

# Chapter LXIV

## Mobile Multimedia Collaborative Services

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### ABSTRACT

*Mobile communication and Web technologies have paved the way for mobile multimedia collaborative services that allows people, team and organisation to collaborate in dynamic, flexible and efficient manner. Indeed, it should be possible to establish and terminate collaborative services with any partner anytime at anywhere on any network and any device. While severe requirements are imposed on collaborative services, their development and deployment should be simple and less time-consuming. The design, implementation, deployment and operation of collaborative services meet challenging issues that need to be resolved. The chapter starts with a study of collaboration and the different collaboration forms. An overview of existing collaborative services will be given. A generic model of mobile collaborative services is explained together with the basic collaborative services. A service oriented architecture platform supporting mobile multimedia collaborative services is described. To illustrate the development of mobile multimedia collaborative service, an example is given.*

## INTRODUCTION

The ultimate goal of computing is to assist human beings in their work by supporting complex, precise, and repetitive tasks. With the advent of the Internet that brought ubiquitous communication, the fundament for ubiquitous distributed computing has been laid. The next objective of computing is hence to facilitate collaboration between persons and organisations. Indeed, in the current globalisation and deregulation era, high level of dynamicity is required from the enterprises. They should be able to compete in one market as they collaborate in another one. Collaborations should be established as quickly as they are terminated. Collaborative services should be tailored according to the nature of the collaboration and to the agreement between the partners. They should be deployed quite rapidly and should function in a conformed way with the expectations of the collaborators.

With mobility, a person is able to access services anytime, at anywhere and from any device. Both, higher flexibility and efficiency can be achieved at the same time as the users' quality of life is improved considerably. Advanced collaborative services should definitely be mobile (i.e., available for the mobile users from any network and any device). While severe requirements are imposed on collaborative services, their development and deployment should be simple and less time-consuming. There are many quite challenging issues that need to be resolved in the design, implementation, deployment, and operation of collaborative services. In this chapter, mobile collaborative services will be examined thoroughly. The nature of the collaboration and the different collaboration forms will be studied. Existing collaborative services will be summarized. A generic model of mobile collaborative services is explained together with the basic collaborative services. A service-oriented architecture platform supporting mobile collaborative services is described. An example of the development of mobile collaborative services is given as illustration.

## BACKGROUND

Organizations constantly search for innovative applications and services to improve their business processes and to enrich the collaborative work environments of their distributed and mobile knowledge workers. It is increasingly becoming apparent that a limiting factor in the support of more flexible work practices offered by systems today lies in their inherent assumptions about (a) technical infrastructures in place (hardware, software, and communication networks), and (b) about interaction patterns of the users involved in the processes.

Emerging new ways of flexible and mobile teamwork on one hand and dynamic and highly agile (virtual business) communities on the other hand require new technical as well as organizational support, which current technologies and infrastructures do not cater for sufficiently.

Pervasiveness of collaboration services is an important means in such a context, to support new business models and encourage new ways of working. A service is a set of related functions that can be programmatically invoked from the Internet. Recent developments show a strong move towards increasingly mobile nimble and virtual project teams. Whereas traditional organizational structures relied on teams of collaborators dedicated to a specific project for a long period (Classic Teams, see Figure 1), many organizations increasingly rely on nimble teams, formed from members of possibly different branches or companies, assigned to perform short-lived tasks in an ad-hoc manner (sometimes called ad hoc teams). For team members, tasks may be small parts of their overall work activities. Such nimble collaboration styles change many of the traditional assumptions about teamwork: collaborators do not report to the same manager, they do not reside in the same location, and they do not work during the same time. As a consequence, the emerging new styles of distributed and mobile collaboration often across organizational boundaries are

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