Chapter 1

MANAGEMENT AND INTELLIGENT SUPPORT TECHNOLOGIES

We live in a world in which information and communication technologies (ICT) are becoming a ubiquitous presence in our working day. In most cases the impact and influence are benevolent and we should be looking for ways to improve the productivity of our working time with the help of ICT driven tools and support systems. In some cases it has turned out that the technologies become a problem as they are only partly mastered, as the learning process requires resources and time, and as the introduction of the ICT applications themselves have an adverse impact on the productivity of everyday working time.

We will tangle with the discussion of leadership versus management in Chapter 2, so here we will as briefly as possible just introduce a vague outline of what is involved in leadership and management activities in order to set the stage for what should be expected from support technologies. The key appears to be: (i) to understand, in some context, what needs to be done, (ii) then, what could be done to make a difference, (iii) then, to understand what actions and/or activities will produce performance and results, and (iv) what are the impact and relevance of the performance and results on the goals and in the context of actions and activities.

In recent years a number of innovative applications of modern support technology have been presented and published in international conferences\(^1\). The challenge for future research is still to explore and understand both successes and failures with the innovative and more advanced intelligent systems constructs.

\(^1\)Such as the HICSS, INFORMS, IFORS, EURO, DSI, ICIS and ECIS conferences
It is a truism in the field that the key problems never appear to be technology related, but they are "people problems": (i) people have cognitive constraints in adopting intelligent systems, (ii) people do not really understand the support they get and disregard it in favour of past experience and visions, (iii) people cannot really handle large amounts of information and knowledge, (iv) people are frustrated by theories they do not really understand, and (v) people believe they get more support by talking to other people (even if their knowledge is limited).

We will use the lessons learned from implementing hyper knowledge as a support platform for strategic management in order to discuss how support technology may be enhanced with new results in intelligent systems and soft computing.

This small wedge in the complex set of issues which form the discussion of intelligent support technologies, the potentials and the limitations of these technologies, the use responsible managers may want and actually intend to make of emerging technologies and the possible impact they may have on actual management processes, will be used to set the scene for the broader and deeper impact we expect fuzzy logic to have in management.

1. Management

Management is about making things happen in ways which make sense to those involved in the actions and activities, and to those who are influenced by the outcomes of these actions and activities. The making sense is understood in several different ways depending on the context and the culture, but it is safe to say that rationality should be involved when we judge if actions and activities make sense or not.

If we base things on rationality, we can simply state that actions and activities make sense if they improve some values - in a social context they make us feel better or they make those influenced by the outcomes feel better. In a corporate context the values involved would mean improved profitability, reduced costs, improved productivity, reduced commitment of working capital, improved market share, reduced downtime, improved sustainable competitive advantages, reduced plant shut-downs, improved return on assets, etc. In the corporate context there is normally a much larger number of ways we want to define the improvements of value than in a social or a personal context.

If we leave leadership aside for a few moments and focus on management as the force behind "making things happen" - then (cf. [18]) "all managerial activities revolve around decision making". We are well aware of the fact that this is not a complete truth, and we will make