Chapter 3.14
Collaborative Decision Making:
Complementary Developments of a Model and an Architecture as a Tool Support

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ABSTRACT

Recent years we can hear a lot about cooperative decision-making, group or collaborative decision-making. These types of decisions are the consequences of developed working conditions: geographical dispersion, team working, and concurrent working. In the article we present two research works concerning two different collective decision situations: face-to-face decision-making and synchronous distributed decision-making. These two research studies adopt different approaches in order to support decision-making process, in view to different research objectives. Nevertheless, the conclusions show complementary aspect of these two studies.

INTRODUCTION

As underlined by Sankaran and Bui (2008), organizations routinely make decisions that require consultations with multiple participants. Combining all points of view towards a consensus acceptable to all parties is always a challenge. Negotiation and collaborative processes become

then a strengthen point for organisations. Modern negotiation theory that finds its roots in decision theory and game theory focuses on interactive processes among antagonists with the attempt to reach compromises. In order to achieve this objective they propose an organisational model for transitional negotiations.

According to Wagner, Wynne and Mennecke (1993) much more effort is needed to bring in researchers from diverse perspectives such as Computer Supported Cooperative Work (CSCW), Group Support Systems, computer conferencing, telecommunications, and computer science and engineering, both to broaden the perspectives from which research is conducted and to expand on the number of applications to which GSS technologies may be applied. On another point of view, cooperative or collaborative decision-making is a more and more complex and process that is predominant in organisations. It has been already noticed in the research literature, a displacement from individual decision-making to collective decision-making (Shim, 2002). These types of decisions are the consequences of developed working conditions: geographical dispersion, team working, concurrent working, etc.

Pascale Zaraté and Jean-Luc Soubie (2004) develop a matrix of collective decisions taking into account two principal criteria: time and place. In their work, they also give an overview of several supports and their correspondence with different types of collective decision-making.

We then can find different types of collective decision-making process:

We define each kind of collective decision making situation:

1. Face to face decision making: different decision makers are implied in the decisional process and meet them around a table. This is a very classical situation;
2. Distributed synchronous decision making: different decision makers are implied in the decisional process and are not located in the same room but work together at the same time. This kind of situation is known enough and is common in organizations;
3. Asynchronous decision making: different decision makers are implied in the decisional process and they come in a specific room to make decisions but not at the same time. The specific room could play a role of memory for the whole process and also a virtual meeting point. This kind of situation is well known in the Computer Supported Collaborative Work (CSCW) field and some real cases correspond to it, but for decision making it has no intrinsic meaning for a physical point of view, we cannot imagine decision made in organisation in this way: it is the reason why this case has a grey background in Table 1. For us this case could be assimilated to the next situation. Nevertheless, for a mediated communication point of view we have to check what are the impacts induced by this particular situation and this case could be seen as a virtual room well known in the GDSS field.

Table 1. Collective decision making situations

	Same time	Different times
Same place	Face to face decision making	Asynchronous decision making
Different places	Distributed synchronous decision making	Distributed asynchronous decision making