A MODEL FOR ORGANISATIONAL INTEGRATION OF MEETING OUTCOMES

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ABSTRACT

Organizations convert meeting outcomes into digital documents for many obvious reasons. This paper discusses one such reason: simplifying the integration of meeting outcomes in the organizational process. Unfortunately, the level of integration afforded by digitalized meeting outcomes is still very weak, serving more official or legal purposes rather than catalysts for action. In order to tackle this problem, we propose an information system and a framework. The framework is necessary to analyse how does a community of users produce and disseminate meeting outcomes, and also to tailor the information system to the community. This framework is composed of three levels of detail: context level, genre level and implementation level. The context level clarifies and models the general problem. The genre level designs a solution, using the concept of communication genres. Finally, the implementation level transforms communication genres in a software system. This paper illustrates the application of the framework to a specific organisation. The proposed framework contributes to develop information systems where organizational integration of different social systems is required.

INTRODUCTION

Many different problems with meeting processes are largely discussed in the literature, e.g. poor planning, conflict, hidden agendas or groupthink (e.g. Buttler, 1996, Nunamaker et. al., 1997). Considering the meeting life cycle (Bostrom *et al*., 1993, Clawson *et al*., 1995), the focus of discussion is typically placed in the pre-meeting preparation and in-meeting management. Regarding the post-meeting phase, emphasis is generally placed in the subject of meeting evaluation.

But the post-meeting phase also raises other interesting problems. In particular, there is the need to integrate meeting outcomes with other organizational systems (Antunes and Guimarães, 1997). In fact, the outcomes produced by a meeting must flow to other organisational processes, in order to induce the production of goods and services, increase productivity or just motivate people.

From the beginning of the 1980's, Electronic Meeting Systems have been viewed as the Holy Grail to improve meeting processes (Fjermestad and Hiltz, 1999). The role of EMS can be broadly defined as supporting work by enhancing group cognition. As such, EMS have tried to enhance communication among groups members, provide shared information bases, coordinate individual tasks to assure a coherent result, guide and stimulate collaboration, all this while overcoming limitations of distance, time and memory.

We show later in the paper that EMS support has somewhat neglected the post-meeting phase. Thus, we do not see current EMS making any significant change in the approach traditionally used to preserve and communicate formally meeting outcomes. The traditional approach uses a *documentum*, i.e. official words, which may assume typical forms such as, for instance, meeting reports, transcripts and memoranda.

Organizations are nowadays producing meeting outcomes in the digital format, many of them available on the World Wide Web, that simply mimic their paper versions. Unfortunately, the level of

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integration afforded by digitalized meeting outcomes is very weak, serving more official or legal purposes rather than catalysts for action. We propose in this paper an EMS and a framework to tackle this problem.

The proposed framework encompasses three different levels of detail. The first level is intended to model the integration problem, considering the transition of meeting outcomes to the organization. People make decisions during meetings. Most times, it is necessary to trigger post-meeting activities related to the decisions taken in meeting sessions. If a decision is a consequence of a question or request, a response must be sent to the ones who made the request. If it was decided that somebody would execute a task, so this person must be informed and instructed. During the meeting, participants may notice that there is not enough information to take a decision. In that situation, information must be requested to other internal or external entities. These are just some of the possible triggers for post-meeting activities related to the decisions taken in meeting sessions.

The genre level is intended to analyse the situated nature of the EMS support. Different communities of people produce and disseminate differently meeting outcomes. Thus, the EMS must be tailored to the community. The proposed solution uses the concept of communication genres. Finally, the implementation level is dedicated to develop a software system based on communication genres.

The paper also illustrates and discusses the application of the framework to a specific organisation. The proposed framework contributes to analyse problems where organizational integration of different social systems is required.

A FRAMEWORK

This framework is fundamentally necessary to, first, analyse and, then, design a solution well adapted to the integration of different social systems: meetings and organizations. These social systems are characterized by their situated nature (Suchman,), complexity of group interactions (Bostrom *et al*., 1993; Dickson *et al*., 1996), group process, many group process variables (e.g. conflict and influence) and many task variables (e.g. task types and group characteristics). The proposed framework is composed of three levels (Figure 1):

- The first level describes the context of the problem, including the main agents and activities. It is at this level that we define the PROFS model.
- The second level is what we call the genre level, because it is supported in the concept of genre, intended to categorise the results produced by meetings.
- The third level is the implementation level, where the concept of genre and the PROFS model merge to give origin to a working system that integrates meeting results into the organisation.

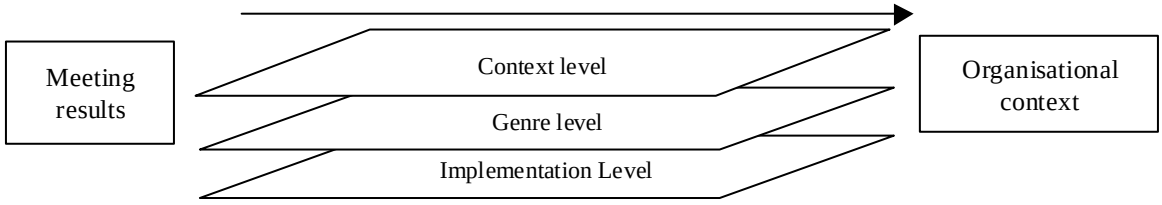

Figure 1 – Three levels of integration between EMS and the organisation

A Model for the Context Level

In order to describe the problem of organisational integration we created a model, which is illustrated in Figure 2 and which was designated PROFS (from Participant, Reporter, Organizational agent, Facilitator, and Sponsor).

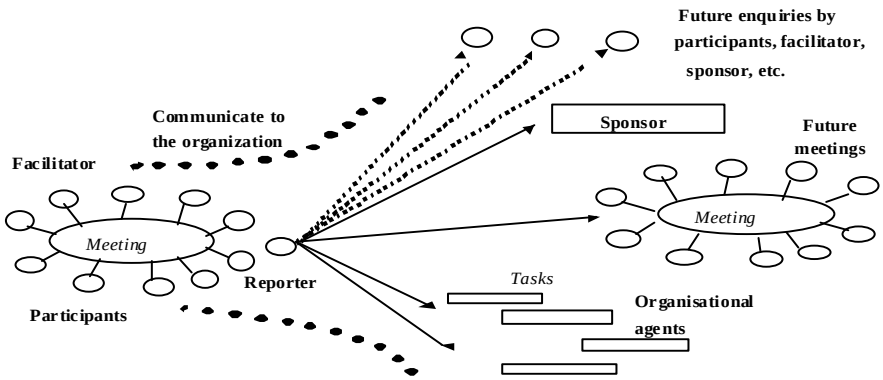

Figure 2 - PROFS Model /context level

This model has mainly three dimensions: 1) Agents and roles; 2) Activities; and 3) Communication targets.

In a context of a meeting we can identify five major types of agents (or roles): participant, reporter, organisational agent, facilitator and sponsor.

- **Sponsor** is the owner of the meeting, who defines the meeting objectives and rules. He or she interacts with the facilitator, who plans and implements the sponsor's objectives.
- **Facilitator** is the person that plans and manages a meeting. During the meeting, the facilitator also intervenes to help and guide the participants accomplishing their task. According to several researchers, this role is critical, particularly in meetings supported by EMS (e.g., Clawson and Bostrom, 1993; or Buzaglo and Wheelan, 1999).
- **Participants** are those who attend a meeting and contribute by making comments, giving opinions, voting, etc. The facilitator also moderates participation, balancing interventions and avoiding conflicts.
- **Reporter** is the agent that produces the final meeting report and distributes it to the other agents. Raikundalia and Rees (1995) consider this a fundamental role in their framework.
- **Organisational agents** are those agents that find their actions directly affected by the results of the meeting. In fact, although meeting results are studied either by social psychologists, organisation researchers or by computer science researchers (e.g., McGrath, 1984, Pinsonneault and Kramer, 1989; Tung and Turban, 1998), consideration for the receiving agents is not a common perspective. This basically results from a short term and static analysis of meeting results.

Another important facet considered by the PROFS model is the communication process that funnels information from the meeting to the organization. During the communication process, it is necessary to identify and retrieve relevant data produced during the meeting, identifying sources and indexing data for future reference. The information must then be categorised, summarised and stored. For data distribution, the relevant receivers and subsequent tasks must be identified. Furthermore, data must be available according to the particular needs and interests of the receivers.

Meeting outcomes may be spread to participants, facilitator and sponsor of the actual meeting, but also to other agents, like sponsor, facilitator and participants of future meetings. Meeting outcomes may also be sent or made available to somebody that is performing a specific task or even to all members of an organisation. To each one of them, a message (or a document) may be sent. Consequently, meeting outcomes may be grouped according to the following communication targets:

- **Organisational memory** – When the outcomes are used to produce organisational memory, such as organisational culture, including all organisational rules, rituals, heroes or past ways of doing. This kind of target requires a long-term information repository. Typically, the following technologies and systems support this organisational memory: large databases, document management systems and the World Wide Web.

- **Sponsor** – Meeting outcomes have a primary receiver: the sponsor who wants to find out a solution for a problem, find out the popularity of some action, and know what happened in a meeting. The emphasis of information systems targeted at the sponsor is in the human-machine interface. The goal is to produce readable reports, executive summaries, graphical elements or other more sophisticated objects. In our experience using EMS, sponsors typically want more strategic information than logs, summaries and statistics commonly supplied.
- **Meeting** – After a meeting, sometimes there happens another meeting (3M Meeting Management Team, 1994). The traditional way of linking several meetings is to start the next meeting with the approval of the previous meeting report. Typically, EMS support the integration of digital handouts in meetings.
- **Organizational agents** – The meeting outcomes may include orders or instruction, linked to some task that must be performed by a specific person or group. In that way, EMS may have interfaces to workflow systems (Antunes and Guimarães, 1997).

The PROFS model described above is a step in the analysis of the organisational integration of meeting outcomes: it describes the problem. However, it is necessary to describe and implement a solution to this problem. The second level of the framework is intended to describe such a solution.

A Concept for the Genre Level

The second level of the framework is designated genre level, because in this phase the development process is heavily supported in the concept of communication genre.

The genre concept was imported from the literature (Yates and Orlikowski, 1992), but its use has been generalised to the organisational context (see, for instance, Crowston and Williams, 1999). A genre of "organisational communication" is a socially recognised type of communicative action, such as a memo, report, resume, inquiry, letter, meeting, announcement, expense form or training seminar.

A genre, established within a community of people, serves as an institutionalised template for social action. The community members, in order to realise particular social purposes, enact, shape and use communication genres. A genre is characterised by purpose and/or by form:

- The purpose of a genre is not an individual's private motive for communicating, but a purpose socially constructed and recognised by the community, and invoked in typical situations. In a empirical study, Orlikowski and Yates (1994) identified and categorized the following purposes: informational message; comment on group process or use of medium; proposed rule, feature or convention; request for information, clarification or elaboration; reply to previous message or messages; and a residual category (including thanks, apologies and ballots).
- Form refers to observable aspects of the communication, such as medium, structural features and linguistic features. In the same study previously cited (Orlikowski and Yates, 1994), forms were categorized as embedded messages, graphical elements, headings, informal messages, openings, sign-off, sub-headings, subject lines and word or phase emphasis.

Occasionally, genres are linked or networked together in a way that constitutes a more complex communicative process. Such a "genre system" consists of interdependent genres that are enacted in some typical sequence (or limited set of acceptable sequences), or in relation to each other.

In our framework, communication genres and genre systems are used to analyse the communication process that funnels information from the meeting to the organization.

Detail for the Implementation Level

The differences between the genre and implementation levels can be explained by the use of a metaphor. In literary work, a novel is understood as a novel whatever its support. But, to publish a novel, it is necessary to decide if it will be published in a book, newspaper, Web page or if it will be available in a Personal Digital Assistant. Consequently, all the attributes necessary to implement genres, making the communicative process possible, must be identified.

The communication genres and genre systems that were identified in the genre level are materialized and incorporated in the software system produced in the implementation phase. Then, the community of users may enact, shape and use the set of communication genres they are accustomed to.

USING THE FRAMEWORK

This framework was applied to a number of practical situations in order to be validated. The example below illustrates the use of the framework to analyse a set of formal corporate accountancy meetings required by law. The accountants participating in these meetings belong to a different organization.

The collection of data was obtained by interviewing accountants employed by the second organization. These accountants presented us examples of meeting reports and also explained the whole meeting process. Given that these accountants participate in multiple meetings from different types of corporations, the study of these formal meetings was restricted to a more specific context, considering small corporate clients.

Our first step consisted in identifying the main agents in these meetings. Stockholders and managers act as meeting sponsors. The facilitator is typically a person from the accountancy organization. Among the participants, we found stockholders, managers, accountants and, sometimes, lawyers. The reporter is somebody from the accountancy organization. Organisational agents are people from the corporation directly involved, from the accountancy organization and also other external corporations.

In what concerns the communication targets (organisational memory, sponsor, meeting and organizational agents), the emphasis of these specific meetings is in the organizational agents.

Using the concepts of genre and genre system, we started by characterizing the generic genre system. An agenda, logistics, context, meeting and results compose the generic genre system. This genre system essentially corresponds to the one defined by Orlikowski and Yates (1998). However, we noticed that the context genre is missing from the Orlikowski and Yates' definition. The context genre is necessary to give context to many decisions taken during meetings. Without this genre, many times the results produced by meetings are hardly comprehensible, due to a lack of context.

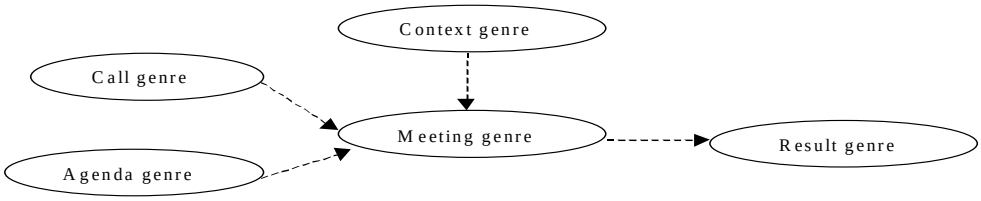

Figure 3 – Generic meeting genre system observed.

The following genres were then identified:

Agenda

There are several agenda genres, according to the purpose of the meeting. We identified the following ones: 1) Management report and financial statement approval; 2) Increasing partner capital; 3) Change headquarters; 4) Change managers.

Logistics

According to the logistics perspective, the call for a meeting is formal and ruled by law. Meetings can be periodic (e.g., yearly, half-yearly or quarterly) or extraordinary. The formal call is attached to the meeting agenda.

Meeting

Typically, a meeting is decomposed in the following tasks: presentation, discussion, voting and action plan. Then, according to each type of agenda, there is a specific type of meeting making each task different. For instance, the presentation may be of financial statements, management report or a proposed action.

Results

The outcome of the meeting assumes the layout of the most common meeting reports. Complementarily to this kind of report, the analysed accountancy meetings may present other results: instructions, commitment to action and "information". Among the instructions, it was possible to identify several types of instructions, like instructions to the accountancy organization and instructions to the documentation services (e.g., "go to the notary for deed scheduling").

Context

A set of documents are used either to support a decision or as basis for a decision. The most common are financial statements (balance sheet and profit and losses accounts) and management reports. Without such contextual information it may be difficult to understand the meeting outcomes.

In Figure 4, we present the specific meeting genre system corresponding to the approval of account statements (balance sheet and profit and losses accounts) as well as approval of management report.

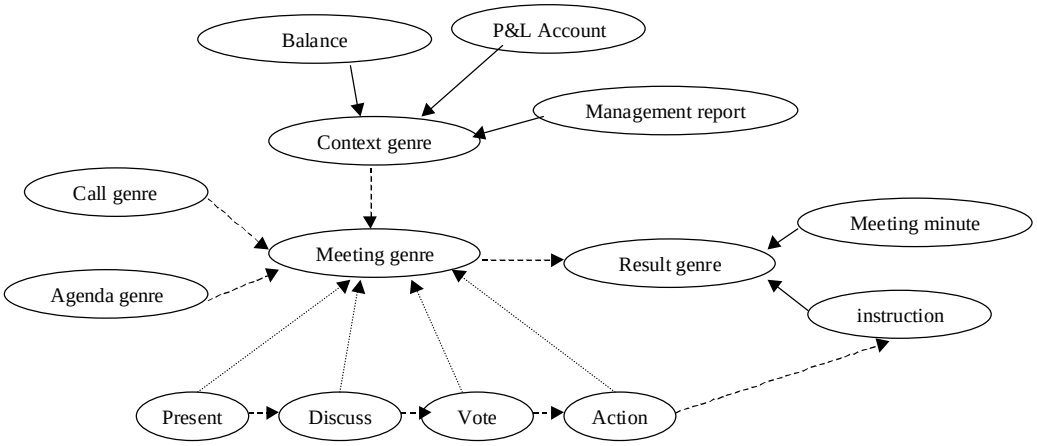

Figure 4 – Meeting genre system: approval of account statements and approval of management report.

In Figure 5, we present the meeting genre system that corresponds to the increase of partner capital.

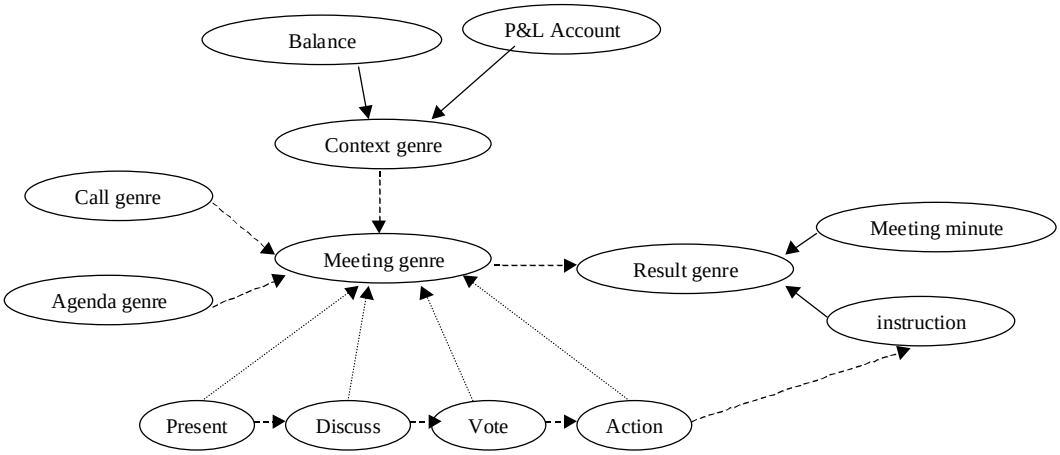

Figure 5 – Meting genre system: increase of capital.

Finally, in Figure 6, we present the meeting genre system corresponding to the change of hearquarters. The meeting genre system corresponding to the change of management is similar to this one.

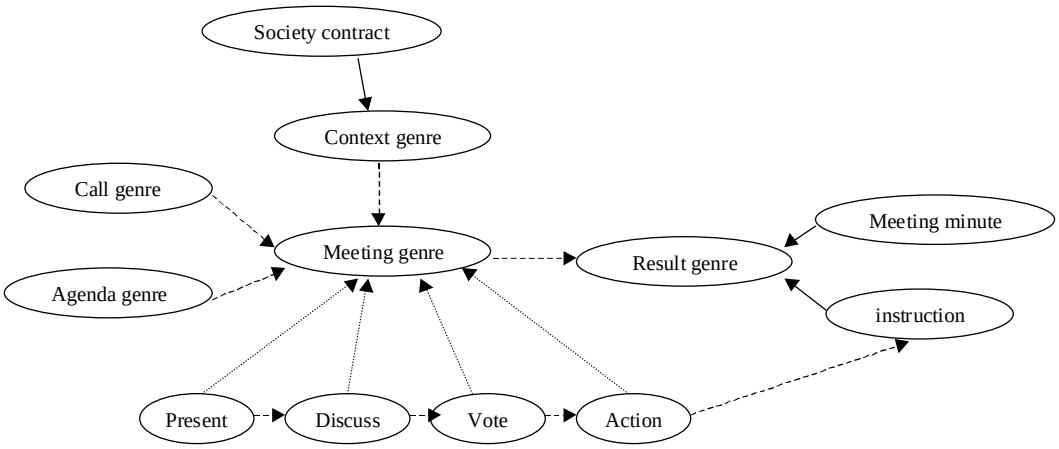

Figure 6 – Meeting genre system: change of headquarters.

Figures 4, 5 and 6 make up the analysis information obtained in the second level of our framework. This information was used to implement an information system in the final level. Considering the implementation, we have to account for some additional observations:

- Each meeting may produce more than one result genre. For instance, in the analysed case, several meetings have as consequence an instruction to a service and also the production of meeting minutes.
- Each genre can be divided in sub-genres with slight differences. For example, an instruction may be sent to the accountancy and/or to document services.
- The explicit use of genres was a good opportunity to identify communication problems and, possibly redesign work.

By now, small prototype systems are being produced, having in mind the following architectural characteristics of the system:

- The proposed system may be used complementarily to other EMS, such as GroupSystems.
- This system may be used either in the close-up phase of a meeting session, with participants collaborating and being leaded by the facilitator; or be used in the post-meeting phase, with a reporter making the most important reporting work.
- The implementation is being made using Internet technology, using Perl, CGI and Java programming languages.
- The system development is being targeted at providing suggestions about which meeting genres should be used, according to the type of meeting decision, agenda, call for meeting and context.
- By now, the meeting results may be produced to the World Wide Web, E-mail and also traditional (printed) documents. Usage of more sophisticated media, like video or audio, is still being analysed.

Currently, the framework is also being applied to analyse informal meetings performed by the accountancy company previously mentioned.

DISCUSSION

The framework proposed in this paper has a number of contributions to the problem of integrating different social systems in information systems development:

- The task of modelling the problem is incorporated in the framework in order to establish a starting point in the development process. This situation is adequate to circumstances where the user requirements may be unknown and hard to formalize.

- The concept of communication genre supports the analysis and design effort, allowing a share of meaning with the community of users and a better understanding of the situated nature of complex social systems.
- The concepts of communication genre and genre system are incorporated in the final system produced. In fact, the concept of genre seems to be so powerful that it can be used not only to collect data in the development process but can also be explicitly incorporated in the final system.

The main disadvantage of the approach results from the additional effort demanded to the developers to understand users' work context and language.

RELATED WORK

The work reported in this paper is related to similar projects reported in the literature. In those projects the problem of organisational integration of meeting results is solved by the use of new information systems.

One of such systems is the Expert Session Analyser (ESA) developed by Aiken *et. al*. (1990). ESA is one of a set of systems exploring the integration of expert systems with EMS components (database, base model, computer network, interface, facilitator and group of users). The main tasks accomplished by ESA are: making summary reports, complement the comments of group members and impose structure to the meeting outcomes such that they can be used as input to other systems. Later, ESA is described among a group of agents including also an automated facilitator (Aiken and Vanjani, 1998), Expert Session Planner (Aiken et. al., 1990), data retrieval agent (Aiken and Govindarajulu, 1994, Colon et al., 1994) and a natural language translation agent (Aiken et al., 1994). Compared to the initial proposition, this new system is restricted to the organisation of results of brainstorming sessions (Aiken and Carlisle, 1992).

Aiken and Carlisle (1992) also describe a tool, designated idea consolidator, which is an agent that automates the process of idea organisation. The system condenses text by identifying key words and matching them with comments.

Cire (Romano et al., 1999) is a collaborative information retrieval environment dedicated to support cooperative information seeking and retrieving. Although the major purpose of the system is to support the meeting process, it constructs a shared memory that includes lists of pages visited, queries executed, comments and relevancy evaluations.

Raikundalia and Rees (1995) proposed a system named LoganWeb, which is an electronic meeting document manager for the World Wide Web. Logan meetings are composed of five phases and occur in multiple, concurrent chains. LoganWeb tools provide meeting log (transcript) information in various applicable, readable and navigable forms. These tools enhance meeting discussions by allowing participants to analyse logs during meetings. LoganWeb also provides a *secretarius* that moderates contributions to the meeting.

In opposition to the literature presented above, the solution that is proposed in this paper is not only a system but also a new approach to information systems development.

CONCLUSION

The problem analysed in this paper is the organisational integration of meeting outcomes. In order to clarify the problem, we used a model that identifies agents and communications targets associated to meeting outcomes.

The paper also proposes a framework that includes three levels of detail: context, genre and implementation. In this framework, the context level is used to contextualise the problem. A more deep analysis of how people meet and produce meeting outcomes is accomplished in the second level of the framework. This level uses the concept of genre, originally imported from literature, and applied here to characterize social actions in terms of purpose and form.

In the final level of detail, the implementation level, genres may be explored to create templates that may be enacted and shaped by the community of users to improve the productivity of the decision making process.

With this framework, we contribute to the information system development field, especially because the framework allows analysing and integrating complex social systems. The genre and genre system concepts allow studying communication process using the users' social system and terminology. Consequently, this framework is a worthful way of collecting data to analyse and design information systems.

As long as the strength of this framework is in the concept of genre, it was noticed that it would be important to integrate explicitly this concept in the implemented system. In fact, because users understand genres, this approach allows an adequate process of choice during meetings. So, during meetings, participants choose a concrete type of communication, defined by them, instead of discussing the philosophy of communication. On the other hand, the genres implemented by the system must be adequately and clearly identified, which means that no generic solution to the problem is provided.

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