Chapter V

Collaborative Engineering Communities—Architecture and Integration Approaches

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Abstract

Regarding the growing task distribution in the area of design and product development (engineering), the idea of communities gets more importance next to the creation of classical development partnerships in engineering. Communities are known as a new organizational kind for users of electronic communication media. The main aim of this chapter is to transfer the idea of communities to engineering networks. Therefore an overview on creation, requirements and profit of collaborative engineering communities is provided. Also a possible integration is shown between collaborative engineering environments and enterprise resource planning systems.
Introduction

In the era of globalization the concept of distributed interaction gains importance, especially concerning the aspects of fast and ubiquitous computing. Virtual communities are a good possibility to organize semi-formal work interactions between people of the same company and beyond. An area of application of virtual communities that is not well described is the process of engineering. In engineering distributed work is well known, but rarely using communities and especially not integrating customers and independent resellers into the engineering communities.

Therefore it is necessary to analyze the desired types of interaction and kinds of knowledge exchange and then to create a supporting application framework, basing on the results of the analysis. This application framework, named as collaborative engineering community, is described in the later sections of this chapter.

Communities as a New Form of Group Organization

In this section, the different mechanisms of interaction between people dispersed in time or space are explained. Basing on this categorization a typology of different kinds of community-supporting software is presented.

Mechanisms of Interaction

A descriptive property of distributed systems is the concerted fulfillment of the task. Formal mechanisms of interaction with different degrees of intensity are communication, coordination, cooperation and collaboration. All mechanisms of interaction base on information exchange.

Communication

Communication is defined as the exchange of information. Information is defined as purpose or target oriented data in the field of business information
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www.igi-global.com/chapter/presence-based-real-time-communication/12469?camid=4v1a

A Policy-Based Team Collaboration
www.igi-global.com/article/policy-based-team-collaboration/61402?camid=4v1a