

New Applications of Group Support Systems

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Abstract

This paper explores the application of Group Support Systems (GSS) within a framework of three perspectives. These perspectives are based on the seminal work of Winograd and Flores and the theoretical foundations of “Dynamic Essential Modelling of Organisation” (DEMO). The first perspective considers GSS as an infrastructure, while the second perspective describes GSS as an information system. The third perspective considers GSS as a social system. When looking from the social perspective, new GSS applications can be identified. Besides establishing this framework, we also provide case studies to illustrate new applications of GSS.

Key words: Group Support System, GSS, New Application, Communication, Action, Speech Acts.

1 Introduction

Approaches for the development of information systems have evolved through different stages and on different foundations. Hirschheim et al. [1] describe seven generations of approaches that evolve from a technical towards a social perspective. This was highlighted in the fifth and sixth generations with works such as Soft Systems Methodology [2], [3] and ETHICS [4], [5]. Hirschheim et al. identify a seventh generation, which promotes the understanding of communication and action. This generation addresses the organisational, social, legal, cultural and communication issues that are related to using information systems, such as Group Support Systems (GSS), but they no longer emphasise technology. Although these approaches are a controversial topic in the field, they also offer new perspectives [6]. In contrast to traditional technical views of people and computers as "information processors", the language/action perspective emphasises what people DO while communicating, how they create a common reality by means of language and how communication brings about the co-ordination of their activities.

In this article we will discuss the application of GSS within a theoretical framework, called DEMO (Dynamic Essential Modelling of Organisation). DEMO provides a theory for understanding communication, information, and action. This integrated

approach to both social and information processes is a necessary precondition for the application of GSS. In Section 2 we briefly introduce the Speech Act Theory, from which the basic principles of DEMO are derived. In Section 3 we present the fundamentals of DEMO and follow in Section 4 with the application of DEMO in the social setting of meetings. Section 5 illustrates by means of case studies how GSS is being applied in new areas. Finally, we present some general conclusions in Section 6.

Background

The focus on communication as the key concept for understanding and designing meetings requires a theory that explains communication and language as its means. Speech Act Theory [7], [8], [9], [10] has proven to be a strong frame of reference for this purpose [11], [12], [13], [14], [15]. The main characteristic of Speech Act Theory is that it considers the use of language as a form of rule-governed behaviour. Uttering a sentence is the performance of an act, a so-called speech act.

The most important type of speech act in a social context is the illocutionary act. Using Speech Act Theory, instances of saying lays out a spectrum of illocutionary acts, classified into illocutionary kinds. Each illocutionary kind specifies how the utterance is intended to be taken - that is, what natural effect (cognitive, motive, social or legal) it is intended to have and in what dimensions (truth, feasibility, propriety, etc.) it is supposed to be assessed. For instance, an utterance can convey a statement, a warning, a promise,

an order, etc. [16].

The initial impetus to a speech-based conceptualisation of organisations, in which meetings play an important role, has been the work of Flores [11]. They proposed perceiving organisations as networks of interrelated commitments created by pairs of directives and commissives, and assertives and declaratives between actors in business conversations and meetings.

The “commitment analysis” of Flores and Ludlow was extended in great detail by [12]. According to this approach, the Conversation for Action (CfA) is the central co-ordinating structure for human organisation. The CfA is conceptualised as the interplay of requests and commissives directed to explicit co-operative action. In addition to the conversation for action, conversations for clarification, possibility, and orientation are identified. For more details on the different types of conversations, the reader is referred to [14], [15], [16], [17].

Following the example of Searle, several researchers classified speech acts. Among them are [18], [19]. Important criticism on Searle's Speech Act Theory was provided by Habermas through his theory of Communicative Action. He argued that Searle's taxonomy failed to explain co-ordination of action and proposed taxonomy based on validity claims [20], [21].

Introduction to DEMO

Contrary to CfA, the theoretical basis of DEMO is primarily founded in Habermas' theory of Communicative Action. DEMO constitutes a cross-disciplinary theory describing and explaining communication, information, and action [22], [23], [24], [25], [26], [27], [28], [29].

It is not our purpose to provide another classification, but to clarify which illocutionary kinds are relevant to DEMO. Therefore in Figure 1 we present a matrix in which the taxonomy of Searle and the taxonomy of Habermas are compared. This matrix is a slight adaptation of the one presented by Dietz and Widdershoven [30].

	Directives	Commissives	Assertives	Expressives	
Imperativa					<i>claim to power</i>
Constativa	question		answer		<i>claim to truth</i>
Regulativa	request	promise	state	accept	<i>claim to justice</i>
Expressiva					<i>claim to sincerity</i>

Figure 1 Comparison of Searle's Speech Act Theory and Habermas' Theory of Communicative Action

The categories of Searle are placed on the horizontal axis, those of Habermas on the vertical axis. Figure 1 also shows how the illocutionary categories of DEMO correspond with those of Searle and Habermas. All performative actions (request,

promise, state, and accept) fall in Habermas' category of regulativa, and all informative acts (question and answer) in the category of constativa.

In DEMO, the functioning of humans, such as in meetings, is viewed from three levels: the documental, the informational and the social level. At the *documental or infrastructural* level, a meeting is regarded as a system of operators that produce, store, transport, and destroy data, such as text documents, voice, images or pictures. In other words, at the documental level, the substance and form through which co-ordination becomes visible is considered. At the *informational* level this substance and form is abstracted from, and the focus is put on the contents (semantics) of the data. At this level a meeting is considered as a system of processors that send and receive information and then perform calculations on this information in order to create derived information (such as presenting averages or variances). At the *social* level a meeting is conceptualised as a system of actors that are engaged in the creation and evaluation of interrelated ideas and commitments, which in turn are composed of interrelated communicative acts.

In the DEMO approach it is assumed that commitments at the social level allow multiple realisations at the informational level and at the documental level. It is important to emphasise that these realisations are ideally deliberate choices. By introducing the three levels of abstraction, the DEMO approach provides a

differentiated and well-founded definition of GSS. For example, GSS can focus on the documental level, i.e., the production, storage, transportation, and destruction of data performed by the system of operators in a meeting (the D-system). In DEMO this is called automation. Change can also focus on the informational level. This means that the system of processors (the I-system) that send, receive, calculate, and derive information in a meeting is changed. It is important that changes at the informational level necessitate changes at the documental level.

In line with this reasoning, changes in a meeting can also focus on the social level. The changes at the social level focus on the social system of actors that are engaged in the creation and evaluation of ideas and commitments. These changes are the most drastic ones, since they also affect the informational and documental structure of the meeting. The meeting as a social system in turn needs to support the required outcomes. In other words, the function of the meeting (such as gathering ideas or reaching commitment) is realised by a social, informational, and documental system. This is represented in Figure 2, where a dotted arrow between two boxes means that the box to which an arrow points is a “realisation” of the box from which the arrow originates.

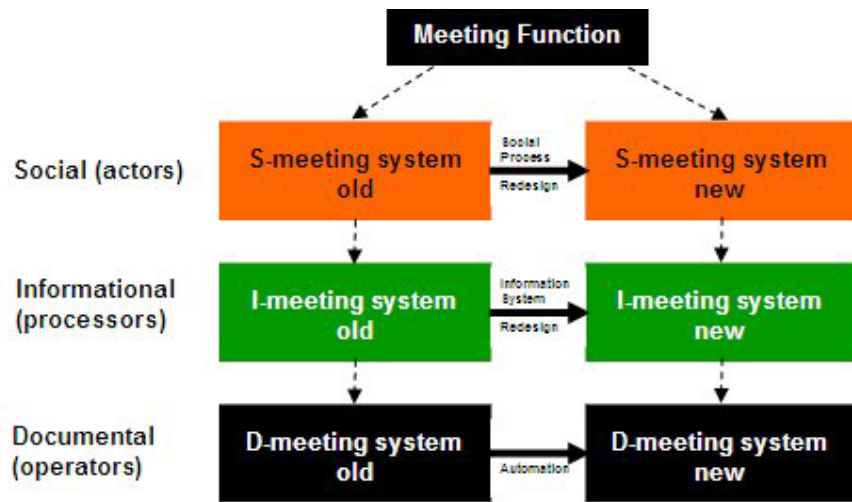


Figure 2. The transformation of meetings

Meeting process redesign primarily focuses on changing the social system of the meeting by applying concepts such as anonymity [31], invitation of a homogenous or heterogeneous group, choosing for individual or team work, presentations, collective memory, organizational learning, acceleration of idea generation, and voting of ideas or combining all these activities. These changes can have a major impact on the social system of a meeting.

Application of DEMO: The Social System of Meetings

The following matrix depicts the DEMO framework applied to meeting functions in two types of meetings: pre-digital and GSS:

	Pre-digital Meeting	GSS Meeting
Social (system)	<p>The creation and evaluation (validity of the claims to power, truth, justice and sincerity) of ideas and commitments by the facilitators and participants</p> <p><i>Realization: The facilitator prepares the meeting on paper and performs the meeting with his social skills. The facilitator checks the validity of claims by asking questions.</i></p>	<p>The creation and evaluation (validity of the claims to power, truth, justice and sincerity) of ideas and commitments by the facilitators and participants</p> <p><i>Realization: The facilitator and operator of the GSS (also called chauffeur) design the meeting steps in the GSS and perform the meeting with social skills and the GSS. By asking questions and using the GSS, the ideas and commitments of the meeting are checked by examining variance and the averages of the group or subgroups. Claims to power are checked by using anonymity or subgroups. Claims to truth, justice, and sincerity are checked by using evaluation tools and predefined lists.</i></p>
Information (system)	<p>The system of human processors that send, receive, calculate, and derive information in a meeting</p> <p><i>Realization: The facilitator counts a show of hands or organises notes by placing them on a flip chart.</i></p>	<p>The system of computer processors that send, receive, calculate, and derive information in a meeting</p> <p><i>Realization: GSS software calculates averages, variances or automatically organises items.</i></p>
Data (system)	<p>The production, storage, transportation, and destruction of data performed by human operators in a meeting</p> <p><i>Realization: Human operators write and interpret texts in paper-based sessions on notes and flipcharts, such as "metaplan" sessions.</i></p>	<p>The production, storage, transportation, and destruction of data performed by the GSS network and human operators</p> <p><i>Realization: Manual keyboard entries by participants and GSS chauffeur display on computer screens and on a public display.</i></p>

Within the DEMO framework, meeting functions (the required outcomes in terms of

content and consensus) can be realised in many ways with or without GSS. The difficulty is to identify which way is the most effective and efficient. GSS offers documental and informational system characteristics that can, depending on the meeting function, provide an effective and efficient way. Labour cost savings of 50% or time savings of 90% savings are possible when applying GSS [32]. However, the main explanation for the advantages of GSS are explained on the level of the social system, by the argument that “the number and impact of break-downs in communication and collaboration are decreased by using GSS”. [32] state that GSS has a “multiplier effect”. In other words, a good social process becomes better by using GSS, while poor meetings will become worse with GSS. These two arguments emphasise the importance of the social system as the key for realising the meeting function and applying the documental and informational group support system with success.

Designing an effective and efficient social system is about how to make meetings useful, meaningful, and successful in achieving stated goals. In 1976, before the introduction of GSS, Michael Doyle and David Straus wrote the bestseller *How to Make Meetings Work* [34]. In this book the interaction method describes techniques and concepts to make a better meeting. Those concepts include:

- Group Memory (a human operator, called the recorder, writes down the items of the group on a large sheet of paper);

- Separation of the four roles (facilitator, recorder, group member and a manager/chairperson; the boss should not run his own meetings);
- Anonymity (since ideas are written down without the name of the author an individual's idea becomes the group's idea. After a while, group members will tend to forget who originally made a particular suggestion, pages 48-49);
- Consensus (doesn't mean compromise, but a win-win solution);
- An agenda;
- Building the group of members (deciding on the right balance between key decision makers and contributors in order to avoid group think); and
- The meeting room with computer equipment (one of the most effective ways to get a group to focus on a task is to seat the participants in a semicircle facing a group memory with each a computer).

When comparing this future fantasy of the 1970's with the current state of the art, we can see that data and information systems for group support in meetings have become a reality. And more than that, with the Internet there is no need for a physical building like the Problem-Solving Centre, but every one can participate from different places, like their homes or offices, and at different times. Even the final report of the meeting does not need to be printed, but is instantaneously available to all members via

e-mail. In this way the transformation of the data and information systems in the fantasy of Doyle and Straus in 1976 is complete and commercially available.

So when looking again at the title of this paper “New Applications of GSS”, it becomes clear that innovation of the D-system and I-system of meetings has taken place, and that the question now is how to apply these innovations of GSS in the social system of meetings in a way that is more effective and efficient than the pre-digital meetings [33].

The way to be more effective and efficient is, in our experience, not to avoid but to look for break-downs in communication between people and groups in specific meetings and then design counter measures using the GSS to overcome these barriers.

Well known barriers and their symptoms are:

- Little or no, inaccurate or delayed recording of decisions made by stakeholders;
- Cultural norms will not allow, practice or perceive the value of the separation of roles: hierarchical, controlling power shuts down participation;
- Reluctance of participants in a hierarchical organization to accept or participate in an anonymous format due to perceived repercussions;

- Dysfunctional meeting culture (corporate laziness, group think – no creative thinking or brainstorming, “not invented here” syndrome, tunnel vision and misinterpretation and miscommunication);
- Lack of a method to track the level of agreement on issues and facilitate dialogue to allow consensus to occur;
- No structure to identify desired meeting objectives, methodology, and outcomes; and
- Meeting attendees are not stakeholders who are charged with making decisions

In the next chapter we will briefly describe six case studies which illustrate new applications of GSS that overcome barriers in the social system of meetings. We will then focus on the first case study for detailing the methodology and the design of counter measures to resolve break-downs in the social system.

Case studies

When we look for case studies in which difficulties in the social system of meetings can be resolved in a more effective and efficient way with GSS, the following six case studies were selected from more than hundreds of GSS sessions that we have conducted in The United States of America, Canada, and Europe:

1. **Influencing and Managing Cultural Change through Process Improvement and GSS Integration** K.C. O'Mara (Shamrock Consulting, LLC) and Kathryn Lamka (Meetingworks) presents a methodology that has been refined over the last decade to influence the cultural change necessary for organizations to deploy continual process improvement and change management.
2. **Policy Development in International Context** The expansion of the European Union from 15 to 25 Member States influences the social system in a direct way due to the immediate participation of new Member States in drawing up EU development policy both through their financial contribution and their participation in decision-making meetings. The still increasing number of EU Member States and their diversity puts the current meetings under strain. The number of Member States and their many different languages, cultures, and objectives leads to difficulties in communication, policy development, and

decision-making. Reaching qualified majority or unanimous decision in meetings become difficult.

These successful applications of GSS illustrate how consensus and participation can be efficiently and effectively achieved in meetings: a) the heads of Public Employment Services in EU/EEA heard introductory speeches of experts and evaluated policy statements by members of the 25 EU states and affiliated countries; and b) 25 European Ministries of Art created policy concerning digital heritage.

3. **e-Mediation and e-Arbitrage of Conflicts** This focuses on a new field of application, namely Alternative Dispute Resolution (ADR). Due to ADR characteristics of small groups with a need to share information and reach consensus, Mediation and Arbitration benefit from the application of different and same time GSS. The SGOA (see www.sgoa.org), the Dutch acronym for Foundation for the Settlement of Disputes shows how to transform a conflict situation (a break-down in communication) caused by traditional barriers in communication to a settlement by using GSS.
4. **Crime Investigation; Solving “Cold Cases”** (murders that could not be solved) Pro-actively research possible threats by criminals and terrorists and creating counter measures to stop criminals and terrorists. Although the outcomes of

these examples are highly confidential, the benefits of applying GSS are recognized (see in Dutch www.om.nl/lp/documents/2004-19_Nationaal_dreigingsbeeld.pdf).

5. **Facilitation of Labour Unions Negotiations** Presumed differences in opinion and interest can easily lead to a conflict situation in Labour unions negotiations between representative institutions for employees and employers. The planning and preparation of these negotiations by a series of GSS sessions and the use of the Internet, in same time and different time, has led to improved negotiations.
6. **Building a Vision and Mission Statement for the Organisation** By involving a broad base of representatives from the organization, one can gain wide support of a Vision and Mission. For instance, in educational institutions we involve experts, students, and employees, while in other organizations, we involve customers, quality assurance, and managers.

In this paper we will focus only on the first case study for detailing the methodology and counter measures to overcome social barriers.

Case Study “Influencing and Managing Cultural Change through Process Improvement and GSS Integration”

The company profile and the project can be summarized as follows:

Company Profile	Project Timeline
Revenue: \$35 Million Number of Employees: 250 Industry: TPA Claims Processing Objectives: <ul style="list-style-type: none"> • Reduce training time by 75% • Reduce the cost to process a claim by 30% • Produce standardized documentation to be used in a corporate capacity to: <ul style="list-style-type: none"> • Manage Production Support and Maintenance • Create Product Vision • Enhance New Development • Facilitate Marketing and Sales Efforts 	Phase One: <div style="margin-left: 20px;"> 3 months Process Reengineering 5 months Implementation </div> Phase Two: <div style="margin-left: 20px;"> 1 mo. Process audit 6 months after implementation </div>

With regard to GSS meetings, we encountered the following issues:

- **Belief that technology will replace talking as the primary communication mechanism** – In most cases, the company will state that they do not want technology to take place of “talking”. The perception is that meeting attendees will be asked to participate in a robotic fashion where they merely type comments to each other. It is difficult to comprehend that technology can augment the meeting process and lead to a set of desired, meaningful outcomes.

- **Meeting culture that resists formalized decision making** – Most corporate meetings are a series of events where people “talk at each other”. There is

little accountability or record of decisions that were made. Opportunities for collaboration can be missed and in the end, there is little or no buy-in.

- **Belief that planning for GSS meetings forces too much structure –**

When planning a GSS meeting, the facilitator must carefully determine a set of steps that will facilitate the necessary dialogue in order to achieve a set of outcomes. To companies who have not adopted this technology, this feels like a daunting task. It is much easier to call a meeting to just “talk” rather than to define and publish an agenda before convening.

- **Propensity for organizational “laziness” –**

The thought of managing the cultural change necessary to adopt GSS technology is daunting. It is easier for a group to default to old cultural norms than to implement the discipline necessary to adhere to a set of pre-defined behaviours. This is the most difficult barrier to counteract.

Methodology

Our methodology has been developed over years of frustration with traditional consulting methods. It is simple to take a systematic approach to defining solutions. It is easy to look over a person’s shoulder and suggest a better approach. It is more difficult to delve into the mind of the staff and discuss the human factors that

impede a company's success. Without addressing these human factors, even the simplest of solutions cannot be implemented. If collaboration is removed from the methodology, companies have increased difficulty with change management during implementation. The following Phases are deployed throughout the project lifecycle:

- **Phase I: Establish Project Charter** – The first step to a successful project and the integration of GSS technology is to establish a project charter. Roles are defined for both internal and external resources. This includes expectations of the chauffeur (recorder), facilitator, participants (meeting members) and the key stakeholders (in this case Executive Management).
- **Phase II: Identify the Case for Action and the Costs of Inaction** – Once the project charter is negotiated and established, the project begins with a GSS facilitated session to identify the Case for Action and the Costs of Inaction as defined by Champy and Hammer in [35]. Members of the Executive and Functional Management teams convene to collaborate on a set of actionable statements describing why process reengineering is necessary and what will happen if they don't. The group brainstorms by having each member submit one statement. These statements are refined into three (3) Case for Action and one (1) Cost of Inaction statement(s). They then must agree by polling their support for these statements. The group is held to

100% consensus (as measured by the GSS technology). Upon their agreement, a communication plan is developed. The management team agrees to deliver the message to their subordinates.

- **Phase III: Documenting “As-Is” and “To-Be” Processes** – The process documentation methodology utilizes a combination of traditional and group facilitation methods. Every exercise uses a collaborative, kinaesthetic approach where processes are documented on the facility wall. Each participant has an opportunity to physically touch the solutions by rearranging tasks. Without much effort, they are trained in the basics of process documentation and re-design. This exercise documents workflows that can be interpreted by all employees of the organization. Successes and improvement areas are discussed and resolutions are identified using GSS. Outlines of process narratives (including process intent and step outlines) are also captured in small groups using the same tool.



- **Phase IV: Presenting Solutions – Press Conference Observation Session**

– During intervals of the process documentation and re-design phases, the project team presents their findings to key stakeholders and other interested parties by “walking them through the process.” The observers are given an opportunity to anonymously ask questions, present concerns, and develop task lists for the working group. This is accomplished by using GSS technology in an “open microphone environment.” The comments are addressed within the session and offline when necessary.



- **Phase V: Planning the Implementation**

– Once the modified workflows are completed, the consulting team presents their findings and recommendations to the Executive Management Team. In many cases, this includes identified efficiencies necessitating the reduction in staff in order to realize cost

savings. Management practices must also be examined and improved and deficiencies addressed. This is where GSS technology is the most powerful. At this point, this organization has been using GSS decision-making methods for approximately nine (9) months. The stakeholders welcome the use of GSS technology to assist in making decisions regarding their approach and the impacts to the staff. Change management strategies are discussed in an anonymous fashion. Staff reduction is evaluated numerically based on a set of conditions thereby removing subjectivity wherever possible. A clear document of decisions is readily available and frequently referred to for a myriad of purposes including checks and balances when questions arise regarding the validity of their decisions.

Project Room Setup at Client Location

Project War Room Setup		Applications
Room Capacity:	60+ People	<ul style="list-style-type: none"> • Executive Strategic Planning and Vision • Change Management Committee Meetings • Process Documentation • Press Conference Open Microphone Convenings • FAQ Development • Human Resource Staff Reduction Selection • Information Technology JAD Sessions
Meetingworks Workstations:	< 35 laptops	
Laptop Configuration:	Varying based on needs of the project	

How the Project Achieved Counter Measures to Barriers

1. **Relying on Group Memory** – All key decisions are recorded via the chauffeur using GSS technology. Decisions are frequently referred to triggering the memory of the decision-making process. This builds reliance, trust, and dependence on the GSS technology and group facilitation methods.
2. **Separation of Roles** – Originally counter to their corporate hierarchical structure, the facilitator forced the organization to abandon their cultural norms in order to adhere to a GSS decision-making methodology. This allowed the company to realize significant progress and financial savings in a short project lifecycle.
3. **Anonymity and Change Management** – The GSS technology allowed the management team to make conscientious decisions with no variability or deviations from agreed upon strategies.
4. **Agenda Development, Meeting Roles, and GSS Reporting** – At each project phase, a meeting agenda is negotiated with the client. This includes the identification of desired outcomes, determining meeting attendees, publishing pre-work packets, and reporting requirements outlining key decisions and learnings.

5. **Driving to Consensus** – Attendees are held to 100% consensus on key decisions.

Outcomes in terms of Operational Improvements:

- 20% Decrease in Turnaround Time with 33% less staff
- 98% of Claims are Resolved in 20 days
- Spiral Workflow Modularized Claims Processing to Create Compartmentalized Marketing TPA/BPO Opportunities

Outcomes in terms of the social process:

The process was participative, consensus-based, and team-oriented. Because the methodology involves participants from all aspects of the organization (those who perform the processes being designed, those who supervise them, and executives), there is a tremendous amount of buy-in and understanding of the problem. Quite often, even those being written out of a job (in the redesign) can be found creating the best solutions to the problems.

Conclusions

In this article we draw conclusions from the illustrated new applications of GSS. All of these new applications require the following counter measures:

1. Select representation from participant groups (customers, managers, users, etc.), to build a micro-world of the relevant stakeholders necessary to accomplish the objectives.
2. Transform a series of meeting events into a process that takes advantage of the available meeting modes (GSS and non-GSS meetings, such as same time, different time, same place, different place) to build on previous work (use of information from pre-meeting sources) and more effectively utilizes the participants' time.
3. Skilfully select GSS tools to disrupt the normal behaviour patterns of problem people by introducing meeting activities that hold the group's attention, provide the opportunity for everyone to participate, and reduce the impacts of dominant or disruptive individuals.
4. Don't underestimate the value of good facilitation. GSS tools should not be used to "get rid of" discussion, but instead assist the facilitator to:
 - Solicit and value ideas from all participants;

- Question ideas to validate commitment;
 - Discuss variances and group averages to check claims to power; and
 - Select appropriate evaluation tools and predefined lists to check claims to truth, justice, and sincerity.
5. Develop GSS methods that address organizational, hierarchical and cultural issues in order to:
- Demonstrate alternatives to decision making processes;
 - Present alternatives to address cultural issues; and
 - Challenge management to instigate cultural meeting change

We conclude that by focusing on the social system characteristics that constitute the meeting processes, we obtain a rich understanding of the barriers in traditional meetings and new areas for GSS application. Since the information systems' blueprint for GSS should be directly derived from the meeting processes, we can establish a stronger relationship between the meeting function and its group support systems by designing an efficient and effective social system.

Literature

- [1] Hirschheim, R., H.K. Klein, K. Lyytinen, 1995. *Information Systems Development and Data Modelling: Conceptual and Philosophical Foundations*. Cambridge University Press, Cambridge.
- [2] Checkland, P., 1981. *Systems Thinking, Systems Practice*. John Wiley, Chichester.
- [3] Checkland, P., J. Scholes, 1990. *Soft Systems Methodology in Action*. John Wiley, Chichester.
- [4] Mumford, E., 1983. *Designing Human Systems*. Manchester Business School.
- [5] Mumford, E., 1985. Defining systems requirements to meet business needs: A case study example, *The Computer Journal*, Vol. 28, No. 2, 97-104.
- [6] Iivari, J., R. Hirschheim, H.K. Klein, 1996. Five Emerging Approaching to Information Systems Development: An Analysis of Paradigmatic Foundations. Manuscript.
- [7] Austin, J.L., 1962. *How to Do Things with Words*. Clarendon Press, Oxford.
- [8] Searle, J.R., 1969. *Speech Acts: An Essay in the Philosophy of Language*. Cambridge University Press, Cambridge.
- [9] Searle, J.R., 1979. *Meaning and Expression*. Cambridge University Press, Cambridge.
- [10] Searle, J.R., D. Vanderveken, 1985. *Foundations of Illocutionary Logic*. Cambridge University Press, Cambridge.

- [11] Flores, F., J.J. Ludlow, 1981. Doing and Speaking in the Office. In: G. Fick, H. Sprague Jr. (Eds.). *Decision Support Systems: Issues and Challenges*, Pergamon Press, New York, pp. 95-118.
- [12] Winograd, T, F. Flores, 1986. *Understanding Computers and Cognition: A New Foundation for Design*. Ablex, Norwood NJ.
- [13] Taylor, T.J., D. Cameron, 1987. *Analysing Conversation: Rules and Units in the Structure of Talk*. Pergamon Press, Oxford.
- [14] Taylor, J.R., 1993. *Rethinking the Theory of Organizational Communication: How to Read an Organization*. Ablex, Norwood.
- [15] Medina-Mora, R., T. Winograd, R. Flores, F. Flores, 1992. The Action Workflow Approach to Workflow Management Technology. In: J. Turner, R. Kraut (eds.), *Proceedings of the 4th Conference on Computer Supported Cooperative Work*. ACM, New York.
- [16] Vendler, Z., 1967, *Linguistics in Philosophy*. Cornell University Press, Ithaca NY.
- [17] Schäl, T., 1996. *Workflow Management Systems for Process Organisations*. Lecture Notes in Computer Science 1096, Springer, Berlin.
- [18] Ballmer, Th., W. Brennenstuhl, 1981. *Speech Act Classification*, Springer-Verlag, New York.
- [19] Janson, M.A., C.C. Woo, Investigating Information and Knowledge Gathering Methods: A

- Speech Act Lexicon Perspective, in: *Information Systems Concepts: Improving the Understanding, IFIP Transactions A-4*, North-Holland, 1992, pp. 239-257
- [20] Habermas, J., 1984. *The Theory of Communicative Action: Reason and Rationalization of Society*. Polity Press, Cambridge.
- [21] Habermas, J., 1988. Bemerkungen zu J. Searle's 'Meaning, Communication and Representation'. In: J. Habermas. *Nachmetaphysisches Denken*. Suhrkamp Verlag, Frankfurt am Main, pp. 137-149.
- [22] Dietz, J.L.G., 1994a. Business Modeling for Business Redesign. *Proceedings of the 27th Hawaii International Conference on System Sciences*, IEEE Computer Society Press, Los Alamitos, pp. 723-732.
- [23] Dietz, J.L.G., 1994b. Modelling Business Processes for the Purpose of Redesign. In: B.C. Glasson, I.T. Hawryszkiewycs, B.A. Underwood, R.A. Weber (Eds.), *Proceedings of the IFIP TC8 Open Conference on Business Process Re-Engineering: Information Systems Opportunities and Challenges*. Elsevier, Amsterdam, pp. 249-258.
- [24] Dietz, J.L.G. 1996a. The What and the Why of Modelling Business Processes. In: R.M. van Es, A. Post (Eds.), *Dynamic Enterprise Modeling*. Kluwer Bedrijfsinformatie, Deventer.
- [25] Dietz, J.L.G., 1996b. *Introductie tot DEMO: Van informatietechnologie naar organisatietechnologie*. Samson, Alphen a/d Rijn.

- [26] Dietz J.L.G., H.B.F. Mulder, 1996. Realising Strategic Reengineering Objectives with DEMO. In: *Proceedings of the International Symposium on Business Process Modelling*, Springer-Verlag, New York.
- [27] Dietz, J.L.G., J.B.F. Mulder, 1998. Transformation of organisations requires constructional knowledge of business systems, *Proceedings of the 31st Hawaii International Conference on Systems Sciences*. IEEE Computer Society Press, Los Alamitos CA.
- [28] Reijswoud, V.E. van, 1996. *The Structure of Business Communication: Theory, model and application*. PhD Thesis Delft University of Technology, Delft.
- [29] Reijswoud, V.E. van, N.B.J. van der Rijst, 1995a. Modelling Business Communication as a Foundation for Business Process Redesign: A case of production logistics. In: *Proceedings of the 28th Hawaii International Conference on Systems Sciences*. IEEE Computer Society Press, Los Alamitos CA, pp. 841-850.
- [30] Dietz, J.L.G., G.A.M. Widdershoven (1991). Speech Acts or Communicative Action? In: L. Bannon, M. Robinson, K. Schmidt (eds.) *Proceedings of the Second European Conference on Computer Supported Cooperative Work ECSCW'91*. Kluwer, Dordrecht, pp. 235-248
- [31] Gallup, R.B. & W.H. Cooper, 1993. Brainstorming Electronically. *Sloan Management Review*, pp 27-36.
- [32] Vreede, G.J., de, R.O. Briggs, 1997. Beter en sneller samenwerken met Elektronische Vergadersystemen, *Holland/Belgium Management Review*, nr. 53, pp 75-85.

- [33] Lewis, L.F., Garcia, J.E., & Keleman, K. (2000) Continuing obstacles and new opportunities for organizational adoption of GSS. Abstracted in Proceedings of Group Decision and Negotiation Conference, University of Strathclyde, Glasgow, Scotland, July 3-7.
- [34] Doyle M., D. Straus 1976, How to make meetings works, the new interaction method, Jove Books, New York.
- [35] Champy and Hammer, *Reengineering the Corporation*, 1991.

Biographies

Hans B.F. Mulder is managing director of VIAgroep nv. He has held several positions. During his career Hans Mulder received his Bachelors Degree in Informatics at the Polytechnics of The Hague and his Masters Degree in General Management at Nijenrode University in 1994. Since 1995 he has published several articles and case studies on the subject of business communication and information systems and is working on his PhD thesis at the Delft University of Technology. In 2002 he and prof. Van Reijswoud set up the “VIA Chair for Business Systems Engineering”, within the Faculty of Science of the University of Uganda. This is the first Chair at Uganda Martyrs University. Next to this every year The Mulder Award, is granted to the best computer science student of Uganda to conduct research in the area of Information System. Hans Mulder is member of the board of SGOA, the Dutch acronym for « Foundation for the Settlement of Disputes ». Next to this he is active in different forms of dispute resolution: ICT-mediation, arbitration, (binding) expert’s advice and e-ADR.

Kathryn Lamka, Vice President, Meetingworks

Kathryn combines skills from a 10-year teaching career with experience and knowledge gained from 16 years of systems engineering with IBM.

She began her IBM career working with General Motors Corporation in Detroit,

MI, supporting large computer systems. With the advent of personal computing, Kathryn began building expertise in the training of end users, from specialists to executives.

In 1990, she opened a GroupWare meeting room for IBM in Seattle, and began working with a variety of clients to help them improve productivity and quality with electronically supported meetings. In 1993, Kathryn left IBM to join Enterprise Solutions, Inc. (now called Meetingworks), where she is Vice President. In addition to supporting the development and sale of the company's meeting support software, she facilitates meetings and consults with other facilitators using the software around the country. Kathryn's clients include such companies as Weyerhaeuser, Motorola, Microsoft, Honeywell, and IBM. She has also worked with national and local government agencies (National Park Service, National Defense University, City of Seattle, State of Washington) as well as organizations such as The Casey Family Program. Typical meetings are: strategic planning, focus groups, control self-assessment, team building, values analysis, requirements gathering, project planning and critical ranking of projects. Her skills with Meetingworks are sought to conduct high-visibility meetings for clients and also to mentor newly trained users of the product. Kathryn holds a Bachelor of Arts in German and a Master of Arts in Secondary Education, both from Michigan State University in East Lansing, MI.

K.C. O'Mara, President, Shamrock Consulting, LLC

K.C. O'Mara has over 18 years of management experience in the customer support industry working for high-paced companies such as Airborne Express, Microsoft and The Casey Family Program prior to successfully starting Shamrock Consulting, LLC, a consulting practice, in 1994. K.C. has designed a unique approach to process reengineering. Her proprietary methodology utilizes a combination of workflow process design, meeting facilitation and technology. K.C.'s primary objective is to assist her clients in evaluating their current situation and identify methods to improve. Results include cost reduction, increased efficiency and improved customer satisfaction.

K.C. has developed her methodology with a focus on knowledge transfer and change management. She feels that an integral part of process improvement is the acceptance of change. She teaches each organization to observe patterns and how to develop progressive solutions. By utilizing her strong intuition, K.C. assists her clients in determining potential change management issues and identifies effective strategies to minimize negative human capital impacts. Her process reengineering projects are fun and energizing while remaining fast-paced and focused.

K.C. completed her junior year in Marketing at the University of Utah before beginning her entrepreneurial efforts. She continues her education in BPR and IE Methodologies and Change Management. K.C. continually strives to enhance her

facilitation techniques and organizational development expertise. She recently presented at the Collaboration 2003 Conference in Annapolis, Maryland where she discussed incorporating Group Decision Support Systems (GDSS) technologies to influence cultural change.

Aad van der Niet (1948) is managing director of Van der Niet & Partners B.V., boardroom consultants. He has held several leading positions in organisations for vocational education in the public domain as well as in the private sector. During his career Aad van der Niet received Master Degrees in Dutch Linguistics and Literature and in Educational Science. Since 1982 he has published – in co-production - several articles and books on the subject of close reading and job related writing. At the moment as a program manager and facilitator he is working in the area of e-learning, employability and life long learning. In co-operation with Hans Mulder he is active in many strategic Meetingworks sessions for divers organisations such as FNV, a Dutch employee organisation, FME-CWM, a Dutch employers organisation, the Ministry of Education, Art and Science, Police Forces and almost all 43 Regional Community Colleges. Via Meetingworks Europe they market and distribute the Meetingworks software and services in Europe.