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First Prototype of ELDER-SPACES Social Network Platform

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Abstract: A report on the delivered prototype of the Elder-Spaces web portal.
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Glossary

VMs	Virtual Machines
CSS	Cascading Style Sheet
REST	(RESTful) Representational State Transfer
API	Application programming interface
UI	User interface
PHP	Hypertext Pre-processor

Executive Summary

Deliverable D5.1a accompanies the prototype implementation of the Elder-Spaces Web Portal. The first prototype includes basic social network functionality and the prototype UI colouring and CSS schema. It will be used to be evaluated by a pilot run with selected users. Once this is done, comments from users as well as feedback from internal review will be used to guide changes and updates.

The delivered functionality for the first prototype is:

- Login/Registration
- Main page and navigation (common components for the site – header, footer, search)
- Footer pages (initial version of about page, help, privacy policy, terms of use and site map)
- Profile pages
- Friends Pages
- Activities
- Notifications
- Messages (no wizard mode for the first version)
- Albums and photos
- Groups
- Events

Besides presenting the tasks and integration plan in this report, there are two additional items that are addressed in this deliverable:

1. The updated version of the API interface, which underwent through some changes after the initial specification in deliverable 2.3. All changes and updates are includes in the accompanying appendix:
“ELDER-SPACES_BYTE_WP5_D5 1_Appendix_API_specification_v1.3.docx”.
2. The updated version of the User Interface. As mentioned in deliverable 4.1¹, there were some adjustments to the UI during development and after testing. The appendix “ELDER-SPACES_BYTE_WP5_D5.1_UI_Appendix_v1.1.docx” presents the final version of the UIs.

1. Introduction

1.1 Overview

This deliverable accompanies the actual development that was integrated into the Elder-Spaces platform. It provides a summary of the integration plan and the main issues encountered during the continuous cycles of development, integration and deployment throughout the project.

All the development done in WP3 and WP4 was integrated under WP5 into the first prototype implementation of the Elder-Spaces web site. In the following document, we show the original and actual integration/delivery plan and also provide some insight to the issues faced during integration, along with the solutions that were provided to overcome them.

The aim of this report is to present an overview of the integration procedure. Actual technical information is included in the accompanying appendixes – as mentioned earlier.

2. Deployment – Integration Plan

In this section, we present the development / deployment plan that was set for the first version of the Elder-Spaces platform. This version included the basic functionality for the site. The delivered system included:

- Login/Registration
- Main navigation
- Profile
- Friends with cognitive recommendations
- Messages
- Activities
- Notifications
- Albums and photos
- Events with cognitive recommendations
- Groups with cognitive recommendations

The site also supported multiple languages:

- English
- Greek
- Hungarian

German and Italian translations were added as part of the second version of the platform; only a partial translation was delivered in the first version.

2.1 Development Plan

In the following table, we present the main tasks for the first version of the platform. Different aspects of a development task were usually assigned to different partners, in order to take

advantage of each partners' expertise but also distribute the effort. For a detailed plan on the work performed, consult Table 1.

Table 1 – Task allocation and delivery dates

Task	UI Design	Specification	Development	Delivery	Actual Delivery
Infrastructure					
REST Sandbox	N/A	N/A	ORIGO	N/A	
Deploy Environments	N/A	N/A	ORIGO	16/11/2012	16/11/2012
BitBucket	N/A	N/A	ORIGO	16/11/2012	14/03/2013
Developer VMs	N/A	N/A	ORIGO	14/03/2013	14/03/2013
API Development					
<i>Group A</i>					
Authentication API	N/A	N/A	ORIGO	16/10/2012	14/11/2012
Message API	N/A	N/A	ORIGO	16/10/2012	30/11/2012
People API	N/A	N/A	ORIGO	30/11/2012	24/12/2012
Activity API	N/A	N/A	ORIGO	30/11/2012	24/12/2012
Notification API	N/A	N/A	ORIGO	30/11/2012	30/11/2012
<i>Group B</i>					
Media API	N/A	N/A	ORIGO	29/03/2013	18/04/2013
Group API	N/A	N/A	ORIGO	29/03/2013	11/04/2013
Events API	N/A	N/A	ORIGO	29/03/2013	11/04/2013
WEB Development					
Group A					
Activities	ORIGO/FTB	ORIGO	BYTE	29/03/2013	29/03/2013
Notifications	ORIGO/FTB	ORIGO	BYTE	29/03/2013	29/03/2013
Profile	ORIGO/FTB	ORIGO	BYTE	29/03/2013	24/04/2013
Friends	ORIGO/FTB	ORIGO	BYTE	29/03/2013	24/04/2013
Messages	ORIGO/FTB	ORIGO	BYTE	29/03/2013	10/05/2013
Group B					
Albums	ORIGO/FTB	ORIGO	BYTE	07/06/2013	29/06/2013
Groups	ORIGO/FTB	ORIGO	CYBION	07/06/2013	29/06/2013
Events	ORIGO/FTB	ORIGO	CYBION	07/06/2013	29/06/2013
Other					
Login/Registration Main navigation & Search	ORIGO	ORIGO	ORIGO	28/12/2013	18/01/2013
Social cognitive recommendations	N/A	CYBION	CYBION	30/11/2012	29/06/2013
Lightbox component	N/A	FTB	FTB	20/5/2013	20/5/2013
Secondary pages	ORIGO/FTB	ORIGO	ORIGO	28/06/2013	30/06/2013
CSS	N/A	ORIGO/FTB	CYBION	28/12/2013	31/07/2013
Images and web design	N/A	ORIGO/FTB	BYTE	28/12/2013	18/07/2013
Testing / Debugging	N/A	All	All	01/09/2013	31/12/2013

2.2 Summary on Tasks

2.2.1 Infrastructure

This section displays the main infrastructure tools that were used during development and integration, in order to assist in the task of integrating code from different development teams.

2.2.1.1 Development environment

The initial development environment included custom setups from each development team which included PHP server and Symfony 2.0 framework. There were compatibility issues with the different installations (differences in versions etc.) which caused delays in integration. This problem was addressed in the Athens meeting on February 2013 by providing a common development environment for all partners in pre-installed VMs. ORIGO provided these virtual machines which included the operating system, a PHP capable server, the Symphony 2.0 framework and any other secondary software that was necessary.

2.2.1.2 Code control and deployment

Code control was important in such a project. The consortium used the BitBucket² system. It is a web-based service which allowed for source code control between the different teams. It also provided feedback via email on all new code commits which was useful when teams needed to be updated when a certain fix was uploaded, in order to continue working.

BitBucket repository was linked to the deployment process that ORIGO managed. The final version of the code would be uploaded via FTP on the web servers automatically. This reduced the effort and complexity of synchronizing work between different teams.

2.2.1.3 Unit testing facilities

Besides any unit test that each developer team performed in the VMs, there was also a sandbox environment available for authenticating and providing debugging options to REST service calls. This functionality is available under: <http://gadget.elderspaces.iwiw.hu/elder-oauth-test/>

It provided, besides OAuth³ authentication tokens, a test bed for isolated REST calls. Developers could check there the exact reply object of each function call, cross reference it vs. the API specification to verify APIs and then use it to debug their code.

2.2.2 API Development

APIs were developed into two groups. The first group (Group A) included the most basic functionalities that was necessary for creating and manipulating the core elements of the social network (person, friends and messages), while the second group (Group B - albums, events and groups) included more complex functionalities, which depended on those in group A.

APIs development included the data entities, the REST calls for get, post, put and delete – where applicable – and the “REST Bundles” mentioned in Deliverable 4.1¹.

One of the drawbacks of delivering the API in stages was that once the first group was

delivered, developers working on the second group were often interrupted in order to debug issues found in the APIs of the first group.

2.2.3 WEB Development

Web development followed that of the API. Once an API was ready and delivered, programmers started working on the new API to produce the related web pages and functionality.

Development started with many issues, which mainly were related to setting up individual environments which had small differences between them and caused problems with collaboration.

2.2.3.1 Group A functionality

Activities were selected as the first functionality to be developed, since the effort was small and the functionality simple, so it acted as a good test bed to identify any collaboration issues early, in order to solve them early on. That was the driving force behind the introduction of VMs, which took some time to identify and resolve.

Person followed as it included the prerequisite functionality for testing all other pages. It was decided to reduce the number lightbox instances used in these pages. Several of the “Edit” contents functionality was delivered in normal web pages instead. This was done to enhance accessibility to the site.

Friends was the next functionality developed. It was done semi-parallel to that of Person as there were two developers available and once they worked out the main core for Person, they were able to parallelize their work and also start on Friends. This functionality utilized the “Social Cognitive Recommendations” module. In order to have a smooth integration with data of “Social Cognitive Recommendations” system, the integration has been realized in two phases: during the first phase it called a dummy service with correct data model. The dummy service has been used until the development for the actual cognitive recommendations was completed. At that point, the service provided actual recommendations, which were presented under the Friends functionality.

Messages were next. For the first version of the site, messages included the traditional “Send Message” procedure, not the wizard mode defined in D2.3⁴.

Notifications were one of the simplest functionalities to be delivered. They are applied as information on the rest of the functionalities.

2.2.3.2 Group B functionality

Albums included some of the larger parts of the development with respect to pages developed and user options available. They include functionality for managing albums and also photographs, with all related commenting by other users. Albums and photos were originally developed using a regular lightbox component, as the intended accessibility compliant solution was developed close to the delivery of Albums. Once the lightbox was released, it was introduced to photos and albums, which along with some delays in the API and problems with debugging some REST calls, delayed the delivery of the services.

Groups and Events were developed in parallel with albums – by different teams. These two development items share similar characteristics and development done for one was easily adapted for the other. Same as Friends functionality described before, Groups and Events functionalities had a dependency with the Social Cognitive Recommendations. Also in this case the integration with the platform has been divided in two phases: the first phase used dummy calls to integrate data with the data model designed. During the second phase, when the Social Cognitive Recommendations module has been released, dummy calls have been replaced by real recommendations.

2.2.4 Other components

Main Pages include login, registration, main page with navigation (side bar) and search. These pages were delivered early on in the development, as they were necessary for all other pages to be based upon. Mainly login and main page with navigation were crucial, as it provided authentication of users and the main page for selecting functionalities.

Social Cognitive Recommendations, as mentioned in the previous chapter, were developed for friends, groups and events. Development was done separately, using input from the development web site, as a large number of activities were necessary to train and test the recommendation engine. In order to integrate the Social Cognitive Recommendation system with the web platform, a set of web services has been defined. The integration has been conducted in two phases as described previously.

A new Light Box component was developed in order to cope with accessibility issues encountered in existing light box solutions. Again, a modular approach was taken. We used calls to an existing component, which with minimum effort was replaced once the development of the new component was completed.

Secondary pages group together a set of necessary pages providing little functionality. Help, About, Privacy policy Disclaimer etc., are these pages which were delivered at the end and were refined for the second version of the platform.

CSS was developed in two stages. As we present information here about the first version of the site, the initial style sheet was introduced early on and along with the initial colouring and imaging schema (Images and WEB Design) provided the first layout for the site. This was necessary to get the feedback from the pilot users and then CSS and images were redone for the final version of the platform to incorporate user feedback and internal comments.

Testing – Debugging was a continuous process. Unit testing by developers was done locally. Then functional testing was performed once the functionality was available in the site. Often, functionality was uploaded in batches, as some pages were available, they would be uploaded and tested, so that any issues were identified as soon as possible and avoid repeating them in the next similar pages. Unfortunately, testing revealed several problems with the API, which in turn caused longer development cycles as fixes had to be introduced in both the API and other components as well.

3. User access

The main deliverable in WP5 is the actual web site implementation. The site's address is www.elderspaces.com

It is possible to register and create a new user, or one may use an existing test user for easy access to the site.

Test user credentials:

- Username: eldertest@hotmail.com
- Password: 123456

In case of new registrations, a valid email address is necessary.

4. Conclusions

The first prototype was delivered on time for the user trials. Some of the content – mainly translations and instructions - was not as good as it should be, but there was provision to fix that in the second phase of integration.

The consortium encountered some difficulties in coordinating development and integration, but it was overcome by standardizing development environment and closer cooperation between the different development parties. In that respect, frequent technical Skype calls and face to face meetings were invaluable to share common problems and come up with solutions.

References

¹ Deliverable 4.1 “Social Networking Basic Functionality”, Elder-Spaces consortium, Dec 2013.

² BitBucket: <https://bitbucket.org/>

³ <http://oauth.net/2/>

⁴ Deliverable 2.3 “Elder-Spaces Platform Architecture”, Elder-Spaces consortium, Dec 2012.