EASE: The European Association for Semantic Web Education

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Abstract. As Semantic Web technology is now becoming more wide-spread, especially in industrial environments, the need for educating people in these technologies increases. In this paper, we present EASE, the European Association for Semantic Web Education, whose main objective is to promote education and continuing education in the area 'Semantic Web' and to bundle all activities on a European level. In this paper, we show the activities of EASE to implement this objective, such as REASE, the repository of EASE for Semantic Web Education, which is intended to collect all high-quality educational resources about Semantic Web for different target users (such as professionals or students from universities). This paper also briefly describes the organizational structure of EASE as a non-profit association.

1 Introduction

Semantic Web technologies have matured significantly during the last years and have become ready for large-scale industrial deployment, as in job recruitment or the bioinformatics domain [1]. As news about these early use cases are currently spreading, more companies become interested in Semantic Web technologies and how to apply them to their own business. This, however, requires knowledge about these technologies, which can either be gained internally (self-study of some employees) or externally (let existing employees participate in external courses; employ students, who have studied Semantic Web technologies at University). In each case, *education* about Semantic Web technologies and their related fields is a key issue to finally move Semantic Web technologies from research towards industrial usage. This is independent of the target group to be educated, be it professionals from industry at different levels (ranging from programmers to executives) or students at universities. Education in Semantic Web technologies, however, currently faces the following problems:

- There is no permanent forum to discuss issues around Semantic Web education. As an example, there is currently no consensus about required topics to be covered by Semantic Web education, which is essential to build a Semantic Web curriculum.
- There are currently not many institutions offering courses about Semantic Web topics, and they are difficult to find. This is a problem for industrial settings, when staff should be educated externally, but also for universities, which want to offer a

degree on Semantic Web (typically, such universities have to find partners to offer such a degree because this involves many different topics and most universities are specialized only in one particular subtopic of the Semantic Web).

– There are only few high-class learning resources about Semantic Web education, which are also difficult to find. Though search engines do provide material on base of popularity rankings, they do not provide information about the target group, e.g., programmers in companies who want to study Semantic Web on their own. Furthermore, material intended for industrial education is in general less popular and more difficult to find for current search engines as such material is rarely linked (=recommended) in the web by their respective users from industry (personal web pages in industry are rather rare).

The *European Association for Semantic Web Education (EASE)*, a non-profit association according to German law, has been founded on the 16th of June 2006 as joint efforts of the EU Networks of Excellence KnowledgeWeb[3] and REWERSE[4] to deal with these problems, i.e., to promote education and continuing education in the area 'Semantic Web' and to support science and research in this area.

This paper describes our approach to support Semantic Web education on a European level with a non-profit association as main organizational body. Section 2 presents more details on the (long-term) general objectives of EASE and the activities to implement them. Afterwards, Section 3 derives the necessary requirements on the organizational structure, which led us to founding a non-profit association. The EASE association itself is described in more detail in Sect. 4, followed by related work in Sect. 5 and a short summary in Sect. 6.

2   Objectives and Activities

As long-term objective to promote education, continuing education as well as science and research related to semantic web technologies, EASE has the following general objectives:

– Promote knowledge and education as a fundamental social objective (as mentioned in the Bologna declaration [2] and its follow-up declarations).
– Support community-building activities, centered around 'Semantic Web Education', involving students, researchers, teachers, and practitioners.
– Disseminate high-quality educational resources and educational events about Semantic Web topics to as many interested communities as possible, aiming for maximum reach.
– Fostering co-operation among educational bodies.
– Using technological innovation pursuant to its goals.

EASE is planned to become the main institution for Semantic Web education on at least a European level (but is open to anyone in the world interested in Semantic Web

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[3] http://knowledgeweb.semanticweb.org
[4] http://rewerse.net

education). This is especially important to bundle the many Semantic Web activities within Europe and to create a European Semantic Web Education community.

The activities of EASE to implement the general objectives are:

1. Dissemination of information around Semantic Web education
   The EASE web pages[5] will help, for example, to find resources like course materials or information about events related to Semantic Web education (e.g., summer schools like the Summer School on Ontological Engineering and the Semantic Web (SSSW'06)[6] or the ReasoningWeb summer school[7]). This also includes information about the European Academic for Semantic Web Education[8], which is in the process of setting up a European Master of Science (MSc) in Semantic Web technologies.

2. Provisioning of a discussion forum, for example, to discuss the creation and maintenance of a generic Semantic Web curriculum, becoming the base for industrial and academic settings.

3. Creation and maintenance of REASE, the *Repository of EASE for Semantic Web Education*[9], cf. Fig. 1).
   REASE is the central repository for technical resources about Semantic Web topics and enables a better search for such resources, which is important for both, persons looking for resources for self-studies as well as teachers who are looking for material for their own courses. This activity has been started already as a joint activity of the EU projects KnowledgeWeb and REWERSE to collect educational resources about Semantic Web topics and annotate them with appropriate metadata (e.g., the intended target users, but also license models, which are especially important for commercial course providers). Though most of the material is currently from partners of these two projects, we have statements of interests from other projects and even private institutions to publish information about resources and events on REASE.

4. Accreditation of educational resources as 'supported by EASE'. All Material on REASE has to conform to a list of quality guidelines to ensure that all material on REASE is of a high quality.

5. Provisioning of a single support structure for running educational events (ranging from light-weight support such as providing contact addresses to full support such as organizing a conference). Examples are to continue the KnowledgeWeb summer school or the Reasoning Web summer school.

6. Supporting students in the Semantic Web domain (e.g., travel grants to conference / PhD symposia)

Supporting these activities by a single body requires a very flexible organizational structure of that body. The following section describes the requirements that led us to founding EASE as non-profit association.

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[5] http://ease.semanticweb.org

[6] http://torresq.dia.fi.upm.es/sssw06

[7] http://reasoningweb.org/2006/

[8] http://www.semantic-web-academy.eu/
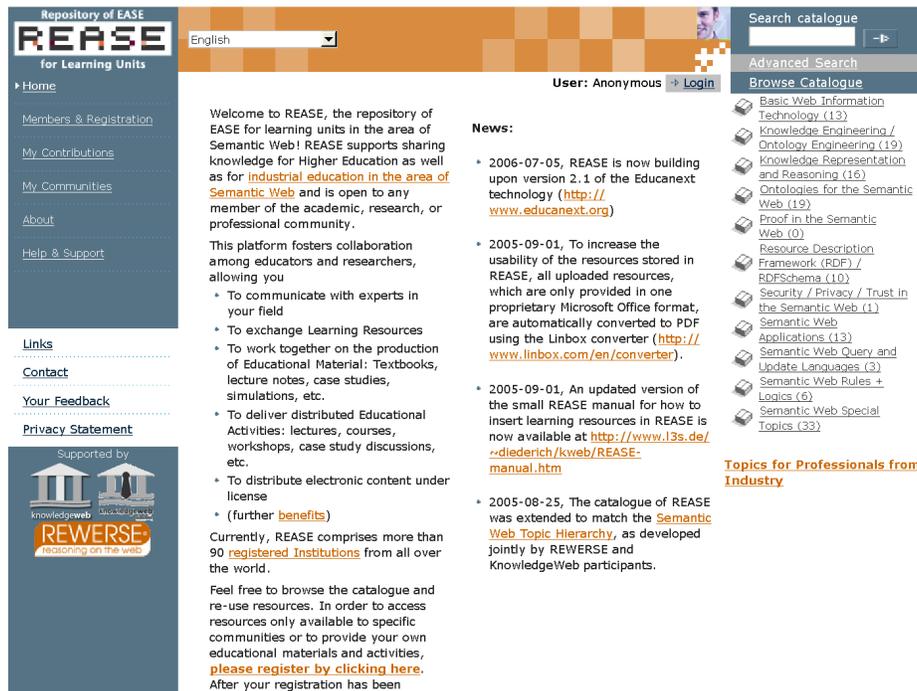
[9] http://rease.semanticweb.org

Fig. 1. REASE: The repository of EASE for Learning Units

3 Requirements on the Organizational Structure

After a thorough analysis of existing approaches [3], we found that supporting all these activities can be done best using a non-profit association to ensure the success of EASE in the long run. This analysis is based on the following requirements:

– Light-weight and flexible structure.
– Non-profit status (as education is a special objective of society).
– Independent of any other legal body.
– Simplicity of founding with low financial efforts.

A light-weight and flexible organizational structure is important to be able to adapt to a different level of financial involvement, which depends on which of the current activities will become the major ones in the future. For example, if community building and dissemination of events becomes the main activities, EASE would not have many financial sources. Hence, running EASE has to be as cost-effective as possible. On the other hand, EASE could become involved in the organization of educational events (e.g., workshops), which could result in a high amount of financial involvement. Both scenarios should be possible to support without changing the organizational structure. Associations are very flexible and can range from very small to very large (such as the ADAC, a German association of car drivers with about 15 million members).
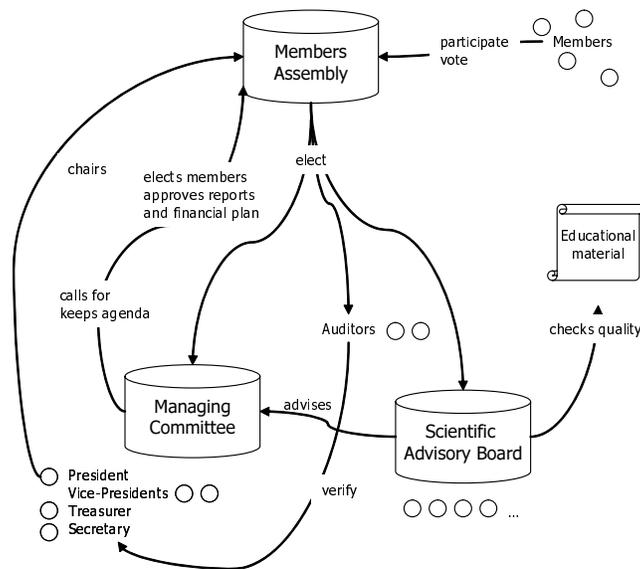
Because of its non-profit status, EASE can accept donations, which can be deduced from the taxes of the donation issuer. Furthermore, a non-profit status reduces the costs for running the association and leads to lower/no taxes to be paid under specific conditions. A constraint of the non-profit status is that membership fees are limited to up to 1000 EUR per year.

Finally, the independence of EASE from any other bodies is important for an easier operation of the association. Furthermore, associations are relatively easy to set up, it is only to have 7 people to agree on the statutes and to submit them to the registration office. EASE was founded as German association because there is currently no European association and the proposed draft for a European Association[10] appears to be too heavy-weighted due to its strong business orientation.

4 The EASE Association

The association statutes, as decided on the founding assembly, define the structure and operation of EASE. The following is a simplified outline of the statutes.

The Bodies of EASE The structure of EASE comprises three executive bodies: The Members Assembly, the Managing Committee, and the Scientific Advisory Board. Figure 2 shows the overall (simplified) structure of the association.

Fig. 2. The organizational structure of EASE

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[10] http://europa.eu/scadplus/leg/en/lvb/l26017.htm

Members: Rights and Duties The association is based on its membership. All members share the common interests of the association: to promote education and continuing education in the area Semantic Web and to support science and research in this area. A member agrees to promote and support the association and its objectives. Membership is open to any natural or legal person from any country of the world.

The Members Assembly as the highest body decides by voting – each member has one vote – on the composition of the other bodies of the association, the Managing Committee for the daily operation of the association and the Scientific Advisory Board which oversees the scientific quality of activities. In footnotes in the following text we name the persons that have been elected for the boards in the founding assembly.

The Members Assembly recommends association's activities, approves the report of the Managing Committee and the auditor's report, It elects the Managing Committee members, auditors and members of the Scientific Advisory Board. The assembly approves the financial plan proposed by the Managing Committee and decides on further proposals and takes organization structure decisions.

The Managing Committee consists of the president[11] plus two vice-presidents[12], a secretary[13], and a treasurer[14], who is responsible for any financial activities of the association. Two auditors[15] – also elected by the Members Assembly – check the activities of the treasurer. The Managing Committee conducts the association's business, representing the association to the outside world and prepares the Members Assembly.

The Scientific Advisory Board[16] assures the quality of the educational material, its diversity and openness. Furthermore, the Scientific Advisory Board helps the association and the Managing Committee to make strategic decisions of technical or scientific nature.

Special feature: Electronic Means To ensure that EASE can be run with as little financial efforts as possible, the statutes have been designed such that the use of electronic means is allowed as often as possible. The details of using such electronic means were fixed in an amendment to the statutes.

5   Related Work

There are quite some organizations having either similar objectives to EASE (but are operating in a different domain), a similar organizational structure, or a financial model, which is interesting for the future of EASE. In this section we briefly present three of them, IVIMEDS, ARIADNE, and the SWSA and compare them with EASE.

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IVIMEDS: The international virtual medical school IVIMEDS[17] has similar objectives than EASE such as providing resources for the education for different user groups, but in the domain of medical education. Many persons working in this domain are forced by law to continuously update their knowledge as part of a life-long learning process.

IVIMEDS intends to build up a delivery system, comprising a repository of reusable learning resources, similar to REASE. This is envisioned as a marketplace for learning resources since IVIMEDS members should be able to make profit from offering their learning resources to improve their financial situation. The organizational form of IVIMEDS is a 'not for profit' company limited by guarantee, established under the auspices of the University of Dundee.

The main difference between IVIMEDS and EASE (apart from the different domain) is that the area 'Semantic Web' is much less mature than the domain 'health care'. Therefore, the current need for education in Semantic Web is lower compared to the medical domain, so it is currently difficult to set up a market place in the IVIMEDS way to connect providers and users of educational resources. The organizational model of a non-for profit company is also not independent and more costly to set up. The financial model for the marketplace, however, can be used as template for running REASE once the need for Semantic Web Education has increased. Currently, all learning resources in REASE are all available for free, but this might change in the future.

The ARIADNE foundation The ARIADNE foundation is a non-profit association according to Swiss civil law. Its main objectives are the improvement of the educational system by sharing and reusing existing knowledge components and the creation of new material as well as the promotion of their usage in education and training. ARIADNE basically provides the following member benefits:

1. A central knowledge pool of educational components.
2. Software tools for creating educational components.
3. Training rights for installation and usage of the tools.

The annual subscriptions range from 500 EUR (for small institutional members) up to 50,000 EUR (large industrial members), the latter including a high number of free training rights and a higher number of votes in the Members Assembly.

The organizational structure, especially the statutes of the ARIADNE foundation highly influenced the EASE statutes, though the Swiss law on associations is different from the German one and ARIADNE is focusing their main activities on software development. The financial model can partly be used as template though German non-profit organizations are not allowed to have such high membership fees.

The Semantic Web Science Association (SWSA) The Semantic Web Science Association is a non-profit association according to German law. Its purpose in general is to promote and exchange scholarly work on the Semantic Web and related fields throughout the world, but specifically the main objective of the SWSA is to supervise the International Semantic Web Conferences (ISWC).

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[17] http://www.ivimeds.org

As the SWSA members do not pay membership fees, the only financial source of the SWSA are profits from past conferences. Hence, budget negotiations as well as the sharing of losses / profits are the main part of the negotiations between the SWSA and the local organizers of the ISWC conferences. This model of organizing educational events can become a template for EASE. Especially, to limit the profit for the local organizer to a certain amount seems very helpful to avoid that local organizers only maximize their revenues instead of providing a well-organized event.

The SWSA is, hence, a good example for EASE in relation to how to run educational events. The main difference is that the SWSA is not intended to focus on education in Semantic Web in general.

6   Summary and Future Work

The Semantic Web is a highly dynamic domain, where e-Learning is just starting to become important. Hence, we have founded EASE to promote education and continuing education in the area 'Semantic Web' and to support science and research in this area. This general objective is implemented by a number of concrete activities, such as REASE, the repository of EASE for Semantic Web Education. The organizational structure of EASE is a non-profit association, which is highly flexible and can be adapted to different possible activities, which will depend strongly on the development of the Semantic Web education area. We are aware of similar organizations in other domains, which we carefully analyzed, for example, to be able to adopt their financial model if necessary. As future work after the registration of EASE, we will start to promote the association and to continue the main activities, which have already started as activities of the Networks of Excellences KnowledgeWeb and REWERSE.

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[18] http://knowledgeweb.semanticweb.org
[19] http://rewerse.net