Success Story
Deployment of b.i.t.®–DMS-Server
at Company A

Version 1.3 – 23 October 2013

© 2013 b.i.t. GmbH Darmstadt, www.b-i-t.de

Summary

Using b.i.t.®–DMS-Server the quality and flexibility of *Company A*'s e-mail marketing has improved significantly.[1] At the same time, the monthly costs could be reduced to a mere 1% and handling of the system used became much easier.

In addition to the newsletter delivery, the b.i.t.®–DMS-Server is used for sending transaction mails, customer data entry (questionnaires, forms), generating customized Web pages and PDF documents.

---

[1] In this document, the company's name is anonymized in order to ensure that potential competitors of *Company A* may not gain internal information. The name may be disclosed to prospective b.i.t.®–DMS-Server customers under the condition that this information will be kept confidential. Also, under this condition may the system be demonstrated.

Table of Contents

1 Requirements at *Company A*

The *Company A* markets products for end consumers in a variety of European countries. For several years, they have mainly used the Internet for marketing and distribution. Besides the Web site, which also has a Web shop, e-mail newsletters play a major marketing role.

The company uses the following IT systems, which are vital for running their business and for maintaining all data relevant for sending e-mails:

- the system *Update7* (http://www.update.com/de) as CRM system for maintaining all data relevant for marketing,
- an SAP system as ERP system for maintaining all business transactions,
- a Data Ware House/BI system for business analysis.

The company sends approx. 200,000 e-mail newsletters per month to their existing customers. Additionally, bulk mails (e.g. special offers) and transaction mails (e-mails for new customer service, order confirmations, delivery confirmations etc.) are sent.

2 Initial Situation

2.1 The System Used

Until the beginning of 2012 *Company A* employed the services of the e-mail service provider P[2] for sending their e-mail newsletters. *Company P* is one of the largest and most important providers of its kind in Europe, offering their services over the Internet. The recipient data, e-mail distribution list, campaign definitions and e-mail contents are stored on *Company P*'s servers and can be maintained using a Web interface. The company's servers perform the e-mail delivery and, using the Web interface, allow various kinds of evaluation of the performed e-mail campaigns.

Besides working with a Web interface, *Company P*'s system allowed the FTP-exchange of various selected data (e.g. customer master data) and to trigger special operative steps using Web services. *Company A* used both options for automating their newsletter delivery. This way batch jobs performed the exchange of customer master data, newsletter unsubscriptions and bounces.

The advantage of using the services of *Company P* for sending the newsletter instead of using *Company A*'s mailserver was that the e-mails were delivered faster and more reliably. Especially for sending bulk mails, using a complex mailserver infrastructure is indispensable.

2.2 Disadvantages of the System Used

Using the services of the e-mail service provider P also had some disadvantages.

Consistency of customer master data

Since the e-mail service provider P stored a copy of all master data, it was necessary to perform complex comparisons of the master data. This was done using batch processes. However, complete data consistency in both systems at all times could not be guaranteed.

Campaign definition

The definition of campaigns, which included the mailing contents and the customer selection, was done using *Company A*'s CRM System Update7. These definitions had to be transformed into corresponding definitions in the e-mail service provider P's system. Even though this was supported by several programs, manual entries were necessary, which proved to be a source of error for the transformation.

---

[2] In this document, the name of the company is not disclosed in order to ensure that potential competitors of *Company A* will not gain internal information. The name may be disclosed to prospective b.i.t.®–DMS-Server customers if this information is kept confidential.

Evaluations

The e-mail service provider P's system offered a nice interface for evaluating the mailings. Unfortunately, these evaluations were not suited for controlling the marketing activities. These evaluations referred to the mailings (how many times they were opened or clicked). What is needed, however, is a linkup with data (sales, returns and other contacts) stored in *Company A*'s other systems, such as their CRM, SAP or DWH/BI systems. But automatic and seamless linking of this data was not possible.

Customization

Customizing mailing contents was possible only in a rather limited way. Using predefined macros, customization was possible to the extent of addressing the customers by name and according to their gender, but not using particular attributes (country, language, last order date, turnover in a period of time, attributes about a person's health disposition).

Integration of Web pages

It makes sense to use e-mails only as starting documents with a newsletter, and host detailed information on the Web pages. This could not be done using the e-mail service provider P's services. Additional Web pages were treated differently from mailing contents, which caused discontinuity for tracking and customization.

Maintaining contents

Except for macros for customization there was nothing else to simplify the definition of contents. This meant that prior to each newsletter delivery 22 documents (11 language/country combinations, HTML and text versions of each e-mail) had to be entered into the e-mail service provider P's system. This was laborious and error-prone (concerning e.g. the link consistency and the currency of publishing information).

Transaction mails

Delivery of transaction mails was not supported completely. There were functions which enabled sending single e-mails but they had been integrated in the service provider's system concept afterwards. The particularities of transaction mails could not be taken into account sufficiently and therefore productive usage was not sensible.

Further aspects

In addition, there were the following problems: Errors in the generation of mails coded in UTF-8, problems with processing HTML contents that were standards-compliant, insufficient classification of bounces etc.

2.3 The Solution

To eliminate the disadvantages of the system in use the companies worked together conciliatorily. But even solving only a few of the problems would have required both companies to invest 10 thousands of Euros. Therefore, *Company A* evaluated the services and products of alternative vendors. In a very intensive evaluation phase 20 offers were analyzed, among them the 15 most important service providers in Europe. Although these offers differed partly from the e-mail service provider P's offer, there was not a single company which could offer the desired flexibility at an appropriate price. This is why *Company A* decided to use the b-i-t®–DMS for their mail delivery.

3 Integrating the b-i-t®–DMS

b.i.t.®–DMS-Server is a system for document maintenance. The system allows maintaining anything that can be described formally (using XML). Maintenance in this context means: Compiling documents from partial documents (templates), storing versioned documents, delivering documents (as HTML pages, HTML/text mail, PDF documents, e-books, and if a 3D-printer is used, also as a real object), logging the creation (e.g. the e-mail delivery) and the document usage (e.g. opening of an e-mail, Web site calls, data entry in forms).

b.i.t.®–DMS-Server provides simple basic functions that can be combined into powerful systems. Because of its conceptual plainness, the b.i.t.®–DMS-Server easily integrates in existing system environments.

In the following we will describe how b.i.t.®–DMS-Server appears to single user groups in *Company A*. Afterwards, the structure of the system used will be described briefly.

3.1 The System from the Users' Perspective

E-mail delivery

For bulk mail delivery (newsletter), in the CRM System Update7 an activity is created and then via a selection, mailing data records are generated. A click on the "Send" button triggers the e-mail delivery. For each mailing data record the DMS stores the delivery status (successful / unsuccessful) in Update7.

The mailing delivery can also be started from the template repository's interface or using a command line program. For both methods only the ActivitySeqNo from Update7 must be specified as a parameter.

It is possible to add new mailing data records to the activity and then continue the delivery (as is customary for activities which describe transaction mails).

Unsubscriptions and bounces are automatically imported into Update7 to prevent further mails to those e-mail addresses.

Definition of the contents

For entering the mailing content usually a text editor is used. Simple XML documents are created where the layout that is to be applied and the texts to be used will be entered.

Instead of a text editor Web forms could be used. However, this option is not being used at the moment, as working with a text editor is as yet more efficient.

Layout definition

Normally, the layout definition is done by agencies. For the development they use software products which they know well (e.g. Adobe products). *Company A* receives layout templates in XML format, which comply with the DMS conventions.

Company A employees who have a basic knowledge of HTML-usage can overwrite or change those layout definitions, if necessary.

Analysis

All information about the delivery (sending an e-mail) or usage (opening an e-mail, calling a Web page, entries in a form) concerning a document can be accessed via an SQL interface. Based on this interface evaluations are generated, which can be used in MS-Excel, Update7 or the DWH/BI system.

Programming (other systems)

The system services can be used by other systems (e.g. Web shops, forms on a Web page). To do so, only a POST request must be sent to the DMS. Particularly, sending transaction mails is done this way.

Programming (system extensions)

The DMS is based on the innovative Web framework Scala/Lift. This framework is very well suited for designing interactive Web pages. All of the options the framework offers can be used for customization. *Company A* has not used those possibilities yet because the DMS functions for implementing their present requirements made additional programming unnecessary.

Management

Each management level in the company can easily access all the mailing information they need. Using a Web interface, call-center staff can display any personalized mail to a customer, employees who edit the content and layout have access to any archived version of documents and changes made to them. It allows analysts to define special evaluation criteria. In the analysis all information contained in the DMS can easily be connected with those stored in other systems. This way management has access not only to the most important information concerning the results of the mailings but also to internal work processes.

3.2 Technical System Structure

Das *Company A* uses several b.i.t.®–DMS-Server, which run on different computers in their internal network and perform different tasks.

For document delivery (sending e-mails, delivering HTML pages and PDF documents) over the internet, a **production server** is available. This server has access to all shared content in the content repository and uses a POSTGRES database for the storage of logging and tracking information. For sending e-mails Amazon SES is used.

An **integration server** is available for integrating new content and for testing. Employees of the company as well as external editors can access this server. Also located on the integration server is the central content repository. Sending (test) e-mails is done using the company's SMTP server, not the production server.

Every employee can start a **local instance** of the b.i.t.®–DMS-Server to edit content or for testing purposes. It uses an integrated database as well as a local copy of the contents from the content repository. Sending (test) e-mails is performed using the SMTP server. It is possible to work with the server using a Web browser, the repository's local interface or a help program of b.i.t.®–DMS-Server. Using the repository's interface the synchronization of the repository and the integration server is done.

The b.i.t.®–DMS-Servers do not impose any particular requirements to the hardware or the computers that are used. Normally, using an up-to-date desktop PC or laptop is sufficient. Only the production server database requires a little more, this depends on the amount of data to be stored. Currently *Company A* has approximately 100 million logging and tracking data records a year.

The b.i.t.®–DMS-Server requires a current Java runtime environment. The production server and the integration server both run on Linux systems. *Company A*'s local instances run on Windows servers, Windows 7 or Windows XP, the agency's local instances usually run on Mac OS.

4 Experiences

4.1 Higher Response Rates

From a marketing point of view the most important result is: that using the system yields higher response rates (opened mails, orders). Of course, this is not owed directly to the usage of b.i.t.®–DMS-Server. But by using b.i.t.®–DMS-Server it is easier and quicker to define customized contents, which results in a high customer acceptance. One result of this was, for example, that the newsletter opening rate increased by 20 percent. Special mailings (e.g. for new customer service) even reach opening rates of 60%.

4.2 Highly customized contents

It is possible to customize contents to an extent never before thinkable. So, a major mailing campaign was defined for new customer care. Disregarding the personalization, the campaign uses 200 different content variants. These variants are based on attributes such as the date of the first purchase, the time since the last customer contact (order or e-mail), the number of follow-up orders, language, country etc. Creating, maintaining and using such a number of content variants is practically impossible using one of the customary systems.

4.3 Seamless Integration of Different Content Types

Different kinds of target documents are generated: Texts for the text body of e-mails, special HTML for the HTML-body of e-mails, HTML for Web pages and Web forms, PDF documents that are delivered online or as a pre-press for letters, as well as images, which can be, for example, integrated into Web pages or PDF documents. The same techniques can be applied for creating, customizing and maintaining any kind of document. This enables simple work processes and provides documents whose content is consistent across documents.

4.4 Extensive and Safe Tracking

Document usage (sending an e-mail, opening an e-mail, calling an HTML-link, entries made in forms) is logged by a unified mechanism. This allows seamless tracking across different document types.

For tracking no questionable security-relevant techniques, such as using cookies, JavaScript or GoogleAnalytics, are necessary.

It is possible to use strong encryption methods which will prevent decoding by third parties.[3]

Strong encryption can also be used to protect particular contents against access.

The actual mailing-system-specific functionalities like newsletter subscription and unsubscription are realized based on the tracking mechanism.

4.5 Seamless Integration with other Systems

Using HTTP-requests, the b.i.t.®–DMS-Servercan access other systems and also let them use its own functionality. This way, the b.i.t.®–DMS-Server can be integrated seamlessly into existing system environments, and without redundant data storage.

For sending e-mails the b.i.t.®–DMS-Server accesses target group selections and recipient attributes in the CRM-System Update7. The results of the delivery, such as registrations, bounces or unsubscriptions, are stored in Update7.

Forms on the Web site and the Web shop use the b.i.t.®–DMS-Server functionality for the validation and storage of data input, or trigger the delivery of transaction mails (registration, reset of passwords, order confirmations and sending customized PDF-documents).

The SAP system uses b.i.t.®–DMS-Server for sending delivery confirmations, which among other things allows order tracking.

For evaluation purposes, data is imported from the b.i.t.®–DMS-Server into the DWH/BI system or special evaluations are performed based on SQL queries.

4.6 Support of Workflows

Due to the clear client-server structure of the b.i.t.®–DMS-Server and the integrated distributed versioning system it is easy for different people to co-operate and work with documents at the same time.

Particularly the versioning feature allows access to different document versions at any time and documents delivered in the past can be re-created.

4.7 Scalability and Failure Safety

Not only can the b.i.t.®–DMS-Server process parallel queries at the same time, it also allows parallel usage of several servers to increase the throughput. For example, a newsletter with more than 50,000 recipients is not sent via the production server but using a special sending server. This is largely transparent for the users.

---

[3] The structure of tracking links in e-mails is often easy to decode. A known tracking link makes it easy to call the e-mails of all newsletter recipients and thus access the personal data of all recipients.

In case of a hardware failure or maintenance of the operating system software, all queries are forwarded to a substitute server, preventing long down times of the production server.

For an update of the b.i.t.®–DMS-Server software no substitute system is needed, as the down time for an update is only a few seconds.

4.8 Easy System Administration

The b.i.t.®–DMS-Server is a Java-Web application and can be used in the usual Web servers or application containers where it can be configured. For the production server and the integration server a Jetty-Server is used.

It is also possible to start the b.i.t.®–DMS-Server as a Java program. *Company A* employs this kind of usage for their desktop computers.

In both use cases not much time is required for system administration.

4.9 Data Security

If possible, documents are accessed via encrypted protocols (HTTPS) and can be protected using passwords.

The only uncoded content that leaves *Company A*'s internal network is the content of e-mails. Master data is not stored with their personal attributes or entries made by users on other companies' servers. This simplifies the compliance with legal regulations for data security and also protects company confidential information.

4.10 Lower Costs

Creating and maintaining the document contents saves most of the costs. As the documents differ strongly in quality compared with the documents created before, plus the costs depend on the extent to which templates are used afterwards, it is difficult to compare the costs directly. But it is safe to assume that the definition of similar mailings will reduce the expenses to a mere 10 percent of what was spent formerly.

The running costs for mail delivery were reduced from approx. 1,000.00 to 10.00 € per month.

The one-time costs for deploying b.i.t.®–DMS-Server corresponded more or less with the incurred costs for an (incomplete) integration of the former system.

4.11 Summary

After using b.i.t.®–DMS-Server for two years, we get clear picture that the system fulfills all of the requirements and is extremely reliable and robust.

In addition to the mentioned positive experiences there are a number of further aspects where an improvement was achieved (e.g. bounce handling, validation and automated testing, easy creation of individual analyses).

The b.i.t.®–DMS-Server runs smoothly. Only right after deployment two errors had occurred, which were due to a defect in the system software. They could be corrected by an update of that software.

In *Company A*'s opinion there is currently nothing that could be improved. After deploying the system in the call center to enable those employees to send single mails directly from Update7 and using the system in an SAP system for creating print masters for invoices and delivery slips, the customer's entire electronic communication is done using b.i.t.®–DMS-Server.

Informationen about b.i.t.

b.i.t. beratungsgesellschaft für informations-technologie mbh is an innovative company. For almost 20 years we have offered our customers high quality services and products.

If you like to have more information about us, do not hesitate to contact us!

http://www.b-i-t.de/ge/impressum.html