Abstract

Some contemporary theoretical and technological issues that are becoming of paramount importance for building a cross-disciplinary research and knowledge-sharing environment are outlined, pointing out those cultural changes implied by the increasing adoption of the ICT. In the unprecedented abundance of information sources that can be reached through the Internet, the growing need for reliability will not be met without a major change of scholar’s, teacher’s, and learner’s attitudes to foster enhanced trusted relationship. In this chapter, emphasis is placed on the open source organizational model, highlighting some of the key elements of the open culture: knowledge-sharing technologies, interoperability, reusability and quality assurance.
Introduction

The spreading of the ICT in a variety of contexts is raising the urgent need for a transformation in how we experience and exchange knowledge and will have substantial impact in scientific and commercial production, as well as in the learning process. Lifelong learning and cross-disciplinary collaboration competencies will be more and more required by scientific institutions and enterprises, while knowledge sharing will become the *sine qua non* of collaborative research.

Boundaries between research areas are increasingly blurred, and growing numbers of investigations are being carried out by larger and geographically distributed teams composed of different kinds of professionals working in close contact.

The ability of sharing knowledge is getting more and more important in universities. The patterns and cadences of interaction among faculty members, learners, instructional development staff, knowledge management staff, and expert practitioners will assume new forms. The ability of generating just-in-time knowledge will spread in parallel with a decline of the relative importance of static knowledge. Pervasive, perpetual learning, richly supported by knowledge management, will become the new “gold standard” for many learners’ experience (Collier, 2003).

It is clear that we cannot naively rest and merely rely on the power of the ever more-advancing new technologies to successfully face such challenges.

More efficient organizational frameworks for the production of knowledge components and for their sharing and reuse are to be devised and fine-tuned, together with aptly suited international laws to regulate authorship management, and a stronger commitment to manage and assess the quality of information.

But the establishment of such infrastructure will not be enough. Ability to create and maintain new relationships with coworkers, often outside the institutional context, and the attitude to emphasize truthfulness of such relationships should be tied with these changes, thus positively affecting the whole spectrum of interpersonal relations and driving the same kind of thorough cultural change that can be already witnessed by some successful open source software projects.

In fact, a response to such challenges is provided by the people involved in the open source phenomenon, where peculiar collaborative methodologies and organizations, rooted into a freely accessible digital infrastructure, are brought out, aimed at designing, assembling, maintaining, and delivering knowledge objects; thus, increasingly shifting the locus of innovation toward users, so that an economical system consisting of complete user-to-user innovation systems can be foreseen (Barron, 2000).

We all have to reeducate ourselves: the culture of open source brings very-high new demands on data quality, information quality, and source code quality, as well as on accountability of all those contributing code and data, and of those who merely use the benefits of open source. These traits countersign the new phenomena of
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