ABSTRACT
Society currently lives in a world of tailorable systems in which end-users are able to transform their working environment while achieving their tasks, day to day and over the time. Tailorability is most of the time achieved through dynamic component integration thanks to a huge number of components available over the Internet. In this context, the main problem for users is not anymore the integration of new components, but how to find the most interesting set of components that will fulfill their needs. Facing this issue, the authors’ assumption is that it would be helpful for users to take benefit of the experience of other users and our work aims at enhancing current software ecosystems to support this sharing of experience. The authors have applied this approach in the context of software development while considering Eclipse as one of the most advanced and used software ecosystem. The authors then offer ShareXP, an Eclipse feature that allows members of a group to share their expertise, this expertise being embodied in the “compositions” each of them has built. ShareXP was already presented in (Bourguin et al., 2012). The current paper is an extension where the authors deeper show that ShareXP is only a first step in their global approach trying to enhance not only the Eclipse ecosystem, but software ecosystems in general.

Keywords: Component, Component Composition, Eclipse, EUD, Expertise Sharing, Software Ecosystems, Tailorability

INTRODUCTION
Tailorability is today much more than a research concept and many of the currently widely used software are in fact tailorable. This statement can be verified in many different application domains: for instance image editing with Photoshop and its plug-ins, Business Process Management (BPM) with solutions offering diverse connectors for service integration, computer games with World of Warcraft and the success of its add-ons which enable users to enhance their playing environment, and, of course, software development with the Eclipse ecosystem and its “everything is a plug-in” approach (Gamma & Beck, 2004). Even if solutions exist and are used in everyday life, there are remaining issues, and a large part of the research work in end-user development tries to propose better tailorable systems (Zhu et al.,
Not surprisingly, most of this research is directed towards new means for integration, since this way of tailoring has long been identified as offering a good equilibrium between the level of tailorability that can be achieved, and the level of expertise or effort that is required to achieve it (Mørch, 1997). A lot of work still remains for understanding how to facilitate this component integration.

However, many systems already propose well-defined integration means, and there is a real huge collection of components that can be easily downloaded and integrated. In this context, the matter for users is not anymore how to integrate new components, but how to find the most interesting sets of components that will fulfill their needs. Facing this issue of finding and selecting good components for performing particular tasks, we suggest that it would be helpful for users to take benefit of the experience of other users.

In fact, the individual skills of users and their ability to share and generate knowledge within their communities and social networks play a crucial role for organizations which want to continuously learn. Networks of personal relationships which are created and reinforced through interpersonal conversation are critical in supporting knowledge sharing (Erickson & Kellogg, 2002). As an example, this has been showed in a field study on the use of Eclipse done by Draxler et al. (2011a) where they found that integration work in the Eclipse ecosystem is a social activity where actors rely on their local social network. The diffusion or sharing is often rooted in personal contacts, project teams, work groups or even a whole organization. But what is the knowledge that users of the Eclipse ecosystem could share for their organization to learn? Finding a component does not give any knowledge by itself. In fact, the context of its use makes the difference. And context arises from embodied knowledge, which is information that is uniquely and integrally embodied in the person’s personality, creativity, intelligence, perceptions, experiences and relationships (Fitzpatrick, 2002). Embodied knowledge is the essence of expertise. It is difficult to identify a priori what expertise could be shared, but it comes naturally in the course of a conversation, in response to hearing or seeing a connected theme and choosing to contribute (Fitzpatrick, 2002). In tailorable systems, components assemblages are elements where knowledge is embodied. A particular assemblage or composition represents a particular point of view on the working environment that best suits a specific task. We will show in part 2 how, when faced with new needs, or as their expertise grows, users can modify their compositions: they add new components, modify their graphical arrangement, etc. Compositions thus crystallize their users experience while reflecting some part of their expertise, as they are the result of users’ embodied knowledge while realizing their tasks. Better supporting the sharing such particular compositions is our proposition for expertise sharing in tailorable environments.

In order to test our ideas, we have particularly developed this approach in the context of Eclipse. Eclipse is one of the most used, most tailorable, and most studied environments where a particular components composition is called a perspective (Springgay, 2001). As a result, we offer ShareXP, a sociotechnical system in the sense that we aim at designing usability while supporting sociability (Preece, 2000), and that was presented in Bourguin et al. (2012). By using ShareXP, users are able to browse particular composition(s) created by others, to preview a composition according to a chosen perspective, to chat about them, and eventually to integrate a full composition or some of its (sub-)component(s) in their own environment. By offering these functionalities, we follow three of the guidelines defined by Wulf et al. (2008) to improve component-based tailoralibity: (1) We offer an "exploration environment" allowing the simulation of the interface, (2) the shared repository (containing the components) is integrated into the tailoring environment, (3) the shared repository is activated directly with only those components that are relevant for a certain tailoring context being displayed (the perspectives).
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