Preface

Collaborative approaches facilitate user participation via interaction in order to solicit, collect, and integrate input from users to improve the quality of the output. Traditionally it was done by proper implementation of incentives and rewards to invoke actions from stakeholders through some structured communicative channel. With the appearance of all kinds of social software, the landscape is changing, and so emerges the new paradigm of collaboration.

Now, collaboration is often thought of as a relatively new yet rapidly maturing kind of technology. Wikis, blogs, and other tools have been mainstreamed over the last few years. Many organizations have found that collaboration suffers from common problems: people do not use it because it creates additional work or does not meet an existing need; a proliferation of ad-hoc tools and widgets creates an unproductive working environment; collaboration becomes an end in itself rather than serving a useful purpose.

As a result, organizations are rethinking their approaches to these tools, and in considering the business case for their use, are seeing a need for ‘deep collaboration’ – that which enables an organization’s core business processes to be carried out more productively in a collaborative fashion than otherwise.

This book is geared toward those who have encountered either the theoretical or practical aspects of collaboration and have wanted a grounding, framework, unified theory, or set of best practices. In some cases they will be business practitioners who are evolving new business models; in other cases, policy experts attempting to grapple with emerging crises, or researchers who are interested in contributing to the emerging body of knowledge in an area which seems set to transform many of the areas with which it intersects.

From one vantage point, the Web was created in order to do collaboration and is just now getting up to the task. It now seems fitting that, with the rising need for more meaningful interactions, collaboration might once again be seen as the main thing, and the Web its byproduct.

In this framework, collaboration is emerging as the new ‘bricks and mortar’ of purposeful activity. Many organizations have ‘gone digital’ – replacing bricks and mortar with a digitized presence - only to find that a key element, that of collaboration and its valuable creative, decision-making, information-sharing, and inclusive power, was missing. As evidence of this, one need only look to the confusion and time involved in sending out trillions of emails as a substitute for collaboration that works.

This book is organized into three general themes: patterns of user experience, interactive tools, and information spaces.

Section 1: Patterns of User Experience for Collaboration

The key to reaping the benefits of deep collaboration lies in modeling the distinctive processes that constitute an organization’s differentiating factors, the reason it exists in the first place. These patterns of collaborative user experience form the building blocks, the new bricks and mortar, for organized activity.
In *A Technology for Pattern-Based Process Design and its Application to Collaboration Engineering*, Gwen Kolfschoten notes that many business processes are inherently collaborative in nature. This chapter shows how managers can design collaboration processes for an organization, and how best practices or design patterns can be used as building blocks. It describes how to build a tool for pattern based collaboration process design following the collaboration engineering approach. This CASE tool supports both users and designers in a continuous learning cycle.

*Pattern-Based Tool Design for Shared Knowledge Construction*, by Stephan Lukosch, shows how to design tools for collaborative knowledge management. These tools pose unique challenges, as they must accommodate interdependent patterns of use by multiple users. The major problems involved are assessed, and a pattern-based process with example tools are introduced.

*Creative Waves: Exploring Emerging Online Cultures, Social Networking and Creative Collaboration Through e-Learning to Offer Visual Campaigns for Local Kenyan Health Needs*, by Andy Polaine, describes a project for designing critical healthcare information in local communities in Africa. It shows how the user experience of collaboration can address some of the most complex communication issues facing today’s world. In an online project, graphic designers joined forces with Pharmacists from over 40 countries to produce graphic proposals for public awareness campaigns for health issues affecting the people of a village community in Kenya. The task was extremely difficult because it encompassed educational, technical, and governmental/administrative dimensions. Nevertheless, the project met with success. This type of multidimensional, collaborative user experience may prove crucial in developing technical and policy approaches (such as preparing the way for research and development) in areas that have previously met with little success.

*Enhancing University Students’ Interaction and Learning Through Formative Peer-assessment Online*, by Monica Liljeström, presents a model for online education that raises interesting questions for curriculum theory. Students were given the opportunity to collaborate in the educational process by giving feedback on each other’s work. Early results indicate that this type of interaction can be an important adjunct to formal instruction. In an era where online education and lifelong learning are so important, and in which the role of technology in education has had mixed reviews, this approach shows that online education may have advantages over traditional classroom settings.

*Preparing the Next Generation of Innovators through Collaboration*, by Marjorie Darrah, offers insight into the types of collaborative experiences needed to spur the innovation. This chapter discusses the steps the United States is taking to ensure that its citizenry remains innovative: how the business community is using collaboration to be competitive, the issues encountered in schools to meet challenges of the 21st Century, and evidence that education is changing in response to the need to produce the next generation of innovators. These collaborative experiences in innovation will help to achieve ‘technology transfer’ – moving new ideas from academia into business implementation, in key areas like energy and healthcare.

*Social Networking Sites (SNS) and the ‘Narcissistic Turn’: The Politics of Self-Exposure*, by Yasmin Ibrahim, discusses a recent change in online communities: from using them to conceal one’s identity to using them to expose one’s identity. A new economy based on these transactions is emerging, which uses the sharing of personal information as a kind of currency. This economy revolves around the risks and rights associated with exposing personal information in anticipation of some future gain. These transactions involve social and cultural assumptions and expectations that are not always well understood by parties of different cultural backgrounds. This raises the issue of how identity and authority are constructed, which is a major theme of Continental philosophy. Identities, roles, rights, and actions will need to be formalized so that they can be incorporated into a SNS. This presents the interesting challenge of moving from Continental philosophy to its more Analytic counterpart. The impact of cultural
differences on technology design is made clear when one considers the very different approach to mobile use in Europe vs. the United States. SNS user experience patterns that are sensitive toward identity and political concerns might be used to improve challenging collaborative exchanges, such as those between the U.S. and Islamic communities, or to facilitate ecommerce initiatives between the huge, culturally diverse, emerging economies of India and China.

Many popular SNS, such as Facebook, Craigslist, and MySpace, have been notable for succeeding in spite of a lack of user experience design, which may help explain why their effectiveness has been hard to duplicate. In the next section are examples of collaborative tools that can be replicated across environments.

Section 2: Interactive Tools for Collaboration

New interactive tools are needed for designing collaboratively generated information. The tools shown here synergize collaborative activity by adding contextual value to information. The information is then used systematically to perform key functions (search, knowledge management, information organization). Once collaborative information is used systematically, quality metrics and best practices can be applied, thus providing the crucial link between collaborative possibilities that ‘seem like a good idea’, and those which show measurable results.

Wikis for Collaboration & Knowledge Management: Current Practices & Future Directions, by Cliff Kussmaul, describes clearly how Wikis can support collaboration and Knowledge Management. It also reviews effective tools and techniques, describes how they can be used for prototyping, and discusses future directions in these rapidly changing areas. It identifies best practices grouped into categories.

Maximizing Collaboration Using Topic Maps-based Ontology, by Myongho Yi, shows how the information glut compounded by many collaborative systems can be managed by using the topics the systems generate. This chapter discusses limitations of current information organization approaches in the digital age and shows how to incorporate ontology into information organizations in ways that facilitate collaboration. This chapter compares the two ontology languages, RDF and Topic Maps, provides guidelines for deciding which to select, and concludes by presenting user performance results of a Topic Maps-based ontology.

Collaborative Retrieval Systems: Reusable Information Quests, by Ying Sun, presents a new take on the critical search functionality. Current collaborative search uses previously collected search sessions as a recommendation. However, users with same expressed query topic may need different information. This chapter proposes a model for next generation search which enriches the context of query representation by incorporating non-topical properties of user information needs. This approach appears to improve the results of collaborative search.

Automatically Evaluating the Quality of Contents Created in Collaborative Knowledge Building: A Pilot Study Using Wiki, by Kwong Bor Ng, addresses one of the key challenges of using Wikis: content quality. While a system that allows anyone to contribute has its advantages, an obvious drawback is that of quality control. This paper describes a pilot study that identifies factors that can enhance the quality of contents built by open collaborative knowledge building. Using stepwise discriminative analysis and logistic regression, several variables were identified that could contribute positively to the high quality of Wiki pages. A machine learning method was applied to create a quality predictor based on these variables to test if a machine could automatically estimate the quality of a Wiki page. The result was analyzed using Receiver Operating Characteristic (ROC) curves from signal detection theory. The predictor worked remarkably well, with high correct prediction rates and low false-alarm rates. As more online publications move toward embracing user-generated content, but want to maintain quality, compliance of various types, and the integrity of editorial control, this approach fills a critical need.
Section 3: The Design of Information Spaces for Next-Generation Collaboration

These new user experiences and tools require new user interface designs. In many cases, the business or organizational framework of collaboration will determine the design of the information that is presented to the user. Whereas the original Wikis functioned similarly regardless of where they were deployed, in the case of deep collaboration, form follows function.

*Speak First, Then What?*, by Jay Heuer, describes a large, often-overlooked aspect of collaboration. According to Jakob Nielsen, “90% of users are lurkers who never contribute, 9% of users contribute a little, and 1% of users account for almost all the action.” In addition, it is sometimes the case that people post their own ideas without listening to others, defeating the purpose of having an online discussion. This chapter describes how to unleash the “dark side” of collaboration: listening, and how to collaborate in a true discussion that provides unique content.

*Collaboration in Open Source Domain: A Perspective on Usability* by Görkem Çetin, provides an open usability engineering method for use in distributed projects. Software designers in this area tend to build around features rather than user-centered design principles. As a result, it is easy to see the drawback to free software: it is hard to use compared to its commercial counterpart. The chapter examines collaboration methods, trends, and patterns of usability experts, users, and developers, with emphasis on concerns about inefficient exploitation of current tools and technologies.

*Teacher Librarians 2.0: Lights, Camera, Action! Via Video Conferencing*, by Lesley Farmer, shows how collaborative videoconferencing can be used as a tool to build professional networks. Professional associations are known for their importance in professional development and in being a clearinghouse for specialized expertise. Both of these aspects hinge on a level of personal interaction that is beyond that of a text-based collaborative system. Collaboration and videoconferencing are often studied independently; here they are presented in a system that has benefits for Teacher Librarians and potentially other groups. Best practices in facilitating Communities of Practice (COPs) and supporting teacher librarian professional development are identified. The components of video conferencing are detailed, and a case study explains how to facilitate a nation-wide community of practice among teacher librarians.

*Collaboration in Risk Markets*, by Scott Rummler, presents a system for using collaboration in risk-based environments such as finance, healthcare, and insurance. A structured environment for sharing critical risk information can improve decision-making. The chapter describes a business framework and an interface in which organizations might collaborate by trading risk-based products and information using an ontology, Web Services, and Peer-to-Peer technology. The chapter suggests that this type of environment might have been used to mitigate the impact of risk-based problems such as the current financial emergency. In conclusion, it is posited that a new type of product could emerge which incorporates the social-computing value of risk.

**CONCLUSION**

As readers will see and learn from this book, in the new collaboration paradigm, just letting stakeholders participate through some predefined channels to shape the final product is not enough to facilitate a productive process. “Collective” is not “collaborative”. Constructive collaboration needs active coordination, common goal synchronization, proper social technologies utilization, and supportive cooperation.

This book is a good first step in understanding how to overcome the limits of current collaborative activities. The best practices in user experience, interactive tools, and information design shown here illustrate how a richer, more creative, and evolving research framework can be used to design and implement practical collaborative technologies and applications.