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People and SOA

Improving productivity through people collaboration

Executive Summary

SOA enables composite applications or collections of services that have been assembled to support a company's business processes. Portal and collaboration software delivers the essential people-focused capabilities of the SOA strategy to provide significant value to the organisation.

Main Findings

- **Organisations depend on processes – and processes still depend on people**
The major decisions within organisations are still made by people, no matter how much automation is put in place. There remain many touchpoints between technically automated processes and people, and these can no longer be regarded as exceptions
- **People must have the capability to easily interact with technical systems**
Applications that force people to work in a prescribed manner do not provide the flexibility that organisations require. There is a strong need to provide sets of functional services from heterogeneous applications that can be easily accessed and utilised as composite solutions by the users themselves
- **Existing siloed applications need to be part of the solution**
Existing technology investments should not be written off, but should be included in any new solutions.
- **A portal approach provides the front end interface, as well as the back end integration, to provide a suitable solution**
The capabilities of today's portal platforms have reached a point where a good portal can become a user's main interface to many of their daily tasks.
- **Employee self-service and management capabilities can provide strong business benefits while establishing a platform for further growth**
By providing sets of callable functions that can be flexibly linked, many tasks such as expense claims, new starter set up, employee changes, vacation booking can be pushed out to the employee, creating an environment of greater trust and better responsiveness, while maintaining management visibility of what is happening. Workforce efficiencies can be gained and strategic opportunities enabled through better utilization of resources.
- **Inclusion is key – the chosen solution must be open and easily implemented and maintained**
Any solution chosen will need to demonstrate that it is open enough to integrate with existing applications that it can present information in the manner the users require and that it is flexible enough to be personalised, and the underlying processes modified by the user while maintaining managerial overview of what has been done.

Conclusion

People will remain a core part of businesses going forwards. Enabling people to become a main force within the business processes, while maintaining control of the business itself, has been an enduring problem throughout the application era. As we move to a Service Oriented Architecture, we can look at providing employees with the capabilities they need to take their own decisions – in a controlled, auditable manner – while adding distinct value to the organisation.

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1 The front end to SOA

Whilst the concept of a service oriented architecture (SOA) has gained widespread acceptance, much of the current discussion has focussed on the back-end technology; the design and build of web services and linking them together into a workflow, rather than on what it means to the end-user. However, SOA is a business-centric IT approach with just as much a focus on people as there is on the technology.

An SOA promotes the reuse of existing application components as sets of functional services, along with the development of new services and their assembly in flexible ways, but that is only part of the story. An SOA enables the creation of business processes that support and encourage the building of additional business value through teamwork and collaboration. Here, the focus is on maximising people productivity within an SOA, delivered through a natural, intuitive and adaptive user interface.

As business processes move from the old model based on monolithic and largely static applications to the new SOA approach of loosely coupled, integrated and flexible constructed and orchestrated composite applications based on flexible workflows, users will take on a new and empowered role. In the past, the application was in control and the role of the user was simply to feed it data as required. For many organisations, it was easier to change the business processes to fit with the way the application worked than to try and adapt the application to support existing or new business processes. In the future, the user will take back a significant level of control of the running of business processes and will be in greater control of the overall flow of business activities needed. Such capabilities point to a new level of importance for the interaction of the user with the available technology, and therefore of the criticality of the user interface in the SOA world.

Portal software can provide a doorway to the entire set of Web services and workflows in the SOA environment, as the base tool for deploying and managing portlets built from the underlying services. The portal software can create an environment that provides a consistent, standards-based entry point to a diverse and distributed set of application function, in which the Web services appear as portlets in the portal environment. Portal software can no longer just be viewed as the "window on the world" – showing information in the best way possible – but also as the means for the user to aggregate disparate data sources, to create new ways of dealing with dynamic business processes, and for the user to be able to maximise their capabilities to deal with business issues in an effective manner.

2 Portals and portlets

Contrary to popular belief and to the early generations of portal vendors, portals do not just consist of front-end "eye candy" that gives views of underlying datasets. A portal is a complete system that aggregates services and data from a number of different sources and typically provides personalised capabilities to its users. In addition, business portals are often designed to share information and create added value through advanced collaboration technologies such as workplaces and other shared functions.

Portlets are pluggable user interface components that are aggregated into a portal page. The Web Services for Remote Portlets (WSRP) protocol provides a web services standard to allow the "plug-and-play" of remote running portlets from disparate sources, and the Java Portlet Specification (JSR 168) enables interoperability for portlets between different web portals. These standards are increasingly important as we move in to the SOA world – new "applications" coming through from independent software vendors (ISVs) often have little in the way of a full user client, depending on either access through a browser or providing their main value through direct integration into existing portals.

Many will be familiar with the above concepts through web sites that allow registered users to personalise their view of the site by turning on or off portions of the webpage, or by adding or deleting features (called "gadgets" on Microsoft's live.com and Google personalised

homepage). This functionality is usually accomplished by a set of 'portlets' that together form the overall portal.

This type of user interface lends itself readily to the SOA approach, a key element of which involves the assembly of reusable components into composite applications. Portlets operating within a portal environment can provide simplified user interaction with multiple back-end services that comprise a composite application, in which each portlet becomes the front end to one or more web-services.

3 The Role of Portal and Collaboration Software

To enable efficient real-time decision-making, people need to be able to easily and seamlessly interact and collaborate with other people. They also need to have instant access to accurate information and data from multiple sources. The increasing virtualisation of the workforce, with resources being far more distributed than in the past, and with resources being brought in from outside companies rather than all being directly employed and housed by the one company means that tools that enable ad-hoc synchronous and asynchronous collaboration are now more important than ever. Portal and collaboration software helps enable the people entry point to SOA, and it delivers the essential people-focused capabilities of the SOA strategy. Good portals also ensure that all this collaboration is carried out under full audit capabilities, ensuring that businesses maintain governance and compliance against their corporate and legal policies.

Portals should be able to call the collaboration technologies required directly, in context of the current business process, which is why portals and SOA go together so well. Whenever a person's, company's or other entity's name appears anywhere within the portal, a user must be able to click on this and find the ways in which they can interact with the entity. For example, a list might show that a certain person is available by email, by instant messaging (IM), by web conference or by Voice over IP (VoIP) telephone call – and what their present status is (e.g. open for IM, but not to VoIP). Clicking on the requisite choice should automatically start up this function – in context and in a way that enables other information available to either party to be directly shared.

Portal software serves as a foundational starting point to SOA for many companies. It provides the essential framework for organisations to give people access to the right content, applications and processes based on their roles. Portal software should hide the underlying complexities to simplify the user experience, by presenting a single composite view on the screen. This enables human and process interaction with consistent levels of service, and promotes efficient, collaborative, real-time decision-making and execution.

4 Supporting Technologies

Development tools exist that allow developers to work both with a web service and with the portlet-based front-end that will call and/or utilise underlying web services. With them, developers or business analysts with lower development skill levels can construct, change, deploy, and maintain reusable functional components, enabling "power users" within the business who are more directly involved with the changing business requirements to construct and update the composite applications directly and as needed to support the changing needs of the overlying business processes.

Such tools can include integrated "builders" that help create portlets and other application components. Builders help automate development and mask the complexity of underlying programming; they can provide functionality ranging from simple page controls to robust integration with the likes of Lotus Domino, SAP, PeopleSoft, Siebel, or any JDBC-compliant database. Such builders help to accelerate the move from a need for high technical capability in areas such as code programming to enabling the business to create required functionality directly – and so freeing up the IT department to concentrate on other IT investment areas of core value to the business, such as security, consolidation/rationalisation and so on.

Some builders also provide AJAX (Asynchronous JavaScript and XML) support to allow more interactive web applications to be built that can interface with the back-end Web Services to dynamically repaint portions of a web page. These enable the portal developer to enhance the user experience by increasing portlet interactivity, speed, and richness. AJAX is proving to be a major change in the market, and AJAX enabled front-ends will provide far more responsive and functional interfaces for the end users, resulting in greater efficiencies and user acceptance.

The same toolset should be able to create a Service Definition for the new web service - generating the WSDL (Web Services Description Language) and making the service public - as well as defining the layouts of the web pages that will receive user input and display query results. This approach of separating the business process - represented by the workflow of data and inter-service transactions across multiple web services - and the user interface is at the heart of a service-oriented architecture.

In the portal software, newly created portlets can become part of an application template. An application template is a reusable component from which custom composite applications can be created, simply by pointing at the appropriate template. Once deployed, the new composite application can be accessed concurrently by multiple portal users.

5 Business Performance Management

As the level of business process automation increases, driven by wide adoption of SOA technologies, it becomes increasingly critical that operators (both IT and business) have better visibility into the state of these newly-automated processes. Whether they be business-critical functions, value-bearing transaction processes, or time critical services like airline reservations, you need to know what state your systems are in and avert the occurrence of events which can be expensive, SLA-breaking, or compliance-threatening.

Portal and collaboration software provide solutions that support corporate governance in an SOA environment and help convert strategy into concrete objectives for the organisation. With the portal technology as an SOA foundation, companies can deploy composite products that are focused on solving specific business needs while maintaining a full audit trail of all interactions and events in that process. Portal software not only helps to build a view of a key business process by aggregating information to help people make better decisions, but can also present this information in a manner segmented for a specific person or role – so that a director can see a high-level view of an organisation's state, with, for example, a sales person seeing more detailed information on the status of their pipeline and the health of their customer base. However, the director can drill down as required if any problems are identified through their high level view – and as the underlying data sources are identical, any issues can be raised and dealt with in a seamless and effective manner with others in the company.

Portal software with reusable service-oriented components speeds the creation of such standards-based, active dashboards. Builders help to speed creation of custom portlets that provide the capability to drill down on a given KPI and view a customised set of detailed operational data. They also enable developers to easily extend the configuration of portlets to business users, such as portlet look and feel, event thresholds, etc, increasing the flexibility of the dashboards whilst reducing maintenance costs.

Dashboards also provide the capability for organisations to gain tighter management of performance, using alert-driven front ends that link to more processes. Here, the events will proactively alert users in real time to important issues and events that affect their business. In this way, organisations become far more responsive to such events and, in many cases, through using early threshold event monitors, items can be dealt with before they become problems.

We also can see how such systems allow developers to quickly create filters that enable end users to dynamically filter the data in their dashboard portlets based upon criteria such as region, dates, product, brands, etc. Filters can easily be created that adapt according to the

user's characteristics and role. Historically, Quocirca has found that much of this kind of work has been carried out through the use of personal spreadsheets using pivot tables – something that requires a reasonable amount of skill, and means that important corporate information is held in discrete pockets that cannot be aggregated to provide an overall view of the health of the business.

However, the dynamic nature of an SOA does bring in some problems for governance. As composite applications can be built, utilised and then disposed of, it becomes even more important to ensure that full audit trails of services and their usage are kept.

6 Customer Example

City of Bradford Metropolitan and District Council (CoBMDC), a local authority in the UK, has over 10,000 direct employees and over 20,000 associated workers that it needed to deal with. Previous “command and control” approaches for centralised administration of employee needs had led to bottlenecks and errors in the processing of employee needs.

6.1 Customer's Business Issue

CoBMDC's highly distributed employee, associated worker and user base had been identified as an area where CoBMDC had to provide better services, mainly through the provision of better user interfaces and also through the provision of as much user self service as possible. The driver behind this was not primarily cost savings, although self service was seen as providing strong savings, but was driven strongly by the need to be more responsive and to empower its employees to make more decisions directly in the work environment.

6.2 Customer's approach to solving the business issue

An implementation of SAP had provided a degree of automation to the problem, but the SAP front end system did not impress the end users, who found it bland and difficult to understand.

Through the implementation of a WebSphere Portal front end, not only was a more user-friendly interface created, but this was also capable of being personalised by the end user to more accurately reflect their personal needs. Also, the portal enabled other systems to be easily integrated, so providing a complete, contextually accurate view of all the underlying data and activities – and so creating a far more effective and efficient overall system. The use of Lotus Workforce Management software enabled CoBMDC to directly integrate Employee Self Service and Manager Self Service (ESS/MSS) front end solutions into the existing SAP functions through a series of pre-built templates.

The system is also far more flexible, and CoBMDC can now add and change its processes as it wishes to reflect the changing needs of its various audiences – the public, its employees and central government.

6.3 Customer's perceived benefits from the implemented solution

CoBMDC now has a system, BradNet, which is not only seen as being far more user-friendly by its employees and associated workers, but is also far more inclusive than the existing SAP solution was. Users can view information in the manner that makes the most sense to them, and can carry out far more activities directly than was previously possible. Employees can book vacation entitlement directly, can claim expenses, fill in time sheets, look at their current and historical pay slips, apply for on-the-job and in-classroom training courses directly through the portal, and others can seek out those with specific qualifications and experience. Team calendars enable groups of people, even where not co-located, to see exactly what other members of the group are doing and what availability is for the future. Help desk requests have lessened dramatically, while employee efficiency has risen rapidly. Overall, CoBMDC see the chosen solution as providing a far more cost effective solution that has greater end user acceptance than the previous solution, while also enabling future flexibility for dealing with both the requirements of the users and the pressures placed on it through central government dictates.

7 Conclusion

Within an organisation, people remain one of the largest sources of true value within the business processes. However, in many cases, this value cannot be easily tapped, and many IT systems try to force people to work in specific ways with proscriptive and prescriptive process automation. Added to this, the growing complexity of processes and of data feeds means that users often have to interrogate multiple different systems before they can gain enough information to make a fully informed decision.

A well engineered portal solution can provide a solution where existing applications can be tapped, turning their functions into services that can be easily called through the portal front end. The portal can present information in manners that are more easily interpreted by the user, can ensure that the multiple sources are interrogated at the same time and in context, and that flexibility is maintained to be responsive to the organisation's needs.

Collaborative and communications technologies that are easily available as services callable from wherever a user needs them will help in creating a fully dynamic and flexible environment that adds real value to the business. Through the use of highly standardised tools, this can be extended beyond the constraints of the organisation to include external workers, suppliers and customers in such a manner as to make decision making and cross and up selling far easier.

The main key to success is in the choice of tools – ones that are too focused on a specific area will, by their very nature, become constraining. The chosen solution needs to be able to be the point of interaction for the vast majority of the organisation – not the few. It has to be able to enable ease of access to other services and applications in a seamless manner. It must enable the end users themselves to create and utilise solutions that facilitate their work. It must enable users to connect with each other, to easily identify existing skills across an organisation and its value chains, and must make it easy for decisions to be rapidly made from available data.

Finally, the chosen solution cannot be there just to meet an issue at a point in time – flexibility must be there to allow for the future, and for the adoption and integration of other technologies addressing the human/technology interface as time goes on.

About Quocirca

Quocirca is a company that carries out world-wide perceptual research and analysis covering the business impact of information technology and communications (ITC). Its analyst team is made up of real-world practitioners with first hand experience of ITC delivery who continuously research and track the industry in the following key areas:

- Business Process Evolution and Enablement
- Enterprise Applications and Integration
- Communications, Collaboration and Mobility
- Infrastructure and IT Systems Management
- Utility Computing and Delivery of IT as a Service
- IT Delivery Channels and Practices
- IT Investment Activity, Behaviour and Planning
- Public sector technology adoption and issues

Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of a company's environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to advise on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca's mission is to help organisations improve their success rate in process enablement through the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research programme, regularly polling users, purchasers and resellers of ITC products and services on the issues of the day. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

Quocirca works with global and local providers of ITC products and services to help them deliver on the promise that ITC holds for business. Quocirca's clients include Oracle, Microsoft, IBM, Dell, T-Mobile, Vodafone, EMC, Symantec and Cisco, along with other large and medium sized vendors, service providers and more specialist firms.

Sponsorship of specific studies by such organisations allows much of Quocirca's research to be placed into the public domain.

Quocirca's independent culture and the real-world experience of Quocirca's analysts, however, ensure that our research and analysis is always objective, accurate, actionable and challenging.

Quocirca reports are freely available to everyone and may be requested via www.quocirca.com.

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