

A Participatory Design Program for Making Ethical Choices in Client Vendor Relations in ISD

Tero Vartiainen¹, Olli I. Heimo², and Kai K. Kimppa³

¹Faculty of Technology, University of Vaasa, Vaasa, Finland
tero.vartiainen@uwasa.fi

²Technology Research Center, University of Turku, Turku, Finland
olli.heimo@utu.fi

³Information Systems Science, University of Turku, Turku, Finland
kai.kimppa@utu.fi

Abstract. We propose a program for developing ethically sustainable cultures in client–vendor relations in information systems development (ISD). The program is based on the participatory design approach and is motivated by the findings of our survey (n=20) that explored ethical challenges and good ethical practices in the IT field. The data showed that client–vendor relations are ethically conflicting as profitability pressures, for example, induce IS managers to undertake unethical practices. Based on the results of our survey, we identified a dialectical process in client–vendor relations in the form of thesis, antithesis, and synthesis. In the process, impulses inducing questionable or unethical practices (thesis) confront the guidelines for good ethical practices (antithesis). This confrontation between a thesis and an antithesis is implemented through the program we propose, and as a result, morally better practices are expected to emerge (synthesis).

Keywords: Client–vendor relations • participatory design • dialectics • ethics

1 Introduction

Client–vendor relationships in IS/IT projects are common, as in business and the public sector, the actors aim for efficiency by concentrating on core processes and outsourcing development projects or functions that are better implemented [1]. However, by aiming for efficiency via outsourcing IS/IT development work, the client engages in vendor risks when contracting a project to outside vendors [2]. Client–vendor relationships in IS/IT projects have been recognized as having inherent problems, some of which are ethical in nature, such as problems relating to honesty [3, 4]. Client–vendor relations have been studied from a variety of viewpoints, including outsourcing [5, 6], risks [7], and fault responsibility [1]. Although in these studies there are discussions that touch on the morals and ethics of client–vendor relations, we did not find studies directly focusing on ethical or moral issues in these relations. Therefore, we gathered data on IT professionals’ perceptions on client–vendor relations, analysed them, and found that there are major moral issues to consider in these relations. As an implication, we will propose a participatory design (PD)-based pro-

gram that uses a dialectical approach to develop practices. The PD approach takes the viewpoint that stakeholders are involved in the development process, and that they themselves determine the outcome instead of an external actor imposing a pre-established solution [8]. In participatory design, dialogical communication is encouraged, instead of linear communication. This suggests that dialectics might serve as a proper process in developing relations. In IS research, dialectics have been proven to be useful in understanding the totality of ISs and their development [9, 10]. Therefore, we adopt dialectics (e.g., [11]) in developing practices. We aimed to see whether the IT professionals were able and willing to describe and discuss the ethical dilemmas arising from their field of work, and to our joy, the results will show that the professionals are capable of both describing ethical challenges in client–vendor relations and produce solutions for ethically good practices. Our study is constructive and normative [12] in the sense that a program for developing client–vendor relations in IT is our main contribution.

After the Introduction, in Section 2, we introduce literature describing client–vendor relations both in the public and private sectors, dialectics, and participatory design. In Section 3, the research design and data gathering methods are presented. In Section 4, the analysis process on empirical data and the dialectical model development are presented. Section 5 discusses the results.

2 Theoretical Background

2.1 Client–Vendor Relationship in ISD

Claybaugh and Srite conducted a grounded theory-based study on client–vendor relations in IT and determined a model explaining good and bad relationships (Figure 1) [3]. In their model, there are categories as follows (including concepts): i) individual (e.g., customer service), ii) technological (e.g., product), and iii) organisational (e.g., customer service). These have an effect on two high-level categories, i) good relationships and ii) bad relationships. As an example, good customer service was identified by their interviewees as being relevant, response times were excellent, and the client’s needs were satisfied. Taking the viewpoint of bad relations in customer service, slow response times, being pushy or antagonistic, and avoiding contact altogether were mentioned as examples.

Fig.

1.

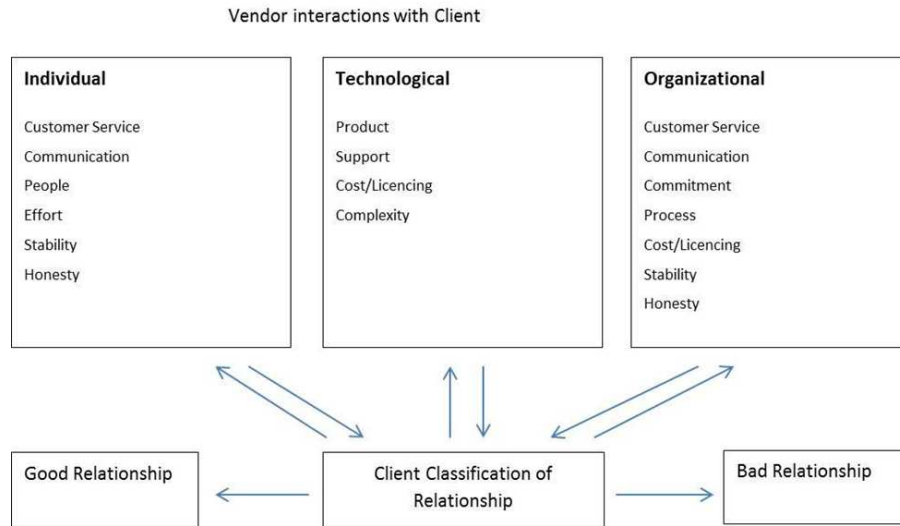


Fig. 2. Model of client–vendor relations¹.

The model by Claybaugh and Srite interprets the relations from the viewpoints of good and bad [3]. However, it is noteworthy that good and bad in their analysis do not directly imply good or bad in a moral sense, although honesty, for example, emerged in their interviewees’ perceptions. Considerations on client–vendor relations have been typically divided into the private and public sectors (e.g., [13, 14]). Next, we briefly describe the characteristics of these sectors.

2.2 Public vs. Private: The Main Differences and Commonalities

In this paper, there are three different organisation types to consider: public organisations as clients of IS procurement, private organisations as clients, and private organisations as the developers of the IS. Rosacker and Olson [15] state that there are many similarities between organisations in the private and public sectors, yet they are clearly distinctive from each other in many substantive ways. As an example, Rosacker and Olson present the idea that the portfolios and stakeholders of these two different types of organisations vary significantly. In addition, Rosacker and Olson argue that “public sector organisations will likely use and manage information systems differently than their private sector counterparts”² In the private sector (business-to-business), what drives clients to pursue IT projects is competitors’ pressures that drive them to innovate in the short term [15]. Indeed, the turbulent business world

¹ [3] p.31

² [15] p. 67

means that product cycles become shorter and shorter, and outsourcing—having a third party performing work—is used to become more competitive [16]. Taking into account client–vendor relations in the public sector, the client organisation’s goals relate to generating services. In democratic societies, the public sector upkeeps various services for the citizenry. These services can include, but are not limited to, public health care; military, border, and police services; public schools; taxation; etc., which can include personal information from every citizen in the country, or in some cases international databases concerning hundreds of millions of people. The aforementioned services are—or at least should be—designed for the best intentions of the citizens’ health, safety, and well-being, and are mostly funded through taxation; in comparison, the private sector acquires money from customers in a form of trade for products and/or services.

There are also differences between the ideologies in procurement. While public organisations’ procurement processes are in many countries limited by law (see “Directive of the European Parliament and of the Council on Public Procurement”³), private organisations can use easier and more agile methods of defining and procuring their information systems. Hence, these agreements in the private sector can vary in the methods of, e.g., payment, development, upkeep, etc., while in the public sector, the agreements are more or less unified.

2.3 Environment: Various Information Systems

Even though private vs. public organisations is one clear and understandable division of organisations, and thus their IS needs, it is hardly the only division. Within these spheres, different kinds of ISs are needed, as information systems requirements vary greatly both by the task the information system is built to solve and by the availability of the information systems built to solve the problem. Most common IS solutions for organisations are bulk solutions (e.g., standard operating systems that come with the computers or office solutions, both of which are available off the shelf, or even embedded software, such as mobile operating systems or specific but one-purpose designed machines) that require little or no customisation and offer various functionalities compared to one-time solutions developed for one specific situation required by only one customer (e.g., special military systems or a custom-made Enterprise Resource Planning (ERP) solution). Another important factor in defining the client–vendor situation is the size of the information system required: whereas big organisations with multitudes of users or subjects can require large and complex systems (e.g., hospital information systems), some organisations require only a tiny fraction of functionalities and information processing capability from their information systems [20].

While organisations procure information systems, non-customised bulk solutions can easily be counted out from unethical procurements, as a) the price of these systems is usually predetermined, b) they usually are available for testing, and c) there

³<http://www.europarl.europa.eu/document/activities/cont/201309/20130913ATT71292/20130913ATT71292EN.pdf>

are ample test data from different solutions (see various professional magazines that do comparisons and reviews of suitable off-the-shelf software). This is true at least when compared to custom-made software, where the development and implementation of the information system is billed to the customer, whether or not the solution meets any of the customer's actual requirements.

Thus, the ethical analysis of procurement and development of information systems—at least according to the previous points—can primarily be focused on large-scale tailored software. Our empirical data, shown later in this paper—at least according to the topics covered in it—also support this claim.

The responsibility of a private company to forge profits lies within the board and the CEO, as well as those on whom the aforementioned actors have laid the responsibility (e.g., in the case of a system purchase, the CIO). The existence of this sort of organisation lies within the profit and productivity of the organisation, or its part and thus the responsibility—while not always fairly—actualises to the actors within the organisation. While it is not always ethical, the organisation therefore has a mandatory need by its very actors to be efficient and economical and, when compared to the public sector, redeem its right to exist with this very fact; thus, the responsibility in these organisations are not only with the CEO, but with the whole organisation. As an example of the requirement for a private company to be efficient and economical, should an incorporated company want to do something else than profit, in Finland, they have to specify in their charter that this is the case (see, e.g., [17]).

This redeeming of existence becomes quite different when it becomes publicly funded. When procuring governmental information systems, it is more difficult to find the responsible parties. This is especially pertinent in cases where the procurement is for critical governmental information systems, where the responsibility is not only to the stockholder, but also to other stakeholders, in the public domain case, especially the citizen [18]. In many cases, the responsibilities remain undefined, and even if they are defined, the responsibility often does not actually land on the responsible party (see, e.g., [19, 20]). If we do not, or cannot, hold any party responsible for the development of the system, responsible development is not possible: the responsible agent seems to be missing [20].

We have a hard time answering who the responsible party for errors in the system is if we cannot find them. Thus, effective safeguards are necessary, but they are difficult to implement. If the professionals' responsibilities towards society can be justified by committing them to the public good (see, e.g., [21] (p. 183)), we can have an environment where proper discourse on the consequences and responsibilities at society's level can start [20].

When procuring (critical) governmental information systems, the citizen is in no position to choose an alternative, as they as a consumer and any private business are, when choosing a different system [20]. To illustrate this, when a citizen selects word processing software or when a company is choosing between potential enterprise resource planning systems, they can pick between many (privately provided) alternatives. On the other hand, when a citizen needs an electronic passport, the one provided by their government is it.

2.4 Dialectics and Participatory Design (PD)

According to dialectic process theories, entities (e.g., humans or organisations) live in a pluralistic world [11]. They are faced with rivalling forces and colliding events with contradictory values that compete with one another for control and domination [10, 11]. This is visible through the design decisions made when ISs are designed (by the people in the organisations). An example of dialectic process theories is the dialectical theory of human development by [22]. Value contradictions between rivalling forces that an entity confronts make the entity develop from one stage to another. In dialectics, the rivalling forces have been named as thesis and antithesis. Confronting these tensions helps create synthesis, which, in turn, assists the entity in moving to the next stage. Often, the synthesis is a new solution that differs from the thesis and the antithesis [23]. In reality, things do not always happen according to dialectical theory. Sometimes, the synthesis is actually a win-win situation, and sometimes the opposite group has enough power to fully overthrow the dominant group so that no synthesis exists [23].

We can find dialectical characteristics in PD. In PD, the stakeholders are involved in the design process to make it possible for the results to meet their needs [24, 25]. This means that, when workshops for designing a new information system, for example, are arranged, the boundary between future users and designers may become blurred [25]. This also means that competing interests among future users or between future users and designers, for example, may emerge, and these conflicts need to be resolved. This means that a PD process may be perceived from the thesis, antithesis, and synthesis viewpoints.

Participatory interventions may target the following goals [8]: i) psychosocial outcomes in increasing feelings of ownership of a problem, ii) improvement of competencies and capacities required to engage with the development problem, and iii) actual influence on institutions that can affect an individual or community. Those effects of the PD should be ethically consistent and positive [26].

PD development projects typically have the following stages [8]: i) research stage: the development problem is accurately defined, and all relevant stakeholders are involved; ii) design stage: actual activities are defined, and the commitment of stakeholders is supported via participation, with the quality and relevance of actions guaranteed by participation by stakeholders; iii) implementation stage; and iv) evaluation stage: the most significant changes are voiced and brought to common attention and assessed.

There are different types of PD, and when defining the goals of programs or development projects, the type of PD should be defined [8]. First, passive participation means that primary stakeholders are informed about what is going to happen or has already happened. People's feedback is minimal. Second, participation via consultation by outside researchers or experts provides answers to the questions. Third, participation by collaboration forms groups of stakeholders to participate in discussion and analysis of pre-determined objectives. Fourth, empowerment participation means that stakeholders are capable of and willing to initiate the process and take part in analysis. This leads to joint decision-making.

To summarize, in this study, we apply the PD framework to attain morally good relations between clients and vendors in ISD. To strengthen the PD approach, we use dialectics to develop better practices from a morals viewpoint. In the next chapter, we will show how we collected empirical data about client–vendor relations. The empirical results will be used in the formulation of the PD-based program.

3 Research Design and Analysis

Interpretive approaches are recommended for studying complex IS phenomena [27]. Such approaches involve studying how individuals interact with the world around them and how they understand reality [28, 29]. As our research question concerns a complex real-life phenomenon, ethical issues in the IT field, we adopted an interpretive approach, and we gave the subjects the opportunity to express themselves in their own terms in textual survey responses [30]. Next, the data gathering is described.

Dialectics (e.g., [9], [11]) steered the question formulation as follows. According to dialectics, social intercourses are inherent contradictions, or opposing forces. Therefore, we asked our respondents to define both the moral concerns in the IT field and good practices (thesis and antithesis in Figure 2). We expected to receive responses that reflect opposing sides for the same concerns. By having the moral concerns and good practices confronted in a PD-based program, the practices might change (synthesis in Figure 2).

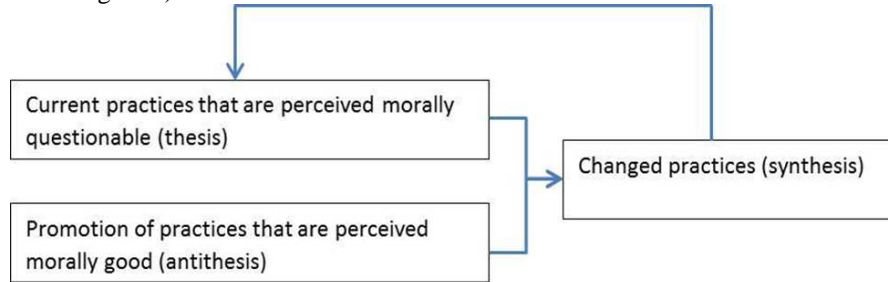


Fig. 3. Model to develop ethically sustainable cultures in client–vendor relations in the IT field.

To gather data about moral concerns and good practices, we developed a survey including the following tasks for the respondents:

1. What ethical and moral questions have you confronted in your IT jobs during the few last years? Describe your role in those situations.
2. Describe the reasons or factors that affected the emergence of the above-described questions. Reasons and factors may be values, norms, or interests that are in conflict with each other.
3. What ethical and moral questions are topical now?

4. What ethically sustainable and good practices you have observed in the IT field and in your own workplace?

To get a representative sample, we used the membership records of the Finnish Information Processing Association. First, we sent the survey to 1,000 members. We got 11 responses. Then we published the survey on the Association's web page and got nine responses. In total, we received 20 responses.

Eleven respondents were male and nine were female. With respect to age, one was in his thirties, seven in their forties, seven in their fifties, and four in their sixties. Six of the respondents were employed in ICT services, three by industries other than ICT, and two by the government. Four represented education. With respect to position, five respondents represented project management, four ISD development, three education, two IS support, and two management.

The majority of the responses considered client–vendor issues. Therefore, as Claybaugh and Strite had found three issues in bad and good client–vendor relations—individual, technological, and organisational—our analysis process focused on the identification of morally questionable practices and good practices relating to these three issues [3]. After recognizing the practices, we used the dialectical framework together with the PD framework to define a PD-based program for client–vendor relations in ISD. Next, the results are presented.

4 Results

In the following section, we show the moral issues and good practices reflected through Claybaugh and Strite's classification [3]. After that, we provide a suggestion for a PD-based program to develop client–vendor relations.

4.1 Practices Reflected through Claybaugh and Strite's Categorization

4.1.1 Individual-Related Practices

With respect to individual-related immoral practices working against one's conscience, inequality in the workplace and inadequate education or training for the work tasks emerged. Some of these issues directly affect client projects, such as issues on education and training. In some issues, it is possible that they indirectly affect projects, such as working against one's conscience and unequal treatment of employees. Examples follow:

“Ageism - oppressing the weak ones.” (Respondent 3)

“Management does not care about employees education: Certain skills are needed for the client project but management does not care.”

The subjects raised the following good practices that relate to individual levels: Taking responsibility for one's work, respecting humans, taking consciously into account equality issues, and honesty and trustworthiness. Exemplary extracts follow:

“Making learning in workplace possible (master-apprentice).” (Respondent 3)

“Respect other people as humans. Trustworthiness and honesty - also when confronting problems. In my current workplace there is unfortunately no sustainable or good practices.” (Respondent 11)

4.1.2 Technological-Related Practices

With respect to technological-related immoral practices, the respondents raised the issues of using certain methods that do not serve larger purposes of the client. An example follows.

“Also the agile methods are a problem. We quickly produce a prototype that works but we do not consider the business setting as a whole and we do not produce solutions that would be for use in larger context.” (Respondent 17)

With respect of good practices a practice related to long-term planning was raised:

“Architectural planning is sustainable development, you get good systems and you are able to maintain and extend them in a sensible way.” (Respondent 1)

4.1.3 Organisational-Related Practices

With respect to immoral practices, the relations between client and vendor seem to be disturbed by economic interests and disputes. According to the respondents, the economic benefits override the needs of clients both at individual and organisational levels. Examples follow.

“You have to produce an oversized system for the client. You take the extra money from client. You do not respect the client anymore. ... The management had interests that are against morality. I hold my beliefs and produced the solutions that are in accordance with the needs of the client. I was not fired.” (Respondent 5)

“Hunting for personal bonuses overrides sensible comprehensive solution. A duet between a foreman with low self-esteem and a subordinate with more knowledge is rarely enjoyable. A subordinate with knowledge is a threat to the foreman.” (Respondent 13)

“When leading IT projects, I feel it as a constant conflict that the best possible solution for a client (internal or external) is not implemented. The other problem that I confronted in the public sector was that the best solution does not win the competitive bidding, but the solution is selected from the vendor that best ‘fits’ to the individuals that make the decision.” (Respondent 17)

Public sector-related immoral practices emerged in the data. According to the respondents, the set-up of procurement in public sector IT solutions is biased in such a way that making honest bids is not possible. Two examples follow.

“A problem that I confronted in the public sector: the best IT solution does not win the call of offers, but instead the solution is bought from the vendor that best ‘suits’ the decision-maker. ... It is sad to be forced to lead a project that you know that the end results will not serve the users in the best possible ways and that the other option would have been better and cheaper. Public procurements are a farce. You can twist the selection criteria and the arguments to the form that the selected solutions pretend to be the best ones. There is no use to use time for assessment rounds when the decision is based on how well the decision-makers have been bribed.” (Respondent 15)

“I am working in IT sales and most of the ethical and moral problems that I have confronted I have confronted in situations when a public client has had too strict requirements in their call for offers. If vendors acted ethically and morally and they honestly and correctly made an offer, no one would get any points in the competition. To succeed in the competition, one has to knowingly interpret incorrectly [the call for offer]. This harms the buyer and society.” (Respondent 16)

With respect to good practices at the organisational level, the respondents raised honesty and transparency as important values. Examples follow. “Guidelines and policies take into account ethical and moral viewpoints, and they are adequately raised in discussions (cf. corporation values).” (Respondent 4)

“Honesty, and the practice that we help clients in need, although their problem would not concern us at all.” (Respondent 7)

“Old people who have experience are ‘mixed’ into projects to bring capabilities on wholes. Internal calls for jobs inside the firm. With this kind of practice we avoid a professional becoming a person of one application.” (Respondent 13)

“Honest practices in work, towards each other. You quite seldom see it, but I believe that it sustains. Many clients do not appreciate honesty, and public procurement does not favour that.” (Respondent 16)

“Good management is vital in getting good end results. Motivated staff does the work well. Transparency of the corporate culture is important [...] in the way that there is nothing that needs to be disclosed.” (Respondent 17)

4.2 Participatory Design-Based Program for Developing Client–Vendor Relations

We propose a program based on PD [8] to develop client–vendor relations in ethical issues. The goal of this program is to achieve the state of “morally good relations” (an extension of “good relationship” by Claybaugh and Srite [3]); it adopts the viewpoint of empowerment, presuming that the stakeholders are willing and capable of collaboration, developing the relations, and taking actions. In practice, this kind of program could be organised by national or international associations.

Table 1 describes the stages of the program. Currently, we are at the research stage. Our current findings show that there are major moral issues to be considered, and therefore the next step in this stage is to get stakeholders involved for collaboration. When at the design stage, the practitioners representing both client and vendor roles are invited to develop joint norms for the client–vendor relations. The workshops might start with the presentation of the results of this study and then with the contemplation of morally suitable practices (synthesis). This requires that the participants not only become aware of the moral challenges in relations (cf. moral sensitivity [32]) and have willingness to make changes, but also to act upon the new practices (cf. moral motivation and character [32]). This also requires that the underlying reasons for the emergence of the ethical issues are articulated. For the implementation phase, the guidelines for better practices should be enforced into practice. The evaluation phase would assess the possible needs for the succeeding rounds.

Table 1. The stages of the PD-based program

Stage	Description
Research Stage	Moral concerns and good practices understood at the individual, technological, and organisational levels.
Design Stage	Production of action-guiding norms for client–vendor relations in ISD.
Implementation Stage	Implementation of norms in ISD.
Evaluation Stage	Evaluation of the implementation of norms.

Taking the types of PD [8] from passive participation to participation by consultation or collaboration and empowerment, it is important that, in the PD-based program, the stakeholders are committed to the program. Commitment might be best achieved via participation by collaboration and empowerment. Participation by collaboration means in this program that stakeholders are invited to workshops to design solutions. Empowerment means that those who take part in workshops aim to put forward the action-guiding norms in their organisations.

Example Collisions of Thesis and Antithesis

By forcing thesis and antithesis to collide, we aim to morally develop the current practices. The recognition that there are competing forces—immoral impulses and understanding of what is morally good—represents the two contradictory sides of the same phenomenon (cf. [9, 10]). As an example, the respondents raised many issues on treatment of client staff, such as not having the proper education or training and unequal treatment. As good practices, respondent described conscious training of staff and mixing people with different experience levels on projects. The discussions on these polarities might entail guidelines for client organisations, such as emphasizing education, training, and knowledge transfer in an organisation.

5 Discussion

First, we were able to show that there is a moral aspect inherent in the client–vendor model by Claybaugh and Srite [3]. All three categories of the model—interpersonal, technical, and organisational—include moral questions that our respondents were able to report. Our results show that client–vendor relations are prone to serious moral hazards, such as dishonesty towards the client by the vendor by abusing the client to the vendor’s own financial benefit and not investing in serving the needs of the client. Also, the reverse was visible: the client tried to “smuggle” into the deal parts that would cost the vendor extra, but not be clearly visible during the negotiations. Therefore, it is not surprising that the core categories of the relations were named “good relations” and “bad relations” by Claybaugh and Srite [3].

Second, the results show that perceived immoral practices in client–vendor relations concerned economic issues. These practices could be explained by the dirty

hands dilemma of business [31]: The dirty hand dilemma is based on the tension between efficient functioning of the business and stakeholder interests. Stakeholder demands have to be met at minimal cost; otherwise, the corporation will not function efficiently. Therefore, to simplify the dirty hands dilemma, and to act responsibly (ensuring the existence of the corporation), one has to act immorally (regarding individual stakeholders). With respect to our results, it seems that profit maximization prevails in client–vendor relations: Clients’ needs are not of real concern, but instead clients are used as cash cows, and resources for staff education are not allocated, affecting the quality of client solutions.

Third, our results showed that there are differences in public and private sector IS procurement. On the public side, the organisations were worried about budgets that went over, content that was not delivered, and promises that were not kept, whereas the private side was concerned with the client trying to get considerably more out of the deal than was—according to the vendor—negotiated for. There seems to be increased concern and frustration towards public sector IS development. While the answers indicated the frustration in observing and working on unethical projects for both the procurement process (e.g., mandatory lying, biased selection of providers, etc.) and development (e.g., poor quality, intentionally increased amount of work to charge more), the underlying reasons for bad client–vendor relationships [3] should be considered: As Heimo et al. [20] state, the responsibility in the public sector lies with the governmental office. The activities of these offices are directly mandated by laws and regulations, and their motivation differs from the motivation of a private organisation. According to our survey, the client–vendor relationship between the vendor of the IS and the governmental office seems to be missing efficient, economical, and ethical factors required for the IT specialists to be satisfied with the ethicality of the situation. While the procurement and development should only be a technicality in choosing the best vendor available, our data indicate that the developer is not only chosen unethically, but there also lies disagreements during the development and upkeep processes. These problems should, according to Heimo et al., be solved by allocating responsibility and encouraging public discussion [20].

The different responsibilities in the situations of a private organisation versus a public organisation are shown partly similarly, partly differently. In a private organisation, there is, at least theoretically, a responsible party (CEO, CIO, the board) who is responsible to the stockholders. In a public organisation, the responsibility disappears into the system if the procurement process has followed the requirements of the law, however deficiently it may have been applied. We argue that, through the thesis–antithesis–synthesis thinking, the responsibility could be made visible to the parties participating in the procurement, and thus it could be included through PD practices, but only after it is visible.

Even if we keep in mind the difference in public and private sector portfolios and stakeholders and organisational motivation, as well as the use and management of IS in general [15], it would be naïve to assume that there are no problems in the private sector. The problems can vary according to the organisation, but the information about the problems in private sector IS procurement is not that likely to reach the

public. This is due to the private nature of these organisations, and thus it is not represented in a similar magnitude in both scientific and public discussions.

Fourth, we proposed a PD-based program for developing practices in client–vendor relations. The program suggests that the immoral practices and morally good practices should be put under analysis by IT professionals to develop morally better practices. The dialectical process is beneficial from the viewpoint of developing awareness of moral issues [32]. However, awareness is not enough; good practices should be put into use.

Evaluation of the Study and Future Studies

Although the number of respondents in our survey was relatively small, the respondents described moral concerns and good practices in many sentences. As a collective, the respondents were capable of producing contradictory perceptions on similar issues. This suggests that the dialectical process we defined might work in a PD environment. This also strengthens the internal validity of our study. As the program we propose in this study is in its early stages, future studies should continue with the action research approach.

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