

Limitations of Community Web Portals: A Classmates' Case Study

Anna V. Zhdanova, Dieter Fensel
DERI – Digital Enterprise Research Institute,
University of Innsbruck, Austria, and
National University of Ireland at Galway, Ireland
{anna.zhdanova, dieter.fensel}@deri.org

Abstract

We analyze typical web portals supporting communication, data sharing and activities of former classmates. The inflexibility and restrictions imposed on users of such portals are demonstrated to support the thesis that introduction of community-driven ontology management is crucial for full-fledged satisfaction of the user needs on the Semantic Web.

1. Introduction

An idea of providing a service for reunion of ex-classmates is proved to be a success by resulting in a large number of highly popular web portals with a multitude of users registered at the largest portals. For instance, more than 75 thousands of classmate groups are registered internationally at Yahoo groups¹ and more than 35 millions of users are registered at a national US and Canadian level (portal Classmates.com uniting graduates of the US and Canadian schools). In relation to other commercial services offered on the Web, the service providing a communication environment for ex-classmates also proved to be promising. For instance, the portal Classmates.com has one of the largest subscriber bases on the Web for paid content and is consistently ranked by Nielsen/Net Ratings as one of the most highly trafficked Web channels.

One of the success reasons for social networking activities across ex-classmates and other user groups [6] is that the portals supporting these activities fill in a novel niche of user demand. Specifically, many e-commerce sites offer what people have always been able to find outside their front doors: books, magazines, toys and groceries. Compared to most online businesses, community web portals are privileged to offer a service that only the Web can provide: the power to connect people who would otherwise be out of touch.

We define *ex-classmates* as a group of people who once had a common educational experience and used to live in the same area. We use the term *classmates* equivalently to

the term “ex-classmates”, because people who once studied together and lived in the same area can be identified as belonging to the same “class”. Specifically, from the virtual community point of view, whether the community is united physically by the past or by the present is usually irrespective for modeling community activities. A *community Semantic Web portal* is a web portal which is based on Semantic Web technologies [1] and maintained by a community of users. Further, a *web portal* is a web site that collects information for a group of users that have common interests [4]. Yahoo is an example of a web portal, however, Yahoo is not a community web portal, since (i) it is resource consuming and anti-collaborative in providing information, (ii) it is maintained by a special department of the host company, but not by a community of users.

Nowadays, with an exception of few cases, existing community web portals are not Semantic Web portals. We demonstrate below that they suffer from a lack of flexibility, missing functionalities, data input overhead and sparse interactivity. These problems are expected to be resolved by employing technologies constituting community Semantic Web portals. In the Semantic Web, information is semantically represented according to ontologies, evolving and shared knowledge structures, allowing advanced usage of the Internet as an information repository [3]. Further, enabling the Semantic Web to be *community-driven*, i.e., endowing users and developers with a wide access to ontology management [9], will make the community Semantic Web portals more dynamic and more responsive to the users' actual needs.

An extensive overview and state-of-art of existing Semantic Web portals is delivered by Lausen et al. [5]. An approach embedding all phases of a community Web portal (i.e., information accessing, information providing, portal development and maintenance) is described in a paper by Staab et al. [8]. Our work is focused on the existing classmates' portals. Demonstrating the limitations of available solutions, we show the need for development of Semantic Web content and services.

The paper is organized as follows. In Section 2, an overview of existing classmate web portals is provided and usage scenarios are discussed. Observed limitations of the classmates' community web portals are described in Section 3. Section 4 concludes the paper.

¹ Yahoo Groups: <http://groups.yahoo.com>

2. Community Web Portals for Classmates

In this section, we provide an overview of the web portals supporting communities of classmates and outline the scenarios at these portals. A summary of typical community web-portals that are created for support of classmate communities is given in Table 1. Geographical coverage and functionality of a portal are important characteristics defining the portals' applicability and usage. Geographical coverage in the context of the classmate portals is its geographical restrictions regarding the countries and cities where ex-classmates used to study. Most observed classmate portals are restricted geographically, i.e., they permit a correct representation of the fact that "somebody studied somewhere" only for restricted values of "somewhere". In Table 1, examples of such national classmate portals are Classmates.com, Odnoklassnik and ILoveSchool. Additional examples are www.passado.de (Germany), www.passado.fr (France), www.passado.at (Austria) and www.chinaren.com (China). At each of these national portals, information is represented solely in the national language of an addressed country. Analyzing functionality of the classmates' portals reveals a tendency of decreasing the portals' functionality with increasing the portals' coverage (including geographical). For instance, Lycos Classmates, Yahoo groups or a widely international alumni portal www.alumni.net provide less of functionality comparing to any other of the national-targeted portals listed in Table 1.

3. Limitations

In this section, we generalize typical limitations of the classmates' community web portals, and briefly outline the way to overcome these limitations via community-driven ontology management on the Semantic Web.

3.1. Overview

Inspection of the functionality of the classmates' portals allows us to identify several limitations restricting their usage:

Geographical restrictions

Most classmates' web portals have geographical restrictions, i.e., a classmate can register adequately only within a portal providing opportunities to state the fact that this classmate comes from a particular school of a particular country.

Absent or simplified functionalities

Most of the reviewed web-portals for interaction of classmates support very basic activities such as registration and search, but not the advanced activities such as maintenance of the common calendar to organize meetings or support of and access to a query service over the instances provided by portal members. Sometimes, the support for advanced activities is present at the classmates' web portals, but usually this facility is not extensive enough. For example, the Classmates.com portal offers a special tool enabling an user to answer suggested questions (e.g., "What kind of job do you have?", "How many children do you have?", "What kind of car do you drive?") and compare his/her answers to the answers of his/her classmates. This tool is valuable for satisfying demands of self-assessment and curiosity; however, it restricts a user to compare his/her answers to the answers of other classmates employing only one type of simple predefined queries. Specifically, the user is asked to choose his or her age group, gender and a particular question as the basis of comparison. Thus, for instance, finding out how many of your classmates of your gender and age have cats as home animals is possible, but finding out how many of your classmates of your age and gender live in the USA and

Name	URL	Geographical Coverage	Functionality
Classmates.com	www.classmates.com	USA, Canada and American / Canadian overseas schools	Registration/search, message board, games, chat, photos sharing, "compare" tool, shopping
Lycos / Classmates	www.lycos.com	International – over 40 countries	Registration/search
Odnoklassnik	www.odnoklassnik.ru	Russia	Registration/search, addresses, telephone and ICQ numbers, photos sharing, message board, chat, polls
ILoveSchool	www.iloveschool.co.kr	Korea	Registration/search, mailing lists, games, whiteboard, news of school, avatar, SMS, shopping

Table 1: Web Portals for Classmates

have at least two children is impossible. This limitation arises, because Classmates.com portal does not support construction and processing of queries with conjunctions or disjunctions.

Generality of services

Apart from the classmates' web portals such as the ones listed in Section 2, other web environments can partially satisfy demands of classmates' communities. For example, Yahoo Groups provide such groupware as registration of a group/group members, mailing-lists, chat, file/link sharing, voting, personal calendar. However, the Yahoo Groups' functionalities prove to be too general, as they are designed to support an environment for any group of people and thus comprise groupware items one can find anywhere else. Therefore, Yahoo Groups and similar general-purpose environments can hardly be considered as a perfect solution for communities of classmates, due to the lack of functionalities and services specifically interesting for these communities.

Data input overhead

Nowadays, a usual need to register and to log in for each web portal/environment every time their functionalities are required incurs overhead. The user has to enter the same personal information (e.g., name, surname, e-mail address, telephone number, etc.) multiple times for each of the different web portals used by him/her and permanently operate with multiple environments. Further, when a community member uploads an object (e.g., text file or image) to a community web portal supporting annotation of the objects (e.g., Microsoft SharePoint Portal Server²), most times he/she has to annotate the object manually by inserting data describing document in the form for each portal.

3.2. Overcoming the Limitations

To overcome the limitations of community web portals, the following milestones need to be passed:

Up-to-date annotations for people and objects

Corresponding to the Semantic Web vision, persons or objects should be provided with a machine-processible annotation that can be shared across applications. FOAF³ and Dublin Core⁴ are examples of wide-spread schemata for annotation of people and documents. Further, when certain properties of a person or object are changed (e.g., a person moves to a new flat), the change in the annotation needs to take place is communicated to the

²Microsoft SharePoint Portal Server:

<http://www.microsoft.com/sharepoint>

³ The FOAF project: <http://www.foaf-project.org>

⁴ Dublin Core Metadata Initiative: <http://dublincore.org>

Semantic Web environments employing the changed (meta)data. This Semantic Web scenario has a potential to overcome the limitations of data input overhead, and has yet to be elaborated in details and achieved in the future on the broad scale. At present, even at the well-developed Semantic Web community web portals such as KnowledgeWeb⁵, extensive data entering is required in order to register community members and introduce new objects for the community.

Access to weaving of the Semantic Web

Enabling wide communities of users and developers to introduce new ontology structures and services is crucial for Semantic Web to adapt to the actual users' needs and to spread widely [9]. An access to participation in the formation of the Semantic Web content is associated with *community-driven ontology management*, where ontology management actions (e.g., ontology editing, versioning, storage, querying) are performed in a distributed fashion by the users' and developers' communities, in addition to a limited group of web-resource creators and domain experts as conventionally. Letting the communities to weave their own Semantic Web will mitigate such current limitations as geographical and natural language restrictions, absent and simplified functionalities, generality of services.

Community-driven ontology/process alignment

As the Semantic Web becomes easily and widely extendable, many similar schemata and processes will be developed and maintained by different communities. Under these circumstances, the ability to easily align and combine similar or complementing schemata and processes is of crucial importance for cross-community interoperability. For instance, a person may belong to several communities and employ several Semantic scheduling services, e.g., as the service developed by Payne et al. [7]. Meanwhile, the scheduling services will be helpful to the person only in case of their interoperation, i.e., when making timing proposals, reporting the conflicts in the person's schedule, etc. is done considering the information in the range of all the scheduling services employed by a person. Community-driven ontology/process alignment has a potential to resolve such limitations as geographical restrictions and absent and simplified functionalities by combining or composing available services in personalized, required services.

Semantic desktop

Once the people/objects and processes are being annotated, the Semantic Web is easily extended by the communities of users and developers, and similar and complementing ontologies and processes can be aligned by individuals, presenting massive volumes of Semantic

⁵ KnowledgeWeb portal: <http://knowledgeweb.semanticweb.org>

content and workflows to the community members is a major challenge. The solution is expected to stem from the active research fields in the Semantic Web area. For example, Decker and Frank [2] address this problem by combining the current Semantic Web developments in a *Social Semantic Desktop*, which will let individuals collaborate at a much finer-grained level as is possible and save time on filtering out marginal information and discovering vital information. Organizing Semantic Web content and services in personalized, cross-linking and supporting communities Semantic Desktop is the final step in overcoming limitations typical for the current community web portals.

4. Conclusions

Within a domain of ex-classmates' portals, the limitations of existing community web portals are identified. The analysis of the scenarios in the selected domain reveals an added value in combination of solutions across domains and communities where similar problems are addressed. Community-aware approaches such as evolution of Semantic Web annotations with respect to their usage, broad accessibility to creation of Semantic Web content and services, community-driven ontology management and alignment of efforts, and semantic desktop have a high potential to overcome the limitations of the current community web portals.

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