Chapter 15

Development of an Ontology-Based E-Recruitment Application That Integrates Social Web

Michel Tétrault
University of Montreal, Canada

Aude Dufresne
University of Montreal, Canada

Michel Gagnon
Polytechnique Montréal, Canada

ABSTRACT

This chapter presents the elaboration of an ontology-based application called Combine. This application aims to optimize and enhance e-Recruitment processes in the domain of Information Technologies' staffing services, and especially e-Recruitment processes that use Social Web platforms as a means of sourcing candidates. This chapter will describe the context motivating this development and how the system was designed, from the requirements analysis to the prototype evaluation, revealing the concerns, constraints and opportunities met along the way. All of these factors will be discussed mainly in regards to Computer-Mediated Communication (CMC) and Human-Computer Interaction (HCI) theories in order to argue the potential return on investment of the conceptualized semantic e-Recruitment application.

INTRODUCTION

As the Social Web, commonly called Web 2.0, settles itself into everyday life, many traditional ways of doing business are challenged by a lot of new opportunities and concerns. Due to a lack of models or applications supporting this new reality, many businesses have begun experimenting with ways to exploit social networking, and thus leaving the path of their standardized workflows. The industry of staffing services has certainly been strongly affected by the web 2.0 revolution, and
especially staffing services in the field of Information Technologies (IT). A study of recruiters from the IT sector (Tétreault, 2010) ranked LinkedIn, a social networking platform, as the second most consulted web site (out of eight sites identified) for looking for new candidates, right after Monster.ca, a classic job searching site that sells to companies access to its CVs repository. The study thereby found that social networking is now considered a necessary practice by the corporate culture of the targeted recruiters. This unplanned experimentation might be beneficial in the short term (the studied recruitment organization does in fact find and hire quality workers via social networking sites), but it leads to some uncertainties, organizational problems and ethical issues in the long term (the question of the ownership and exchangeability of data, the political games around the sharing of contacts, the multiplication of systems, etc.). It also reveals that social networking has a potential value that is still poorly defined, and thus underexploited.

Another dimension of the communicational reality of IT recruiters amplifying this problem, is the constant – not to say accelerating – evolution of means to produce and disseminate information, as well as the content objects of information (i.e. concrete objects about which is the information). From the perspective of the attention economy theory (Simon, 1996; Davenport & Beck, 2001), this information-rich world we now live in forces recruiters to split their attention in order to manage a wide variety of information systems, electronic documents and communication devices. “Too much information kills information” is the cognitive ergonomic’s classic saying.

What Could Help?

Providing the industry with a broader worldview about the current situation may be a good start. For people who are still struggling to master the web 2.0 concepts, seeing the horizon of a web 3.0 (Semantic Web) and empowering them with a better understanding of the future of the web, should put them in a more proactive position. Ontologies, which are one of the main technical components of the Semantic Web (SW), are formal knowledge models that allow one to abstract and standardize representations across a domain and thus, ease the management and integration of the information resources of that domain, whether documents, sites or software. As a consequence, ontologies and ontology-based applications are showing some great interoperability potential that could address the cognitive problem of the sophistication and multiplication of web resources.

In that way, this chapter presents the conceptualization of a system called Combine, which adopts the principles and technologies of the SW. It also presents the research that has been done around the development of the system’s specifications and prototypes (ontology and user interface). Basically, Combine integrates an ontology¹, a screen scraping device and an automated browser within an e-Recruitment application dedicated to support IT’s staffing processes. This system can ease the interactions and the data exchange with social network applications (or many other types of electronic resources). As for a mandate, the Combine development project aims to highlight the benefits, of a given Community of Practice (CoP²; here refers to the recruiters of a consulting and staffing group in the field of information technologies), of using a system that implements SW technologies. In that, the Combine project was a form of market research with which to probe the needs and receptivity for such an application. More precisely, Combine was a usability engineering development case, primarily based on Human-Computer Interactions analysis of the application’s field, that focused on providing an overview of what a SW application, using existing techniques, could bring as a solution to the identified problems.

How do SW technologies, supported by common web technologies and techniques, allow the automation of recurring tasks of e-Recruitment