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Marius Janson

University of Missouri - St. Louis, janson@umsl.edu

Dubravka Cecez-Kecmanovic

University of New South Wales, dubravka@unsw.edu.au

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Information Systems Development and the Participatory Ethos*

Marius Janson

Professor of Information Systems

College of Business Administration, University of Missouri-St. Louis

8001 Natural Bridge Road

St. Louis, Missouri, 63121

United States of America

Tel: 314-516-5846, Fax: 314-516-6827

janson@umsl.edu

Dubravka Cecez-Kecmanovic

Professor of Information Systems, Faculty of Commerce and Economics

University of New South Wales

Sydney, NSW 2052

Australia

Tel: 61-2-9385-4735

dubravka@unsw.edu.au

Abstract

Participatory--also called emancipatory--information systems development (ISD) approaches claim systematic and meaningful user involvement, workplace democratization, and reduced worker alienation. Grounded in a humanist view of information systems (IS) as social systems, participatory ISD advocates open and non-distorted communication, reasoned argumentation, cooperation and mutual understanding between IS users and developers. However, the critical theoretical foundation of participatory ISD was contested and its practical value called into question (Wilson, 1997). Moreover, participatory ISD was criticized as serving the interests of capital by co-opting workers and thereby weakening their resistance (Asaro, 2000).

Given the controversy surrounding participatory ISD, its objectives, theoretical foundation, and application in practice, further studies are warranted. Drawing on a longitudinal field study, this paper provides insight into a company that successfully implemented participatory practices in organizational decision-making including ISD. By exploring ISD in a broader organizational context, this paper re-examines conditions for participatory ISD and sheds light on the subtle difference between ISD practices that liberate and empower, and those that colonize and disempower.

Keywords: ISD, Participatory ISD, Emancipatory ISD, Critical Social Theory.

1. Introduction

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Participatory information systems development (ISD) was a reaction to the positivism and functionalism of traditional ISD methodologies (Hirschheim and Klein, 1994). Positivist ISD methodologies are based on several key assumptions. First, information systems (ISs) developers gather ‘objective facts’ about organizational problems and user information needs and design ISs to increase efficiency and effectiveness of business processes on a scientific basis. Second, these ISs and the methods that led to their design are considered socially and politically neutral, portrayed as inevitable technological development. Third, positivist ISD methodologies were criticized for contributing to economic rationalism and solutions that ran counter to stakeholder interests, increased control, monitoring and surveillance of workers, and increased coercive use of power (Saravanamuthu, 2002; Hirschheim and Klein, 1994; Hirschheim, et al., 1991).

Following the above critique and motivated by high IS failure-rates, attempts were made to involve workers (users) in ISD. This strategy was named *participatory* ISD. Examples include IBM's Joint Application Design (JAD ®) during the 1970s (Carmel et al., 1993), Scandinavian Collective Resources approach (Ehn and Kyng, 1987), Participative System Design (Mumford, 1981), and ETHICS (Mumford, 1983, 1997 (Asaro, 2000)). These methods drew inspiration from the workplace democracy and the “Quality of Working Life” movement (Trist, 1981). Furthermore, Hirschheim and Klein (1994) enhanced participatory ISD by incorporating emancipatory ideals informed by neohumanistic values and paradigm. Conceptualizing ISs as social systems with a potential to free employees from “repressive social and ideological conditions and thereby contributing to the realization of human needs, these researchers proposed requirements for emancipatory ISD methodology (Hirschheim and Klein, 1994, p. 87; Alvesson and Willmott, 1992).

Roderick (1986) observed that individuals are subject to self-imposed constraints, unacknowledged conditions, and distorted communication. The emancipatory ISD methodology aims to make the individual aware of these constraints by a process of self-reflection. Emancipation then comes about when individuals can overcome self-imposed constraints and repressive social conditions (Geuss, 1981). As technology is seen as a means of furthering economic rationalism that obscures repressive social conditions and ‘the continued destruction of the human potential’ (Saravanamuthu, 2002), participatory and emancipatory approaches to technology deployment of ISs, seem to provide hope for a more humane and socially responsible use of technology.

However, participatory and emancipatory ISD approaches were dismissed as naïve incapable of resolving real-life power struggles, and preventing colonizing effects of information technologies. Moreover, their foundation in Critical Theory was condemned and the “real agenda” of its proponents was called into question (Wilson, 1997). A more considerate critique by Saravanamuthu (2002) considers a labor process perspective and emphasizes the risks for “participatory IS approaches to become tools of ideological manipulation, as they sidestep workplace conflict and (implicitly) legitimize the logic of efficiency” (p. 195). It has often been repeated that more empirical studies of participatory and emancipatory ISD are needed to understand its potential and limitations.

This paper revisits participatory and emancipatory ISD methods by drawing on a longitudinal field study of a retail company that practices participatory ISD without naming it as such. This company developed a unique approach to informatization by proposing, accepting, and developing ISs as part of its continuous organizational development process. Through insights into company decision-making and ISD practices, the paper demonstrates the realism of participatory ISD in organizational practice (thus responding to the charge that it is naïve and practically impossible), revisits the four conditions for emancipatory ISD practices

proposed by Hirschheim and Klein (1994), and delineates conditions that threaten and those that enable the attainment of emancipatory objectives and values.

The sections that follow present our research methodology (section 2), company description (section 3), empirical evidence from our longitudinal field study (section 4), interpretation of findings and discussion (section 5), and concluding comments (section 6).

2. Research Methodology

Our investigation of Colruyt, Belgium's third largest retail company, is an interpretive case study based on the notion that knowledge about reality is inter-subjectively created through shared experiences and understandings within particular contexts (Walsham, 1995; Klein and Myers, 1999). We designed our field study "to gain an in-depth understanding of the situation and meaning of those involved... [and an] interest in process rather than outcomes, in context rather than specific variables, in discovery rather than confirmation" (Merriam, 1998, p.19). As the research evolved we focused on workers' emancipation, alienation, participation in decision-making, and the achievement of company objectives during ISD. Hence, our study is a critical inquiry into ISD practices.

Data collection consisted of on-site audio taped interviews with the company's president, the chief information officer, the marketing manager, middle level managers, workers, and union representatives. Semi-structured interviews were conducted in Flemish, the native language of interviewees, and transcribed for further analysis. Interview guidelines were sent to all interviewees ahead of the interview. This allowed interviewees to tell their own story without undue influence by the researchers and yet ensured that all topics were discussed. After each interview the researchers would record first impressions: the interviewee's demeanor and tone, the demeanor of office personnel, and the surroundings in which the interview occurred. These impressions were invaluable during subsequent data analysis. We also analyzed company documents, letters, annual reports, union reports, and newspaper articles.

3. The Company

The Colruyt Company was founded in Brussels, Belgium, in 1965 as a single food discount store - a revolutionary concept in Europe at that time. Competing on price was and still is the Company's strategy, as stated by the IS manager, Lengeler:

"The business strategy was concise, that is +10%, -10%, and 1%. It means that we charge customers 10% below our competitors, we pay employees 10% above average industry rates, and we realize 1% return on sales." (Lengeler, interviewed 1993, and 2000)

The Belgian retailing environment in the 1960s was hierarchical. Personnel consisted of a store manager, several section managers, restocking clerks, check out clerks, and cleaners with little potential for promotion from a lower to a higher job classification. However, since the company's inception its owner and members of upper management worked toward rational discourse, reducing power differences among employees and between company management and employees. Management also encouraged personal responsibility and initiative toward action at all company levels. The late Jo Colruyt, Company founder and its former president, stated in two company documents:

"Based on theoretical considerations we conclude that the Colruyt Company is a networked organization with large numbers of virtual workgroups. The potential of computer-based communication and the restrictions of hierarchical bureaucratic organizational systems have

motivated us to search for innovative organizational structures. These innovations include functional groups, working groups, and groups composed of specialists.” (Colruyt, 1985, p. 69)

“Power decentralization has the enormous advantage arising from organizational flexibility to instantly adjust the organization to new situations. Hundreds of employees obtain the power to take initiative. They will experience this in their personal life, and consider it an enrichment of their professional life.” (Colruyt, 1985, p.74)

Top management sought to limit a one-sided reliance on rationality (e.g., improving efficiency and effectiveness) by balancing the rational and the intuitive/subjective. The company’s founder referred to it frequently during the interview:

“Rationality by itself does not work. The more computers [one] introduces the more one has to pay attention to [human] communication and human relations. [In absence of all this] people will come to behave like computers and that leads to a society that has no place any longer for humans.” (Jo Colruyt, interview, 1993)

Company seminars in self-actualization, self-empowerment, self-expression, decision-making and assertiveness support balancing rationality and emotionality in day-to-day corporate practice. Jo Colruyt stressed the importance of seminars:

“Many employees attending [such] seminars requires the company to change its orientation. The Company is the people and when they change the company has to change. Members of top management have to attend these training sessions also, so that they know what ideas exist among the employees...otherwise they cannot relate to employees.” (Jo Colruyt, interview, 1993)

Drawing on company documents we quote the opinions of two employees at different echelons about training:

“Colruyt expends time and financial resources on training and improving employees’ abilities. There are many courses and a program of job rotation”. (Worker, 1985, pp. 179-180)

“Many courses are available on the topic [of communication & relationships]. Participating in these seminars remains one of my best experiences. I learned to better understand myself, something that I consider very important: to know oneself, confront oneself, and ask questions of oneself. I learned to understand my emotions and understand how they played an important role in my relations, communications and [human] contacts. This process of learning with and about myself made it possible to obtain better insights into other people, understand others, achieve open dialog, learning better the wishes and goals of others, and to love others better.” (Worker, 1985, pp. 113-115)

These and other employee quotes show that seminars, which are attended by everyone from top managers down to the lowest ranking clerks, are integral to working in the company, and essential for building its participatory culture.

4. Empirical Findings

4.1 Participatory Decision-Making

Our data analysis reveals complex patterns of participative corporate decision-making. On the one hand, employees have a right and, indeed, an obligation to make decisions concerning the discharge of their job responsibilities. On the other hand, the individual making a decision does so based on broad consultation with all company members interested in and affected by the decision. In a company directive Jo Colruyt stated:

“Anyone contemplating making a decision needs to publicize its content in a broad manner: verbally, by telephone, during meetings, and in any case in writing. Moreover, agreement should be sought from all individuals affected by the decision.” (Jo Colruyt, 1985, p. 58)

Together with democratization of work relations and workers' participation in decision-making, the company nurtures individual responsibility. While decision-making in the Colruyt Company is participative, the ultimate responsibility for a decision always rests with one individual. Jo Colruyt emphasized two key principles for high quality decision-making: (1) broadly based communication and consultation about the problem and involvement of all relevant members in the decision-making process, and (2) individual responsibility for making and implementing the decision. For example, company documents reflect the opinions of two interviewees concerning decision-making:

“Being a purchase agent is exacting – it requires learning and personal decision-making. I feel constantly challenged. I want to do a better job by obtaining better prices yet without breaking my good relations with suppliers. It is a game of testing, choosing, negotiating, and ensuring that Colruyt's product assortment stays up-to-date.” (Purchasing agent, 1985, pp. 122-123)

“One has to respect employees' rights to make their own decisions. One cannot just force decisions taken somewhere else on one's subordinates...one has to ensure the availability of information and informing employees about information sources.” (Manager, 1985, pp. 139-140)

The firm invests much effort in informing employees about company affairs and significant decisions. In the early 80s, the company created an information system for information dissemination (ISID), a predecessor of a groupware that continues to be used extensively today. Drawing on company documents we quote:

“There is a fantastic system for storing information and communication. It was built because the company considered it imperative that everyone becomes informed to the degree necessary to do his/her job.” (Worker, 1985, pp. 179-180)

“An efficient and effective communication system is an important source for each employee who needs information to carry out his job. Having information means having power. Power to act in an informed manner, which is to say having participative rights.” (Jo Colruyt, 1985, p. 203)

In addition to being the depository of incoming, outgoing, and internal company documents, ISID supports bottom-up initiatives for problem solving and broadly based participation in decision making. Company policy ensures distribution via ISID of information concerning decisions, actions, and events. Similarly, company members use ISID to identify, describe, and share information pertaining to a problem, and to discuss ways to resolve it, and finally to publicize the decision taken. In short, ISID is essential to cooperative work practices and participatory decision-making.

4.2 Participatory ISD

IS development follows a pattern similar to that of decision-making: one or more individuals recognize a problem the solution of which may require an IS, an organizational process change, or a combination of both. Assuming an IS is needed, a request for assistance is then submitted to the IS department using ISID. A system developer, after an in-depth consultation with the initiators and potential user(s), analyses the problem and develops a cost-benefit analysis. Based on the information so created the analyst then decides whether to advise major or minor IS development.

Major IS development is prioritised by a steering group comprising members of top management and the chief information officer. Minor IS development starts at the discretion of the IS department, which has a budget for this purpose. In either case, solving the users' problem through close cooperation between users and IS analysts is a common practice. Apart from meetings, ISID functions as a communication channel enabling continual building of mutual understanding and cooperation between all parties.

To illustrate the practice of participatory ISD in the Colruyt Company, we will analyze a transcript of a work group meeting comprising a middle level manager, an IS analyst, a software analyst, and a work analyst. Fresh produce is shipped in carts with hollow walls filled with a coolant that keeps the inside cart temperature below the legal maximum temperature during transport. Upon arrival of a fresh produce shipment, stockroom clerks make temperature readings that are then stored in a database. The meeting focused on the part of a larger IS that recorded fresh produce temperatures.

The systems analyst presented in detail the benefits and drawbacks of alternative temperature measuring devices. His concerns focused on efficiently and accurately measuring temperature while keeping equipment cost down. The work analyst reported on methods for efficiently and effectively entering temperature data into a database. His immediate concerns centered on the stockroom clerks' working conditions and the rough-and-tumble stockroom environment that could easily lead to damaging computer equipment and on ways to avoid such mishaps.

The software analyst was extremely attentive but took no part in the discussion. Inquiries by the author after the meeting's end revealed the reason the software analyst attended the meeting; namely to become acquainted with the Company's ISD practices, decision-making and meeting style. The manager explained:

“We think it important to involve [analysts] in projects early on. They need to [learn] not only to complete a project, but [should] also get to know the systems users. It is our experience that this enhances IS performance.” (Manager, Interview, 2001)

The systems analyst and the work analyst were the most active discussants, followed by the middle level manager acting as discussion moderator. Based in part on discussions with stockroom clerks, the work analyst proposed that carts be outfitted with a thermometer so that stockroom clerks could read fresh produce temperature. Furthermore, he recommended that a two-colored label be affixed to the side of the fresh produce cart to be read by a laser gun, the output of which would be recorded in a database. After reading the cart's thermometer, the stockroom clerk would aim the laser gun at one or the other color indicating whether the fresh produce temperature was below or above the legally accepted temperature. Thus a permanent electronic record concerning the acceptability of a particular fresh food shipment would be created. The meeting ended with a general agreement to work on the realization of the proposed solution.

Close reading of the transcribed text of the meeting's audiotape record led to interesting insights. First, during the meeting the views of all attendees were considered. Second, group members were comfortable with one another and they reported on tasks that had been assigned during an earlier meeting. Third, the ebb and flow of information was logical and coherent to all those present at the meeting. Fourth, after a lively discussion, agreement was reached about the tasks that each of the attendees would complete in preparation for the next meeting. The minutes of the meeting together with the decisions made were subsequently distributed via ISID to those who attended the meeting as well as to other interested parties.

One suggestion made during the meeting involved investigating whether stockroom personnel would accept a single rather than multiple bills-of-lading per shipping cart. We think this is essential to the participative process because it demonstrates the conscious inclusion of those affected by the situation. Stated the meeting's moderator:

“I hear positive noises [from the dock] that using a single bill-of-lading would again be discussable.” (ISID document, 2001)

Notice the moderator is concerned whether the bill-of-lading issue is even “discussable,” i.e., whether those affected are ready to consider the topic. Furthermore, during the meeting it was decided that the choice between a blackboard and flat computer screen would be left to individual store managers.

ISD practices in Colruyt are embedded in its culture and a long-established approach to problem solving based on company-wide information sharing and collaboration, fostering personal initiative and individual responsibility. Statements from two employees recorded in company documents illustrate this cultural value:

“The Colruyt Company has its unique atmosphere with form and content. For me the unique aspect is the extensive and wide-ranging use of information technology and a [simplified] bureaucracy. Each [document] is accessible in a short time, everything proceeds speedily and effectively.” (Worker, 1985, pp. 179-180)

“The big differences between Colruyt and the other four firms I worked for are being allowed and able to take initiative, promote one’s ideas, make decisions and acquire power. I don’t know of any firm where one is kept informed so openly of others’ ideas and positions. It does not matter what the view of the other is and equally important is that one can inform others of one’s

While in Colruyt employees do not specifically talk of emancipatory ISD practices, they became embedded into their way of thinking and dealing with organizational issues. We were intrigued to investigate their deeper meaning and explore conditions that affect their social implications.

5. Discussion: Company Participatory Ethos and Its Approach to ISD

Analysis of interviews, minutes of meetings, and field observations show Colruyt Company ISD practices exhibiting several characteristics of participatory ISD. First, users as part of continual work process improvements and customer service enhancements frequently initiate ISs. Second, major and minor IS development proposals are approved by the company’s steering group or directly by the IS department, respectively. Third, the initiative and subsequent discussions about proposals are publicized via ISID, thus enabling wide cooperation and coordination through ISD. Fourth, ISD is integral to continuous organizational development during which members have the power and, indeed, obligation to participate and exercise agency. As the evidence shows, employee emancipation, self-determination and the realization of human potential are perceived as the company’s competitive advantage because they motivate employees to work cooperatively towards collective well being. Fifth, participatory ISD is key to company informatization that strives towards continuous innovation and organizational development.

To examine further to what extent ISD and decision-making practices at Colruyt may be considered emancipatory, we shall analyze these using four conditions proposed by Hirschheim and Klein (1994).

The first condition for emancipatory ISD is it “must support an active process for individual and collective self-determination” (Hirschheim and Klein, 1994, p. 87; Alvesson and Willmott, 1992). Based on our observations and collected evidence, individual and collective self-determination is central to company philosophy that penetrates all work aspects and decision-making, including ISD. On the one hand, the company nurtures individual self-determination, responsibility and “power to act in an informed manner” as Jo Colruyt

described it. Many employees explained how satisfying and challenging it is to be able to develop solutions and to play an important role (at any level) in company affairs. On the other hand, the company built a sense of collective identity and self-determination that motivates employees to develop mutual understandings of problems they experience and work cooperatively towards their solution. Particularly interesting is the involvement of work analysts because it ensures a general problem solving approach that may involve ISs. Thus, problem solutions may involve better use of existing ISs or developing a new IS. Moreover, all such initiatives and proposals are publicly announced, enabling company-wide assessment of and input by all interested or affected. In summary, ISD practices at Colruyt essentially rely on users participating in ISD but also on IS analysts participating in solving users' problems.

The second condition for emancipatory ISD requires support for a "process of critical self-reflection and associated self-transformation" (Hirschheim and Klein, 1994, p. 87; Geuss, 1981; Roderick, 1986). As the findings from our field study presented in the previous section show, the company has a long tradition of organizing a broad range of seminars on communication, assertiveness, sensitivity training, group dynamics, interpersonal relations, et cetera. These seminars are an integral part of workplace culture and all company employees - ranging from members of top management to checkout clerks -- attend them. As several employees pointed out, seminars foster self-understanding and a critical attitude toward themselves, work and company practices, and ISD processes. It is interesting to note that individual self-reflection and self-transformation by employees stimulate company changes and vice versa. This dialectic process is evident in ISD practices: the ways business problems are identified and resolved by a bottom-up process of innovation and experimentation using the latest information technologies. What is particularly notable is that it is not only an individual nor is it the company that matters, but it is both the individual and the collective that engage in mutually inspiring critical self-reflection and self-transformation aimed at continuous self-improvement.

The third condition for emancipatory ISD stipulates "encompassing a broad set of institutional issues" concerning employees' ethical needs, quality of working life, personal autonomy and freedom, social justice, and due process, has been explicitly addressed at Colruyt in alternative ways (Hirschheim and Klein, 1994, p. 88). Drawing on company documents we quote a bookkeeper:

"I enjoy my work and being part of the company. Most of my colleagues consider it normal that we commit ourselves 100% to the job. This relates to my being considered a human being and a company member within Colruyt. These feelings arise on account of the Colruyt culture: one of open relationships." (Manager, 1985, pp. 140-142)

The values underlying the company's development since its inception include concerns for individual needs -- material, social and emotional -- for the quality of work environment and enjoyment in work, as well as prevention of worker alienation. Non-hierarchical organization structure, power decentralization, participatory decision-making, balancing rationality and emotionality, discussions via ISID, norms and rules concerning just and fair work relations and customer relations, are among institutional issues that impact on and contribute to participatory and emancipatory ISD.

The fourth condition requires open communication and critical evaluation of assumptions, beliefs and values informing ISD. As our empirical findings show, Colruyt implemented ISID to assist and support rational discourse. ISID is used from the very beginning when problems are identified and discussed involving interested parties, until a solution or the initiative to build an IS are suggested.

Having the means for company-wide communication (ISID), a culture that nurtures open, free and honest interaction, and the practice of critical assessment of all claims during ISD, are key factors that make participative ISD practically realizable. The company's culture encourages employees to be direct in their argumentation. The statement of one worker defines corporate culture rather aptly:

"I realized quickly that good relations [with colleagues] were necessary. I acquired self-confidence, I believed in myself, and that led to better and more relations with colleagues. The knowledge I acquired taught me not to stay quiet when something was amiss, but instead to discuss matters. It was and still creates a wonderful feeling." (Worker, 1985, p.171)

Our analysis demonstrates that the four conditions for a participatory and emancipatory ISD approach defined by Hirschheim and Klein (1994) are fulfilled to a considerable extent. Particularly interesting, however, is that individuals at Colruyt do not speak of 'grand ideals,' they simply practice 'participatory ISD.' Our raising abstract issues involving 'critical theory' or 'radical critique' drew mostly blank stares, but many individuals gave a balanced, nonreified, and reality-grounded view of participative ISD and decision-making.

However, our analysis also identified additional aspects needing further investigation to get still better insight into participative ISD practices. An important criticism came from union representatives who accused the company of indoctrination and covert manipulation primarily through company seminars and implementation of ISID. While employees talk about seminars as empowering and liberating, the union representative claims they:

"Cause [people] to think Colruyt, to live Colruyt, to sleep Colruyt. It is always the same [thing]. What I have heard is that employees who don't [attend] seminars are not liked very much." (Socialist Union, Interview, 2001)

The union also pointed to dehumanizing effects of technology and specifically IS, such as a system that records customer waiting times. While one may discount the union representative's critique as biased and driven by vested interests, their criticism needs to be taken seriously. Interestingly enough, their criticism resonates with the critique in the literature that participatory ISD is in fact another form of furthering "capitalist goals at the expense of workers" and making them "less resistant" (Asaro, 2000, p. 285). Such criticism also gives credit to claims that participatory and emancipatory ISD approaches may in fact "sweep aside workplace antagonism with unproblematic notions of cooperation and negotiation and thus 'become tools of ideological manipulation'" (Saravanamuthu, 2002, p. 195).

Nevertheless, our interactions and interviews with Colruyt members, including workers, reveal that Colruyt's participatory ethos is genuine and that both participatory ISD practices and the resulting systems testify to honest pursuits of emancipatory ideals. Having said that, we consider union representatives' claims as warnings that participatory ISD can slip into a procedure lacking substance and thus turn into its opposite. To guard against such a threat company members regularly reflect on their ISD and decision-making practices and assess their pursuit of participatory and emancipatory ideals.

The union also has reservations concerning ISID. Whenever company and union representatives meet to discuss issues involving workers' interests, each party informs the workers about the negotiation. The company does this via its efficient and effective ISID system while the union, using classical means, reaches its members always after the company has told workers "its side of the story". A union representative stated:

"It is not easy as a Union representative to work with [the Company] because they are always ahead of us thanks to the [communication] system. They [Company] can inform the workers much faster than we [Union] can." (Socialist Union, Interview, 2001)

While the union's objections arise in part motivated by self-interest, manipulate and increase control over workers was discussed with company members. The company experienced a few cases of misuse of ISID that prompted public debate and introduction of new norms to prevent it in the future. To some extent the danger still exists: a) having expert knowledge, IS analysts have an advantage in debates concerning implementation and use of technology and alternative IS designs, and b) being generally better educated, managers may articulate their needs (and interests) better and exert greater influence on IS specifications.

However, the culture of valuing each employee's knowledge and contribution irrespective of his/her position or status guards against such dangers. Furthermore, several employees emphasized how seminars helped them learn to present arguments and to be more communicatively competent. Continuous education and personal development through the seminars, we believe, enables all employees to learn to access information and share knowledge with others, thus creating a climate that reduces the above stated danger. Finally, allocating IS analysts in user departments, a unique feature of Colruyt ISD practices, assures their familiarity with and engagement in problem solving, thereby leading to better understanding and cooperation between analysts and users.

6. Conclusions

Participatory ISD, defined as systematic and meaningful user participation, was proposed to counteract a functionalist emphasis on efficiency and effectiveness and advance emancipatory ideals grounded in neohumanist philosophy (Hirschheim and Klein, 1994). However, its theoretical foundation, practical application, and social implications remain subject to intense debate and critique.

Evidence arising from the field study in the Colruyt Company and our analysis of its decision-making and ISD practices demonstrates the realism of participatory and emancipatory ISD. Participatory ISD, as practiced at Colruyt, is integral to company-wide participatory problem solving and decision-making and, in other words, is a way of life. Furthermore, we identified several contextual factors that enable participatory ISD practice and affect its outcomes.

First, participatory ISD is embedded in and emanates from the company's participatory culture. The company nurtures a participatory ethos: it has a non-hierarchical organization and decentralized power structure; its members have the right but also an obligation to participate in decision-making, including ISD.

Second, the company continuously trains employees and executives in communicative competence, logical and convincing argumentation, personal development, and self-reflection. Roderick (1986) convincingly argues that self-reflection is necessary to uncover self-imposed constraints and distorted communication. Geuss (1981), however, shows that emancipation, that is to say, freeing oneself from self-imposed constraints and distorted communication, may also require an ability to act against established social structures. Indeed, the Colruyt Company's culture encourages individual initiative and power to act, and the company's employee educational program aims to make employees communicatively competent. In short, the Colruyt Company's cultural and organizational conditions are emancipatory.

While we demonstrated that the company's ISD practices are participatory and emancipatory in terms of the four conditions defined by Hirschheim and Klein (1994), we also identified

inherent dangers and risks of their deterioration into manipulation and control. Furthermore, we identified preventative factors that guard against such risks: a) nurturing the culture of individual and collective (organizational) co-development and self-reflection, b) regular questioning and reflection on the ISD practices and assessment of their effects, and especially achievement of emancipatory values and ideals, and c) public (company-wide) exploration of critical issues, including ISD. As the company develops, so too does its participatory ethos, making the fine line between enlightened ISD practices that liberate and empower, and those that colonize and disempower, in need of permanent attention.

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