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SAP NetWeaver™ – The Need For Tactical Solutions On The Road Towards Strategic Goals

A series of white papers by Iryx

Paper 2

Why do I need NetWeaver, which parts of NetWeaver do I need, and when do I need them?

Contents

Today's Challenges.

Evolution

IT has moved on from disparate systems, through desperate integration by any means (point-to-point), to SOA. Service Orientated Architecture is what is says on the label. SOA is the ability to re-use existing functionality, existing data and existing systems but exposing them to create an environment flexible enough to support 'agile businesses'. SOA is, therefore, the instruction sheet for how to create an environment which:

- provides meaningful and structured information in a timely fashion,
- supports enterprise-wide initiatives, and
- allows agile responses to new market, customer or internally-driven needs.

I would be letting the side down if I did not mention the fundamental term of choice – '*leveraging existing assets through web-services*'.

In essence SOA is the answer to the question 'How can I integrate my people, information, processes and systems in a single, homogeneous environment that allows me to leverage all of the advantages that brings?'.

What the IT community is now facing, driven by today's leaders, Microsoft, IBM and SAP, is the need to move to a more flexible infrastructure to facilitate collaboration. As IT budgets have shrunk two things have come to the fore:

- Firstly, the need to reduce costs through closer ties to partners (both customers and suppliers); in a word, collaboration.
- Secondly, the need to move from IT strategies of massive re-implementations, each costing millions and taking years to a strategy of quick-win, fast ROI projects. Each successive project must build on the infrastructure and re-using the functionality of previous projects.

To enable all of this we have SOA. SOA is the architecture for flexibility, collaboration and empowerment. The 21st century IT architecture.

Packaged Applications

It is not a spectacular breakthrough in thinking to realise that most companies have IT applications which have evolved to become pretty much in line with the way the business works. In all probablity they have been developed to mirror the businesses own peccadillo's, and are all the more invaluable to the business for all of that. Previously, the drive for commonality of information, processes and people interfaces led us all down the garden path of packaged applications. What were the consequences of this?

- Loss of specific functionality supporting internal processes.
- Force-fitting processes into ill-fitting suits of functionality (or should that be straight-jackets?).
- Large, long and very, very expensive IT projects (as an SAP consultant I did appreciate this though).

Integration

Where the breakthrough has come is in the realisation (driven, admittedly, by pressure on IT budgets) that it is not necessary to replace all of those old but well-fitting applications to achieve the goals of commonality. The dawning of the age of SOA brings with it enlightenment, with the understanding that we can keep all of that nice functionality and leverage it's intrinsic value by placing a single, homogeneous integration layer above it. A layer which understands the applications, can expose their critical functions, and pull together the disparate data into single, homogeneous information channels for the business.

Agility

The promise of SOA is one of real agility, where businesses really can collaborate real-time and with a much reduced lead time. SOA is the host from where business processes can be changed and from where new business processes can be developed without changing the plethora of applications which reside underneath. The creation of web services, exposing the application functions is the key driver for this.

NetWeaver

And so to SAP NetWeaver™ - not a product or even a component, but a technology stack. In fact, NetWeaver is the SAP answer to the whole IT question, it incorporates their own SOA (Enterprise Services Architecture – ESA), their own development environment fully integrated with J2EE and integration at people, information and process level, exposing most functions of most SAP component applications as web services. All of this exposed as role-based portals. Basically, NetWeaver could be seen as the evolution of the SAP philosophy.

There is one more, one critical, factor; that of the need to create a more homogeneous, single-sign-on environment for users. This means to move away from lots of different systems with lots of different user interfaces towards a portal concept. The portal concept allows any user to access everything they need from a single, browser-based access point and allows the Enterprise to create a single user-experience, leveraging the information in the Enterprise and providing a more flexible and responsive user community.

Timescales

One thing is for sure, the implementation of a complete NetWeaver solution will not be a 1 month project. SAP themselves talk about projects lasting years. In today's business environment this is only feasible if those years are actually a series of small, fast projects each delivering the customer one more piece in the final jigsaw.

What does this mean for SAP customers? Well, no matter the size of the customer the same questions need to be asked;

- Why do I need NetWeaver, which parts of NetWeaver do I need and when do I need it?

- Where should NetWeaver fit into the strategic IT architecture? (does it replace the current one, can it sit side-by-side with the current? do I have a strategic IT architecture?)
- What will NetWeaver deliver for me that I cannot get out of my current architecture?
- How do I get from today's architecture to the strategic architecture I now envisage (which includes NetWeaver)?
- Can NetWeaver deliver everything I need in the new, SOA, world?

This paper is focussed on the 1st of these points – 'Why do I need NetWeaver, which parts of NetWeaver do I need and when do I need it?' and is one of a series of white papers Iryx will publish.

What are the key drivers pushing companies to becoming more agile?

Budgets

We are currently in an era of diminishing IT-specific budgets where each IT project needs to be justified not only against other IT projects but also against business projects. businesses rightly judge IT projects against the business advantage that would result. It is difficult to justify IT projects which are not clearly and explicitly delivering the business objectives. More and more businesses are looking at how to cut costs by closer working ties with their partners, reducing both stock levels and order lead times.

Open Standards

We are also in an era where both customers and suppliers are becoming more active in pushing their partners down the road of open-standard electronic interfaces. From the ashes of customised EDI standards (an oxymoron if ever there was one) has risen real global drive towards adopting a more real and enforced (XML-based) set of standards.

Economic Pressures

All of this in a time of falling (and unstable) global markets, depressed economies and global uncertainty.

SOA

Taken together, the net result is that it is more difficult to leisurely plan the next 5 years IT projects. Driven by the speed of change in the markets themselves, by the greater awareness of partners and by the need not to fall behind competitors, more and more businesses are finding that they need to be able to implement new solutions faster than ever and across the whole enterprise to achieve competitive advantage (and even just to stand still).

SOA is designed to facilitate this agility, but the greatest challenge is to help customers attain that goal of a single, homogeneous integration environment quickly and efficiently.

SOA is the most clearly defined definition of exactly what an IT architecture needs to consider and to deliver. The integration of a businesses resources, people, information, processes and systems is the key to providing the future agility that every business will need to survive and thrive in the 21st century.

Why do I need NetWeaver, which parts of NetWeaver do I need, and when do I need them?

The first part of this question is partly answered by the previous section (key drivers pushing companies to becoming more agile) but let us examine some more factors that play a part in the decision process.

As well as discussing what is driving businesses along the road to SOA it is important to understand where businesses are today. Most of the larger companies (at least) have developed their IT architecture strategy towards creating a more responsive environment, and are already delivering integrated information. Indeed, the need for responsiveness, visibility and control are nothing new. But without the key tool of a single product which could integrate systems, processes, information and people, it has been a struggle. The reality is that most businesses have found themselves somewhere on a side-road, part way towards their objectives, but distracted by the costs and complexity of forcing together various bits of middleware.

Why do I need NetWeaver?

As already discussed above, there are a number of drivers pushing companies (or, for the most aware, supporting their own push) towards a more agile, flexible, responsive IT systems environment. These are:

- More customer / supplier driven initiatives with short-term goals.
- The need to justify IT projects against other business projects rather than having a bespoke IT budget.
- The resulting need for short-term, faster ROI projects whilst still driving towards an integrated IT architecture.
- The need to reduce the TCO of existing and new systems across the Enterprise.

Put together they all point to the same need, that of finding a way of pulling all of the existing (disparate) systems together to leverage their intrinsic value in terms of information and processes, whilst creating the ability to define cross-system, cross-organisation business process definitions and allowing data to be pulled together from all of these systems.

In fact, this is a very tall order and one not easily achieved. Clearly, implementing new systems meets very few of the goals and is contrary to most of the drivers. Equally, rationalisation of systems (moving organisations or functions onto other systems within the environment), whilst still an important and worthy goal will still only deliver a part of the overall objective.

What is needed is to put a homogeneous layer over all of the current back office applications which can talk to any and all of the systems, enabling Enterprise-wide business process definition and information gathering and allowing creation of new processes by exposing individual functions within the applications as web services.

Why another layer?

Why a homogeneous layer when all of the middleware products out there, even the new SOA solutions (Microsoft, IBM and SAP), all talk about the ability to integrate with other integration solutions? Well, partly because of the TCO of multiple integration solutions, partly because multiple products inevitably means watering down the degree of flexibility and responsiveness, but mainly because of the simplification this produces. No multiple upgrade paths, no multiple changes to implement a single new process or change to an existing process, and one place to maintain, monitor and process information exchanges.

Of course, the reality is that most businesses will have existing data warehouse solutions, existing knowledge management products and existing middleware. It will not necessarily make sense to re-implement all of these. That is why NetWeaver is designed to easily integrate other middleware, other KM products and even other portals. The utopian position, the green-field solution, would be a single homogeneous environment, and the closer to reality that becomes the more agile the business is.

Single Environment

NetWeaver provides a single environment with the tools to integrate people, information, processes and applications. It also fully supports the open standards which enable NetWeaver to fully and easily integrate to other solutions in each layer. Whether that is other portals, other knowledge management tools, other data warehouses or other middleware. Naturally, the more SAP applications an Enterprise contains the more fluent the and speedy the integration into NetWeaver.

NetWeaver is not the old-fashioned, run-of-the-mill SAP product which really only works fluently with other SAP products. NetWeaver embraces open standards and leverages the market position of SAP which has pushed all other players in the integration market to produce SAP adapters.

So, why implement NetWeaver? Because it is a single solution to all of the key needs businesses face today.

Building Blocks

However, implementing all of NetWeaver's components from scratch today is a 2-4 year project which defeats the objectives of fast ROI, short term projects. What is needed is a building block approach, a series of projects, each of which delivers specific business benefits and can be justified stand-alone and each of which delivers one or more building blocks so that, finally, the complete environment is there and the business can truly call themselves 'agile'.

The keys then are to understand which parts of NetWeaver a business should implement and when they should implement them. The following sections of this paper will look at these issues.

Which parts of NetWeaver do I need?

The Iryx methodology is based on assessment, understanding, definition of final goals and creation of a roadmap to get there. The roadmap is covered in white paper number 4 in this series; this paper is looking at the first 3 parts of this methodology.

The first question that must be answered is 'which parts of my current IT architecture are still strategically relevant given the move to NetWeaver?'

How to answer this? The first key is to categorise all of the existing systems, to be able to understand which systems are applications, which are systems integration, process integration, information integration and people integration systems. Having done that it is necessary to evaluate every system in terms of applicability to the new strategic architecture.

Existing applications may be rationalised or replaced on the basis of TCO but this is not driven by SOA per se.

Existing middleware may be replaced on the basis of TCO as a result of NetWeaver but this can be evaluated on the basis of the following;

- License costs.
- Re-usability of existing services within this middleware.
- Ease of integration between NetWeaver, this middleware and the systems the middleware is integrating (it could be that specific adapters already written would not be available 'out-of-the-box' with XI for instance).
- Life expectancy of the systems being linked by this middleware.

In all, this does require a manual approach based on the specific factors and issues that middleware provides. Integration consultancies (like Iryx) have built up this knowledge, experience and understanding over years of solving complex integration issues.

Existing data warehouses are unlikely to be replaced as the result of NetWeaver, it is an important criteria met by most data warehouses that data is published in standard ways to facilitate the use of standard OLAP tools. The default position would be to incorporate existing data warehouses either by publishing their reports/queries on the NetWeaver portals or by feeding data from them to strategic BW cubes.

The same thing applies to knowledge management tools and content repositories. State-of-the-art solutions in these areas can be integrated into NetWeaver portals rather than replaced. This leverages the open standards such products adhere to whilst avoiding unnecessary re-implementations. Older products may conform less to these standard so, in these cases, it may be better to re-implement their content into NetWeaver KM.

The result of this assessment exercise will be an understanding of which parts of the existing (or implementation in progress) architecture will stay in a NetWeaver environment i.e. is compatible with an SOA environment. That answers the which, the when has still to be determined at this point.

When do I need them?

It is important to prioritise those parts of the goal strategic SOA environment which will deliver the most benefits. This needs to utilise the business goals and objectives to understand the priorities. The following factors will help to determine the priorities:

- What are my immediate business goals?
- Which customer/supplier/industry/market initiatives am I aware of and do I consider important?
- Which critical information am I missing today?
- Where are my stress points in my current architecture?
- What planned projects do I have and how do they fit in?

You will see, again, that there is no 'one size fits all' answer. It is important for each and every business to sit down, with an integration consultant, to understand and answer these questions. Having done that, the outcome is a set of short-term projects delivering the most important objectives.

At Iryx we believe that each of these projects should also be categorised in terms of defining the building blocks for the final, strategic, SOA the project will deliver. In terms of project management this should also be one of the benefits against which the project should be judged.

Sometimes, the answer shows that there are urgent needs for projects which do not fit into the building block approach. It could even be that some projects cannot wait for the definition of the roadmap or even the final decision to go to NetWeaver. As discussed in paper 4 of this series, sometimes tactical decisions are required and sometimes this involves implementing compatible solutions which can be integrated into the strategic solution later.

So is this only for big businesses?

Some of the above may well sound like it is only applicable to large enterprises, but the reality is that it is equally applicable to medium-size companies and even some smaller companies. How? Because most medium size businesses (and some small) have multiple systems across their Enterprise. Most of them have acquired new businesses or carried out mergers. The result is a plethora of legacy systems and a bill for re-implementation, rationalisation or upgrades into the millions. The Enterprise does not need to be global to have the problems of flexibility, agility and responsiveness that we have discussed in this paper. In fact, smaller companies have the added complexity of their partners assuming they can be more flexible, an assumption not always made for large businesses.

This does not have to be a global issue; it does not even have to be a continental issue. It is an issue for every company which has evolved a systems architecture which does not easily lend itself to the business being 'agile'.

Conclusion.

Why do I need NetWeaver, which parts of NetWeaver do I need, and when do I need them?

Only by understanding, assessment and definition of where we are today, where we want to be, and what needs to be in place to make the business agile can we really answer all of those questions. We at Iryx are ready to help you through this process, to help you determine your personal road-map and to help you along that road.

Paul A Moore
Director
Iryx Limited

References.

This document is one in a series of whitepapers Iryx have published on the subject of NetWeaver. The full list of whitepapers is:

Tactical solutions towards strategic goals overview

Overview document – 'Tactical solutions towards strategic goals'

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