



Chapter 11

**The Knowledge Medium – A
Conceptual Framework for the
Design and Implementation of a
Platform Supporting the
Community of AIDS Researchers
and Practitioners**

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INTRODUCTION

The health care industry is essentially knowledge-based. The quality and efficiency of work performed depends on the ability to both manage internally created knowledge, e. g., about healing practices and available expertise as well as to enrich and integrate it with relevant external knowledge created world-wide by pharmacy research teams, international health organizations, etc. Efficient management of knowledge in health care requires, therefore, concepts and solutions for cooperation and sharing of knowledge within and between communities (Greiner & Rose, 1997).

Communities must be supported by special “platforms” which consider both the common language and the community-specific communication and cooperation requirements. In this chapter, we will introduce the concept of the knowledge medium defined by Schmid and apply it as a conceptual framework to the design

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and implementation of a platform supporting the community of AIDS researchers and practitioners. Thereby, the Swiss HIV Cohort Study (SHCS) will be the core community and the starting point of our analysis.

SHCS is a multi-center clinical trial involving outpatient clinics of seven center hospitals (referred to as “Cohort Centers”) and a Coordination and Data Center. SHCS was initiated in 1987 (1) to collect clinical, laboratory, and socio-economic data with the intention of analyzing the prevalence and progression of the HIV-infection in Switzerland, (2) to promote and facilitate clinical research, and (3) to improve the health care services provided to HIV-infected patients (Ledergerber, Von Overbeck, Egger, & Luthy, 1994). Currently, the technical infrastructure supporting the SHCS includes various legacy laboratory systems at the Cohort Centers and a relational database system at the Coordination and Data Center. This database system is the common repository of the Cohort Centers and provides the basis for statistical analysis and planning of clinical trials. All data (including the electronically available) are manually processed on a paper study form including various media breaks. As a result, the creation and dissemination of new knowledge based on study data is considerably delayed. In order to overcome this shortcoming, a Web-based platform has been designed and is currently being implemented based on the concept of the knowledge medium.

THE CONCEPT OF THE KNOWLEDGE MEDIUM

Definition and Components of the Knowledge Medium

Schmid defines a knowledge medium as a sphere for the exchange and generation of knowledge within a confined community of human and artificial agents (Schmid & Stanoevska, 1999). *Communities* are associations of agents which share a common language and world as well as values and interests and use media in order to communicate with each other by taking over (predefined) roles. Thereby, the (digital) media provide a metaphor for physical meeting spaces. *Online* or *net communities* use (interactive) electronic media, particularly the Internet, in order to communicate with each other (Lechner, Schmid, Schubert, Klose, & Miler, 1999). Supporting or initiating an online community means building the appropriate medium which meets the specific community requirements for communication and cooperation.

A knowledge medium is comprised of the following components (Grütter, Stanoevska, & Fierz, 2000; Lechner & Schmid, 1999; Lechner et al. 1999; Schmid & Stanoevska, 1999):

- a *logical space* defining the common syntax and semantics of the knowledge represented and exchanged by the medium;

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