Collaborative Tagging Applications and Capabilities in Social Technologies

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Abstract. With this paper we will be exploring the usage of Collaborative Tagging in administrative Information Systems of the Estonian Defence Forces (EDF), which is currently using Information Systems (IS) mainly for administrative purposes. The potentials of using Collaborative Tagging in Inter- and Intra-organizational settings for knowledge management and sharing are not well understood at present. Moreover, military applications of Collaborative Tagging have not been reported. The paper will therefore explore some initial use cases of the use of Collaborative Tagging and from these identify potentials and threats. Does collaborative tagging in semantic environment help us better organize knowledge in the EDF Information Systems? Semantics can foster to gain individual knowledge in the community.

Keywords: Collaborative Tagging (CT), Estonian Defence Forces (EDF), Knowledge Maturing, Semantic Scuttle (SSC).

1 Introduction

Collaborative tagging describes the process by which many users add freely chosen keywords (tags) to shared content (such as webpages, photos, …) and in the last years, collaborative tagging systems emerged as a popular tool supporting knowledge workers such as researchers or students in managing their own resources and finding relevant material based on keywords assigned to them [1].

With this paper, we will be exploring the usage of Collaborative Tagging in administrative Military Information Systems. The Estonian Defence Forces (EDF) is currently using Information Systems (IS) mainly for administrative purposes.

2 Backgrounds

In order to proceed with further analyses the conceptual terms should be clarified:

- **Tags** are metadata about the resource;
- **Collaborative tagging** (CT) systems allow users to share resources in the web and to annotate them with freely chosen keywords, so called tags. The resources together with the tags are stored on a central server and can be

accessed from any computer connected to the web. The term social bookmarking system often is used interchangeably for such systems.

Tags, Collaborative Tagging, Taxonomy, Folksonomy - this is common terminology getting from individual knowledge sharing into group knowledge sharing in the current research.

The Concept of administrative Information Systems of EDF is based on strong Taxonomy. There are for every Information Systems platform different kind of uses cases, which describe different problems.

- EDF Information System Postipoiss (provides the possibility of managing incoming and outgoing documents during these lifecycles. Finding the specific document is time consuming. The System uses expired structure and it needs modern solutions and capabilities, which would satisfy user`s needs.);
- EDF Mil intranet (It supports transportation orders, job time schedule administration, training materials databases and a lot of other necessary possibilities);
- EDF Mil internet web page (for public gives answers to the questions: What EDF is? What the EDF tasks are?)
- ILIAS E-Learning portal (different kind of learning manuals, course papers etc.)

The problem: At the moment used Information Systems are having information overlapping – you can find the same information in different systems. Information is not managed effectively – finding exact information in different information systems can be very time consuming and problematic. One of the helpful solutions would be to start using Collaborative Tagging in the systems simultaneously with Taxonomy. How much it would help by organizing user`s knowledge during information sharing in the systems? - The empirical studies are conducted for this reason by the author.

3 Knowledge Maturing

The kind of activity and commitment which is facilitating tagging in organizational environment has to carry broader mission and goal for EDF.

Knowledge maturing is a concept which defines goal-oriented learning on a collective level. While developing collaborative tagging capabilities it thus becomes essential to evaluate the alternative solutions from knowledge maturing perspective. During the knowledge maturing process knowledge becomes less contextualized, more explicitly linked and easier to communicate. It takes place in five sequential phases defined as: expressing ideas, distributing in communities, formalization, ad-hoc learning and standardization [3]. As collective tagging reflects the process of knowledge creation from individual perspective and collective perspective then the activities within collective tagging can be connected to the knowledge maturing phases.

In order develop and maintain the credible capacity of EDF and ensure constant learning at organizational level knowledge maturing phases have to identifiable inside the collective tagging.

4 The Research Project and Methodology

In this section the Research Vision of the Knowledge Maturing in the Collaborative Tagging will be presented. The principal author of the current research paper has started from the beginning of the year 2012 the small research project by using the Semantic Scuttle (SSC) software.

SSC has been implemented based on three level layers:

1. Information Systems Layer consists of different kind of used administrative Information Systems (IS) in EDF.
2. Semantic Layer consists of used Information System called SSC. It`s goal and possibility is to combine all the coming information from IS into semantic context – every SSC user can find necessary information more efficiently and information is combined into one environment.
3. Knowledge Maturing Layer – taken into account the Knowledge Maturing theory we can improve organizational knowledge collaboration. We can use technology efficiently and organizational knowledge will be improved.

Collaborative Tagging improves Knowledge Management, because by using Tags we can prioritize most used information and knowledge. Personal Tag Clouds will be shared and it gives in community setting capability of Community Tag Cloud sharing. Finally we will have Taxonomy in Collaborative Tagging – based on common rules how to share information and knowledge will be tagging used as effective tool.

The principal author of the current paper would define research project as field experiment in Nascent Theory Research, because current research project tries to solve different kind of practical problems by using theory which has not been used in such context before [4].

The principal author would define his research steps as Traditional Field Research Process [4]:

- Identify target area of interest (Collaborative Tagging capability in EDF Information Systems);
- Reading the literature (reading about Collaborative Tagging generally)
- Develop research question (will be developed according that Knowledge not managed effectively in EDF Information Systems)
- Design a study (Interviews, observations, questionnaire produced regarding how could help EDF Information Systems users Collaborative Tagging tool Semantic Scuttle by sharing knowledge more effectively)
- Collect and analyse data (Qualitative data that need to be interpreted)
- Write up results
- Publish the research project

Research consists of 4 cycles. Every cycle starts from action planning and continues with action, action observation and finally changes will be conducted:

- I Cycle: Orientation phase goal was to understand the situation regarding information management in EST MIL information systems (domain description is the outcome). Different use cases were defined. First answers to the questionnaire.
- II Cycle: Check out phase goal will be interviews (should be recorded) with the selected interested co-workers with professional ideas how to improve the environment. Detailed description of necessary needs and their improvement with CT technology and look up in semantic layer context will be done. Analysing semantic scuttle context with selected users will be conducted.
- III Cycle: Exercising phase goal would be by summarizing previous phases improved use cases will be defined and exercises based on use cases how to improve these problems based on user's opinions by using CT technology and semantic scuttle context. All the ideas and experiences will be documented.
- IV Cycle: evaluation phase goal would be summary of the project and documented results. Results should show different final use cases and how these will be solved based on CT and Semantic layer context. Finalized will be semantic layer context regarding Knowledge Maturing (KM) processes.

Further research improvements will be taken into account during PhD studies of the paper author.

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