Keep the savings, increase functionality
How OpenCms enables us to do both
I Want To Talk About ...

Part 1: Short Introduction
Part 2: Changes & Enhancements
Part 3: Challenges
Part 4: Measures
Part 5: Conclusion
The system we are talking about ...
**SHORT INTRODUCTION**

**Our move to OpenCms**

– Coming from a grown Fatwire Content Server 5.5, Websphere, Oracle 9 environment we were faced with high costs, poor flexibility and maintainability in 2006.

– 2006/2007 we have moved towards an Open Source Plattform with OpenCms as core application saving a remarkable amount of money.

**Key features**

– flexible and expandable functional and technical architecture based on OpenCms

– 30+ sites, 300 workplace users, three styles supported with templates

– 15,000 – 70,000 elements per site (pages, folders, xmls, pictures)

– 40,000 to 300,000 page impressions per month / per site

– support of different channels for content delivery (own site, insurance agencies sites, saving & loan bank sites)

– application integration in OpenCms pages

– Create and maintain hundreds of online forms with so called form generator

– multiple usage of content in different sites (content sharing)
**SHORT INTRODUCTION**

Infrastructure overview
Short Introduction

Application architecture
Short Introduction
What happened since then ...
Changes & Enhancements

More sites, additional style

- Expanding number of sites from 30 to 60.
- Adding new style & template set for biggest site.
**Changes & Enhancements**

Providing special weather information for registered users

- Registered users get access to special weather informations e.g. rainfall, soil humidity – useful for farmers.
- Application takes raw data and builds maps, graphics etc. based on user preferences.
Changes & Enhancements

Microsite Feature

- Users can create microsites for special target groups or campaigns with a set of templates.
- Microsites can appear in a layer, a new browser window or as a stand-alone site.
- Users can change the style of the microsite by changing the css-files.
- Second rendering channel provides a flash version of the microsite while supporting non-flash-browsers, search engines, bookmarking.
Changes & Enhancements

Integrating news agency content

- New regional portal functionality for customer retention integrating news agency content delivered as xml and combining it with regional sport news.
- Providing separate and simple workplace access towards newspaper editor.
**Changes & Enhancements**

**Improving availability**

- Having two productions nodes in one data centre working as a cluster was fine.
- Now we have added a third production node in a distant data centre for disaster recovery.
- Implementing global load balancing for improving availability.
Changes & Enhancements

Service- and process integration

- Moving from shop window to integrated service platform demanded enhancements in the application architecture.
- In the future most of the sites will cooperate with other applications and insurance backend processes.
Challenges

Live isn’t easy going ...
Challenges

New browsers

– Whole system was build for MSIE 6/7, Firefox 1.x as target browsers.
– Since then new browsers appeared – with interesting behavior.
**CHALLENGES**

**New content & navigation concepts**

- Increasing use of layers for further information etc. leads to new questions.
- While creating content and rendering is quite easy, it is much harder to answer questions regarding SEO, full-text search and bookmarking.
**CHALLENGES**

Increasing number of applications & security questions

- More applications allow more service. And most application collecting data with fields.
- And any field can be vulnerable for cross site scripting, sql injection and other fine things.
**CHALLENGES**

**Use of AJAX**

- AJAX allows cool behavior, interesting service etc..
- Unfortunatly AJAX requests do not have reference to the single site in a multi-site system.
- Session can't hold anything due to cluster performance.
- AJAX requests have to work in the offline projects to.
Challenges

Combining content with application

– Combining content with application logic and data changes the way of creating content by users.
– Used to work with wysiwyg and creating „just“ content users now have to add IDs etc.
No one likes JSPs

- We do have programmed many JSPs, XMLs etc..
- But have You ever met a client in sales or marketing interested in that?
Challenges

Competition from Typo3 & Co.
CHALLENGES

Other nice topics to think about

– Building a complex system needs staff training during the project and afterwards.

– Infrastructure has to be reviewed and renewed after several years.

– We are still working with something like OpenCms 6.5 or 7 beta.

– Sometimes expectations are higher than even the most powerful content management system can fulfill.

– Growth of content data base can't be addressed by buying a 500 GB mobile hard disk at a cheap online store.

and

– Reducing costs with the project was fine with our clients. But 2010 the provider contract ends. And expectations for further reduction are fundamental.
Measures

How do we face the challenges ...
Measures

Application monitoring

- We do collect application behavior data with JMX and convert JMX-messages in SNMP.
- We use webperform.com for a permanent external view on our sites.
Change Control & Staging

- Starting even with our development environment we document every new version or application for all stages.
- No new application should be installed without reference to bug or change request in the ticket system.
- Staging has to follow our deployment process rules.
Measures: Split it up

Splitting up the pages

- We do split up more complex pages in several elements.
- Less experienced users can still change the content with simple forms or wysiwyg, while „professionals“ can configure behavior, application integration etc.
Measures

Speeding up development

- Faced with a huge number of change requests from different projects and clients we merged all projects as components of one large project.
- All project managers or account managers participate in the bi-weekly sprint planning.
- Dependencies and synergies can be detected and addressed in common.
## Document dependencies

- Faced with many OpenCms modules, applications and configurations changed in different projects we needed an overview easy to understand by non-technical project members too.
- Simple MS Excel Sheet proved as sufficient.

<table>
<thead>
<tr>
<th>Funktion</th>
<th>Modul</th>
<th>dependencies</th>
<th>wars</th>
<th>konfigurationen</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY/ exclusiv Login</td>
<td>oev-cms-sy-exclusiv-module</td>
<td>oev-cms-kern-module, oev-cms-persistenz</td>
<td>oev-sy-exclusiv-war, oev-sy-sy-exclusiv-jnd-binding-service.xml</td>
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</tr>
<tr>
<td>Funktionalität zum Signieren mit dem Servlet</td>
<td>oev-cms-kern-module, oev-cms-persistenz</td>
<td>oev-sy-exclusiv-war, oev-sy-sy-exclusiv-jnd-binding-service.xml</td>
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<tr>
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<td>oev-cms-wpv-module, oev-cms-wp-v-module</td>
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<td>oev-cms-vg-h-module</td>
<td>oev-cms-formular-module, oev-cms-kern-module, oev-cms-kern-integration-module, oev-cms-persistenz</td>
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<tr>
<td>VGH Pensionskassenrechner</td>
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</tr>
</tbody>
</table>
Permanent security & performance testing

- We do check performance with IBM Rational Performance Tester at regular intervals or at major changes.
- We do check application security with IBM AppScan at regular intervals or at major changes.
MEASURES

Regular checks of logfiles

- Even if there's no breakdown, performance problem etc. we do check logfiles.
- There will be always things like nonpractical logging configurations etc..
- Cleaning up logging configuration regularly makes logfiles easier to read then You need them.

1. ERROR-Einträge

CmsInclude für „breadcrumbElement“

Log-Einträg


Anzahl Einträge

Profil: 3195
Produkt: 3390

Ursache

Die Integrations-JSPs (Anwendungsintegration, z.B.: Betreuungsanzeige) verweisen noch auf das Element 'breadcrumbElement'. Dieses existiert nicht mehr und daher dieser Log-Eintrag.

Lösung: aus den Integrations-JSPs entfernen.

OpenCmsCore-Klasse

Log-Einträg

2009-10-16 00:12:10.999 [org.apache.main.OpenCmsCore or OpenCmsCoreGerman] ERROR: Reading resource from path: "/html/service/idm/hotdepartment/main_voter/main_voter_detail/index.html", required permission: "r".
2009-10-16 00:12:10.999 [org.apache.main.OpenCmsCore or OpenCmsCoreGerman] ERROR: Reading resource from path: "/html/service/idm/hotdepartment/main_voter/main_voter_detail/index.html", required permission: "r".
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Anzahl Einträge

Profil: 806
Produkt: 897

Ursache

INFO-Einträge

CmsLinkManager

Log-Einträg

2009-10-16 00:12:10.999 [org.apache.main.CmsLinkManager] ERROR: CmsLinkManager: failed to resolve link to resource "~".

ANZAHL

Anzahl Einträge

Profil: 25889
Produkt: 34747

Ursache

Für diesen Eintrag gibt es grundsätzlich zwei verschiedene Ursachen. Es entsteht, wenn ein Link in einer JSP erstellt wird, aber das Ziel nicht existiert.

- Linkersetzung: bei logging
- OpenCms erkennt diese Links als Fehler.

Es sind, „tote Links“ enthalten. Diese würden auch über die Administrationsoberfläche von OpenCms ermittelt werden können.
Back to my promise ...
CONCLUSION

Keep the savings and increase functionality is possible ...

– Open Source / OpenCms enables You to keep control over application & budget!
– OpenCms is stable and expandable enough for intense use – it’s hard to reach limits.

... as long, as You want to do Your job ;-)

– Raising complexity is o.k. – if necessary and if someone will manage it!
– Better think in business terms than cost saving, technical solutions etc.!
– Challenge Your running system!
– Always keep in mind that Open Source does not mean You can do things by yourself – You have to do so! Every day!
Thank You!

**Speaker**

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