

Control and care in big projects

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Abstract

There are significant differences in how project managers are recommended to engage in formal control in complex projects that are strictly limited in terms of the 'Iron Triangle' of time, scope and budget, and how managers actually do that in practice. How managers activate their chosen strategies for organizing and controlling projects with care is rarely discussed. Two construction projects are studied (Ukraine vs. Norway). The experiences of key people involved in controlling the projects are analyzed in order to discuss how managers mobilize informal controls with care, to repair the failures of formal controls. The paper illustrates how care and control complement each other in big projects by enhancing trust, empathy, help, lenience in judgment, and courage among project participants, thus facilitating the projects' progress. The study emphasizes that how a control system is mobilized through care is more important than how 'perfectly' it is designed.

Keywords: care, control, complexity, big construction projects, Norway, Ukraine

1. INTRODUCTION

The purpose of the paper is to analyze how project managers cope with project uncertainties and safeguard that projects meet stakeholders' requirements and expectations. Big projects are often completed with significant cost escalations, time overruns and other deviations. In cases of not meeting the stakeholders' expectations and missing important milestones' deadlines, the project's managers often become scapegoats. A significant part of the project management and accounting literature recommends spending additional time on planning (Flyvbjerg, 2007) and implementing a versatile system of strict management controls over the iron triangle parameters of time, scope and costs throughout the project's life cycle (PLC) (Kerzner, 2013). Fundamental limitations are reported in the use of formal control systems (including budgets, contracts, accounting reports, rules, procedures, etc.), as they cannot detect or prevent different uncertainties related to stakeholders' pressures, optimism bias, asymmetry of information, excessive opportunism and other human-related aspects, which in sum represent a danger for projects' progress (Klakegg et al., 2016). This issue is especially sensitive in construction projects, whose budgets exceed six figures, and which are strictly limited in time. Therefore, a substantial amount of research focuses on non-traditional forms of control and project organizing (Sahlin-Andersson, 1992; Blomquist et al., 2010; Söderlund, 2004), because traditional formal controls often seem to fail (Flyvbjerg, 2014).

It is common belief that the initial stages of large complex projects often define their 'fate' (Samset & Volden, 2016). However, uncertainties also arise as projects evolve (Revellino & Mouritsen, 2017), and project managers must still tackle those uncertainties in an 'un-programmed' way. Thus, some non-conventional organization strategies and control approaches must be sustained throughout the whole project's life cycle (Sahlin-Andersson, 1992; Blomquist et al., 2010), in addition to formal controls (Curry et al., 2019). For instance, 'good fate' projects apply not only non-conventional strategies but also those strategies which implement projects with a great deal of *care*. The concept

of *care* is 'borrowed' from the valuation, leadership, and organization studies (Heuts & Mol, 2013; Vie, 2009; 2012a, 2012b; Von Krogh, 1998; Solomon, 1998), and is conceptualized as a 'repair mechanism' in this study. Care as an essential element of human agency that helps link emotions and human abilities to mobilize people through informal controls, and, consequently, to help repair the failures or complement the deficiencies of traditional formal control systems. Care depicts aspects that formal controls cannot achieve, such as mutual trust, lenience in judgment, access to help, enabled participation, and cooperative knowledge transfer (Heuts & Mol, 2013; von Krogh et al., 2000). Care may ensure that informal controls contribute to projects' completion on time, despite unfavorable conditions. The ability of human agents to mobilize management control systems (MCS) beyond formal purposes needs further study.

The paper asks the following question: *how do managers mobilize informal controls with care, to repair the failures of formal controls in big construction projects?* It aims to answer this question by analyzing experiences of 'key persons' involved in steering two complex construction projects in different contexts. These are two famous sport arenas in Europe: the "Holmenkollen" ski jump arena (Oslo, Norway), built for the World Ski Championships in 2011 and "Donbass Arena" (Donetsk, Ukraine), one of the largest stadiums in Eastern Europe, designed and built to UEFA elite standards for Euro 2012. Empirical material was collected immediately after the projects were completed in 2011. The study demonstrates that projects' uncertainties arose as projects evolved, and it places special emphasis on the way in which managers motivate and control projects' participants.

The studied projects are considered successful, as they met or even exceeded stakeholders' expectations. Both arenas became landmarks of their regions and were completed in time – before important sport competitions. However, both projects were completed with double their budgeted costs (compared to initial estimations), which, from the 'Iron Triangle' perspective, would constitute

a managerial failure. That outcome can be attributed to the cumbersome pre-execution stage of both projects but also to the fact that, even at the final stages of execution, new uncertainties appeared and required 'redrawing'. Despite considerable case differences, e.g. the projects' ownership (public vs. private), there was a similarity that allowed the MCS to be navigated and safeguard the projects' progress. Through qualitative data, care is shown as a natural part of managers' acceptance of personal responsibility and one of the central elements that predetermined the good fate of the studied construction projects.

The interviewees describe practices where control is not a matter of casting judgments after the fact but, rather, an undertaking of various activities that project managers engage in to care for their projects. In interviewing project managers, who shared their opinions about control efforts that contributed to the projects' progress and the tackling of uncertainties, these people were identified as being emotionally attached to the projects; they discussed some aspects with considerable passion and pride but also displayed a great deal of regret and anger about others. Various questions asked by the interviewer were followed by rich narratives and stories of their exciting work experience behind office doors, at the construction site, in press-conferences, negotiations with stakeholders, etc. Further, the interviewees provided examples of what they were *mostly careful* and *less careful* about in safeguarding their projects' good fate, and also mentioned what aspects were *not worth caring about*. These examples became a starting point for exploring what *care* is and how informal controls are mobilized with care in the MCS of large construction projects.

The paper is organized as follows. Firstly, theoretical assumptions are provided, and the main dimensions or aspects of care identified. The third section presents the methodology-related issues and a description of the research setting. The fourth part, containing the empirical findings, is followed by discussion and conclusion sections.

2. THEORETICAL LENSES

The paper aims to investigate the question: *how do managers mobilize informal controls with care, to repair the failures of formal controls in big construction projects?* This question arose as a consequence of numerous reports and studies of project overruns, where formal MCS fail to serve their intended functions: to cope with project risks and uncertainties and ensure the timely progress (Flyvbjerg, 2007; Loch et al., 2011; Sommer & Loch, 2004; Winch, 2010; Frow et al., 2010; Revellino & Mouritsen, 2017). The connection between project uncertainties and MCS is not always a linear one – it is not necessarily more planning and formal control that are needed when new uncertainties arise (Winch, 2010). Considering their extraordinary character, unique construction projects often cannot follow the regular program (Geraldi et al., 2010; Sahlin-Andersson, 1992). Often, architects redraw or the progress offers new solutions and technologies, and changing, selecting, rethinking, redefining, improvising and maneuvering become inevitable (Sommer & Loch, 2004; Söderholm, 2008). During the whole PLC, informal and proactive control mechanisms must also be in place (Barber & Warn, 2005) such as informal meetings, conversations, presence at the construction site, etc. In this regard, instead of performance being managed by formal controls, informal controls become ‘repair mechanisms’ of the failures of formal controls that enable performance (Mouritsen, 2005; Ahrens & Chapman, 2004).

Some studies suggest that human interactions and informal processes of notifying oneself and others is a far better management tool than formal MCS (Preston, 1986). It is important to understand the influence of human relations on management control issues and to acknowledge unplanned and spontaneous processes, with organically emerging informal structures supplementing or subduing rationally designed frameworks (Hewege, 2012). With increasing project requirements (however measured in terms of complexity, project type, duration, etc.), there is an increasing need for emotional competencies in the manager (Müller & Turner, 2010). Effective

controls hinge on individuals being able to share their viewpoints and personal, true beliefs about the situation with other team members (Cicmil et al., 2006; Kelly & Barsade, 2001). An important body of literature addresses the above-mentioned issues via the notion of care. Although the concept of care is widely used in organization, leadership, valuation and knowledge-creation studies (Heuts & Mol, 2013; Vie, 2009, 2012a, 2012b; Mayeroff, 1965, 1971; Solomon, 1998; Von Krogh, 1998), it is a relatively novel term in management accounting and control literature. Therefore, it requires thorough analysis and a description of how it can be operationalized in the settings of large project's MCS.

“Care (as a noun) is the provision of what is necessary for the health, welfare, maintenance, and protection of someone or something; serious attention or consideration applied to doing something correctly or to avoid damage or risk. Care (as a verb) means feeling concern or interest, affection or liking” (Oxford Dictionaries Online, 2017). Care may be understood as serious attention (heeding), a feeling of concern and interest. Regarding care in relationships, to care for other people, in the most significant sense, is to help them grow and actualize themselves (Mayeroff, 1965, 1971). To care for someone is to help him to learn, to increase his awareness of important events and their consequences, and to help nurture his personal knowledge creation, while sharing his insights (Von Krogh, 1998). In a project setting, *caring* is an activity in which control is implied – both caring *about* and caring *for* the project's ‘good fate’. Care may be seen as the way a manager behaves towards his colleagues and subordinates (Vie, 2009, 2012a, 2012b; Von Krogh, 1998). The term *care* suggests enduring work that seeks improvement but does not necessarily succeed (Heuts & Mol, 2013). Despite managers’ extensive efforts to make projects ‘good’, success is never guaranteed. Caring, therefore, indicates efforts that are ongoing, adaptive, adjusting and open-ended (Heuts & Mol, 2013). These aspects make it relevant to study *care* in big construction projects that are often met with significant budget and time overruns. In the reviewed studies on *care*, different dimensions of

care are identified: care related arrangement and psychological aspects and implications of high care efforts. Figure 1 represents a summary of the theoretical findings and propositions.

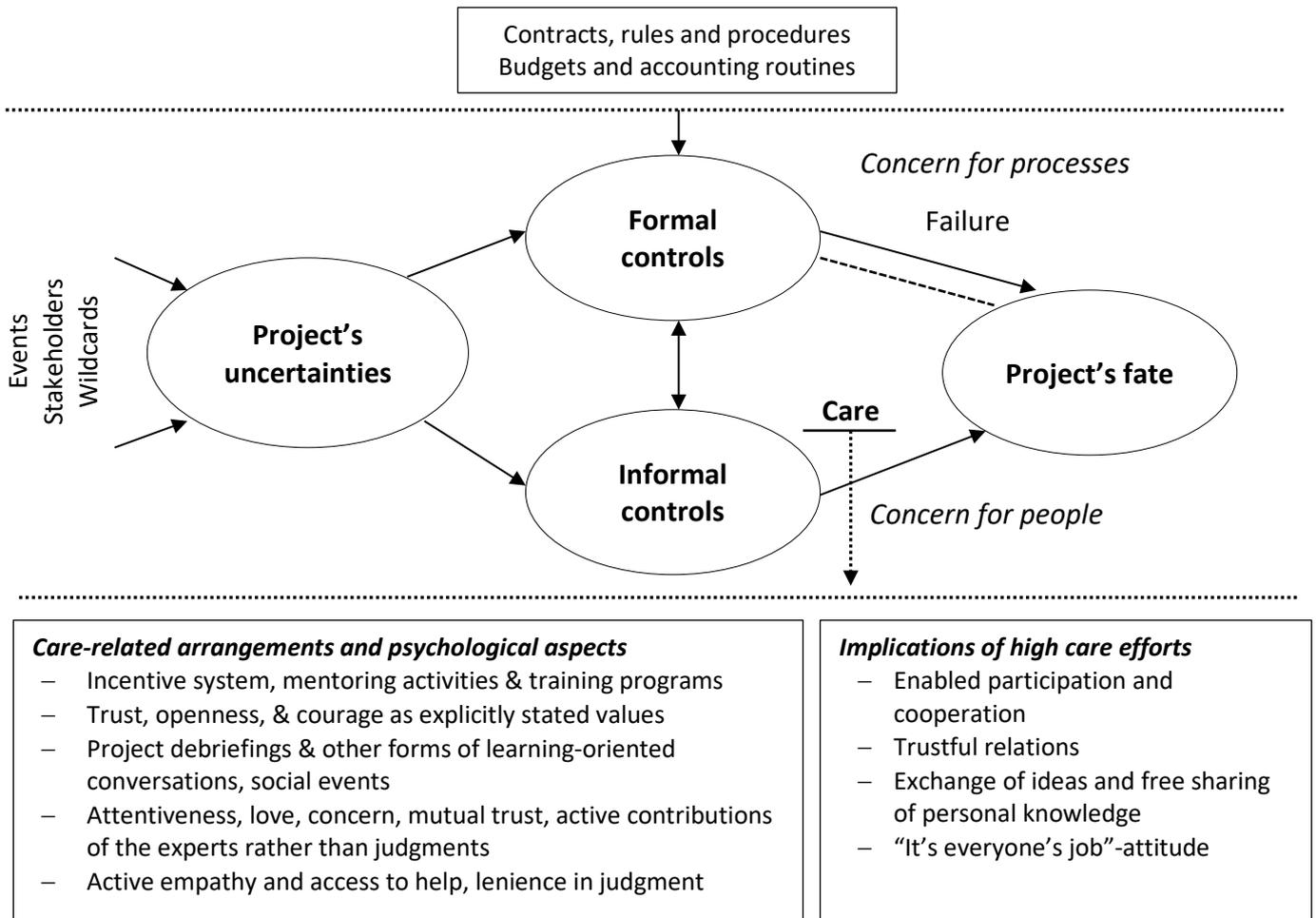


Figure 1. Project's control and care

Starting with care-related arrangements and psychological aspects: the expression ‘to care for’ could refer to an activity, without necessarily containing emotion, or to a set of feelings, without these necessarily being expressed through action (Solomon, 1998). Care gives rise to particular behavior in relationships, summarized as mutual trust, active empathy, access to help, lenience in judgment, and courage (Mayeroff, 1965, 1971; von Krogh, 1998; von Krogh et al., 2000). Care gives rise to these forms of behavior and their interplay. Emotional support from project managers in enabling the project's performance – through ordinary activities like listening and chatting (e.g.

instead of constant demands for reports and explanations of projects delays, etc.), as well as behaving with care towards employees – can influence the progress of the project. High-care relationships can overcome mistrust, fear and isolation and promote knowledge sharing (Vie, 2012a). Care and emotional stability maintain the atmosphere of trust and courage, to fulfill the project's objectives (Vie, 2012b), despite different stakeholders' pressures, uncertainties and ambiguities.

Care includes love and emotional attachment and a sense of duty to make the project 'good' (Heuts & Mol, 2013). Care includes experts' active contributions, rather than judgments, and also means "all but endless work" (Heuts & Mol, 2013, p. 136-137). Care not only concerns appreciating reality as it is but also questioning what is appropriate to improve things. In this sense, care sometimes may include "pruning" and "destroying" (Heuts & Mol, 2013). As many construction projects (especially unique ones) are not 'given', in the sense that no instructions could be suitable for each unique construction project, in the process of developing them, divergent qualities and requirements may be tinkered with in combination. For managers to be adaptive means being adaptive within particular limits that are not obvious from the start but can only be experimentally discovered in the process of 'tinkering'. The complex nature of big construction projects, then, also calls for the attentiveness of those who work with them. Despite how hard one tries, working to improve projects does not necessarily guarantee 'success'. It is not a matter of taking control and imposing an ideal but of caringly playing with possibilities. Care typically occurs in informal settings, that is, outside the meeting room (Heuts & Mol, 2013).

Although all people can influence each other, managers' behavior is still considered to be more influential than that of other people, due to their position and formal authority (Vie, 2012a). Managers may undertake different types of efforts and activities to facilitate care in projects (Von

Krogh (1998): (i) an incentive system with particular focus on access to help and on other behavior that encourages care in organizational relationships; (ii) mentoring activities and training programs, which allow senior members to grow and actualize their full potential; (iii) trust, openness, and courage, as explicitly stated values by project managers, and as formulated expectations for the behavior of project participants; (iv) project debriefings and other forms of learning-oriented conversations that foster a sharing experience among project participants and enhance the personal learning of each individual; and (v) social events likely to stimulate good relations.

These aspects may have implications for projects – such as enabled participation and cooperation, trustful relations, exchange of ideas and free sharing of personal knowledge – that, all together, produce conditions for safeguarding the project's 'good fate'. On the contrary, untrustworthy behavior, constant competition, imbalances in giving and receiving information, and a "that's not my job" attitude endanger the project's 'good fate' (Cicmil et al., 2006; Kelly & Barsade, 2001; Vie, 2012a). Constructive and helpful relations speed up the communication process, enabling organizational members to exchange their concerns and personal knowledge and discuss different ideas freely. Overall, good relations purge ineffective communication and lower distrust, fear and other negative outcomes of a not-healthy project environment (Von Krogh, 1998). There are several benefits or reasons why managers engage in care (Cialdini, 2001; Vie, 2012b). Firstly, reciprocation is a powerful and influential process that makes people feel physiologically obliged to return favors. Secondly, liking, which is influenced by physical attractiveness, similarities, and greater familiarity through repeated contact and association, works because people prefer to say "yes" to individuals they know and like. Thirdly, authority is the process by which occupational titles increase compliance (Cialdini, 2001). Thus, in this paper, it is assumed that the care dimension influences projects. In this regard, it is interesting to understand what dimensions of care are significant in big construction projects and how they contribute to the projects' control and progress.

3. RESEARCH METHOD

In order to analyze how project managers of big construction projects cope with project uncertainties and safeguard the project's 'good fate', informants in the know were sought. Ideally, fieldwork would have followed the informants in their project's related control initiatives. This was, however, not easy to achieve, and therefore the study proceeded with interviews. With some effort, it was possible to talk to people from the 'project management world'. The informants are considered to be experts in relation to practices in which they were routinely (professionally) involved (e.g., project managers, directors, engineers). As the purpose of this research was descriptive-exploratory, interviewing proved a sufficiently helpful research method. Semi-structured open-ended interviews were conducted with six 'first persons' of the big construction projects – those who were personally involved in the projects' progress and quality control work (See Table 3, and Figures 2 and 4, to understand interviewees' positions in the project's hierarchy and roles served in the project). The informants were generous with their expertise, and interviews with project participants lasted between 55 minutes and three hours. Interviews were conducted just a few weeks after the formal completion, in March–April 2011 and December 2011 (Table 1), therefore enabling the capture of very fresh memories from the site.

Table 1. List of interviews

Project	Interviewees	Role in project	Type of interview	Date/Time/Place
Holmenkollen	Project Director (1)	CFO	Personal interview (English)	Date: 31.03.2011, Oslo Time: 14:00-15:30
	Main Engineer (2)	Quality control	Personal interview (English)	Date: 04.03.2011, Oslo Time: 17:00-18:15
	Project Manager (3) (Major Contractor)	Project progress & quality control	Personal interview (English)	Date: 05.03.2011, Oslo Time: 12:00-13:30
Donbass Arena	Project Manager (4)	Project progress & quality control	Personal interviews (Russian)	Date: 08.04.2011, Donetsk Time: 08:30-12:00 Date: 05.12.2011, Donetsk Time: 09:05-12:10
	Project Director (5)	CFO	Personal interview (Russian)	Date: 12.04.2011, Donetsk Time: 10:00-11:15
	Project Manager (6) (Major Contractor)	Project progress & quality control	Telephone interview (English)	Date: 13.04.2011 Time: 15:00-15:55

To ensure procedural reliability and the credibility (Flick, 2009; Mason, 2002), different techniques were used. Firstly, all personal interviews were tape-recorded and then transcribed. At the end of each interview, the conversation was summarized, and clarifying follow-up questions were asked in order to ensure correct interpretation and understanding of the problems. Further, interviewees were contacted after the personal interviews (mostly via e-mail) to ask additional questions. As these two sport venues were very important for both countries, which were preparing to host prestigious international sport events: the World Ski Championships in Oslo in 2011 and the Euro 2012 football competition in Ukraine, they became local symbols of these regions and attracted considerable attention from the mass media in the studied countries and abroad. Thus, special attention was also given to selecting and translating secondary data, which were collected in languages other than English (e.g. in Russian, Norwegian and Ukrainian). These data are publications on the official web-sites of Arup Sport, Donbass Arena, ENKA and Holmenkollen (accessed 2011-2012), project brochures with short reports about project realization and news in the mass media (publications in the press between 2005 and 2011 in *Vårt Land*; *Dagbladet*; *Teknisk Ukeblad*; and the Norwegian News Agency; and the Ukrainian News Agency UNIAN), as well as video press conferences and films about project progression available on YouTube.

Interpretative sense-making (Welch et al., 2011) took place while theorizing from this study. The aim was to understand the actors' subjective experiences and to provide a thick description of their initiatives. As the study was of two completed construction projects, historical events could not be observed unfolding over time. Nevertheless, it was possible to reconstruct the historical context of the construction of the two projects, based on documentary evidence, reports, and other secondary data and interviews with managers. As such, the informants were invited to talk as if they were their own ethnographers or, rather, their own "praxiographers" (Heuts & Mol, 2013; Mol, 2002). The basic aspect of this approach is to persistently ask questions about the specificities of activities that

informants tend to take for granted (Mol, 2002). This invites them to take a fresh look at their own practices, rather than getting stuck in relating their opinions (Heuts & Mol, 2013).

Interviews were subjected to the following topics for discussion: peculiarities of big projects (e.g., standards, stakeholders, project limitations, etc.); most striking important sources of risks and uncertainties; how the uncertainties were handled and by what kind of (control) tools; what managers and the project management team learned from the project. At some point during the interviews, the interviewer always asked, “If I were you, what should I have done to safeguard the mega construction project’s progress?” or “Now, after the project is completed, what have you learned from this and what would you do differently, if you had the chance?” In the course of interviews, managers gave the impression that they would long remember all the project details and even the relationships between each other during the projects. None of the interviewed managers had difficulties or doubts in answering any of the questions, and it seemed that they enclosed a part of their souls in their job. Concerning the concept of care, the author did not start with the idea of using the concept of care to explain how managers deal with complexities and ambiguities in projects. It was a natural choice after data collection was completed. Many of the care aspects were detected through managers’ emotions, pride and passion during the interviews, while telling stories and sharing their experiences about the projects and achieved results.

Previous research indicates that projects are dependent upon the contexts in which they are undertaken (Miroshnik, 2002; Winch, 2010), and consequently managerial approaches for managing uncertainties are likely to discern, as they embody different assumptions about trust, organizing, leadership, reward systems, construction norms, business traditions, etc. In order to obtain plausible research results, it was assumed that projects in different contexts (e.g. Ukraine vs. Norway) should provide rich comparison (Flick, 2009; Mason, 2002). Two projects were studied: one

in Norway and one in Ukraine. These countries are both situated in Europe but have different types of economies, traditions and norms. Norway is a stable, well-developed country with standards of living that are among the highest in the world. Ukraine is a relatively young country, with an unstable economy and weak political and legal systems; it has an underdeveloped infrastructure and transportation and a high level of corruption and bureaucracy. The studied projects differ in terms of ownership type: Holmenkollen is publicly financed, while Donbass Arena is a privately financed project. Being technically different, the projects display interesting project-related similarities (Table 2).

Table 2. Information about projects

Key characteristics	Holmenkollen	Donbass Arena
<i>Industry</i>	Sport	
<i>Contractors</i>	More than 20	Around 15
<i>Final costs</i>	USD 400 mln	
<i>Initial plans</i>	USD 125 mln	USD 185 mln
<i>Budget overruns (final costs compared to initial plans)</i>	320%	216%
<i>Terms of realization</i>	Around 3 years	
<i>Initiation of the project</i>	2005 – 2006	2004 – 2005
<i>Actual start–completion of the project</i>	2008 – 2011	2006 – 2009
<i>Time overruns</i>	2 years	1 year
<i>Main architecture</i>	JDS Architects (Denmark)	Arup Sport (UK)
<i>The most crucial performance indicator</i>	Time	Budget

Both constructions were completed in three years, and both projects faced similar constraints and experienced strong pressures from stakeholders during the PLC. Much speculation and pressure emanated from the media and sport associations like The Fédération Internationale de Football Association (FIFA) and International Ski Federation (FIS), which kept a close watch over the implementation of the projects. Several changes in the design of the construction projects were undertaken at the execution stage. The initial drawings were altered significantly at least three times, resulting in changes in the scope of works, and consequently influencing budget estimates. Another similarity was the large number of multinational contractors and sub-contractors on the

projects. Potentially, there are significant differences in terms of how the care aspect is present in public and private projects. In particular, the private project's organizing and controlling approach could contain 'more care' and therefore be more progressive.

Surprisingly, the projects were discovered not to be so different in terms of uncertainties; managers respond to unexpected events in quite similar ways. The next section will describe major findings about the two studied projects. Of particular interest are the process of organizing and controlling the projects and the projects' outcomes. The input variables are not the primary concern of this paper. Cost escalations during the PLC are examined and their reasons briefly defined. The complexities and uncertainties in and around the projects, as well as the studied managers' roles in tackling them, are described.

4. EMPIRICAL FINDINGS

4.1. Studied projects – main parties and projects' uncertainties and complexities

The Holmenkollen project. Holmenkollen is a large ski-jumping hill located in Oslo, Norway. It is a popular tourist attraction and the only steel jump in the world. The generator of the project and the venue owner, Oslo Municipality, was responsible for the development of this project (Figure 2).

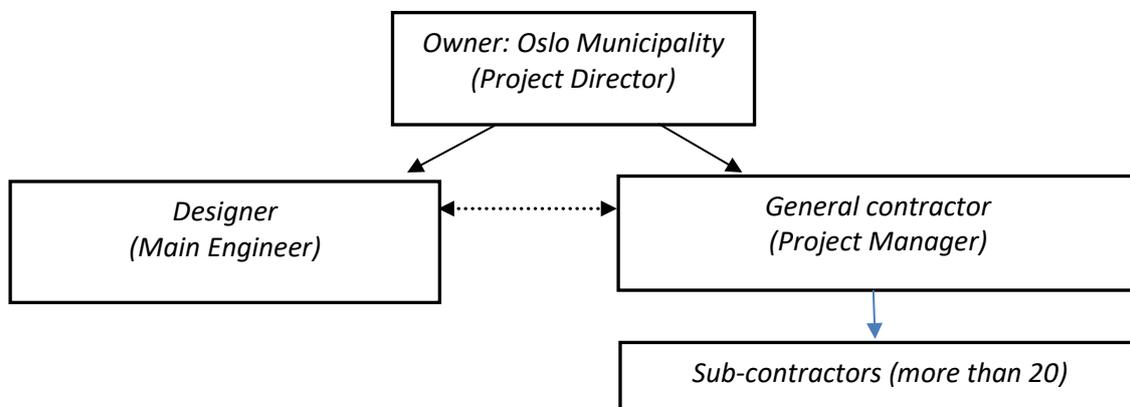


Figure 2. Main parties of the Holmenkollen project

Two contracts were signed: the owner-designer contract, which involved planning, design, and construction administration, and the owner-contractor contract, which involved construction. An indirect, third-party relationship existed between the designer, Dipl.-Ing. Florian Kosche AS, and the contractor, Terramar AS (Atkins Norway AS from 2015), due to these two contracts. The project director, who served as CFO of the project, represented the interests of Oslo Municipality. Time was crucial in the Holmenkollen project, as it took a long time to make decisions and plans. When the project began, Oslo Municipality did not know exactly what to build and how. Uncertainties arose, regarding how much money should be spent on the project. Many disagreements among politicians from Oslo Municipality were concerned with the design, for example whether it should be just a ski-jump arena or a monument – a visiting card for Oslo. The project owner had no experience in such a field but was actively involved in project calculations, based on the sums of money they could spend.

In 2006, the project was estimated to cost NOK 310 million. The municipality launched an architectural design competition to rebuild the hill. The politicians agreed on the sum of NOK 653 m (around USD 100 m; currency exchange rates for 2011) for the construction project. According to the informants, a situation had arisen, which qualified specialists call “*content without engineering*” (Project Manager), in which planned costs were calculated without the involvement of engineering specialists and other professionals. The lack of detailed elaboration led to the underestimation of costs. Lack of agreement between project parties made the tasks even more complicated. After the municipality realized that the project would not be finished before the scheduled testing ski-jump championship in February 2010, they decided to stop the planning and engineering stages of the project and proceed directly to execution.

Reduced planning and engineering stages lead to additional gaps in the earlier risk analysis. Priority was given to the ski jump itself, since the infrastructure could also be improved after the ski jump was ready. By 2008, the cost had accelerated to NOK 1.2 billion (USD 200 m) and by the following year it had reached NOK 1.8 billion (around USD 300 m). The City Commissioner for Business and Culture, who served as a project director at that time, had to leave the position because of inability to ensure the project's progress, and significant cost overruns. A consultant report ordered by the municipality concluded that the pressure to find cost savings to remain within the budget, which was underestimated to start with, resulted in slower progress, which again resulted in higher costs. Although construction started late, the testing competition on Holmenkollen was planned to start in February 2010. The project had to be finished at any cost. *"We could not postpone any dates for the Testing Championship. We had to build an arena on time at any cost. Otherwise, the world's sport community and other project stakeholders – all would blame us for our failure. Personally, it meant that I would lose my reputation"* (Project Director). The total costs for the upgrade of the national arena and infrastructure, including new ski stadiums, ended at around NOK 2.4 b (USD 400 m), which is 320% more than the initial estimate (USD 125 m).

The Donbass Arena project. The Donbass Arena was the first stadium in Eastern Europe, designed and built in accordance with UEFA elite standards for Euro 2012. Construction was launched in June 2006, when a contract with the Turkish company ENKA was signed. After construction was completed in 2009, the arena received several awards, including the Best Construction Prize of Ukraine. A different contract was chosen for the construction of Donbass Arena, compared to Holmenkollen. The client was a private investor, the owner of the football club, "Shakhtar Donetsk". The model replaces two traditional contracts with three contracts (see Figure 3): owner-designer, owner-construction project manager, and owner-builder (general contractor).

The decision-making process was time-consuming at the start of the project. Even simple questions that did not lead to an increased budget were negotiated between ENKA and Donbass Arena, because it was implicated in the contract. The choice of designer and contractor was made based on open tender procedures. Initially, the project manager's role was to provide construction advice to the designer, on the owner's behalf, design advice to the constructor, again on the owner's behalf, and other advice if necessary.

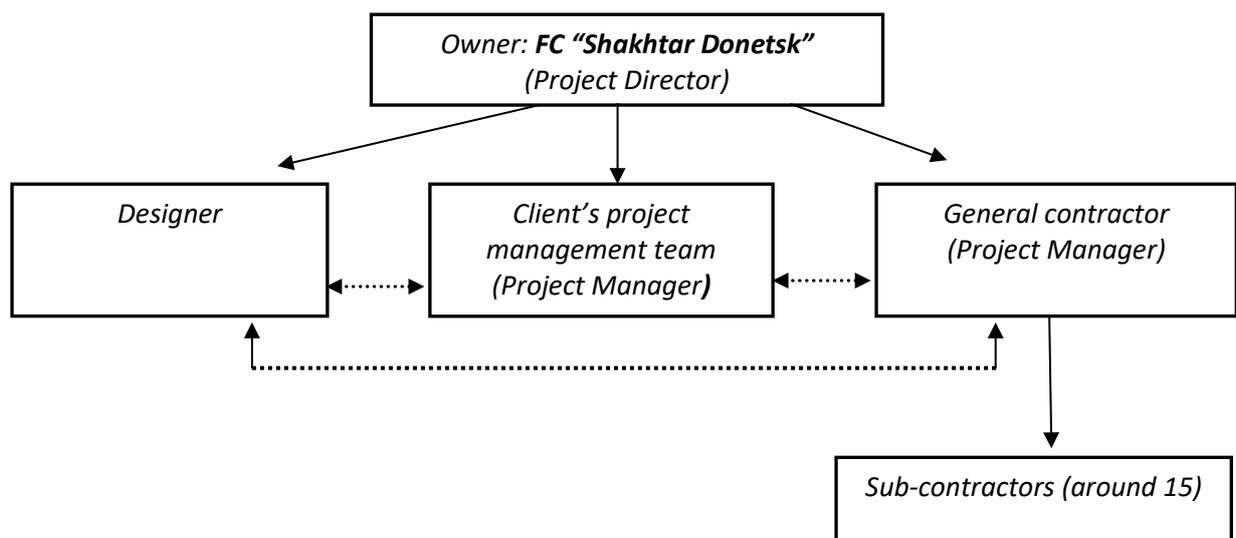


Figure 3. Main parties of Donbass Arena project

The construction project management company was an additional party engaged in direct construction. The project manager and his team provided assistance to ENKA, which was not able to cope alone with Ukrainian legislation. After assuming responsibility for the project, ENKA started choosing sub-contractors independently. At the same time, the client's service group checked all tender procedures and could influence the decisions of ENKA. Due to the long negotiations with the architects and contractor, the project was running late. The project manager of the client's project management team was fired, blamed for poor project progress and replaced by a more experienced professional project manager. Instead of the planned two years to construct Donbass Arena, it took three years. The total costs of the project increased significantly, compared to the initial calculations. Although the Donbass Arena stadium was completed one year later than originally projected, the time dimension was not as significant as in the Holmenkollen project, because

construction started more than five years before the start of Euro 2012. The project's budget and time schedule were well-defined in the contract from the beginning of the project's execution in 2006. The initial estimated cost of the project was USD 185 m. The budget was renegotiated in 2007–2008, after the project managers faced several problems. In order to fulfill the initial cost plans assigned for the project, cheaper substitute materials were used, but they appeared to not be good enough for the construction project. Further, costs increased due to some uncertainties, which were not (could not be) taken into account from the start of the project, e.g. frequent changes in Ukrainian legislation and construction norms, causing changes in the design of the arena and consequent increases in the project's costs; problems with the mentality of workers, who did not show up after several holiday celebrations; client's desired changes in the design of the arena at the end of the project, etc. The final sum of project costs and the surrounding park reached USD 400 m.

4.2. Addressing project uncertainties by controlling with care

Despite the many significant challenges described in the previous section, the project managers of both projects showed great ability in taking informal control over their project's progress. Surprisingly, the approaches to project management in the Holmenkollen and Donbass Arena projects were not as different as expected at the beginning of the research. Managers faced similar challenges that were tackled in similar ways – often with the help of informal managerial 'tools'. The interviewees described control is not a matter of casting judgments after the fact but, rather, undertaking a variety of activities that project managers engage in to care for their projects.

The Holmenkollen project. Since the decision-making process was slow and totally controlled by Oslo Municipality in the earlier stages of the project, the main engineer and project manager, worried about progress and inopportune decisions, engaged in negotiations to obtain the right to begin the construction process. Further, the managers started negotiating their rights to decide for

themselves, in frames agreed with the project's owner. In the execution phase, the project manager gained the right to make decisions without agreement with the client – up to NOK 1,000,000 (around USD 170,000). The subordinates of the project manager were also given the right to make their own judgments and to make decisions without agreement with the project manager – up to NOK 30,000 (around USD 5,000). *“It was especially relevant to be able to serve the project within the defined limits, that also enhanced courage in making decisions, stimulated experiment and trust between the project's participants”* (Project Manager). *Mutual trust and encouragement* between the different parties of the project became one of the MCS' tools.

Taking the visions of the main stakeholders (e.g. FIS, sportsmen, Norwegian Ski Association, operator on Holmenkollen arena, etc.) into consideration was an important factor of the project's success. Many issues were negotiated during press conferences and special meetings and, later, with external consultants and different levels of the project's management. Each of the project's parties was encouraged to give an opinion, because the sport arena was built first and foremost *“for people to be happy”* (Project Director). These caused several changes in the design, due to new demands by stakeholders: from simply rebuilding the existing ski jump – to fully dismantling it and constructing the monument – a symbol of Oslo. The architects were inspired by this decision and engaged in significant redrawing. However, caring for the project and assuring its 'good fate' also meant having the courage to provide limits and make difficult decisions that would be considered the best possible solutions in particular situations. As the date of the trial championship could not be postponed, the managers who understood the complexity and implications of various costly changes suggested finding good enough and realistic solutions, in order to complete the project on time. The project manager commented that there are particular moments in projects that require a great deal of *courage*. That is, for example, finding *freezing points* in the design, negotiating with architects and engineers, as *“There are no limits to improvements and creativity”* (Project Manager).

Following the tender procedures, an issue arose that required maneuvers. That is, finding yet another *freezing point* and establishing personal contacts for the sake of the project. By Norwegian law, a competition between potential contractors (tenders) is required. Tenders in public sector projects at that time were closed procedures, with clients making judgments based on the tender price (the cheapest bid); the reputations of companies were not fully taken into account. Complicated relations with some suppliers and difficulties in working in international teams had an impact on the project. Sometimes the supplied construction materials did not meet quality requirements and had to be returned to the sub-contractors, as, for example, using steel of another quality was not acceptable for safety reasons. This was fixed by establishing *personal contacts* with sub-contractors in different countries, by visiting them in their countries and hand-shaking. According to the project director, this was the only way to establish e.g. continuous supplies of steel from Poland and deliveries of other materials from Italy without interruption. This made it possible to implement better control of deliveries and, later, to trust their contractors.

The impact of nature (or so-called force majeure) was also a source of uncertainties during the PLC. Although responses to weather conditions were included in the risk management plan, nobody expected that winter time in Oslo would reach record low temperatures and wind during construction of the arena. The project team had no additional time available for construction and they had to undertake the main construction works during September – December 2009. *Concern for people* and their health was a priority. To keep the workers safe and healthy, the managers developed a scheme of changing positions and providing a supply of hot drinks and food. This caused additional spending on the project but kept the staff healthy and, ultimately, saved time on construction.

The interviewees have mentioned with regret that they did not develop an incentive system, simply because they lacked time. However, because skiing is the most popular sport in Norway, project managers tried to motivate people working on the project by getting them to understand that a unique ski arena would become a symbol of the country and add some prestige to their CVs. The creation of a special working atmosphere and self-motivation were very important in the project. Too much pressure on personnel was considered to be inappropriate, because it could create the atmosphere of distrust and apprehension: *“You lose your authority and weightiness in the project if you become a dictator. That will never work in Norway”* (Project Director). Managers thought it was better to create an atmosphere, in which every worker believes that he or she is an essential part of doing something good and important, thus making it possible to achieve an effect from the attitude: ‘it’s everyone’s job’.

Since the project attracted close attention from the mass media, which was, on one hand, involved in maintaining the special spirit behind the creation of a symbol of Oslo, while, on the other, providing very critical reflections on the project’s progress. The interviewed managers mentioned that, at some point, they decided to focus solely on the project, without paying attention to media pressures: *“You cannot stop it [media], so put it ‘aside’ and do your job properly”* (Main Engineer). Thus, selectivity and *attentiveness* to more salient issues were also on the project manager’s agenda.

The formal MCS consisted of monthly reports and regular meetings with the director of the project, who received all the information from the project manager (frequency: one month and two weeks, respectively). During the most problematic phases of the project, when the planned tasks were poorly performed, and/or many activities were postponed for different reasons – for example, problems with delivery or unsatisfactory weather conditions – there were two-weekly reports and

weekly meetings that reflected the project manager's *concern* for the project's progress. The project was divided into sub-projects, with different managers responsible for each of these. The project manager received monthly reports from the above-mentioned managers. At the 'peak' of the project, these reports were more frequent. Kick-off meetings (three to four hours every month/every two weeks in the "peaks") and personal observations on the project helped to modify and accomplish project tasks. Informal communication in the project was more effective than formal, since, in this way, managers "*became an inseparable part of the project*" (Project Manager). When even weekly meetings were not enough to provide the entire picture of the project's progression, it became important to be on the construction site and provide *access to help*. "*I literally lived at the construction site till the project was finished*" (Project Director). Managers were constantly present at the construction site with the purpose not of providing punishment for bad progress, but of listening and chatting with the matrix managers and ordinary workers and *providing necessary support*. The interviewed managers were open to communication with middle-level executives and workers, who could come to them anytime they faced problems. In this way, many issues and problems were solved faster, and this ensured project readiness before the important deadline.

Electronic tools were also used, such as Microsoft Outlook and the Software OPERA Project (Microsoft Excel-based tool, a Norwegian analogue of MS Project). This software was used for detailed planning, assigning resources to tasks, tracking progress, managing budgets and analyzing workloads, etc. This tool gave an opportunity to visualize the project's progress via diagrams and analyze project progression. However, this information had a merely historic character, and managers did not specify the real value of those tools. Therefore, the groups of 'matrix' managers used weekly or daily follow-ups, together with ICT, personal control and observations.

According to the interviewees, the major lesson learned from the project is that late decisions cost much. This means that, in big construction projects, where time is crucial, too much time spent on planning does not pay off. Time 'wasted' on detailed planning and budgeting of project costs reduced the time available for execution. As a result, the schedule shrank, many tasks were performed simultaneously, and project managers had to invest extra effort to keep the project going. The project's key persons adapted to the situations and coped with uncertainties by caring about people, providing access to help and personal involvement. Especially useful were informal control tools, and mutual trust. The decision-making process became efficient a formalized limit of responsibilities. Observations at the site, as well as chatting and listening, were a natural part of the project manager's care for the project's progress. Main Engineer also mentioned that, before taking any kind of responsibility in big construction projects, managers "*should absolutely love what they are doing*", because it requires not only time and labor but also enormous mental efforts and sacrifices.

The Donbass Arena project. As the project was financed by a single private investor, the client's role was decisive in terms of the design of the sport arena and the amount of money that could be spent on construction. Some project's design changes occurred because of changes in the owner's visions, and new ideas, which arise after the project has started. Near the final stages of this project, the illumination system (millions of lights) had to be replaced, because it did not seem sufficiently fancy for the owner during the first trial. Some other changes also took place in the middle and late stages of the project, because of new construction standards issued in Ukraine (including new requirements for roofs).

The client demanded the most effective use of financial resources. The project management team closely monitored spending on project activities. No trust was in place among key project

participants at the beginning of the project. As the project evolved, the involved parties understood that the strict control over each activity and the inability to make even simple decisions without confirmation from the client had a negative impact on the project's progress. The project manager negotiated *the right to implement his decisions* without confirmation from the director of the project. The decision-making limit was set to USD 30,000. The director of the project also had limited ability for decision-making (up to USD 100,000) without confirmation from the client. Decision limits were also provided for the main contractor, thus stimulating *mutual trust* between the project's participants later in the project.

Communication problems became significant in the project. The official language of correspondents was English (stated in the contract). Neither the Turks nor the Ukrainians had a good command of English, especially at the beginning of the construction process. To communicate, they had to use professional interpreters that knew how to translate words but did not know the specifics of the project management discipline and practice, construction norms, materials, etc. The interpreters often failed to provide 'meaningful' translations. This led to numerous misunderstandings between the parties. To fix the situation, the project's managers abandoned official translations and communicated with help of facial expressions, gestures, spontaneous drawings and body language. With time, this problem became less significant, as both project management teams improved their language skills, as a consequence of trial-and-error learning. Despite the significant challenges of working in an international team, both sides of the project – contractor ENKA and the team of Donbass Arena – succeeded in caring for workers and motivating people to work, and gained trust in each other with time.

Access to help was provided by the client's project management team to different foreign contractors that were unable to cope with the Ukrainian business context, different bureaucratic

procedures and customs. For example, the construction of the roof was renewed a couple of times, because German subcontractors' specialists had to harmonize their project with Ukrainian norms, which changed several times in one year. ENKA frequently faced problems at customs with the import of construction materials. To navigate the situation, the client's project management team assigned Ukrainian specialists to help with customs authorities, courts, etc. *Access to help in solving complex tasks, mentoring activities and training programs* also evolved with the project.

In the team were many people aged between 50 and 60, who had gained their experience in Soviet and post-Soviet times. They were offered training to improve their knowledge concerning construction materials and technologies, ICT and construction techniques. Considerable attention was paid to *team building and corporate culture* during the whole PLC: competitions and several arrangements for workers and their families. A *bonus system* was implemented to improve motivation and get people more interested in productive work and coming to work, e.g. despite long New Year celebrations in Ukraine. Another aspect is showing their own examples of good work, *"being there for people, giving your support and full dedication to the project"* (Project Director).

Different motivation systems were used by client organization and main contractor. Each system included both financial and nonfinancial incentives. ENKA used a system of bonuses in the case of over-fulfilment of the plan's results. Workers had one day off every 15 days. Once every three months, all workers could fly to Turkey to visit their families at the company's expense. An important nonfinancial incentive was the prestige of working for ENKA, a well-known company in Turkey. Donbass Arena also had a system of financial bonuses, based on the results achieved during the calendar year (in the case of improved quality, time-saving and economy). One of the tools to encourage people to perform tasks efficiently was the setting of a good example and the performing of tasks by the project manager and other 'top people' in the project. This built *relationships of*

respect and a special climate among the team members. Sport competitions between employees, fishing with their families and Turkish colleagues, etc. are some examples of nonfinancial incentives used by the client organization to strengthen the spirit of the team and provide encouragement to complete the project with over-fulfilment of the planned results.

The impact of nature (or so-called force majeure) was also visible in the Ukrainian project, as many outdoor tasks were performed during the winter seasons, which are quite harsh, especially for Turkish workers. Change of position, switching the plans to performing more indoor work during extreme cold periods, providing hot food and drinks were also elements that helped to manage the situation.

The 'iron triangle parameters' (quality, costs and schedule) were controlled on both sides: (i) on the side of ENKA by the Department of Quality (men in 'blue helmets'), and (ii) on the side of Donbass Arena by the Department of Technical Supervision. Kick-off meetings, regular compulsory reports (that could also be provided on the demand of the project manager) and ICT tools (the team used 'Spider project', a project management package), were used. However, the teams spent much time on negotiations. Work meetings between the project managers of ENKA and Donbass Arena were held every day (despite not being mentioned in the contract). Regarding some vital issues, meetings could happen even two to three times a day. At the beginning of the project, these work meetings lasted about 1.5 hours, but, in order to be efficient and not waste time on dalliance, managers admitted that they learned to communicate faster, get straight to the point and solve problems immediately. Managers spent approximately 10-20 minutes solving current/everyday problems, when they had found a 'common language', using handwriting, drawings, sketches and other figures, instead of formal reports and templates. Among the major lesson learnt from the project interviewees stated the importance of being prepared to establish informal contacts and to learn

by doing, in order to be ready to handle unexpected events during the PLC. Clear project goals, incentive systems, corporate culture and different team-building activities were good means of ensuring the project's progress, especially in combination with a bonus system.

5. ANALYSIS AND DISCUSSION

The purpose of this paper was to investigate the question: *how do managers mobilize informal controls with care, to repair the failures of formal controls in big, unique construction projects?*

Empirical descriptions show that, indeed, it is simply impossible to totally de-risk the project and implement it without any deviations (Geraldi et al., 2010; Revellino & Mouritsen, 2017; Perminova et al., 2008). Despite difficulties and cost overruns, both studied projects may be considered as 'good fate' projects. These are the cases of learning, knowledge exchange and dialogues, where the initially stated and mapped intentions, preferences and conditions did not remain stable throughout the PLC, due to working with the projects and caring about getting the best project outcomes. Project participants made their projects open to "revisions" (Söderholm, 2008) and "trial-and-error" (Sommer & Loch, 2004) – they redrew MCS, changed the designs, and tried to find better materials to improve quality and ensure safety. Regarding the peculiar characteristics of projects, in terms of sources of uncertainties, there (surprisingly) were only a few differences. The remaining uncertainties stemmed from the complexities of the projects and the multiple actors (stakeholders) involved in the projects.

The peculiarities of the studied projects are seen in their different approaches to reporting and interaction, use of motivation systems, the role of trust, tender procedures, governmental regulation and construction norms, force majeure management of extreme weather conditions (winter in Oslo was much colder than predicted), misunderstandings between the client team and the general contractor ("Lost in translation" in the Donbass Arena project; mentality of workers that

sometimes did not attend work), impact of bureaucracy and corruption (foreign contractors' inability to cope with Ukrainian licensing organizations and other institutions), and unstable Ukrainian law and business environment. Despite significant differences in terms of the projects' organization, ownership and institutional environments, the managers coped with challenges and uncertainties in similar ways – by maneuvering and careful use of different levers of control. Table 3 provides a short summary of care-control efforts in the studied projects.

Table 3. Types of care-control efforts in studied projects

Elements of 'care'	Holmenkollen Project	Donbass Arena Project
Incentive system	Nonfinancial incentives	Financial and nonfinancial incentives
Mentoring activities and training programs	Dialogues and being at the site	Dialogues and being at the site, arranged courses
Trust, openness, & courage as explicitly stated values	Flat management structures, trust among project management team	Gained trust and openness with time
Active empathy, exchange of ideas and lenience in judgment	At the project's execution, after gained limits of responsibilities	
Project debriefings & other forms of learning-oriented conversations	Frequent	Very frequent
Social events	Some	Many
Attentiveness, love, concern	Attentiveness throughout the whole PLC Loving the job and caring about projects and people Concern for timely decisions, project progress, own reputation	

Both projects were subject to numerous informal negotiations and daily meetings. Building the atmosphere of 'doing something big and important' was an essential control element in both studied projects. In the Ukrainian case, managers developed a more complex motivation system (a formal system of bonuses and non-monetary motivation, e.g. "best worker of the month", fishing competitions, (re)training programs for employees that needed to advance their knowledge in using software and new building materials, etc.). Norwegians mostly used nonfinancial incentives and preset payment for work. Both projects used budgets and performance measures, progression reports, kick-off meetings, negotiations, ICT tools, the help of external consultants, research and design institutes. The difference lay in the frequency of diagnostic actions. Budgets in both control

systems were considered equally important, but, in both cases, these budgets were not met and were corrected over time.

The two cases show that, in response to projects' complexities and uncertainties, the informal elements of control proved to be more effective and less time-consuming than the formal. This finding is in line with critics, who state that mainstream management control and accounting is too focused on accounting controls (Hewege, 2012) or "clarity strategy" (Sahlin-Andersson, 1992). Care-control efforts embody motivating people by providing one's own examples of good work, spending time not at the office but at the construction site; establishing communication and mutual understanding with employees and contractors, despite language and other cultural differences; changing work positions (e.g. while cold); arranging trips to families (when working abroad), and team-building and other activities, that maintained a healthy working atmosphere.

As the findings indicate, projects become arenas for exercising care that contributes to solving problems, implementing solutions, forming and strengthening relations, developing professional competences, and having a nice time. As seen, project managers used different care efforts to positively influence the project's progress and performance. Care in different dimensions involved actors with different epistemic properties. Although earlier studies suggest that care of people is at the core of leadership, this study reveals that the non-human dimension of care is also important (e.g. sport arenas, manager's reputation).

This study reveals that care becomes a reason for conduct (Bandura, 1989) and means doing more than required by the contract. Analyzing the care-control aspect throughout the PLC, it was observed that both projects initially suffered from the implementation of "clarity strategies". It took time to engage project participants in constructive dialogues and reciprocal feedback, gain trust,

and establish a common language between participants. There was a turning point in the planning and execution stage, when care became 'feasible', and contributed to the projects' completion. It was revealed that at 'peaks', when project managers realized they were behind all schedules and budgets, they started focusing on finding 'good enough' options and solutions. Caring in these cases meant 'making priorities' and 'selecting' what to care about *more*, and what *not to care about* at all (e.g. mass media in the last stages of the Holmenkollen project; abandoning official translations and substituting them for gestures and hand drawings in the Donbass Arena project).

Implementation of both projects was a complex process that included both formal and informal control mechanisms, improvisation, persuasion and care for people and project progress. In fact, control and care were not separated from each other at the execution stages. The suggestion is that it is important to find a balance between care and control. As previously noted, too much control may be misleading in big construction projects. Each project should be assessed for the appropriate level of control needed: too much control is too time-consuming; too little control is very risky (Lewis, 2000). Care can function as a control mechanism; it would not be perceived as a coercive mechanism and therefore would not hinder the desire of employees to perform better and influence project progress by their good work. Care is a safeguard that project results will be achieved. Thus, managers should be blamed – not for increased control but, perhaps, for not caring enough.

6. CONCLUSIONS

Previous empirical studies show that 'concern for process' via formal control might be important in relatively simple projects (Müller & Turner, 2007; 2010), but 'concern for people' via formal and informal controls mobilized with care is necessary in more-demanding projects, such as those examined in this study. Despite the fact that managers cared much about their projects, the unexpected events happened and had a significant impact on progress and final costs. However, it

can also be assumed that, in cases with 'careless administration', the projects would face a problem of 'letting things slide' and would result in more significant cost increases and time overruns. The organization and controlling of projects is a fruitful field for researchers interested in studying 'care' and its relation to project control and progress. In the studied cases, mutual trust, empathy, help, courage, and lenience in judgment, enhanced through care (Von Krogh, 1998), made a positive impact on the projects' progress. Unique construction projects that are limited in time need a special set of managerial skills that includes emotional competences and care (Ashforth & Humphrey, 1995; Vie, 2012a). Caring efforts should be visible early in the project, because it takes time for care effects to be felt by project participants and, thus, safeguard the project's progress. The research reported here contributes to the accounting and project management literature in several ways. Firstly, this research raises the issue of 'careless' and 'careful' administration and their implications for projects. It is recognized that only one small aspect of informal management control is revealed, but this does not make it less important. This research reminds the business schools and the professional bodies, such as Project Management Institute (PMI), not to forget the human aspects of control and management (such as care) in their teaching programs, because 'careless administration' is not necessarily the only approach that students and future managers need to learn.

This study contributes to the discussion on what project managers actually do and how they use controls during the whole PLC (Blomquist et al., 2010; Söderlund, 2004). The new dimension of control through care is applied in relation to large construction projects. Rather than understanding management control as a purely technical activity, it is demonstrated that the control process is socially constructed and includes several psychological aspects attached to it (Hall, 2016). For practitioners, doing something has priority over measuring it (Jordan & Messner, 2012). MCS may be described as a "point of orientation", which, however, important, should not exclusively guide managers' decisions and actions (Jordan & Messner, 2012). It is necessary to think about the

practices, processes and people behind the indicators, in order to derive possible areas for improvements. The greater importance of how a MCS is mobilized through care, than only how 'perfectly' it is designed, is demonstrated. Caring in these settings means that 'you do not abandon the ship when it sinks'; caring means extending boundaries and finding new solutions to complex problems. Managers modify MCS with care and face uncertainties; they mobilize MCS with care to produce project results. Care requires passion, patience, inspiration, and gut feeling.

An implication of this research for practice is that, by recognizing the need to exercise care in different dimensions, managers may be "less surprised by the burdens of managing and thus better prepared to bear them" (Vie, 2012, p. 160). Several limitations of this study need to be highlighted. Firstly, there are limitations related to the methodological approach, because only two cases of unique construction projects in different contexts are examined. Only a limited number of people, who contributed to the projects' control and progress and made sense of their subjective experiences, feelings and interpretations, were interviewed. The aspects of 'time and space' (Tengblad, 2002; Quattrone & Hopper, 2005) may play an important role, while studying care-control aspects in big projects. That is, the evaluation of a project's success or failure depends on the stakeholder focused on, the manager interviewed and when.

An attempt was made to overcome this limitation by using different sources of information, as secondary data, in addition to the interviews. Managers were interviewed right after the project's completion, and the impression was gained that all study participants had very fresh memories about the projects and problems that they had faced. The study does not try to provide universal 'care-control models' and 'recipes'. Rather, through two different cases, it shows that control is a complex social construction and practice, intimately bound up with other people's interests and other project elements. In terms of future research, it could be interesting to investigate another

people's perspectives on control and care. Especially relevant is understanding how ordinary employees perceive the care-control aspect in projects. This study would benefit from its extension to other empirical contexts and the use of another research technique, such as shadowing the project managers and other project stakeholders in action (McDonald, 2005).

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