

8.1. Customize Analysis - Decision Maker

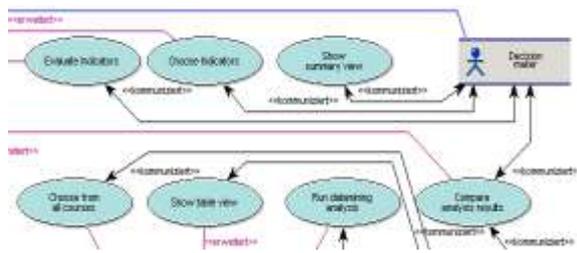


Figure 2. Use Cases *Decision Maker*

The *Decision Maker* (see Figure 2) places high emphasis on a quick and effective overview of several key metrics of the e-learning offers and the e-Learning system as a whole. In turn, the analysis of individual e-learning resources is of minor importance for him/her.

For this purpose he/she chooses relevant indicators (*Choose Indicators*) and evaluates them (*Evaluate Indicators*) based on the analysis results the system provides.

Like the *Domain expert*, it is equally important for the *Decision maker*, to identify changes and trends of key figures (indicators) by comparing results of analysis for different time periods (*Compare analysis results*).

8.2. Customize Analysis - Domain Expert

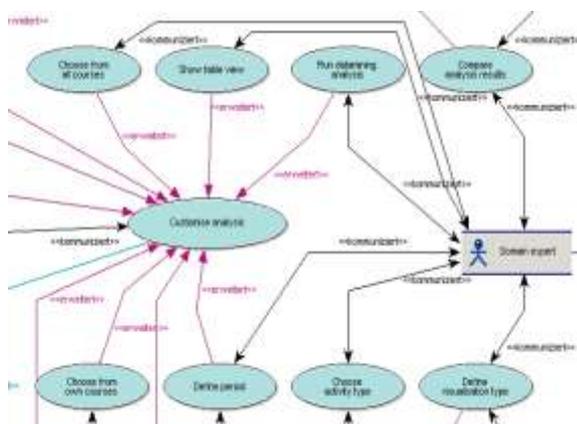


Figure 3. Use Cases *Domain Expert*

The *Domain Expert* (Fig. 3) has a strong analytical focus and works regularly with the system. Hence, a comparatively wide range of relevant use case exists for him/her.

Unlike the *Decision maker*, the *Domain Expert* usually operates at the level of concrete courses. In opposite to the *Lecturer*, he/she has the possibility to access all courses within the system.

Due to his/her stronger technical background he/she is also able to use more advanced analysis

functionalities such as data mining analysis (*Run data mining analysis*).

For the purpose of better evaluation and processing of analytical data in external applications, the *Domain expert* can use a tabular analysis beside the graphical representation (*Show table view*) and is able to export this data as well.

8.3 Customize Analysis – Lecturer

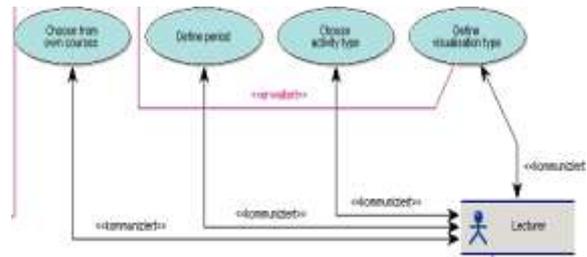


Figure 4. Use Cases *Lecturer*

The classification *Lecturer* (Fig. 4) primarily describes lecturers who want to analyze their own courses. For this purpose, he/she shares much of the functionality with the *Domain expert*.

This concerns basic functionalities like the setup of the analysis which includes the considered time interval (*Define period*), the selection of the types of activities (eg. activities in the forum, blog, assignments and tests, media, etc.) to be included in the analysis (*Choose activity type*), as well as the selection of the specific course and the type of the desired visualization (*Choose own courses* and *Choose visualization type*).

8.4 Dashboard

The second Use Case scenario (*Dashboard*) exemplifies general purpose use cases, which a user will be faced with while interacting with his/her personal start page.

9. User Interface

Man-machine systems (MMS) – like the LeMo application - need to integrate an interface for interacting with the user, in order to present the results produced by the application logic.

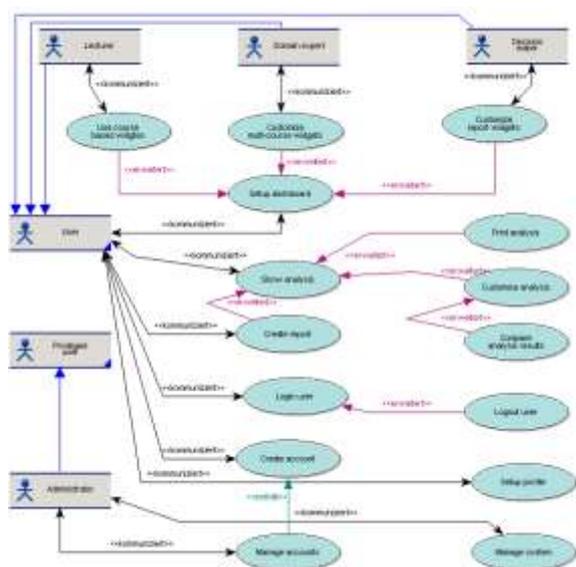


Figure 5. Use Case Dashboard

This interface is used to control the application logic by a defined set of controls that can be used for selective manipulation of the behavior of an application.

On this basis, a layout has been developed, which is characterized by the following assumptions:

- “Content matters”, Therefore, getting rid of unnecessary layout elements (banners, etc.)
- Important information must be located within the user visible area of the browser window
- Display only the most necessary controls (context-sensitive)
- Compliance with usability principles in the selection of color and contrast pairs

In addition, in order to achieve good legibility, the user interface is designed to work with different client resolutions (Responsive Design) [14].

We have included an early design Mock-up of our upcoming prototype application. The mock-up (Fig. 8) gives some insights on the design concept of the personal start page (Dashboard).

It shows the basic structure of a user's personal dashboard. The header area at the top of the page contains all context-sensitive control and navigation elements and provides status information about the currently used users account. The space below is completely intended to display the content.



Figure 6. Mock-up Dashboard

10. Conclusion

In this paper we have described our approach to the analysis and description of Use Cases based on personas. Our goal is the development of the learning analytic tool called LeMo, which should be applicable for a broad audience in the field of e-Learning.

To which extent the demonstrated approach can support a user-centered application development process must be verified by further studies.

11. References

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