Normalization of deviance in the construction industry; A managerial perspective

**Abstract**

Organizational factors such as complexity, weakness in organizational design and capabilities, optimism bias or strategic misinterpretation are often the most important drivers behind situations where conflicts, mistakes or disasters occur. It is the specific problem of teams normalizing unacceptable behavior which makes this phenomenon potentially damaging. This phenomenon has been referred to as “Normalization of Deviance” by Vaughan (1986), based on her study of the culture of NASA prior to the Challenger disaster. In a project management context, this term can be defined as the gradual process through which unacceptable project management practices or standards have become acceptable. As this behavior is repeated without catastrophic results, it gradually becomes the social or operating norm of the project group, organization (Pinto, 2014) or even industry. In these situations, people often accommodate, explain away or normalize discrepant cues of problems, because they are part of a system, routine or culture which unintentionally reduces mindfulness. This will all together prevent the organization from anticipating a wide range of crises. This study will investigate the project management practices within the construction industry which have become an acceptable part of the system, but in hindsight lead to overall poor performance of construction projects. This study will investigate the counterproductive managerial practices which overtime become embedded into the organizational culture, the characteristics which put construction project organizations in a position to fall into the slope of normalization of deviance and the contribution of sensemaking in overcoming conditions under which organizations fall into this slope.

**Keywords***: Construction industry, Normalization of deviance, Sensemaking*

1. **Introduction**

The problem of poor performance in construction projects is a global phenomenon. In UK alone, most construction firms and project owners lack confidence in the industry’s ability to deliver projects on time and on budget. There is abundance of literature on the factors leading to poor performance in the industry among which poor communication, information transmission, coordination, and teamwork issues (Weippert et al., 2001). According to Puspasari (2005), the main factors contributing to poor project performance in the construction industry can be categorized into eight main groups including project characteristics, client / developer related factors, contractor related factors, labor and material related factors, consultant related factors, contractual related factors, project procurement related factors and external environment related factors. Other research reveals that the construction industry is characterized by complexity factors owing to industry specific uncertainties, interdependencies, and inefficiency of operations (Dubois and Gadde, 2010). This also contributes to poor performance on the overall level.

Research reveals that the construction industry is characterized by complexity factors owing to industry specific uncertainties and interdependencies, and inefficiency of operations (Dubois and Gadde, 2010). Construction projects in general, often suffer from poor performance in terms of time delays, cost overruns and quality defects. The causes of poor performance have often been analyzed. However, few studies have addressed the influence of cultural norms and the processes through which unacceptable management practices or standards may have become acceptable, thus leading to poor performance. This phenomenon has been referred to in the literature as “Normalization of Deviance”, developed by sociologist Diane Vaughan (1996) based on her study of the culture of NASA prior to the Challenger disaster.

It is important to remember that normalization of deviance does not happen only due to deliberate efforts to violate norms, but also due to corporate cultures that accept these counterproductive behaviors. Not every deviation, specifically the ones that are a natural phenomenon in project organizations, such as conflicts, necessarily equate to normalization of deviance. The problem arises when behaviors become culturally embedded and destructive but remain viewed as a normal part of organizational processes (Pinto, 2014). A reasonable understanding of the situation under which organizations get accustomed to deviant practices and forming an environment where cues and warning signs of deviations are constantly monitored, consolidated and acted upon, can be an approach that project organization managers can adapt for reducing the risk of normalization of deviance. This approach which will be later discussed in detail is referred to in the literature as sensemaking (Weick, 1995).

This study will investigate the elements which have, over time, become a norm in the construction industry leading to poor performance. To investigate this issue, a thorough literature review is carried out, supported by two illustrative cases in the British and Finnish construction industry to explore the following aspects:

1. Counterproductive managerial practices which, over time, become embedded into the organizational culture.
2. Characteristics which put construction project organizations in a position to normalize deviances.
3. Contribution of sensemaking in overcoming conditions under which organizations to overcome these obstacles.

This paper consists of the following sections. The first section includes a literature review on the concept of normalization of deviance in general and specifically within the project management area. The current status of the construction industry and possible elements which can be referred to as normalized deviances will be also discussed. Secondly, the research methodology will be presented. The subsequent sections include the description of the illustrative cases and the potential effect of normalization of deviance construction firms. Finally, the discussion and conclusions of the research are presented.

1. **Theoretical Foundations**

The construction industry plays a crucial role in the economic growth and development of all countries. By construction industry we mean the manufacturing of building materials, the sale of the final products and associated professional services such as facilities. The construction environment is characterized by a high level of competition, complex operations and high-risk conditions (Tarwane, 2014). The construction industry is in nature involved with high level of uncertainty due to its systemic nature and complexity of the construction projects (Fernández-Solís, 2008). The characteristics of the construction industry have been investigated by researchers from diverse management viewpoints. Some of the significant characteristics identified by scholars are fragmentation, multidisciplinary, sensitivity to economic change and highly competitive environment (Kangari,1988). The industry is also capital-intensive, dependent on location, climate and weather, and involves a complex long-term procurement process (Arditi el al., 2009). In this section, the construction industry, its characteristics and challenges will be seen from a cultural point of view, the concept of normalization of deviance and the sensemaking approach for overcoming such conditions will be discussed.

***The construction industry culture***

*Culture* is identified as one of most difficult and complex organizational constructs to understand. This can be due to it being defined in various and rather conflicting ways. According to The Australian Cooperative Research Centre for Construction Innovation (2001) “Culture is commonly identified as “a set of mores, values, attitudes, beliefs, and meanings that are shared by the members of a group or organization” and is often the primary way in which one ‘group’ (organization, team, etc.) differentiates itself from others.” On a more informal basis, organizational culture is defined as “the way we do things around here to succeed” (Schneider, 2000). Hofstede (1997) defines organizational culture as a “collective mental programming that distinguishes the members of one organization from the other”. However, research shows that the organizational culture within certain industries is associated with specific features of its projects. For example, Akrah et al. (2009), in their research have explored the relationships between the cultural orientations of construction project organizations and several key project features. Some of the common features of construction projects include immobility, complexity, durability, costliness, and high level of social responsibility (Mokhtariani et al., 2017).

Construction project management has always been challenging, otherwise the problems this industry is dealing with, would have been solved by now (Winch, 2010). According to the UK office of Government Commerce’s leaflet, construction projects in general fail due to several common causes among which lack of effective engagement with stakeholders, lack of effective project team integration between clients, the supplier team and the supply chain. This can be to a great extent related to the culture of the construction project organizations. In the current global competitive business environment, the culture of an organization has become a critical aspect of its success (Sadri and Lees, 2001).

According to Ankrah et al. (2009), improving the project delivery in the construction industry requires attention to the culture within project organizations which is often closely connected with characteristics such as fragmentation, conflict, mistrust, poor communication, blame game, masculinity, and sexism. That is why many believe that cultural change in construction project organizations is necessary. This is because the culture within an organization directly influences its behaviors and practices (See Figure 1) and eventually its overall performance.

Actions

Practices

Behaviors

Beliefs

Norms

Values

Perceptions

Cognitive biases

*Figure 1. Hidden and visible dimensions of organizational culture (Adapted from Duarte and Snyder 2001 and Schmiedel et al. (2015))*

Another aspect which is quite common among all construction projects is the fact that due to the nature of construction industry where firms come together and form a temporary organization which delivers a project or product, the success of the project is heavily dependent on effective coordination among the participant firms (Abdul Nifa and Ahmed, 2010). In other words, construction projects are complex interdependent systems, where there are a variety of possible network configurations among the actors (Pryke, 2012). Therefore, relations and management of relationships are very important aspects in the construction context. This can increase the importance of trust among the actors within this industry. Research on the aspect of trust reveals that if more attention would be paid to the importance of trust among organizations operating in the construction sector, this could significantly impact the contract design and over all procurement strategy (Malik et al., 2007). Another cultural aspect which is said to be common in the construction industry is the “macho culture” where crisis management is rewarded, leading to demotivation of specialist contractors to perform at their best (Latham, 1994). Finally, it is no secret there is a culture of resistance to change within the construction industry, which can lead to missed opportunities (Lines et al., 2015).

In addition to the above-mentioned aspects, corruption should be included in the category of factors which can undermine the performance of projects, such as complexity or “technological sublime”, weakness in organizational design and capabilities, optimism bias, strategic misinterpretation or even certain project characteristics. (Garemo et al., 2015, Locatelli et al., 2014). However, this factor has not been widely considered in the project management literature while it is apparent that features such as large project size, uniqueness, and complexity do favor corruption in large construction projects (Locatelli et al., 2016).

The fact that construction projects have many common characteristics, allows us to assume that the majority of construction project organizations, may share to a certain extent similar cultural elements, norms and values regardless of their size, complexity, location, etc. In the following section, the concept of normalization of deviance and the unproductive attitudes and norms which have over time become part of the culture within this industry will be discussed.

***Normalization of deviance in project organizations***

The term “Normalization of Deviance” was first introduced by American sociologist, Diane Vaughan, in 1996, in her book *The Challenger Launch Decision*. Vaughan stated that the main cause of the Challenger disaster was related to the reciprocated choice of NASA officials to launch the space shuttle despite being aware of a dangerous design flaw with the O-rings. This phenomenon is described as occurring when individuals within an organization become gradually insensitive to deviant practice that it no longer feels wrong. In short, what may look very risky or irresponsible in hindsight, came to be viewed as acceptable by decision makers in a gradual process that evolved over an extended period. Vaughan also found that people grow more accustomed to the deviant behavior the more it occurs. Normalization of deviance suggests that the *unexpected becomes the expected, which becomes the accepted over time* (Pinto, 2006).

Evidence of normalized deviance has been found in the fields of health, safety and medical practices. The aviation industry is a clear example where normalized deviances can cause disastrous consequences. According to Albright (2017), it is seen repeatedly in the aviation industry that actors can become so experienced in their profession that “complacency displaces competency”. An example of disastrous events due to normalization of deviance are in addition to the Challenger case, the Gulfstream IV N121JM wreckage in 2014.

In the health sector, according to Banja (2010), many serious medical errors result from violations of recognized standards of practice and even extreme violations of standards of practice might become “normalized” over time. Examples of common rule-breaking practices in American hospitals include: not washing or sanitizing hands sufficiently; not gowning up or skipping some other infection-control procedures; not performing safety checks; using abbreviations; not getting required approval before acting; and violating policies on storing or dispensing medications (Banja, 2010). Unfortunately, health professionals are hardly the only professional group to engage in, or fail to attend to, variations or deviations from standards or protocols. Major disasters such as Chernobyl, Three Mile Island, Bhopal, and the Challenger and Columbia space missions all witnessed system flaws and protocol violations that caused disasters over years. The recipe for disaster in addition to these, requires errors, lapses, or violation of standards to go unattended, unappreciated, or unresolved for an extended period (Reason, 1999).

In a project management context, we refer to Pinto’s (2014) definition of normalization of deviance. According to Pinto (2014), *normalization of deviance is typically the result of a series of deliberative choices that have become institutionalized over time*. The nature of normalized deviance is one of gradualism and the accumulation of (and organizational acclimatization to) a series of decisions that individually, may not signal disasters but taken collectively, and applied continuously to a project setting, will eventually, lead to serious repercussions (Starbuck and Farjoun, 2005).

Normalization of deviance occurs when project organizations repeatedly perform actions or decisions which have the potential to cause disastrous results. What makes these actions a normalized deviance, is the fact that they are significantly violating defined and established standards and rules, without being frowned upon. This is where the unaccepted becomes accepted over time. The longer it goes on within an organization, the more people become accustomed to it. People on the outside see it as abnormal but within the organization it becomes accepted as everyday practice. It is important to distinguish between what is perceived as flaws or mistakes within an organization and normalized deviations. It is also important to note that deviance is relative and varies in time and context. For example, deviance may become the “norm” in a group when members comply to a set of rules and share a culture of violation as long as their behaviors stay invisible to those who do not comply to this certain culture. In this case, a member who does not accept the group’s rules then becomes a ‘‘deviant’’ from the other group members’ perspective, although he may then act in a ‘‘non-deviant’’ way in the eyes of society (Courtois and Gendron, 2017). In this study, we refer to “deviations” as the violations from the defined baselines and established standards and rules. Figure 2 presents the authors’ understanding of the concept of normalization of deviance in organizations.



*Figure 2. The Normalization of Deviance spiral*

There are different factors which account for the normalization of deviance in different contexts. According to Banja (2010), there are several factors in the healthcare sector, which explain the development of normalization of deviance. Following the factors which can be relevant to the project management context are presented.

1. The ones who deviate the norms often interpret rule compliance as irrational and a drag on productivity.
2. Lack of knowledge on standards or rules among professionals and feeling uncomfortable in asking for help, or in admitting ignorance in understanding or applying a standard.
3. If the person who observes the violation of rules is afraid to speak up, the likelihood that deviations become normalized will increase.

Having studied the common unproductive practices within the construction industry (Jenning, 2012; Flyvbjerg et al., 2009; Flyvbjerg et al., 2002), we present a few examples which comply with the definition of normalization of deviance. According to Pinto (2014), there is a tendency in construction project organizations to underestimate costs. This has, over time, become a normal part of the system and therefore the cost overruns which realize after the project go-decision, are accepted by the decision makers. Note that this exists in spite availability of standards and best practices on accurate cost estimations and risk management strategies for projects of all kind. Another common practice in the construction industry is following short-sighted strategies to make profit, leading to lack of investment on learning (Particularly ICT use) (Kajewski et al., 2001).

Pinto (2014) presents a model for countering normalization of deviance in project organizations. The suggested steps include: establishing a mechanism to identify instances of willful or benign behaviors that may be characterized as normalization of deviance, educate organizational members to identify instances of normalization of deviance as part of their own operating processes and the motives behind these actions, clarifying organization-wide standards for acceptable interactions with stakeholders, establishing planning, and scheduling activities to be uniformly enforced, ensuring transparency throughout the organization and finally rewarding compliance with the new standards.

In this study we investigate an additional approach for countering normalization of deviance in project organizations; sensemaking. sensemaking refers to processes through which people seek plausibly to understand ambiguous, equivocal or confusing issues or events (Brown et al., 2014). According to Brown et al. (2014), an effective sensemaking procedure in organizations can contribute to coordinated and rational actions. In the following section, we will discuss the concepts of sensemaking and sensegiving in organizations and how it can contribute to establishing a culture which can prevent the organizations falling into the deviation slope and foster rational actions to overcome the normalized deviations within project organizations.

***The concepts of sensemaking and sensegiving in project organizations; an early warning procedure for overcoming normalization of deviance***

Sensemaking was first introduced by Karl Weick, an American organizational theorist, in 1985. It is a broad concept and is defined in various ways by different researchers and scholars. Sensemaking refers to how we structure the unknown to be able to act in it (Ancona, 2012). The concept aimed to encourage a conversion from the conventional focus of organization theorists on decision-making and towards the processes that form the meaning of the decisions that are enacted in practice. According to Maitlis and Christianson (2014), *“sensemaking is the process through which people work to understand issues or events that are novel, ambiguous, confusing, or in some other way violate expectations.”*

In practice, sensemaking involves coming up with reasonable understandings and meanings; testing them with others and through action; and then clarifying the understandings or abandoning them in favor of new ones that better explain a drift of reality (Ancona, 2012). Sensemaking forms the foundation of expertise as it consists of the initial stage of information processing that influences judgement and decision-making (Gacasan et al., 2015). Another view on sensemaking is that this perspective gives insights into how the actors, both individually and jointly, interpret the signs and cues that they perceive to impose meanings and call upon actions within their network of relationships (Fellows and Liu, 2016). For instance, at an organizational level, leaders need to apply sensemaking to understand why problems such as malfunctioning teams, loss of customers and shortage on safety and reliability in the operations, occur. At a personal level, sensemaking can help individuals in understanding why they have not performed according to their own expectations as a leader, or why they don’t seem to be getting along with their colleagues or new boss (Maitlis and Christianson, 2014). Researchers use different terms when referring to the act of sensemaking from different perspectives. For instance, Hill and Levenhagen (1995, p. 1057) refer to sensemaking as the vision or mental model which should be developed by an entrepreneur on how the environment works. On the contrary the act communication this understanding to others in order to gain their support is indicated as “sensegiving”. These two concepts are the two sides of the same coin and one cannot exist without the other (Rouleau, 2005).

Sensemaking requires paying constant attention to cues and signs from the environment, consolidate and incorporate the new information obtained, and thus turn what may be a poor possible understanding of the situation, into a useful sensemaking device (Weick, 1995). Sensemaking is often triggered when “members confront events, issues, and actions that are somehow surprising or confusing” (Maitlis, 2005, p. 21). However, it is important to note that cues and signals of potential problems/disasters, may not always trigger sensemaking if group norms or the organizational culture mitigate against it. According to Maitlis and Christianson (2014), the literature offers many examples of situations in which people explain away or normalize contradictory cues often because they have become part of systems, norms, and cultures that unintentionally reduce mindfulness or promote adaptation and compromise in order to achieve the production targets. This can be referred to as the concept of normalization of deviance in organizations which we discussed in the previous section. This reduces the chance that cues predicting a crisis or potential problem will trigger sensemaking and action that could either prevent its occurrence or minimize its impact (Mailtlis and Christianson, 2014). Hajikazemi (2015) also refers to this phenomenon as a barrier against identification and response to possible early warning signs/cues indicating that a potential problem or crisis is likely to occur. The sensemaking procedure is illustrated in Figure 3.

*Figure 3. The sensemaking procedure (Ancona, 2012)*

Hajikazemi et al. (2015) refer to the element of cues as early warning signs of potential problems or deficiencies in a project context. However, although there is evidence that it is possible to detect cues or early warning signs of problems in projects and despite the existence of the necessary information, the appropriate response is often missing from the responsible individuals in many cases. This may be due to many reasons, such as time pressure, a tendency for optimism, and the effects of politics (Williams et al., 2012), over-optimism, lack of tolerance of warnings, and lack of an outside view (Lovallo and Kahneman, 2003), or the ‘normalization of deviance’ (Pinto, 2014). Hajikazemi et al. (2015) also refer to several filters which the information regarding potential cues need to overcome in order for the effective corrective actions to be taken. These filters which have been initially introduced by Ansoff (1984) and later investigated further by Nikander (2002), include: the surveillance filter, the observer and decision maker mentality filter, and the political/power filter. The first stage in processing information, exemplified by the surveillance filter, requires a company, project, or organization to choose what kind of information is needed and what type of techniques should be employed to procure it. The mentality filter is sociological and psychological in character, and at this point a receiver evaluates the received information and decides what to accept and what to eliminate as unnecessary, unrealistic, or irrelevant. It is then the choice of the observer whether to communicate the signs to the decision makers or not. The third and final filter in the process, the political/ power filter, is used especially by decision makers and determines what type of information is permitted to influence the decision-making process. The early warning procedure is presented in Figure 4.



 *Figure 4. The EW procedure and the possible filters against flow of information (Hajikazemi, 2015)*

In the discussion section, the application of this procedure as an approach for overcoming normalization of deviance in construction project organizations will be explained.

1. **Research method**

This study seeks to develop a better understanding of the unproductive practices which have over time become normalized and part of the culture of project organizations in the construction industry and the possible consequences of normalized deviance within project organizations. The authors endeavor to scrutinize the procedure through which individuals and organizations come to adhere to a culture of deviance which can potentially cause disastrous outcomes. This was done through a literature review on the concept of normalization of deviance and the common practices in the construction industry which although have become part of the system, are obviously causing deficiencies. The concept of sensemaking was investigated as a tool for creating an atmosphere through which organizations can control and influence the culture in a way that deviances are taken seriously and thus avoiding falling into the slope of normalization of deviances.

In order to better illustrate this idea, the authors discuss and analyze two real-life cases which comply to this concept. The research method applied is *Secondary Data Analysis* which involves information that others have gathered through primary research. Today, the technological advances have resulted in large amounts of data that has been collected and stored, and that is now easily accessible for research. As a result, utilizing existing data for research is becoming more prevalent, and therefore secondary data analysis. While secondary analysis is flexible and can be utilized in several ways, it is also an empirical exercise and a systematic method with procedural and evaluative steps, just as in collecting and evaluating primary data (Johnston, 2014). The cases have been chosen through investigation on options where the elements of normalization of deviance were identifiable. Based on the secondary data analysis that the authors perform on the illustrative cases, an alternative perspective relying on sensemaking will be defined for organizations to develop a culture of awareness on how deviant behaviors can overtime become part of the system and cause serious consequences.

1. **How does normalization of deviance affect the construction industry?**

In this section we will discuss two illustrative cases to better understand how normalization of deviance can overtime become a burden to success at both project and project organization level in the construction industry.

* 1. **Illustrative cases**

***The collapse of Carillion***

In January 2018, the construction firm Carillion, which was involved in a host of major government projects including HS2, the high-speed train project between London to Birmingham, with a budget of £42.6 bn, went into compulsory liquidation[[1]](#footnote-1). It collapsed under the weight of a £1.5bn debt pile after the government refused to bail out the company. Carillion was a British multinational facilities management and construction services company headquartered in Wolverhampton. Its liquidation which began in January 2018, is according to UK Government reports (Companies House, Department for Business, Energy & Industrial Strategy, Government of the United Kingdom, 2018), the largest ever trading liquidation in the UK. There has been abundance of debates on the reasons for the collapse of Carillion. According to Smyth (2018), recent contracts that had made thumping losses and the series of related profit warnings, the absence of cash reserves and the presence of mountainous debts, and the low margins it had sought to secure work, had all contributed to the firm’s failure.

Different parties have investigated this case from diverse perspectives, taking into consideration both the government's role and the internal organizational elements which have contributed to the liquidation of Carillion. The House of Commons public administration and constitutional affairs committee (2018) investigated this case, leading to results such as flaws in the way the government awards contracts because of “an aggressive approach to risk transfer”. The report stated that ministers try to spend as little money as possible when awarding contracts while forcing contractors to take unacceptable levels of financial risk (Wearden, 2018). Another parliamentary report states “recklessness, hubris and greed” as the reason for Carillion’s failure, and criticized auditors for lack of identifications of its problems (Wearden, 2018). In this study, our focus is on the internal organizational factors, specifically cultural aspects, which over time have led to the above-mentioned consequences. Thus, it is necessary to briefly discuss the origins of this event. Table 1 presents the financial status of Carillion in shortly prior to the liquidation.

*Table 1. Financial status of Carillion prior and up to liquidation (Mor et al., 2018)*

|  |  |
| --- | --- |
| **Time** | **Event** |
| July 2017 | Carillion announced that its profits would be hit to the tune of £845 million.  |
| July 2017 | The chief executive resigned (No dividends that year) |
| July 2017 | The shares lost 70% of their value over the announcement of the resignation of the CEO  |
| September 2017 | Carillion’s half-year financial statements revealed a total hit to the company’s worth of £1.2 billion – enough to wipe out the profits from the previous eight years put together. |
| 2009 to 2016 | Carillion paid out £554 million in dividends, 75% of the cash made from operations. |
| January 2012 to June 2017 | Carillion paid out £333 million more in dividends than it generated in cash from its operations. |
| December 2009 to January 2018 | Total dept of Carillion increased from £242 million to an estimated £1.3 billion – more than five times the value at the beginning of the decade. |
| January 2018 | Carillion owed around £2 billion to its 30,000 suppliers, sub-contractors and other short-term creditors. Most of them risk getting little or nothing back from the liquidation, due to low priority in the hierarchy of creditors. |

As presented in the table, the big picture reveals that high debts and payment of high dividends despite the low margins, were major and obvious problems in the final phase of the life cycle of Carillion. However, the financial status of the firm, is most probably an effect of the organizational culture and the way things had been done in the firm, over time. According to another report by the House of Commons (2018), although the problems that caused the collapse of Carillion, were long in the making, so was the rotten corporate culture that allowed them to occur. The members of parliament who investigated the case of Carillion believe that the directors of the firm should face disqualification for “being too busy stuffing their mouths with gold to worry about employees” (Scottish Construction Now, 2018).

The May 2018 report of a Parliamentary inquiry by the Business and the Work and Pensions Select Committees said Carillion's collapse was "a story of recklessness, hubris and greed, its business model was a relentless dash for cash” and accused its directors of misrepresenting the financial realities of the business. A separate report by the Public Administration and Constitutional Affairs Select Committee, in July 2018, blamed the UK government for outsourcing contracts based on lowest price, saying its use of contractors such as Carillion had caused public services to deteriorate.

Carillion has been criticized for its aggressive bidding and accounting. ‘Aggressive accounting’ is the practice of declaring revenue and profits based on optimistic forecasts, before the money has actually been made. All is well if the forecasts are correct. But if costs rise and revenues fall (say, because of delays and defects), expected profits turn into actual losses. Because aggressive accounting means declaring profits before receiving the money, it shows up in company accounts as a fall in the actual cash that the company makes compared with the profits it declares. Carillion’s accounts are a case in point.

In its 10 July 2017 profit warning, Carillion announced that it had undertaken ‘an enhanced review of all of the Group’s material contracts’ which resulted in a ‘contract provision of £845m at 30 June 2017’. In other words, Carillion had been £845m too optimistic about its contracts. On 29 September 2017, Carillion’s half-year financial statements revealed a total hit to the company’s worth of £1.2 billion – enough to wipe out the profits from the previous eight years put together.

 The main areas criticized in this report include the following:

1. Considering adequate contributions to the company’s pension schemes, a “waste of money”.
2. Over-optimism of the chairman role which was intended to be a role to challenge.
3. Failure to scrutinize or challenge reckless executives by the company’s non-executive directors.
4. Paying huge amounts of money to big-name firms as internal auditors who failed in their roles.
5. Absence of reliable information for shareholders.
6. Failure of Financial Reporting Council (FRC) to follow up the identified concerns in the Carillion accounts in 2015 leading to directors getting their way.
7. Potential for legal action for wrongful trading or failure to exercise directors’ duties acting as a restraint on the behavior of the board.

Despite all the weaknesses and failure points which were identified in hindsight, according to the House of Commons report on the collapse of Carillion, the firm became a massive unsustainable corporate in a regulatory and legal environment still in existence today. What makes this case and similar cases worth investigating more thoroughly is that fact that the individuals who failed in their responsibilities, in running Carillion and in challenging, advising or regulating it, were often acting entirely in line with their personal incentives.

Carillion’s corporate culture has been branded “wholly deficient” by MPs as an inquiry into the construction giant’s collapse published a report from professional services firm Ernst & Young that revealed “pervasive institutional failings”. Business select committee chairwoman Rachel Reeves said: “The Carillion directors either took their eye off the ball or *they failed to see the warning signs that investors, Carillion staff, and, in this case, EY flagged to them*. “Directors didn’t just drop the ball once*, they made a habit of it*, giving every indication that it was the long-term failings in the management and corporate governance at Carillion which finally sank the company.”

Rachel Reeves, BEIS committee chair and Labour MP for Leeds West, attributed Carillion’s collapse to its “delusional directors” who “drove Carillion off a cliff and then tried to blame everyone but themselves”.

Minutes from a Carillion board discussion of strategy in August 2017 identify “a culture of making the numbers” (hitting targets at all costs) and “willful blindness” among long-serving staff as to what was occurring in the business. The board concluded that the culture of the organization required “radical change”.

What can be referred to as normalized deviance in this case are elements which had become part of the corporate culture, without realizing the potential consequences it would have for the firm in the long run. Based on the information available on this case, we identified the following elements as normalized deviances within this corporation.

1. Living with high debts without generating higher margins
2. Paying big-name firms as internal auditors who failed in their roles
3. Rewarding the senior staff despite the poor performance of the firm

However, in the years leading up to the company’s collapse, the senior staff were paid substantially higher salaries and bonuses while financial performance declined. It was the opposite of payment by results. In fact, not only were the deviant actions and strategies accepted, but they were also promoted and encouraged through high incentives and bonuses, leading to the crisis which followed shortly. This not only reveals an unhealthy corporate culture, but also exposes a regulatory system which allows such practices to become normal within construction corporations.

***The West Metro project in Helsinki, Finland***

The West Metro is a Helsinki metro system extension project to west to the city of Espoo in two phases., The first phase of the project was carried out in April 2007 - November 2017 and the second phase is currently under construction. The final approval for the 13.5 kilometers long first phase route was granted in April 2007 and the actual construction started in 2009. Originally, the extension was planned to be opened in August 2016, but the project was delayed with over a one year and completed in November 2017. Länsimetro Oy was founded by the two cities of Helsinki and Espoo, to act as the constructor company of the extension. The preliminary plans for the project, made already in 2000 and 2001, estimated that the cost of the first phase would be approximately 400 million euros. When City of Espoo decided on the construction of the metro in 2004, the cost was evaluated to be 452 million euros, while in September 2007, the estimated cost had risen to 530 million euros. By January 2008 the estimated cost had risen to over 800 million euros and by February 2014 to about 1 billion euros. The final cost of the project was over 1.2 billion euros. The project faced numerous challenges related to automatization, safety systems, commissioning, project leadership and overall project management of the network of organizations delivering the project. The complex interfaces from the two cities to Länsimetro Oy and from Länsimetro Oy to the main contractor and building contractors caused communication challenges. An external and independent audit that focused on the management and organizing of The West Metro project was carried out by Ernst and Young in 2017. The report was based on the documentation analysis and interviews of the key representatives of the project. A notable finding in the report was that there existed a lot of warning signs of the schedule delays and of the realizing schedule risks already during the relatively early stage of the construction phase. While these issues were regularly brought up in the monthly reports of the main contractor, Länsimetro Oy did not react to them in a decisive manner. In addition, the board of Länsimetro Oy decided not to change the schedule target between April 2014 and June 2015 at all, although the schedule risks were communicated. Already at the beginning of 2016 it was evident that no detailed plans for the commissioning existed and that the project had not reserved enough time for the tests and the commissioning phase. However, it was not until June 2016, when the company announced that the original target of August 2016 will be missed and that it is not possible to specify the opening date for the metro at that time. At this point, the marketing campaign that promoted the opening of the metro in August 2016 had already been launched. The politicians also stated that they were reassured time after time that the metro would be launched in schedule in August 2016. The interviews and documentary analysis also revealed that the board of the Länsimetro Oy, although informed that the deadlines were not realistic, made the decision to keep the original deadlines and not to change them because it was considered that tight schedule targets would support the completion of the project on time. The report states that despite the calculations and realistic estimates made by the professionals in the scheduling workshops about the undeniable schedule and cost overruns, the organization did not change the targets, as doing so would have given a signal for the subcontractors that the schedule and cost targets are flexible. This, however, led to the paralleling of work and fast-tracking of the project, which caused more challenges, which then delayed the project even more. Therefore, it may be that the decision-makers were normalizing the schedule and cost deviance caused by the uncertainty and complexity typically inherent in projects of this size in a manner that denied the possibility for seeing and acknowledging realistically what was happening. The normalization of deviance can be interpreted to have been visible in the responses that actually denied the possibility for delays and the need to take action and start controlling and overseeing the delays in a more decisive manner: although schedule and cost overruns were taking place, no extra resources were assigned to oversee and control these issues, but instead even the separate risk management organization was closed down. Furthermore, based on the evidence can be asked whether the managers have had such a strong will to believe that the unrealistic schedule would be achievable, that they have not been able to interpret and acknowledge the warning signs related to the schedule and costs overruns in an appropriate manner.

In the following section, using the above-mentioned cases, we will discuss the counterproductive managerial practices which, over time, become embedded into the organizational culture, characteristics which puts construction project organizations in a position to fall into the slope of normalized deviances and the contribution of sensemaking in overcoming conditions under which organizations fall into this slope.

1. **Discussion and conclusions**

In this study, we have outlined the concept of normalization of deviance and provided examples of this phenomenon in a construction project contexts. This adds to the existing literature on normalization of deviance that has explored the phenomenon in other non-project-based-contexts such as healthcare. As mentioned earlier, the construction industry is characterized by a high level of competition, complex operations and high level of uncertainty. In addition, the construction industry is fragmented and highly sensitive to economic change. In this study, we have endeavored to investigate the organizational culture within the construction industry, associated with the specific features of its projects, which has over time become established as a normal part of the organizations.

Our focus has been on the deviant counterproductive practices which being a normal part of the organization, do not seem wrong anymore. The complexity of construction projects, which is defined by Williams (2001) as numerous elements in a system and the numerous forms they can relate to each other, can cause common problems such as lack of effective engagement with stakeholders, lack of effective communication and thus mistrust. Features such as large size and complexity can also facilitate corruption in construction industry as well (Locatelli et al., 2016). All in all, these aspects contribute to forming a specific “culture” within the construction industry, known as the norms, values, beliefs and attitudes, which create the intentions for the common behaviors, actions and practices (See Figure 1).

However, not all the actions and behaviors which are common and repeated, are necessarily productive and lead to success. When project organizations repeatedly perform actions or decisions which have the potential to cause disastrous results, significantly violating defined and established standards and rules, without being frowned upon, the phenomenon of normalization of deviance is born. This is where the unaccepted gradually becomes accepted and expected (See Figure 2). Some elements which can be referred to as normalization of deviance include the following:

Cost overrun in a single project, which is seen as a problem in an organization, is not a case of normalization of deviance. But if this becomes a normal part of every project within an organization, without even referred to as a problem and totally acceptable by all organization members, then this can be referred to as normalization of deviance. When it comes to management practices, if there are specific cases where a qualified male worker is preferred over a qualified female worker, perhaps this is not a case of normalization of deviance, but if there are statistics showing that nearly a third of women in the UK construction industry believe that sexism has held them back from pursuing senior roles in construction (according to a new study by the Royal Institution of Chartered Surveyors (RICS)),Clark, 2017), then this is normalization of deviance, as it seems like it is an accepted norm within construction project organizations in the UK.

Based on the investigation within the relevant literature and through the illustrative cases presented in section 4, we can see that several practices were normalized in the discussed organizations. In the case of Carillion, ignoring the profit warnings despite the rising debts without generating higher margins, paying big-name firms as internal auditors who failed in their roles and rewarding the senior staff despite the poor performance of the firm, were normalized counterproductive practices which led the firm to a disastrous condition, going into compulsory liquidation.

In case of The West Metro in Finland, we see a rather similar pattern were the over-optimism of the decision makers and their strong will to believe that the unrealistic schedule would be achievable hindered them from a realistic interpretation and acknowledgement of the warning signs related to the schedule and costs overruns in an appropriate mannern addition to that the lack of extra resources available to oversee and control these issues and even closing down the separate risk management organization reveals that the deviations had become accepted from the organizations side.

For resolving the problem of normalization of deviance, Pinto (2014) suggests both remediation through project governance and reflection through organizational learning. The challenges related to these actions should not be overlooked. For example, organizational learning often faces challenges due to the unique nature of project-based work, which develops barriers and limits that prevent or slow down the transfer and use of knowledge obtained from earlier projects (Bartsch et al., 2013).

In this study, a sensemaking approach has been suggested. An effective sensemaking procedure provides insights into how actors, both individually and in teams, interpret the signs and cues that they perceive to impose meanings and call upon actions within their network of relationships. At an organization level, as mentioned earlier, leaders need to apply sensemaking to understand the origins of the problems such as malfunctioning teams, loss of customers or decreasing profits. At an individual level, sensemaking can help individuals understand the causes of poor performance or lack of effective integration with their colleagues. It is a requirement for performing efficient sensemaking to constantly pay attention to cues and warning signs from the environment, obtain the information and turn it into a useful sensemaking device.

It is important to note that normalization of deviance can itself act as a barrier towards effective sensemaking of possible cues of problems. In the illustrative cases discussed earlier, the problem was *not* the lack of warning signs, but in both cases, the tendency of the leaders and decision makers to *ignore* these cues and signs due to normalized deviances. In other words, the reason for cues of crisis not being identified and acted upon is the lack of an effective sensemaking procedure which is fit for purpose and strong information filters which hinder the decision makers from taking the corrective actions on time.

As presented in Figure 4, there are several filters which the information regarding potential cues need to overcome for the effective corrective actions to be taken. When deviances are normalized, potential areas for future problems are viewed as a normal part of organizational processes thus not monitored, deviance is unrecognized due to assuming that it’s a normal occurrence, there is resistance towards taking possible warning signs into consideration due to the fact that perception of errors is reduced to normal occurrences and the potential for catastrophe and thus actions, due to earlier decisions which resulted in invisible or indiscernible negative effects are overlooked.

The possible elements which can contribute to formation of a more effective sensemaking procedure which will thus act as an early warning system are (Hajikazemi, 2015):

1. Improving formal assessment approaches performed periodically and evaluated independent of parties where the assessment results might harm their interests.
2. Improving internal competences and skills in order to make the optimal choice of success criteria and key performance indicators.
3. Improving the knowledge sharing procedure in order to provide better grounds for identifying possible cues and signs of potential problems.
4. Improving the change management process in order to be able to take better actions when there is a need for rapid changes to prevent or reduce the consequences of problems.
5. Choosing the right stakeholder strategy in order to attain mutual agreement and common view on potential problems and actions which lead to preventing them, among all the project stakeholders.

The authors are aware that such approaches, although seeming obviously effective in hindsight, require an organizational culture which is open and transparent and where appropriate measures are in place to ensure these aspects. Communication and stakeholder engagement are important skills needed. Leaders should smartly influence stakeholders and build on transparent information sharing. It is also important to decide and establish governance arrangements early enough to allow for a smooth relationship to form among stakeholders.

Finally, it is worth mentioning that although the effective sensemaking approaches will contribute to hindering firms facing crisis, establishment of regulatory systems which prevent construction firms from falling into the normalization of deviance trap is crucial. This is also obvious in the two illustrative cases discussed.

Future research implications include exploring normalization of deviance at different levels, large projects, project-based firms and project-based industries. It is of interest to investigate the likelihood of this phenomenon occurring at different levels and whether there are differences regarding what kind of deviations are normalized at each level. Also, it is favorable to look at the pace and patterns of normalization of deviance “spreading” from one project-based firms to another e.g. through management board networks and other social systems.

**References**

Abdul Nifa, F. A. and V. Ahmed, 2010, “ The role of organizational culture in construction partnering to produce innovation” In: Egbu, C (Ed) Procs 26th Annual ARCOM Conference, 6-8 September 2010, Leeds, UK, Association of Researchers in Construction Management, 725-734.

Albright, J. ,2017, “Normalization of Deviance, SOPs are not a suggestion”. Business & Commercial Aviation, January 2017: 40-43.

Ancona, D. ,2012, “Sensemaking, Framing and Acting in the Unknown” in Snook, S., Nohria, N. and Khurana, N. (2012) The Handbook for Teaching Leadership, Knowing, Doing and Being, Sage publications Inc, CA, US.

Ankrah, N.A., D. Proverbs, and Y. Debrah, 2009, "Factors influencing the culture of a construction project organisation: An empirical investigation", Engineering, Construction and Architectural Management, 16(1): 26-47.

Ansoff, I. H., 1984, “Implanting Strategic Management”. Prentice/Hall International Inc., USA.

Arditi, D., 2009, "The risk of contractor default", Proceedings of Fifth International Conference on Construction in the 21st Century (CITC-V), Istanbul, Turkey, 20-22 May: Greenwood Press

Bartsch, V., M. Ebers, I. Maurer, 2013, “Learning in project-based organizations: The role of project teams’ social capital for overcoming barriers to learning”. International Journal of Project Management, 31, 239–251.

Banja, J., 2010, “The normalization of deviance in healthcare delivery”. Business Horizons, 53(2):139-152.

Brown, A.D., I. Colville, A. Pye, 2014, “Making Sense of Sensemaking in Organization Studies”. Organization studies, 36(2): 265-277.

Clark, T. , 2017, “Sexism 'holding back' up to third of women in construction”, available at https://www.constructionnews.co.uk/best-practice/sexism-holding-back-up-to-third-of-women-in-construction/10022050.article, 25.11.2019.

Companies House, Department for Business, Energy & Industrial Strategy, Government of the United Kingdom, 2018, "Carillion PLC (03782379)", Retrieved 22 December 2018. Commencement of winding up: 15 January 2018.

Courtois, C., Y. Gendron, 2017, “The ‘‘Normalization’’ of Deviance: A Case Study on the Process Underlying the Adoption of Deviant Behavior”. Auditing: A Journal of Practice & Theory, 36 (3): 15–43.

Duarte D. L. , N. T. Snyder, 2001, “ Mastering Virtual Teams: Strategies, tools and Techniques that Succeed”, San Francisco, Jossey-Bass Inc.

Ernst and Young , 2017, “Investigation report on West Metro project, the activities of Länsimetro Oy and decision-making related to West metro project”. Ernst and Young, 4.10.2017. https://www.espoo.fi/download/noname/%7BE9AE2538-B0AF-44E1-81F1-BA721E148A41%7D/93780

Fellows, R., A.M.M, Liu, 2016, “What does this mean? Sensemaking in the strategic action field of construction”. Construction Management and Economics, 35(8-9): Social Networks in Construction.

Flyvbjerg, B., M.S., Holm, S. Buhl, 2002, “Underestimating costs in public works projects: error or lie?”. Journal of the American Planning Association 68, 279–295.

Flyvbjerg, B., M.Garbulo, D. Lovallo, 2009, “Delusion and deception in large infrastructure projects: two models for explaining and preventing executive disaster”. California Management Review 51, 170–193

Gacasan, E.P.M., M.W. Wiggings, B. J. Searle, B.J., 2015, “The role of cues in expert project manager sensemaking”. Construction Management and Economics, 34 (7-8) Theorizing Expertise in Construction: 492-507.

Garemo, N., S. Matzinger, R., Palter, 2015, “Megaprojects: the good, the bad, and the better”, available at:
http://www.mckinsey.com/insights/infrastructure/megaprojects\_the\_good\_the\_bad\_and\_the\_better, 12.12.2018.

Hajikazemi, S., 2015, “The Early Warning Procedure; Foundations, Approaches and Challenges”. Doctoral Dissertation, Norwegian University of Science and Technology, Trondheim, Norway.

Hajikazemi, S., B., Andersen, O.J., Klakegg, 2015, “Barriers against effective responses to early warning signs in projects”. International Journal of Project Management 33 (2015): 1068–1083.

Hill, R. C., M. Levenhagen, 1995, “Metaphors and mental models: Sensemaking and sensegiving in innovative and entrepreneurial activities”. Journal of Management, 21(6):1057–1074.

Hofstede, G., 2001, Culture’s Consequences: Comparing values, behaviors, institutions, and organizations across nations, Sage Publications, Thousand Oaks, CA.

House of Commons, Business, Energy and Industrial Strategy and Work and Pensions Committees ,2018, “Carillion, HC 769”. Published on 16 May 2018 by authority of the House of Commons.

Jennings, W., 2012, “Why costs overrun: risk, optimism, and uncertainty in budgeting for the London 2012 Olympic Games”. Construction Management and Economics 30, 455–462

Johnston, M.P., 2014, Secondary Data Analysis: A Method of which the Time Has Come, Qualitative and Quantitative Methods in Libraries (QQML) 3:619-626.

Kajewski, S., M. Sherif, P. Tilley, Crawford, J. Chen, S., Lenard, D., Brewer, G. and Gameson, R., Martins, R., Sher, W., Kolomy, R., Weippert, A., Caldwell, G., Haug, M. ,2001, “State of the Art Report into the use of ICPM in the Construction Industry”. Technical Report 2001-008-C-01, CRC-CI, QUT.

Kangari, R., 1988, “Business failure in construction industry". Journal of construction Engineering and Management, 114 (1988): 172-190.

Latham, M. ,1994, Constructing the Team, Joint Review of Procurement and Contractual Arrangements in the United Kingdom Construction Industry, Final report, Department of the Environment, UK.

Lines, B.C., K.T., Sullivan, J.B. Smithwick, J. Mischung, 2015, “Overcoming resistance to change in engineering and construction: Change management factors for owner organizations”. International Journal of Project Management, 33(2015):1170-1179.

Locatelli, G., M. Mancini, M., E. Romano, 2014, “Systems engineering to improve the governance in complex project environments”. International Journal of Project Management, 32 (8): 1395-1410.

Locatelli, G., M., Giacomo, T., Sainati, M., Greco, 2016, “Corruption in public projects and megaprojects: There is an elephant in the room!”. International Journal of Project Management, 35( 3) : 252-26.

Lovallo, D., D. Kahneman, 2003, “Delusions of success: How optimism undermines executives’ decisions”. Harvard Business Review, July 2003, 56–63.

Maitlis, S., 2005, “The social processes of organizational sensemaking”. Academy of Management Journal, 48: 21-49.

Maitlis, S., M., Christianson, 2014, “Sensemaking in Organizations: Taking Stock and Moving Forward”. The Academy of Management Annals, 8(1): 57–125.

Malik M.A.K., P., McDermott, W., Swan, 2007, “Building trust in construction projects”. Supply Chain Management: An International Journal, 12 (6): 385-391.

Mochtar, K., D. Arditi, 2001, “Role of marketing intelligence in making pricing policy in construction”. Journal of management in Engineering, 17 (2001): 140-148.

Mokhtariani, M., M.H., Sebt, H., Davoudpour, 2017, “Characteristics of the Construction Industry from the Marketing Viewpoint: Challenges and Solutions”. Civil Engineering Journal, 3(9): 701-714.

Mor, F., L., Conway, D., Thurley, L., Booth, 2018, “The collapse of Carillion”. Briefing Paper Number 8206, 14 March 2018, The House of Commons Library research service, UK.

Nikander, I.O., 2002, “Early warnings: A phenomenon in project management”. Unpublished doctoral dissertation. Helsinki University of Technology, Espoo, Finland.

Pinto, J.K., 2006, “Organizational governance and project success: lessons from Boston's Big Dig”. Presentation at: Concept Symposium — Principles of Governance of Major Investment Projects, Trondheim, Norway.

Pinto. J.K. ,2014, “Project management, governance, and the normalization of deviance”. International Journal of Project Management 32 (2014): 376–387.

Pryke, S. 2012, “Social Network Analysis in Construction”. John Wiley and Sons Ltd, the Autrium, Southern Gate, Chichester, West Sussex, UK.

Rouleau, L., 2005, “Micro-practices of strategic sensemaking and sensegiving: How middle managers interpret and sell change every day”. Journal of Management Studies, 42(7):1413–1441.

Reason, J., 1999, “Human error”. Cambridge, UK: Cambridge University Press.

Sadri, G., B., Lees, 2001, “Developing corporate culture as a competitive advantage”. Journal of Management Development, 20 (10): 853-859.

Schmiedel, T., J., Brocke, J. Recker, 2015, “Culture in Business Process Management: How Cultural Values Determine BPM Success” In vom Brocke, Jan & Rosemann, Michael (Eds.) Handbook on Business Process Management 2: Strategic Alignment, Governance, People and Culture. Springer, Berlin Heidelberg, 649-664.

Schneider, B., 2000, “The psychological life of organizations” in Ashkanasy, N. (Ed.), Handbook of Organizational Culture and Climate, Sage Thousand Oakes, CA.

Schneider, W.E., 2000, “Why good management ideas fail: the neglected power of organizational culture”. Strategy & Leadership, 28(1): 24-29.

Scottish Construction Now, 2018, “Carillion’s Board to blame for ‘rotten corporate culture’ that led firm’s failure, say MPs”, Available at

https://www.scottishconstructionnow.com/article/carillions-board-blamed-for-rotten-corporate-culture-that-led-firms-failure-say-mps, accessed 23 November 2018.

Smyth, H., 2018, “Castles in The Air? The Evolution of British Main Contractors”. © 2018 Hedley Smyth, The Bartlett School of Construction and Project Management, UCL.

Starbuck, W.H., F.J. Milliken, 1988, “Challenger: fine-tuning the odds until something breaks”. Journal of Management Studies 25, 319–340.

Tarawneh, S.A., 2014, “Marketing for Service Quality-Contractors' Perception: UAE Case Study”. European Journal of Business and Management, 6 (2014): 94-101.

Vaughan D., 1996, “The Challenger Launch Decision. Risky Technology, Culture, and Deviance at NASA”, Chicago, IL: University of Chicago Press, USA.

Wearden, G., 2018, "Carillion collapse exposed government outsourcing flaws” report, Available at: https://www.theguardian.com/business/2018/jul/09/carillion-collapse-exposed-government-outsourcing-flaws-report, accessed 20 December 2018.

Weick, K. E. , 1985, “ Cosmos vs. chaos: Sense and nonsense in electronic contexts”. Organizational Dynamics, 14(2) :51–64.

Weick, K. E. , 1995, “Sensemaking in organizations”. Thousand Oaks, CA: Sage.

Williams,T., O.J., Klakegg, D.H.T., Walker, B., Andersen, O.M., Magnussen, 2012, “Identifying and acting on early warning signs in complex projects”. Project Management Journal, 43(2): 37–53.

Williams, T. M. , 2001, “|Modeling complex projects”, John Wiley & Sons: Chichester, UK.

1. Compulsory liquidation is a court-based procedure through which company assets are realized for the benefit of creditors. [↑](#footnote-ref-1)