

# Chapter XXI

## A Classification Scheme for Innovative Types in Scholarly Communication

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### **ABSTRACT**

*Information and communication technologies seem to bring new dynamics to the established, but partly deadlocked, system of scholarly communication. Technologies are the basis for new publication forms and services which seem to enable a faster and more cost-efficient distribution of research results. Up to now new forms of scholarly communication have been described in the literature only in the form of single and often anecdotic reports. Despite the large number of papers in that area, no classification scheme for new forms of scholarly communication can be found. Therefore, this chapter aims at presenting such a classification scheme. It allows the description of new forms of scholarly communication in a standardized way. A structured comparison of new activities is possible. For this purpose, original publication media on the one hand and complementary services on the other are differentiated. With the help of morphological boxes, characteristics of both kinds of new means of scholarly communication are presented.*

## **INTRODUCTION**

The number of scientific journals and, subsequently, the number of published articles grew at an enormous rate over the last century (Henderson, 2002). In the second half of the 20<sup>th</sup> century the system seemed to abut against its boundaries, because, in comparison to research budgets, library budgets did not grow fast enough to cover the entire academic output produced (ARL, 2004). Price increases well above the inflation rate were set by commercial publishers whose disproportionately high market power—especially for journals in the science-technical-medicine-sector in the last 30 years—has worsened the situation even further (“serial crisis”). New information and communication technologies (ICT) seem to bring new dynamics and radical changes to the long established but partly deadlocked system of scholarly communication. The new technologies are the basis for innovative publication forms and services in the area of scholarly communication, which seem to facilitate a faster and more cost-efficient distribution of research results.

In this changed context, the role of libraries will change. It has to evolve from being a collector and provider of physical media to being a service provider and consultant for scholars in the area of scholarly communication. To fulfill this role, it is essential that the libraries themselves gain a deeper understanding of the emerging development in electronic scholarly communication. Furthermore, discussions and further research work should be based on a precise and systematic description of reality.

Up to now new forms of scholarly communication have been described in the literature mainly in the form of single and often anecdotic reports. Despite a large number of papers in that area, no classification scheme for new forms of scholarly communication is available from the literature. Therefore, this chapter aims at presenting such a classification scheme. It allows the description of new forms of scholarly communication in a

standardized way and facilitates a structured comparison of new activities.

## **BACKGROUND**

### **Functions of Scholarly Communication**

Scholarly communication is an important part of the research process. For systematic and efficient scientific progress to take place, research results have to be published and made accessible to other researchers who need to incorporate them in their own research (Figure 1).

Scientific publications are the formal means of communication between scientists. In general, a scientific publication fulfils four main functions that are valuable for the scholarly communication (Kirez & Roosendaal, 1996):

- The registration function that relates research results to a particular scientist who claims priority for them,
- The certification function that concerns the validation of research,
- The awareness function that leads to disclosure and search needs, and
- The archiving function that concerns the storage and accessibility of research results.

Every kind of scholarly publishing must fulfill these abstract functions in some way or another (Geurts & Roosendaal, 2001).

### **Classic Rolls in Scholarly Communication**

Figure 2 provides an overview of the interaction among players and their position in the scholarly communication value chain that prevails in the traditional model.

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