The Open University

Ebusiness technologies: foundations and practice
Ebusiness in Practice

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Internet and web technologies are at the core of business developments. More recently these same technologies have enabled a new model of distributed computing known as SOA, or service oriented architecture. To learn more about these developments and the implications they hold for in e-business, we spoke to some of the developers of Tesco Direct at IVIS and to an SOA evangelist at IBM.

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SOA fundamentally is a, a great vocabulary to enable a much better and richer conversation between business and IT and that's one of the key advantages that we see. And as a software company in promoting what we can deliver in the technical sense from technology standpoint in terms of tooling and products, is how we see an improvement in the ability to respond to those business pressures.

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It's an iterative development on distributed computing that brings enough standardisation and methodology to make it actually feasible to implement. And it gives you, it talks about the standards but also the governance and control necessary to make sense of a large IT landscape, while still making use of the concepts of re-use and de-coupling and integration.

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To make this thing happen a number of things have to change. First of all there's gap that always existed, you know, between business and IT. Two different agendas, two different, you know, way of looking at life. This has got to change, you know, the two communities need to be brought closer together.

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Service oriented architecture is just one of many IT developments on the landscape, but business has become wary of IT failures. So what might encourage them to look at SOA?

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We're definitely driven largely by business requirements. So the driver for our technology is always from the business. However, we would look across our technology landscape for opportunities to increase efficiencies or reduce costs based on, you know, the landscape that we generate from the business drivers that come in.

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I think actually what's very key there is the business requirements. Being able to understand that fully will then allow your architecture to map onto those business requirements. So I think whilst the architectural considerations are very crucial I think a lot of that actually comes out from understanding the business requirements.

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Service Oriented Architecture is very much around business, business agility and business flexibility so we always start the conversation talking about, both with IT and business around, trying to make the paradigm relevant to business and that's really the emphasis that we place on any descriptions when we talk about SOA.

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As with many emerging technologies, SOA has its early adopters. So who are the technology enthusiasts and visionaries? What types of organisation are exploiting SOA?

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As new technologies come on board and new paradigms like SOA have evolved, traditionally the bit-based industries come first. So the telcos, the insurance companies, the banking, you know, retail finance and capital markets. You know, because they have, first of all they have lots of cash to spend, but because they have an ability to be more responsive because they're managing bits rather than atom??

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Over the last couple of years there have been small points of solutions and implementations where business IT units have looked to SOA technologies to implement, you know, specific tactical projects and solutions but nothing organisation-wide. This years that's really starting, this year we're really looking into it and we're measuring what it's going to take to get to, to become a SOA-driven organisation.

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Given that the majority of businesses in the United Kingdom are classified as small or medium scale enterprises, what are the implications for them in this new paradigm?

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If you're a small business, you're a SME, SMB, you know, what do you need to be? You need to be agile. You need to be able to grow quickly and take on new employees, you need to be able to potentially combine with other organisations, you need to be able to develop products and services much more quickly. And so fundamentally that's about business agility. So all that we've said applies equally well, if not more so, to the SME marketplace.

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Big companies who've got a lot of investment in massive infrastructure like Google, Amazon, Yahoo, Ebay and so on, are offering parts of their system as our services under various protocols and then people can create their own applications, whether it's a small applet or an entire website, offering various services. So I think that then gives the opportunity for smaller groups or individuals to create systems, add value to what is already being offered.

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Whilst SOA affords the opportunity for a better dialogue between business and IT, it must embrace the multiplicity of IT systems and services that a business has accumulated over the years.

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Deutsche Bank has a very wide range of technologies at the point with its environment. Some of that will be historical legacy as you would have with any fast moving organisation and fast moving requirements. As an infrastructure service provider we would see a very good representation of what's in the environment. On the server side we have principally Java, J2EE and Windows mixed. On the client's side we would have dot.net, Ajax and Swing, other types of that client and more traditional web client technologies.

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Historically this diversity in the IT environment has been through solutions such as enterprise application integration, which can lead businesses tied to specific vendors, platforms and development technologies. SOA offers an alternative solution, the enterprise service bus built around open standards. SOA's foundation of open standards affords new solutions to the diversity issues such as the enterprise service bus.

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That inheritance tree around enterprise application integration space, the EAI world has now manifest through the Enterprise Service Bus. So that's the key thing, you know, that provides the plumbing for, you know, inter-operability and connectivity of the components that support the infrastructure. So that's fundamental. Obviously based upon all the standards that we've inherited through time. To augment that, you know, data management and data interchange through XML, technologies, business process execution language, B-PEL, the web services definition language, those key protocols actually enable a much more richer and higher level of abstraction in fact and allows the ability to, as I say, take real business process with a level of abstraction in the business service and the business can understand through to an implementation and deployment cycle leveraging those standards.

Without the infrastructure it becomes very difficult to understand how you can do that level of inter-operability and actually guarantee a quality of service that enterprise class customers, for example, would demand in terms of transaction integrity, high availability, security, ability to govern, ability to be regulatory compliant. The things that go with quality of service around high availability, security, you know, fail over, and all those great things that certainly companies like IBM is passionate about and has a traditional set of values around, clearly is where most of those characteristics are substantiated and manifest through the enterprise service bus.