it is likely that its evolution will depend on the following success factors:

Integration and architectural interoperability. While some providers may favour more proprietary, "walled garden" approaches, others will prefer a more open-standards approach. While the latter may be preferable for end-users, the former plays into the hands of a reduced set of larger vendors. Some providers and integrators may bring integration skills to the more hybrid world, for example by adding cloud/service wrappers around existing services.

Aggregation and innovation in procurement and contractual frameworks. The intermediate supplier needs to know how to procure and build attractive propositions, potentially mediating between different providers – acting as the "one throat to choke". This may see new risk/reward models being developed, especially in professional services.

Trust in suppliers and the whole supply chain. Trust is something organisations are prepared to pay for, but it is not always given easily and will depend on what services an organisation expects to receive from different providers. For example, an organisation may feel comfortable offloading certain non-critical workloads onto a provider, but not systems running core data. For another example, there may be an opportunity for a supplier to act as a federated identity provider, but this will require a particular level of trust.

Enough about supply-side, then: let's think about demand-side.

Putting the best foot forward

It stands to reason that business consumers of IT services stand to benefit from the new service landscape, if they go about procuring and using services in the right way. Indeed, it was ever thus: as discussed already, larger organisations have been continuously reviewing how they source their IT facilities for many years now. There are many places where delivery of services from a hosting provider makes sense, but equally, there will be places where keeping IT facilities in-house is deemed to be more appropriate. This is a familiar, and indeed timeless trade-off.

Given that suppliers are gearing themselves up around supplying services and not products however, this can only continue to catalyse the trend away from buying and running software, towards acquiring and managing best value services. "Best value" is a nebulous concept at the best of times however. In theory, the preference from an end-user organisation perspective is to pay for resources according to what is actually used in proportion to the benefits achieved, as opposed to making a judgement on what might be necessary in the future. There will always be a need for one-off tactical procurements of point solutions with a limited shelf life, but we are not talking about these here. For more complex products or services, hosted or in-house, defining a business case will always be tough as it needs to take into account such aspects as:

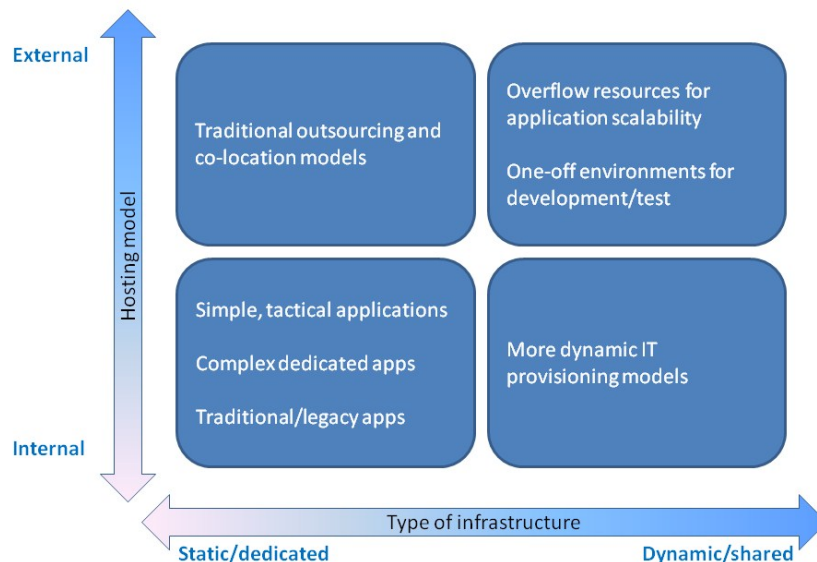
- The level of interoperability and integration required with existing systems, and across services already in place.
- Data protection, risk management, security and compliance policy criteria, depending for example on where the information is held.

- Risk assessment in the wider sense, for example, business and reputational risk should a service fail.
- Management aspects, including service management, configuration management and provisioning, service desk and support.
- Distributed working and offline access to both corporate and hosted facilities.
- Architectural constraints, for example, to ensure services can scale during periods of high demand.
- Business continuity and disaster recovery in case of a major catastrophe, depending on what areas of IT and the business are seen as critical.
- The ability to switch from one supplier to another, and/or to act should an existing supplier fail to deliver the required service (portability).

Let's be clear: these criteria remain exactly the same should a product or service be delivered in-house or hosted on somebody else's equipment. In some circumstances, the resulting business case may come down in favour of a hosted model, but in others, an in-house model may be preferable. Often the main factor will be the length of time a service is required – the capital costs associated with an in-house deployment may be prohibitive in some circumstances for example, whereas the ongoing operational expense of a SaaS solution may eventually become more expensive than running a similar capability in-house. All such criteria translate into questions of business case best practice and supplier due diligence.

The move towards more service-based procurements suggests moving away from product selection based approaches. We can consider this in terms of the quadrant diagram we show here. The fundamental point is that there will be appropriate times to adopt each of the four potential models, which will need to operate in tandem as an inevitable result. Additional dimensions are whether the development and/or management are in-house or outsourced, which further add to the complexity and need to operate a hybrid environment.

Variation in hosting requirements



The implication is sourcing skills – i.e. supplier management, articulation of requirements and so on – will continue to grow in importance at a senior level in IT. This raises a number of questions, not

least whether the advisors of senior IT decision makers also need to change their skill sets and up their game. In some organisations, as discussed, the likely impact is to drive the service portfolio management approach across both internal systems and external services. We could go into much more detail here, and we shall continue to review best practice as it evolves in this area, for example, as senior roles adopt more service delivery than technical management skill sets.

The bottom line

IT is complex, and evolving all the time so it is understandable that we might be tempted to latch onto more simplistic ideas as a way of explaining things. While there may be much confusion in the industry at present, at some point in the future, when the hype machine is no longer talking about “cloud”, the opportunities offered by the underlying trends, their benefits and costs, challenges and solutions will remain.

In historical terms, we are only just emerging from a recession in the IT industry caused by the bursting of the dot-com bubble. Meanwhile, following the global banking crisis, the jury is out on whether overall IT spend is to stay the same or reduce over the coming years (few believe it will rise). However, the expectation is that the cost of commodity platform services will continue to reduce, particularly as the service marketplace increases, potentially freeing up funds for using IT in more innovative ways.

Faced with the backdrop of noise in IT today, the key for both suppliers and consumers of IT services is to listen carefully to what’s going on in terms of service provision and identify the signal, made up of the following:

- That vendors, service providers and systems integrators are being more innovative in how they deliver their wares, moving towards more service-centric models for IT delivery.
- That organisations are also moving towards a more service centric model from a consumption perspective. More forward-thinking organisations are stating a preference for paying for what they use in terms of services, as opposed to buying products, and moving from a monolithic to multi-sourcing model of service delivery.
- That these are early days, and any higher-level aspirations around cloud computing or new service supply chains will first require the constraints and hurdles in the underlying trends to be overcome.

External hosting in particular remains a work in progress and we continue to advise due diligence before rushing off to adopt ‘cloud computing’ from untested suppliers; supplier credentials are a key consideration. Open questions remain around data protection, licensing, interoperability, the continued lack of sufficient bandwidth at an appropriate cost and guaranteed QoS, high availability and disaster recovery.

As we have seen from our research, we know that many forward thinking IT organisations are looking to adopt more service-centric models and create more innovative relationships with a wider variety of suppliers. However all of the above suggests that, just as in the past, IT will continue to operate in some kind of hybrid model which incorporates both internally and externally hosted products and services. For organisations wishing to go down the road towards service centricity, the key is recognising their own place in the new service landscape, understanding the evolving supplier landscape as well as adopting a more service-centric model in-house.

The trick for organisations of all sizes is to make the right decisions that meet their own application and service requirements, and not to get distracted by the short-term marketing messages that favour one approach over another. In a couple of year’s time, the terminology may have changed again. While the causes are coming from both suppliers and end-user organisations as we have seen in this paper, most of the impact is currently being felt in the IT supplier community, and it will take time before the resulting outputs are fully developed. End-user organisations should recognise this and avoid the temptation to accept what is being said and adopt anything that is unready or inappropriate to meet their own needs. The real opportunity is to understand, prepare and plan, to maximise the benefits, value and chances of success that service centricity can bring.

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Appendix 1 – Taxonomy of Hosted Services

Hosted services categories are currently in a state of flux. While using the traditional application stack as a reference point can help to understand where individual services might fit into customer activities, a full review of what's available in terms of hosted services even now reveals quite a few different on-demand categories that are useful to be aware of. We present these below.

ON-DEMAND SERVICE CATEGORIES	
Business application services	It is in this area that the term 'Software as a Service' (SaaS) was originally coined. Services at this level are typically focused on the delivery of complete business functionality, e.g. CRM, ERP, etc.
Hosted productivity tools	Services here are more concerned with horizontal capability ranging from desktop suites for end users, through to modelling, development and project management tools for analysts and developers.
Hosted comms/collaboration	Spearheaded initially by hosted email and web conferencing, the number of services offerings in this area has exploded to include full unified communications and/or social media (directories, blogs, wikis, etc).
Trading community services	As supply chain automation has gathered momentum in some industry sectors, services have emerged aimed at facilitating the way in which customers and suppliers collaborate and transact electronically.
Plug-in services	A myriad of services exist which do not provide complete business functionality but 'plug into' existing applications to enhance or extend them. Examples include everything from mapping to credit checking.
Application platform services	As an alternative to consuming pre-built services from external providers, application platform services provide development and runtime environments allowing custom applications to be built and hosted online.
Utility services	Sometimes, you have your software, but simply want somewhere for it to run and store its data. This is the realm of utility services, which are essentially about providing raw compute and storage resources.
Operational services	This often overlooked but highly important category is where we find services concerned with online backup, archiving, security (e.g. email filtering), etc., and even full blown monitoring and management tools.

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