Chapter 16
Professional ICT Knowledge, Epistemic Standards, and Social Epistemology

Frederik Truyen
University of Leuven, Belgium

Filip Buekens
Tilburg University, The Netherlands

ABSTRACT

Several co-evolving trends have impacted expectations of professional workers' quality of knowledge. The abundance of information shared through the Internet, the ever-increasing specialization of tasks, the possibility of immediately accessible information through social networks, the participation of stakeholders in the social web, and the increased requirements for separation of duty in a corporate context have contributed to a situation where the current 'knowledge worker' is not expected to have the same level of readily available knowledge as before. This chapter describes this phenomenon in detail with a case study from ICT-expert jobs. It shows that an ICT manager can no longer overlook the work of collaborators, just by virtue of being the smartest employee around. He/she will increasingly rely on organizational procedures and professional standards to assess whether the right people - with the right competencies for the job – are at his/her disposal. After describing the specifics of professional knowledge for ICT experts and the role of social software plays in this, the chapter focuses on the epistemological aspects of ICT expertise. The authors discuss current strands of reliabilistic accounts for knowledge in relation to expertise. They show that besides reliability, it is accuracy that is needed in order to perform as an expert.

INTRODUCTION

Accuracy is a thoroughly social concept. In discussing "interactive expertise", the social constraints on knowledge are explored further, in direct relation to the social networks that are facilitated by social software and web 2.0 technologies. In fact, as advocated in connectivism, acting as part of a strong knowledge network allows for adaptation to current knowledge needs.

Once a theoretical framework has been set up, we will look into aspects of knowledge acquisition, dissemination and consolidation made possible by social software and web 2.0: track while scan, information filtering, information re-use, open source and crowd sourcing.

DOI: 10.4018/978-1-4666-2178-7.ch016

In this chapter, we will discuss how the requirements for professional expert knowledge have evolved through the Internet and its technologies. We will show how the role of social software not only impacts the way knowledge is created and disseminated, but also what an individual is expected to know in order to be considered an expert in the field. We will focus on examples of ICT (information and communications technology) experts, as they are easily recognized as such in society and have a close link to the technology discussed.

The Internet in general, and social software in particular, has an obvious impact on how ICT workers collaborate. This comes as no surprise. But changing ways of collaborating, in the end, also means changing expectations of co-workers' knowledge. When one builds a social network around a particular domain of knowledge, one comes to trust certain people for their knowledge. Building such a reliable network helps to forge a stable working environment. It helps to vet decisions and diminish uncertainties. In this chapter, we propose that the requirement for accuracy is a central and underestimated aspect when assessing expert knowledge. This requirement helps us understand why the ICT profession evolved in the way that it did, and why social software and web 2.0 have emerged as a natural environment for ICT knowledge acquisition, dissemination and consolidation.

The Knowledge of ICT Professionals

In what follows, we will look into the professional knowledge of ICT workers in small to large teams, typically SME's (small and medium enterprises) whose core business isn't ICT. The examples we have in mind are primarily the systems support people - like system administrators (sysadmins) - who are responsible for the company network, its servers, its main application hosting and in many cases, providing support for the users of its infrastructure.

While the ICT profession has a solid basis in mathematics in general and computer science in particular, the cases that we examine demonstrate how a large amount of the expert knowledge required is acquired through trial and error, and through a reliance on so-called "best practices". The trial-and-error methodology - inherent in designing ICT solutions - makes for loose selection criteria, many solutions for the same problem, a lack of convincing arguments and the distinct feeling amongst customers that they are dealing with an immature business.

It also means that supervision is hard to accomplish: an ICT-manager is often in charge of several specialized domain teams, the members of which have more in-depth knowledge than the manager himself. Whereas the team leader is typically a *primus inter pares*, the manager supervising the team leaders is neither a primus (he/she doesn't have the specialty of the teams) nor an equal: his/her way of dealing with ICT is on a more functionally abstract, organizational level. This leads us to a first, important observation, viz. that supervision of expert teams is only partially based upon individual knowledge. Merely knowing more about the same subject is not the sufficient condition of being a qualified ICT manager.

Supervision of ICT is then managed through several possible mechanisms:

- The implementation of ICT management standards such as COBIT (www.isaca.org/Knowledge-Center/COBIT) or ITIL (www.itil-officialsite.com), which provide general frameworks that ensure one is prepared for all possible risks – this is mainly the case in larger organizations;
- Certification or accreditation of ICT professionals, for certain roles;
- Auditing, both internal and external;
- Consultation;
- Peer assessment;
- In service training.