Oracle Forms and SOA: Software development approach for advanced flexibility

An Oracle Forms Community White Paper

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INTRODUCTION

Service Oriented Architecture (SOA) is currently one of the hottest topics in the world of IT. It would appear that this acclaimed concept for IT architecture will lead to new and revolutionary solutions. Atos Origin has developed its own vision of SOA with a specialized team and is now successfully implementing that vision. This paper documents that vision and is based on an interview with Malcolm Smith, Portfolio Manager at Atos Origin and published in "We Love IT" magazine.

*"**In a few years, SOA will be as common a concept and technology as project management and the use of RDBMS are today.**"*

SUSTAINABLE CHANGE

There are people who view Service-Oriented Architecture, SOA in short, as the new Jenny Craig diet for the IT industry. The quick and effective way to a better and healthier life. But to actually be successful with any diet program, you need to do more than just know your foods and understand the theory. You need to rethink your daily eating habits, visit the fitness club on a regular basis and most importantly; stick at it! You need to change your way of life! The same thing is true for SOA.

In spite of the fact that many regard SOA as currently still in its hype stage, it looks as if this form of architecture will be here to stay. It will therefore also be given a permanent place within the integration and systems development world. Malcolm Smith is Portfolio Manager, Oracle Technology and plays a leading role in Atos Origin's SOA Team. He has the following to say about the role of SOA: "SOA is indeed a much discussed topic in the IT industry. For some time now, it has been an item on the agenda of IT decision-makers and a subject of discussion at conferences and workshops for the past few years. But make no mistake about it, SOA is here to stay! In a few years the current hype will have disappeared, but SOA will survive as a concept and technology that will be just as obvious as the use of project management and an RDBMS is today.

The thing that is so special about SOA is that this way of thinking, more than ever before, is capable of focusing IT on the business needs and the business processes of the organization. This allows the business to be optimally aligned with operational IT in terms of applications, interfaces and supporting systems. SOA demands a new way of thinking, organizing, managing and working. In fact, it's all about a change in life style."

"*Whenever a SOA approach is used, the business-side of the organization must be explicitly involved. This is an aspect that is often underestimated by companies that rapidly move into the SOA world from a technology perspective.*"

CORE SOA ELEMENTS

The main concept behind SOA is that standard functions in software packages and applications are structured and exposed as services so that they can be used or reused by different business processes. In this way for example, a standard procurement function is no longer exclusively assigned to a single ERP software package. Based on a service-oriented approach to software development and integrating the service into business operations, it becomes possible to deploy the procurement function (or service) on an organization-wide basis and in combination with multiple applications. Malcolm Smith: "Whenever a SOA approach is used, the business-side of the organization must be explicitly involved. A useful link between business and IT is created if this requirement is properly supported and managed. This is an aspect that is often underestimated by companies that rapidly move into the SOA world from a technology perspective.

SOA Value

The real value of a SOA to companies is clearly visible in a number of ways. First of all, SOA provides a number of standards, guidelines and a set of design principles that can be used to design business processes and IT systems on the basis of reusable services. This approach to the development of software clearly offers greater flexibility than previous application development methods and methodologies. It is consequently a better means for enabling IT to keep up with the dynamics of today's business demands. There are many causes for change in an organization that are related to its business processes and procedures and, as a result, to the supporting IT environment. Laws and regulations for example, as well as market trends, competition, growth and company mergers etc.

In time, a SOA makes it possible to significantly shorten lengthy, traditional development and change projects. Other elements that offer added value include centralization and standardization. Integration also becomes simpler and more robust

and therefore cheaper to maintain. Viewed from a business perspective, these technical improvements translate into a faster time-to-market, a uniform client image and chain integration. Furthermore, the SOA approach can also yield significant benefits for the renewal and migration of existing legacy systems."

A PROVEN APPROACH

Atos Origin has been active in the SOA domain for some time now and they have developed a solid and proven approach to SOA. On SOA projects, the Atos Origin SOA Team collaborates with all layers of the organization. In other words, at the business management level, architecture, design, governance and technical implementation levels. Special attention is devoted to make sure the development of a SOA remains manageable during implementation, and guidance is given for the maintenance and administration of the delivered SOA, also for the long term. This approach is founded on a number of proven international standards and best practices and bundles the Oracle knowledge available within Atos Origin.

One of these areas of expertise is business process automation, where the Business Process Execution Language (BPEL) forms the foundation for business process automation tools. BPEL is the international standard for business process integration and automation. Malcolm Smith: "The BPEL standard makes it possible to integrate different IT systems used within a business process – irrespective of supplier or technology – in a structured, user-friendly manner. Combined with the Oracle knowledge available within Atos Origin we are capable of developing a SOA that in practice can lead to successful chain integration. The services that we develop using Oracle technology and tools can be deployed platform and technology-independent on an organization-wide basis.

When our SOA Team initially starts working with a customer, the first step is to agree together with the customer on a mutual understanding as to exactly what SOA really is. There are still a lot of misconceptions about SOA from a business as well as an IT perspective. Once this step is completed and the various basic SOA elements have been clarified, we will identify and assess precisely what the potential benefits an SOA will actually provide to the organization. But we also thoroughly assess the possible risks, pitfalls and disadvantages. This results in a solid and well founded SOA business case."

"Still today, the majority of customers are struggling with the question; – What is our next step with Oracle Forms and how should we make the move to a future proof platform?"

SOA AND ORACLE FORMS

Much of Malcolm Smith's work on Oracle SOA is as a legacy transformation enabler. Many Oracle customers use the traditional Forms development environment. Customers have invested a lot of time and money in the development of Forms and PL-SQL based scripts and applications. We see that over 65% of all Database Enterprise Edition users are extensive users of Oracle Forms. This is also true for custom functionality developed for users of Oracle's E-Business Suite. There has been some confusion over the past few years concerning the roadmap for the future use of Forms. This *roadmap* is crucial in terms of the future certainty of Forms as a development platform and the strategy for current Forms-based applications within companies.
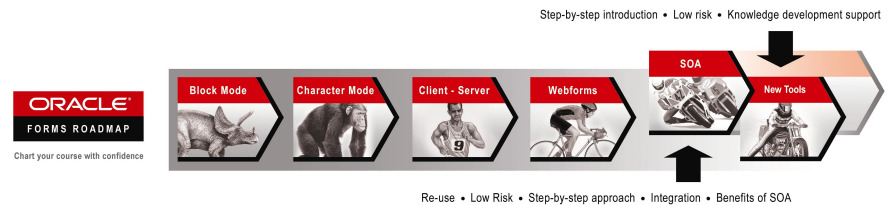
Adoption of Oracle Java, with JDeveloper and ADF is the ultimate outcome for current Forms customers, according to the traditional Oracle Forms Roadmap. Malcolm Smith has this say about this subject:

Think Big, Start Small

"Continued development and support of Forms is guaranteed by Oracle. However there have been inconsistent messages conveyed to customers concerning the future of Oracle Forms by various sources for various reasons. This has often resulted in unnecessary pressure to migrate from Forms to another technology platform – even to a non-Oracle technology in some cases. Oracle recommends the adoption of Oracle's new development tools and Java as eventual replacement for Forms as a development platform. And this is the best solution as a long-term strategy. However when you consider the significant number of companies that are extensively using Forms to support their critical business processes, you realize that migrating to Java is not as simple as it may seem. The migration of large Forms applications to Oracle Java is a solution that for many companies is simply a bridge too far. Java as a programming language and development platform requires a different development approach and the use of different tools. Companies often employ numerous Forms developers and have invested a lot in their technical knowledge and development skills. A migration to Java would mean a poor ROI for this considerable investment. Not to mention the years of development invested into the current Forms applications. These are considerations that can cause major headaches for many companies. Good reason for these customers not to be too hasty to adopt Oracle Java and the new development tools. Still today, the majority of these customers are

struggling with the question; – What is our next step with Oracle Forms and how should we make the move to a future proof platform? This was reason for me to look closely at this challenge and re-asses all the possible options in the steps towards a future proof Forms environment.

An intermediate step towards SOA is the use of web services. The key advantage here is that this allows companies to start working on a modernization strategy and new development architecture in a step-by-step fashion, at their own pace and in accordance with their own available resources and finances. Hereby also avoiding a risky and complex 'Big Bang' scenario. Put another way: *think big, start small.*"

The stepwise SOA approach, the controlled, phased introduction of new technologies and tools, and finally the reuse of existing Forms logic as services are the three key components that are fundamental to Atos Origin's SOA projects with Oracle Forms.

"Whatever the choice of the future platform, migrating or transforming Forms to a future proof environment can be considerably eased and simplified by using SOA principles and technology."

Think before you leap

The reuse of Forms functionality within current Forms applications can lead to significant savings and greatly increases the return on current Forms related investments. Most operational Forms environments – especially those of recent years – generally function extremely well. The use of SOA makes it possible to access these functions as web services. As a result, old and new IT environments can operate alongside one another.

As Malcolm Smith puts it: "Think before you leap. Always give due consideration to the possibilities of reuse of the Forms logic that companies have already developed. There are a number of technical aspects that need to be assessed in this process and the business goals for the application also need to be considered when determining what and how best to re-use components.

From a financial and business perspective, a step-by-step approach is attractive. It ensures that the introduction of new tools and technology and therefore new knowledge occurs in a controlled, manageable fashion. An example of how this process could be initiated could be developing new, non-critical functions with Java and new development tools. When integrated as a web service, these components then function as part of the existing Forms environment. By using

SOA it is possible to expand this process in line with the available knowledge, capacity and financial resources within the company.

Both the web services and the way in which SOA facilitates the integration of old and new systems yield benefits. Heterogeneous systems can be implemented and integrated as a complete entity – irrespective of the underlying technologies of the IT services and systems.

Whatever the choice of the future platform, migrating or transforming Forms to a future proof environment can be considerably eased and simplified by using SOA principles and technology."

Front office versus Back-office

The role of legacy systems has not yet fully played itself out in many organizations. At the same time, the increased use of new web technologies is a key factor. This unquestionably leads to new challenges, particularly in terms of the integration of these two completely different worlds. Malcolm Smith: "SOA can also yield benefits within the relatively short term. For example, the reuse of Forms applications offers the possibility of renewing the user interface within the front-office by using the most recent web technologies to make it more flexible and appealing, and furthermore also make it independent of the underlying logic and IT systems. This means that the interface can be deployed on an organization-wide basis while being platform and technology independent. Just think of all the different government organizations and local councils that are struggling to expose their IT services to users from their back-end legacy systems. Using a SOA means that the development of the front office in relation to the user interface can be made generic. As far as the back-office is concerned, the business processes are uncoupled from the logic (code) and the logic is stored in the database. Once all application logic is stored in the database, it becomes relatively simple to make individual functionalities, small or large, accessible and to integrate them as services. The combination of these challenges related to the front-office and back-office, is something that is inherent in many organizations and presents an excellent opportunity for SOA."

Leading the Way

Oracle foresees an important role for SOA in the coming years as an effective enabler within the roadmap of Oracle Forms. During his years of service with Oracle as the Solution Specialist for Fusion Middleware, Malcolm Smith put a lot of effort into Oracle SOA and played a central role in the international project set up to further develop the Oracle Forms and SOA concept and message. The SOA

approach for the future of Forms is based on the reuse of Forms applications, a gradual and stepwise evolution to Oracle Java and consequently a more affordable and feasible uptake to Java as a future platform. SOA provides insight and overview, and results in the centralization of processes and systems. The underlying technology is of less importance in this regard and legacy platforms can continue to be used. This strategy has led to a message that allows Oracle to better retain its Forms customers. At the same time a clear SOA business case has emerged for Forms customers that allows customers to start work on a SOA in a responsible and affordable way. The Atos Origin approach provides further clarity in this respect. Companies can start work on a small scale by developing new functionalities as services, and by deploying the SOA approach, can also continue to use old legacy applications alongside new applications. No one will be able to deny that this significantly reduces costs and therefore delivers considerable savings."

SUMMARY

All in all it appears that the deployment of SOA can result in surprising solutions in which both old legacy systems and modern and innovative systems can operate alongside one another. It would appear that business is finally getting the IT that it deserves.

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