Paperless mobility in European Higher Education Institutions with Moebius

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1. SUMMARY

Erasmus+ mobility procedures have many different phases during the academic year. Each phase involves different people during the application process and administrative handling. The Moebius software is designed to model mobility flow and to organize information at each level in a system where all procedures are completed electronically.

2. BACKGROUND

The Aristotle University of Thessaloniki is the biggest university in Greece, having 60.000 students, 2.500 teaching members and about 1000 administrative and assistance staff. Erasmus+ mobility numbers are also significant at every action: 800 outgoing and 500 incoming students per year for studies and traineeship, as well as 150 outgoing and 160 incoming staff members for teaching and training. These mobility numbers impose a significant overhead for processing and evaluation. Consequently, a new software application was designed in house, firstly to replace the existing, costly and inflexible commercial software and secondly to explicitly serve AUTh needs with online procedures.

3. DEVELOPING AUTH'S MOBILITY MANAGEMENT SYSTEM

Moebius is designed and developed to serve in the framework of Erasmus+ [1], the EU programme for education, training, youth and sport 2014-2020.

The idea raised by the need of Aristotle University Erasmus Office to use an application that simplifies the mobility procedure and fully interoperates with the rest electronic systems of the institution. Thus, the project aims to document and model student and staff mobility procedures and provide electronic solutions to them.

3.1. Architecture

The application consists of an online and an offline system, each one built to serve different groups of people.

The online subsystem is a portal designed to gather information from end users. In this subsystem:

- Interinstitutional agreement contracts are completed and signed by the involved members (Higher Education Institutions HEI)
- All incoming and outgoing mobility applications are submitted
- Any pre-mobility process is performed, for example the evaluation of mobility submissions.

The offline subsystem is the main mobility management application, which manages the mobility procedure. This subsystem handles the:

- Submission of nominations

- Management of interinstitutional agreements and mobilities for all types of actions
- File uploads per mobility in order to create the electronic folder case
- Export of reports and certificates for end users
- Statistics on mobility data, graphs and maps for instant overview of mobilities (Figure 2).

The architecture of the system is described at Figure 1.

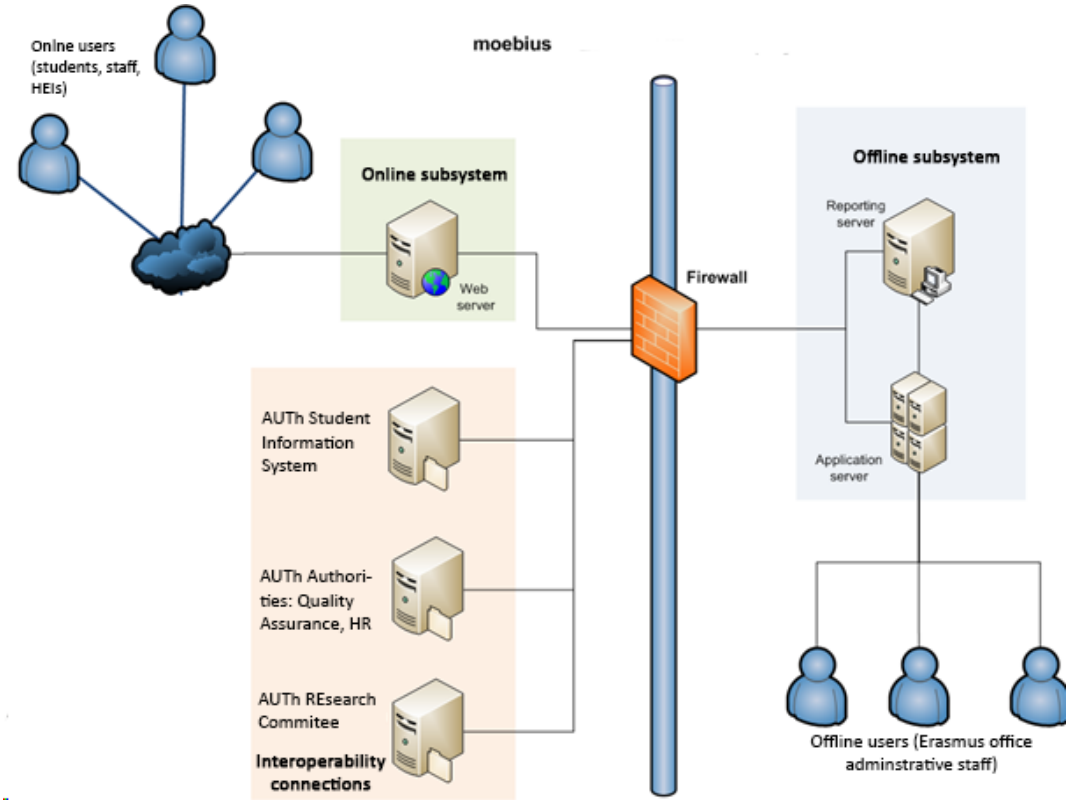

Figure 1: Moebius architecture

3.2. Technologies

Moebius is built using modern technologies and methods. More specifically, the online subsystem is built in Drupal 7. The backend of the offline subsystem developed in CodeIgniter [2] PHP application development framework and its frontend interface uses Ext JS [3], a comprehensive JavaScript framework for building feature-rich cross-platform web applications targeting desktop, tablets, and smartphones. Maps constructed using Google Maps API [4]. Any communication between the Moebius application and other AUTh information systems is done using REST services.

3.3. The roadmap

Moebius was developed in cooperation with AUTh's Erasmus Office, as the main target of the system was to serve and cover Erasmus+ requirements. Therefore, the challenge was to create an application that fulfills AUTh needs but generalize development as much as possible according to the programme.

Another major issue was that student and staff mobility workflows have many bureaucracy points that Moebius tried to simplify by inserting electronic procedures, electronic documents and digital signatures.

The impact was significant to end users (students and staff) as mobility applications and evaluation is quicker and transparent to all AUTh users. In parallel, AUTh Erasmus administrative staff is equipped with a tool that serves as mobility electronic folder case and simplifies their daily job.

3.4. Interoperability

A huge asset of developing an in house application is the high degree of interoperability with existing systems of the university. In this respect, Moebius communicates with:

- The Student Information System, in order to gain access to grade records and ECTS credits of students applying for a mobility experience
- The Authorities of AUTh and provide statistics to the Quality Assurance Information System
- The AUTh HR main Directory, in order to synchronize staff personal data
- The AUTh Research Committee, simplifying the procedure of student payments

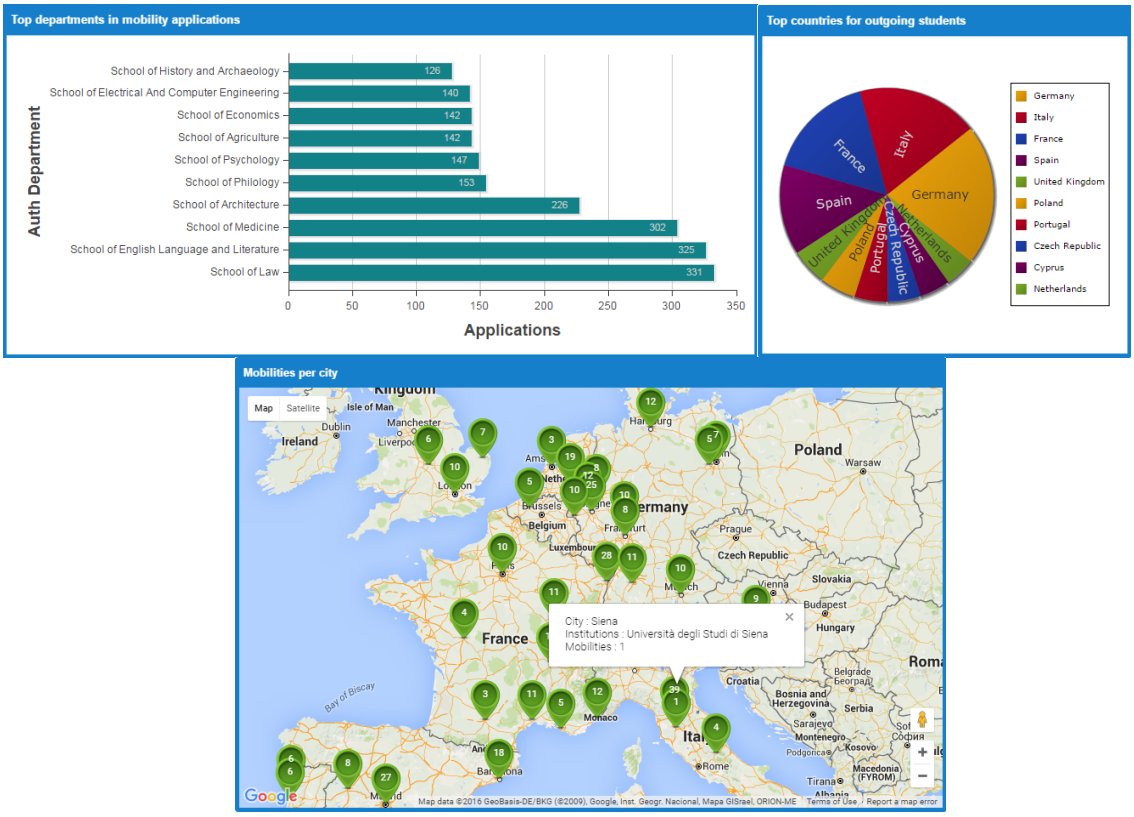

Figure 2: Mobilities per city, per country and per AUTh school

4. FUTURE WORK

Further development is already under way, building new features and customizing the application for AUTh community members. It will employ online monitoring of application status, personalized notifications and post-mobility communication, as well as backend extensions to financial management of the Erasmus+ projects.

5. CONCLUSION

Implementing AUTh's mobility management application is a challenge, as it aims to cover the different aspects of the Erasmus+ mobility procedure in a highly extrovert European university. The expected result is to simplify the mobility experience, facilitating both the person that performs the mobility and the administrative staff that manages the procedures.

6. REFERENCES

[1] Erasmus+, retrieved Feb 25, 2016 from http://ec.europa.eu/programmes/erasmus-plus

[2] CodeIgniter PHP framework, retrieved Feb 25, 2016 from https://www.codeigniter.com

[3] Sencha Ext JS, retrieved Feb 25, 2016 from https://www.sencha.com/products/extjs/#overview

[4] Google Maps API, retrieved Feb 25, 2016 from https://developers.google.com/maps/

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