

Chapter 9 Conclusion

In the introductory chapter, it was argued there is a strong case for using ABSS modelling in case study research where other modelling approaches are limited. The main justification was that agents are an expressive way to model the cognitive processes and complex interactions typical in management and business situations. It was argued that new insights could be gained from considering qualitative accounts and incorporating them in the model specification.

Modelling was shown to be a valuable tool for getting an insight into the dynamics of management issues such as customer take-up of e-commerce and value chain reorganisation. However it is not proposed that it is sufficiently penetrative to use as a replacement for multiple, qualitative case studies. Rather, the argument put forward here is that there is much to be gained from using agent-based modelling in parallel, i.e. as part of a multi-methodical approach to management research.

The complexity of case studies presents difficulties for modelling: much more work needs to be done to find appropriate techniques and methods. Some have been suggested in this thesis, for example in defining 'qualitative modelling' and developing ways to explicitly link fieldwork data and stakeholder clarifications into the specification of formal models.

The stakeholders, having much expertise in e-commerce systems and strategy of the company, were involved in the research from the beginning of the project. This collaboration required developing this relationship and maintaining contact over a long period of time. The interactions were of central importance for planning the research and affected greatly how it was carried out.

The key benefit of stakeholder involvement was to focus the modelling on those issues of particular interest to the company, hence ensuring the research approach was applied to relevant industrial problems on which it could be tested. The partnership also brought the benefits of improved model validation procedures (where the research could be carried out as planned). The role of the modeller is to assist the stakeholders in understanding the models and interpreting their results. On this point

it was quite encouraging that with a little explanation the stakeholders were able to grasp the basic concepts of agent-based modelling and to see how simulations could be used to explore the dynamics of different business scenarios. However, the modeller's role must be to more strongly mediate between the research findings and the conceptual understandings of the managers, whilst recognising the subjectivity of their accounts and identifying the assumptions that are inherent in these views.

One weakness that became apparent was the difficulty of obtaining access to data and expertise, which was highly dependent upon the availability of the stakeholders. Some key data were not forthcoming. This type of unpredictability of involving industrial and other partners is difficult to anticipate and plan for. However, the outcomes discussed in chapter eight were positioned relative to some classic problems of ethnography and participatory enquiry, leading to a better understanding of the measures necessary to take to reduce the negative impact upon future modelling research.

The combination of qualitative and quantitative methods was shown to produce a model that could reasonably approximate the main processes and outcomes of the value chain investigated in the case study. The methodology was therefore appropriate because it allowed development of a model that addressed the research questions stated in section 6.2. Furthermore, for the reasons given in chapter two it is unlikely that such a result could have been achieved with other modelling approaches. Clearly ABSS is not always appropriate, but is increasingly regarded as a valuable research tool in this type of study.

There are different criteria for evaluating the success of the research project. By the criteria of the case study design in section 4.2.4, it was established that it was a reasonable success. Whilst in academia a peer review system is used to evaluate projects, in industry a different set of rules applies. The most important criterion is having an end product (of the research) that is useful in practical terms. The researcher found it difficult to obtain feedback about the usability of both the fieldwork findings and the representative model. Whilst it is thought that the findings would be useful, it is not known who actually read it in the company. To counteract these problems of participatory enquiry, it was suggested a system of face-to-face

review meetings for the purpose of improving feedback between stakeholders and researcher.