Effects of Changes in Awareness and Communication Channel of Group Decision Support System

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An important feature of this thesis is that. 1. Analysis of group decision process form viewpoint of "Awareness". 2. Effects of using GDSS (Group Decision Support System) have been analyzed and compared with several communication environments. 3. Analysis of decision making using high-performance video conferencing system (it's had high resolution picture and real size picture) as well as general video conferencing system.

Research field of CSCW (Computer-Supported Cooperative Work) and Groupware are many researchers have gotten a lot of attention. And research of GDSS is one area of CSCW and Groupware's research field. Recently, the information technology has advanced. We have a many communication channel. In today's society, information has become one of the essential goods, and information technology has rapidly supported for an integral part of modern society and everyday life. It changes our communication style using GDSS. In the past, we often used GDSS in face-to-face environment. But now we can use GDSS in distributed environment as well as face-to-face environment. In research field of CSCW and Groupware reveal, "Awareness" is closely related to communication channel, and "Awareness" is closely related to collaborative work too. Therefore, viewpoint of "Awareness" is increasing attention by CSCW and Groupware's researchers. And in the present state of affairs, GDSS research in that viewpoint is scarce.

We have to reveal an importance of "Awareness" in using the GDSS. And we have to reveal impact of "Awareness" in the consensus-building-process and the result of decision-making with communication channel's changes.

In this thesis, we discuss the above things. Main scope of our research is how to use "Awareness" for effective and efficient decision-making. From this perspective, we try to analyze the effects on decision-making of using GDSS and without using GDSS in some communication channels by experiments. In the experiments, we use face-to-face environment and two kinds of different distributed environments. 1. Simple and convenient type video conferencing system 2. High quality type video conferencing system

Why use two different distributed environments? The reason is we can use a variety of other video conferencing system. For example, the one to use simple and convenient type video conferencing system as represented by NetMeeting. (It's a Microsoft's products.) It's commonly used for distributed environment. On the other hand, the one to use high-performance video conferencing system. It's using high resolution picture and real size picture. Picture's scope, size, qualities are closely related to "Awareness" levels. So we should distinguish that, simple and convenient type video conferencing system and high quality type video conferencing system.

In this research, we use existing GDSS: Group-Navigator to confirm the effects of changes in awareness and communication channel of GDSS. Group-Navigator was designed for decision-making supports of alternative evaluation base on subjective judgment. The system has a function of WYSIWIS (What You See Is What I See) and support for consensus building by the novel method of sensitivity analysis. We enhanced several functions of the system and added TCP/IP communication function to the system.

As the results, we found some outlooks. We are how to use "Awareness" more effective in decision process. We are how to select communication channel for effective decision making.