

Discourse Gives Way to Situated Actions in a Japanese Company - In Search of a Research Framework of Hermeneutic Structuration -

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Abstract

Developers work in a discursive world of rational thinking, whereas users tend to work below this level of consciousness in Japan. These differences cause problems in IS implementation. Both IS development and IS usage could be considered hermeneutic human acts. This paper proposes a research framework that uses structuration theory and Bourdieu's social theory as a means of studying the changing process of IS implementation brought about by those hermeneutic acts. The use of this research framework is described in the analysis of a failed IS implementation in a real organization in Japan.

Keywords

Implementation of Information Systems, Social aspect of information systems, Structuration theory, Bourdieu's social theory, Dialectical / Critical hermeneutics

INTRODUCTION

Because of the differing roles of IS developers and users, there is also a difference of "habitus" (Bourdieu 1987), a difference which is greater in non-western societies, including Japan. Developers work in a discursive world of rational thinking, whereas the users' "habitus" tends to operate below this level of consciousness and language, and may be considered different classes. This difference is greater in non-western societies, including Japan. Here IS implementation tends to be successful, if developers design IS to make use of the "tacit" and explicit knowledge that employees "already" possess (Bensaou and Earl 1998). However, it is not uncommon for developers to adopt an "IT magic bullet theory" (Markus and Benjamin 1997) to bring about changes in organizations, which causes IS implementations to fail.

Interpretive school of thought has emerged to understand the complexity of IS implementation that cannot be captured by either deterministic or strategic view. Interpretive cases, however, are specific to individual situations in their research frameworks and formats of description, bringing readers difficulty in understanding. There are a few methodologies including adaptive structuration theory (DeSanctis and Poole 1994) and one proposed by Klein and Myers (1999). The former has not got wide-spread use, and the latter brought an important starter-kit but is still too broad to conduct an interpretive study. This still implies the absence or shortage of research methodologies in interpretivism. In this paper we will search for and build an integrative research framework which helps researchers sensitize and describe the field of study, and use it in a real case.

IS development and use can be considered the interaction of hermeneutic acts by human agents (Boland 1985). This process of hermeneutic evolution can be considered a struggle between two parties of developers and users. We will use Bourdieu's social theory to identify the parties / classes, and use Giddens' structuration theory as a sensitizing device to understand and describe the hermeneutic processes.

Section two begins with a research framework that integrates Bourdieu's theory with structuration theory, while in section three the research method is discussed. In section four a case study of a failed IS implementation is given, followed by the analysis of that case using the research framework. Finally, implications of the findings and conclusions from the study are presented.

RESEARCH FRAMEWORK

The research for understanding is based on interpretivism. Interpretive methods of research start from the position that "our knowledge of reality, including the domain of human action, is a social construction by human actors" (Walsham 1993).

Social reality and Typifications

IS implementation is a social reality being constructed by human actors / agents. "The social reality of everyday life is apprehended in a continuum of typifications. ... Social structure is the sum total of these typifications and of the recurrent patterns of interaction established by means of them" (Berger and Luckmann 1966). The dynamics involved in typifications is further clarified by them as: "Institutionalisation occurs whenever there is a reciprocal typification of habitualized actions by types of actors. Put differently, any such typification is an institution. What must be stressed is the reciprocity of institutional typifications and the typicality of not only the actions but also the actors in institutions."(ibid.)

Typifications lead to the production of different habitus. "Different conditions of existence produce different habitus. ... The habitus is not only a structuring structure, which organizes practices and the perception of practices, but also a structured structure" (Bourdieu 1987).

Practical knowledge is critical in understanding social reality. The schemes of the habitus owe their specific efficacy to the fact that they function below the level of consciousness and discourse, beyond the reach of introspective scrutiny or control by the will (ibid.). "The cognitive structures which social agents implement in their practical knowledge of the social world are internalized, 'embodied' social structures. The practical knowledge of the social world that is presupposed by 'reasonable' behavior within it implements classificatory schemes" (ibid.). He confers on this practical knowledge a genuinely constitutive power of the social reality.

In IS implementation of Japanese firms, for example, users' habitus is consistent with their situated action and tacit knowledge rooted in traditional Japanese culture, while developers' habitus tends to enhance their rational use of representation for analysis. These habitus control their actions, which in turn reproduce their habitus over time, resulting in wider differences between users and developers.

Hermeneutics and Structuration Theory

The design, use and study of IS are best understood as a hermeneutic process (Boland 1985). Users consider IS and developers' action as text-analogues and interpret their meaning accordingly, while IS developers consider and interpret their organization as text-analogues and develop IS in accordance with their interpretation.

Hermeneutics shows this interpretive act is a universal condition of our being in the world

(Heidegger 1962). Bourdieu (1987) argues that the social world is a field where struggles over the appropriation of economic or cultural goods are, simultaneously, symbolic struggles to appropriate distinctive signs in the form of classified, classifying goods or practices, or to conserve or subvert the principles of classification of these distinctive properties. Each person is a being who interprets the social world for his existence. The social world changes with the struggles between classes / parties through hermeneutic processes.

Giddens' structuration theory (1984) focuses on the dialectical interplay between agency and structure. He proposed it as a sensitizing device to capture this hermeneutic process which produces and reproduces the social reality. It hinges on overcoming three dichotomies: the dualism between voluntarism and determinism, the dichotomy between subject and object, and the separation of statics from dynamics (Archer 1982). Therefore, structuration theory can be a device to sensitize habitus and social reality.

For analytical purposes an organization can be divided into the three structures of signification, domination, and legitimation, which have no existence independent of the knowledge that participants have about what they do in their day-to-day activities (ibid.). An interpretive scheme necessary for action as modality is drawn on from structure of signification (mutual knowledge) and used to interpret the social reality. In turn, the participants contribute to the reproduction of structures through modality.

In this theory knowledge is related to three levels of consciousness: discursive consciousness, practical consciousness, and unconsciousness. Discursive consciousness is that knowledge demonstrated by interviewees when asked to give the reasons for their actions, while practical consciousness is knowledge about social conditions, which cannot be expressed discursively. The notion of practical consciousness is fundamental to structuration theory (ibid.).

This theory has been used in a few researches of IT and organizations, ex., Barley (1986), Orlikowski (1992), Nandhakumar and Jones (1997), and Kosaka and Fitzgerald (1997) but is not widely accepted. Garnsey and Kelly (1995) revealed that the use of this theory in empirical research can be fraught with difficulty and that misinterpretation of features of structuration theory are not uncommon.

An Integrative Framework of Hermeneutic Structuration

Structuration theory places so much emphasis upon the reproduction of structure that it is rather difficult to capture social changes with its sole use. It is related to the absence of notion of interaction between parties.

Interaction occurs between people who draw on their own different interpretive scheme. It looks to imply that a single structure is shared by all people. It is true that a single structure of domination is often shared between parties, because a power relation is dialectic. However, he also states that *weltanschauung* is a structure of signification (Giddens 1976), which is often different depending upon each person. These suggest that researchers must consciously derive multiple structures of signification depending upon different parties.

We propose an integrative research framework which infuses Bourdieu's social theory to structuration theory. Since the provision of multiple structures is considered necessary to sensitize a social reality, we will use Bourdieu's theory to identify parties and associated structures. For each party we will use structuration theory to sensitize their habitus.

Complex interaction can be reduced to interaction between two parties, so that an integrative research framework is prepared for the two (fig.1), where "scripts" include the interpretive scheme, facility and norm. Arrows starting from structure show structural constraints on

interaction, and arrows from interaction show production/ reproduction of structure. The lower or upper half of the figure is made by combining the duality of structure portrayed by Giddens (1984 p.29) with the levels of consciousness. The meaning of arrows is based on Barley (1986). The research framework is hereafter referred to as hermeneutic structuration.

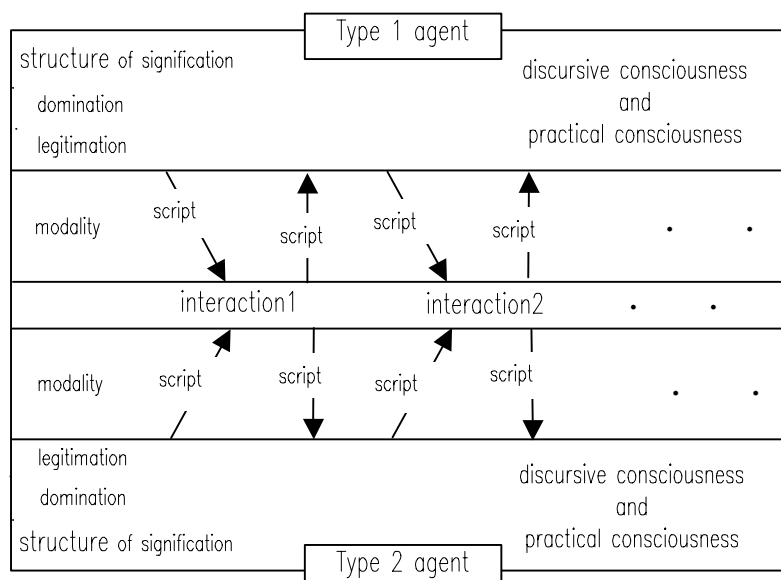


Figure 1: A Research Framework of Hermeneutic Structuration

With the aid of the framework, researchers can capture not only discursive but also practical consciousness. From separate pieces of discursive information and researchers' foreknowledge, researchers can describe a social reality by use of the framework. Hermeneutic structuration is applied and examined below to sensitize and understand the interaction between developers and users in a real failed IS implementation.

RESEARCH MEHTOD

Case study research methods were used in this research, which took place over a period of 17 months commencing in April 1997. Being a member of the organization chosen for the study, one of the authors was a cultural insider. Hence, as a member of the project committee and the development team, he was intimate with several of the sub-universes of reality that comprise the overall institutional reality. This report is the result of both a process of guided self-reflection by one of the authors and a series of more than ten in-depth discussion sessions of hermeneutic circles.

Through the hermeneutic circles (Klein and Myers 1999), required was additional information, which was gathered by interviewing the main stakeholders who were involved and this included the committee members, the developers and the salespersons as a user of the system. Information from other sources such as internal materials, articles from business magazines and books written about Japanese culture and the Western one were also used to build a picture of dynamics in which the system was implemented.

With the aid of the research framework of hermeneutic structuration, the field of implementation was sensitized, and the statements and figures were produced during the intensive series of in-depth discussion sessions.

CASE DESCRIPTION

An Outline of the Company

Secunet was established as a subsidiary of a large firm in Japan in 1985, to conduct a business centered on information network services for client companies, with sales and installation services for PCs and servers. The company, which faced an increasing need for more employees, already had approximately 110 people, most of whom had previously gained experience with other companies. There was, however, a clear imbalance due to the size of the sales force, some thirty salespersons. While a steady growth in sales was being experienced, from a level of approximately six billion yen in 1993, business transactions were still mostly being processed by manual procedures with partial automation by individual salespersons using PCs.

The president of Secunet was an ex-bureaucrat, retired from Ministry of Communication, who had joined the company at its foundation. Under him were two senior executives, one was responsible for sales, and the other, Ken Yano whose previous experience had been in engineering, was responsible for both administration and engineering, and had been headhunted by the CEO of the parent company at the same time as the company president.

Two issues related to the partial automation of order entry, inventory, and invoice concerned him. One was related to the inefficiency of transaction processing, which could lead to a decline in customer satisfaction, which in turn could adversely affect the company's competitive position. The other was lack of monitoring and control of the sales activities by the administrative department, which could lead to a negative balance despite the volume of sales turnover. A further problem was the small profit margin of the current business, and business shift from the current infra-related service to IS development support service was under consideration. To bring about this shift in 1991 Secunet acquired the first dealership of a well known integrated CASE tool, organizing a CASE business section with the acknowledgment of the parent's CEO. However, it was not until 1992 that any development support service using the tool was available.

What Took Place

In May 1992 Yano announced a project plan for the building of an IS, with three objectives:

- We will solve all the current problems of the company by computerizing them, integrating, through information, the tasks of order entry, inventory, and invoice, which are at the core of value chain of our company.
- We will build an ideal system by identifying the necessary functions and information models in a top-down approach, regardless of our current system.
- We will complete an integrated system for our entire business in the near future, and supply relevant information to everyone.

Yano organized a project committee and a development team. The committee, led by an engineer, was composed of personnel from the various departments of the company, who understood the functions of the company. In particular the representative from the sales department was an exceptional man, whose clear rational thinking highlighted the problems of current sales tasks. Yano made it clear to the committee members that "The rapid acquisition of CASE know-how is an expected effect along with the stated objectives." Hence all of the people from the CASE business section participated in the development team.

The systems planning stage commenced in July. With little in-house project know-how

Secunet hired a consultant, who through interviews with a cooperative staff, and with a clear objective of an ideal system design, could lead the committee members to identify conceptual information and process models.

Yano had as an undisclosed agenda, it being the intention through the introduction of the ideal system to normalize sales functions. Though he had informally told development members that “By using IS a single price table to all customers will be enforced and the uniform processing of transactions as opposed to multi price tables dependent on the particular customer and the ad-hoc, sometimes reversed processing of transactions.” This stage took six months, the system plan being completed late in 1992. The plan was acknowledged and passed to the next stage without formal appreciation by the senior executive board, at which point the committee was dissolved.

In January 1993 the analysis stage commenced. The development team grew into a mixed group with 13 members, some of whom were externally hired engineers. Because of their varied backgrounds and the different ISDMs that they had experienced, the team members had many different interpretations of concepts and terms, which were not fully resolved despite extensive discussion. Thus when the team was divided into three sub-units, to gain efficiency, a gap of analytical precision among sub-teams emerged, but was ignored as the team members rushed towards the next stage, attempting to overcome a delay of one month.

In May the design and programming stages started without an appropriate review of the results from the analysis stage. The integrated CASE tool was thought to automate all the detail design and programming required in a conventional development approach, and allowed the team members to devote themselves to concrete tasks, such as display design and report layout. The three sub-teams continued to exist and function independently as they rushed towards the final target.

When the integration-test stage started in August a technical problem occurred, due to a program designed by a novice engineer, which attempted to perform inquiry processes in a sequence inconsistent with the physical data structure, and thus resulted in no response to any queries. The problem took four months to fix even with the aid of DB-experienced engineers. It was team policy that programs produced by the tool were to be used as a runtime system without testing, therefore there was no time estimate reserved for the test workload. It became clear that the systems opening scheduled for September 1993 was going to be desperately late. The effectiveness of integrated CASE tools, which had been hyped by both commercial magazines and consultants, now that its limitations had been revealed, became the topic of conversation for every salesperson.

The system use stage started three months later than planned. It was at this point that it became apparent that the IS implementation was a failure. Salespersons saw a breakdown of their sales task using the system, and there were rising complaints from them. The only people who continued using the system were those a few people who had participated in the planning stage. The president of Secunet finally declared that the system would cease use in February 1994. The decision remained unaltered despite Yano and the team leader requesting an opportunity to improve the system, and the business shift became more difficult than ever.

THE STRUCTURING PROCESS

The case will be described using the research framework of hermeneutic structuration. In addition to their discursive consciousness, we will consider the practical consciousness of the actors in order to understand their behaviors from the viewpoint of the researchers. This means that the historicity of researchers will be involved in the description and that the

description will center on the evolving process. Therefore, we will include a phase of conception phase prior to the IS development process.

The interaction of the development side, comprising Yano and his team, with the user side, other members of the company, is described in order to capture the dynamics between them. Each side has “distinction” and can be considered a different class, embodying a different practical consciousness, which allows their classification into the two different parties.

The project progression is found in figures 2 - 5, where the upper section illustrates the consciousness (structure) and scripts of Yano, committee members and development team members, and the lower section those of users, particularly salespersons.

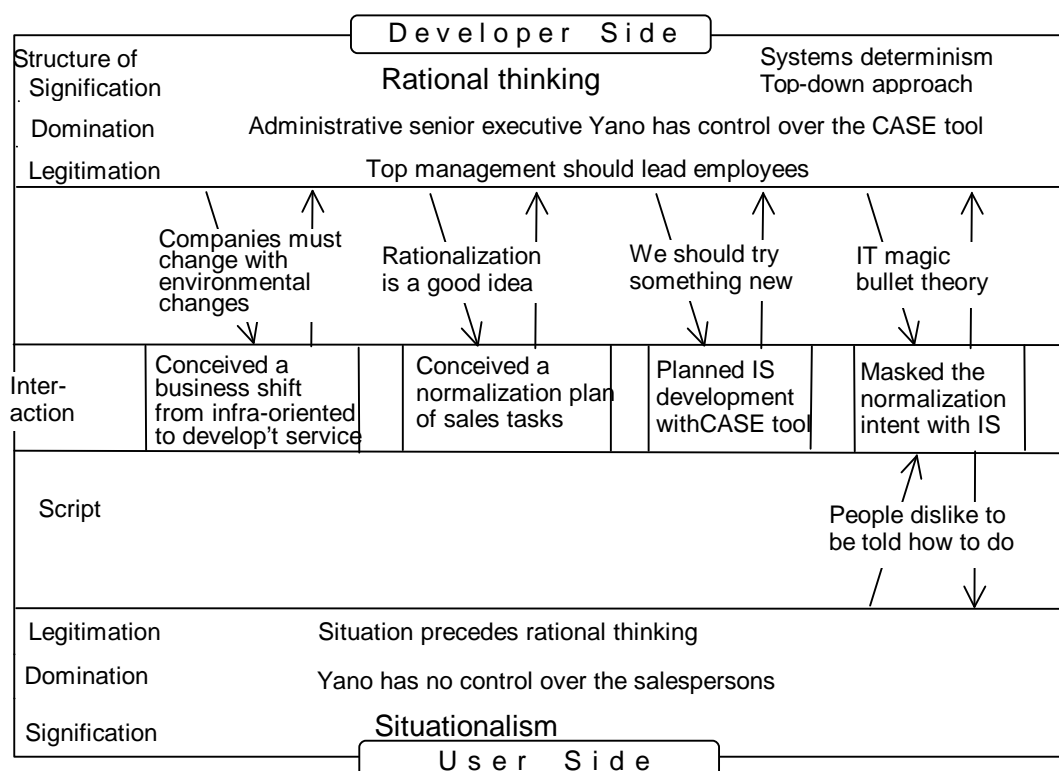


Figure 2: Conception Phase

Actions and events are ordered into four phases, the first being the conception phase in which only Yano plays a part in a voluntaristic world. The second phase is the systems planning phase in which early interaction between Yano and others took place. The third is the development phase which deals with the internal dynamics of the development team. The last is use phase in which the later interaction between Yano and the users took place.

Conception Phase

This phase, which underpins the reasoning behind the project and is solely related to Yano, was recreated using discursive information heard from him. From the information it was possible to understand some of his background, and psychological make-up, it becoming apparent that Yano was a man of rational thought and planning. He was headhunted by the CEO of the parent company. Both his behavior and thought patterns were largely different from those of most Japanese, more in the rational Western mould than that of the Japanese situationalism. It was because he had been an engineer, with a consciousness consistent with systems determinism, and because of his planning ability. However, he clearly lacked the ability to lead charismatically, whereas the CEO was well known in Japan for his charismatic leadership, which may have influenced Yano's thought pattern and behavior to some extent. It

is possible that because of his seniority in the company and his planning ability, which was appreciated by the CEO, he thought that he had to manage Secunet himself.

Yano's senior executive position and consciousness of Western-style rational thinking lead him to take a series of strategic management steps. Firstly drawing on the norm that "Top management should lead employees" from structure of legitimation, which led to his drawing on an interpretive scheme "Companies must change with environmental changes" from structure of signification, thus he conceived a plan to shift the business from the current infra-related services, which led him to the acquisition of the dealership for integrated CASE tools. By drawing on another interpretive scheme "Rationalization is a good idea," he conceived a plan for the normalization of sales tasks. Further, drawing on the norm "We should try something new," he conceived a plan of IS development using CASE tools, with the consequent learning through the use of the tools, thus combining both IS development and tool experience building in the plan at this phase.

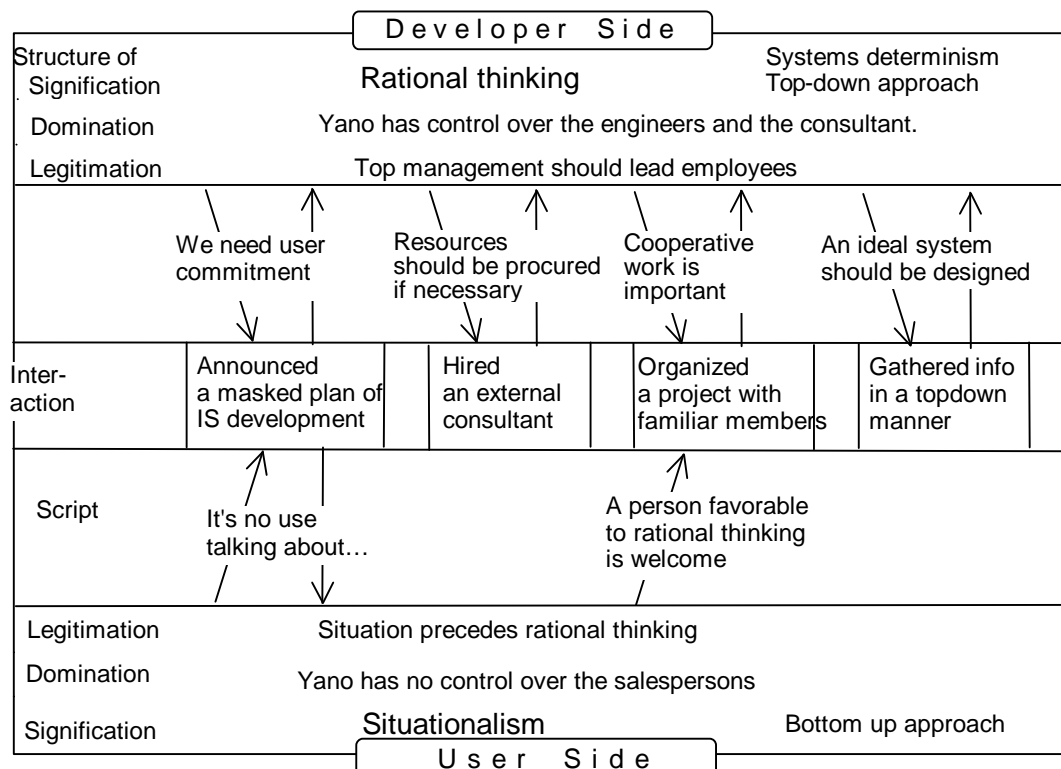


Figure 3: Planning Phase

Despite his senior position, and perhaps because of his lack of charisma Yano could not ignore the structure of power, and thus took the organizational characteristics into consideration before he announced his plan. By drawing on the interpretive schemes "People dislike to be told how to do" and "IT magic bullet theory" he masked the radical thinking behind the plan for normalization within the plan for automation. The above description dealt primarily with the process of voluntarism taken by Yano, which naturally reproduced his consciousness of rational thinking.

Planning Phase

The early interaction between Yano and others took place in this second phase. The consciousness of most employees, all of whom had previous experience with other companies, can be considered as reflecting the usual Japanese structures of signification, domination and legitimation, i.e., a social consciousness of practice dominating discourse / discursive. Hamaguchi (1998) categorized the behavior of Japanese people as situationalism

and that of Western people as logical-universalism. In Japanese society contracts are re-negotiated if the situation changes (Hall 1987). Because most of Japanese are dependent on the situation they are not serious in discussion of the future, and are hence contrast with rational Western thought pattern as an ideal type in Weber's term. Similarly the Japanese structure of domination, which has been so apparently informal that the person in power has not necessarily become the leader, contrasts with the Western system of hierarchical power. Thus in Japan the nominative head of an organization does not make decisions but coordinates stakeholders, and managers are usually promoted through the seniority system. The real power structure in Secunet comprised of the formal president, administrative senior executive Yano and the sales senior executive.

Yano in announcing the IS development plan, drew on an interpretive scheme "We need user commitment", which was normative knowledge of IS implementation. However, there was as an undisclosed agenda, it being the intention that through the introduction of the ideal system sales tasks could be normalized. Though he informally told a few committee members of this intention but, taking into consideration the organizational characteristics held by many employees, he avoided mention of this intent in his announcement of the IS development plan. This means that he consciously drew on IT magic bullet theory (Markus et al. 1997), while reconfirming the interpretive scheme "It is no use talking about..." and therefore confirmed the practical consciousness of situationalism.

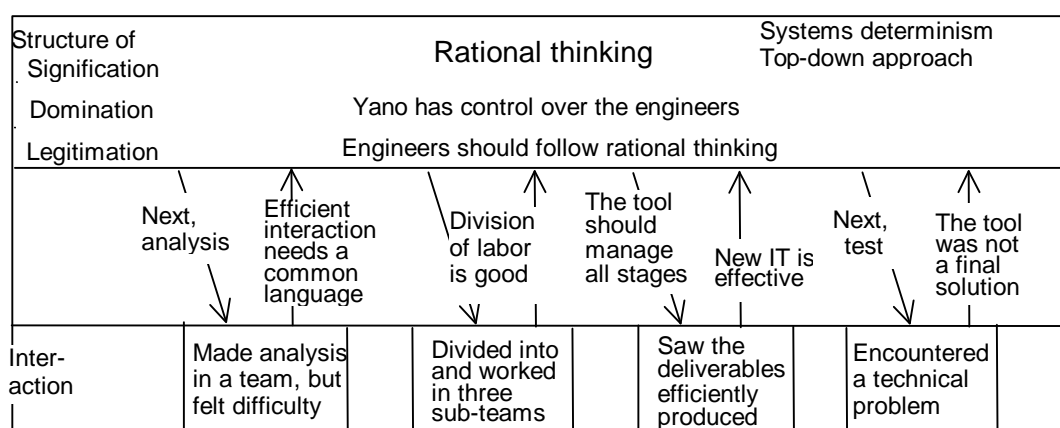


Figure 4: Development Phase

Reflecting the real structure of domination, Yano did not try to get support from the president for the project, and drawing on the norm that "Resources should be procured if necessary," he hired a consultant. He organized a project by drawing on the norm "Cooperative work is important", yet in an attempt to keep the project under his control he selected as project leader an engineer with a similar background to his own, and chose as a committee member a rational thinking salesperson, who had doubts about the existing sales functions.

Consistent with the logic of the ideal system design, the project was made to adopt a top-down approach, however this was inconsistent with situationalism. The salesperson involved in the project further enriched his own rational thinking as the project progressed and he became more familiar with the ideal system design, which meant that he gradually left his role as a representative of the sales department. While drawing on the norms "An ideal system should be designed" and "We need user commitment" the committee members maintained the consciousness of rational thinking by only interviewing those people who were already favorable to the project and would cooperate.

Development Phase

This phase deals with dynamics within the development team members. It was at this time that external engineers were introduced to the team, so that the knowledge and backgrounds of the members became further diversified. Reflecting their interaction at work, a new interpretive scheme was produced by the team, “Efficient interaction needs a common language.” However, their inevitable differences and a strength of belief in the division of labor were reflected in their drawing on the interpretive scheme “Division of labor is good”. This led to the division of the team into three sub-teams, in which it was apparent that there was an imbalance of analytical precision as they separately continued the work.

Because it was the first time any of the members had used integrated CASE tools they drew on the IT myth that “The tool should manage all stages necessary for IS development.” Because of the relatively small workload a series of “deliverables” were efficiently produced by the tool, this led the team into thinking that the development was going smoothly. This belief contributed to reproduction within the team of the IT myth “New IT is effective.”

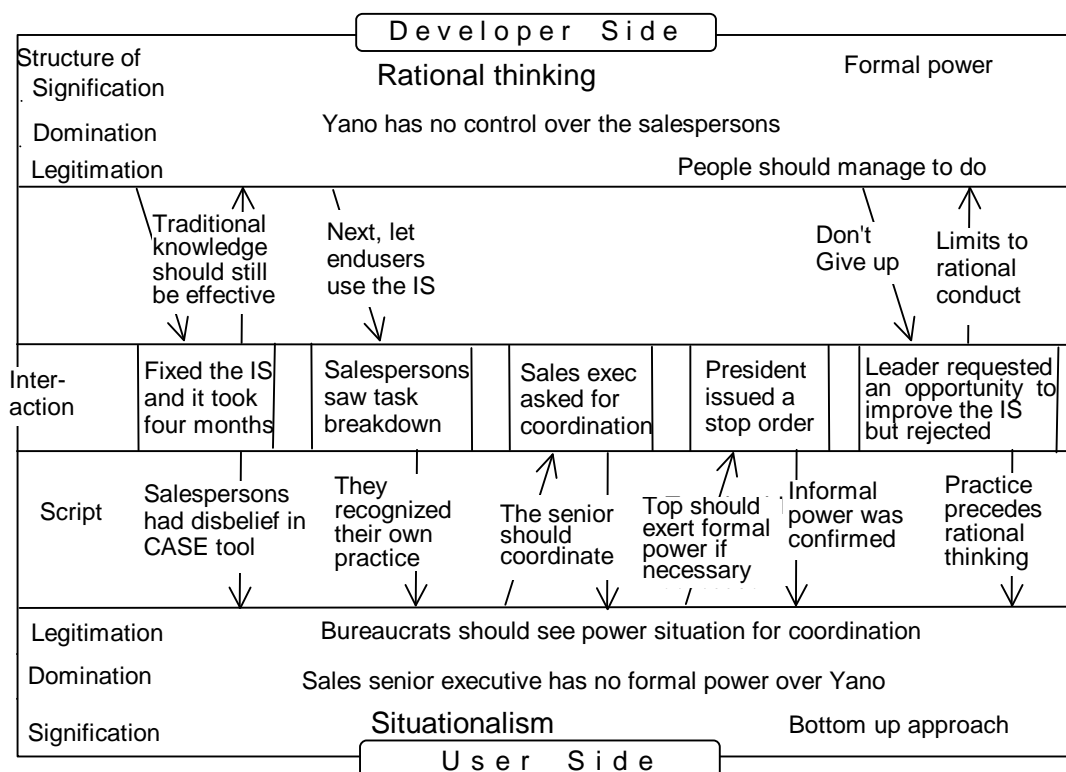


Figure 5: Use Phase

The high performance of the tool postponed any recognition of problems, thus a large technical problem, with a design which ignored access paths, emerged on the integration test. This made the development team acknowledge that the new IT was not a final solution but brought about steady progress, and contributed more or less to reproduce IT myth.

Use Phase

The problem took four months to analyze and correct, during which time everyone in the company watched. There was a great deal of doubt about the supposed high potential of the CASE tool, which was indirectly reproduced by the salespersons as a disbelief in the new IT before it was used. Also when the IS was released to the salespersons, after the problem was corrected, there was neither advance instruction about the normalization of sales tasks.

The IS forced the salespersons to process their transactions step-by-step within a fixed price table, and thus they found difficulties in continuing their previous sales practices because of

the absence of multi price tables, and also could no longer allow products to be delivered prior to the price being agreed. The IS appeared to them as breakdown, as well as forcing them to consciously recognize what their sales practices were. However, because they had never had the need to change their practices, it appeared to them that the IS was the problem.

It was a common belief in Secunet that the salespersons, because their requests were accepted and attended to by others, had power over those others. However the formal positions of the sales senior executive and Yano were on the same level, so that the former did not have any right to issue an order to the latter. In Japanese society it is not the custom to discuss an issue in public in order to coordinate it (Nakamura 1989). It is usual for a person of the level immediately above the level at which the issue arises to informally coordinate. In this case the president was an expert coordinator, being an ex-bureaucrat, the major role of Japanese bureaucrats being to coordinate issues among stakeholders rather than to propose new ideas.

In accepting a request from the sales senior executive to stop the IS implementation, the president made explicit the structure of domination. He acted purely as a coordinator, and drawing on a norm "The top should exert formal power if necessary," the stop order was issued to Yano and the development team. While Yano and the development team leader requested an opportunity to improve the IS, which was not granted, as the normalization agenda was now clear to everyone. It was made clear by this interaction that the sales senior executive was in a superior position to that of Yano, and thus current practice or situation takes precedence over innovation. This means that the current business was practically considered good and that situationalism was reproduced. It should not be forgotten that an unintended consequence was that the business shift, hoped for by Yano through his planned IS implementation, from the current infra-related service to IS development support service had become more difficult than ever, with the disappearance of the CASE tool business from Secunet.

DISCUSSION AND CONCLUSIONS

This paper has proposed the research framework of hermeneutic structuration as a sensitizing and expressing device for a hermeneutic process, and applied it to a failed IS implementation. It has helped the authors sense a mismatch between developers (administrative senior executive Yano and his team) and users (salespersons), and clearly illustrates the dynamics of the IS implementation process. Through interactions and practical consciousness it has been possible to see how the rationalism of the developers was forced over a period to accommodate itself to situationalism, before being finally rejected in a society of practice orientation.

In commenting on the interpretive study described above, a number of important points can be made. First, the research framework helped the authors sense the field of IS implementation. Practical consciousness being critical in structuration theory, the notion of practical consciousness and *weltanschauung* has always been taken into consideration and enabled authors' foreknowledge and historicity take part in sensing the field.

Second, the framework has been effective in capturing the totality of understanding while it has made the authors keep in touch with each discursive act by an agent. It has also made the authors make good use of the historicity of agents, for example, the addition of the conception phase in the analysis of the case being one of its results

Third, the expression derived through the framework has a capability of conveying the totality of understanding to readers. Although there are many interpretive studies and their contents might have many to convey to them, it is more difficult and take more time for

readers to read and interpret the texts than those in positivistic research. The result created and expressed by the research framework can be more open to further interpretation and criticism by other researchers because of its ease of understanding.

An Interpretive research, hermeneutic study in particular, creates another text through researcher's interpretation over an original text. The researcher's text facilitates him or her to have better understanding but not necessarily facilitate readers to do so. For interpretive research there are needs for a device of expression, the research framework contributing to it.

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