Part V.

Conclusion

Dissertations are not finished; they are abandoned.

Frederick P. Brooks

8. Conclusion

In this chapter we present a summary of the contributions, applications and benefits of this work, as well as open problems and possible future work.

8.1. Contributions

The main contributions of this thesis are as follows:

We have proposed a theory of knowledge sharing. The theory is grounded on game theory and experimental economics. This gives us a framework for analyzing knowledge sharing in different environments. The theory provides testable propositions about the influence of different factors on knowledge sharing. It especially gives propositions about the influence of incentives and culture.

We have used actual transaction data from a global knowledge management system to empirically test our hypotheses about incentives and culture. This system from an international company has nearly 18,000 registered users in fifty-nine countries. The field data design gives a realistic picture of the knowledge-sharing behavior in a real system. To the best of our knowledge, a field study on the actual knowledge-sharing activities in a real knowledge management system such as this has not yet been conducted.

Then we have developed a model for knowledge trading. It addresses the different subproblems in a knowledge market and suggests solutions for each of them. The model should help market engineers who try to design a knowledge market. An emphasis lies in the analysis of different market mechanisms. We give testable propositions for the ranking of different knowledge transfer institutions.

Moreover we have designed and implemented an experimental environment to observe knowledge trading behavior. The conducted experiments have been used to test our hypotheses about the performance of the market mechanisms and the free riding behavior.

Finally we have developed an architecture for electronic knowledge markets which fits well in a service oriented architecture (SOA). Different aspects of the market have been modelled with UML and a prototype (*KnowMarket*) has been implemented. The prototype shows the feasibility of this approach.

8.2. Application and benefit of this work

This thesis has numerous practical implications. By predicting the effect of different factors on knowledge sharing, this thesis also gives recommendations about how to select appropriate levels of those factors to enhance knowledge sharing. It makes therefore a theoretical foundation for the management of knowledge sharing processes, especially in an international cross-cultural environment.

If it is true that our society becomes even more knowledge driven, the trading of knowledge assets will also be of even more importance. For market engineers and researchers this thesis offers solutions for different problems concerning knowledge asset trading. Our model for knowledge trading addresses these problems. The thesis gives experimentally supported guidance for choosing the appropriate market mechanisms for knowledge trading. Our analysis of mechanisms to match experts and advice seekers as well as to overcome the uncertainty about the quality of the knowledge assets enable the proper working of the knowledge markets.

8.3. Open problems and perspectives

There are some possibilities for future work. First of all, some propositions have not been empirically tested. A test about the importance of individual motives can well be incorporated in our *Data Trade Game* by adding a survey that checks the motives and values. These can then be compared with the actual knowledge sharing behavior in the game. Also, the game can be changed in such a way that the participants can communicate with each other (for testing Proposition 13) or are identifiable or anonymous in their actions (for testing Proposition 9).

The prototype *KnowMarket* was mainly designed for online expert advice. Even though a lot of aspects can easily be transferred to documented knowledge, a prototype for a Web Service oriented market for documented knowledge can complete the envisioned picture of globally ubiquitous knowledge trading, that could enhance the daily life of many knowledge workers.