Marketing websites based on SAP NetWeaver Portal –

Planning and implementation using
www.ibsolution.de as an example

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Date: 14.03.2007
Version: 1.0
Language: English

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1. Management Summary

Nowadays every self-respected company has its presence in the Internet World. If this presence is the right one is actually another question that can be broken into three sub questions: Is your company consuming E-Business opportunities when they appear? Are you transferring your interested customers into future faithful clients? Do you have a wide variety of customer-specific offers on your website?

Being honest - most of the CEO's are quite satisfied with their company's websites. This is only because they don't really know the opportunities that are being missed due to a non-flexible E-Business website. We at IBSolution went through the same experience once and we don't want to come back to it anymore. Our old website was just a marketing instrument and nothing more. The internal company view changed when we realized all the advantages that a website based on SAP NetWeaver Portal is offering:

Missed E-Business opportunities

- Role-specific content for different user groups

- Customer-specific offers

- Easy integration of a Webshop

- Single Sing-On (once authenticate and have access to all important information)

- Marketing, Sales and Service departments can access one unified customer database

You might ask yourself - how is it possible to inform my customers with the most actual and accurate information without letting them get lost into the Internet information chaos. We achieved that, by using the advantages of SAP NetWeaver portal (role-based menus, excellent possibilities for connection to back-end systems) and our employees' know-how. This combination opened possibilities that were unimaginable before. Things like the standard SAP Header, inflexible user management, no Flash integration and no CMS were not a problem anymore.

Customers and interested visitors get the most actual and accurate information

The change to SAP NetWeaver Portal was a successful move for us. It gave us a solid platform, which was also flexible by supporting most of the well known SAP Applications and content packages. By pasing our website on the Portal we offered our Marketing and Sales Departments a plattfrom, which was communicating

Platform for the future

individuality and also enabling global visitors to become future customers.

➔ The solution is available online at: www.ibsolution.de.

2. The initial situation

Different target groups require different market approaches so that customers and interested visitors are equally intrigued by the proposals that the website has in store. Therefore it should not be reviewed as the cherry on top of the cake, but rather as base for all further E-Business activities.

As a SAP service provider IBSolution is very active and successful on the market. The company's portfolio started with Business Intelligence Consulting and the implementation of planning systems. However the company never stopped expanding it and now it includes also Master Data Management and Enterprise Portal consulting services.

New products enchance everyday's business

It didn't take long, before our consultants realized that the newly added topics were not in the range of our customers. Either they had no knowledge about them whatsoever, or in the better case they had the basics, which were however not enough to persuade them into starting a project. This information black hole was created partly from the poor SAP communication regarding their new products and of course from the lowered number of customer fairs in the last few years. A fact, which can't be also ignored, is that SAP entered "new lands", with some of their software products, which are not so well-known among the companies, using SAP "standard" software.

Customers are not informed when new products are released

A further challenge was that the raising number of customers had to be kept up to date with all the newest releases and development breakthroughs. At the beginning we approached that challenge by incorporating newsletter listings to inform our customers for new topics and updates that might be of interest to them, but as the topics grew in size we moved some of them to the website to keep the newsletter neat and compact. However the website itself was filled with so much information that it reached the point of bursting at the seams. The amount of publications, articles and news was so great that it wasn't anymore possible for the visitors to get an overview of all topics.

Additionally in autumn 2006 IBSolution decided to enter the ISV (Independent Software Vendor) market by implementing its own software products and solutions. Those should be uploaded to our website and available for download providing also customer online support, if needed.

Self developed products require support platform

If we gather all the mentioned requirements, we come to the following summary:

- Business website providing the newest and most actual information to new customers

- Download section and online newsletter registration for all interested visitors

- Online registration for workshops and seminars

- Online purchase and download of software components

- Online software support

In November 2006 the above summary have lead to an important decision. The current open source platform, on which our website and seminar shop resided, was replaced by SAP NetWeaver Portal.

Redemption using SAP NetWeaver Portal

3. Challenges

The decision to move to SAP NetWeaver Portal was not an easy one. At the beginning many "MUST" criteria were not fulfilled.

Since the final decision was already taken (moving to the SAP NetWeaver Portal) all that was left was to plan the realization. An important step before we even start was to define the importance of the different building blocks scaled according to their complexity of implementation:

- Easy and intuitive content management system (CMS[1])
- Flexible layout including Flash header[2]
- Low support and operating costs
- System based on roles for individual access to information
- Search possibilities covering the complete website

The first challenge was that SAP solutions didn't officially support or provide any kind of Content Management System. This criterion was almost a K.O. factor for the project, because without a functioning CMS we couldn't achieve efficient operation of the website. We managed to resolve this problem by integrating an external CMS that didn't have any additional software and hardware requirements, but rather was installed as a plug-in to the SAP NetWeaver Portal.

A missing CMS was defined almost as a K.O. factor

The second important criterion was the freedom to design and layout the website the way we want it. As every company, we also wanted to keep and use our CD[3]. This was almost impossible, since SAP standard header didn't provide us with much flexibility, plus we wanted to have a nice flash header that incorporates the navigation too. Our goal was interactivity and user-friendly design. That's why we were Flash minded since it is the leading solution to developed interactivity for the Internet in the last 5 years.

Flash Header was a must, but SAP didn't have it planned

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[1] CMS: Content Management System: A system whereby users can log in and update their website online. The content is usually stored in a database and the HTML is created dynamically on request.

[2] Header is usually the top most part of a website, where the navigation and other useful tools reside.

[3] CD: Corporate Design: All elements have the company look and feel (e.g. logo, company colours, etc.)

As a SAP consulting company we had always problems to provide support to companies running non-SAP systems. We are an open-minded company and we share those experiences with our customers. If the system landscape is based on one type of system, then the costs for personal support and external consulting will be lower than if using different systems for each single project. Having this experience, we decided that it was important for us to base our new website on a technology that is well known to us and where we have the know-how to provide the best support and implementation services to our customers.

Using the existing system knowledge for better customer support

A further criterion was the availability of roles that define the customer navigation and information options on the website. Having a good role concept is important since it allows the interested visitors and customers to access relevant, for them, topics and efficiently to acquire the information they need. All anonymous users get pre-defined content, which is available to them using a guest role. In case the guests decide to register, then they already have the possibility to define content that is of interest to them. Planned is also a forum, where registered users and customers can communicate with our consultants and receive the information they need directly from the source.

Role concept for special target group information

The already mentioned role concept allows registered users to book seminars and workshops as well as gives them access to premium content like for example is our download section. Integrating SAP ERP in our solution gave us the possibility to not only have online ordering, but also to create the respective bills on the fly.

Online shop already scheduled

Search functionality was a must due to the raising number of documents, news and articles on our website. Using it our customers can search the complete website for all the information that it contains.

Search the complete website

The loading time was always a very important and critical point when talking about Internet and external websites. Each page on our website should not take more than a few seconds to load. The standard pages provided with SAP Netweaver Portal are approximately 1MB of size without including the content itself, which makes them way to heavy for the Internet. The little trick here is not to use the standard SAP framework, but rather the light SAP framework that essentially reduces the overall page size to the point of loading only the required, by the page, java classes. A further performance improvement is also possible by integrating the Citrix NetScaler, a product that not only speeds up your loading times, but also can act as an application firewall.

Fast loading times

4. Project flow

After we laid all of the requirements on the table it was time to approach the problem in a way that is cost effective and quick to implement.

Based on the defined challenges in the previous chapter, we have considered the most important points regarding the implementation:

- Interactive header with flash
- Login for customers and registered visitors
- Dynamic Content
- Search over the complete website
- Content Management System
- Good website performance

We knew that even if we create an adequate solution, it won't be able to compete with the leading marketing websites when it comes to layout and interaction, but we had the advantage of the easy back-end system integration and the role concept, which normally require hard work and lots of additional manual tuning to get them up and running on other systems.

The "normal" project time for portal projects is around 3 months. Unfortunately often project managers forget to leave some buffer time for any software incompatibilities that might appear. Therefore we decided to give a 5 month period to make sure non of the above mentioned happens. The deadline was 14. March 2007 since we also wanted to launch the website for the CeBit 2007 fair in Hannover. The implementation part of the project was split in the following phases:

Buffer period for external software integration

- Phase 1: Blueprint
- Phase 2: Technical concept
- Phase 3: Implementation
- Phase 4: Going Live
- Phase 5: Support

4.1 Phase 1: Blueprint

In this phase we analyzed our old website and decided to break the content into two categories - for new customers and for current customers. All information regarding the first category was

Website breakdown

published for open viewing on our website, while the second type of information was only available after registration and logging in to the website. The idea of this split was to reduce the irrelevant technical information, which was not so interesting for our new customers and focus on structuring it into our registered section, where our current customers can search for it convinietly. The website structure was designed, reviewed and accepted by the sales and marketing departments in 6 weeks time.

4.2   Phase 2: Technical concept

The most important task in this phase was to ask ourselves, which of the things are doable and which not. Specifically speaking the Flash header, the content management and the user login module. We planned approx. 4 weeks for that task, but we needed considerable more since all those topics were quite new in the SAP world. The good thing was that we learned very fast.

There were no SAP Notes or any SDN articles mentioning a Flash header built in SAP NetWeaver Portal. If such thing was possible at all, was a task we had to find out ourselves. Therefore we invested a lot of time on reaseach, which of course if successful would have covered for the time loss. Well at the end it was successful and the key to our success was called XML streaming. Using XML streams from the portal to the Flash environment we managed to transfer the complete navigation structure and even some other useful information like login details, user name, etc.

Flash header

Using the role concept we could generate new navigation structures depending on the role of the user. If the role changes, then the user gets the new navigation automatically assigned without any manual intervention. The Flash header enables different display schemes for different depth levels, whereas the standard SAP navigation allowed a maximum of 2 depth levels to be dispayed in the main navigation menu. (see Screenshot)

Generating navigation menus automatically according to the user's role

Screenshot: Our portal solution at www.ibsolution.de

The other two technology building blocks - the CMS and the login module were a bit easier to implement. There are plenty of CMS solutions on the market so at first we decided to go for one of them. An important prerequisite was that we should not install additional software or buy additional hardware to make the solution running. This requirement lowered the possible solutions to two. Basically those solutions use the KMC repository[4] as storage and therefore the packages can be offered as a plug-in to the SAP NetWeaver Portal. Unfortunately since we were already ahead of time, we had to go for a quicker solution, which was self-implementation based on XML forms[5]. For the future we plan to either incorporate one of our partner solutions or use the planned SAP Web Page Composer product from SAP, which is to be released in Q3 2007 and would also offer some CMS functionalities.

Content management system

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[4] KMC Repository: An information storage that is part of SAP NetWeaver Portal, where you can upload all necessary documents, images and web pages. The CMS is retrieving this data on demand to render the web pages on the website.

[5] XML Forms: Forms, which include content fields that are later filled out by the editors. The information is saved as XML (eXtensible Markup Langugage) and later used for the generation of the web pages.

At the same time we had to create concept for registration and login processes on the website. For the task we used the SAP User Management Engine (UME), which is available through a very neat and handy interface that is also pretty good documented. The concept included the creation of a specialized user interface that will guide new users through the registration process. Each user gets a specific role assigned, according to his topics of interest. The login process is based on the Single-Sign-On idea, meaning that once the user has logged in, he has all the information he wants at his disposal without the need of further logging in to other systems.

Registration and login modules

Project phase 2 was originally planned till mid January, but because of the extensive research and the large number of challenges we finished it at the end of February. This of course automatically meant that the implementation phase should be stressed regarding time.

4.3   Phase 3: Implementation

After we managed to solve all technical challenges in phase 2, now it was time to build the solution together. First on the implementation front was the Flash header, followed by the dynamic navigation and then each of the role-defined menus.

Dynamic Navigation allows for context sensitive links and articles

The second implementation building block included the page layout (main title plus teaser). Here the challenge was to implement the dynamic content on the right side, which had to be dependent on the main page content. The contact person, events calendar and hot product teasers were only some of the large number of the so called dynamic content.

After all the texts, images and graphics were ready, all that left was to build the pages together. The intensive work connected with the adaptation of the Portal software now brought its fruits. We have built all the pages and links between them within a week. This is a very good achievement if we consider the volume of information that the website has.

The final website was created within a week

4.4   Phase 4: Going Live

The system landscape for the Portal solution was based onto two machines. The development system resided on a VMWare Solution and the productive system on a separate physical machine, which was shielded behind a firewall. There was a possibility to transfer content, roles and pages between the two portals using the standard Portal transport functionality. For the

KM content we used ICE Transports, which fitted perfect to our requirement to make periodical updates.

We mentioned the word performance already in section Challenges. Our goal was to have the fastest SAP NetWeaver Portal on the market, which did not mean that we wanted to invest alot of money in hardware gadgets. The solution reached us shortly before the launch. Then we received a Citrix NetScaler system, which we've used to further optimize our web presence. NetScaler is popular for its capabilities since Google used it not a long time ago for search optimizations. The system is used for load balancing and as an application firewall, incorporating complex caching mechanisms, which improve significantly the website performance.

Citrix NetScaler provides performance optimization

4.5 Phase 5: Support

There is not much to say here. The content management system was set up and ready for use by our sales and marketing departments. Besides the complete support was handled to our Service department, where also all the other systems are being observed. One of the main arguments for using SAP NetWeaver Portal was that we had the know-how within the company and therefore we could solve problems quick and cost effective. In addition to our operating costs, we're planning a total cost inspection.

Our own SAP know-how reduces the support costs

5. Hardware/System setup

Sites that include customized programming are expensive and take long to implement. The art here was to use the standard functionality that SAP NetWeaver Portal offers.

Our main project goal was to use our own know-how in managing the website on the long term. An additional challenge was the performance and the loading time of the start page, which in any case should not have been worse than those of our old website.

To determine the sizing for the hardware we had to define how many users do we expect to register and how many of them would access the page simultaneously. Additionally in account came the possible downloads per user, which are also connected with intensive database access. At the end we based our hardware on the standard SAP sizing guidelines.

Sizing depends on the concurrent users

We launched our website with the following system landscape:

- SAP NetWeaver Portal NW04s with SP10 on a Windows 2003 Server x64 and Oracle xxx database

- Citrix Netscaler

- Hardware: DELL Poweredge 2950 with 2 x QuadCore CPU, 8GB RAM and 6x80GB HDD

The result of our effort was a very well performing website that withstanded the load of more than a thousend users and at the same time ran on a relatively low-priced hardware. So we found a way to bring this solution also in the range of small companies that cannot afford to go for big solutions.

Acceptable hardware costs allow for SAP

➔ The solution is available online at www.ibsolution.de.

6. IBSolution GmbH

IBSolution's model for successful projects has always been: The right technology at the right point of time and in the right doses.

IBSolution started back in 2003 with a small team of 6 employees in the city of Heilbronn, Germany. Today the consulting house is among the top most companies when it comes to SAP NetWeaver consulting with more than 80 employees in 4 offices around Germany (Berlin, Dortmund, Heilbronn and Munich).

We see us as connection between the business challenges that our customers face and the competence needed on the side of the software producer. As a full service provider we have know-how in all areas related to SAP NetWeaver. We can support you with complete solutions, or even with our own products, which would be adapted to your needs as flexible as possible.

Thereby we are always focused on a clear objective: The enhancement of your performance capabilities. And we know all the things that matter. As service partner and special expertise partner of SAP we are always inside the new and innovative components implementation. Being leaded by our industries know-how we develop future-oriented business solutions, which help you beat the competition and use new challenges as chances to grow even more.

7. About the author

The author's impulse is always to apply newest technology in a meaningful way, so that the IT would always prosper through the large competitive markets.

Loren Heilig is one of the founders of IBSolution GmbH and since then (2003) he is one of the managing directors in the company. Additionally he was the co-author of both SAPPRESS books - SAP NetWeaver and SAP NetWeaver Master Data Management. Besides some more publications, he is also regulary holding lectures at universities and conferences on a higher level.

Before the founding of IBSolution Loren Heilig had a project leading function at SAP Systems Integration AG and SAP AG. There he was responsible for the building up a BW consulting team with emphasis on human resources. He also was coordinator for BW/HR projects at Saudi Aramco (Saudi Arabia). He studied at the University of Applied Sciences Karlsruhe, where he graduated as an industrial engineer.

At IBSolution GmbH he is responsible for the Research and Development departmnet, where he is extending the consulting and product know-how in the following areas: Master Data Management, Service Oriented Architecture and External Facing Portal.

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