



Project Proposal

Customer Care Center

written as part of the lecture

Workflow Modeling and Proces Management – 188.924

advised by

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1 Project description

The goal of this project will be the creation of a program which manages customer requests from different sources. Customers can contact the customer care center via e-mail, Facebook or Twitter. The program automatically polls requests from these sources. Incoming requests are enriched (e.g. with a unique ID) and passed to an agent who processes the request. The customer also immediately receives a confirmation message indicating the customer care center received the request. All requests are logged and there is also a backup process which translates the requests to XML format and syncs it with a Dropbox account. The different EIPs, components and their purposes will be described later on.

1.1 Features

- receive user ticket requests via different channels (email, Facebook, Twitter)
- route ticket requests to different positions (agent, calendar)
- append messages to existing tickets
- filter spam mails
- reply to messages
- convert logs to XML and backup via a Dropbox account

1.1.1 EIPs

1. Content Based Router – Distinguish between message channels (email, Facebook, Twitter)
2. Message Filter – will be used to filter spam (based on a blacklist)
3. Aggregator – if a ticket is closed the aggregator is used to combine all messages and save them in the database
4. Splitter – will be used to separate facebook posts (as they are grouped via polling)
5. Wire Tap – will be used to log incoming requests and forward requests to employees at the same time
6. Message Translator – will be used to translate requests into a XML format
7. File Transfer – take the translated XML-Backup and sync it with a Dropbox account
8. Logging EIP – will be used for logging purposes (see wire tap)
9. Content Enricher – get Ticket IDs from existing business cases
10. Seda Queue – will be used for syncing Twitter tweets
11. Polling – will be used to get emails, facebook-posts

1.1.2 Components (incl. Beans/Processors)

1. Dropbox – will be used to store backups of the requests (in XML format)
2. Google calendar – will be used to store appointments of customer care center employees with customers
3. Database + camel-mongodb – will be used to save all exchanged messages with a timestamp
4. Facebook – company has a facebook profile which can be used by customers to contact the company
5. Twitter – company also has a twitter profile which customers can use to post requests

6. camel-mail – besides facebook and twitter customers can also contact the company by mail
7. camel-velocity – this component will be used to create auto response templates (e.g. for the response that the request entered the customer care center)

2 Graphical Process Model

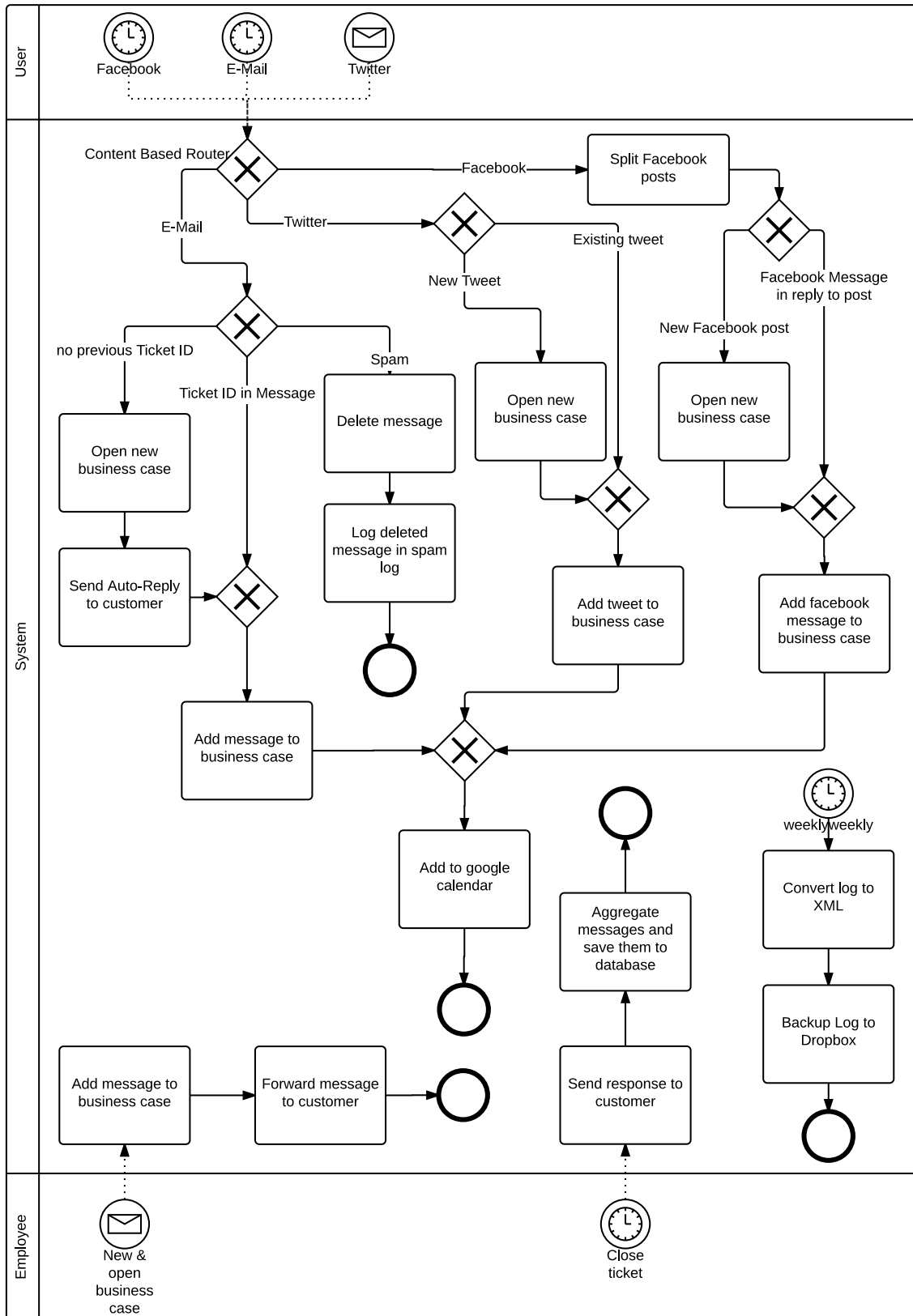


Figure 1: BPMN 2.0 Model

2.1 Description of the graphical process model

The user can send requests to our helpdesk via Facebook, email or Twitter. Depending on the input channel, a content based router decides which path in the further process the request takes. E-Mails are divided in three categories

1. New requests: A new business case is opened, an auto-reply with the new ticket-id will be generated and returned to the customer.
2. New mails for an existing ticket (where the subject contains a ticket-id): If there is an open business case with this ticket number the message will be added to it.
3. Spam (will be filtered, deleted and logged)

In case of a Twitter-request it will be checked if it is a reply to an existing Tweet. In this case the new tweet will be added to the existing business case. Otherwise a new business case will be opened.

For Facebook posts it works similar to Twitter with the only difference that Facebook posts are split (since they are polled).

The business cases are then saved to a Google calendar (to schedule customer appointments). Employees can add messages to business cases and forward them to customers.

On a weekly basis the logs are converted to XML files and saved to a Dropbox folder (as a backup).

3 Architecture

- Application concentrated on business logic
- Use of a MongoDB
- Apache Camel for message routing
- Dependency Management (Maven)

4 Cost estimation

Table 1: Cost estimation

Cost estimation	%	hours/member
Management (meetings, documents, records, documentation)	20	10
Requirement specification	5	2,5
Design	10	5
Coding	30	15
Testing	10	5
System- and Integrationtests	15	7,5
Overhead(error handling, bug fixing, riskmanagement)	10	5
Sum hours/member	100 %	50
Sum overall hours		250
Estimated overall costs		20.000 €

Teammembers: 5
Wage/hour: 80 €

5 Risks

Based on our projects domain, the following risks may arise during the development process:

- Absence/loss of a team member (e.g. because of illness)
Countermeasures: Depending on progress and state of the project, either other team members will take over responsibilities or the project scope will have to be reduced, if an agreement can be found with the course administration.
- Bad decisions regarding software architecture and choice of technologies
Countermeasures: Extensive discussions about the selection of technologies, tools and components. Careful planning of software architecture.
- Lack of Quality (e.g. crashes, error messages)
Countermeasures: Regular, extensive, automated testing.
- Inaccurate estimation of effort
Countermeasures: If a task or feature appears to require drastically more work than initially estimated, the workload will have to be shared with fellow team members.

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