theARC magazine

ISSUE 01 JANUARY 09

SOFTWARE + SERVICES

SOFTWARE + SERVICES

What is it and what can it do for your business?

DISRUPTIVE TECHNOLOGY

Manchester Business School explains how to spot a disruptive technology

THE BUSINESS

How technology will shape and define the business of tomorrow

Microsoft®

Microsoft

Welcome

Software + Services (S+S) is the term that Microsoft has coined to describe the next wave of computing that will drive software developments over the next five years.

The widespread availability of broadband, greater bandwidth, cheaper networks and storage, plus a wide variety of internet-connected hardware devices mean that it is now possible for people to stay productive wherever they are and whatever device they have to hand.

'Always on' internet connectivity has led to an explosion of hosted applications that can be accessed from any device with a web browser. Some of these have proved very successful, posing the question of whether the internet is now the optimum means of software delivery (see the article by Dr Steven Moxey on page 6).

The business case for running applications in the cloud is certainly compelling and Microsoft itself is active in this area.

However, it has flaws: even with overlapping WiFi, Wimax and 3G networks it is not always possible to get online; the quality of a network connection cannot be guaranteed; and performance is frequently compromised. It also raises questions around security, access, the location of data and integration with systems already residing on-premise.

Clearly, a one-size-fits-all model for software delivery will no longer suffice. Instead, organisations should consider a choice of delivery options encompassing everything from hosted on-premise to hosted on-demand.

Another element of the software equation that needs to be considered is the client itself. Whether this is a mobile, a laptop or other connected device, there is a benefit in exploiting the compute and offline capabilities that should not be ignored.

Take the messaging and collaboration server Microsoft Exchange as an example. This is widely installed on-premise, but it is also available as a hosted offering, either through Microsoft partners or Microsoft itself, giving customers the widest set of delivery models to choose from.

Next let's look at Outlook, the client application of Exchange. The Outlook application installed on a user's laptop has both on and offline capabilities for accessing and synchronising data. In addition, there is the Outlook WebAccess client, a browser-based client that allows access when the user is away from his or her own machine; Outlook Mobile, which provides on and offline access to emails from a mobile phone; and finally Outlook Voice, which gives voice-activated access to emails from any type of phone. All provide different but synchronised views of the same data.

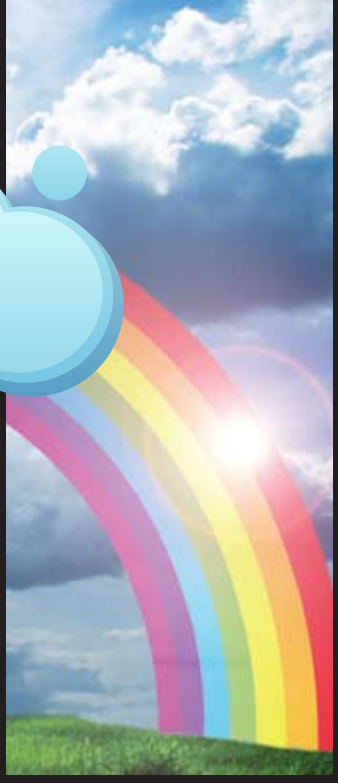
Having this much flexibility and choice is the essence of what Software + Services is all about. In a nutshell, S+S provides the best of both worlds: the power and usability of local software, plus the reach and flexibility of the cloud.

In Issue One of The Arc, we aim to give architects, IT professionals and software developers a deeper understanding of the business case for Software + Services. In subsequent issues, we will address the technical architecture of S+S in greater depth.

We hope you enjoy the read and gain an understanding of why Microsoft believes that a hybrid approach is the best way forward for the IT industry and its customers.

MATT DEACON
Chief Architectural Advisor, Developer & Platform Group, Microsoft UK

Questions or thoughts? Email; thearc@microsoft.com



Cover illustration: www.thesingingbird.com

Contents

Additional Contribution from:
Koby Amedume: Platform Marketing Lead, Microsoft UK
Matt Deacon: Chief Architectural Advisor, Developer & Platform Group, Microsoft UK

The Arc magazine Software+Services is published on behalf of Microsoft Ltd by NGT Media Ltd. **www.ngtmedia.co.uk**

Microsoft Limited, Thames Valley Park, Reading, RG6 1WG

Software + Services: The Background

Microsoft regards Software + Services (S+S) as the fifth wave of computing after mainframes, PCs, the internet and Web 2.0. Others argue that the combination and integration of enterprise and cloud-based computing is not a new wave of computing at all but merely a maturation of the third or fourth wave.

Wherever one stands on this debate, there is no doubt that in the next 5 to 10 years S+S will have a huge impact on software development and delivery.

The roots of Microsoft's S+S proposition lie in a Memo written by Microsoft chief software architect Ray Ozzie on October 28, 2005 just months after he had joined the company.

Entitled The Internet Services Disruption, the memo describes a "time of great turbulence and potential change in the industry" driven by the dramatic evolution of computing and communications technology to the point where a services-based model for software delivery becomes viable.

Ozzie wrote: "The ubiquity of broadband and wireless networking has changed the nature of how people interact, and they're increasingly drawn toward the simplicity of services and service-enabled software that 'just works'".

In 2005, Ozzie identified three trends that were transforming the software landscape: the use of advertising to fund the creation and delivery of software and services; the use of the internet for software delivery; and demand for products that delivered a seamless experience in which all the technology in an individual's life just worked.

He argued that Microsoft was in a good position to deliver this seamless experience and urged Microsoft divisions to assess how services might impact and influence the design of Microsoft products.

Microsoft teams had already developed solutions along these lines, notably in the areas of messaging and gaming, but Ozzie's memo made it a priority for the whole company, as he felt that 'the service disruption' would spread to enterprises where services would be combined with an organisation's existing software.

SOFTWARE + SERVICES

Fast forward to October 27-30 2008 and the Microsoft Professional Developers Conference (PDC) in Los Angeles where Microsoft unveiled some of what it has been working on in response to the call to arms issued by Ozzie in 2005.

Microsoft already has a range of hosted services, including Exchange Online, SharePoint Online, Microsoft Dynamics CRM Online, Office Communications Online and Office Live Meeting, which can be used as a complement or addition to on-premises software.

However, unlike advocates of Software as a Service (SaaS), Microsoft does not believe that everything will reside in the cloud and be accessed by a browser. It envisages a much more inclusive future, in which SaaS is just one point along a spectrum of delivery models and S+S represents a converged, or blended, approach to software delivery that includes desktop and server software and Web-based services.

At PDC, Microsoft ushered in a new era of S+S with a preview of Windows Azure, a services platform that will enable software developers to deploy applications using cloud-based Internet services, on-premises servers or a combination of the two, with full synchronisation between online and offline working.

For ease of integration, they will be able to do this using skills, tools and technologies already broadly familiar to them, such as the Microsoft .NET Framework and Visual Studio, plus a wide range of commercial or open source development tools and technologies.

Windows Azure, which combines cloud-based developer capabilities with storage, computing and networking infrastructure services, is a key component of Microsoft's Azure Services Platform.

This platform already offers Microsoft SQL Services for database services and reporting; Microsoft .NET Services for service-based implementations of.NET Framework concepts such as workflow and access control; Live Services, which give users a consistent way to store, share and synchronise documents across PCs, phones, PC applications and Web sites; and Microsoft SharePoint Services and Microsoft Dynamics CRM Services for business content, collaboration and rapid solution development in the cloud.

OFFICE ONLINE

As a developer of software products in its own right, Microsoft has been using these tools in its own applications notably Windows Live, Office Live, Xbox LIVE and Live Mesh. At PDC, it also demonstrated 'Web applications for the Office'. These lightweight versions of Microsoft Office Word, Excel, PowerPoint and OneNote can be operated from within Web browsers and are fully compatible with existing phone and PC versions of Office, so that users can view, edit and collaborate on the same rich document regardless of the type of Office used. Web applications for the Office will be included in the next version of Microsoft Office and will be available to individuals through Office Live, and to businesses though a hosted subscription service and existing licensing programs.

In both its roles, as platform provider and software developer, Microsoft is showing how S+S can be used to transform software delivery. Developers benefit from simpler, faster and lower cost product development and customisation, while their customers can look forward to seamless working on and off-line.

The background

Microsoft's S+S strategy started in 2005 with a Memo written by Microsoft chief software architect Ray Ozzie

JARGON...?

Software Plus Services (S+S)
The idea of combining hosted services with locally running software to provide a richer, better solution for users.

Cloud computing
The use of computer technology with resources provided as a service over the Internet relieving users of the need for knowledge, expertise or control of the products.

Microsoft®

An ON and

Software + Services

By combining the speed and functionality of client software with the flexibility of online services, Software + Services overcomes the limitations of SaaS.

The pace of technological change is relentless. In a very short space of time we've gone from big standalone mainframe systems that once ran entire businesses in isolation to networked PCs with a global reach and a vast array of mobile computing devices with ten times the processing power of their gargantuan predecessors.

The Web itself has brought increased competition and a new set of challenges, but also new possibilities and new ways of doing business and interacting with colleagues and suppliers. The challenge for IT managers is making the most of these opportunities at a time when budgets are being slashed.

So how can businesses do more with less, without compromising reliability and risking system downtime?

Faced with the need to economise, business managers might regard now as a good time to outsource. Yet many see pure outsourcing and Software as a Service (SaaS) as risky, and enterprises are often reluctant to place all their faith in hosted applications. Even now, chief information officers (CIO) and IT managers can be wary of entrusting their crown jewels to an outsider, preferring to keep them safe within the perimeter fence – a mindset that can be tough to break.

Software + Services (S+S), which combines the benefits of running client software on a device, e.g. speed and functionality, with the flexibility of Internet services, is an attractive proposition because it gives enterprises the opportunity to reduce both cost and risk. By using a mixture of software and hosted services, companies can reduce their capital expenditure (CapEx) significantly and reap the benefits of paying for software on subscription out of operational expenditure (OpEx).

This scenario has many other advantages, notably an offline capability that differentiates it from SaaS; and a simpler means for companies to upgrade and future-proof systems.

"I think many want to keep fully on-premise but then there is an opportunity-cost equation that comes into play," explains Matt Deacon, chief architectural advisor, Development and Platform Group, Microsoft. "Forward-thinking companies can see the benefit of a mix and are exploring a hybrid architecture or blend of on-premise and on-demand. They have a handle on their architecture and view integration as part of their strategy."

Deacon points out that because most organisations have existing investments they can ill afford to rip out and because very few operate in isolation, the sensible strategy is to find ways for existing systems to collaborate or share data with other services.

"Forward thinking companies regard integration as a strategic advantage and position it so," he says. "They don't just view their architecture as a 'build versus

OFF affair

buy' equation, but as an 'integration, build, buy' equation. The point of service oriented architecture (SOA) was to answer the question of how to leverage existing assets rather than replace them."

S+S takes this model further forward, placing equal importance on a new technology's ability both to fit in with an organisation's overall integration strategy and to solve a particular business problem.

In reality, this is the direction organisations have been travelling for years and vendors have been swift to realise that if they are to provide a satisfactory end user experience, total reliance on a web browser isn't always enough: companies require desktop components to link with legacy software, too.

As Bob Tarzey, business process analyst at Quocirca, puts it: "Software + Services describes the reality of how software is actually delivered these days…Indeed, research shows that most independent software vendors (ISVs) are evaluating on-demand delivery at some level and most businesses are using this at some level too."

DYNAMIC UPDATES

One of the key benefits for vendors and IT managers is the ability to provide data and updates dynamically as appropriate, something that is likely to be of particular interest to smaller organisations with limited IT skills.

"Software + Services is Microsoft's approach to some trends in the marketplace – the increased penetration of Internet access and the increased number of connected devices we use," explains Steve Clayton, services lead, Microsoft International. "This combination enables new ways to deliver experiences that span devices and take advantage of increased access to the Internet."

Many businesses will use on-demand offerings for obvious things like hosted email or web conferencing tools that are on-demand by their very nature. However, more and more are now using this model for critical business applications because networks are sufficiently reliable and because on-demand applications are a great way to support fast moving trends in business.

Uptake is being driven by the move to mobile and flexible working, as on-demand gives employees access to applications wherever they happen to be. The model also lends itself well to cross-organisational business processes, where multiple organisations share applications easily and securely – handy for supporting things like complex supply chains in a globalised economy.

In all of these scenarios it's important to retain control over process and guard against latency, which can occur with pure SaaS. This is where the mixture of on-premise and on-demand has real benefits.

Architecturally, this demands thought about how you build an application, where you put the user interface, business logic and data, as there are multiple places these can go. More than this, it requires integration to have strategic importance within the organisation as a whole.

"This is why SOA has enjoyed so much popularity for so long," says Deacon. "The problem has been in delivering on this promise. The businesses that are succeeding are those that have adopted SOA at an organisational or business level, not just as a technical or solution architecture."

Clayton adds: "The SaaS approach puts all of this in the cloud, which provides great flexibility on updates etc. but compromises on performance and availability – especially if you have no Internet access. On the other hand, putting all of this on the device makes updating harder too."

THE BIG CHALLENGE

S+S offers the benefit of integration but, for many, this is also the biggest challenge or fear.

"It can be all too easy to think of a solution as residing in one domain or another such as on- or off-premise," adds Deacon. "The fear rises once you start to think of this solution as a mix."

SaaS solutions make sense because typically they represent a complete 'finished' service like CRM, for example. All associated data exists within the domain of that solution so it is easy to envisage it all residing on- or off-premise. Integration problems start to occur when you share things like customer data with the purchase order system that you already have on-premise.

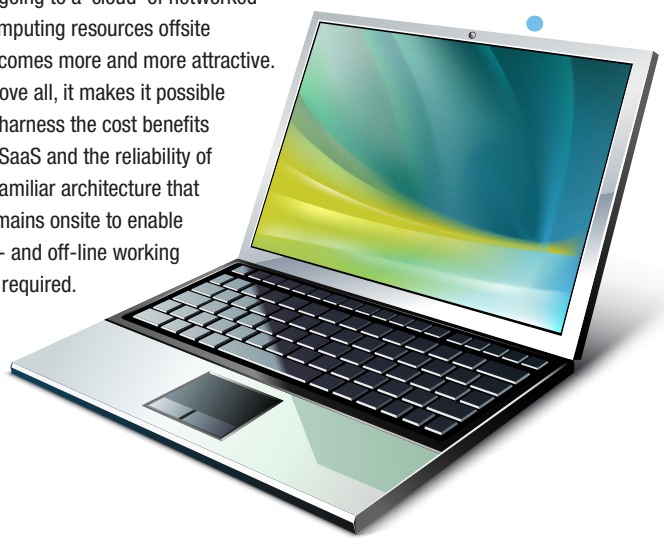
"The key tenet of S+S is integration - a concept it inherits directly from SOA," explains Deacon. "Any solution that bases itself on this concept is already focused on addressing the needs of integration and is more able to engage as a business process that takes advantage of existing assets whether they themselves are on- or off-premise."

Once users have this in mind, the idea of going to a 'cloud' of networked computing resources offsite becomes more and more attractive. Above all, it makes it possible to harness the cost benefits of SaaS and the reliability of a familiar architecture that remains onsite to enable on- and off-line working as required.

JARGON...?

SaaS
Where an application is hosted as a service provided to customers via the Internet.

Service Orientated Architecture (SOA)
Where methods for systems development and integration group around business processes and are packaged as interoperable services. SOA also describes an IT infrastructure that allows different applications to exchange data with one another as they participate in business processes.



Microsoft

Services disruption

SaaS+

Is SaaS a radical or a disruptive technology?

Dr Steven Moxey considers the evidence.

Author

Dr Steven Moxey is Research Fellow at Manchester Business School. www.mbs.ac.uk

The idea of disruptive technology is well established and occurrences can be identified throughout history, where new tools and practices that started at the fringe of society emerged to rival and supersede existing technology. The term 'Disruptive Technology' was first introduced by Clayton Christensen and Joseph Bower in their leading 1995 article *Disruptive Technologies: Catching the Wave*,[1] in which they describe the scenario which affected the creators of disk drives from the 1970s to the 1990s. No individual disk drive manufacturer was able to dominate the market for more than a few years, each manufacturer repeating the mistakes of others by failing to understand the nature of disruptive technology.

Since the mid '90s the Internet has played a significant role in shaping the software industry. In 2004 at a conference brainstorming session between O'Reilly and MediaLive international, the popular term of Web 2.0 was born and with it a wave of interest focusing on the idea of the web as a platform for software delivery – now known as Software as a Service (SaaS). In 2005, Ray Ozzie, Chief Software Architect at Microsoft, articulated the importance of this new model for software delivery in his memo entitled *The Internet Services Disruption*.[2] Could SaaS be the next disruptive technology?

RADICAL OR DISRUPTIVE?

Technology-based innovations are often classified as radical innovations, frequently originating in R&D labs and offering significant functional performance over the old technology, or as incremental innovations, which tend to be customer driven and deliver more modest improvements. In both cases the technology innovation delivers against the needs of current customers of the firm. A good example of a radical innovation is the development of the jet engine, which certainly offered breakthrough performance against well-established customer needs for military and civil aviation. A company with a radical innovation is likely to enjoy a significant competitive advantage.

By contrast, disruptive technology innovations are more complex and can best be understood as a series of steps leading to disruption. During a Manchester Business School/Microsoft SaaS research project a simple disruptive technology framework was used to explain the idea of disruptive technology (Figure 1) .

DISRUPTIVE TECHNOLOGY FRAMEWORK

The first step in the disruptive technology journey is an existing product, which is successfully sold to meet existing market (customer) needs.

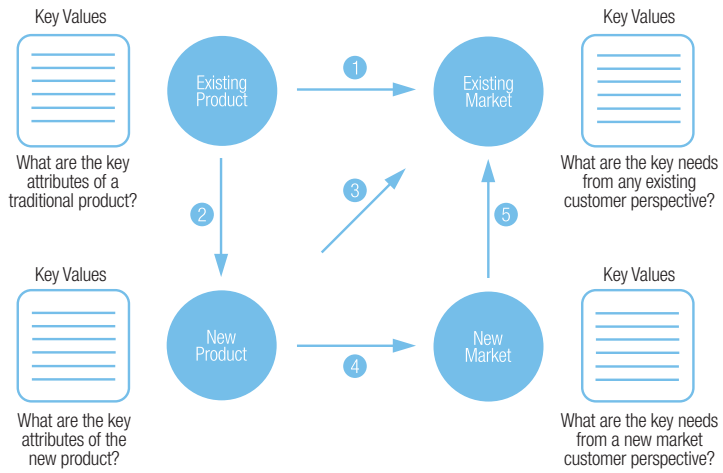
A new technology innovation, potentially disruptive, then occurs which creates a new set of products. Interestingly, firms already in the industry often develop the new innovation.

The firm then tests the innovation with existing customers, a very natural step. However, for a disruptive technology the customer feedback is not good since disruptive technologies fail to meet key needs of existing customers and hence it does not appeal (a radical technology by contrast will appeal to existing customers).

The firm then seeks out new markets and applications for the new disruptive technology. In many cases new markets are created, or enabled, by a disruptive technology. The new markets may grow to be many times the size of the original markets served by the firm. This growth helps the firm to refine and improve the performance of the disruptive technology.

Finally, the performance of the disruptive technology has improved to the extent that it can successfully re-invade the original market and disruption occurs.

FIGURE 1. THE DISRUPTIVE TECHNOLOGY FRAMEWORK



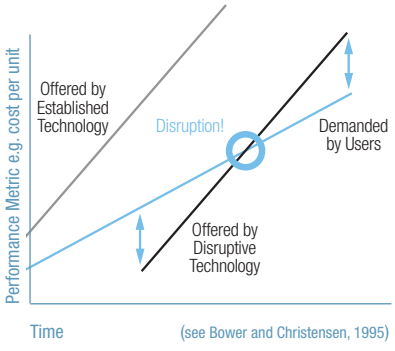


FIGURE 2. DEMANDED PERFORMANCE

The actual point of disruption can be identified as the point where the disruptive technology performance exceeds the customer's demanded performance line, see Figure 2. This means that existing customers will accept the disruptive technology. Note that the original technologies often carry on improving as well but customers are not prepared to pay a premium for additional performance.

DEMANDED PERFORMANCE

A technology is disruptive when it has completed all of the five steps, which may of course take some time. It is easy to identify a disruptive technology innovation when it has run its course, by which time it is usually too late!

An interesting example of a potential disruptive technology in progress may be the Wii games console. Traditional gaming customers value realism and complex gameplay – the market is served by Sony (Playstation), Microsoft (Xbox) and Nintendo (step 1); Nintendo develops new technology innovation, the wand (motion sensor) (step 2); this is unlikely to appeal to hard core gaming customers (step 3); so Nintendo creates the Wii product and targets a new market for leisure and families (step 4). This has proved to be very successful and Nintendo is still struggling to meet demand. Will there be an opportunity for disruption of the core gaming markets by the Wii? It is difficult to say but that may be less important if the new leisure gaming segment proves large and profitable.

Understanding the needs of new and existing market segments is very important to the successful management of disruptive technology innovations. Unfortunately information on new markets is notoriously hard to come by, especially quantitative market sizing, and this makes it challenging for firms to develop business cases for disruptive technology, compared to radical or incremental innovations.

SOFTWARE AS A SERVICE

Software as a Service (SaaS) is an important new development for the software industry, which may have disruptive potential. In 2008 Manchester Business School and Microsoft completed an investigation amongst ISVs and Enterprise customers to assess the potential of SaaS as a disruptive technology.

Seventy-five UK ISVs were surveyed, supported by three customer focus groups, to assess SaaS's potential for disruption and to classify their own innovations (based on SaaS) as disruptive or radical/incremental.

Disruptive technology enjoys a high degree of awareness and understanding amongst ISVs, with 70% of the sample agreeing that they understood disruptive technology and 67% believing that disruptive technology is important to their business. The vast majority of UK ISVs, 81%, are aware of SaaS and 71% believe that SaaS has disruptive potential. Indeed 56% are already creating innovations based on SaaS. This shows the importance of disruptive technology innovation to Microsoft UK ISVs.

To distinguish between disruptive and radical innovations, proven measurement scales[3] were employed to create a disruptive innovation index and a radical innovation index, both ranging from 0 to a possible maximum score of 100.

The disruptive innovation index for SaaS was measured as 54.5, and the radical innovation index as 60.4 (see Figure 3).

RADICAL AND DISRUPTIVE INNOVATION INDEX

These results suggest that the innovations under development by UK ISVs may be more radical (aimed at existing markets) than disruptive (initially aimed at new markets). For more details, view the full report online at http://tinyurl.com/8bdw26.

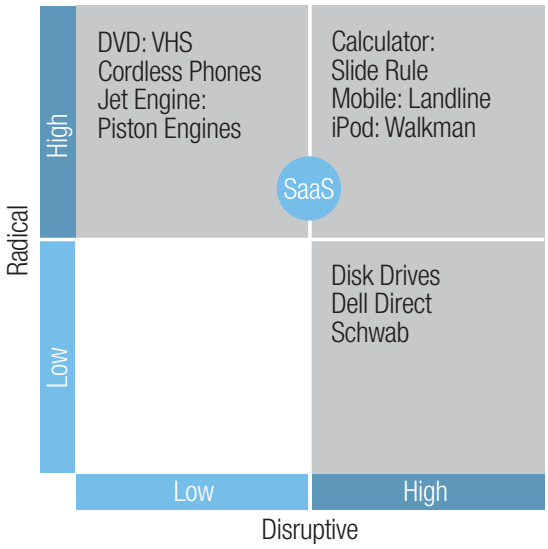


FIGURE 3. RADICAL AND DISRUPTION INNOVATION INDEX

The most important driver for disruptive technology innovation was found to be senior management belief in the innovation. The more senior management understands and supports disruptive technology innovations, the more likely it is that investments will be made. The main barrier to exploiting disruptive technology innovations appears to be allocating resources to disruptive technology innovation ahead of established products and business. This is the same conclusion reached by Joseph Bower and Clayton Christensen in their work on disruptive technology.[1] The solution to this problem may be better management awareness of disruptive technology innovation and ring-fenced investment for new innovations.

The goal for companies with disruptive technology is to create surprise for the competition. ISVs should seek to avoid disruptive technology surprises in their markets by scanning for new technologies that have applications relevant to their business. Once a technology is identified, a competitive strategy to counter the disruption can be prepared including partnership opportunities with the new entrant.

In summary, SaaS technology certainly shows the potential for disruptive innovation but we will have to wait some time yet before a definite judgment can be made and the business school case studies written.

FOOTNOTES

[1] Bower, J. L. & Christensen, C. M. (1995) Disruptive Technologies: Catching the Wave. Harvard Business Review, 73, 43-53.

[2] The Internet Services Disruption, Ray Ozzie. http://tinyurl.com/8523v7

[3] Easingwood, C. & Moxey, S. (2006) 'Bringing High Technology to Market: Successful Strategies Employed in the Worldwide Software Industry' Journal of Product Innovation Management, 23, 498-511.

Microsoft

Dynamic IT evolves with S+S

The future

The Arc spoke to Dale Vile, research director at Freeform Dynamics, about where Software + Services fits into the evolving IT landscape

JARGON...?

.Net
A Microsoft software framework available with several Microsoft Windows operating systems. It includes many pre-coded solutions to common programming problems plus a virtual machine that manages the execution of programs written specifically for the framework.

Two major problems that have existed for decades in relation to IT systems are inflexibility and fragmentation, and the software layer has played a big part in this.

Indeed, until recently acquiring software was a case of making choices and having to live with them for long periods until upgrades or replacement bespoke applications were developed. These changes themselves caused upheaval and posed significant risks and costs to businesses, as they involved the need for integration or re-integration.

The good news is that thinking, technology and standards have now evolved to a point where organisations can look forward to a much smoother evolution of their IT landscape.

DYNAMIC IT

Today, IT is moving towards a more dynamic model. Virtualisation has been accepted at the hardware or systems layer, and while there is still a long way to go, developments and experience in this space have shown enterprises the potential of a more dynamic approach to business operations, too.

In the solution space a similar spirit has emerged, notably with Service Oriented Architecture (SOA), which supports the idea of flexibility, ease of integration and the smooth evolution of systems. While there has been some confusion over how best to bring SOA on board for internal developments, packaged application vendors have invested heavily in this area and are introducing SOA into the IT landscape through the 'side door'.

Dale Vile, research director at Freeform Dynamics, believes that this forms a foundation on which many will build, not necessarily consciously thinking of SOA, but at least embracing the concept of services and standards-enabled integration.

"Once you start down that road, you are not only able to move things around and substitute components within your own infrastructure, you are able to move things across company boundaries," he says.

"This opens the door to a few things. Firstly, getting third party service providers to host some of your infrastructure for you, while maintaining systems integrity and robust integration. Secondly, taking advantage of services that were conceived to be provided from the cloud and integrated with in-house software, and lastly, enabling the concept of constructing solutions in a highly flexible and responsive manner through component assembly – giving rise to so called 'composite applications.'"

This has the potential not only to streamline the way in which an IT department operates internally, but also to enable IT to give users a safe and efficient way to take some of the strain in the 'last mile' of application delivery through things like mash-ups and user-configurable portals.

Such possibilities are increasingly supported by more capable tooling and the evolution of the concept of 'application platforms' that embed core capabilities such as application serving, security, identity management, analytics, workflow and so on. The notion of services and re-use that underpins SOA is an important concept here, too.

ADOPTION

While we may have entered the era of genuinely dynamic IT, we are just scratching the surface of its potential. The real uptake and transformation of many of these ideas will take place over the coming 5 years, during which time we will see many changes in the way IT is delivered within the enterprise.

Software + Services (S+S) will form a natural part of this evolution, yet at the moment many still don't understand it as a concept and there is much work to be done educating businesses about its benefits.

Vile believes that the hype around cloud computing has obscured what is really going on in terms of the underlying trend towards Dynamic IT. Much of this stems from those cloud advocates who suggest that everything should be hosted externally unless there is a very good reason to do otherwise.

For Vile, the concept of Dynamic IT, which Software + Services plays into, is location and provider agnostic. "It is the difference between saying 'the cloud is the best place to run things' and 'things should be able to run wherever is most appropriate,'" he explains.

In relation to S+S specifically, this is manifested in two ways.

Within larger enterprises, S+S is really an extension of the Dynamic IT architecture based on principles including virtualisation, abstraction soft-coupling and the like, where the idea is to reduce hard-wired dependencies and empower businesses to substitute and move components around as their needs dictate.

"If the organisation has an SOA programme or initiative, then it is a natural part of or extension of that," says Vile. "For smaller organisations, who generally do not think in terms of infrastructure and architecture, S+S manifests itself as 'plug-in' services from the cloud."

He believes vendors must take these views into account, as large organisations remain suspicious of reliance on black-box plug-in services, whereas small ones don't understand the architectural implications.

"Clarity on how the underlying concept translates to solutions and propositions in different ways by segment is important," says Vile.

Also of importance is the difference between the more traditional ASP and SaaS model, primarily concerned with delivering standalone application functionality with minimal integration, and S+S, which is geared towards breaking down boundaries and introducing flexibility in the broader sense – something every enterprise is interested in given the current economic outlook.

"The key questions people need answering are around selecting and qualifying opportunities for SOA; S+S; the practicalities of scoping and justifying projects; understanding the risks; preparing appropriately; and lastly, executing cost effectively. It's all about identifying best practices, which is as much about acknowledging the pitfalls and workarounds as it is about defining the opportunities and benefits," explains Vile.

As it stands, the problems experienced today are less to do with technology and more to do with how the wider industry supports the models that are emerging.

Vile believes that much of what we hear, particularly from those vendors wedded to the concept of cloud computing, remains naive.

"As organisations begin to plug external services into their IT infrastructure, they will accumulate service providers and service agreements that will result in fragmented accountability for who is responsible for what, which translates to a potentially huge operational and commercial risk," he says.

Right now, service providers seem to be ignoring this, but at some point, says Vile, they will need to deal with the issue.

"The average large enterprise runs literally thousands of applications. If only 10% of the functionality was outsourced to specialist providers, that would still mean dealing with 100s of service providers," he explains. "When dependencies and integration between applications and services is then taken into account, you can immediately see the extent of the problem as it relates to service levels, troubleshooting, support, maintenance, upgrades and accountability, not to mention customisation."

However, for S+S to really take hold, there needs to be a coherent service and application provider ecosystem in which business models, standards and practices exist that take account of multi-provider solutions.

"I think Microsoft in particular has a big role to play here as an orchestrator, match-maker and catalyst," says Vile.

One of the other challenges will be to bridge the gap between the 'echo chamber' in which new ideas and concepts are hyped up by vendors, analysts and other advocates, and the real world in which mainstream businesses and IT departments live, he says.

But as the economy stutters into 2009, that real world is learning some very harsh lessons already and many enterprises are being forced to think carefully about their next moves. With budgets slashed or gone, and no room for manoeuvre in terms of ripping out their old systems, the S+S model should allow clever enterprises to tap into existing arrangements whilst reaping the benefits of hosted solutions.

JARGON...?

Enterprise Service Bus (ESB)
This refers to a software architecture construct, typically implemented by technologies found in a category of middleware infrastructure products, usually based on recognized standards, which provide fundamental services for complex architectures via an event-driven and standards-based messaging engine (the bus).

Case study

Software + Services is all about evolution not revolution, says Andy James, CTO of IT consultants Solidsoft.

S+S in the real world

As the CTO of Solidsoft, Andy James prides himself on being at the cutting edge of technology, not merely from a technological standpoint, but also in terms of his ability to deliver real business benefits to his customers.

For the past fifteen years the independently owned firm of IT consultants has specialised in the use of Microsoft technologies to solve the problems of system integration within and between enterprises. More recently, it has developed business solutions based on BizTalk, Sharepoint and .Net.

To start with, Solidsoft's focus was on enterprise application integration, business process integration and trading partner integration. However, it soon moved into more process-orientated solutions, concentrating on business process management (BPM) and latterly enterprise service bus (ESB).

"As an architectural paradigm we adopted Service Orientated Architecture (SOA)," James explains. "The focus was not only on delivering software but also the underlying building blocks or services."

Today, Solidsoft is moving forward with a composite approach to business solution delivery.

"In a sense we were treading the path of Software + Services before Microsoft coined the phrase. What's important is that there is a clear distinction between what we do and Software as a Service. In our experience, Software as a Service is not a complete answer. I can cite examples where the use of a product like salesforce.com just doesn't cut it on its own and needs augmenting with services such as postcode lookup and the like. Here we see true Software + Services."

James says that Solidsoft evaluates each company's business problems on a case-by-case basis and adapts its approach accordingly. "We do not start with a set approach: we start with the customer's business problem and how we can solve that. S+S is one option in solving the problem."

One of the major advantages of this model is that it makes it possible for Solidsoft to deliver quick wins for customers. "Rather than taking the 'boil the ocean approach' to an enterprise level solution, we can deliver key services and couple them with best-of-breed software solutions delivering tangible value quite quickly," says James.

This allows Solidsoft to build solutions around a customer's preferences. It doesn't matter whether a customer favours Salesforce CRM or Microsoft CRM: Solidsoft can deliver services around either. It can then add partner services, such as credit card clearance or address look-up, enabling it to create complete, composite solutions.

CUSTOMER FEARS

Even so, James believes some customers are put off by what they regard as the hype around S+S and by doubts about 'buying' multi-vendor solutions.

He expects these fears to persist until Microsoft's Azure platform becomes 'real', by which he means something that can be used in enterprise-strength solutions.

"Today Azure is a promise by Microsoft to deliver cloud computing. That promise is being backed up with some interesting pre-release software and hosting services but as yet it can't be 'bought', costed or used to deliver to business," explains James.

One of the common misconceptions is that S+S is too expensive and complicated for most enterprises to take on board. Yet, with a little education and a steer around

the subject most managers soon realise that it can not only help their business but provide the cost benefits that many crave in the current economic climate.

Right now, the industry is not helping matters: the major players in this space continue to jostle for position and, as James puts it, refuse to 'play nicely'. But he believes that eventually order will prevail, making it easier for advocates of S+S to make their point.

"The new world of the cloud is an opportunity for service and software suppliers to really embrace a true collaborative approach to delivering business solutions," he says. The demand is there and once businesses truly understand the mantra, many will engage and deploy services.

KEY PROJECTS

In the last 12 months Solidsoft has delivered a number of key projects in which S+S has proved itself, for both central government and the private sector. Non-disclosure agreements prevent James from talking about particular clients, but he cites the example of one organisation where highly sensitive information input by members of the public is distributed to and shared by a number of departments.

"The main customer experience was a web-based user interface with a set of composited features from many services including security, address lookup, personal account validation and relationship processes. In order that the data could be easily disseminated to relevant departments across the country, software such as Microsoft BizTalk was utilised. In effect BizTalk provided a rules-based distribution service," explains James.

In addition, Solidsoft developed a number of services that receiving departments could access, either to retrieve further information or to send updates back. Instead of the monolithic applications of the past, Solidsoft chose to go down the S+S route, so that services developed for this iteration could be re-used

"If a citizen's identity needs to be validated for access to a number of services, it seems prudent to produce an identity service that can be re-used over and over again," says James. "Similarly if I need to supply my address, the validation and look up process need only be developed once and used many times."

But, according to James, it's the use of off-the-shelf software configured with a solution constructed to deliver a number of services that really shows the power behind S+S.

"Too often solution providers waste time and effort re-engineering the same services over and over again," he says. "By following an S+S approach, the solution can be based on both newly created software and services, existing software and services and updated software and services where new functions are added to existing offerings."

Like many of his industry peers, James doesn't think that what we're seeing is revolutionary. Rather, it is an evolutionary process that enables savvy enterprises to make the most of the two environments, using them to complement one another and bring order to their business without having to make wholesale changes time and again.

"I don't really believe the principles behind S +S are all that new or earth shattering," concludes James. "What I do believe is that today and going forwards Microsoft has provided the software, frameworks and development tools that make it so much more achievable. From Solidsoft's point of view our focus is still the same: helping our customers succeed, and in doing so we, too, succeed."

JARGON...?

Virtualisation
Within computing this refers to the abstraction of computer resources at various levels.

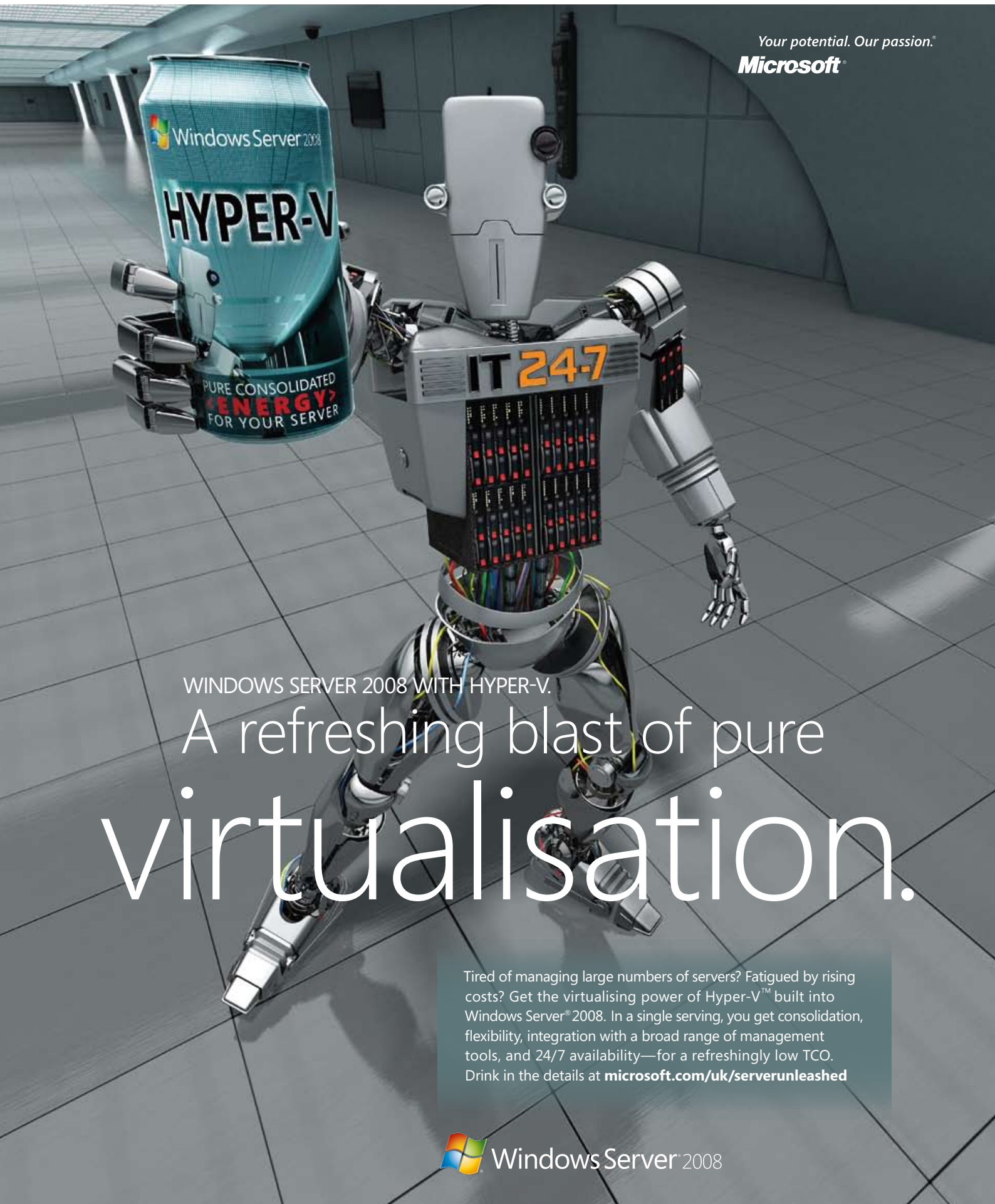
Microsoft BizTalk Server
Referred to by many as BizTalk, this business process management (BPM) server enables companies to automate and integrate business processes.

Microsoft Sharepoint
Browser-based collaboration and document management platform products that can be used to host websites that access shared workspaces and documents, plus specialiased applications like wikis and blogs from a browser.

theARC magazine

Microsoft®

www.microsoft.com/architect



WINDOWS SERVER 2008 WITH HYPER-V.

A refreshing blast of pure virtualisation.

Tired of managing large numbers of servers? Fatigued by rising costs? Get the virtualising power of Hyper-V™ built into Windows Server® 2008. In a single serving, you get consolidation, flexibility, integration with a broad range of management tools, and 24/7 availability—for a refreshingly low TCO. Drink in the details at **microsoft.com/uk/serverunleashed**

Windows Server® 2008