Impact Factors For Innovative Work Behavior in The Public Sector

The case of the Dutch Fire Department

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Management Summary

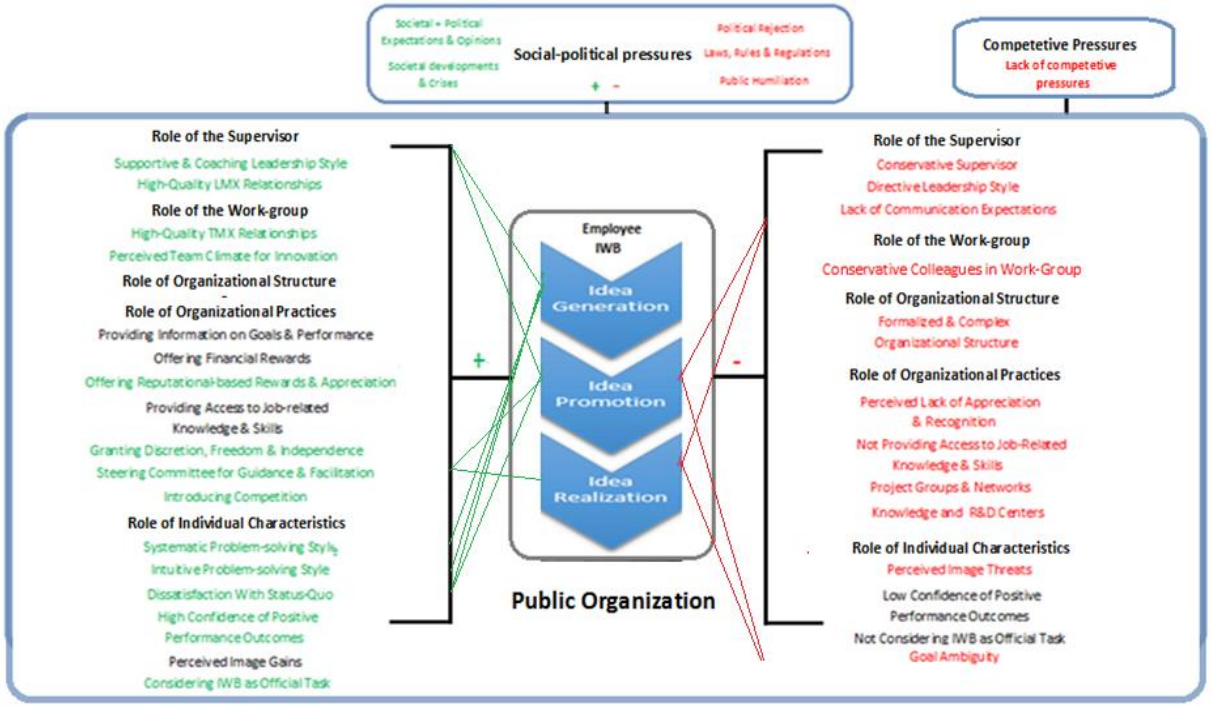
This paper focuses on the stimulation of individual innovative work behavior within the public sector. Employee innovative work behavior (IWB), which is described throughout this paper as *all individual actions directed at the generation, processing and application/implementation of new ideas regarding ways of doing things, including new product ideas, technologies, procedures or work processes with the goal of increasing the effectiveness and success of organizational processes,* is often argued to be an important asset for firms pursuing innovativeness and as a determinant for success in dynamic environments. Scholars studying the process of individual innovation within the public sector encountered that IWB is likely to be restrained by more barriers and to an larger extend in public organizations than in private organizations. Several issues contribute to the fact that within the public sector, the success and effectiveness of initiatives meant to foster IWB can be inhibited, indicating that public firms in general are likely to be unable to adapt to their dynamic environments and to deliver their services efficiently and effectively. Studies explicitly determining factors and practices concerning how to stimulate such behavior as well as how to ensure that it is not restrained within public organizations are limited though, demanding more insights to decrease this knowledge gap. The goal of this study is to do so through determining impact factors for public employee IWB.

In order to do so, an exploratory case study consisting out of several data collection methods has been conducted within a typical example of an public organization. The organization, purposively selected for this exploratory case study, is the Dutch Fire Department. First, document analyses have been performed in order to check the nature and influence of the formal organizational vision and goals with regard to firm innovativeness and employee IWB, their communication throughout the firm under study and official organizational practices on public employee IWB. Second, unstructured interviews have been conducted with members of the firms' management in order to check the formal guidelines and communications towards the work floor, the extent to which they stimulate employee IWB and to what extent and how the respondents perceive that IWB is restrained within the current setting. Semi-structured interviews have been conducted with fire fighters and their supervisors in order to determine their perceptions and behaviors regarding antecedents and inhibitors of IWB within the firm under study. Semi-structured interviews have also been conducted with employees previously having submitted and championed an innovative initiative in order to discover stimulating and restraining factors during innovative processes, as experienced by project champions. Finally, training sessions have been attended in order to observe how innovative behavior is stimulated and promoted through the use of training and development practices.

These data-collection methods have resulted in the identification of several impact factors for public employee IWB as well as the nature of their influence on the IWB process. The identified factors concern the roles of the supervisor, the work-group, organizational structure, organizational practices and individual characteristics. Depending on their nature, each of these factors are capable of stimulating as well as restraining the individual IWB process of public employees. Among others, it has been found that positive effects on public employee IWB are associated with social and political developments and expectations favorable of innovation, the adoption of supportive and coaching leadership styles, high quality LMX relationships, a team climate for innovation, high-quality TMX relationships, offering reputational rewards, appreciation and recognition, granting freedom and discretion, introducing competition and central steering and facilitation within the firm, the presence of dissatisfaction with the status quo, high confidence that

performance outcomes are associated with conducting in IWB and the considering of the development and implementation of innovative efforts as a part of the official job description and responsibilities. Also, it was found that restraining effects on public employee IWB are associated with rejection of innovative projects by political actors, the content of rules and regulations, a lack of competitive pressures, a conservative attitude of the direct supervisor, the adoption of directive leadership styles, a lack of communication of supervisory expectations, conservative colleagues in the work-group, a complex organizational structure, a perceived lack of appreciation, low provision of job-related knowledge and skills, the establishment of project groups, networks and knowledge centers, perceived image threats associated with conducting in IWB and goal ambiguity.

A comprehensive oversight of all findings with regard to impact factors for public employee IWB is displayed below. This comprehensive framework describes the broad impact factors identified, whether their impact is negative or positive as well as whether they influence specific stages of the IWB process or the process as a whole. Also, it specifies how the factors influence public employee IWB, thereby illuminating the process of stimulating IWB in the public sector. The impact factors are internal as well as external to the organization.



This study offers multiple theoretical and practical contributions. Firstly, this study offers a comprehensive framework describing antecedents of public employee IWB and the nature of their influence, each constituting propositions for future research. More studies are needed validating these propositions and improving them when needed as well as enriching our understanding about the reasons for the existence of these relationships. This study also offers new insights by pointing to the influence of a number of impact factors on specific stages of the employee IWB process. Thirdly, this study has identified multiple differences between the process of stimulating employee IWB in the public sector and in the private sector. Studies validating these findings and further enriching our understanding about these differences are highly welcome. In doing so, this study contributes to the decreasing of the knowledge gap with regard to the stimulation of IWB within the public sector and answers to the explicit call made for papers on the effective implementation of HRM in the public sector as well as for papers on differences between the IWB process in the manufacturing and service sectors. Finally, this study adds value

through illuminating the process of stimulating IWB within fire departments and pointing to the differences between individual innovative processes within public firms considered as essential service providers and other public firms, giving rise to the possibility that (IWB) research within the public sector needs to be segmented. Studies further investigating this proposition might significantly increase our understanding about organizational processes within the public sector. This study also offers a large number of practical recommendations towards public managers as well as managers of fire departments specifically desiring to increase the innovativeness of their firms and the IWB of their subordinates. In doing so, this study offers a practical manual towards public managers to be used during the stimulation of public employee IWB. Validation of these implications and recommendations is needed, testing their use and value.

Acknowledgements

Ever since I started with my Bachelor studies, I was fascinated by the phenomenon of organizational change and the fact that all organizations, either small one-man businesses or massive multinational corporations, change inevitably over the years. The skill and competence to look outside the organization, towards competitors, customers, political stakeholders as well as societal and political developments and to reshape the organization, either public or private, to fit these contingencies and to maintain outstanding performance, is a skill and competence I admire at heart and of which I can only dream of to possess it someday. At the core of making organizational change happen lies the hart of every organization: people. This is where my interest in Human Resource Management comes in. Without the right involvement of every firms' most important asset, not a single organizational change will reach its success. Regardless of the quality and state-of-the-artness of a firm's marketing- or sales strategy, it are the employees who ultimately determine the success of organizations. Therefore, I decided to extend my knowledge on the disciplines of Human Resource Management and change management.

Though the topic of Innovative Work Behavior is not directly linked to the discipline of Human Resource Management, the practice of stimulating this behavior is. Focusing on this topic allowed me to combine the knowledge and skills obtained during my bachelor studies with knowledge and skills obtained during the Master program. It has been a privilege to be able to be a part of such a complex organization such as the Dutch Fire Department for six months and to discover how the process of organizational change runs in such organizations. I am very grateful that the IFV offered me the opportunity to do so. This internship constituted my first prolonged engagement within a public organization which allowed me to discover the nature of the public sector and the art of true intrinsic motivation. Taking everything into account, it has been an interesting and challenging journey and an experience which allowed me to learn a great number of things.

First of all, I would like to sincerely thank Anna Bos-Nehles for introducing me to her contacts within the Dutch Fire Department and for her outstanding provision of support and facilitation when needed. I am convinced of the fact that she helped me to get the best out of myself and that without her help, I would not be able to deliver this Thesis in the way it currently is. I would also like to express my gratitude to The Dutch Fire Department and the IFV for offering me the opportunity to conduct my Thesis on such an interesting topic. I especially want to thank Emanuel Borninkhof, who supervised this project on behalf of the IFV, for the valuable advice and support he gave during the execution of my project and for the interesting experiences he offered me. I also would like to thank the ATLV team and especially Renée Oprel for their support and guidance through the offering of feedback and suggestions and the arranging of contacts. My gratitude also goes to Tanya Bondarouk, who provided outstanding feedback on my workings allowing me to take my Thesis to the next level. Finally, my appreciation goes to all the employees of the Dutch Fire Department who participated in this study for providing me with honest, qualitative information and valuable contributions to this research.

To conclude, special thanks goes out to my dearest parents Hans and Angelique, for unconditionally demonstrating their support during good and hard times. Remaining positive during the darkest hours is not easy nor self-evident. However, you have shown otherwise and though you indicate how proud you are often, it really is me who should be proud at you.

"There are no limitations to the mind except those we acknowledge. The world of imagination is litmitless"

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1. Introduction

Nowadays, the importance of innovation for organizational effectiveness is widely accepted (i.e. Van de Ven, 1986; Janssen et al., 2004; Woodman et al., 1993; Yuan & Woodman, 2010). The ability to continuously innovate products, services, technologies and work processes is argued to be crucial for the competitive advantage of organizations in the private sector (de Christensen, 1997; Fagerberg et al., 2006; Jong & den Hartog, 2010; Porter, 1985) as well as the public sector (Bartos, 2003; Breul & Kamensky, 2008; Pollit & Bouckaert, 2004; Borins, 2008; Damanpour et al., 2009; Walker & damanpour, 2008). In general, innovation studies have dealt with the management of innovation at the levels of organizations, work groups, networks and individuals (King & Anderson, 2002), determining several practices, mechanisms and factors stimulating or inhibiting the development and implementation of new products, technologies and work processes.

Employee innovative work behavior (IWB), which is described as the development, adoption and implementation of new ideas for products, technologies and work methods by employees (Yuan & Woodman, 2010) is often argued to be an important asset for firms pursuing innovativeness and as a determinant for success in dynamic environments (Kanter, 1983). This importance is caused by the fact that the origin as well as the consumption of innovation lies with individuals , causing individuals' actions to be of crucial importance for the continuous improvement of business processes and products (Van de Ven, 1886; Janssen, 2000). This conclusion is generally drawn not only in the academic literature on innovation, but is also found in the domains of total quality management (McLouglin & Harris, 1997) and corporate entrepreneurship (Sharma & Chrisman, 1999)

Several factors have been studied as stimulators of -or barriers towards- individual innovative behavior including organization culture and climate (Scott & Bruce, 1994), the interaction between subordinates and supervisors (Janssen & Van Yperen, 2004), job characteristics (Oldham & Cummings, 1996), social group context (Munton & West, 1995), individual differences (Bunce & West, 1995) and intermediate psychological processes that explain how different individual and contextual antecedents affect innovative behavior (Yuan & Woodman, 2010). Examples of such psychological processes are an individual's intrinsic interest in his/her task (Amabile, 1996; Woodman et al., 1993) and expected payoffs (Far and Ford, 1990). These studies have led to the development and testing of several conceptual models meant to predict relationships between such factors and employee innovative behavior (i.e. Farr & Ford, 1990; Scott & Bruce, 1994; West & Farr, 1989; Yuan & Woodman, 2010).

Scholars studying the process of individual innovation within the public sector encountered that innovative work behavior is likely to be restrained by more barriers and to an larger extend in the public sector than in the private sector (Borins, 2001; Damanpour & Schneider, 2009; Fernandez & Moldogaziev, 2012; Rainey & Bozeman, 2001; Rainey, 2009; Walsch, 1995). Several issues, or barriers, contribute to the fact that within the public sector, the success and effectiveness of initiatives meant to foster employee innovative behavior can be inhibited. One of those barriers is the fact that in general, public firms lack competitive pressures vis-à-vis private firms (Verhoest et al., 2007), taking away an important trigger towards managers and policy-makers to stimulate the innovativeness of, and IWB within, their firm. Another barrier is the generally low distinction between costs and benefits of the individual innovation process within public organizations. On the one hand, rewards for successful innovations in the public sector are relatively low, caused by the absence of venture capitalists funding public management innovations, the lack of share ownership opportunities and the generally fixed nature of salaries with miniscule

bonuses vis-à-vis the private sector (Borins, 2001). On the other hand, consequences for costly, unsuccessful innovations can be severe; with the media and oppositions always being willing to expose public sector failures and publicly humiliate public servants (Borins, 2001). As strong image risk-perceptions vis-à-vis image-gains perceptions are likely to restrain innovative and creative behavior rather than stimulating it (Yuan & Woodman, 2010), this low distinction between costs and benefits may pose a serious barrier towards IWB within public organizations. A high general fear of public sector failure led to strict central agency controls meant to minimize corruption and to ensure that public processes run smoothly. This process and the lack of internal and external pressures for innovation and improvement created bureaucratized, formalized and hierarchical organized systems, characterized by several formal mechanisms, a high adoption of rules and regulations and the usage of budget-based control systems which are unable to adapt to their dynamic environments and to deliver their services efficiently and effectively (Walsch, 1995).

The challenges and difficulties within public organizations with regard to the stimulation of innovative work behavior can be analyzed and understood from another point of view through adopting a contingency perspective. Contingency theorists have developed and empirically tested several relationships between contingencies such as organizational strategy and technology and organizational structure (Chandler, 1990 ;Miles et al., 1978; Porter, 1980; 1985). When analyzing the propositions developed by these theorists, it can be concluded that the contingencies surrounding most public sector firms cause their managers to adopt organizational structures which are relatively unfavorable towards innovative work behavior and its stimulation. For example, it is often argued that firms having adopted prospector, analyzer-, (Miles et al., 1978) or differentiation-(Porter,1980;1985) strategies generally have adopted organizational structures which are highly oriented towards firm innovativeness due to their high focus on flexibility and their low degrees of formalization, standardization and decentralization (Robbins & Barnwell, 2006). The nature of most public firms, however, cause them to generally adopt strategies which can rather be described as reactor (Miles et al., 1978) and cost-leadership (Porter, 1980; 1985) strategies (Boyne & Walker, 2004; Rainey and Steinbauer 1999; Wechsler & Backoff, 1986). Indeed, studies have argued that public agencies are more likely to have strategy content forced on them (Bozeman & Straussman, 1990; Nutt & Backoff, 1993) and that they are more likely to be regulated highly by their political sponsors (Hood et al., 1999) through mechanisms such as performance indicators, planning systems, inspections, audits and budgetary controls (Ashworth et al., 2002). This creates limits on their ability to make strategic decisions, inhibits entrepreneurial behavior (Boyne & Walker, 2004) and creates a high need to be responsive to the shifting demands of external stakeholders (Rainey, 2009). Therefore the adoption of a prospector strategy may be perceived as extremely eager to take risks and the adoption of a defender strategy as being too reluctant to respond to pressures for change within the public sector (Boyne & Walker, 2004). Because of these considerations, several scholars have argued that public organizations are more likely to adopt reactor orientations rather than the other strategic orientations, especially whenever regulation is high (Boyne & Walker, 2004; Rainey and Steinbauer 1999; Wechsler & Backoff, 1986). Another proposition made within contingency theory is that the adoption of non-routine technologies is related to a low extend of formalization, less rigid control rules, job descriptions and regulations (Hage & Aiken, 1969; Perrow,1967; Van de Ven & Delbecq, 1974; Van de Ven et al., 1976; Woodward, et al., 1965), and higher degrees of flexibility (Perrow, 1967) teamwork and communication (Robbins & Barnwell, 2006). These structural characteristics, corresponding to the adoption of non-routine technologies, are generally argued to be favorable of innovation and innovative

work behavior (Scott & Bruce, 1994; Yuan & Woodman, 2010). However, two characteristics of public organizations give rise to the presumption that, in general, these firms have adopted routine technologies. First, problem analyzability within the public sector is generally high due to the high usage of regulations and prescriptions and the high provision of trainings and manuals towards public employees in order to minimize corruption and to make sure that they act according to official policy. Second, the facts that tasks are generally specified to a large extend within public firms, making every public employee and every department responsible for one little aspect of the total process and that whenever exceptions arise, tasks are generally transferred to the colleague responsible for that specific tasks, indicate that task variability may generally be low within public organizations. Community services, for example, are well-known for their high division of labor, in which every employee deals with a small aspect of the community service. Following the typology of Perrow (1967) this leads to the conclusion that, in general, public firms have adopted routine-technologies, resulting in organizational structures with high degrees of formalization and low degrees of flexibility (Rainey & Bozeman, 2001; Rainey, 2009). Thus, the contingencies with regard to strategy and technology, relevant for most public firms, cause their managers and policy-makers to adopt organizational structures which are, in general, unfavorable towards IWB and its stimulation. These organizational structures may not solely decrease the need for innovative behavior within public firms, but can also significantly inhibit the adoption and stimulation of employee innovative work behavior.

This high risk/reward ratio, the high level of goal ambiguity and the relatively high degree of formalization and bureaucratization, generally relevant for public sector firms vis-à-vis private sector firms, might inhibit individual innovative efforts severely (Rainey & Bozeman, 2001; Rainey, 2009; Fernandez & Moldogaziev, 2012). Also, they may lead to adverse selection, with highly innovative individuals rejecting careers in this sector and choosing for private firms (Borins, 2001). Taking these considerations into account, several scholars have argued that, within the public sector, multiple possible factors exist giving rise to challenges restraining the IWB of employees (Borins, 2001; Damanpour & Schneider, 2009; Fernandez & Moldogaziev, 2012; Rainey & Bozeman, 2001; Rainey, 2009; Walsch, 1995). In a world in which continuous improvement and innovation is becoming more and more important, and in a sector in which firms have to cope with increasing cutbacks in financial resources while simultaneously heaving to deal with increased demands for public services (Gené-Badia et al., 2012; Taylor-Gooby, 2012) these barriers to innovation may cause severe problems for the future performance and survival of public organizations.

This paper focuses on the stimulation of individual innovative work behavior within the public sector. Though several studies have focused on public sector challenges and barriers with regard to innovative behavior, studies explicitly determining factors and practices concerning how to stimulate such behavior and how to ensure that it is not restrained within the public sector are limited, demanding more insights to decrease this knowledge gap. As most public organizations are under increasing pressure to improve their service quality and safety while at the same time to optimize their efficiency levels (Veld et al., 2010; Decramer et al., 2013; Knies et al., 2015), the importance of developing and implementing more efficient technologies and work processes is likely to become essential for the future performance and survival of public organizations. This introduces the importance for public managers to determine to what extent the above described barriers apply within their setting and how the innovative behavior of their employees can be increased. In order to do, insight into the factors influencing public employee IWB and the

way in which they exert this influence is needed. Therefore, the central research question posed here is the following:

Which factors stimulate and inhibit innovative work behavior within public organizations?

The structure of this paper is as follows: First, existing literature will be analyzed in order to determine impact factors for innovative work behavior, as proposed by scholars in previous studies. These insights are to result into the development of a preliminary conceptual framework displaying impact factors for IWB within the public sector. Next, an exploratory case study consisting out of several data collection methods will be conducted within a typical example of an public organization in order to identify which factors stimulate and inhibit the generation, championing and implementation of innovative efforts within this setting and how the management of the firm under study stimulates IWB. The organization, purposively selected for this exploratory case study, is the Dutch Fire Department. Document analyses have been performed in order to check the formal organizational vision and goals with regard to firm innovativeness and employee IWB, the nature of their communication throughout the firm under study and the official practices possibly influencing employee IWB. Unstructured interviews have been conducted with members of the firms' management in order to check the formal guidelines and communications towards the work floor, the extent to which they stimulate IWB and whether and how the respondents perceive that IWB is restrained. Semi-structured interviews have been conducted with fire fighters and their supervisors in order to determine their perceptions and behaviors regarding antecedents and inhibitors of IWB within the firm under study. Semi-structured interviews have also been conducted with employees previously having submitted and championed an innovative initiative in order to discover stimulating and restraining factors during innovative processes, as experienced by project champions. Finally, training sessions have been attended in order to observe how innovative behavior is stimulated and promoted through the use of training and development practices. These data collection methods have ultimately led to conclusions on impact factors for the generation, championing and implementation of innovative efforts by individual employees in the public sector, describing what the most important antecedents of public employee IWB are, what the nature of their influence on the IWB process is and how they exert it. Also, they have led to conclusions on how these impact factors differ from those influencing IWB in the private sector and what the implications of these insights for public managers in search for firm innovativeness are.

In doing so, study provides academic as well as practical value. Academic value is offered by the development of a comprehensive framework describing impact factors for public employee IWB constituting propositions for future research. Value is also provided by the specification of differences between the process of stimulating employee IWB within private organizations and public organizations. In doing so, this study contributes to the decreasing of the knowledge gap with regard to the stimulation of IWB within this specific sector and answers to the explicit call made for papers on the effective implementation of HRM in the public sector (Knies et al., 2015) as well as for papers on differences between the IWB process in the manufacturing and service sectors (Bonesso & Tintorri, 2014). Finally, as studies on the stimulation of innovative behavior within fire departments are lacking, this study offers valuable preliminary insights to this unexplored domain. Practical value for managers of fire departments as well as for public managers in general is delivered by the determination of important impact factors for innovative behavior in a real-life setting and the provision of practical recommendations towards public managers regarding how to stimulate innovative work behavior within the public sector as well as how to prevent that IWB is restrained within public organizations.

2. Antecedents of Employee Innovative Work Behavior

2.1 Individual Innovative Work Behavior defined

2.1.1 Definition

Definitions of individual innovative work behavior (IWB) have been recorded extensively. Hurt et al., (1977) described individual innovativeness as a generalized willingness to change. In search for a more explicit definition, Farr and Ford (1990) described IWB as an individual's behavior that aims to achieve the initiation and intentional introduction of new and useful ideas, products or procedures. Quite similar, Kleyson and Street (2002) defined innovative behavior as "all individual actions directed at the generation, introduction and or application of beneficial novelty at the organizational level" (p. 285), and argued that "such beneficial novelty might include the development of new product ideas or technologies, changes in administrative procedures aimed at improving work relations or the application of new ideas or new technologies to work processes intended to significantly enhance their effectiveness and success" (p.285). Yuan and Woodman (2010) conceptualized innovative behavior as both the generation and introduction of new ideas and the realization or implementation of new ideas. Based on these notions, individual innovative work behavior (IWB) is defined here as:

all individual actions directed at the generation, processing and application/implementation of new ideas regarding ways of doing things, including new product ideas, technologies, procedures or work processes with the goal of increasing the effectiveness and success of organizational processes.

This behavior does not solely entails coming up with new ideas and developing the desire and behaviors to implement them, but also a general willingness to adopt other's new ideas rather than resisting them. Thus, in short, an employee having adopted and integrated the IWB philosophy automatically improves aspects of his or her working environment whenever opportunities to do so are spotted and is generally willing to adopt improvements posed by colleagues or others outside the organization.

2.1.2 The Employee IWB Process

Close to the concept of IWB is that of creative behavior, referring to behavior contributing to the generation of ideas that are both novel and useful (Amabile, 1988; Oldham & Cummings, 1996). Creative behavior is generally described as one aspect of IWB because innovative behavior not only includes individual novel idea generation, but also adopting other's ideas that can be described as novel to the firm or work unit (Woodman et al., 1993). Furthermore, creative behavior solely concerns new idea generation, while IWB includes both the generation and implementation of new ideas (Shalley; 2004, Zhou; 2003). The same distinction is generally made between invention and innovation, with invention emphasizing the generation and construction of new concepts or artefacts and innovation emphasizing the commercialization, or bringing into use of such artefacts (Conway & Steward, 2009).

Building on this process-oriented, multi-dimensional notion of IWB, several studies have focused on the operationalization of the IWB construct and the identification of specific steps within this process. For example, Scott and Bruce (1994) distinguished between idea generation, idea promotion and idea realization, while de Jong and den Hartog (2010) concluded on idea exploration, idea generation, idea championing and idea implementation. Finally, Kleysen and Street (2002) concluded that the process of IWB consists out of opportunity exploration, generativity, formative investigation, championing and application. For a number of reasons the operationalization of Scot and Bruce (1994)

is adopted here, implying that the IWB process can be described as consisting out of the steps of idea generation, idea promotion and idea realization. First, this operationalization clearly distinguishes between the distinct steps, posing three separate activities without any overlap between them. Second, though several models posing more than three dimensions have been developed later, empirical evidence regarding their validity often is weak, with multiple dimensions being rejected later on. For example, Kleyson and Street (2002) discussed that "the results of the previous analysis do not lend empirical support for the factor structure hypothesized in this paper" (p. 291) and that "the measurement model used to operationalize the five dimensional model could be improved" (p.291). The large number of studies having adopted and applied the model of Scot and Bruce (1994) –including, for example, Bunce and West (1995), Spreitzer, (1995), Basu and Green (1997) and Janssen (2004)- and the absence of conclusions rejecting its validity feeds the proposition that currently, this operationalization is the most valid one; or at least, the one with the least number of critiques. Using the model of Scott and Bruce (1994), the IWB process is displayed in figure 1.

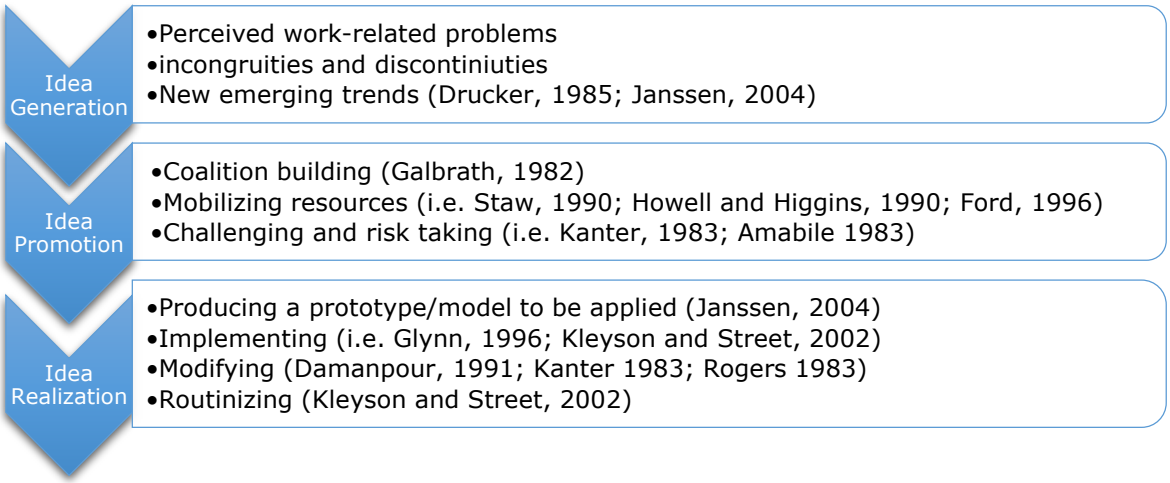

Figure 1: *The individual Innovative Work Behavior process (content partly extracted from Kleysen & Street (2002))*

The start of an individual innovation process is often concerned with the discovery of an opportunity or some problem arising (de Jong & Den Hartog, 2010) and "the trigger may be a chance to improve conditions or a threat requiring immediate response" (p. 24). Examples of sources of opportunities include failures or events, gaps between 'what is' and 'what should be', changes in industrial or market structures and trends, new knowledge or process needs in reaction to identified problems or failure (Drucker, 1985). Idea exploration and generation includes looking for ways to improve current products or processes or solving problems through trying to think about them in alternative ways and to combine or reorganize information and existing concepts (de Jong & Den Hartog, 2010). This is referred to by Kanter (1988) as kaleidoscopic thinking, which he argued is the process of rearranging already existing pieces into a new whole. An example of such idea generation was the revolutionary idea of fire fighters to use hoses rather than buckets to transport water to fires, of which it is generally claimed that it arose from both the need to improve the slow, labor intensive and relatively unsuccessful process of people passing buckets with water and new technologies regarding water hoses, fire plugs and the fast transportation of water.

Whenever a new idea has been generated, it has to be promoted and championed as it generally demands a change in the current ways of doing business which can be resisted

against (Janssen, 2003). This often implies that a strong coalition needs to be built (Galbrath, 1982), resources are to be mobilized (i.e. Staw, 1990; Howen & Higgins, 1990; Ford, 1996), the right people are to be involved (Howell et al., 2005) and risks need to be taken (i.e. Kanter, 1983; Amabile 1983) as for most ideas it is not clear whether their benefits will exceed the cost of developing and implementing them and resistance to change often occurs (Kanter, 1988). In the case of the revolutionary fire hose, described above, such championing was needed to a less extend due to its obvious and undeniable improvements to the former work processes and the improved ability to extinguish fires. For new ideas having less obvious impacts on work processes or outputs, championing is likely to be more important.

Finally, implementing new ideas involves activities such as producing a prototype or model of the new product, technology, process or way of doing things (Janssen, 2004) and implementing it while adopting a result oriented attitude (i.e. Glynn, 1996; Kleyson and Street, 2002). Also, it involves testing and modifying the prototype when needed (Damanpour, 1991; Kanter, 1983; Rogers, 1983) and routinizing the new way of doing things (Kleyson and Street, 2002) in order to make the innovation part of regular work processes of work groups or entire organizations (de Jong & Den Hartog, 2010). Thus, the concluding step of the IWB process is concerned with the actual production, testing and implementation of the innovative effort.

2.2 Impact Factors for Individual IWB: In Search For Antecedents

Several studies focused on impact factors for the process of individual IWB within firms. These factors vary from those internal within- to those external to the organization, from the work group level to the level of individual characteristics and preferences and from the interaction between subordinates and supervisors to interactions among subordinates. Though some of these studies have been focused on public organizations, the majority of studies on IWB have been focused on the private sector and private sector employees.

2.2.1 External Antecedents of Individual Innovative Work Behavior

Certain external, or contextual factors are generally argued to put pressures on general management to stimulate innovate behavior within their firm. Due to these factors, organizational managers are more likely to feel the need to increase the innovativeness of their organizations, thereby being more likely to install mechanisms that increase the IWB of their employees. Thus, while these factors do not increase the IWB of employees directly, they are argued to do so indirectly through creating a demand for it among their managers and policy-makers. The external antecedents of individual innovative behavior are competitive and social-political pressures.

2.2.1.1 Competitive pressures and IWB

It has been generally agreed upon that competition creates an incentive to perform well. For example, Nelson (1993) argued that that market forces and competition in particular, functions as a major motivator for innovation, as failing to innovate can result in less competitiveness and may endanger survival. Whenever industries are characterized by a relatively high adoption of new technologies, working methods and work-processes, actors must constantly manage the generation and implementation of new methods in order to keep up with the competition. Within the private sector, this process manages itself by distinguishing between stable and unstable markets, in which in dynamic markets, such as the electronics industry, firms are obliged to innovate constantly, while in relatively stable markets, such as the oil industry, continuous innovation is demanded to a less extend.

In the public sector, in which competition generally either is absent or low, this process is less self-managing. A main focus of public firms on (semi-)fixed budgets and service delivery according to formal requirements is likely to result in less incentives for excellent performance and hence in less need for innovation (Verhoest et al., 2007). Governments can solve this general problem for public sector firms by creating external pressures through introducing competition of other suppliers in the form of market-type mechanisms (Le Grand & Bartlett, 1997; Verhoest et al., 2007; Walsh, 1995). Common et al., (1992) agree with this notion, indicating that introducing market mechanisms and competition in the public sector is likely to elicit action to ensure survival, such as stimulating innovative behavior within the firm and that besides introducing present competition, the threat of future competition can significantly revitalize public firms.

In the 1980's, New Public Management (NPM) reforms in the U.S, U.K, Australia, Canada, France, Sweden and Norway integrated these insights into a set of administrative doctrines developed to counter the perceived lack of result- and customer-orientation, the high levels of bureaucracy and formalization and the lack of innovative behavior within public firms (Verhoest et al., 2007). These reforms consisted out of three types of measures: allowing for more managerial autonomy by delegating decision-making competencies from external actors to the agency itself, creating market-like pressures through harsh performance standards in contracts and specified sanctions and rewards and, finally, creating external pressures from outside the sector by introducing competition of other suppliers. Though research on the influence of competition on innovation within public firms is relatively scarce, some support is to be found. Verhoest et al., (2007) studied the effect of the NPM reforms in 84 Flemish public firms and found a direct relationship between (potential) competition and innovative behavior within firms. Other studies having found that introducing competition has innovative effects within public firms include those of Walsh (1991) and Domberger et al.,(1995).

To conclude this section, it can be proposed that high external competitive pressures are likely to have more positive effects on IWB than low –or the absence of- competitive pressures. Following this proposition, the argument made by Verhoest et al., (2007) that competitive pressures offer less incentives to conduct in employee IWB within public organizations, may indicate that competitive pressures have little stimulating power on employee IWB within this specific sector. This introduces the necessity to determine to what extend competition is relevant within public organizations with respect to the stimulation of employee IWB.

2.2.1.2 Social-political pressures and IWB

In their empirical study among public firms in NPM countries, Verhoest et al., (2007) found that, besides competitive pressures, political pressures stemming from threats to the legitimacy of the public organization affect the need for innovativeness. An example of such political pressures is the threat of a decline in political support for the public firm arising from inefficiencies in work processes. The managers under study indicated to fear that a loss of legitimacy and support of political principals could lead to cutbacks of resources, restructuration or even the abolishment of the public firm and that because of this fear, they felt obliged to innovate and keep developing their practices (Verhoest et al., 2007). In line with this notion, Osborne (1998) found support for his institutional hypothesis regarding the influence of institutional factors such as societal changes, central government perceptions and perceptions and expectations of funders and similar organizations on innovation. He identified the search for legitimacy, which is the benefit that stimulating innovation within the firm can offer to public firms in the form of legitimacy

in the eyes of beneficiaries, staff, peers or funders. These findings led to the conclusion that whereas in the private sector, profit motives and direct competition are major factors influencing the stimulation of innovation within firms, the legitimacy motive in the institutional framework constitutes a major factor in the non-profit sector (Osborne, 1998) and the public sector Verhoest, 2002; Verhoest et al., 2004).

In his work on private, for-profit firms, Suchman (1995) argues that firms seek legitimacy through achievement strategies that both conform to their external audience and inform unaware audience members of their activities. In this sense, firm innovativeness –of which it is generally argued that IWB is one aspect of- can be seen as one of such strategies meant to demonstrate firm excellence and needed to attract attention. This indicates that the search for legitimacy is a driver which is applicable within the private sector also. The emphasis on legitimacy as a driver for firm behavior is discussed intensively in the literature on sociological institutionalism. An important concept within this literature is that of isomorphism, firstly posed by Powell and DiMaggio (1983;1991). Isomorphism is described as certain activities leading to increasing homogeneity in the processes or structure between organizations which can be a result of imitation, normative factors or coercion (Powell and Dimaggio, 1991). These activities of structural uniformity within industries are often performed with the goal of enhancing legitimacy, ultimately resulting in greater access to resources and higher probabilities of survival (Sing & Lumsden, 1990). Applying these insights to the non-profit sector, Oborne (1998) argued that within this sector, another institutional pressure is at work: "a pressure to congruence with the prevailing expectations within the institutional field" (p.187). In their case studies, Verhoest et al., (2007) found evidence for so-called instrumental isomorphism, as interviewed managers ''oriented themselves quite strongly toward what they perceived as the expectations of their customers, interest groups and sometimes quite indirectly, their political principals in order to enhance their legitimacy"(p.488).

Thus, according to this stream of research, organizations may behave innovatively –with the stimulation of IWB as one of the practices to achieve this- in order to create and ensure their autonomy (Carpenter, 2001) and to exploit the opportunity of a potential win-win situation: producing an outcome for the customer –innovative products and services- while enhancing trust levels of public and political principals (Verhoest et al., 2007). This 'search for legitimacy' may create significant incentives for managers to increase the innovativeness of their firm, thereby indirectly creating a demand for IWB.

2.2.2 Internal Antecedents of Individual Innovative Work Behavior

While the above described external factors are argued to influence IWB indirectly by either creating strong or weak incentives for organizational managers to increase the innovativeness of their firms and employees, they are rather indirect and, more importantly, they don't specify the process in which IWB is created, enhanced or inhibited. For an insight into this process, factors inside the firm are to be reviewed. These factors include the relationship of, and interaction between supervisors and subordinates, the nature of work group interactions, the nature of organizational practices and the degree of empowerment and autonomy, the organizational structure and the nature of processes and procedures and the nature of individual psychological processes, characteristics and preferences, ultimately resulting in an organizational climate either enhancing or inhibiting IWB. It has to be noted here that, due to the low degree of studies explicitly focusing on impact factors for employee IWB in the public sector, the insights displayed below are mainly retrieved from studies focusing on the private sector and private organizations. Though the relevance of these factors generally have not been tested in the public sector

yet, their consideration has been found to be essential for a comprehensive understanding of the stimulation of employee IWB as well as for the development of a primary conceptual framework describing impact factors for public employee IWB.

2.2.2.1 Supervisor-subordinate interactions, leadership style and IWB

Leader Member Exchange and supervisor-subordinate interactions

An employee's relationship with his or her supervisor is generally argued to be an important aspect of the direct work environment influencing the employee's belief in possible performance and image outcomes of his or her innovative attempts (Yuan & Woodman, 2010). Indeed, Damanpour and Schneider (2009) found that a public managers' pro-innovation attitude positively influences the adoption and implementation of innovative efforts within 725 local U.S. governments. As leaders, business managers can influence worker's motivation and job satisfaction and create a work- and social environment which encourages and rewards innovation and change (Damanpour & Schneider, 2006; 2009; Elenkov et al., 2005; Janssen, 2005). Leader-member exchange (LMX) theory (Graen et al., 1982; Graen & Uhl-Bien, 1995) argues that subordinates having 'high-quality' relationships with their supervisor are given greater resources, decision-making abilities and freedom in return for high loyalty and commitment. As Kanter (1988) concluded that new considerations and experimenting with novel ideas to improve products, technologies and processes often require additional time, resources and freedom at work, greater resources and support from a supervisor increases the chance that innovative behavior will be stimulated and successful (Yuan and Woodman, 2010). It can thus be argued that employees having high-quality relationships with their supervisors are more likely to demonstrate IWB and to be confident that their innovative behavior will result in performance gains. Such an high-quality relationship is often characterized by mutual trust and respect (Graen & Uhl-Bien, 1995) and a low perceived threat of potential image losses for innovative employees (Yuan & Woodman, 2010). This low fear of employees for image losses whenever their innovative ideas fail is caused by the fact that supervisors tend to evaluate employees they trust more positively (Judge & Ferris, 1993; Wayne & Liden, 1995; Zhou & Woodman, 2003) leading to the overall perception that new ideas of trusted and respected subordinates are meaningful and significant. Therefore, subordinates who are trusted and liked by their supervisors are likely to perceive that there are more possibilities for image gain vis-à-vis image loss (Yuan & Woodman, 2010), ultimately resulting in a feeling of safety when engaging in innovative behavior. On the contrary, LMX theory depicts that low-quality leader-member exchange relationships, characterized by interactions that are formal and impersonal, are more likely to inhibit innovative behavior. Studies providing empirical evidence in favor of this relationship includes those of Basu (1991), Scott and Bruce (1994), Sanders et al., (2010) and Yuan and Woodman (2010).

Besides the interactions and relationships between supervisors and their subordinates, the communicated expectations of supervisors regarding the IWB of their subordinates are argued to influence innovative behavior (Scott & Bruce, 1994). The Pygmalion effect refers to the alteration of an individual's behavior based on the expectations for that behavior received from another (Eden, 1993) -in this case the supervisor. Subordinate roles and tasks may be rigidly prescribed for several reasons, such as technological constraints and routine tasks, rigid expectations of managers regarding specific roles within their domains or the absence of interest and/or imagination to negotiate the role of subordinates with them (Scott & Bruce, 1994). This low communication –or even the lacking of it- of the expectation of supervisors regarding, for example, the IWB of their subordinates, is often suggested to significantly shape subordinate behavior through altering their self-

expectancies and motivations (Eden, 1983). As subordinates develop perceptions of their supervisors' expectations based on their behaviors (Eden, 1983), those perceptions could be wrong or even contrary. Scott and Bruce (1994) found evidence supporting this proposition, concluding that the degree to which a supervisor expects a subordinate to be innovative positively influences IWB. A note has to be made that this conclusion could only be drawn for the technicians in their sample and not for the engineers and scientists, showing signs that "an apparent lack of receptivity to leader role expectations may be caused by their high levels of education and independence" (p. 600). This implies that it might be possible that a high level of education is a moderator removing the effect of supervisor expectations on IWB. It is proposed here though, that in general, clear communication of expectations from supervisor to subordinate regarding IWB is more likely to positively influence IWB than a less clear communication.

Leadership style and IWB

In line with the above insights regarding high quality LMX relationships, authors have argued that participative or collaborative leadership styles, rather than styles based on direction and coercion are critical for the innovation process (Basu & Green 1997; Kanter, 1986). Such studies generally distinguish between transformational and transactional leadership. Transformational leadership is generally defined as a style that transforms followers to rise above their self-interest by changing their morale, ideas, interests and values, and motivating them to perform higher than initially expected (Bass, 1991; Yukl, 1999). This inspiring and motivating nature of leadership is often argued to be affective in stimulating innovation within organizations (Basu & Green, 1997). Transactional leadership, on the contrary, is described to be based on an exchange relationship in which the leader makes clear what is expected of followers (Bass, 1999; Yukl, 1999) and offers rewards when followers do what is expected, treating every process as an transaction. Central to the concept of transformational leadership is the idea that transformational leaders alter the existing state of affairs through coming up with and stimulating the generation of novel ideas and bring about major changes (Bass, 1991; 1998). Therefore, it has been argued that transformational leaders stimulate IWB through expressing an inspiring vision, stimulating followers to question the status quo and allowing individual development (Basu & Green; 1997) and creating motivation through aligning the needs and desires of followers and the firm (Bass, 1999). Transactional leadership, however, can be argued to be negatively related to IWB due to its high focus on in-role performance vis-à-vis the stimulation of novel activities (Deci & Ryan, 1987; Pieterse et al., 2010).

This strong theoretical ground proposing the influence of transformational leadership on organizational innovation has led to several studies offering evidence for this positive relationship (Gumusluogo & Ilsev, 2009; Jung et al., 2003; Jung et al., 2008). However, evidence for the relationship between transformational leadership and innovative behavior at the individual level is scarce and contradictory. While Basu and Green (1997) found a negative relationship, Boerner et al., (2007) found a positive effect –supporting the strong theoretical grounds. Moss & Ritossa (2007), however, did not found any effects of leadership style on IWB. Evidence on the relationship between transactional leadership and IWB is more consistent, generally showing that this style is not related to IWB (Boerner et al., 2007; Moss & Ritossa, 2007). The relationship between follower creativity –above identified as one aspect of IWB- and leadership style is comparably inconsistent showing both positive (Gumusluoglu & Ilsev, 2009; Jung, 2001; Jung & Avolio, 2002; Shin & Zhou, 2007) and negative (Jaussi & Dionne, 2003; Kahai et al., 2003) effects of transformational leadership on creativity. These inconsistent results demand the adoption of a contingency

approach of leadership (House, 1971; Yukl, 2002), focusing on moderators of the impact of leadership (Pieterse et al., 2010) including task context and follower characteristics. In their study, Pieterse et al., (2010) found support for this contingency approach indicating that the relationship between leadership style and IWB are contingent on follower psychological empowerment, with transformational leadership being more effective when "followers feel more able to proactively influence their work role and environment" (p. 610) and transactional leadership decreasing IWB under such circumstances of high psychological empowerment. Also, they concluded that transformational leadership can have less positive, or even detrimental effects on IWB whenever psychological empowerment is low (Pieterse et al., 2010). Thus, though transformational leadership can make employees willing to be innovative, they also need to feel able to be innovative in order to move into action and behave innovatively (Pieterse et al., 2010). As psychological empowerment is argued to have multiple antecedents, such as the organizational structure, interactions with colleagues and numerous other sources within the person or the environment (Spreitzer, 1995; Thomas & Velthouse, 1990), the ability of managers and leaders to impact employee IWB is to be seen as a firm-wide issue, involving the consideration of multiple factors. This gives rise to the proposition that none of the antecedents of IWB, posed throughout this literature review, is to be considered in isolation. Rather, the right combination of factors, ultimately leading to the development of a climate favorable of innovation is to considered. This concept is elaborated on later.

Though a small number of studies have focused on the role of the supervisor during the stimulation of IWB within the public sector, the large majority of such studies were found to be focused on private organizations. Therefore, while the impact of the nature of supervisor-subordinate relationships, interactions and leadership style on employee IWB is well-tested and well-argued within the private sector, it is yet relatively unknown in the public sector.

2.2.2.2 Work group interactions and IWB

Another factor, generally argued to influence employee IWB concerns the role of the working group and the interaction of employees with their colleagues. While idea exploration and generation may be activities performed by individuals in isolation –though some authors argued that collaborative effort among peers is crucial for idea generation (i.e. Sethia, 1991)-, idea promotion and implementation are generally executed at higher organizational levels, starting with that of the work-group. Several authors concluded that teamwork involves social and psychological processes that can influence the generation, evaluation, acceptance and implementation of new ideas, resulting into the fact that team members are less likely to come up with and communicate new, unusual ideas whenever they expect these to be instantly rejected or criticized (Mumford & Gustafson, 1988; West & Anderson, 1996). Therefore, in order to foster IWB, an environment allowing creative ideas to be openly communicated, fairly evaluated and properly implemented is needed at the work-group level (Amabile & Gryskiewicz, 1987). Indeed, Radaelli et al., (2014) found evidence for a direct, unmediated link between knowledge-sharing behaviors of colleagues and innovative work behavior within public organizations, thereby confirming the importance of the working group during for the stimulation of employee IWB.

One of the first to focus on this organizational level of analysis was Rogers (1954), suggesting that the cohesiveness of a work group determines the degree to which individuals perceive that they can come up with new ideas without being threatened with disapproval and rejection. Combining this notion with LMX theory, Seers (1989) argued that individuals engage in a role-making process within their work group(s) which may

result in high-quality team-member exchange (TMX), characterized by mutual trust and respect and collaboration within the group. Low-quality team-member exchange, on the contrary, is argued to be characterized by a lack of integration of certain individuals into the work group resulting in a low extend of collaboration, trust and respect (Seers, 1989). Thus, in the case of high-team member exchange, individuals are more likely to be able to make use of idea sharing and feedback of peers, stimulating their IWB (Scott & Bruce, 1994). West (1990) proposed that innovation within teams can be encouraged in a team environment –or climate- where creative ideas are valued and supported and can be presented without fear of retribution, arguing that four factors of work groups foster the development of such a climate. First, the existence of a clear vision is argued to foster the adoption of clear, attainable and shared team goals and to make sure that innovation goals pursued are consistent with customer requirements. Second, participative safety, which is described as an interpersonal and non-threatening atmosphere of participation within teams, is ought to help establish collaboration and cooperation within the team and to provide a safe forum for the generation and evaluation of radical ideas. Task orientation, which is a shared concern for the excellence of task performance is argued to foster the need for innovation and improvement within work groups. The last factor is support for innovation, displayed by an articulated and enacted support for all attempts to introduce new and improved things (West, 1990). Several studies empirically tested the validity of these factors. Agrell and Gustafson (1994) found that participative safety and vision are significantly correlated with external ratings of innovative team production within a variety of organizations. Burningham and West (1995) found that participative safety, support for innovation and task orientation all were correlated with external ratings of innovation of work teams in oil companies. West and Anderson, (1996) found that all factors are correlated with overall innovation as well as self-reported innovation of top-management work teams in hospitals. Based on a review of studies focusing on these factors, Bain et al., (2001) concluded that especially participative safety, support for innovation and task orientation are important for team innovativeness and the stimulation of IWB. In their own empirical study, however, they concluded that the relationship between team innovative climate –measured using the four dimensions of West (1990)- and individual and team innovation is stronger for research teams than for development teams, indicating that personal characteristics of work group members play a role.

An environment, or climate within work groups which is reluctant towards innovation may significantly decrease the IWB of its members (Bain et al., 2001). Indeed, it is likely that overall perceptions of colleagues which are skeptical towards new ideas result into the fact that group members are generally reluctance to change, favor the status-quo and refuse to test new ideas or provide feedback of them. As a result, it is likely that the IWB of individuals within such a group is lower than when perceptions and behaviors are positive and motivating with regard to innovation and change. The importance of considering the work group level lays in the difficulty of designing formal control systems to enhance innovation (Caldwell & O'Reilly, 2003). Group norms may work as replacements of such formal mechanisms as a means to stimulate innovation and IWB (Caldwell & O'Reilly, 2003), as strong normative order may act as a social control system to promote –or inhibit- creativity and implementation (O'Reilly, 1989). Due to the fact that social controls such as group norms lack the undermining and hierarchical effects of formal control, employees maintain a sense of autonomy (Deci & Ryan, 1985). Also, group norms are argued to have the ability to have stronger influence on attitudes and behaviors than formal controls and as well as to be able to produce a climate of behaving in non-routine ways (Caldwell & O'Reilly, 2003), making them potential powerful mechanisms stimulating or inhibiting IWB.

Again, though a small number of studies have focused on the role of work-group interactions during the stimulation of employee IWB within the public sector, the large majority of such studies were found to be focused on private organizations. Therefore, while the impact of the nature of work-group relationships and the degree of openness of colleagues with respect to innovation and newness on employee IWB is well-tested and well-argued within the private sector, it is yet relatively unknown in the public sector.

2.2.2.3 Organizational Structure and IWB

Several studies have focused on the determination of structural and processual characteristics of organizations being favorable and supportive with regard to organizational innovation, change and flexibility. Burns and Stalker (1961) were one of the first to distinguish between two extreme types of organizational structures: mechanistic structures and organic organizational structures. While a mechanistic organizational structure focuses on the adoption of a strict vertical hierarchy, clearly defined responsibilities, high degrees of centralization, specialization and formalization and a high usage of rules, regulations and procedures, an organic structure is argued to focus on authority based on expertise, broadly defined and flexible tasks, decentralization, low degrees of specialization and formalization and a relatively low adoption of rules, regulations and procedures (Boddy, 2011; Daft et al., 2010). After the observation of twenty UK industrial firms, Burns and Stalker (1961) observed that these types of organizational structures are adopted in distinct circumstances: while the mechanistic organizational structure was adopted mainly by organizations surrounded by an stable external environment creating little incentives and a low need for change and flexibility, organic structures were found to be adopted mainly by firms surrounded by rapidly changing environments creating high incentives to be flexible and innovative. Indeed, after having conducted an intensive literature review, Daft et al., (2010) concluded that learning organizations, in which flexibility, innovativeness and IWB are generally argued to key success factors, mainly demand structural characteristics such as horizontal authority, empowered, non-routinized tasks, shared, horizontal information systems, high degrees of participation and collaboration and adaptive cultures.

The need for organic, flexible organizational structures during the stimulation of firm innovativeness and IWB can be argued further by pointing to arguments made by scholars adopting the strategic contingency approach. Strategic contingency theorists have developed and empirically tested several relationships between organizational strategy and organizational structure (Chandler, 1990 ;Miles et al., 1978; Porter, 1980; 1985). For example, it is often argued that firms having adopted prospector, analyzer-, (Miles et al., 1978) or differentiation- (Porter,1980;1985) strategies, thereby focusing on improving their products through innovation and development, are in need for high degrees of flexibility, low degrees of formalization, standardization and decentralization and the adoption of less rigid control rules, regulations and procedures (Robbins & Barnwell, 2006). In other words: firms having adopted such strategies, thereby focusing on the stimulating of employee IWB are argued to be in need for an organic organizational structure. Based on the above arguments, it is proposed here that organic, flexible organizational structures, characterized by low degrees of centralization, formalization and bureaucratization and by work processes which can be described as flexible rather than rigidly controlled through procedures, rules and regulations, stimulate employee IWB and firm innovativeness.

As argued in the introductory section, the contingencies and circumstances surrounding most public organizations may pose difficulties for their managers to arrange that organizational structures favorable of innovation and IWB are adopted. These contingencies include several forces forcing public organizations to generally adopt reactor strategies rather than prospector strategies (Ashworth et al., 2002; Bozeman & Straussman, 1990; Boyne & Walker, 2004; Hood et al., 1999; Nutt & Backoff, 1993;

Rainey, 2009; Rainey & Steinbauer 1999; Wechsler & Backoff, 1986) as well as to adopt routine technologies rather than non-routine technologies, which are generally argued to be favorable of innovation and IWB (Scott & Bruce, 1994; Yuan & Woodman, 2010). Indeed, Walsch (1995) concluded that the public sector is characterized by bureaucratized, formalized and hierarchical organized systems, resulting in the adoption of several formal mechanisms and a high usage of rules, regulations and budget-based control systems which are unable to adapt to their dynamic environments and to deliver their services efficiently and effectively (Walsch, 1995). These insights indicate that public organizations generally have adopted (mechanistic) organizational structures which not only are likely to decrease the need for innovative behavior within public firms, but also to significantly inhibit the adoption and stimulation of employee innovative behavior. Therefore it is proposed here that in general, public firms have installed organizational structures unfavorable of IWB and its stimulation.

2.2.2.4 Organizational (empowerment) practices and IWB

Empowerment: Definition and importance

The concept of employee empowerment is generally described using two perspectives. From the managerial perspective, employee empowerment is considered as an relational construct describing how those with power in the organization –managers- share their formal power and authority with those not having it (Conger & Kanungo, 1988). Scholars adopting a psychological perspective describe empowerment as an internal cognitive state characterized by enhanced feelings of self-efficacy (Conger & Kanungo, 1988) or increased intrinsic task motivation (Thomas & Velthouse, 1990). Conger & Kanungo (1988) argued that an employee's motivation to increase his or her effort is a function of the expectancy that one's effort will result in the desired level of performance and the expectancy that performance will produce a desired outcome or reward –a notion being in line with the expectancy theory of motivation (Vroom, 1964). In trying to answer the question what explicitly constitutes empowerment, Fernandez and Moldogaziev (2012) integrated the managerial and psychological perspectives by describing it *as "a set of management practices (sharing authority, resources, information and rewards) that influence performance (effort, productivity) not only directly but also indirectly through their impact on employee cognition (self-efficacy, motivation and job satisfaction)"(p. 157).* Due to its completeness, this definition is adopted here.

Empowerment practices have been linked to higher levels of performance, job satisfaction and commitment in the private sector (Nielson & Pederson, 2003; Lawler et al., 1995; Guthrie, 2001) as well as in the public sector (Fernandez & Moldogaziev, 2011; Lee et al., 2006; Park & Rainey, 2007). One of the main reasons, given for the relationship between empowerment and firm performance is the assumed effect of empowerment practices on the IWB of frontline employees (Bowen & Lawler, 1992;1995; Gore, 1993; Thomas & Velthouse, 1990). Empowered employees are argued to be better able to recover from errors in service delivery, to learn from those recoveries and to proactively redesign processes whenever they feel the need to do so (Bowen and Lawler, 1992). In line with this notion, Thomas and Velthouse (1990) argued that intrinsically motivated individuals may demonstrate higher levels of flexibility leading to initiation of new tasks as problems arise. In his study on the characteristics of successful public management innovations nominated for the Ford-KSG awards between 1990 and 1998, Borins (2001) concluded that organizational decentralization and employee empowerment fostered experimentation and learning within public firms, ultimately leading to higher innovativeness. Fernandez and Moldogaziev (2012) argued that "the link between empowerment and encouragement to innovate is of particular significance in the public sector, where goal ambiguity, high

levels of formalization and restrictions on the ability to reward extrinsically might dampen or neutralize the effects of empowerment efforts "(p. 156).

Empowerment practices

It has been found that, besides elected officials and political appointees (i.e. Breaux et al., 2002), frontline employees are important sources of innovation in the public sector (Borins, 2000;2012, Kamensky, 1996; Light, 1998) through the generation of novel ideas by experimentation or accidental occurrences. Bowen and Lawler (1991) described four general practices of empowerment: providing information about goals and performance, offering rewards based on performance, providing access to job related knowledge and skills and granting discretion to change work processes. These practices and empirical evidence on their effect on public employees, as provided by Fernandez and Moldogaziev (2012), regarding their effectiveness are displayed in figure 2.

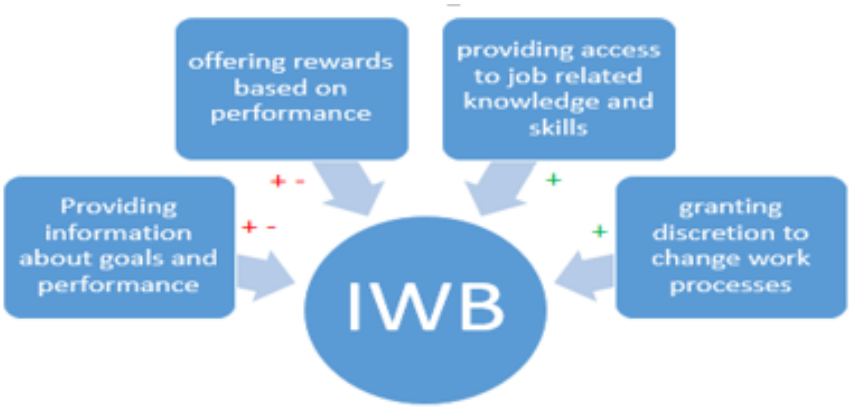

Figure 2: *The effect of empowerment practices on Innovative Work Behavior (Results retrieved from Fernandez & Moldogaziev (2012))*

First, communicating goals and priorities to employees and offering feedback on performance can encourage achievement-oriented employees to seek new strategies and tactics for attaining those goals (Knol & van Linge, 2009; Fernandez and Moldogaziev, 2012). Negative feedback showing failure also communicates the need to search for new ways of improving performance (Fernandez & Wise, 2010; Salge, 2011), encouraging employees to innovate (Fernandez & Moldogaziev, 2012). The earlier described goal ambiguity in the public sector can undermine the effectiveness of this empowerment practice as a motivational approach (Rainey, 2009), though at the work-team or individual level goals should be able to be made sufficiently clear. In their study, Fernandez and Moldogaziev (2012) found empirical evidence that, while providing information about goals and performance is ineffectively in improving IWB when used alone, it may produce small gains in IWB when used in combination with other empowerment practices. Other studies concluded that the success of this practice in stimulating IWB depends on the employees' level of cognitive ability –with those having low cognitive abilities benefiting more from goal setting than others-(Kanfer & Anckerman, 1989) and the nature of tasks –with the practice being more effective at motivating those with simple, programmable tasks (Winters & Latham, 1996). Thus, evidence regarding the relationship between the first empowerment practice of Bowen and Lawler (1991) and IWB is not uniform and consistent.

Second, though intrinsic job characteristics have been found to have stronger impacts on employee attitudes than extrinsic rewards (Deci 1971; O'Reilly & Caldwell, 1980), pay and other extrinsic rewards can still be effective to increase effort, performance, job satisfaction (Greene & Haywood, 2008; O'Really & Caldwell, 1980) and employee IWB (Ramamoorthy

et al., 2005; Monks et al., 2012; Zhang & Begley, 2011). Even within the public sector, in which public employees generally are argued to have higher levels of public service motivation, monetary rewards have found to be valued significantly (Alonso & Lewis, 2001; Durant et al., 2006; Wright, 2007). Despite this evidence, the impact of extrinsic rewards on IWB within the public sector is often argued to be negative, discouraging innovativeness in government agencies through causing turbulence within organizations (Amburgey et al., 1993; Fernandez & Rainey, 2006) and reducing motivation for tasks which were originally perceived as intrinsically motivating (Ryan & Deci, 2000). Indeed, Fernandez and Moldogaziev (2012) found empirical evidence pointing to a negative relationship between rewards based on performance and IWB whenever performance is defined in terms of outputs and outcomes. This negative relationship seems to be caused by the fact that rewarding short-term performance make employees settle for proven ways of doing things while avoiding disruptive changes. They did found, though, that rewarding innovative changes in processes rather than outputs and outcomes seemed to encourage IWB. Borins (2001) found contradictory evidence and concluded that offering rewards, either monetary or reputational, stimulated innovative behavior within the public firms in his sample. Beer et al. (2003) found evidence in favor of a contingency approach, concluding extrinsic awards –measured by pay and recognition- positively influenced IWB under the condition of an adaptive cognitive style of employees and relatively simply jobs, it negatively influenced IWB under the condition of an adaptive cognitive style and complex tasks. Further, a weak relation has been found between offering extrinsic awards and IWB under the condition of an innovative employee cognitive style and complex jobs. Thus, evidence regarding the relationship between the second empowerment practice of Bowen and Lawler (1991) and IWB is also not uniform and consistent.

Thirdly, efforts to increase the access of employees to job-related knowledge and skills through offering training and job-embedded learning have often been linked to openness towards new ideas and creativity (Bysted & Jespersen, 2013; Fernandez and Moldogaziev, 2012). Training and professional development activities help to spread innovations as employees learn about new ideas applied in other firms and expose employees to a broader range of ideas to be used to solve new problems (Damanpour, 1991; Katz & Tushman, 1981). Further, the ability to diagnose and solve problems is generally improved by training, making it more likely that innovative ideas will become effective practices (Dewar & Dutton, 1986). Indeed, Fernandez and Moldogaziev (2012) found empirical evidence for a strong, positive relationship between offering opportunities to acquire job-related knowledge and skills and IWB, indicating that the enhanced knowledge of alternatives for improving performance and the greater confidence in the efficacy of those alternatives caused employees to be more innovative than others. Several studies focusing on the public as well as the private firms found similar evidence (i.e. Bysted & Jespersen, 2013; Knol & van Linge, 2009; Monks et al., 2012; Zhang & Begley, 2011).

Finally, the relationship between granting employees the discretion to change their work process and innovation is well-argued in the innovation literature. Several studies described how loosening control gives entrepreneurial employees more freedom to think about elements and practices and recombine them in new ways (Levin & Senger, 1994), encourage employees to be innovative by giving them a sense of control and responsibility for the quality of their work (Hackman & Oldham, 1976; Ohly et al., 2006) and by raising the confidence of employees that he or she will not sanctioned for failed innovations (Edmonson, 1999) Indeed, Fernandez and Moldogaziev (2012) found empirical evidence indicating a strong, positive relationship between empowerment practices aimed at granting employees discretion to change their work processes and IWB. Several other

empirical studies confirmed the existence of this relationship (i.e. Abstein & Spein, 2014; Bysted & Hansen, 2013; Monks et al., 2012; De Spiegelaere et al., 2012). Rainey and Bozeman (2002) described that the relatively high extend of rules and regulations within the public sector might prevent managers within this sector from granting enough discretion to stimulate innovative behavior, indicating that within this sector, top management might has to consider how to make sure that the high formalization characterizing their firm does not affect manager's ability to grant discretion.

The results of Fernandez and Moldogaziev (2012) on the effect of empowerment practices on the IWB of US Federal Government Employees show that "while employee empowerment as an overall approach can increase encouragement to innovate, empowerment practices have divergent effects, and some may even discourage innovation' (p.155). While practices aimed at providing employees with access to job-related knowledge and skills and granting them discretion to change their work processes could significantly increase encouragement to innovate and IWB, offering employees rewards based on performance seems to reduce it under distinct circumstances. These are conditions that managers wanting to stimulate IWB throughout their firm need to consider.

2.2.2.5 Individual-level factors and IWB

Outside direct managerial control are some individual factors characterizing individual employees, possibly stimulating or inhibiting their IWB. These include individual problem-solving style, task type and job requirements, personal preferences regarding the status-quo and perceptions regarding rewards and risks related with IWB. Though managers generally cannot influence these factors directly, they can do so using indirect mechanisms and practices.

Individual problem solving style and IWB

During the last two decades, increased attention has been given to cognitive dimensions as antecedents of, among others, IWB. Kirton (1976) distinguished between those who have the ability to do things better, and those who have an ability to do things differently, and argued that these groups ultimately produce qualitatively different solutions to seemingly similar problems. Jabri (1991) distinguished between two types of problem-solving styles: associative- and bisociative thinking. He argued that associative thinking represents a systematic problem-solving style, based on the following of habit or a set of routines, adherence to rules and the adoption of disciplinary boundaries while using rationality and logic. The systematic problem solver works with established methods or procedures and is likely to produce conventional solutions to problems (Scott & Bruce, 1994). Bisociative thinking, on the contrary, is characterized by a tendency to combine separate domains of thought at the same time, a low attention to existing rules and disciplinary boundaries and an tendency towards imagination and intuition, representing an intuitive problem-solving style (Jabri, 1991). Scott and Bruce (1994) argued that the intuitive problem solver generally processes information from different domains and paradigms simultaneously and therefore is more likely to generate novel problems to solutions. Though it is generally agreed upon that neither style is preferable and better than the other, and that it is the fit between problem-solving style and the task and work environment that determines performance (Payne et al., 1990) it is often proposed that the adoption of the intuitive problem-solving style influences IWB more positively than the systematic problem-solving style (Scott & Bruce, 1994). Though Scott and Bruce (1994) could not provide support that the intuitive problem-solving style is directly related to IWB in their empirical study, they did found that adopting the systematic problem-solving style inhibits high levels of IWB. Related to this branch of literature are theories on social

cognition, which argue that individual perceptions of employees influence the way they respond to certain practices and messages. Nishii and Wright (2007) argued that, depending on the cognitive processes, pre-employment history and organizational roles of distinct actors, the same organizational context can give rise to a variation of perceptions regarding (HR) practices. Other studies confirm this notion, concluding that people attach different meaning to social stimuli based on the way that they perceptually filter information (Fiske & Taylor, 1991). These natural information processing mechanisms of individuals, influencing the way they experience situations, are influenced by their motivations (Locke & Latham, 1990), past experiences (Rousseau, 2001), demographic backgrounds (Cox, 1993), values (Meglino & Ravlin, 1998), personality (Hough & Schneider, 1990) and attitudes (Brief, 1998). These personal characteristics are likely to influence the need and ability of individuals to innovative, and therefore their desire and capabilities towards IWB (Scott & Bruce, 1994).

Though the above described characteristics of individual employees are formed by many factors outside direct managerial control, mechanisms and practices can be implemented to indirectly influence them. For example, training programs can be installed to teach employees to adopt the intuitive problem-solving style and to foster the need and desire to be innovative. As employees being unable or not interested in behaving innovatively are less likely to produce and implement innovative initiatives than those being able and interested in doing so, failing to address these issues can seriously inhibit employee IWB.

Task type, job characteristics and IWB

An employee's work role and task description could also affect IWB. Kanter (1988) argued that the obligations and prescriptions of a person's position can serve as an stimulator –or inhibitor- or innovation. For some tasks, innovation is explicitly mentioned as relevant for successful performance. In the case of employees of a R&D department, for example, it is rather clear from the start that their purpose and goal is to produce innovative efforts, making innovation extremely relevant for them. For other tasks, such as working at assembly lines, the relevance of innovation seems to be less evident from the start. Therefore, compared with others, employees who perceive innovativeness as part of their job requirements and natural occurring tasks are more likely to believe that generating, and implementing innovative ideas is expected of them and will benefit their work (Scott & Bruce, 1994). Furthermore, as audiences tend to evaluate new ideas and behaviors more favorable when they are conducted by people whose job position support their behavior (Ashford et al., 1998; Daft, 1978), employees will be more likely to feel confident that managers and colleagues consider their new ideas good and well grounded. Indeed, Yuan and Woodman (2010) found that innovativeness and flexibility / multifunctionality as an job requirement stimulates IWB. This implies that employees with an 'innovative' and flexible job description are more stimulated to conduct IWB than other employees. Several empirical studies confirmed this argument (i.e. Dorenbosch et al., 2005; Monks et al., 2012; Ohly et al., 2006). This individual factor can be addressed by organizational managers through expressing and communicating that innovation is expected from everyone within the firm.

Preferences regarding the status-quo and risks and IWB.

Dissatisfaction with the status-quo

It has been generally agreed upon that dissatisfaction is an important attitude that makes people aware of the need to change (Farr & Ford, 1990) and the value of introducing new ideas (Yuan & Woodman, 2010). Dissatisfaction of an individual with the current performance within the work-group or organization can arise from a variety of reasons,

examples being environmental changes, comparisons with competitors or the discovery of potential improvement opportunities. Without dissatisfaction with some aspects of the current situation, individuals are less likely to be stimulated to act innovatively due to the fact that they believe that new ideas, products or processes will result in performance gains (Yuan & Woodman, 2010). Poor overall perceived performance also can be a strong force for change, making resistance and criticism less likely and providing opportunities for receiving credit and being considered as competent (Yuan & Woodman, 2010). Indeed, Yuan and Woodman (2010) found empirical evidence supporting the proposition that dissatisfaction with the status quo is positively related to expected positive performance outcomes and image gains of innovative behavior, thereby stimulating IWB. This implies that it is likely that employees being satisfied with the status-quo are less stimulated to conduct IWB. According to this notion, organizational managers can stimulate the IWB of 'satisfied' employees by expressing and communicating organizational concerns for performance or regarding certain work processes, informing such employees of firm-wide dissatisfaction regarding those aspects.

Perceptions regarding performance and image outcomes

Several studies have focused on the underlying motivations of individuals to develop, championing and implement innovative efforts. In general, they focus on efficiency outcomes (Abrahamson, 1991; Rogers, 1983; Wolfe, 1994) and image outcomes (Arndt & Bigelow, 2000; Tolbert & Zucker, 1983; Westphal et al., 1997).

The efficiency perspective depicts that people's IWB is stimulated by a need to bring performance gains through the generation and implementation of new technologies or work methods within their work roles or work units which are better than the existing ones. Examples of such performance improvements include increased productivity and work quality, a lower error rate, higher goal-achievement abilities and improved job performance (Yuan & Woodman, 2010). It is important to note here that how significant these positive performance outcomes exactly are is defined subjectively by each individual employee, influencing their motivation to innovate. In their empirical study, Yuan and Woodman (2010) found that expected positive performance outcomes significantly influenced respondents' IWB. Based on these findings, it is proposed here that the association of expected positive performance outcomes with conducting in IWB positively influences this behavior.

The social-political perspective depicts that other people's perceptions or impressions significantly influence employee IWB due to the fact that such impressions influence relationships and the possibility of the actor to receive necessary resources and social support (Leary & Kowalski, 1990; Tedeschi & Riess, 1981). In line with this notion is the conclusion of Janssen (2003; 2004), that conducting in IWB can lead to interpersonal conflicts and high levels of stress, frustration and animosity of the individual idea-champion. Such conflicts are likely to arise whenever colleagues, supervisors or other stakeholders resist a worker's innovative ideas for change due to their desire to avoid the insecurity and stress surrounding change (Jones, 2001), their habits and preferences for familiar practices (Jones, 2001), cognitive biases (Jones, 2001) and their commitment towards established theories and practices (Staw, 1978; Janssen, 2003). Accordingly, adopters of this perspective argue that people's IWB is stimulated whenever individuals expect that their innovative behavior will lead to image gains. West (1989) found that participated nurses described other's reaction as an important concern preventing them from being innovative. Sutton & Hargadon (1996) found that the design engineers in their sample merely used brainstorming sessions as channels for prestige and opportunities to

impress their colleagues, establishing favorable social images. Tetlock and Manstaed (1985) distinguished between defensive impression management, which is designed to protect an individual's established social image and assertive impression management, which is designed to improve an individual's social image. While defensive impression management is triggered by negative affective states such as embarrassment and shame, assertive impression management is triggered by self-enhancing motives, such as perceived possibilities to create a favorable image. Based on this distinction, Yuan and Woodman (2010) argued that, while perceived potential image risks will be likely to inhibit employee's IWB due to a focus on 'safe play' and the prevention of negative social feedback, perceived potential image gains will likely stimulate IWB due to a focus on image improvements. Studies offering empirical support for the first proposition include those of West (1989) and Yuan and Woodman (2010. Evidence for the second proposition is less uniform, indicating that perceived image gains do not always stimulate IWB. This could be caused either by the fact that employees merely wanting to use IWB for purposes of showing off actually are less innovative, or that managers are able to see political motives and evaluate those who are innovative to pursue personal agendas negatively (Yuan & Woodman, 2010).

Thus, the nature of perceptions regarding the status-quo and the expected performance outcomes and image outcomes associated with conducting in innovative behavior may significantly influence employee IWB. The exact nature of employee perceptions regarding such outcomes vis-à-vis risks may be determined to a large extend by the organizational climate, which is described in the next session. The proposed effects of individual problem-solving style, task type, preferences with regards to the status-quo and perceptions with regard to performance and image outcomes on employee IWB have been tested in the private sector mainly. Therefore, insights on their effect on the IWB of public employees is yet to be developed.

2.2.2.6 The total organizational package: organizational climate and IWB

The phenomena of organizational atmosphere and shared organizational perceptions are generally explained using the concept of organizational climate. Individual, psychological climate can be described as an individual's cognitive interpretation of an organizational situation (James et al., 1990) regarding what behaviors are expected and rewarded within an organizational setting. As described above, this individual cognitive interpretation can be influenced by a number of individual factors as well as organizational factors. Factors within the organization signal expectations for desired behaviors and potential outcomes of those behaviors which individuals use and interpret to formulate expectancies and instrumentalities (james et al., 1977). Whenever the collective interpretation, or collective psychological climates of individual employees lead to the adoption of a general, more or less agreed-upon set of habits, visions, goals and expected behaviors, a certain culture, or climate arises. Schneider (1975) argued that there are many types of organizational climates, of which a climate for innovation is an example. This climate, or organizational support for innovation can manifest itself as an pro-innovation culture (Amabile, 1988; Scott & Bruce, 1994), favoring change and delivering organizational values and norms that increase expected image gains and decrease expected image risks associated with IWB (Farr & Ford, 1990; Yuan & Woodman, 2010). Such innovative organizations are argued to be characterized by an orientation toward creativity and innovative change (Kanter, 1983; Siegel & Kaemmerer, 1978), a tolerance for diversity among their employees (Siegel & Kaemmerer) and an adequate supply of resources such as equipment, facilities and time (Amabile, 1988). A pro-innovation culture also encourages IWB through its legitimation of experimentation (West & Wallace, 1991) and its warranting of psychological safety for trial and error (Ashford et al., 1998). Therefore, Yuan and Woodman (2010)

hypothesized and confirmed that employees working in firms with a strong support for innovation are more stimulated to conduct in IWB than those working in firms with little support for innovation and found empirical evidence for their claim.

How does such a climate for innovation, or organizational support for IWB arises? Though some answers are provided by studies on the topic of organizational climate, these answers are not all-inclusive. As climate perceptions are created by all signals, both directly and indirectly sent by and within the organization, several organizational factors play a role in shaping them. These factors include companies' rules and regulations, communication mechanisms and the tone of communication, supervisors' leadership styles, interactions and relationships with supervisors, work group relationships and interactions and personal factors. These factors all create perceptions of employees regarding the desirability or undesirability regarding IWB and therefore are all important to consider when wanting to stimulate IWB. Whenever firm policy indicates that creativity and the generation of new ideas are good and needed treats which are expected from everyone, but the supervisor is generally reluctant and skeptical towards new ideas and change –or seems to be- the IWB of his subordinates is likely to be low. Whenever the supervisor indicates that he values creativity and IWB, but a high formality of firm processes and mechanisms or a lack of empowerment practices and autonomy inhibit the execution of innovative behavior, IWB is also likely to be low. Thus, the process of IWB cannot be viewed as one to be influenced by one factor or measure. Rather, it comprises a comprehensive process of creating and shaping an innovative climate supporting innovation throughout the organization.

2.3 Individual Innovative Work Behavior in the Public Sector: A conceptual Model

The list of antecedents of employee IWB, identified after an intensive literature search and described in the previous sections, has been reduced to a number of broad categories of factors generally argued to influence employee innovative work behavior. It has been chosen not to include all the above described factors and practices because of the fact that the major share of studies on impact factors for employee IWB has been conducted within the private sector and hence is focused on private sector employees. Therefore, it is yet unclear whether and how the specific factors and practices, described in the previous sections, influence employee IWB within public organizations. Though private sector models have been applied in various forms to public sector organizations (Bach & Kessler, 2007), it remains unclear to what extent they are effective in public sector circumstances. After all, it may be possible that the different characteristics of public organizations vis-à-vis private firms complicate adopting a strategic approach to HRM (Kessler et al., 2000; Knies & Leisink, 2014) and that the mechanisms linking HR practices with both employee and organizational outcomes differ (Vandenabeele, 2007; Gould-Williams et al., 2013). Taking these considerations into account, it has been chosen to solely include broad categories of factors in the preliminary conceptual framework and to use the above described specific practices and factors as rules-of-thumb, or guidelines, regarding which factors may stimulate or restrain IWB in the public sector and which may not. In this research, it will be explored whether the broad categories of factors as well as whether other factors influence employee IWB within the firm under study and how these factors influence the generation, championing and realization of innovative efforts. Ultimately, this is to lead to the development of a comprehensive framework describing impact factors for public employee IWB. The preliminary conceptual model displaying the broad categories of factors, generally argued to influence (public) employee IWB is displayed in figure 3.

First, competitive pressures and social-political pressures are argued to create and increase the incentives towards organizational managers to make sure that their firms are

innovative; either by demanding them to perform better than the competition or by posing the threat of losing legitimacy and political support of their funders. The higher these pressures are, the more it is likely that managers feel the need to increase the innovativeness of their firm and to install mechanisms aimed at creating a climate for innovation and to increase the IWB of their employees. Thus, these factors have indirect effects on employee IWB. While scholars focusing on the influence of these pressures in the public sector argued that social political-pressures have the ability to significantly stimulate as well as restrain public employee IWB, it is generally argued that competitive pressures have a low ability to stimulate public employee IWB and mainly restrain public employee IWB.

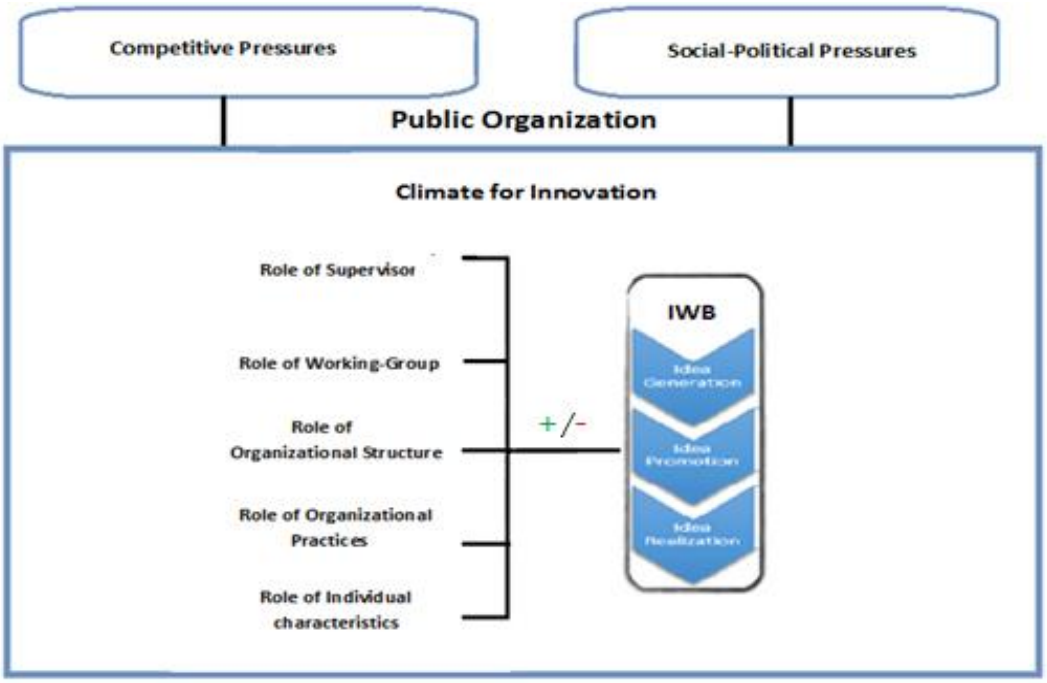

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Figure 3: *Impact factors for employee IWB in the Public Sector: A preliminary conceptual framework*

Whenever external factors have created high incentives towards public organizational managers to foster the development of a climate for innovation and to stimulate employee innovative work behavior within their firm, these managers can do so by addressing a number of factors. These factors, which can stimulate as well as restrain IWB depending on their nature, are generally argued to concern the role of the supervisor, the role of the working group, the nature of the organizational structure, work processes and procedures, the nature of implemented organizational (empowerment) practices and the role of individual employee characteristics. While studies focusing on private organizations stressed the importance of high-quality LMX relationships and transformational leadership styles for the stimulation of idea generation, idea promotion and idea realization, evidence on the impact of these practices on employee IWB within the public sector is scarce. Correspondently, while studies focusing on the private sector generally provide evidence for the propositions that high-quality TMX relationships and a work-group atmosphere favorable of innovation, experimentation and change stimulate employee IWB, studies focusing on the effect of such practices within public organizations are scarce. While studies focused on the public sector concluded that public organizations generally have adopted organizational structures which are unfavorable of innovation and employee IWB, more insight is needed into this process and into methods to counter this development.

Furthermore, though a small number of studies focusing on the stimulating ability of certain organizational (empowerment) practices within public organizations concluded that some of those practices positively stimulate public employee IWB, the limited amount of such studies demands further research on the influence of several (empowerment)practices on public employee IWB. Finally, while studies conducted in private organizations provide evidence for the existence of a positive relationship between creative and intuitive problem-solving styles, job descriptions in which innovativeness is assigned as an requirement as well as perceived positive image and performance outcomes associated with the generation and implementation of innovative efforts and employee IWB, studies examining these relationships within public firms are limited.

These internal and external factors all are ought to contribute to the fact that either a climate favorable of innovation, arises, or not. This support for innovation -or the lack of it- throughout the firm creates values, norms, habits and expectations of employees which either are favorable or unfavorable towards employee IWB. Also, it determines whether and how the firm offers resources, facilities and mechanisms that allow for creativity and IWB to arise and flourish. These climate perceptions, values and norms determine employee perceptions regarding the possible outcomes of engaging in IWB and the risks of such behavior for their image. Whenever there is general support within the firm for innovativeness and innovative behavior, perceptions regarding image risks may be low due to the fact that risk taking and experimenting is appreciated and desired. Also, perceptions regarding potential performance and image gains may be positive. Controversially, whenever support for innovation and change is low, perceived image risks may be high and perceptions regarding the possibility for performance and image gains may be negative, posing severe barriers for IWB.

As indicated earlier throughout this paper, the main focus of research on impact factors for employee IWB has been focused on the private sector, with the large majority of empirical studies being conducted within private organizations. There, a knowledge gap remains to exist with regard to impact factors for employee IWB within the public sector and the question how public managers can stimulate the IWB of their employees as well as prevent that this behavior is restrained within their organization. The central goal of this study is to decrease this knowledge gap through exploring which factors stimulate IWB within the public sector and to illuminate the process in which these factors do so. Therefore, it has to be noted that several other factors than those described in the preliminary conceptual framework can be found to foster or restrain innovative work behavior.

3. Method

In order to identify which factors stimulate and restrain innovative work behavior in the public sector, an exploratory case study is conducted within an organization which has been found to be a typical example of a public organization. As the goal of this study is to develop new insights with regard to the stimulation of IWB within the public sector, and as one of the main purposes of exploratory research is to satisfy the researcher's curiosity and desire for new or better understanding (Babbie, 2012), this type of research is highly suitable for achieving this goal. A single case study has been selected for this exploratory research because of this research design's ability to develop an integrated, all-inclusive picture of all factors, relevant for a given phenomenon. Though the value and use of case study research as an descriptive or explanatory methodological approach is questioned by some scholars (Abercrombie et al., 1984; Campbell & Stanley, 1966; Dogan & Pelassi, 1990), it has been generally argued that this approach is highly suitable for explorative studies aimed at the development of propositions and theories through learning from actual cases and phenomena (Abercrombie at al., 1984; Campbell, 1975; Christensen, 1987; Eckstein, 1975; Flyvbjerg, 2001; Flyvbjerg, 2006; Ragin & Becker, 1992).

As it is essential for the understanding of impact factors for public employee IWB that a case is selected in which IWB actually is present and preferably is relatively high, a random selection method for determining the case to be studied was found to be insufficient for this study. The usage of purposive sampling methods is justified by several scholars arguing that random sampling may not be the most appropriate strategy whenever the objective is to achieve the greatest possible amount of information on a given problem or phenomenon (Eisenhardt, 1989; Flyvbjerg, 2006; Ragin, 1992). The organization, purposively selected for this exploratory case study, is the Dutch Fire Department. Although it has to be admitted that a truly representative case is by no means easy to identify (Seawright & Gerring, 2008), a number of characteristics of The Dutch Fire Department cause this organization to satisfy the criteria of a typical case, as developed by Searwright and Gerring (2008). Firstly, several authors have concluded that typically, public organizations lack sales and profit indicators and incentives (Rainey & Bozeman, 2000), have intangible, non-profit related goals (Daft et al., 2010), have a large degree of political oversight and interventions of multiple authorities and interest groups (Rainey, 1983) and are funded primarily by governments rather than private investors (Daft et al., 2010). Bozeman and Loveless (1987) summarized these characteristics into three categories: public firms are owned by political communities rather than private shareholders, receive most of their funding from political sponsors rather than fee-paying customers and the behavior of their managers are constrained by political forces rather than market forces. It has been found that The Dutch Fire Department's main objective is not profit-related, but rather to "increase the national safety through controlling and preventing fires and related calamities" (Samen sterk, samen veilig, 2015), that it is directed, consulted and supported by multiple political and public authorities and interest groups and that it is funded primarily by governmental budgets. Therefore, it can be concluded that the firm under study satisfies all the criteria, as developed by Bozeman and Loveless (1987) and hence can be described as an excellent example of an public organization. Secondly, as indicated in the sections below, the organizational structure of The Dutch Fire Department can be described as relatively mechanistic, with high degrees of standardization and centralization and high formalization throughout its chain of command through an excessive network of rules, regulations and prescriptions. Claims indicating that the adoption of such organizational structures is a common phenomenon within the public sector (Chubb & Moe, 1990; Walsch, 1995; Warwick, 1975), together with the above described insights, have convinced the author of this paper that the Dutch Fire Department can be considered a typical example of a public organization. Indeed, the above insights indicate that the Dutch Fire Department satisfies the typicality criterion of

a typical case, indicating that this organization is highly likely to be representative for the population (Seawright & Gerring, 2008). Finally, as the nature of the activities conducted by fire fighters -the controlling of fires and related calamities- induces high demands on the continuous development and improvement of work processes and techniques in order to increase the general public safety, it is highly likely that a desire exists within this setting to conduct in employee IWB. Indeed, as will be described in the sections below, it has been found that the degree of employee IWB is relatively high within this organization, resulting in a high number of generated innovate ideas at the work floor and a high number of implemented innovations. Because of the high degree of employee IWB and firm innovativeness throughout the firm and the high representativeness of this case for the public sector as a whole, The Dutch Fire Department has been found to be an excellent setting to determine factors stimulating as well as inhibiting the employee IWB process.

3.1 Organization: The Dutch Fire Department, Safety Regions and the IFV

3.1.1 Innovation at The Dutch Fire Department

The Dutch Fire Department employs around 30.000 people throughout the Netherlands , operating out of 900 fire stations. In 2013, it has processed 139.000 reports of which 87.000 were fire reports and 52.000 were requests for relief emergency services. Having an average mobilization time of four minutes and an arrival time of 9.5 minutes, 36.050 fires have been extinguished and 400 rescue actions have been conducted by fire fighters throughout 2013. In that year, the Dutch municipalities have spent 1113 million euro's financing the activities of the Dutch Fire Department; around 66 euro's per citizen (CBS: Brandweerstatistiek 2013, n.d.). Besides fire control and rescue actions, regular activities of employees of the Dutch Fire department comprise removing damaged cars, cleaning roads and terrains, opening bunched doors, rescuing animals, processing flooding- and storm damages and providing AED when needed (CBS: Brandweerstatistiek 2013, n.d.). In general, the activities of the Fire Department are divided into three broad categories: risk control (prevention, education and permits), incident control (response and handling) and crisis/calamity control (preparation, response and supervision). During the last decade, the Dutch Fire Department had to cope with significant cutbacks in financial resources. More cutbacks are coming; up to an estimated amount of 40 million between 2015 and 2020 (NOS, n.d.). It is very likely that this process increases the need for and importance of innovative technologies and approaches, making work processes more efficient in the future. As the Dutch Fire Department has to cope with increasing demands for their services on the one side and less financial resources on the other, the improvement of technologies and work processes seems crucial for future performance.

Ever since the 'birth' of the organized control of fires and related calamities through the appointment of so-called 'fire-masters' in 1413 in Amsterdam, volunteers have constituted an important part of the process of extinguishing fires and controlling calamities. This importance of volunteers for the fire department is still to be seen in 2013, with 20.400 of the 25.500 fire fighters being volunteers and solely 5.100 fire fighters being professionals. This ratio differs significantly between regions, though. For example, while the percentage of volunteers was 28% in the region Amsterdam-Amstelland, it was 95% in the region North-East Gelderland in 2013 (Brandweerstatistiek 2013, n.d.). Studies examining the relationship between voluntary employees and innovation are scarce. ShinBrian and Kleiner (2003) proposed that volunteers increase the innovativeness of organizations through introducing new and fresh ideas. Furthermore, based on the fact that many studies focusing on empowerment have concluded that intrinsic motivation stimulates the psychological empowerment of employees (i.e. Conger & Kanungo, 1988; Thomas & Velthouse, 1990) and on findings indicating that volunteers are primarily motivated by some kind of intrinsic motivation (Haug & Gaskins, 2012; Kemp, 2002; ShunBrian & Kleiner, 2003; Waikayi et ak., 2012), it is argued here that, due to their higher degree of

intrinsic motivation, voluntary employees may have higher potential to show IWB and thereby to increase the innovativeness of organizations. By pointing to the absence of the provision of extrinsic awards and official, formal responsibility to volunteers, however, it simultaneously is likely that voluntary employees have less sense of responsibility and less incentives to conduct in IWB and hence bring less innovation within the firm. Because of these contrary arguments it is unclear upfront what the effect of the high extend of volunteers within the Dutch Fire Department has for its employees' overall IWB.

Whether influenced by volunteers or not, innovation clearly is important and relevant for fire departments. As fire fighters are to neutralize and control every possible calamity they encounter and as each fire or calamity is different from the other, possibly demanding a different approach, fire fighters need to be prepared to alter their methods whenever this is needed. Therefore, it is not surprising to find that the birth and rise of the Dutch Fire department has been characterized by innovation and improvements. Starting with the appointment of fire masters having the authority to fine people threatening the general fire safety and leading extinguishing activities in 1413, several innovations and improvements have shaped the process executed by fire services. These innovations include technological, administrative and processual innovations. Among technological innovations include the development of several types of fire hoses between 1614 and 1642, their improvement allowing the development of the first fire boats, the development of steam-driven fire hoses in 1858, the improvements offered by the construction of waterworks and hydrants during the second half of the 19th century and the introduction of motorized vehicles radically improving response rates. Among administrative and processual improvements were the introduction of local fire stations within districts of Amsterdam and fees for fire fighters significantly improving the response time, the foundation of a professional fire force and official fire stations offering full-time fire fighters a home and the implementation of an official training for professional fire officers (all from: Koppers & Appels, 2012). More recent innovations within the Dutch Fire Department having completed the innovative process of idea generation, idea-promotion and idea-realization include the replacements of books by tablets as the main instruments of aid during training methods and exercises, the formation of civil panels of immigrants with the goal of increasing the safety within neighborhoods of Northern- Limburg, the development of a new, special tool for fire divers significantly increasing their safety and the development and implementation of an App allowing continuous learning among the various categories of fire department's employees (BrandweerNederland, n.d.). The high focus of the firm under study on innovations and employee IWB has resulted in 142 documented innovations during the last six years (BrandweerNederland, 2012; 2013; 2014). These innovations varied from small, low-scale innovations such as new techniques to wrap-up fire hoses, open locked doors, alarm residents or rescue flooded cows, to larger-scale projects such as the development of new techniques to extinguish forest fires, extinguishing robots, fire drones and flexible response units (BrandweerNederland, 2012; 2013; 2014).

When considering the insights displayed above, the relevance of innovation and employee IWB for fire departments seems evident. However, previous studies on employee IWB within fire departments are lacking, or at least very hard to find. This incisively calls for research on the simulation of innovative behavior within fire departments and on the question which barriers for IWB are relevant in this particular setting.

3.1.2 The safety regions

An important aspect which has not lost its importance throughout the years is the fact that most aspects of fire control are generally arranged at the regional level, as every region is believed to be different and in need for a different approach. Due to a lack of national congruence and collaboration between these regional fire departments during multi-regional or national calamities and disasters, more national collaboration and framework

provision was found to be needed. To date the Netherlands are divided into 25 safety regions, which are displayed in Appendix 1. Though these distinct regions all have independent administrations and a significant amount of autonomy, guidelines are offered on a national scale. In order to understand all factors possibly influencing employee IWB within this particular setting, insight into the purpose and structure of a number of national agencies and institutions is needed.

Starting in 2010 with the instalment of the Law Safety Regions (Wet Veiligheidsregio's, Wvv), the Netherlands were divided into 25 Safety Regions within which the Fire Department collaborates with other essential service providers such as the Regional Medical Emergency Response (Geneeskundige Hulp bij Ongevallen in de Regio, GHOR), the police and municipalities in order to collaboratively prevent and control crises and calamities. The reason for the instalment of this law and the corresponding system was the experience that the old mechanisms failed to achieve the necessary multi-regional and national collaboration needed to adequately prevent and control crises and calamities such as the fireworks-disaster in Enschede in 2000 (VeRA, 2010). In the Law Safety Regions, the basic requirements for the organization of the emergency services and the minimum requirements for emergency response workers and their degree of facilities and resources are determined (VeRA, 2010). These legal prescriptions are to be implemented by the administration of each safety region. Issues which are not prescribed by the Law Safety Regions are to determined regionally. The primary goal of the Law Safety Regions was to transfer staff, responsibilities and resources from local municipalities to the Safety Regions.

All 25 Safety Regions have distinct fire departments led by a regional fire commander. These regional fire commanders answer to the director of their Safety Region, who is directed by the Safety Region's administration, formed by the mayors of the municipalities laying within the safety region. Thus, the mayors of the municipalities within a safety region, together with the regional director determine –within boundaries- the policies and practices of their regional Fire Department. National collaboration and fine-tuning is created through the Council of Regional Fire Commanders (RBC), which is an committee consisting out of the 25 fire commanders of the distinct Safety Regions. Out of this council, an executive committee is elected to be responsible for daily execution of national matters, relevant for the Dutch Fire Department. This executive committee consists out of one president and six functional leaders, each responsible for the development and implementation of national frameworks and guidelines within distinct functional areas. Though the executive committee of the Dutch Fire Department develops and implements national frameworks, it has no official legal authority. Therefore, the policies and frameworks developed by it can be considered as prescriptions rather than regulations. The administrations and directors of the Safety Regions determine to what extent they apply and implement the nationally developed frameworks. Therefore, policies and practices may differ significantly between distinct Safety Regions. The organization structure of the Dutch Fire Department is displayed in Appendix 2.

Other national agencies are the Council of Safety Region directors (VR), the GHOR and Population Care, which all develop national frameworks and prescriptions within their profession and collaborating to increase the general safety within the Safety Regions. The last agency, discussed here is the Safety Council, which is formed by the presidents of the administrations of all 25 Safety Regions. This council receives advice from the above described agencies and has the mandate of advising the Minister of Safety and Justice on subjects relating to national and regional Safety. Again, it has to be noted that none of these agencies have official, legal authority and therefore solely develop prescriptions or advises which can –or cannot- be followed by the Safety Region's Administrations.

To conclude, on a national level, several agencies, such as the RBC, VR and GHOR develop and implement basic frameworks which function as prescriptions regarding policies,

practices, facilities and resources for the administrations of the Safety Regions. As none of these agencies have formal legal authority, the regional administrations determine whether and to what extent these prescriptions and advices are followed, allowing differences between distinct Safety Regions to arise. When considering the profession of the Fire Department, the regional administration determines to what extent the prescriptions, made by the RBC, are applied. Whenever they decide to apply such a prescription, they direct the director of their Safety Region, who leads the Regional Fire Commander. The Regional Fire Commander directs the commanders of the distinct districts within his or her region, who, finally, direct the fire officers leading local fire stations. The Dutch Fire Department –with the RBC as its executive committee, can be seen as an 'network-organization', in which, depending on the subject and functional area, people with specific expertise from the field form a temporary network, work group or project group (Organisatie brandweer Nederland, n.d.). A simplified demonstration of the process, described above is displayed in Appendix 3.

3.1.3 The IFV

The Institution for Physical Safety (Instituut voor Fysieke Veiligheid, IFV), founded in 2013 is the overarching, supporting organization facilitating the national collaboration of all organizations, as described above. The mission of the IFV is the allowing and improvement of collaboration between several associations within and between Safety Regions, as described above, in order to improve the overall ability of Safety Regions to control crises and calamities whenever they occur. It's position and mission is determined in the Law Safety Regions, it counts 250 employees and it facilitates the meetings of the Safety Council, RBC, VR, GHOR and Public Care as well as congresses and training programs for people operating in the field. Thus, its purpose is to strengthen the Safety Regions and their partners and to increase the national safety through the professionalization of tasks and employees, the development and sharing of relevant knowledge, the offering of advice, the connecting of parties and reacting to social developments (all from: Over het IFV, n.d).

The Safety Council, consisting out of the presidents of the administrations of the 25 Safety Regions, constitutes the administration of the IFV. They elect, from within their midst, an Executive Committee. Due to the fact that the IFV will be part of this research, the organogram of the IFV is displayed in Appendix 4. An simplified picture showing the entire structure with associations possibly having an influence on practices and employees of the Dutch Fire Department is displayed in Appendix 5. The description of the above mentioned agencies, institutions and organization charts have been checked by organizational actors for validity. Whenever descriptions appeared to be flawed, they were corrected.

In order to identify impact factors for individual IWB within the Dutch Fire Department, the influence of a number of these institutions and associations is to be analyzed. As the RBC develops and implements national frameworks and guidelines, it can impact the stimulation of IWB by either calling for or arguing against it. Similarly, as the IFV develops training programs and exams as well as acquires and administers resources, it can direct mayor influences on IWB either by communicating and demonstrating its importance or ignoring it. Thus, in order to adequately and comprehensively determine stimulators and inhibitors of IWB within the organization of the Dutch Fire Department, a study has to be conducted at a national level -within the RBC and IFV and the management of the Safety Regions- as well as at the regional level -within the Safety Regions themselves.

3.2 Data Collection Methods

In order to discover which factors stimulate and restrain employee IWB in the public sector, an exploratory case study has been conducted within The Dutch Fire Department consisting out of several data collection methods. These methods include interviews with a variety of participants, observation methods and document analyses.

3.2.1 Interviews

In-depth interviews have been conducted with several actors in order to explore their perceptions and behaviors regarding (impact factors for) employee IWB and the role of organizational practices. Belk et al., (2012) describe the in-depth interview as "a formal, semi-structured and lengthy interview which tries to go more deeply into the subject as the interview proceeds" (p. 31). Semi-structured interviews can be seen as one of the best ways to identify individual perceptions and opinions directing individual behavior due to the fact that the possibility to ask more questions if needed increases the likelihood to determine deeper perceptions. Four types of interviews have been conducted for this study and not each type can be described as a semi-structured interview. Each type is shortly discussed below and a short description of the nature and function of these interview types are described in table 1.

Interviews with employees from the RBV/ IFV (number: 5)	•**Goal**: check formal guidelines & communications with regard to IWB; determine perceptions on stimulating and restraining factors for IWB. •**Nature**: unstructured interactive interviews (one hour) •**Example of questions asked**: which initiatives are implemented to stimulate IWB; What restrains IWB at the moment?
Interviews within the Fire stations (number: 21)	•**Goal**: identify perceptions and behaviors of district commanders, team leaders & fire fighters with regard to IWB and its impact factors •**Natur**e: semi-structured interviews (one hour) •**Example of questions asked**: relationship with & role of supervisor and working group, role of organizational structure, practices and individual characteristics
Interviews with 'Innovative Employees' (number: 10)	•**Goa**l: check the experiences of respondents with regard to stimulating & restraining factors for IWB •**Nature:** semi-structured interviews (one hour) •**example of questions asked**: what really helped and stimulated your innovative process; what restrained it?

***Table 1**: Description of Interview methods*

First, unstructured interactive interviews have been conducted at the headquarters of the Dutch Fire Department with members of the IFV and RBC in order to check the formal guidelines and communications towards the Safety Regions, the extent to which they stimulate IWB, to what extent the respondents perceive that IWB is restrained and which factors they feel cause the effects of their initiatives to be restrained. In unstructured interviews, sometimes referred to as open-ended interviews, participants are given considerable control over the course of the interview and are asked to tell their story as they experience, feel and see it (Corbin & Morse, 2003). These unstructured interviews allow to discuss a variety of subjects and increase the likelihood that important information, including information on impact factors for employee IWB, as experienced from within the IFV and RBC, is discovered. Disadvantages of unstructured interviews could be a lack of generalizability and the possible collection of significant amounts of worthless information. However, due to its ability to discover important information, overlooked before, and the exploratory nature of this study, it has been selected as an viable method. Because of its nature, no interview template has been constructed for these interviews in advance. The respondents which have been selected for these interviews all are occupied with innovation and its stimulation throughout the organization. The interview transcript of one of these interviews is displayed in Appendix 6. As all information which was needed was gathered after 5 interviews, the total number of conducted interviews was 5 (n=5). The interviews lasted around one hour.

Semi-structured interviews have been conducted with fire fighters, their direct supervisors and district commanders at the local level in order to identify the perceptions and behaviors

regarding antecedents and inhibitors of IWB present at three distinct levels of the hierarchy. Van Aken et al., (2012) argued that unstructured interviews use a list of specific questions while leaving sufficient room for additional information. This method has been chosen due to the high number of interviews, making the use and analysis of unstructured interviews too time-costly and the fact that, while it is known a-priori what the interview is to produce, room for additional information revealing new insights is needed. The interviews have been conducted in one local fire station in three Safety Regions, which were selected based on their innovative ability between 2008 and 2014. The innovative ability of an Safety Region was measured by the number of innovative initiatives officially submitted by local fire departments located within that specific Safety Region. In order to be representative and to develop an unbiased view of perceptions and behaviors regarding antecedents of IWB throughout the country, one of the most innovative as well as one of the least innovative Safety Regions have been included in the sample. Also, a Safety region laying within the median has been selected. Thus, the sampling method used can be described as sampling for maximum variation, an application of theoretical sampling (Van Aken et al.,2012). Within each Safety Region, one local fire station has been selected randomly and within each local fire station, five fire fighters (two volunteers, two professionals, and one employee being occupied with prevention-related services) as well their team leader have been interviewed. Also, the district commander of each Safety Region has been interviewed in order to discover how IWB is stimulated by the higher hierarchical levels in the Safety Regions. This led to a total number of 21 interviews. (n=21). This number was found to be sufficient, as the last interviews provided few new insights. The interviews lasted around one hour and the interview templates and examples of interview transcripts are displayed in Appendixes 7, 8 and 9.

Finally, semi-structured interviews have been conducted with employees who have previously submitted and championed an innovative idea or initiative as a means to improve their work processes. Respondents have been randomly selected out of a national database displaying innovative initiatives and their champions between 2008 and 2014. The goal of these interviews was to discover any stimulating and restraining factors during the processes of idea generation, idea promotion and idea-implementation, as experienced by project champions. The total number of interviews was 10 (n=10) and the interviews lasted around one hour. Again, the number of interviews has been found to be sufficient, as the last interview provided no new insights. The interview templates and an example of an interview transcript is displayed in Appendix 10.

During the construction of the semi-structured interviews, the advice of McCracken (1988) is followed by taking some distance from the topic a priori of the interviews in order to remain objective and to reduce the impacts of assumptions. Before each interview, the confidential nature of the interview and the anonymity of the respondents have been highlighted. Despite the fact that the semi-structured interviews were structured through the usage of a pre-determined set of questions, the order and content of these questions were not followed blindly at all times depending on the specific case of the interviewee. This way, the interview templates were seen as a list of topics rather than a to-do list in order to maintain flexibility and to treat the interview as a normal conversation as much as possible. In doing so, an environment of informality and openness was created and maintained, in which interviewees could really speak out their opinions. Probing techniques, such as asking for explanations, examples and clarifications regarding distinct statements, were used to stimulate respondents to tell as much as possible and to make the interviews comprehensive, detailed and extended (Rapley, 2001; Emans, 2004; Belk et al., 2012). The mirroring technique, explained by Myers and Newman (2007) has been used through constructing follow-up questions while listening carefully to the answers given by respondents.

3.2.2 Observations

Several training programs and information meetings have been attended in order to observe and ecxplore whether and how employee IWB is stimulated during these sessions. The sessions were generally provided by and at the IFV and were directed to employees with (future) leading positions In the Safety Regions. The attended training programs mainly concerned training sessions on innovation for current and upcoming talents. Participating in daily, weekly or monthly activities allow to experience work from an insider's perspective and to enrich the understanding of the organization under study (Van Aken et al., 2012). Also, it has the advantage of the presence of an observing, thinking researcher on the scene of action, who can capture relevant aspects of social processes beyond the scope of tape recorders and cameras (Babbie, 2012). Due to these two advantages and the possibilities observations can offer with regard to the identification of the nature and content of training programs and their effects on the stimulation of employee IWB within the firm under study, this data collection method has been included in this study. During the observations, notes have been made intensively regarding the nature of training programs and masterclasses, the people attending them and their possible effects on IWB. Examples of such notes are displayed in Appendix 11.

3.2.3 Documentation Analyses

Finally, formal organizational documents have been analyzed in order to determine the organizational vision and mission with regard to firm innovativeness and IWB, the nature of their communication throughout the firm and the formal organizational practices with regard to the stimulation of IWB. An important advantage of analyzing mission statements, policy documents, incident reports, procedures, memos, correspondence and databases is the fact that it may provide information that organizational members have partly or completely forgotten (Van Aken et al., 2012). Furthermore, corporate documentation generally is a more reliable source of information than the opinion of an organization member, which could be influenced or flawed (Van Aken, 2012). An disadvantage, however, is that it does not allow to ask any additional questions and that it does not necessarily indicate that the content of the documents are shared and enacted upon throughout the organization. Therefore, it is important to determine to what extent official documents indicate an tendency towards the stimulation of innovative behavior as well as whether and how the content of these documents are translated into actual practices, mechanisms, programs, norms and values. The unstructured interviews were aimed at this goal and hence at removing this disadvantage.

3.3.Thrustworthiness of the data

The interview frameworks have been constructed by a team of researchers. During the development of the interview templates, discussions have been held to make the questions relevant to the organizational context and to increase the construct validity of the study. Each respondent has received the interview template in advance to allow for the development of well-thought and well-explained answers. After receiving permission for it, interviews have been recorded in order to exclude the possibility of missing important information (Belk et al., 2012). The interview transcripts have been sent to the respondents afterwards to verify correct understanding and have been corrected whenever respondents found misunderstandings. Though the results of observations remain quite subjective -based on the interpretations of the observer- the results have been discussed with participants as well as supervisors afterwards to check for validity.

3.3 Data Analysis

3.3.1 Interviews

The interview transcripts have been analyzed using the analysis software program NVIVO. Interviewees have been labelled according to their function. Respondents from the IFV and

RBC have been given the label RBC 1, 2, 3, etc. Comparably, employees having generated and championed innovative initiatives in the past have been labelled IE (Innovative Employee) 1, 2,3, etc. The respondents from the fire stations have been labelled as follows:

- PFF1SR1: Professional Fire Fighter 1 Safety Region 1;
- VFF1SR1: Voluntary Fire Fighter 1 Safety Region 1;
- LMSR1: Line-manager (team leader) Safety Region 1;
- DCSR1: District commander Safety Region 1; etc.

The first step of the analysis process of the interviews was to insert word-by-word interview transcripts into the software program NVIVO. This program assisted in sorting the answers of each individual interview into categories using open coding processes in order to make sense of the data (van Aken, Berends & van der Bij, 2012). These open coding processes using NNIVO resulted into the development of 25 codes explaining stimulating and restraining factors with regard to employee IWB within the firm under study. Examples of codes created are 'competitive pressures', 'institutional pressures', 'current IWB', 'rewards provided for IWB' and 'role of working group'. In total, 1256 references have been assigned to these 25 codes, recorded from 36 sources. This way, perceptions on stimulating and inhibiting factors for employee IWB of the respondents have been determined. A display of the coding process is displayed in Appendix 12. The second step was to identify the reasons for the existence of these perceptions using the same coding process. During the final step, theoretical coding was used to search for potential relationships between perceptions (van Aken et al., 2012). An example of such a relation would be that negative perceptions towards innovative behavior of employee A leads to negative perceptions towards innovative behavior of employee B. During this coding process, discussions were held periodically between several researchers in order to reach consensus and to check for validity. Through the performing of these steps, stimulating and inhibiting factors with regard to IWB, as perceived by several actors within the Dutch Fire Department, have been determined.

3.3.2 Observations

During the observations of training sessions and masterclasses, notes have been made intensively in order to identify the nature and meaning of behaviors, information provided and conversations, as observed during the sessions. During the data collection phase of observing and making notes, relatively little distinction has been made between observations which seemed relevant for the stimulation and restraining of IWB and which seemed not. During the first round of analysis, notes have been checked for relevance for IWB, removing any elements lacking relevance. Next, relationships have been determined between certain observations, such as a the teaching method or style, as adopted by the instructor and reactions and behaviors of the people attending the session. These steps have led to conclusions regarding the nature and content of the sessions under study and the stimulation of innovative behavior within the Dutch Fire Department. During each of these steps, discussions have been held with colleagues in order to check for relevance and validity. Proceeding towards the next step was done solely whenever agreement was reached on the above issues.

4. Results and Analysis

In this section, the findings of this study and their analysis are described. The findings are structured according to the preliminary conceptual model displaying broad categories of impact factors for public employee IWB, as introduced in the section on antecedents for innovative behavior. For convenience, this model is displayed again in figure 4.

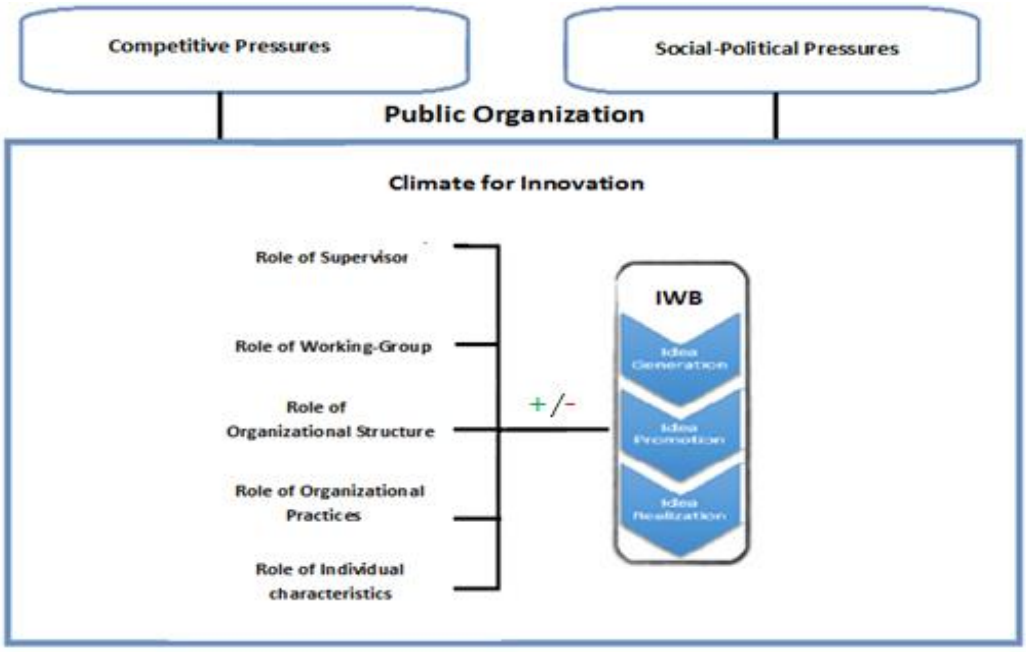

Figure 4: *Impact factors for employee IWB in the Public Sector: A preliminary conceptual framework (2)*

First, findings on the current degree of employee IWB within the firm under study are described, indicating whether and how the separate IWB process stages of idea-generation, idea-championing and idea-realization are stimulated or restrained and what the motivations of the employees of the firm under study for conducting in IWB are. Next, the influence of external factors on employee IWB within the firm under study are described. These external factors include competitive as well as social-political pressures. After this, the findings on the influence of several internal factors on employee IWB within the firm under study are described. These internal factors include aspects with regard to the roles of the supervisor, the working group, the organizational structure, organizational practices and individual characteristics. The results of all three data collection methods have been integrated in order to develop an comprehensive understanding of the influence of the impact factors described above, as well as the influence of other impact factors. In general, it has been found that the findings made during the observation of training sessions strengthened the results of the document analyses and the interviews. Therefore, it has been chosen not to separately discuss the findings made during the observations. These insights will ultimately lead to the development of a revised, specified and comprehensive framework displaying impact factors for employee IWB in the public sector.

4.1 Employee IWB within the Dutch Fire Department: Current Stimulation and Motivations

This section will start with analyzing the official communications of the organizational vision, mission and strategy and whether these communications create a general perceived desirability of firm innovativeness and employee IWB within the firm under study. Next, it will be analyzed what the motivations of employees are to conduct in IWB as well as whether and how the specific steps of the IWB process are stimulated or restrained in the current setting.

4.1.1 Organizational Vision, Mission and Communications

In general, organizational documents articulating the organizational vision, goals and ambitions of firm under study indicate a high strive of its management for innovation and employee innovative behavior. For example, in the official document introducing and explaining the organizational vision and strategy from 2015 to 2040, innovative ability is described as being a key future performance indicator for fire control and fire prevention, displayed by the call for a new doctrine of fire safety, the adoption of innovative technologies and the increasing of the knowledge of employees (BrandweerNederland, 2010). The document explaining the vision with regard to volunteers articulates a similar strive for innovation, with calls being made towards regional administrations to provide autonomy and independence towards local fire stations, to stimulate the application of modern techniques, to involve volunteers with the development of new policies, to offer training and learning opportunities and to direct volunteers based on trust rather than on regulations (VBV, 2013). This document also called for openness of volunteers towards change and asked volunteers to come up with ideas on improvements whenever these arise (VBV, 2013). The vision on HRM and leadership explicitly articulated the recommendations of the RBC towards the HR department of the firm under study to make sure that fire fighters are stimulated to come up with personal or collaborative initiatives in order to seize the opportunities they see (NVBR, 2012). During these bottom-up processes, the HR department is to be a consultant, inspirer and assistant, providing the right conditions and training programs with regard to the change process and innovation. Also, a call was made for the development of specific leadership competences throughout the firm, indicating that leaders on the operational, tactical and strategic level should be trained as such that they can act as personal coaches, team coaches, change champions, networkers, managers and craftsmen (NVBR, 2012). During the observed training sessions, a similar call was made, underlining the crucial role of the supervisor during innovation- and change processes and the stimulation of employee IWB. These leadership characteristics, stimulated within the firm under study, have high similarity with those generally assigned to transformational leaders. Indeed, as indicated in the following sections, leaders are found to generally have adopted supportive and collaborative leadership styles rather than directive and coercive styles, significantly stimulating employee IWB.

The content of the above described organizational documents point towards the presence of a high degree of ambition with regard to innovation and employee IWB and all seem to understand and underline their importance. Through stressing the relevance of firm innovativeness and employee IWB rather than indicating that it is not desired of fire fighters, these communications have been found to help stimulate public employee IWB. Indeed, it has been found that within almost every organizational document which has been read, the word innovation and the need for innovation was mentioned at least once. Correspondently, it has been found that during all observed training sessions and Masterclasses, the need for employee IWB and their importance for the performance of the firm under study was stressed and underlined. However, it has to be kept in mind that the large majority of documents written, visions articulated and messages communicated by the RBC solely constitute guidelines towards the administrations of the Safety Regions. Therefore, it is important to identify to what extent the above described vision and goals, as articulated by the policy makers of the firm under study, has resulted into actual practices and how these practices influence public employee IWB. This will be analyzed and discussed in the upcoming sections.

4.1.2 IWB within the Dutch Fire Department: degree and motivations

It has been found that, in general, the employees of the firm under study are highly motivated to come up with new and innovative approaches. The large majority of respondents has indicated to have played a role during at least one innovative process and

more than half of them indicated to have come up with and championed an innovative idea themselves at least once. While most of these projects have been found to concern incremental innovations such as new data applications, new training methods or new procedures offering relatively small improvements, the association of the respondents with larger, radical innovations has been found to be less present. However, this is not always found to be caused by employees themselves: due to the fact that large, radical projects focusing on revolutionary extinguishing techniques such as the usage of robots and drones are generally focused on by project groups and national networks, the involvement with and interest of individual employees in such radical projects are much lower. Therefore, the ideas generated, championed and implemented by the majority of the respondents generally involved incremental innovations.

The high willingness of fire fighters to think and act innovative and to conduct in IWB has been found to be caused by a high degree of intrinsic motivation arising from the nature of the fire fighter and his work. The findings indicate that due to the fact that every crisis is different and may need a different approach and solution, fire fighters perceive that they always need to be prepared to improvise and to think innovative. Because of this need to solve whatever problem that occurs, fire fighters can be described as full-time, natural problem solvers, who need to do whatever they can to solve whatever problem they come across as fast as possible. As the large majority of employees having generated and championed innovative efforts indicated to do so because of this nature of the work they do, it has been found that this innovative mentality, which every repressive fire fighter is forced to adopt, leads to a high degree of generated and championed innovative efforts. This is explained by a district commander and a team-leader:

Every fire is different and every crisis situation is different. When you leave this fire station towards an crisis, you don't know what you are going to have to deal with. Therefore, you always have to be ready to improvise, to innovate, to be flexible and to think creatively (DCSR1).

The nature of the fire fighter is that he is an inventor and someone who wants to fix and change things. This is a part of our work, because we never approach the same crisis. Therefore, we are searching for better things and improvements automatically and continuously (LMSR3).

A district commander underlined that, besides the nature of fire fighters' work, their intrinsic motivation is another factor causing them to conduct in IWB to such a high degree:

In general, the attitude and motivation of fire fighters is unique. They are always occupied with fixing and improving things and developing new ideas. They are highly dedicated to their work and their motivation is excellent (RBC3).

Solely a small minority of respondents indicated not to consider the generation and implementation of innovative approaches and innovations as their responsibility and as something they want to do. Therefore, it can be concluded that the employees of the firm under study demonstrate a high degree of employee IWB. Two caveats have to be made with regards to this conclusion, though. Firstly, an opinion widely shared among the respondents, is that new ideas and innovations have to have value. Generally, it has been found that the openness of fire fighters towards innovative applications which are state-of-the-art but have little value is significantly lower. This is explained by one fire fighter:

Currently, our region is occupied with an expensive project focusing on the usage of drones during our activities. That's all very nice, but we have cameras on our high workers through which we can see everything clearly. Some techniques are just good the way they are, and they cannot be maximized any further. So why do we have to invest significantly in expensive projects such as drones? (PFF3SR3)

Secondly, it has been found that employee perceptions with regard to radical innovative ideas are somewhat more skeptical than perceptions on incremental innovative ideas, opposing such projects more. This may indicate that fire fighters are afraid to radically change the way they are doing things. This is indicated by one fire fighter:

A lot of people have severe troubles with large, radical innovations and changes. Whenever the organization changes too rapidly, it will lose people along the way. This generally concerns the more experienced and routinized people, who simply can cope with significant changes less well (PFF2SR3).

Overall, the findings indicate a high willingness of employees of the firm under study to conduct in IWB, resulting in a high number of respondents having participated in innovative projects or personally championed efforts. This high willingness is found to be caused by the nature of the respondents' task as well as their intrinsic motivation, making fire fighters innovative by nature. Because of the large number of innovative ideas found to have been generated by the respondents, it can be concluded that the IWB process stage of idea-generation is stimulated and completed to a high extent within the firm under study. Findings pointing to a general openness and support of respondents with regard to innovations constituting clear improvements but a relatively low openness and support with regard to those constituting less clear improvements indicate that the idea-championing stage of the IWB process is not completed at all times and may be restrained by a number of factors. Indeed, as indicated by one respondent, championing a project and finding support is not always easy:

Whenever I propose something to colleagues, the general response is negative. The majority of people, especially the more experienced colleagues don't believe that your idea is good instantly, indicating that you have to invest a significant amount of time and effort into convincing them of the value of your project. And even when you do so, you don't have the guarantee that you will succeed (IE3).

These restrains on the idea-championing stage of the employee IWB process have been found to be caused by a number of factors, which will be described in the following sections. In line with these results are the findings on the IWB process stage of idea-realization, of which several factors have been found to restrain its completion in the firm under study. Therefore, it can be concluded that, though the generation and posing of innovative ideas is found to be stimulated within the firm under study to a large extend, the championing and realization of innovative ideas has been found be restrained. In the next section, internal and external impact factors for public employee IWB, identified within the firm under study, are described.

4.2 External Factors Influencing Public Employee Innovative Work Behavior

4.2.1 The Influence of Competitive Pressures

It has been found that there is a low perceived need within the firm under study to conduct in IWB due to the existence of competitive pressures. In general, the respondents indicated that the absence of competitors producing similar services as the firm under study cause them to believe that being the best is not a necessity for survival for the firm under study, nor that a lack of innovation may lead to decay and bankruptcy. The large majority of the respondents indicated to not feel the need to implement innovative approaches because of profit-related incentives but rather because of several other incentives. These perceptions, generally expressed by the respondents can be displayed by the following examples:

The question is: to what extent do we want to be innovative? We are not a private company which needs to be updated continuously in order to remain competitive. We are a public firm which needs to perform our activities well: saving people. As a monopolist, you don't need a good competitive position. Do we need to invest millions in a new revolutionary new suit for our fire fighters? I think not (RBC2).

Honestly, I don't feel a harsh necessity to generate innovative things. We don't have to make a profit, be highly efficient and make the best products in order to survive. In some industries, you won't survive whenever you don't innovate. This is much less relevant for us. Naturally, we can't spill our money and be big spenders, but the need for to be the best and to keep on innovating is simply far less within this organization. We won't go bankrupt whenever we don't innovate (DCSR3).

The public nature of the firm not solely has found to lead to a lack of competitive pressures increasing the need to develop and implement innovative approaches, but also in a

decrease of the opportunities and benefits of innovative processes. As indicated by one respondent, this severely restrains the championing and implementation of innovative efforts, indicating that though ideas are generated, they ultimately are not implemented.

We cannot sell the things we develop individually or as a team. It is not allowed to make a new software program for my region and sell this system to other regions or companies. Though I can make valuable applications using my software company, I have to be careful with what I make for the fire department, because this may mean that I cannot sell this innovation through my company to other firms (IE8).

The issue described by this respondent seems not to be a sole problem of the firm under study, but also a problem relevant for other public organizations:

Some guys I know who work at the water-municipality have experienced the same problems after they have developed a new software tool. This led them to resign at their firm in order to be able to sell and make a profit out of their software tool. Thus, the water-municipality lost some outstanding men (IE8).

Taking the above considerations into account, it has been found that the lack of competitive pressures, found to be relevant for the firm under study, leads to a low perceived necessity to conduct in IWB in order to ensure survival. In order to reduce the perceived restraining effect of this lack of competitive pressures on employee IWB, the management of the firm under study has developed and implemented an annual competition. This initiative, named the Jan van der Heyden price, awards an price to the local fire department that has submitted the highest rated innovative initiative yearly (BrandweerNederland, 2012; 2013; 2014). This annual competition is held since 2008 and has given rise to the generation of multiple innovative ideas and projects (142) and to the implementation of several of those ideas. As the winning department receives a price of 10.000 euro to be used to further develop and implement the idea and as there are image gains associated with the price – a photograph of the winning team is displayed at the headquarters of the RBC and the department as a whole receives an 'innovative' image- this initiative creates competition between local and regional departments. Therefore, it constitutes a firm-made competitive force for innovative behavior which was absent previously due to the public nature of the organization. Though this section describes external factors influencing IWB rather than internal ones, the fact that this practice is aimed at reducing the restraining effects of the lack of competitive pressures has led to the choice to discuss its nature and consequences in this section. The reason for its implementation is explained by a district commander:

The reason why we started with the Jan van der Heyden price is to create an larger incentive to develop innovative ideas through allowing local departments to compete with each other. Also, it is targeted at introducing an event which increases the visibility of local innovations and increases the extent to which they are improved and implemented by, and in, other regions (RBC2)

Though its value seems evident when considering the large number of innovative initiatives it has given rise to over the last six years, opinions about this initiative are varied throughout the organization. While some people have been found to be convinced of its value for innovation and employee IWB:

I think it created a mentality within the top positions of this firm more favorable of innovation and its stimulation. This price has helped the development of several initiatives, giving them the stage, publicity and resources to refine and implement them. It also offers national publicity and increases the possibility that ideas are shared and implemented within several regions (RBC2) .

The Jan van der Heyden price is an excellent initiative. It creates an strong incentive to come up with something new and it gives people a national stage to present and share their idea (DCSR1).

, others have the opinion that its potential is not used fully, that it is targeted at favoring people located at the higher ranks mainly and that its leads to a limited amount of implemented ideas:

The idea is okay, though this initiative needs to be directed content-wise more. Currently, it lacks vision, leading to small, unimportant innovations that no one practically needs (IE5).

Several of the ideas submitted to this price are really good and receive a lot of attention. However, I see almost none of them back in reality. So, despite the fact that some ideas are good and judged as very desirable, they are not adopted and implanted nationally (IE6).

These findings indicate that, while this initiative stimulates the IWB process stages of idea generation through offering incentives to come up with new ideas and idea championing through offering innovative ideas publicity and a stage in order to find support, in some cases, it fails to stimulate the idea-realization stage. Furthermore, the respondents indicate that the people at the working floor are not involved with this initiative enough and that, as a result, the effect of this price on the behavior of fire fighters is limited:

This price should be applied to the working floor more. Now, the people at the office generally have the room and time to issue projects and to take part in this price. Therefore, we {fire fighters} have the idea that we are doing the hard repressive work, and that they {people at the office} get the honors and fun stuff for things such as innovative projects (LMSR2)

When I look at the people who are present at the conferences of the Jan van Heyden price, I see that those are mainly high positioned people and almost no people working within the fire stations. All those prices are really fun, but when they don't have national reach, they are useless (IE2)

These arguments are strengthened by a general lack of awareness of this initiative among professional and voluntarily fire fighters: the majority of the fire fighters indicated either to not have heard of this initiative at all or to have too little knowledge about this initiative to have an opinion about it. Whenever people indicated to be familiar with the price, however, they have been found to be generally positive about its value, with the large majority of this group of respondents either indicating that it has clear, undisputed value for the stimulation of innovative behavior or that it has value of some other kind. Thus, though it has been found that the effect of this practice can be increased through involving the working floor more and increasing the general awareness about it, the findings indicate that it declines the perceived restraining effects of the lack of competitive pressures on the IWB of respondents who are aware of its presence. It does this through creating a firm-made competitive pressure which creates the incentive among employees of the firm under study to conduct in IWB and through offering idea champions a stage to present their idea, find support and attract the resources to implement their idea. In other words: this practices has been found to stimulate all three employee IWB process stages, with idea-realization being stimulated whenever it familiarizes policy-makers and people with access to resources with a given innovative effort.

4.2.2 The Influence of Social-Political Pressures

It has been found that social-political pressures create high incentives towards managers and fire fighters to improve the way in which things are done and to be innovative. Several respondents indicated that political and societal expectations, -opinions and -developments create a need throughout the organization to change and to develop innovative approaches. For example, as indicated by a district commander, local mayors can have significant degrees of political power exerting influence on the need to be innovative:

A police commander is named by the king. A fire commander, though, is named and fired by the mayor. Therefore, fire commanders will always be dependent on mayors and always have to keep their mayors satisfied, leading to a low degree of independency. Whenever a mayor wants to have something, for example an certain innovative approach or a solution for a given problem, there is a large possibility that the fire commander of that region will stress the need for it (RBC3).

A professional fire fighter explains this influence of political actors such as Mayors further:

The local Mayors all pay for our services and in return, they all want to have their privileges and special treatments. Therefore, they, and other local or national administrators, can have a strong role in determining which innovations are desired and which are not: when they desire the fancy

usage of drones during the extinguishing of fires, our managers found a project group focusing on it (PFF1SR3).

These findings indicate that political expectations and opinions, such as the opinions and preferences of local Mayors and other politicians, can significantly stimulate or restrain the IWB of the respondents whenever they explicitly support or oppose a given idea or project. Other respondents pointed to the influence that recent developments in the society surrounding the firm under study, such as financial crises, and the effect that public expectations and desires can have on the IWB of fire fighters:

A lot of current changes we made through are caused by the crisis. Crises give a large incentive towards the society and the people living in it to change. Because of such crises, they are made aware that things have to go more efficiently. Therefore, they expect us to become more efficient also, causing creativity and pressures towards us as a fire department to develop innovative approaches (VFF1SR2)

A District Commander agrees with this notion, pointing to the consequences of cutbacks in resources, issued by political actors, on the incentives to increase the innovativeness of the firm under study:

I look for innovative approaches because of my own motivation as well as external influences. For example, the cutbacks in several branches of our work demand us to perform a lot of activities better, differently or both. This causes a necessity to develop and implement new approaches (DCSR2).

In line with this notion is the opinion of a team-leader, who indicated that the need to keep up with societal changes of all kind and changes of public expectations and habits create incentives to conduct in public employee IWB:

Our environment changes continuously and forces us to change with it. Technologies change, construction methods change and the expectations with regards to our service levels & performance change. Therefore, we continuously have to look at how current things are going, which aspects can be improved and whether and which innovative approaches can assist us with this (LMSR3).

Based on the above findings, it can be concluded that several social-political factors pose strong incentives to the managers and employees of the firm under study to conduct in IWB. Correspondently, they also have been found to be able to significantly decrease the need for innovation and to create barriers towards the implementation of innovative ideas. For example, a District Commander indicated that, in order for an innovative effort to be implemented, it is not always sufficient that the higher management of the Dutch Fire Department approves it:

We cannot simply look at what our highest organizational policy makers think and whether they approve a given idea. We also have to look at national administrators and politicians. When I want to implement an idea, all 25 mayors of this region have to agree with it and improve it. Also, the minister of Safety and Justice can interfere with this process, arguing that there are privacy matters or simply that he does not like the idea, for example (DCSR1).

The last sentence of this quote indicates that, in some cases, political pressures decrease the ability of public employees to champion innovative efforts or may even inhibit or stop their implementation of such efforts. The findings also indicate the presence of a relatively high fear for possible negative consequences of failed innovative projects among fire fighters and their managers. As one District Commander explains, these perceived dangers of participating in innovative projects may even prevent people in the higher ranks of the organization to conduct in IWB:

Most of our employees are so afraid of failure and of being displayed on public news programs that they don't try anything at all. In my opinion, this anxiety grows stronger when you rise higher in the organization. Thus, the highest positioned managers in our organization are really afraid of being publicly humiliated. Political actors can make this process harder, with their demands for paperwork, rules and regulations (DCSR2).

These findings indicate that social-poltical pressures pose large incentives towards fire

fighters and their managers to conduct in innovative work behavior as well as large disincentives to do so whenever political and societal actors don't desire a given innovation or whenever fire fighters or their managers perceive that are large negative consequences associated with failure. Therefore, it can be included that social-political pressures have been found to be able to significantly influence the IWB of the firm under study. These results, together with the results of the document analyses, indicate that a large proportion of the strategy content of the firm under study is forced on its management by formal laws and regulations such as the Law Safety Regions and other regulations and that the organization is regulated highly by political sponsors through mechanisms such as performance indicators, inspections, audits and budgetary controls. Therefore, the pursuit of innovativeness is found to be rather targeted at improving organizational performance in order to increase the satisfaction of political and public stakeholders and to increase the general public safety than at beating the competition. Because of this high need to be responsive to the shifting demands of external stakeholders, identified within the firm under study, it has been found that the type of strategy adopted by the firm under study is a reactor strategy rather than a prospector strategy.

4.3 Internal Factors influencing Public Employee Innovative Work Behavior

In this section, findings on the internal impact factors for public employee IWB, identified within the firm under study, are described. These factors concern the roles of the supervisor, the working group, organizational structure, organizational practices and individual characteristics.

4.3.1 The Role of the Supervisor

The supervisor-subordinate relationship and leadership style

In general, the relationship and interactions between fire fighters and their supervisors, identified within the firm under study, can be described as being twofold: while supervisors have been found to adopt directive leadership styles in some cases, they have been found to adopt supportive and collaborative leadership styles in other situations. Thus, supervisors seem to switch between transformational and transactional leadership approaches. As described by two respondents, this duality is caused by the nature of fire fighters' work, the controlling of calamities:

Within the fire station, I have very open relationships with my guys and I deal with supporting them as good as possible, providing them with the facilities they need. Everything can be discussed and I certainly value their opinion. During action, though, I have to lead directly, commanding people what to do and how to do it. In such situations, our relationship is merely based on command and follow; they are not allowed to ask unimportant questions or tell me how they feel (IE3).

There certainly is mutual respect. However, because of the nature of our work, there is absolutely no room for discussion during responses. It is impossible to argue in front of people who have their house on fire. So on the street, there is an highly directive relationship (PFF4Sr1).

It was interesting to find that, though all respondents confirm the existence of this dual relationship, the majority of them accept it and even is convinced that this duality is necessary and desired. Therefore, the directive style of leadership, generally adopted during repressive actions, is not perceived as undesirable. The reason for this high degree of acceptation could be the fact that the time devoted to repressive actions solely constitute a minor proportion of the total working time of fire fighters. Indeed, after being asked for the relationship with their supervisor in general, inside as well as outside the fire stations, the large majority of respondents answered that this relationship is very open and based on collaboration, mutual trust and respect. Almost all respondents indicated that they have the feeling that they can discuss everything with their supervisor including new ideas with regard to innovative approaches. Furthermore, all interviewed supervisors and district commanders indicated to have adopted leadership styles which can be described as

supportive and coaching styles rather than coercive or directive ones. This general adoption of the transformational leadership approach is explained by one district commander:

I am not a very directive manager. Rather, I prefer working in group processes, developing processes and people together with the help of my colleagues and achieving something together. There absolutely is mutual trust and respect. Also, I try to make sure that everyone has the feeling that this relationship is really open with everything being open for discussion (DCSR3).

Besides personal preferences, it has been found that there is another reason for the adoption of these supportive and coaching leadership styles throughout the organization: the nature of fire fighters' work. This is explained by a two line-managers:

I share 24 hour-shifts with my guys indicating that we see each other all day. Therefore, I practically am one of the guys (…). Because we share such long shifts, a bond of trust and mutual respect has developed. Therefore, they know that they can come to me with everything and that they can discuss everything with me. We can speak openly about several things, including private matters (LMSR2).

At the fire station, I am one of the guys and part of the crew. Tonight, I sit next to the guys, watching TV and drinking coffee; discussing a wide variety of things including problems and private matters. At the end of the last shift of our week, we mostly go to the pub and grab a beer together (LMSR3)

Because of the nature of fire fighter's work, giving rise to a bond of mutual trust and respect, the relationships between subordinates and direct supervisors generally are found to be open and personal. Correspondently, solely a small minority of all respondents indicated not to perceive that they receive unconditional support from their direct supervisor, whenever this might lead to personal problems for the supervisor at hand. The findings that supervisors generally serve as role models for their subordinates, maintain open, informal and personal relationships with their subordinates in which everything is open for discussion and which are based on collaboration, mutual trust and mutual respect, all are indications that, especially within the fire stations, high-quality LMX relationships exist within the firm under study. Also, they indicate that the dominating leadership style, adopted throughout the firm under study is directive during responses and supportive and coaching during non-responsive activities.

Direct supervisor's attitudes with regard to innovation and newness

The attitude of direct supervisors with regard to new ideas and newness in general is perceived as being relatively positive, as almost all respondents indicated that their supervisors generally are open towards new ideas with regard to innovative approaches, appreciate the posing of them and that they provide constructive feedback including advice on how to further develop it. One fire fighter explains the positive effect of his' supervisors attitude with regard to new things on his ability and motivation to come up with new ideas:

I discussed my idea to develop and implement a new diving registration system with my supervisor, and he instantly told we how he felt about it and what I needed to do to get it done. This really helped me to get started and ultimately to get it done (PFF1SR2)

These findings correspond with the answers provided by the team-leaders and district commanders with regard to their attitude towards new ideas and newness. All respondents originating from these groups indicated to value and support the posing of new ideas and to perceive it as highly important to be as open as possible for subordinates approaching them. This importance is highlighted by a district commander and a line-manager:

Whenever you ignore the ideas people pose to you, these people will become demotivated and will not come up with ideas anymore. And that can have severe consequences, especially for innovation. Therefore, totally support any input from the floor. (DCSR1).

I always try to involve my people through assigning them with a problem or challenge or asking them to gather a view people and to look at it in order to come up with recommendations and advices. In general, very good things arise out of these processes. I think that it is essential to stimulate new ideas, to be open towards them and to give people the room they want and need. When you don't

do this, you kill the need and desire to be innovative, which is lethal for innovative behavior and the innovativeness of your firm. (LMSR3).

It has also been found, though, that the personal judgement supervisors make about a certain idea or idea champion remains an important factor influencing their openness towards new ideas. This finding is confirmed by fire fighters as well as team-leaders:

in general, my supervisor is relatively open towards new ideas. His attitude might depends on the person you are and the ideas you have posed, though. Whenever you have approached him with a number of small, useless ideas in the past, he will probably react less happy and open (PFF4SR2).

You have to be open for new ideas, though they have to be good. Don't approach me with a very small idea which delivers a new application that we really don't need. Don't waste our time (LMSR1).

The role of the direct supervisor during the IWB process.

Despite the judgment that supervisors seem to make individually, it has been found that the large majority of fire fighters having championed and completed at least one innovative process within the firm under study perceives that their supervisor was an stimulating factor due to his or her openness, provision of feedback and facilitating efforts; a majority even was convinced that their supervisor was a crucial factor for success through the offering of the feedback, freedom, resources and facilities they need. These findings are strengthened by the fact that employees having indicated that their supervisor was not crucial for their success admitted that their direct supervisor played no role during this process. Therefore, none of the respondents having championed and implemented innovative efforts perceived that their supervisors were not open towards their ideas at all nor that they were an restraining factor. Two innovative employees explain the crucial positive role of their supervisors during innovative projects:

The role of my supervisor is highly supportive. He is very open towards new, innovative ideas and personally comes to me with new ideas often. My supervisor also often stimulates me to think beyond the topic at hand. Therefore, I feel really stimulated to think creatively (IE3).

When I told my supervisor and the sector commander of my idea to gather data in order to build a data-warehouse which can be used to make better decisions, they instantly saw the value of implementing Business Intelligence. They asked a lot of interesting questions, constituted outstanding sparring partners and they gave me a significant degree of time and freedom to work on it. This really stimulated and motivated me so much that I dare to say that his role was crucial for my success (IE9).

It has been found that during innovative processes demanding a relatively large amount of investment, the role of the supervisor is influential mainly during the IWB process stage of idea generation and during the first part of the idea-championing stage. All respondents having experienced such an process indicated that, though their supervisor can be stimulating through being open, supportive and offering constructive feedback, this role generally ends during the idea championing stage. In order to complete this stage, the idea has to be passed to the higher ranks of the organization, seeking formal approval in order to attract finance. The lack of influence of the supervisor during the end of the championing-stage is explained by a team-leader:

For projects demanding large investments, the best I can is send my guys home and let them think thoroughly about their idea. I let them write a good proposal in which they motivate why their idea is needed, what it will deliver, what it will cost and what the possible disadvantages and consequences are. When they really thought about it and wrote something down, I will go with them and let them present it to the people in the higher ranks. After this, my role and influence ends (LMSR3).

Also, it has been found that an unfavorable attitude of the direct supervisor with regard to innovation and newness can have severe restraining effects on the behavior of his or her subordinates. As one fire fighter indicated, a lack of openness of the supervisor towards new ideas and a lack of support and trust can decrease the desire and motivation to be innovative significantly:

The attitude of my supervisors with regard to new ideas and things is really bad due to the fact that they generally see troubles and challenges rather than opportunities and benefits. Because they often indicate that it is not my job to be innovative, I don't have the idea that I am welcome to come up with new things at all. Therefore, I notice that I keep my mouth shut more often, having severe doubts why I still would want to put more effort in my work than needed and demanded (PFF4SR3).

In general, supervisors within the firm under study don't explicitly indicate that they expect their subordinates to be innovative: the large majority of the interviewed fire fighters argued that they never received any communication of this kind from their supervisor. Despite this lack of communication, almost all respondents indicated that they are aware of the fact that they are expected to improve their situation whenever they see the possibility to do so. However, perceptions with regard to the supervisory expectations of IWB are varied, indicating the presence of uncertainty with regard to whether IWB is expected by the direct supervisor or not. This is explained by two fire fighters:

My supervisor has not communicated explicitly that he expect us to be innovative. I think he expects that whenever you come across something of which you think needs, and can, be improved, you will go work on it. So in that sense, he expects us to improve our situation when possible. But he does not expects us to be occupied with innovating and new things continuously (PFF2SR2).

My supervisor did not communicate towards me that he expects me to be innovative. Only when you work in a project group, you know that is expected. (..) But within my regular job, I don't believe that it is expected from me to be innovative (PFF1SR1)

These findings indicate that failing to explicitly communicate the need to generate and implement innovative approaches and failing to communicate that this behavior is expected of everyone leads to uncertainty among employees whether conducting in IWB is explicitly expected of them or not, thereby decreasing their need and motivation do to so.

To summarize the findings on the influence of the supervisor on employee IWB, it has been found that the high-quality LMX relationships existing, and the supportive and coaching leadership styles adopted within the firm under study, lead to the fact that supervisors are generally perceived as being open towards new ideas and as crucial stimulating factors for employee IWB. However, it has been found that during processes demanding significant investments, their role is somewhat limited to the idea-generation and the first part of the idea-championing and that a lack of openness and support to new ideas can have severe restraining effects on employee IWB. Finally, it has been found that supervisors being relatively unwilling towards innovation and failing to explicitly communicate their expectations with regards to IWB cause uncertainty about those expectations and desires among their subordinates, restraining the IWB process stage of idea-generation and thereby employee IWB as a whole. Taking these insights into account, it can be concluded that the role of the direct supervisor is crucial during innovative processes.

4.3.2 The Role of the Work Group and Colleagues

The Nature of work-group relationships

As the large majority of respondents indicated to perceive the relationship they have with their colleagues as being relatively intimate, open, based on mutual trust and respect and as characterized by a high degree of collaboration, it can be concluded that that high-quality TMX relationships are prevailing within the firm under study. Correspondently, as solely a small minority of the respondents argued not to perceive these relationship as such, signs for the existence of low-quality TMX relationships are weak. As indicated below, the reason, generally provided for the existence of such intimate relationships within the firm under study, is the nature of fire fighters and their work, which create a bond of trust, friendship and loyalty:

My working group really is a unity. We trust each other completely and we share one purpose. We discuss several things including personal and private things and the atmosphere is very open. Therefore, I always feels like I am home within the fire station (PFF1SR1).

I know the strengths and weaknesses of all my colleagues and I accept them totally. In my opinion, the unity of teams is something which belongs to our work: We share unique, dangerous experiences in which we safe people and risk our lives. This creates a unique bond between people without individuals being left out or ignored (VFF1SR3).

Based on these opinions, generally provided by the respondents, it can be concluded that, in general, high-quality TMX relationships are found to exist within the work groups and teams in the firm under study in which nobody is left out or not integrated within the group.

The influence of the working group and work-group interactions on public employee IWB

Out of the above quotes, displayed to give an impression of the answers generally provided by the respondents with respect to their relationships with colleagues, two findings can be made with regard to the nature of these relationships. Firstly, it has been found that employees within the firm under study generally perceive that their team-mates pursue the same goal and purpose as their selves and that their team operates as an unity pursuing a shared goal. Second, due to the fact that the respondents generally indicated to perceive being able to discuss everything with their colleagues as well as to have personal, open relationships with them, the perceived participative safety within distinct teams has found to be relatively high. This argument is strengthened by the finding that the large majority of the respondents indicated not to be afraid to approach their colleagues with new ideas about innovative approaches at all, leading to a non-threatening atmosphere with respect to the posing of new ideas within teams, This feeling is explained by one respondent:

I never experience and I don't have any fear for conflicts, stress or any damages for me personally. Whenever you make a mistake or pose an crappy idea which is a waste of everyone's time, you correct it, apologize to your colleagues and continue with your work. And you don't get mad or upset when others make mistakes or pose ideas which are not desired at all (VFF1SR3).

Furthermore, the findings indicate the presence of a shared concern for task performance, the performance of teams and the performance of the department as a whole. Also, it has been found that the respondents perceive that their colleagues have similar high degrees of task performance. As indicated by one respondent, this high degree of perceived overall task orientation leads to a general openness within teams towards new, innovative ideas:

All the guys are highly interested in their job and open for possible improvements. Therefore, the coming up with new ideas and supplements is really valued. Because of this reason, I know that I can come up with new, innovative ideas or perceived problems anytime, that I will receive good feedback on them and that we will work together to come to an solution, if needed (PFF1SR3).

Findings on the degree of support for innovation within teams are inconsistent, indicating that champions of new efforts not always receive full articulated and enacted support from their colleagues. Though the large majority of respondents argued that they consider the generation and implementation of innovative approaches as important for individual and team performance, solely halve of them indicated always being open and support the generation of ideas with regard to new approaches by their team mates. This relatively low degree of support for new, innovative ideas posed by colleagues has found to be caused by a perceived overload of changes. Almost all respondents having indicated not to currently desire the posing of new and innovative ideas argue that they lack this desire because of the fact that they have had to cope with a significant amount of changes lately, causing them to be tired of changing. This is explained by two respondents:

There currently are so many innovative projects going on that the firm is changing as a whole rather than changing on one thing or aspect. Therefore, there is an overload of changes which some of my guys cannot handle anymore. I notice that some of them are simply tired of changing and don't want to anymore. They just want to stick to their current, outstanding way of doing things (LMSR2).

We recently had a commander which changed almost everything. Therefore, we have seen changes everywhere and have been forced to change our behavior somewhat continuously. This has caused

friction. Therefore, I currently don't desire any other thing which lacks evident improvements and which forces me to change my behavior (PFF1SR2).

The findings on the openness of colleagues with regard to new ideas having clear value and potential are more consistent, as the large majority of respondents indicated to support such innovative efforts unconditionally. These findings correspond with the finding that almost every respondent perceives to be appreciated and supported whenever they come up with an idea which has high value and potential.

Based on these findings, it can be concluded that high-quality TMX relationships are generally prevailing within the firm under study and that within work groups, clear and shared visions and goals exist. Also, it is found that there are high levels of perceived participative safety and task orientation and that, though a large share of the respondents indicated to be less open towards new ideas because of a recent overload of changes, the large majority indicated to support the new ideas having clear value. Therefore, it can be concluded that, in general, innovative team climates exist within the firm under study in which creative ideas can be presented without fear of retribution. As a result, it has been found that the role of the working group is being perceived as highly supportive during innovative efforts within the firm under study, as the large majority of respondents indicated that their colleagues are generally open for newness and innovative ideas and that they generally provide adequate and useful feedback and support when needed. The perceived value of being able to discuss new ideas with colleagues and to receive feedback on them is highlighted by the large majority of respondents. The crucial role of colleagues and the work-group during innovative efforts is explained by two fire fighters:

When someone comes with a new idea –either radical or simple- we all discuss it and provide feedback. Mostly, the idea gets better whenever you discuss it with others and when you receive feedback on it. After all, two people have more knowledge and expertise than one (PFF2SR1).

When I have an good idea, I will not hesitate to tell about it because I know that everyone wants to know about it and is ready to collaborate with me and to think with me. Everyone is willing to look whether the option is desirable and achievable or not (PFF2SR3).

Despite these findings on the highly supportive role of the work-group, a small minority of respondents have been found to either perceive their colleagues as being unsupportive or as a demotivating and restraining factor for their innovative efforts through not providing the support needed. Reasons provided for this lack of support for innovative ideas are a general reluctance towards change, a lack of knowledge on the topic, a lack of time and personal goals and personal motives which don't correspond with the idea at hand. It has been found that these work-group interactions, unfavorable towards innovation and change, have severe demotivating and restraining effects on public employee IWB. This is explained by two respondents:

The people surrounding me did nog really appreciate my initiative and did not want to be involved with it. Also, they made somewhat fun of me and made jokes about my initiative. Though I knew that I should not take these jokes too seriously, they really created an unpleasant feeling. The lack of support gave me a feeling of isolation and I really felt alone. It almost caused me to stop my project (IE4).

Whenever I propose something to colleagues, the general response is negative. They never instantly believe that your idea is good and you have to invest a significant amount of time and effort into convincing them of the value of your project. Also, the restraining force of more experienced fire fighters cannot be ignored. These people have current authority and the reputation to be the expert who knows everything. Whenever you come up with something new, they lose this expert role (IE3).

Thus, it can be concluded that, whenever the work group is unfavorable towards innovative ideas, it may have severe demotivating effects on employees to conduct in IWB. In general, though, work-group interactions are perceived as stimulating factors for IWB and as essential ingredients for innovative efforts within the firm under study. Indeed, the majority of respondents having championed innovative efforts described that, without the

supportive role of their colleagues, their project would very likely to be unsuccessful. This crucial role of the work-group for public employee IWB is explained by one fire fighter:

After I gathered as many data I could find and developed a data warehouse and several data models, a colleague of me joined in and helped me to use these instruments to actually provide answers to important questions and to turn this data into useful applications for our fire department. Thus, together we arranged that our region started to benefit from available data (IE9).

The important role of colleagues and the working group during the IWB process is highlighted by the large majority of respondents. Most interviewees have been found to be convinced of the fact that the innovation process is not something which can be completed individually, that the openness, help and support of colleagues is essential for the success of any innovative project and that no project arising from the floor will succeed whenever most colleagues are against it. This insight is explained by two respondents:

Whenever you have a team backing you and providing you feedback, you are very likely to succeed. These people will help you improve your idea and convince others of the value of your project (IE5).

I simply placed the first pilot of the application inside this fire station. After a week, the guys would kill me if I would remove it. They instantly saw that this was something they needed and I immediately got support for it and some feedback to make it better. They shared it with other colleagues from other fire stations after which I received a general support and got finance from my supervisor very easy (IE8).

Based on the above insights, it can be concluded that the nature of work-group interactions significantly influences all three stages of the employee IWB process. It has been found that the existence of high-quality TMX relationships and a team environment for innovation motivates idea generation through the existence of a general openness and support of colleagues towards new, innovative ideas within the firm under study creating an atmosphere in which creative ideas are communicated and evaluated without fear of retribution. Furthermore, it has been found that such work-group interactions stimulate idea-championing within the firm under study through the role that colleagues play with respect to convincing other people of the value of a given project and creating a general support for it. Also, it has been found that the existence of high-quality TMX relationships and a team environment for innovation stimulates and improves the implementation of innovative efforts within the firm under study through the offering of valuable feedback to its champion with regard to the best way in which it should be implemented. Finally, it has been found that work-group interactions can pose severe restraining influences during all these stages whenever the working group is relatively unfavorable and closed towards innovative approaches.

4.3.3 The role of Organizational Structure

4.2.3.8.1 The influence of organizational structure

In line with the findings made during the description of the firm under study, it has been found that the large majority of respondents perceive that the organizational structure of the firm under study is highly formalized, mechanistic and bureaucratized and that they consider this organizational structure and its consequences for organizational processes as the largest restraining factor for their ability and motivation to conduct in IWB. Indeed, the relatively high degree of formality and complexity of organizational processes has been found to be the factor mentioned most frequently as actually having restrained the IWB process of employees having generated and championed innovative efforts. Examples of restraining influences of the current organizational structure on employee IWB, as indicated by the respondents, include uncertainty with regard to who to address or where to go with a new idea, long-lasting and exhaustive decision-making processes, a relatively high suffering of rules, regulations and prescriptions, low degrees of flexibility of organizational actors as well as organizational processes, indications of the presence of centralized authority and a strict hierarchy and fixed and rigid budgets not allowing for

exceptions. The existence of some of these negative influences of the organizational structure on employee IWB is explained by three respondents:

When someone generates an innovative idea, he informs his team chef. This chef informs his departmental head, who communicates the idea to his district commander. This district commander informs his regional commander who contacts the MT after which a decision finally is made. This process may take a few years and everyone within this line of command has his own opinion about it and has the possibility to hold back the project when they don't like it. Thus, the road to success is far too long and knows far too many obstacles (DCSR1).

It takes far too long before decisions are made and communicated. This decision has to pass several commissions, procedures, budgetary people and technical people who all have an opinion about it and have to agree with it. I often see that my guys become demotivated by this and argue that they will not pose anything again. They want to see a quick reaction and a rapid answer because their idea is based on a necessity to solve something, a given problem. Also, fixed, rigid mechanisms and procedures are large restraining factors for innovative behavior as well as regular behavior, decreasing the ability to do something differently (LMSR3).

The high extend of rules and regulations adopted here can restrain you significantly. For example, we are not allowed to work more than 48 hours every week. I experienced that the championing and implementation of a good innovation takes around 60 hours extra monthly. But, practically, this is not allowed by the current rules and regulations. When your time is up, your project is restrained because you won't get paid for your workings. Though I really love my job, I definitely don't consider myself as a charity worker (IE3).

These findings, provided by respondents originating from all layers of the organization, indicate that the firm under study has adopted and implemented a large degree of formal procedures, rules and regulations. Also, they indicate that budget-based control systems are adopted, accompanied with a high degree of formalization and centralization. As indicated by one respondent, this causes the flexibility of organizational processes and organizational actors to be low, having restraining effects on the IWB processes of employees of the firm under study:

For one of my projects, a website had to be hosted and I know exactly how to do it. However, regulations and procedures forced us to conduct a detailed study on the alternatives and their costs and benefits, having led to more expensive yet less effective plans. Also, we came across a large number of demands for things such as service-level agreements, process agreements, production agreements, contracts and other things which are barriers on the way. Because of this high demand for clarity and formalization, quickly developing something and benefiting from it is impossible (IE8).

The relatively mechanized structure, found to be adopted by the firm under study, has been found to have two causes. Firstly, as indicated in the section on social-political factors, the public nature and the high degree of social-political pressures being exerted on the firm under study have caused its management to adopt a reactor competitive strategy. Indeed, it has been found that employees of the firm under study have a relatively high degree of exposure to regulation through performance indicators, procedures, inspections, audits and budgetary controls and a high adoption of formal rules and regulations in order to be responsive to the shifting demands of external political and societal stakeholders. Secondly, as it has been found that the problem analyzability within the firm under study is generally high to do the high usage of regulations and prescriptions and the high provision of trainings and exercises and as task variability has found to be relatively low due to the fact that tasks are specified and divided to a large extend, it can be concluded that the firm under study has adopted routine technologies. As indicated the theory section, the adoption of reactor strategies and routine technologies is generally argued by contingencies theorists to be related with high degrees of formalization, the usage of rigid control rules and regulations and low degrees of flexibility.

Taking the above results into account, it can be concluded that the strategy and technology, adopted by the firm under study, has caused its management to adopt a relatively mechanistic and formalized organizational structure. This organizational structure and its corresponding organizational processes and procedures has found to

severely restrain the employee IWB stages of idea-championing and idea-realization within the firm under study. Therefore, it is proposed that the adoption of a complex, formalized and mechanistic organizational structure restrains public employee IWB.

4.3.4 The role of Organizational Practices

This section will start with describing whether certain empowerment practices are adopted by the firm under study and what their effect on public employee IWB is. Next, the effect of several other implemented organizational practices, aimed at the stimulation of firm innovativeness, on public employee is discussed.

4.3.4.1 The role of empowerment practices

The influence of granting freedom and discretion on public employee IWB

It has been found that leading persons within the firm under study provide their subordinates with a relatively high amount of freedom and discretion during the execution of their tasks. It has to be noted, though, that this freedom is provided solely within the fire station and during so-called 'cold tasks' and hence, not during repressive actions. Also, it has found that freedom and discretion can only be provided within boundaries, as a large degree of activities and duties are prescribed by official procedures, rules and regulations. Despite the presence of these boundaries, it has been found that all interviewed supervisors and almost all district commanders indicated to find it essential to -within the allowed boundaries- assign their subordinates with a large degree of freedom and discretion to execute their tasks and to change work processes and that they do so. The opinions and perceptions of the large majority of respondents are found to correspond with the above findings. Though a minority of the respondents indicated not to have the freedom to execute most of their tasks according to their own judgement, they generally argued that this is caused by external factors restraining the ability of managers to grant discretion such as laws, rules and regulations rather than internal factors. Two fire fighters explain about such factors and their effects on IWB:

The regulations for working times are very harsh. We are obliged to be free for 11 hours after we completed a 24 hour shift. I sometimes have a meeting after such a shift, but I am not allowed to be present at those meetings because I need to be free. Also, I am not allowed to work on innovative projects after a 24-hour shift and earn money during these hours. So I am restricted (PFF1SR2).

Due to official prescriptions on the performance of our department, we are obliged to deal with things which originally are not part of our tasks. These activities include cleaning masks or gas tanks and testing equipment regularly, even though we know the equipment is good. Because of this, our available time for exercises, trainings, and getting to know each other is decreased severely. Also, it decreases the available time to be able to successfully lead innovative projects (PFF3SR2).

Though laws and regulations are often perceived as being restraining factors for the degree of freedom and discretion of fire fighters, the direct supervisors generally are not. The large majority of interviewed fire fighters indicated that they receive a high degree of freedom with regard to the aspects of their work for which it is allowed, that they perceive that they are able to perform a large share of their work independently and with discretion and that they were satisfied about the degree of freedom provided to them. The importance of granting freedom and discretion for employee IWB is highlighted by several respondents, as all respondents indicating to have been provided with freedom and discretion argued that this provision was one of the critical factors having led to their success and as this practice has been found to be considered as one of the key success factors for any successful innovative project. As indicated by one respondent, freedom and discretion increases the perceived responsibility for the quality of the project and raises the confidence to complete it:

The freedom and room that I have received from my supervisor and the organization certainly has been a key success factor for the success of my project. My supervisor allowed me to work on my project completely independent for 50% of my time during the first year and for 100% of my time

during the next two years. This motivated to such an large extend that I really felt motivated and responsible and sometimes I even worked through the night. This was okay, though, because then I was allowed to report at noon rather than in the morning (IE9).

The influence of the provision of freedom and discretion has found to be positive on all three stages of the employee IWB process through offering employees the room and confidence to generate and improve their ideas, the room and freedom to involve and convince other people and parties with and about their project and the room and discretion to search for and select various ways to implement the idea. Two innovative employees explain this influence of freedom, independence and discretion on the IWB process:

For most of our projects, we don't need permission from above and we are relatively free to determine what we do and how we do it. Because of this freedom and the facilities and resources we have available, we really can get things done here. We have the freedom to attract and generate new ideas as we please, to test their viability and to improve them and ultimately to come up with a plan describing how they should be implemented. This creates a feeling of safety that I can do certain things without that these projects are terminated instantly (IE6).

I received a lot of freedom to do whatever I thought was needed to do with the guarantee that my hours got paid. This was really critical for me, because it allowed me the room to experiment and to find out the best way to implement my idea (IE4).

These results indicate that the provision of freedom, discretion and independence has stimulating effects on all stages of the public employee IWB process. It has also been found that the content of existing laws, rules and regulations pose severe barriers and limits towards managers of the public firm under study with regards to this provision, thereby restraining their ability to stimulate public employee IWB.

The influence of providing information on goals and performance on public employee IWB

It has been found that the majority of respondents has not received any communications explaining the current and future vision and goals of the organization under study, as described in official organizational documents (BrandweerNederland, 2010). Furthermore, even though a minority of the interviewed fire fighters indicated to remember having received any communications of this kind, either from their direct supervisor or through organizational channels, less than half of them actually could describe what they are. Thus, as indicated by one respondent, even whenever people have been informed, they still have been found to be relatively unaware of the organizational vision and goals, indicating communicative flaws:

A few years ago, we were present at an meeting in which the vision and goals for the next 20 years were projected. But in my opinion, this talk was rather fuzzy and lacked clarity. They kept talking about reaching some kind of dot at the horizon… I had no clue what they were talking about (PFF1SR2).

These findings correspond with the finding that solely a small portion of all interviewed fire fighters indicated that they are aware of the official vision, mission and goals of the firm under study. Most of the respondents indicated to be unaware of or to be unable to describe the strategic change that has been initiated in 2012. This high extend of goal ambiguity not solely applies for national strategic matters and goals, but also for regional strategies, and objectives. In general, the respondents are found to mainly focus on the pursuit and completion of team objectives. This has been found to lead to restrains for employee IWB, as the respondents often are unaware whether their ideas are desirable with respect to the organizational strategy and goals. This is explained by two fire fighters:

It seems that our management has no vision, mission or strategy at all. Nothing is communicated to us. I am sure of the fact that there are some goals, but I don't know what they are. This is very damaging, because without a plan, strategy or goal, innovation cannot be guided. I simply don't know what is expected nor what is desired of me. What can I come up with and what not? (PFF3SR3)

I think a vision with regard to how we will extinguish fires in the future is lacking. Are we going to do it with 4, or 6 or with 8 guys; will we specialize or not? There are a lot of ideas, but there is no

vision. People have to have a direction. Within my team, everyone seems to have a slightly different idea of what these goals are. Without a goal, they either won't search for better ways to achieve this goal or they will make their own interpretation of goals, producing things we don't need (IE1).

It has been found that this perceived ambiguity about organizational goals and desires has restraining effects mainly during the idea-championing and idea-realization stages of the IWB process. Whenever people are little- or unaware of what is expected of them and what is desirable or not, they are found to be more likely to come up with new innovative efforts that are not in line with organizational goals. Therefore, they are less likely to receive the support they need in order to realize their effort. Even whenever such innovative efforts, not corresponding with organizational goals, receive the support they need, they are likely to meet severe problems during the implementation phase due to a lack of integration with current and future organizational practices. This is explained by two respondents:

When you communicate towards people that the current goal is to create a smaller, more flexible and knowledge-driven organization, they know what to do: create things that match this goal. However, the communication of expectations towards fire fighters currently lacks vision and a clear statement of the goals, leading to the posing of ideas that do not match these goals and hence are useless (IE5).

I have many examples of situations in which I really screamed for innovation and have posed really good ideas. However, they are generally being perceived as useless and non-corresponding with the current plans, leading to a lack of support. I have no idea why (PFF4SR3).

When analyzing the last quote, it seems very likely that the fire fighter having ventilated this opinion is unaware of the future goals, leading him to unconsciously pose innovative ideas which are not in line with these new organizational desires. Therefore, they are rejected by his superiors without him understanding why. Indeed, it has been found that this respondent is not aware of the new strategic doctrine. Taking these results into consideration, it can be concluded that the provision of information on organizational goals does not stimulate public employee IWB unconditionally. Also, it has been found that an inadequate provision of information on organizational goals severely restrains the employee IWB process stages of idea-championing and idea-realization through the posing of ideas not corresponding with organizational desires. Finally, an inadequate provision of information on goals has been found to be able to restrain the entire employee IWB process through spreading goal ambiguity and spreading the perception that the generation and championing of innovative efforts it is not expected nor desired of employees.

With regard to the provision of information on performance, it has been found that this information is well-provided to fire fighters. All interviewed district commanders and line-managers indicated to conduct annual appraisals in which their subordinates are informed of their current performance and the way in which this performance is to be improved. Also, they indicated to provide their subordinates with feedback during daily activities regularly, informing them about aspects which are to be improved. Findings on the perceptions of fire fighters correspond with the above results, as the large majority of the interviewed fire fighters indicated to be informed of their performance at least once every year, that their current level of performance is clear to them and as all interviewees argued that it has been made clear to them what they need to improve and how to do it. As indicate by a respondent, this high degree of clarity is found to lead to confidence and satisfaction among fire fighters:

I receive food feedback from my supervisors and from others. For example, I was told I had to improve the way I discuss things in front of the men and to appear more confident in front of the group. Recently, I managed to improve this and I feel much more free and confident (PFF1SR2).

It seems logical that fire fighters knowing exactly what their performance is and what they need to do to improve it are more likely to seek new strategies and methods to better attain their goals and improve their performance such as conducting in employee IWB than fire fighters not knowing this. However, as the people being well-informed about their performance have not found to demonstrate higher levels of employee IWB than those not,

this study has found no indications of the existence of such a positive, direct relationship.

The influence of offering rewards on public employee IWB

The findings with regard to the offering of rewards for performance can be described as highly inconsistent, indicating the existence of differences in the rewarding mechanisms between distinct Safety Regions. While a minority of respondents indicated either to have received specific rewards such as bonuses or promotions based on their performance or general rewards such as appreciation and recognition from their supervisor and/or colleagues, a majority indicated not to have been rewarded for their performance. Despite this high number of respondents not being rewarded for their performance, the large majority indicated to be satisfied with the way in which they have been rewarded for their general performance or not. This indicates the presence of a general low desire for getting rewarded individually and the presence of a high degree of public service motivation within the firm under study. Apparently, the majority of fire fighters consider an outstanding level of performance as an natural occurring part of their job which does not need to be rewarded specifically. This mentality is displayed by a fire fighter:

I don't know whether you have to be rewarded. I simply do the best I can and am paid for it monthly. Whenever I would not have agreed with the amount of this payment, I would have applied for a different function or another job. Thus, I don't desire receiving an extra bonus or something else. Rather, I like the way in which it is done currently: appreciation displayed by our supervisor through taking the team out for a lunch or doing things together. I value these things much more (PFF2SR3).

Though in one region, monetary rewards are provided based on performance annually, the rewards generally offered are found to be mainly in the form of appreciation and recognition of supervisors and colleagues. Within the region providing monetary rewards, this rewarding mechanism has found to have little effect on the behavior and motivation of fire fighters: though all respondents having received such an reward indicated to appreciate receiving it, they also all indicated that they were not influenced by it to a large extend. These findings indicate that the provision of financial incentives has a low ability to influence public employee IWB. Rather, it has been found that the large majority of respondents prefer receiving rewards in the form of appreciation and recognition from their supervisors and their colleagues. Correspondently, rewarding employees for their performance using such mechanisms has been found to influence employee behavior to a significant larger extend within the firm under study than rewarding them with financial mechanisms. This is indicated by both a voluntarily and a professional fire fighter:

The only thing I need besides my salary is general appreciation from the organization and from the people we safe. That's all. I am satisfied with the way this is being done currently (PFF4SR1).

I get paid for my presence here and I don't need any other specific rewards. The satisfaction I personally have from performing the activities we do, the feeling of oneness and cohesiveness with the guys and the appreciation from the people surrounding me and the people we save are my most important personal rewards (VFF1SR2).

Several practices have been found to be used by leading persons in order to satisfy this need for recognition and appreciation. These practices vary from the offering of promotions and assigning people with the lead over new, innovative projects to allowing subordinates to participate in national projects or to visit (inter)national congresses and fairs. Furthermore, some regions have been found to arrange annual events during which people who have excelled in excellent performance are named and cheered. One district commander describes the nature and purpose of such an event:

During these events, we cheer people who have done something very well or who have done an extra step, for example employees who have successfully championed an innovative project. First, people are called forward after which a small story is told about them. Next, they can held a speech. Finally, they receive flowers, a cake and a gift card for the entire department. Last event we honored 8 people this way (DCSR1).

The findings with regard to the rewards provided for the (successful) championing of innovative efforts within the firm under study differ significantly from those on the rewards offered based on performance in general. While the provision of specific rewards such as bonuses, reputational rewards or promotions is higher for the completion of innovative efforts, the provision of general rewards such as appreciation and recognition is significantly lower for such behavior. Also, the absence of rewards has found to be more prevailing for IWB than for performance as a whole. As a result, the satisfaction among the respondents with respect to the rewards provided for successfully conducting in IWB is found to be much lower. These results imply that fire fighters, in general, are rewarded for their innovative efforts less than half of the time within the firm under study and that, whenever they do, they mainly receive specific rewards. Examples of such specific rewards provided vary from getting promoted and receiving bonuses to nominations for the Jan van Heyden price and allowing champions to participate in national innovative project groups and projects. Furthermore, it has been found that the firm under study has implemented a practice aimed at providing innovative fire fighters with a reputational-based reward. This practice stimulates supervisors and other leading persons to identify people within their region or district who perform an extra step and who are or have been involved with an successful innovative project and to provide them with a luxurious jewel as a token of prestige. One member of the RBC explains the reasons for, and nature of, this practice:

After a leading person has provided someone with a pearl, we publish a 'hero story' about this person on Twitter and the company website. We also make and publish videos about these pearls of the organization with the intention of informing people about the fact that is really is valued to come up with new ideas (..). The goal of this project is to motivate people to pose and champion their ideas and to motivate leaders to search for innovative people and to stimulate IWB. Ultimately, it is to spread an innovative attitude throughout the organization as an puddle of oil (RBC1).

Respondents wo have received a pearl and who have been made part of the pearl project indicated that they value and enjoy this appreciation and recognition and that they feel stimulated as well as supported by it to a large degree. This is explained by one fire fighter:

When I was called a pearl of the organization and was presented as an example for others having innovative ideas, I really felt proud. It certainly provided me with the appreciation and interest I needed from the organization and the confidence and courage to continue my struggle (IE4).

However, as the knowledge about this practice is found to be lacking among the other respondents, the stimulating effect of it on employee IWB has been found to be limited. Due to the fact that not a single respondent besides those having received a pearl has found to be aware of the existence of this practice, it seems to constitute an informal mechanism of recognition which nobody is aware of. Thus, despite that the people having received a pearl are found to be stimulated to conduct in IWB to a large degree, the limited awareness of its existence restrains its ability to influence employee IWB.

The above findings lead to the fact that a majority of respondents are found not to be satisfied about the way in which employee IWB is rewarded within the firm under study. The main reason for this relatively high extent of dissatisfaction is found to be a perceived lack of appreciation demonstrated by the people positioned at the higher levels of the organization. Combined with the perceived risks of championing an innovative effort, this may even demotivate people to conduct in IWB severely, as indicated by one fire fighter:

Recently, I developed a new training method for my diving class together with students. My supervisors reacted fairly angry to this new development, asking me how I developed it, who invented it and that I should've informed them about the fact that I was working on it. Thus, doing something out of your personal motivation and performing an extra step does not seem to be appreciated at all. This has caused me to stop come up with and pose anything for a while (PFF4SR3).

Thus, while it has been found that public employee IWB is not affected to a large degree by the provision of bonuses and other monetary rewards, it has been found to be stimulated significantly by the adoption of rewarding mechanisms aimed at demonstrating appreciation and recognition and by reputational-based rewards. Such rewarding have

been found to positively influence all three stages of the IWB process, as they have been found to increase the satisfaction as well as the motivation of employees to conduct in IWB as a whole. The lack of influence found to be exerted by reputational-based rewards has been found to be caused primarily by the lack of knowledge about it among the respondents rather than the practice itself. Finally, it can be concluded that a lack of perceived appreciation and recognition for the generation and championing of innovative efforts may have detrimental effects on employee IWB.

The influence of providing job-related knowledge and skills on public employee IWB

It has been found that the extend of trainings and courses provided to the respondents is relatively large. As remaining skilled and crafted is an condition which is obligatory and prescribed by law for every fire fighter, professional employees of the firm under study are associated with training and performing (new) exercises daily and voluntarily fire fighters weekly. Besides these trainings and courses aimed at remaining able to be responsive, around half of the respondents indicated to have been given the opportunity to follow a specialized course or education of some sort. Examples of such specialized courses or educations mentioned are full educations to be followed outside working hours, specialized diving courses, specialized driving licenses and other courses aimed at increasing the knowledge of participants about certain topics. Cases in which employees want to follow specialized courses to extend their knowledge and skills but are not given the opportunity to do so are found to be scarce. However, as indicated by one respondent, the few cases which were found demonstrated severe demotivating effects on the fire fighters involved:

I informed my supervisors that I want do to more than originally is expected of me a couple of times, but I have not been provided with the proper courses I need. This has not solely made the completion of my project more difficult because I simply do not possess the knowledge and skills to complete it, but it has also destroyed my motivation to do so. Do they want me to help them or not? (PFF2SR1)

Training on problem solving skills and analytical abilities are generally not provided within the organization under study, as solely a small minority of the respondents indicated to have received such an training or course. However, as explained by one respondent, it has been found that fire fighters generally perceive the provision of this type of training to be unnecessary for them, because of the nature of their task as natural problem solvers:

Within this profession, there always a problem solving ability included and needed. Therefore, this ability is learned by itself. We always have to check, think and act to come to the solution for a problem. So, I don't think we need to receive training on this topic specifically (PFF2SR3).

Though the high provision of trainings and educations, found to be present within the firm under study, could be related to the relatively high degree of employee IWB identified within the firm under study, no clear-cut indications could be found proving the existence of such a direct relationship. Therefore, it cannot be concluded that such provision stimulates public employee IWB. It has been found, though, that failing to provide specialized courses and training programs to employees who are committed towards receiving them can severely demotivate and restrain public employees to conduct in IWB.

4.3.4.2 The role of other Organizational Practices

Besides the implementation of an annual contest rewarding the best innovative effort, a reputational-based reward provided to employees having conducted in employee IWB and the implementation of several empowerment practices, it has been found that the organization under study has implemented a number of other practices aimed at stimulating public employee IWB. These practices include the appointment of innovation managers and a national steering committee, the founding of national collaboration groups and networks and the instalment of (regional) knowledge centers. Their nature and influence on public employee IWB are discussed shortly in the sections below.

The influence of an innovative steering committee on public employee IWB

In order to provide central support to innovative efforts arising from the work floor, the management of the firm under study has founded a national steering committee and innovation managers tasked with locating, steering and facilitating fire fighters championing innovative efforts. Together, these parties judge to what extend innovative ideas posed by fire fighters correspond with the current and future goals of the program boards and in doing so, which of them are desired and which are not. When an effort is judged as desirable, the steering committee offers support and facilitation through connecting people and projects having the ability to help each other, help writing project proposals, arranging finance internally and attracting external finance whenever current budgets come short. The role and activities of this steering committee and the innovation managers are described by one respondent:

We act as an innovative core determining what takes place and what not and connecting people and projects having the potential to collaborate and support each other. For example, when we noticed that two projects were related to a large extend, we provided an extra sum of subsidy in order to arrange that they started to collaborate, after which they significantly strengthened each other. Also, we actively search for alternative, external ways of attracting finance in order to give innovation a boost throughout this firm (RBC2).

Thus, the main purpose of this steering committee and the innovation managers is found to facilitate, steer and support projects which are too large to be issued locally. Furthermore, the steering committee has been found to initiate large-scale, national projects and to have a budget available to financially support such national projects. These projects involve efforts such as the implementation of national-wide Business Intelligence and the usage and sharing of Big Data, projects related with improving the general knowledge of fires and large-scale technological projects such as those focusing on extinguishing robots, the usage of drones and flexible response units, all being projects which are too large to be issued and completed locally. As indicated by a member of the steering committee, the purpose of this involvement with such national projects is not to control them, but rather to steer and facilitate them:

We never lead such projects and meetings, but we rather try to facilitate them. Sometimes the projects already are issued by a number of devoted people. Then, we will step in and offer financial or non-financial support. Our committee tries to increase the amount and quality of these meetings through investing in them (RBC2).

Finally, the steering committee has been found to have installed an idea box on their website, allowing people to present innovative ideas and to allow others to offer feedback or other kinds of support. The purpose of this practice is to allow the diffusion of knowledge about local innovations and to increase the degree of national collaboration as well as support. The national steering role and the perceived value of this committee is further described by one member:

Recently, we have made an significant effort into convincing people that solely two regions should conduct research on the usage of drones during our activities and on the development of good applications. These processes are highly complex and demand significant investments in time, resources and people. Allowing every region to work on it would lead to a detrimental waste of time and money. This is our role: steering innovations when needed, thereby maximizing the value, effectiveness and efficiency of development processes (RBC2).

As the steering committee and the innovation managers have the ability to spread the word about an innovative effort, convince others of its value and arrange collaboration and support through involving other people, they are found to be able to significantly stimulate the employee IWB process stage of idea championing. Also, as they have the resources and connections to facilitate and support most projects financially as well as non-financially, they have been found to be able to significantly ease the process of idea-realization of innovative efforts. However, two caveats have been found with regards to

the influence of this practice on individual public employee IWB. Firstly, it has been found that the committee mainly supports relatively large innovative efforts standing out and demanding large investments. Therefore, small, local initiatives receive little or no attention from the committee nor of the innovation managers. Also, it has been found that they solely support innovative efforts of which they perceive correspond with the current and future strategy and goals. As a result, initiatives which are not perceived to fit organizational desires have generally been found to be ignored or rejected. This rejection of small local initiatives and initiatives with a low perceived fit to organizational goals are found to have demotivating effects on their champions and restraining effects on their future IWB. Secondly, because of the fact that the committee and the innovation managers are occupied mainly with relatively large projects, regular fire fighters operating locally and being occupied mainly with small projects are not familiar with their existence. As a result, it has been found that the majority of respondents is unaware of their possibilities and of the fact that they may receive facilitation and support from the steering committee whenever they issue projects. This leads to the finding that this practice has little influence on employee IWB upfront. This lack of awareness of the steering committee and its initiatives among fire fighters is explained by three respondents:

The main problem is that there are not enough facilities and resources within this firm. I have posed several ideas, but I generally hear that there is no money and that it cannot be achieved. Why don't they just install some national supporting mechanism aimed at locating and supporting initiatives which make a difference? There are so many good things developed at the work floor…(IE8).

When something is too expensive, it will simply not be purchased. There is no one you can approach or nothing to help you then; it will just not happen. That is a large problem (PFF2SR2).

These quotes all indicate the presence of a lack of awareness of the existence of a national steering committee having the financial and non-financial resources to support innovative initiatives. Therefore, it can be concluded that employee IWB is stimulated by this practice solely to a small extend upfront due to the fact that only a small portion of the employees is aware of its existence. It can also be concluded, though, that this practice significantly increases the abilities of employees to conduct in IWB through stimulating the IWB process stages of idea-championing and idea-realization whenever the steering committee actually joins the process and starts facilitating the champion of an innovative effort.

The influence of collaborative project groups and networks on public employee IWB

It has been found that several formal and informal collaborative project groups and networks are formed within the firm under study aimed at generating and implementing innovative efforts focused on specific topics. While a number of these project groups are found to have been formally initiated by the steering committee, they also have been found to arise informally out of the efforts of fire fighters originating from different regions. Most of these informal projects groups can be joined freely by interested people, leading to the fact that they can be described as networks rather than formal project groups. It has been found that networks starting informally generally have the tendency to become more formalized, ultimately leading to structured meetings, goals and outcomes. Another trend which has been found is that, as networks grow and become more structured and formalized, they generally start to receive the attention, facilitation and support of the steering committee. Examples of such project groups are those focusing on expanding and sharing the knowledge of Business Intelligence, the overall quality of data, extinguishing robots, flexible response units, house sprinklers and fire investigation. During most of these projects, the steering group on innovation provides facilitation and support. One respondents who have been involved in national project groups describe its nature:

I have been involved with an national effort aimed at the introduction of national collaboration with regard to the improvement of our repressive working methods. During this project, people from all over the country meet in order to discuss and test new applications developed in their regions and to see whether they are improvements. For example, we have discussed and tested how to reach

and control complex fires deeply located within office buildings, resulting in a new method to extinguish fires (IE3).

Through increasing the collaboration and the sharing of knowledge and expertise within the firm under study, these collaborative groups are found to have undisputed value for the generation and implementation of innovations and for the improvement of the performance of the firm as a whole. However, their effect on the IWB of individual employees has found to be questionable. As these project groups are found to formalize development processes through assigning a group of people with the task of arranging the generation and implementation of innovative approaches on certain topics, they exclude the possibility of others to work on it. Also, while they have been found to motivate and stimulate the people being involved with one or more projects, they are found to demotivate the ones not being involved with them through spreading the idea that it is not their job to innovate but that of others. This effect is explained by three fire fighters:

The generation and implementation of innovative approaches is expected solely when you work in a project group. I am part of a project group focusing on fires within rooms of students. Here, we know that it is our goal is to come up with an innovative plan to make students rooms should more safe. Others are not expected to focus on this topic because that would be a waste of time (PFF1SR1).

It is not expected of us {fire fighters} because whenever we come with an idea, it is generally ignored. Recently, a few fire fighters developed a plan for a new training method, devoting an significant amount of time in developing that plan and recommendations. However, the organization decided to found a special project team focusing on this topic, which completely ignored this plan and the insights provided by it. Therefore, their efforts have been totally useless (PFF3SR1).

Indeed, it has been found that a lack of involving fire fighters with innovative processes and the existence of perceptions of fire fighters that they are not taken seriously during the posing of innovative efforts is considered as one of the most significant barriers for employee IWB within the firm under study. Thus, though collaborative groups are found to stimulate the IWB of those employees involved, they have been found to severely restrain the individual IWB of those respondents not being involved with such projects through creating the perception that IWB is not expected nor desired of them. Therefore, it can be concluded that the forming of collaborative project groups and networks focusing on innovative topics restrains all stages of the public employee IWB process.

The influence of (regional) knowledge centers on public employee IWB

It has been found that the firm under study has installed regional R&D departments focusing on the development of innovative approaches and the testing of current and new technologies. These R&D centers are found to act as knowledge centers in which people from throughout the country gather to discuss and develop innovations. Also, they have been found to constitute meeting locations in which employees of the firm under study meet and collaborate with several external institutions such as universities, (high-tech) private organizations and other knowledge-driven institutions. In general, these centers are found to be equipped with a large range of facilities to be used during the development and testing of innovative approaches, including test courses, test buildings and laboratories. Two respondents describe the role and activities of these centers:

We are an knowledge center occupied with a variety of innovations and focusing on the increasing of our knowledge within several topics. We focus on the development of new approaches with respect to our services as well as educational matters and work with ideas being posed by people within the fire department as well as outside it. Also, we work together with public and private organizations and other knowledge institutions who approach us with ideas with regards to new technologies (IE6).

Here, a group of people collaborates which rather can be seen as an group of entrepreneurs than as a group of fire fighters. These people receive the room and freedom to develop new things and to collaborate with other institutions. This has significantly increased our innovative ability (DCSR3).

The R&D centers are found to lead to the generation, development and implementation of several innovative approaches. Due to their access to a significant amount of resources

and their high-tech facilities, the people operating in them are highly able to produce innovative approaches and hence are found to demonstrate high levels of IWB. Therefore, the R&D centers generally are described as important assets of the firm under study. However, in line with the findings on collaborative project groups and networks, their influence on individual employee IWB has found to be questionable. Though it has been found that the knowledge centers operate as important points of contact to submit innovative ideas, the role of regular employees is found to generally end after the submitting of their idea. As the people operating within these knowledge centers are considered as the ones tasked with the development of innovative efforts, other employees are often expected to leave this process after having ventilated their idea. This process and its effects are described by two respondents:

We have a regional department focusing on the development and implementation of new methods and techniques. This agency seems to focus on fixed projects initiated by our administration solely; there is little room for ideas arising from the work floor. They can be posed, but they often are ignored and not picked up. Apparently, it is not the job of regular fire fighters to be occupied with generating new ideas and innovative approaches (IE3).

It has been found that all the respondents operating below the top levels within the region having installed such a knowledge center, supervisors as well as fire fighters, displayed opinions similar to those described above. Though they all indicated that the R&D center has clear value with respect to the development and realization of innovative approaches and for firm innovativeness as a whole, they also argued that it has abolished the role of regular fire fighters during innovative processes. Based on the above results, it can be concluded that the instalment of knowledge centers has restraining effects on the IWB of individual public employees through spreading the perception that the development, championing and implementation is not a task expected from nor desired of fire fighters.

4.3.5 The role of Individual Characteristics

4.3.5.1 The influence of individual problem-solving style on public employee IWB

It has been found that most of the respondents having championed innovative efforts generated their ideas through the adoption of the systematic problem-solving style. After being asked to describe the way in which they generated their innovative idea(s), these respondents stressed the importance of using rationality and logic. The high usage of rationality and logic is demonstrated by the fact that the large share of respondents indicated to have generated their idea through logically analyzing a perceived problem caused by a perceived gap between their demand for something and their current state-of-being. Furthermore, their explanations demonstrated the following of habit and routine and the adherence to existing rules during the idea-generation process, an example being the search for solutions for a perceived problem through observing the way in which other (foreign) fire departments handle the issue at hand. The adoption of the systematic problem solving style is described by one respondent:

Mostly, my ideas arise from the combination of my personal vision for a given situation and the identification of a new phenomenon or development I spot. Out of this development, a problem arises demanding a solution, after which I try to come up with one rationally. For example, I noticed that fires are changing due to the fact that buildings, architectures and interiors change. Therefore, we need more cooling ability to extinguish the same types of fires. Because the old systems are used at their maximum potential currently, these higher cooling abilities can only be delivered by new extinguishing systems. Therefore, I started looking them and found one abroad (IE3).

The adoption of the systematic problem-solving style has been found to have led to the generation of several innovative approaches. The intuitive problem-solving style has been found to be adopted by a small minority of respondents having championed innovative efforts. These respondents stressed the importance of intuition and imagination and the desire to come up with completely new approaches during the generation of new ideas. Also, they argued that their ability to ignore the current rules and the current way of doing things has been essential for the generation and success of their innovative efforts. The

adoption of the intuitive problem-solving style is explained by one respondent:

My idea to develop a tap to be attached on fire hoses in order to cool down burns on people's bodies arose to me whenever I discovered that we lacked such a device when I needed it. The absence of such a method caused me to experiment with a lot of ridiculous things back at the fire station, which ultimately led to a right combination and the development of this nice application (IE2).

Though the systematic problem-solving style has been found to be adopted to a larger extend within the firm under study than the intuitive problem-solving style, both styles are found to be prevailing and both styles have been found to lead to the generation of innovative efforts ideas and hence to the stimulation of employee IWB. Therefore, it can be concluded that neither one of them is more suitable and more stimulating for employee IWB than the other.

4.3.5.2 The influence of task type and job characteristics on public employee IWB

It has been found that, while almost all respondents indicated to consider improving their situation and environment and achieving their highest potential as their responsibility and as a part of their job description, only a minority of respondents consider the generation and implementation of innovative approaches as such. This may be caused by the fact that thinking innovative and implementing innovative approaches is not explicitly mentioned as one of the official tasks of fire fighters. As displayed below, a finding which stands out is that, while all district commanders and almost all supervisors indicated to consider innovativeness as an official job requirement, solely a few fire fighters consider it as such:

Whenever you decide to be a fire fighter, you know that you always need an innovative ability and an innovative desire within you. When you leave this fire station towards an crisis, you don't know what you are going to have to deal with. Thus, being ready to improvise, being flexible and being innovative really is part of your official job, and everyone should be aware of this (DCSR1).

To be honest, I did not come up with a new project or an innovative thing ever. But I don't think that is my role and duty: I need to go to people who need help and help them. It's not my job to be very intelligent and to come up with the best idea of the country (PFF3SR1).

While all respondents having indicated to consider conducting in IWB as an part of their job description and their responsibility actually been associated with, or conducted in, innovative behavior, relatively less respondents having indicated not to consider it as such have generated and championed innovative efforts. Therefore, it can be concluded that considering conducting in IWB as an part of the job description stimulates public employee IWB. In general, the interviewees who argued that IWB is part of their job description were those working in innovative project groups or research and development centers. Respondents being active within the fire stations, though, stress the need and duty to improve their environment and work processes rather than to come up with innovative approaches or applications. To display this separation, a respondent of each of these groups explain their opinions:

I am operative as an data manager. My official task is to further develop and improve our current data systems and software programs. Thus practically, my job is to come up with new applications and to innovate. Therefore, I have been involved with several innovative projects (IE5).

I don't think that a fire fighter has the duty to be innovative, but I certainly feel like it is my task to improve my situation when possible. Whenever I see that something does not run smoothly or that something can be improved, I try to find a better solution or better way for it (PFF3SR2).

This does not incline that not considering IWB as an part of the official job description demotivates or prevents employees to conduct in IWB. Though it has been found that less employees not considering it as such conduct in IWB than those who do consider it as their duty within the firm under study, it has not been found that they don't do it at all. Apparently, a large share of the respondents generate and champion innovative efforts disregards of the fact whether they consider it as their duty or not. Therefore, though it

can be concluded that including IWB as an part of the job description and official tasks stimulates IWB, it cannot be concluded that not including it as such reduces employee IWB.

4.3.5.2 The role of perceptions about the status-quo and outcomes of the IWB process

The influence of dissatisfaction with the status-quo on public employee IWB

It has been found that most of the innovative ideas generated within the firm under study have been posed in order to decrease the dissatisfaction of its champion with the current state of affairs and as an reaction to perceived problems, environmental developments, the discovery of improvements or dissatisfaction with the performance of current work processes. As explained by two respondents, this dissatisfaction with the current state of affairs caused them to step-up and to champion their innovative effort(s):

I was really fed up with the old way of registering. The old way included so many activities that it became unworkable and it really needed to be improved. Therefore, I came up with the idea to introduce a new system, in which notes could be uploaded after which they were made public for the entire region instantly. This improved the way in which we register things significantly (PFF1SR2).

I am searching for new ways of doing our work mainly because I am very dissatisfied with a number of things and the way in which they happen currently. These things include the way in which fire truck drivers are educated and the mentality that fire truck drivers and volunteers generally have with regards their responsibility in traffic. It is essential for the general safety that these things change and improve (PFF3SR3).

A small share of the respondents having championed innovative efforts indicated that they did so for other reasons than a perceived dissatisfaction with the status-quo. As indicated by two respondents, the two reasons generally provided for conducting in IWB include official tasks assigned to employees or a personal preference for creativity and change.

My initiative arose as a response towards a call made by our administration for approachable contacts within the fire department towards the public. As a response, I volunteered to arrange this (IE4).

For me, it is highly important that my daily work is interesting and is kept interesting. You would really have to motivate me to do the same job every day. Therefore I really like variety and creativity and I continuously look for improvements, innovations and changes to keep my job interesting ad challenging (PFF2SR1).

Despite these findings, it has been found that respondents who don't perceive a certain degree of dissatisfaction with the current state of affairs generally are less willing to conduct in employee IWB: while the majority of all respondents having indicated to be dissatisfied with at least one aspect of their work has conducted in IWB as a means to decrease this dissatisfaction, solely a minority of all respondents having indicated not to be dissatisfied about any aspect of their work has conducted in innovative behavior. Therefore, this study has found strong indications that dissatisfaction with the status-quo positively stimulates public employee IWB. This positive influence has found to be exerted mainly on the idea-generation stage of employee IWB, as dissatisfaction stimulates the employee perceiving it to come up with improvements. Whenever the dissatisfaction with regard to the perceived problem is shared by colleagues, it may also positively influence the stage of idea-championing through easing the process of getting support for a given innovative effort by making people aware of the need to change and the value of introducing new ideas and making resistance and criticism less likely.

The influence of perceptions regarding performance outcomes on public employee IWB

All respondents having championed an innovative initiative demonstrated a high degree of confidence that their efforts were going to deliver performance gains of some kind. Though the nature of personal motives have been found to differ between the respondents, they all are found to be motivated by the confidence that the implementation of their technologies, work methods or applications would bring performance improvements such as increased productivity, quality of work, goal achievement abilities, job performance or decreased error rates. Furthermore, no respondent having championed an innovative effort has been found to lack the confidence of being able to bring performance gains through

their effort. This may be related to the finding that the majority of this group of respondents indicated to be dissatisfied with a least one aspect of the current state of affairs, as perceived dissatisfaction might increase the perceptions with regard to opportunities for performance gains. Due to the fact no respondents could be identified within the firm under study lacking the confidence that their innovative efforts will result into performance gains for the organization as a whole, it was not possible to compare such results with those of respondents having such confidence. Therefore, this study has solely found indications that a high degree of confidence with regard to the performance gains of generating, championing and implementing innovative efforts stimulates the motivation of employees to conduct in IWB. No conclusions can be drawn with regard to the influence of lacking such confidence on public employee IWB.

The influence of perceptions regarding image outcomes on public employee IWB

The findings with regard to image perceptions of employees associated with the IWB process display a separation which can be identified in all categories of respondents and within all layers of the organization. In general, perceptions with regard to image damages and threats are prevailing, as a large minority of the respondents indicated to perceive that the generation and championing of innovative efforts can lead to damages to the champion's reputation. As explained by two respondents, these damages include a large variety of negative consequences varying from losing positions in important networks and being made fun off to getting into conflict with colleagues and personal stress:

The chance is relatively high that you will be confronted with reputational damages. When you have a certain reputation within this firm, it is not easy to get rid of it. That is because of the making-fun-off-culture prevailing within the fire department. You have to be sure that your idea is very good and will be supported, otherwise your reputation may be harmed (PFF4SR1)

Many people see me as an threat because I tell them that they have to change the way they work. This has led to a number of conflicts with people who did not agree with my point of view. These conflicts can become fairly personal, with people really desiring to destroy your reputation (IE5).

Furthermore, it has been found that these perceptions may prevent people from posing their ideas with regard to innovative approaches. Of the respondents having indicated to perceive dangers for their reputation, the majority argued not to have posed a new idea to others at least once because of a fear for such threats. Also, indications have been found that employees make careful considerations about the costs and benefits for their position before posing and championing their innovative efforts. These considerations may lead to the decision not to ventilate a given idea because of the thought that the perceived costs of doing so outweigh the perceived benefits. As is displayed below, this mentality and the fear for image loss has been found to be present in all layers of the organization:

There are always risks for your reputation associated with innovative processes. You put your neck on the line meaning that you are responsible. I will always make the personal consideration with regard to these aspects upfront. When I think that the risks for my reputation or the expected stress are larger than the advantages of my idea, I will not pose it. Some essential projects are excluded off course; when I believe that a given idea will increase the general safety, I won't hesitate (DCSR1).

You have to be cautious that you not throw too many unnuanced statements into the world. This way, you might lose your credibility and the respect from your men. Whenever you lose these, they don't come back easily within this organization (LMSR3).

This is a very traditional organization in which every change seems to be accompanied with heavy emotions, opposition and resistance. The people within this organization are not afraid to held back an innovative initiative and to directly oppose its champion. Sometimes, it even gets personal. This might hold me back to come up with a new idea (PFF3SR2).

Besides perceived reputational threats of employees vis-à-vis their colleagues associated with conducting in IWB, the findings also indicate the presence of fear for possible negative consequences of failed innovative projects. As indicated in the section on social-political pressures, a fear for public humiliation has found to be prevailing within the firm under

study, which may prevent people located in the higher ranks to conduct in and to stimulate public employee IWB. Based on the above described findings, it can be concluded that the presence of perceived image-threats associated with conducting in IWB and a high perceived danger of such behavior for the reputation of the person at hand severely restrains public employee IWB through decreasing the desire of employees to generate champion and implement innovative efforts.

The results with regards to image gains can be described as highly consistent, with most of the respondents indicating not to perceive that potential image gains are associated with conducting in IWB. Thus, though several practices are found to be directed at providing reputational-based rewards to innovative employees within the firm under study, they seem to have little effect on the image perceptions of the respondents. The respondents who indicated to perceive that image gains are associated with the development and implementation of innovative efforts all argued that these perceptions stimulated them to conduct in IWB. Though these findings constitute indications that perceived image gains are positively related to public employee IWB, the number of respondents corresponding to this group has been found to be too small to be able to draw valid conclusions. Therefore, it has to be concluded that the findings on a stimulating effect of perceived image gains on public employee IWB are not significant, demanding further study.

4.4 IWB in the Public Sector: A Comprehensive Conceptual Framework

This study has identified several factors influencing the generation, promotion and realization of innovative efforts by employees within the firm under study. These factors can be described as being external to the firm as well as internal and as having stimulating as well as restraining effects on public employee IWB. As indicated earlier in this paper, the firm under study has been found to be a typical case or example of a public sector organization. Therefore, the findings have been used to generalize to public organizations as a whole in order to develop a comprehensive framework displaying propositions on impact factors for employee IWB within the public sector. While the original purpose of this study was to determine the influence of broad categories of impact factors on public employee IWB, the results exceeded the original expectations through making it possible to develop detailed specifications of the process in which these factors influence public employee IWB. This enabled the writer of this paper to specify the influence of the broad factors described in the preliminary conceptual framework on the dependent variable. The comprehensive framework, displayed in figure 5, describes the factors identified as influencing employee IWB within the public sector, whether their impact is negative or positive as well as whether they influence specific stages of the IWB process or the process as a whole. Also, it specifies how the factors influence public employee IWB, thereby illuminating the process of stimulating IWB in the public sector.

First, the low competitive pressures, perceived by the respondents, are found to create a low perceived necessity among organizational actors to increase the innovativeness of their firm as a means of survival and to conduct in employee IWB. This indicates that public managers desiring to increase employee IWB may have to cope with challenges while doing so. It has been found that these challenges can be partially dealt with by introducing artificial competition within the firm through implementing innovation competitions or prices aimed at creating a perceived need and desire of employees to conduct in IWB. Second, it has been found that social-political factors have the ability to significantly stimulate as well as restrain public employee IWB. Societal and political opinions and expectations as well as societal developments such as financial crises have been found to stimulate IWB whenever they favor and demand innovations and improvements with regard to quality, efficiency or effectiveness. For example, governmental cutbacks or political desires for change are found to force public employees to significantly alter their practices and to develop and implement innovative approaches. Also, it is found that

political rejection of innovative efforts, the content of several laws and regulations as well as a perceived fear for public humiliation through the media associated with IWB processes significantly restrains public employee IWB. This indicates that public employees are dependent on the opinions and cooperation of politicians and the content of laws and regulations to a large extend, being unable to realize innovative efforts whenever these factors don't allow them to do so. Also, it indicates that whenever public employees perceive that the failure of innovative efforts leads to high risks for damages to their image through public humiliation, they are restrained and held back to conduct in IWB.

Third, it has been found that the role of the supervisor can be described as crucial for the stimulation of public employee IWB. While the adoption of supportive and coaching leadership styles have been found to stimulate the generation, championing and realization of innovative efforts, the adoption of the directive and coercive leadership styles has been found to significantly restrain it. Correspondently, while the existence of high-quality LMX relationships and a general openness of supervisors towards newness and innovation are found to stimulate public employee IWB, a conservative attitude towards innovation and change and a lack of communication of the expectations of supervisors with regard to employee IWB has been found to severely restrain public employee IWB through creating goal- and expectancy ambiguity. Though their role has been found to be crucial for the stimulation of public employee IWB, it has been found that during large projects demanding significant investments, the influence of direct-supervisors is exerted mainly during the idea-generation and idea-championing stages of the employee IWB process. This is caused by the finding that the success of the implementation-stage of such efforts generally depends on the support provided by decision-makers located higher in the hierarchy.

Fourth, it has been found that the role of the work-group is crucial for the stimulation of public employee IWB. The existence of high-quality TMX relationships and a perceived team climate for innovation, characterized by the existence of a shared purpose, perceived participative safety, a shared concern for task performance and a general support of innovation and newness within work groups are found to stimulate the entire IWB process of public employees. The existence of conservative, skeptical colleagues and a general perceived unwillingness towards newness, innovation and change within the working group has been found to severely restrain the complete IWB process of public employees. As the openness and support of colleagues with regards to innovative efforts influences the motivations as well as abilities of employees to conduct in IWB, it can be concluded that this factor has the ability to influence all three stages of the IWB process.

Fifth, in line with expectations, it has been found that a complex, formalized and mechanistic organizational structure significantly restrains the IWB process stages of idea championing and idea realization through the restraining influences of fixed procedures, rules, regulations, budgetary controls and a lack of overall flexibility. Also, it has been found that that one of the main reasons for the adoption of such an organizational structure by the firm under study is the nature of the firm as an public organization, indicating that public firms may have troubles with establishing structures favorable of employee IWB. Due to the fact that this organizational structure was identified within the firm under study and no other structural type, no indications have been found with regards to any type of organizational structure that is capable of stimulating public employee IWB.

Sixth, While the adoption of some empowerment practices is found to stimulate public employee IWB, the adoption of others is found not to do so. Granting employees with the freedom and discretion to execute tasks according to their own judgement and to change work processes has been found to significantly stimulate all stages of the IWB process of public employees. However, it is found that existing laws and regulations prescribing and determining the exact execution of a large share of the activities of the firm under study and its employees restrict the abilities to grant employees with freedom and discretion.

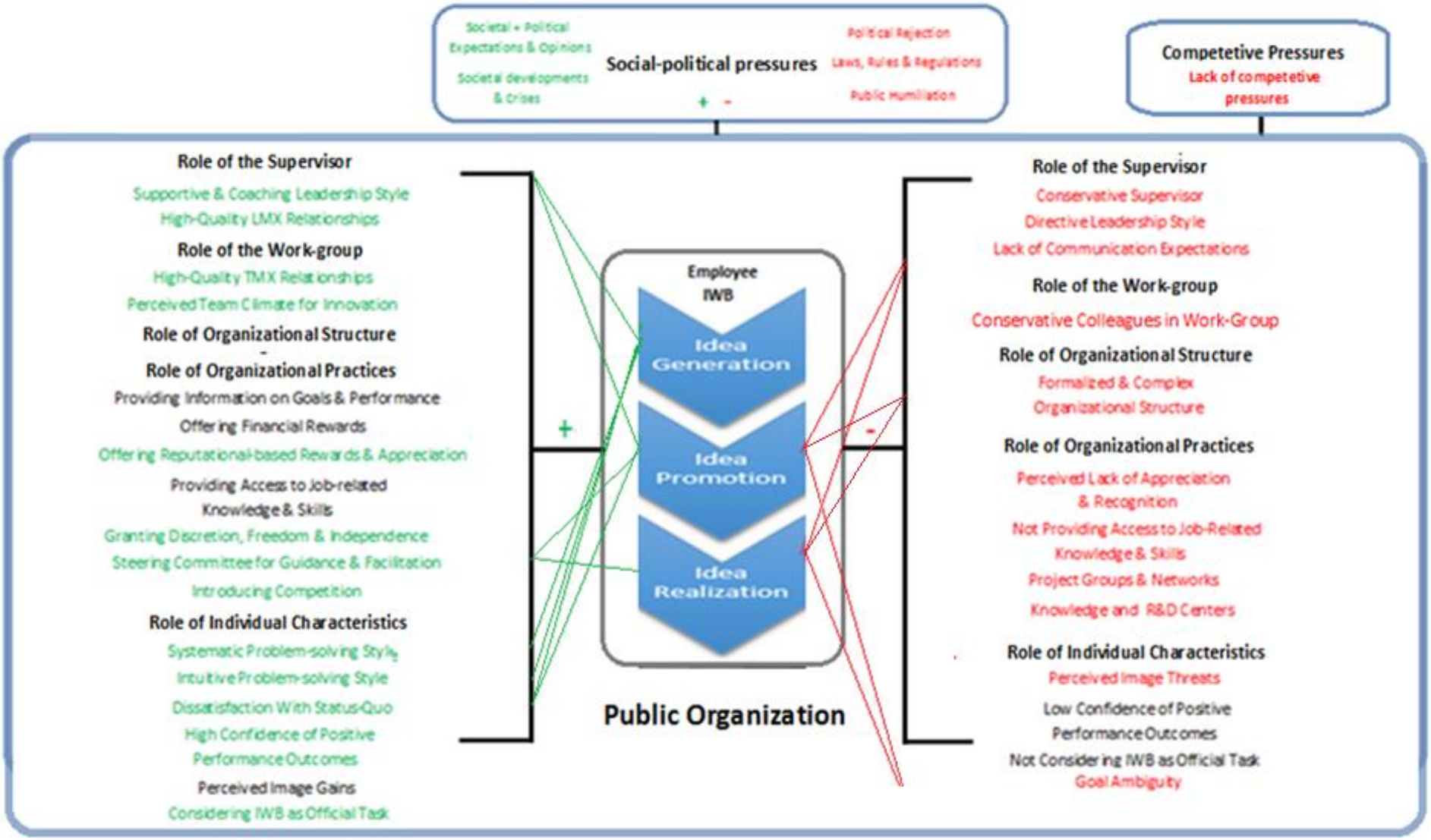

***Figure 5**: A Comprehensive Framework for employee Innovative Work Behavior in the Public Sector*

Also, it has been found that the existence of these laws and regulations is caused by the nature of the firm under study, being considered as an essential public service provider. Based on these considerations it is proposed that, within public organizations, the stimulating ability of providing freedom and discretion on employee IWB is more likely to be restricted by laws and regulations than within private organizations. Furthermore, no evidence has been found that providing information on goals and performance stimulates or inhibits public employees IWB. Evidence has been found, though, that an inadequate provision of information about the organizational vision and goals leads to a high degree of perceived goal ambiguity among employees, significantly restraining their motivation and ability to conduct in IWB. Inadequately receiving such information has been found to mainly restrain idea-championing and idea-implementation, as employees lacking such provision have been found to be likely to generate innovative efforts not corresponding with organizational desires. The provision of financial rewards has not been found to influence public employee IWB. The offering of reputational-based rewards and rewards based on demonstrating appreciation and recognition are found to have a crucial influence on public employee IWB, as providing such rewards have been found to stimulate the complete IWB process and failing to provide recognition and appreciation has found to significantly restrain such behavior. Finally, while providing access to job-related skills and knowledge has not been found to influence public employee IWB, failing to provide courses and educations to those employees desiring it has found to severely restrain the championing and implementation of innovative efforts. Introducing a committee and innovation managers offering steering and facilitation has been found to significantly stimulate the IWB process stages of idea-championing and idea-implementation whenever they actually spot and facilitate such employees and their efforts. Though the establishment of collaborative project groups and networks and the instalment of knowledge and R&D centers both are found to lead to a significant degree of innovations and hence to have significant value for the innovativeness of the firm under study, they also are found to severely restrain the complete individual IWB process of public employees through raising the perceptions that the development and implementation of innovative efforts is not expected nor desired from individual employees.

Seventh, as both the adoption of the intuitive problem-solving style and the systematic problem-solving style are found to stimulate the IWB of public employees, it is proposed here that neither of them is more preferable than the other during the IWB process. A perceived dissatisfaction with the status-quo has been found to significantly stimulate the idea generation of employees. Also it has been found that a shared perceived dissatisfaction with the status-quo within work-groups stimulates both the employee IWB process stages of idea-generation and idea-championing, as colleagues are more likely to support new ideas constituting possible improvements. Furthermore, it has been found that a high degree of confidence that performance gains are associated with the generation and implementation of innovative approaches stimulates public employee IWB. While perceived image gains associated with the generation and implementation of innovative approaches are not found to influence the IWB of public employees, perceived image and reputational threats associated with conducting IWB are found to severely restrain the complete process of public employee IWB. Finally, while it has been found that not considering the development, championing and implementation of innovative approaches as a part of the job description and official responsibilities does not influence the IWB of public employees, considering it as such has found to stimulate innovative behavior. Apparently, employees generate and champion innovative efforts disregards of the fact whether they consider it as their duty and as expected of them or not.

5. Discussion

5.1 Impact Factors for Innovative Work Behavior in the Public Sector

This study provides additional insights into the relatively unknown process of public employee IWB through the provision of a comprehensive framework describing propositions with regard to stimulating and restraining factors for employee IWB within the public sector. In line with earlier conclusions drawn, it has been found that, besides elected officials and political appointees (i.e. Breaux et al., 2002), frontline employees are important sources of innovation in the public sector (Borins, 2000;2012, Kamensky, 1996; Light, 1998). In accordance with the argument of Verhoest et al., (2007), this study provides indications that the lack of competitive incentives, generally being posed on public firms, results in less incentives for excellent performance and hence in less need for innovation. Therefore, public employees are less inclined to conduct in IWB as a means of survival. Also, this study confirms previous claims indicating that introducing competition in the public sector is likely to elicit innovative behavior (Walsch, 1991; Common et al., 1992; Domberger et al., 1995). An additional insight provided by this study is that IWB can be stimulated by introducing competition within individual public firms through implementing organizational practices aimed at spreading competitive incentives. This study also support claims made with regard to the stimulating role of social-politial pressures on IWB within public firms (Verhoest et al., 2007). As indications have been found that societal and political opinions and expectations as well as societal developments such as financial crises stimulate the need of public employees to conduct in IWB, arguments on the positive influence of institutional factors and the search for legitimacy on public employee IWB are confirmed (Osborne, 1998; Carpenter, 2001; Verhoest, 2002; Verhoest et al., 2004). Additional insights provided by this study are findings that political rejection and the content of laws, regulations and prescriptions can severely restrain the process of IWB in the public sector. Findings on the restraining effects of consequences of unsuccessful innovations such as public humiliation through the media and image damages on public employee IWB confirm previous insights provided by Borins (2001).

This study confirms previous claims stressing the importance of the direct supervisor and the nature of supervisor-subordinate relationships for employees' motivation and job satisfaction and for the creation of a work- and social environment which encourages innovation and change (i.e. Damanpour & Schneider, 2009; Elenkov et al., 2005; Janssen, 2005; Yuan & Woodman, 2010). Additionally, this study provides support for the propositions developed by studies focused on the private sector, that the existence of high-quality LMX relationships stimulates employee IWB (Basu, 1991; Sanders et al., 2010; Scott & Bruce, 1994; Yuan & Woodman, 2010) and that supportive and participative leadership styles rather than styles based on direction and coercion are critical and stimulating for the innovation process (Basu & Green 1997; Kanter, 1986). It does so through finding that these propositions also validly apply within the public sector. This study provides additional insights through identifying a restraining effect on public employee IWB of a general conservative attitude of the supervisor towards newness, innovation and change. Indications that there are employees who maintain high-quality LMX relationships with their supervisor and who are led supportively and participative but don't engage in public employee IWB seem to provide support for the claim that though leadership style can make employees willing to be innovative, employees also need to feel able to be innovative in order to behave innovatively (Pieterse et al., 2010). Finally, support is provided for the Pygmalion effect, referring to the alteration of an individual's behavior based on the expectations for that behavior received from another (Eden, 1993). In accordance with the claim made by Scott and Bruce (1994) in their study conducted within a private organization, indications have been found that a lack of communicated expectations of supervisors with regard to employee IWB restrains the innovative behavior of public employees through giving rise to the development of perceptions of these

expectations which are wrong or even contrary. Findings indicating that the restraining effects of this lack of communication of supervisory expectations mainly influence idea-championing and idea-implementation can be considered as new insights. Another additional insight provided by this study is that, disregards of the nature of supervisor-subordinate interactions, the influence of the direct supervisor during projects demanding significant investments is exerted mainly during the idea-generation and idea-championing stages of the public employee IWB process.

The findings of this study on the crucial role of the working group for the stimulation of public employee IWB support the claim made by Amabile and Gryskiewicz (1987). Additionally, by finding that it also applies within public organizations, this study supports the argument made by Scott and Bruce (1994) that the existence of high-quality TMX relationships stimulates employee IWB through increasing the ability to make use of idea sharing and feedback of peers. Also, through identifying its validity within the public sector, this study provides support for the proposition that the existence of a team environment for innovation, where creative ideas are valued and supported and can be presented without fear of retribution positively influences public employee IWB (i.e. Bain et al., 2001; Burningham & West, 1995; West and Anderson, 1996; West, 1990). Findings on the severe restraining effects of the existence of conservative, skeptical colleagues and a general perceived unwillingness towards newness, innovation and change within the work-group on public employee IWB confirm several claims made with regard to this relationship (Bain et al., 2001; Mumford & Gustafson, 1988; West & Anderson, 1996).

Findings on the highly complex and bureaucratized organizational structure of the firm under study and the causes of its adoption provide support for the claims that public firms are likely to have strategy content forced on them (Bozeman & Straussman, 1990; Nutt & Backoff, 1993) and that they are more likely to be regulated highly by their political sponsors (Hood et al., 1999) through several mechanisms (Ashworth et al., 2002) than private firms. Additionally, support has been found that this inhibits entrepreneurialism (Boyne & Walker, 2004), creates a high need to be responsive to the shifting demands of external stakeholders (Rainey, 2009) and leads public managers to be likely to adopt reactor strategic orientations rather than other orientations (Boyne & Walker, 2004; Rainey & Steinbauer 1999). Findings indicating that the adoption of this organizational structure significantly restrains public employee IWB because of the restraining influences of fixed procedures, rules, regulations, budgetary controls and a lack of overall flexibility on innovative processes, provides support for the claim that formal control systems generally are unable to enhance innovation need for flexibility, opportunism and adaptability (Caldwell & O'Reilly, 2003). Additionally, the findings support the proposition that the high levels of formalization and bureaucratization of public sector firms vis-à-vis private sector firms might inhibit individual innovative efforts severely (Rainey & Bozeman, 2001; Rainey, 2009; Fernandez & Moldogaziev, 2012). Finally, findings on employees leaving the firm under study because of the presence of this large degree of restraining factors confirm the claim made by Borins (2001), that adverse selection might be a problem for public firms, with highly innovative individuals preferring careers in the private sector.

The results of this study support the propositions that empowered employees are better able to proactively redesign processes and products whenever they feel the need to do so (Bowen and Lawler, 1992) and that intrinsically motivated individuals may demonstrate higher levels of flexibility leading to initiation of new tasks as problems arise (Thomas & Velthouse, 1990). However, as some empowerment practices are found not to influence public employee IWB, the findings of this study argue against the proposition that empowerment as a whole stimulates the IWB of frontline employees (Bowen & Lawler, 1992; Thomas & Velthouse, 1990). Rather, the results seem to support the claim that empowerment practices have divergent effects on public employee IWB (Fernandez &

Moldogaziev, 2012). The findings of this study with regard to the stimulating effects of granting employees with freedom and discretion on public employee IWB support the arguments made by several scholars (i.e. Abstein & Spein, 2014; Bysted & Hansen, 2013; Fernandez & Moldogaziev, 2012; Monks et al., 2012). Furthermore, the results of this study support the proposition that the relatively high extend of rules and regulations within the public sector might prevent public managers from granting enough discretion to stimulate employee IWB (Rainey and Bozeman, 2002). As this study has found that the provision of information on goals and performance does not stimulate nor restrain the IWB of public employees, no support has been found for studies claiming that the implementation of this empowerment practice -either adopted in isolation or in combination with other empowerment practices- stimulates employee encouragement to conduct in IWB (i.e. Knol & van Linge, 2009; Fernandez and Moldogaziev, 2012; Salge, 2011). Rather, support is provided for the proposition that the high extend of goal ambiguity in the public sector can significantly undermine the effectiveness of this empowerment practice as a motivational approach (Rainey, 2009). Additional insight is offered by this study through pointing to the dangers of an inadequate provision of information about the organizational vision and goals, as it stimulates the development of perceived goal ambiguity among employees, significantly restraining their motivation and ability to conduct in IWB. New insights are also offered by the finding that an inadequate provision of information on goals and performance mainly restrain the activities of idea-championing and idea-implementation. Furthermore, as it has been found that providing financial rewards does not influence public employee IWB, the results of this study seem to reject the claim that monetary rewards are valued significantly within the public sector (i.e. Durant et al., 2006; Monks et al., 2012; Wright, 2007; Zhang & Begley, 2011) as well as the claim that the impact of the provision of extrinsic rewards on IWB within the public sector is negative (i.e. Fernandez & Rainey, 2006; Ryan & Deci, 2000). Indications provided by this study that a stimulating effect on public employee IWB is associated with the provision of reputational-based rewards confirm the claim made by Borins (2001), proposing that offering such rewards stimulated IWB within his sample. This study provides additional insights through stressing the crucial influence of the provision of appreciation and recognition on the stimulation of public employee IWB. Finally, the fact that providing access to job-related skills and knowledge has not been found to influence public employee IWB rejects the claims made with regard to the stimulating ability of this empowerment practice (i.e. Bysted & Jespersen, 2013; Fernandez & Moldogaziev, 2012; Monks et al., 2012). This study provides additional insights by pointing to the importance of providing training courses and educations towards those employees desiring it in order to prevent demotivating and restraining effects on public employee IWB to occur. Also, new insights provided by this study are that specific practices such as those focusing on introducing competition within public firms and the appointment of committees or departments aimed at locating and facilitating innovative employees stimulate public employee IWB. Finally, new insights are provided by pointing to the restraining effects of the establishment of collaborative project groups and networks focusing on specific innovative topics and the instalment of knowledge and R&D centers on public employee IWB.

As the results of this study indicate that both the intuitive problem-solving style and the systematic problem-solving style are able to stimulate public employee IWB, they seem to reject the claim made by Scott and Bruce (1994), that the adoption of the intuitive problem-solving style influences employee IWB more positively. Rather, this study provides support for the proposition that neither style is preferable than the other and that it is the fit between problem-solving style and the task and work environment that determines outcome (Payne et al., 1990). Furthermore, in accordance with previous

insights, this study provides support for the proposition that a perceived dissatisfaction with the current state-of-affairs increases the motivation and confidence of employees to develop and implement innovative approaches (Farr & Ford, 1990; Yuan & Woodman, 2010) Additional insight is provided through pointing to the existence of a relationship between a shared dissatisfaction with the status-quo among a group employees and the employee IWB process stages of idea-generation and idea-championing. The findings of this study indicating towards a stimulating effect of perceived confidence that performance gains are associated with conducting in IWB on public employee IWB support the claim of Yuan and Woodman (2010). Additionally, by validating these arguments in the public sector, this study has found support for the propositions that other people's perceptions significantly influence employee IWB (Leary & Kowalski, 1990; Tedeschi & Riess, 1981) and that employee IWB can lead to interpersonal conflicts and high levels of stress, frustration and animosity of the individual conducting in it (Janssen, 2003; 2004). As this study has found indications that perceived image and reputational threats associated with conducting in IWB severely restrains public employee innovative behavior, it supports claims made by West (1989) and Yuan and Woodman (2010). Finally, in accordance with claims being made by previous scholars focused on private organizations, this study found indications for the presence of a stimulating effect of considering IWB and flexibility as a part of the job description and official responsibilities on public employee IWB (Monks et al., 2012; Ohly et al., 2006; Yuan & Woodman, 2010). This study provides additional insights by stressing that not considering conducting in IWB as a part of the job description and official responsibilities does not restrain the IWB of public employees, indicating that public employees might generate and champion innovative efforts disregards of the fact whether they consider it as their duty and as expected of them or not.

5.2 Stimulating employee IWB within the Public Sector: Implications

5.2.1 Theoretical Implications

This study provides several new insights into the process of public employee IWB. Firstly, new insights are offered through introducing additional impact factors for this behavior, not identified as such before. For example, indications have been found for the existence of a positive effect of introducing competition as well as committees and departments aimed at locating and facilitating innovative employees within public firms on public employee IWB and the negative effect of the establishment of collaborative projects groups and the instalment of knowledge centers on individual public employee IWB. In line with literature focused on private organizations, this study found indications that high-quality LMX relationships, an adequate communication of supervisory expectations, participative leadership styles, high-quality TMX relationships and a team environment for innovation within work-groups positively influences employee IWB within the public sector. New insights are also offered by pointing to the crucial negative influence of political rejection and the restraining content of laws and regulations, an inadequate provision of information about the organizational vision and goals, failing to provide rewards aimed at the offering of appreciation and recognition and failing to provide training courses and educations towards those employees desiring it on public employee IWB. More new insights are provided through describing the influence of a number of impact factors on specific stages of the public employee IWB process. For example, indications have been found that the restraining effects of a lack of communication of supervisory expectations as well as an inadequate provision of information on goals and performance are mainly exerted on the IWB process stages of idea-championing and idea-implementation and that a shared dissatisfaction with the status-quo among a group of employees positive influences idea-generation and idea-championing. Also, indications have been found that, the adoption of a complex and mechanistic organizational structure mainly restrains idea-championing and idea-implementation and that, disregards of the relationship between supervisors and subordinates and the adopted leadership style, the influence of supervisors on public

employee IWB is exerted mainly on the IWB process stages of idea-generation and idea-championing. Finally, new insights are provided through the identification of several differences between impact factors for employee innovative behavior in the private sector and the public sector. These differences and the other theoretical contributions are displayed in table 2.

Impact Factors for:	Private Employee IWB	Public Employee IWB
External Factors	Influence of competitive pressures + social-political pressures on IWB (i.e. Nelson, 1993; Powell & Dimaggio, 1991) (positive as well as negative)	Little influence of competitive pressures on IWB, significant influence of social-political pressures (positive / negative) on IWB (i.e. Verhoest et al.,2007).
Internal Factors	Positive relationship high-quality LMX relationships (i.e. Yuan & Woodman, 2010), adequate communication of expectations (i.e. Scott & Bruce, 1994) and participative leadership styles (i.e Basu & Green 1997) and IWB	Positive relationship high-quality LMX relationships, adequate communication of expectations & participative leadership and IWB *Effect of communication of expectations limited by goal ambiguity in the public sector; crucial role of supervisor limited to idea-generation & idea-championing.*
	Positive relationship high-quality TMX relationships (i.e. Scott and Bruce (1994) & team environment for innovation (i.e. West, 1990) and IWB	Positive relationship high-quality TMX relationships & team environment for innovation and IWB
	Negative effect of complex, formalized organizational structure on IWB (i.e. Burns & Stalker, 1961; Chandler, 1990 ;Miles et al., 1978)	Negative effect of complex, formalized organizational structure (i.e. Walsch, 1995) on idea-championing and idea-realization *Complex organizational structure forced upon public organizations (i.e. Boyne & Walker, 2004)*
	Positive relationship between four empowerment practices and IWB (i.e. Bowen and Lawler, 1992; Thomas & Venthouse, 1990)	Positive effect of granting freedom and discretion on IWB (i.e. Fernandez & Moldogaziev, 2012) though *limited by the presence of rules & regulations in the public sector (i.e. Rainey & Bozeman, 2002)*
		Negative effect of lack of provision of information on goals on idea-championing and-realization (no positive effect identified); *Strengthened by high degree of goal ambiguity in public sector* (Rainey, 2009)
		Positive effect of reputational awards & appreciation rather than monetary rewards on IWB
		Negative effect of failing to provide access to job-related skills & knowledge on idea-championing and idea-realization (no positive effect identified)
	Intuitive problem-solving style more simulative for IWB than systematic style (i.e. Scott and Bruce, 1994),	Positive effect of Intuitive- & systematic problem-solving style on IWB; no style preferred (Payne et al., 1990
	Positive relationship perceived dissatisfaction with status-quo and IWB (i.e. Yuan and Woodman, 2010)	Positive relationship perceived dissatisfaction with status-quo and IWB (i.e. Yuan and Woodman, 2010) *+ Positive effect shared dissatisfaction with status quo on idea generation & idea-championing*
	Positive relationship perceived image + performance gains, negative relation-ship between perceived image threats (i.e. Yuan & Woodman, 2010) and IWB	Positive effect of perceived performance gains on IWB; negative effect of perceived image threats on IWB (no effect of low perceived performance gains & perceived image gains identified)
	Positive relationship considering IWB as part of official job description and tasks and IWB (i.e. Scott & Bruce, 1994)	Positive effect of considering IWB as part of official job description, tasks and responsibilities, no negative effect of not considering it as such on IWB identified
Specific practices		Positive effect of introducing competition within public firms on IWB (i.e. Domberger et al., 1995)
		Positive effect of introducing central steering, and facilitation on idea-championing and idea-realization
		Negative effect of the establishment of project groups and collaborative networks on IWB
		Negative effect of the instalment of R&D centers on IWB

***Table 2**: Impact Factors for Employee IWB in the public sector and the private sector compared*

5.2.2 Practical Implications

The results of this study have a number of practical implications for public managers desiring to increase the innovativeness of their firms and the IWB of their subordinates. First, they may have to cope with challenges and problems arising from a general low perceived necessity and desire of organizational actors to develop, champion and implement innovative efforts as a means of survival. As it has been found that these challenges can be partially dealt with by introducing artificial competition within the public firm through implementing innovation competitions or innovation prices creating a need and desire of employees to conduct in IWB, it is recommended to public managers to do so. Second, the results imply that public managers may have to cope with several social-political forces restraining the motivations and abilities of managers and employees to conduct in IWB. As these forces are caused by factors and actors outside the public organization, they are largely outside the control of its managers. Therefore, it has been found that, besides lobbying and maintaining good relationships with politicians and people or institutions having high social influence, little can be recommended to minimize their effects. Findings on the role of the direct supervisor indicate that, in order to stimulate public employee IWB, public managers are to ensure that all leaders and supervisors within their firms adopt supportive and coaching leadership styles, establish high-quality LMX relationships with their subordinates, demonstrate a general openness towards newness and innovation and clearly communicate their expectations with regard to employee IWB in order to prevent goal ambiguity to arise. Therefore, it is recommended towards public managers to include the above competences and characteristics in the official job descriptions of leading functions and to evaluate and discuss their presence and achievement during job interviews and appraisals. Fourth, the findings on the role of the work-group indicate that the presence of a perceived general support for innovation, newness and change and a group environment which is favorable towards change and in which creative ideas are fairly evaluated without fear of retribution is essential in for public employee IWB to flourish. Therefore, it is recommended to public managers to establish and communicate clear visions and goals at the work-group and departmental levels, to hire as well as retain employees with a high concern for task performance and intrinsic motivation and to encourage and communicate the importance of experimentation throughout the firm. Also, it is recommended to widely communicate the relevance of innovation for the firm, to underline that failed innovative projects are considered as opportunities for learning rather than failures and to convince employees of the need for improvement. The findings on the role of organizational structure indicate that public managers are to prevent that complex, formalized and mechanistic organizational structures are adopted by their organization and that a high degree of fixed procedures, regulations and budgetary controls is implemented. However, as these organizational structures generally are forced upon public firms by several factors and contingencies, this may be a difficult objective to achieve. Therefore, studies determining how to cope with these challenges are needed. Sixth, the findings on organizational practices indicate that, in order to stimulate public employees to conduct in IWB, public firms' managers are recommended to provide their subordinates with freedom and discretion, information on organizational goals, reputational-based rewards and rewards aimed at demonstrating appreciation for innovative efforts. Also, training courses and educations are to be provided to anyone being committed to receiving them in order to prevent employee IWB to be restrained. Furthermore, public managers may consider implementing a steering committee and innovation managers aimed at locating and facilitating innovative employees and their efforts. Seventh, the results on individual characteristics indicate that, whenever employee IWB is to be stimulated within public organizations, managers are recommended to stress the inefficiencies and flaws of the current working methods in order to raise a general dissatisfaction with the status-quo throughout the firm and to create the confidence among their subordinates that the generation of innovative approaches is

valued and likely to lead to improved performance. Furthermore, they are to prevent perceptions to arise that conducting in IWB can be damaging for employees' reputation and image. In order to do so, it is recommended to stress and communicate the importance of IWB for the performance of the firm and to make sure that failed experiments will not be considered as failures. Hiring the right people for leading functions, having the characteristics and competences as described above, may significantly assist during this process. Finally, it is recommended to public managers to declare the generation, championing and realization of innovative approaches as an part of employees' job description, tasks and official responsibilities. This can be achieved through including IWB in the official job description and discussing the importance and relevance of IWB during job interviews and appraisals. As indicated earlier in this paper, the introduction of one specific practice targeted at altering an individual impact factor for public employee IWB is not sufficient for the development of a climate for innovation and hence for the stimulation of IWB throughout the organization. Therefore, it is recommended to public managers to take all the above considerations into account.

5.3 Stimulating employee IWB in fire departments

Though it has been found that fire departments are to be considered as typical examples of public organizations, it is likely that a number of findings can be described as being specific for this type of organization. For example, it has been found that the nature fire fighters' task -the controlling of fires and related incidents- creates extra demands on them to be flexible and to conduct in public employee IWB. As every crisis situation is different and may need a different solution, possibilities for standardization are limited and fire fighters are found to perceive that they need to be prepared to improvise, to be flexible and to think innovative continuously. Therefore, they can be described as full-time problem solvers indicating that it is likely that in general, fire fighters are highly willing to conduct in employee IWB, easing the process of stimulating this behavior within fire departments. Also, it is highly likely that social-political pressures for innovation are higher for organizations which are considered as essential service providers such as fire departments than for other public organizations. As with police departments and health response organizations, the adoption of innovative approaches bringing (clear) improvements to the service delivery of fire departments will always be preferred and called for by political actors and the society whenever they are believed to increase the general safety. Again, this may ease the process of stimulating employee IWB within fire departments vis-à-vis other public organizations. However, the opposite is applicable for radical and more risky and/or costly innovative projects of which it is less evident that they will bring improvements to firm performance: because fire departments deliver essential public services, political actors and the society will always demand and try to make sure that their services are delivered at a minimum quality level. Therefore, experimentation and risk taking will be held back to a larger extend within such firms than within other public organizations in order to prevent the general public safety to be threatened; especially when the outcome of a given project is uncertain. Based on this consideration, it can be proposed that projects focusing on radical innovations generally are not desired within fire departments and that employee IWB, whenever it concerns radical or risky innovative projects, will be restrained to a larger extend by social-political factors within fire departments than within other public organizations. Managers of fire departments can try to counter these restraining forces on (radical) IWB by maintaining excellent relationships with politicians and people or institutions having high social influence and by explaining, stressing and communicating the need for radical innovations. Another aspect which may be unique for fire departments is the relatively high degree of voluntary employment. Though it has not been found that volunteers don't conduct in public employee IWB at all, it has been found that they have less time and interest to generate, champion and implement innovative efforts than their professional peers. This seems fairy logical, as

volunteers have less time available due to the fact that they generally have full-time or part-time jobs to care for. Therefore, it is recommended to managers of fire departments to establish supporting mechanisms which facilitate and assist volunteers to complete innovative efforts, thereby reducing the necessary time to be devoted to innovative projects by this group of employees. An example of such a mechanism is the introduction of a steering department which assists with the writing of project proposals, the attracting of (external) finance and which delivers contacts, telephone numbers and tools of aid such as presentation formats, USB sticks, beamers and laptops when needed. Also, mechanisms are to be installed which connect volunteers capable of helping each other. As volunteers have the potential to significantly increase the innovativeness of organizations through introducing new and fresh ideas (ShinBrian & Kleiner, 2003), it is essential for managers of fire departments to stimulate the IWB of their voluntary employees by taking into account their personal circumstances and preferences. Studies on this topic are scarce and needed. A final aspect being unique for fire departments and comparable firms such as police departments, the military and health response units are the unique experiences they share, influencing the openness of their work-group interactions through creating bonds of trust, respect and loyalty. Though this characteristic of fire departments may ease the posing of new ideas and the perceived participative safety within work-groups, it may also restrain these processes due to the restraining influence of role behavior and perceived social pressures to conform to shared group expectations and habits on the posing of ideas within the group. Manager of fire departments are to pay attention to these social pressures and counter them whenever they are unfavorable of innovation and IWB. This could be done by increasing the internal mobility of employees between work groups, regions or departments in order to prevent social pressures to arise at the group level.

5.4 Limitations and Suggestions for Future Research

Through integrating literature focused on the private and the public sectors and conducting a case study within a typical example of a public organization, this study has provided several impact factors for employee IWB in the public sector. As the development of a comprehensive framework describing antecedents of public employee IWB has been lacking so far, each of these proposed factors as well as their influence constitute propositions for future research. More studies are needed validating these propositions and improving them when needed. Also, more insights enriching our understanding about the reasons for the existence of these relationships are needed. Studies providing methods with which public managers can overcome and counter the factors and contingencies forcing them to generally adopt complex and mechanistic organizational structures as well as the social-political factors restraining the IWB of their employees are also needed. Furthermore, studies further enriching our understanding about the differences between the process of stimulating IWB within the private sector and the public sector are highly welcome. Finally, validation of the implications and recommendations offered by this study to public managers with regard to the stimulation of employee IWB within the public sector is needed, testing their use, value and practicality.

Despite efforts to maximize the validity and generalizability of this study, some limitations are to be mentioned. First, it has to be acknowledged that the gathering and analysis of data through the in-depth interview (Belk, 2012) and observations are of a relatively subjective nature which are susceptible to experimenter bias and response bias. However, techniques to increase the trustworthiness of this study allow for generalizability and reliability of the data and interpretations. Also, it has to be acknowledged that fire fighters might have characteristics which are unique for employees operating within fire departments. These unique characteristics, which are described in the previous section, could potentially endanger the generalizability of the results towards public employees as a whole. Whenever fire fighters are found to have an higher susceptibility towards

reputational-based rewards than other public employees, for example, some of the generalizations on impact factors for public employee IWB, made in this study, could be biased. Accordingly, a limitation of this study might be formed by the fact that public agencies considered as essential service providers, such as fire departments, police departments and health services, might be restricted by laws and regulations to a higher extend than other public agencies, such as public libraries. However, the fact that the firm under study has been found to satisfy all the criteria, generally applicable for public firms (i.e. Bozeman & Loveless, 1987; Rainey & Bozeman, 2000; Daft et al., 2010) justifies the usage of fire departments for the generalization towards the public sector. To exclude the existence of this limitation completely though, studies focusing on the generalizability of fire departments and other essential service providers towards the public sector as a whole are needed. Depending on the outcomes of this research, it might be proposed that (IWB) research within the public sector needs to be segmented. Studies investigating this proposition might significantly increase our understanding about organizational processes within the public sector. A final limitation of this study is the discussion about and low desire for radical innovations within fire departments, resulting in a high focus on incremental innovations within the firm under study. As radical innovative projects are found to be scarce within the firm under study, the results of this research are mainly based on findings identified during the execution of projects which concerned incremental innovations. Therefore, it cannot be excluded that the results might be less generalizable towards radical innovative behaviors. However, due to the fact that the goal of this study was to develop a preliminary framework focusing on impact factors for innovative behavior and the fact that this behavior may be focused on any type of innovation, the lack of radical innovative projects in the sample used did not conflict with the central goal of this study. In order to further increase our understanding about the process of innovative behavior, though, more insights on the generation, championing and implementation of radical innovative efforts by individual employees are needed.

6. Conclusions

This study has provided several new insights into the process of innovative work behavior in the public sector, describing what the most important antecedents of public employee IWB are, what the nature of their influence on the IWB process is and how they exert it. Also, it has determined how these impact factors differ from those influencing IWB in the private sector and what the implications of these insights for public managers in search for firm innovativeness are. The results underline the crucial role of social-political factors, the direct supervisor, work-group interactions, organizational structure, certain organizational practices and individual characteristics during the stimulation and inhibitation of public employee IWB. Depending on their nature, each of these factors are capable of stimulating as well as restraining the individual IWB processes of public employees. Among others, the stimulating effects of social and political developments and expectations, supportive and coaching leadership styles, high quality LMX relationships, a team climate for innovation, high-quality TMX relationships, offering reputational rewards and appreciation, granting freedom and discretion, introducing competition and central steering within the firm, dissatisfaction with the status quo, a high confidence that performance outcomes are associated with IWB and considering the development and implementation of innovative efforts as a part of the official job description and responsibilities on public employee IWB are discussed. Also, the restraining effects of political rejection, the content of regulations, a lack of competitive pressures, a conservative attitude of the direct-supervisor, directive leadership styles, a lack of communication of supervisory expectations, conservative colleagues in the work-group, a complex and mechanistic organizational structure, a perceived lack of appreciation, a lack of access to job-related skills, the establishment of project groups, collaborative networks and knowledge centers, perceived image threats associated with IWB and a perceived goal ambiguity on public employee IWB are discussed.

In doing so, study has provided academic as well as practical value. Academic value is offered by the development of a comprehensive framework describing stimulating and restraining factors for public employee innovative work behavior constituting propositions for future research. Value is also offered by the specification of differences between the process of stimulating employee IWB within private organizations and public organizations. In doing so, this study contributes to the decreasing of the knowledge gap with regard to the stimulation of IWB within this specific sector and answers to the explicit call made for papers on the effective implementation of HRM in the public sector (Knies et al., 2015) as well as for papers on differences between the IWB process in the manufacturing and service sectors (Bonesso & Tintorri, 2014). Finally, as studies on the stimulation of IWB within fire departments are lacking, this study offers valuable preliminary insights to this unexplored domain. Practical value for managers of fire departments as well as for public managers in general is delivered by the determination of important impact factors for innovative behavior in a real-life setting and the provision of practical recommendations towards public managers regarding how to stimulate innovative work behavior within the public sector as well as how to prevent that IWB is restrained within public organizations.

It was Winston Churchill who once argued that ‘without tradition, art is a flock of sheep without a shepherd; without innovation, though, it is a corpse’. Indeed, moving forward while cherishing outstanding established ways of doing things seems to be the right strategy to adopt for any organizational actor. However, especially within the public sector it can be observed that, while the holding on to tradition is an art well-practiced, the right approaches to move forward still belong to the exhaustive list of relatively unknown phenomena of which it is essential to develop better understanding. The difficulties of public organizations to stimulate employee IWB can be best described using the words of Voltaire, describing that ‘our wretched species is so made that those who walk on the well-trodden path always throw stones at those showing a new road’. In hope for further studies focusing on this topic, this study is one of the first to counter this classic thought.

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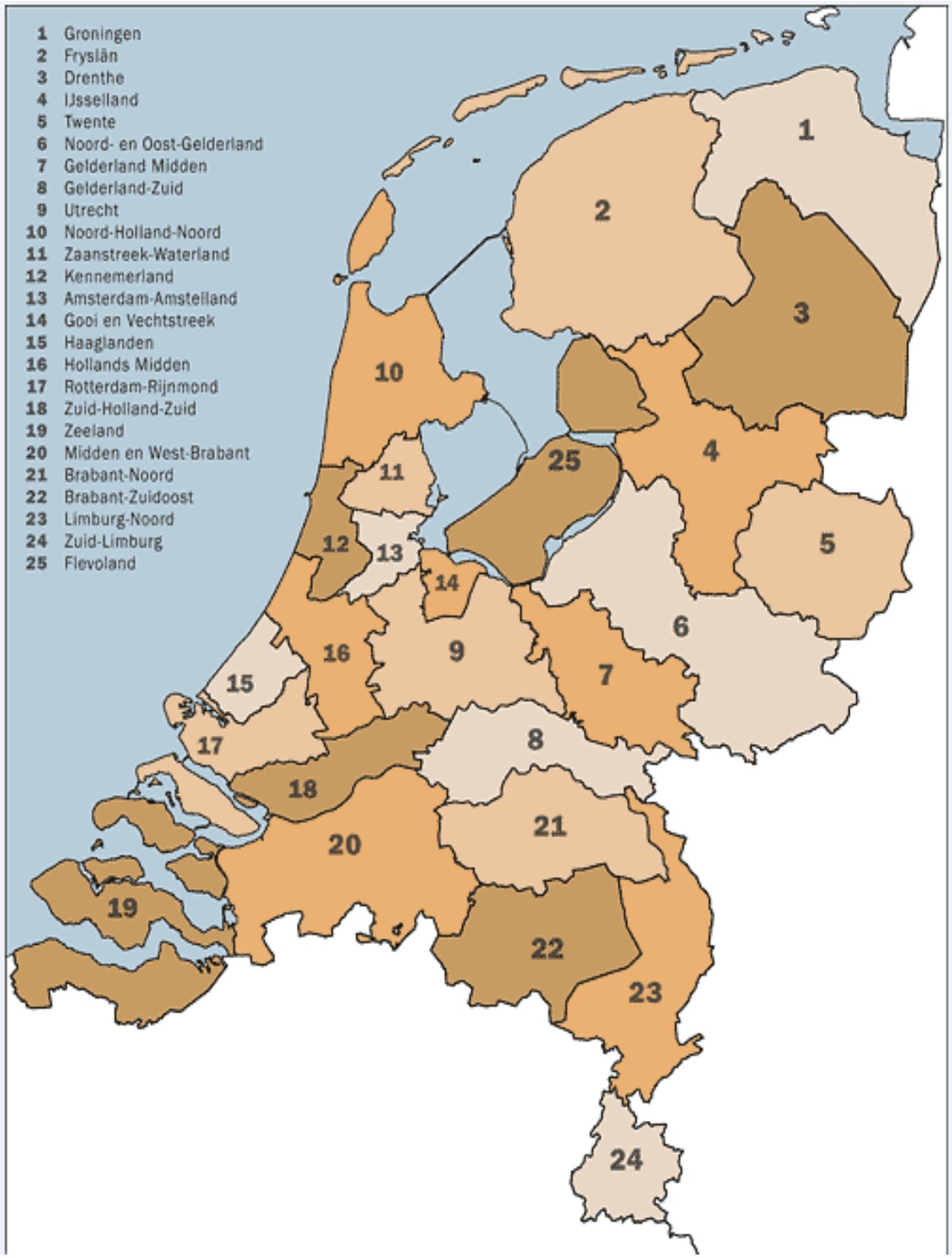
Veiligheid Referentie Architectuur: Samenwerking door Samenhang (Organizational Document), *Arnhem: Communicatie Brandweer Nederland*

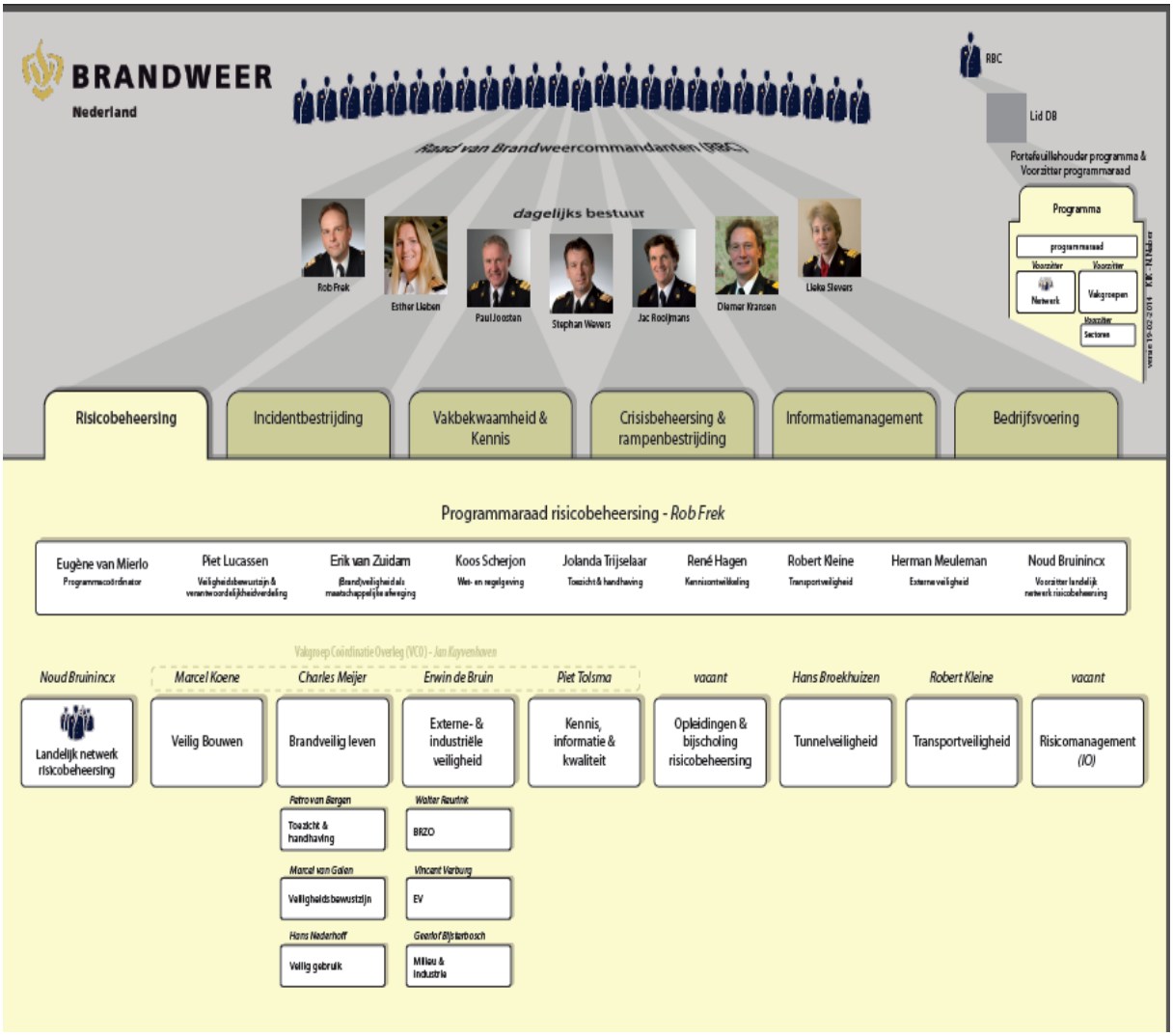
Appendix

1. The Dutch Safety Regions



(Source: http://www.brandweernederland.nl/wie_zijn_we/kopie-brandweer/)

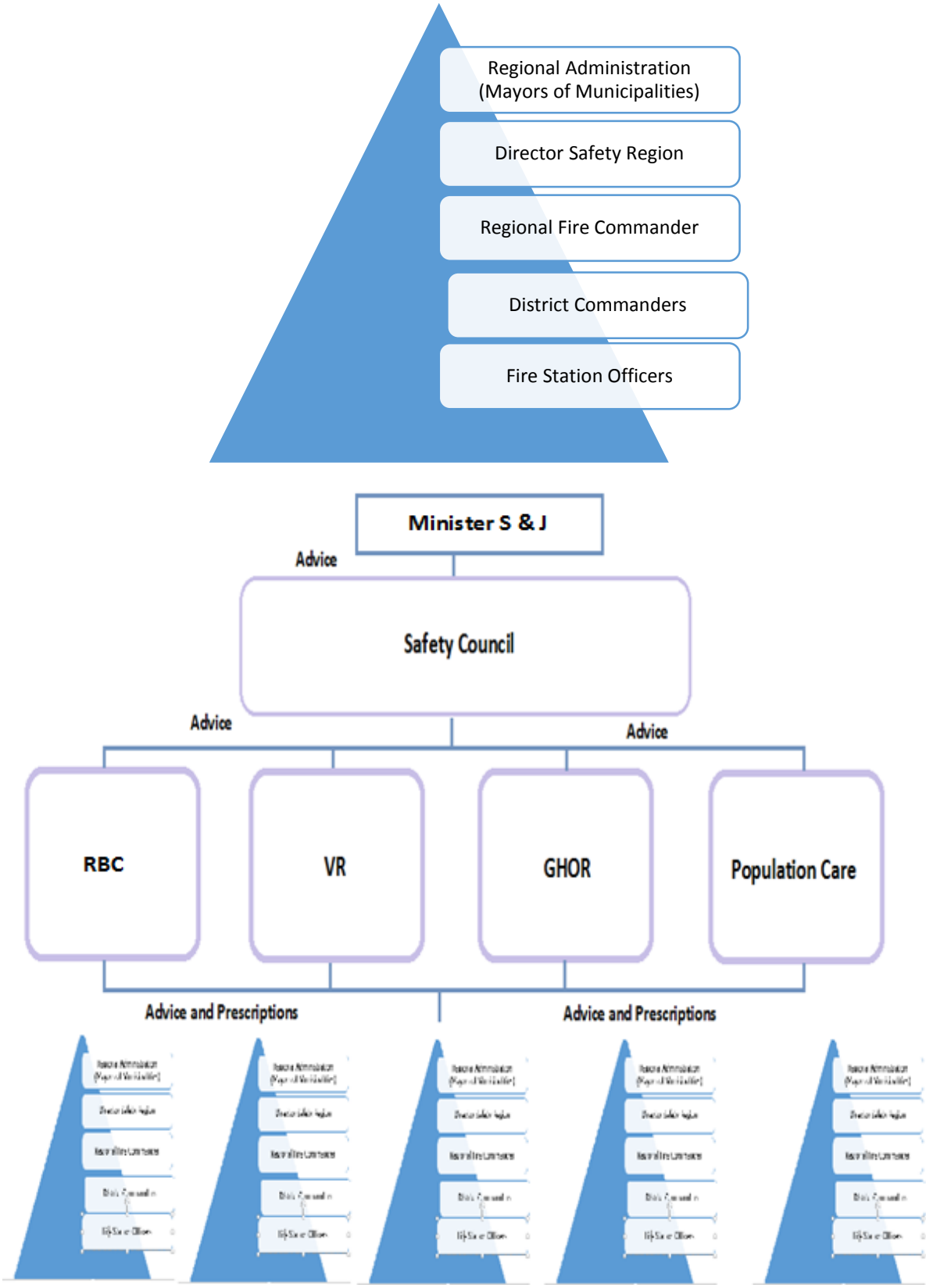
2. Organization Structure Dutch Fire Department



(Source: http://www.brandweernederland.nl/wie_zijn_we/organisatie/)

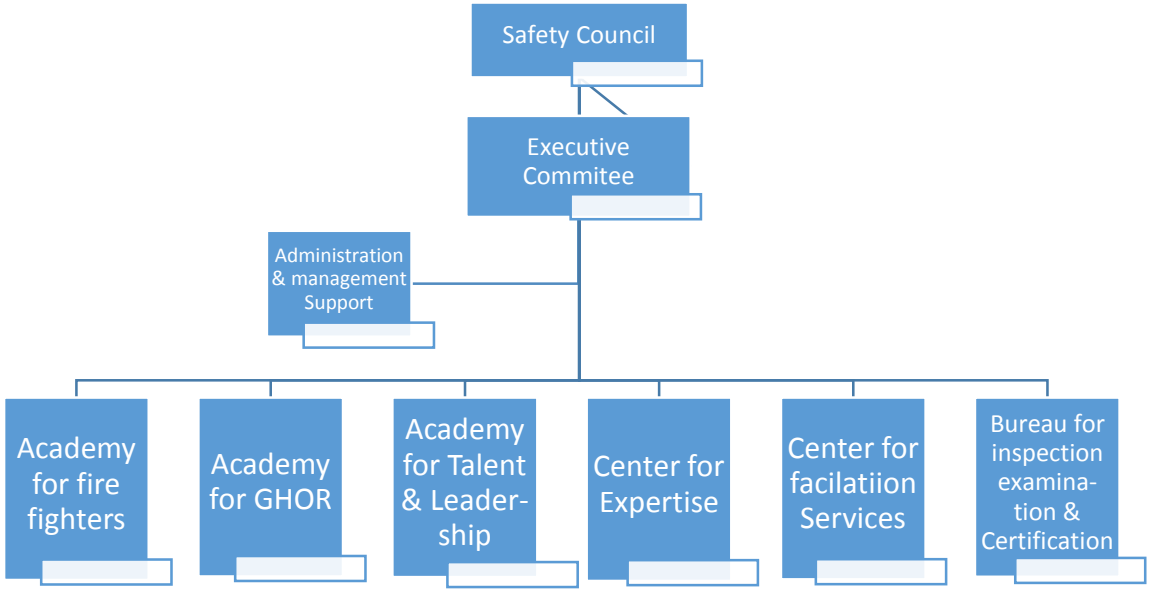
*This is a display of the structure of one of the six functional areas (risk control) and has been displayed as an example.

3. The Safety Regions: Regional and National Control



* The ministry of Safety and Justice is the only party in the bottom display with official, legal authority (on the issues regulated in the Law Safety Region).

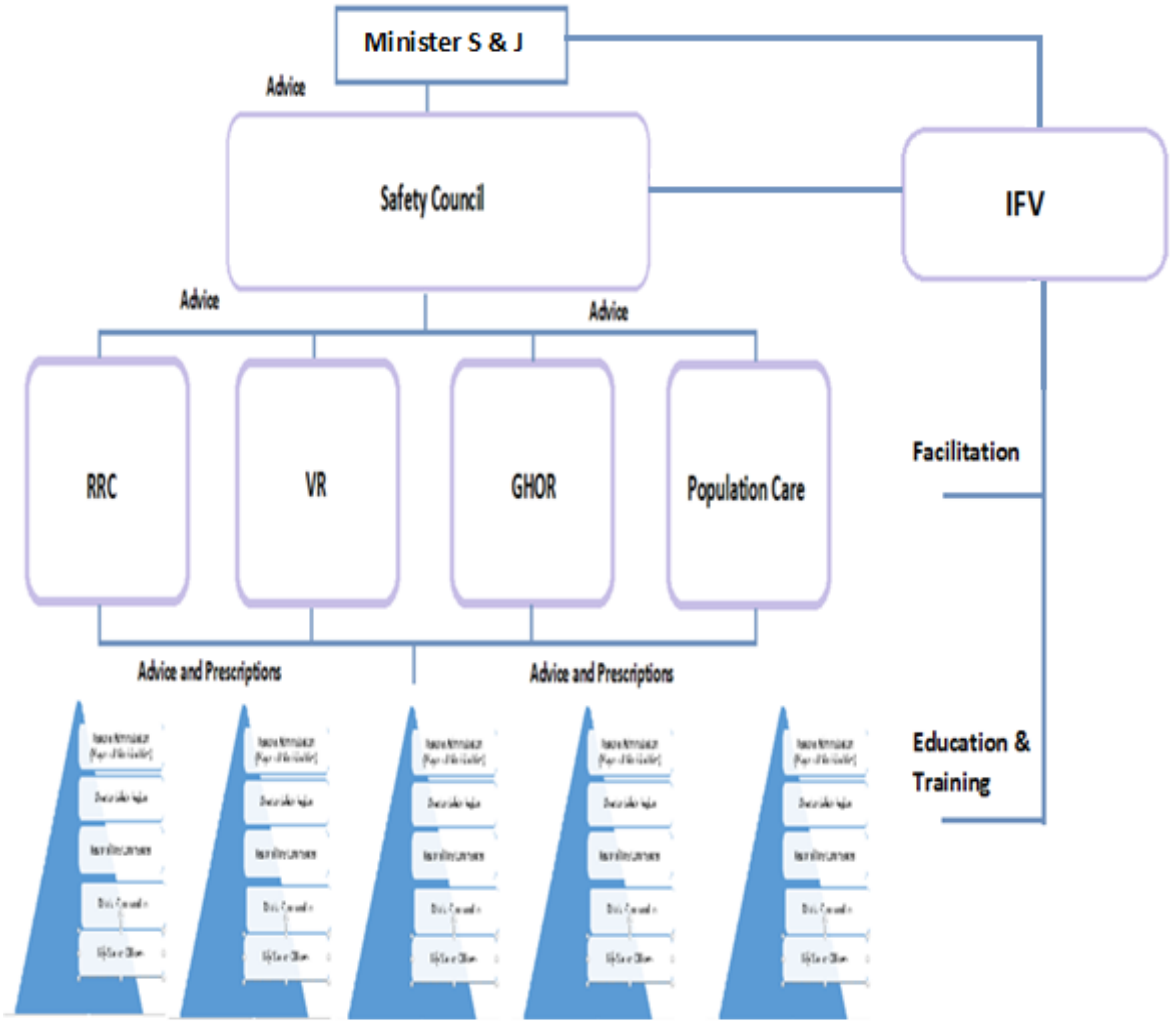
4. Organization Structure IFV



(Input sourced from: http://www.ifv.nl/Paginas/Over-IFV.aspx#tab3)

* Names have been removed for privacy concerns.

5. (Hierarchical) Structure Safety Regions including IFV



* The ministry of Safety and Justice is the only party in this display with official, legal authority (on the issues regulated in the Law Safety Region).

6. Interview Transcript Unstructured Interview

Interview transcript RBC1

-What is your function?

I am a program coordinator working for the Dutch Fire Department. Within the Dutch Fire Department, several of such program coordinators are active, each responsible for one or more functional areas and projects. My main functional areas are the connection and communication between The Dutch Fire Department and the Dutch Society, which is more broad than solely one of the six functional areas. Thus, I don't specifically belong to one of these functional areas. My main subjects are "Living Safe" (fire prevention), the fire doctrine and issues for local posts; all under the scope of innovation. People within my department work towards the fostering of –among others- innovation throughout the Safety Regions and Fire Departments.

-Which practices with regard to innovative behavior are currently used within the Dutch Fire Department?

Based on the vision for the next 20 years we have developed and implemented initiatives to achieve the goals articulated for the next 20 years. As you probably are aware, in this vision, the increasing importance of the prevention of fires and calamities is introduced and highlighted, implying a need for us as a department to implement practices which foster innovation, not solely with regards to fire control, but also with regards to fire prevention. This is quite a noble goal to achieve, because it concerns making introducing a culture shift within the Dutch Fire Department as well as the Dutch society, more it more self-aware, and self-responsible regarding general Fire Safety. This includes, for example, making people aware of possible dangers within their homes and making houses more safe with regards to fire issues.

One of the methods to find and reach such people is the implementation of the "pearl'' project. We have developed little pearls, packed in a jewelry box with our logo on it, and distributed them to leading persons within the Safety Region assigning them with the task to award people from the repressive service within their region who, based on their intrinsic motivation, perform activities besides controlling fires; thus activities related to innovative and fire prevention initiatives. This way, innovative and prevention-aware people become motivated, their leaders become motivated to search for innovative people (and to stimulate innovation) and the search and stimulation of innovation and the prevention attitude is spread throughout the organization as an puddle of oil. Leaders have to be aware what value is present within their region –which posts and which people are currently really involved with their local community and provide briefings provide information, etc.- in order to make them able to move their region towards the goals posed by the vision. Thus, solely top-down planning and implementation is not sufficient.

Despite the problems we encounter at the moment, we have seen that a number of initiatives have really reached success. For example, Greet, an fire fighter from Olst-Wijhe has reacted to a message of her organization towards 80 volunteers regarding the need for a Fire Safety program within her Safety Region. She was the only one to react on the message and visited several homes personally in order to talk to people and advise them on the safety of their houses using a checklist. However, we found that after the initial message of the regional administration, no further informing activities have been performed afterwards. Another successful initiative was that of Zuhair, an fire fighter in Amsterdam who activated young men with problems to let them visit homes and advise on the fire safety of houses and provide recommendations. However, Zuhair also had to cope with significant difficulties during the process of implementing his idea.

-What kind of problems do you encounter during your work with regards to the stimulation of innovative behavior?

The biggest problem I come around is the fact that the organization as a whole fails to spot all those people wanting to develop and implement innovative ideas with regards to fire prevention. Take for example the pearl project. We have found that many local leaders find it really hard to search, find and award the 'pearls' within their department. We have received many questions such as: what are the rules and frameworks based on which I may award the pearls? This despite we really underlined the fact that they are to award the pearl based on their own judgment in order to let them think about the pearls -the most valuable people- within their regional organizations. Thus it seems to be that people really desire policies, prescriptions and rules in order for them to feel safe. But we don't want that; we don't want to restrict people. Also, we see that people take their pearls to the official section of fire prevention of their Safety Region, and give up their task towards people from that

section, who operate within that field. But that is precisely what we don't want, we want leaders to look outside their own department. We want them to go to their local fire stations, talk to people, influence people and award people. If you don't visit people, listen to them, know their current issues and trends and inform them of your intentions, you can't see the potential within your fire department and cant activate this potential. It is good for departments at regional headquarters to develop official policy and plans which are implemented, but when these plans are resisted by people at the working floor, they won't be successful. I really think that there are enough people who can be innovative and preventive, but they have to be approached, listened to and stimulated. What we now see as that too often, people at the working floor don't know about our intentions, they aren't asked any questions, are not involved. Thus, solely top-down planning and implementation is not sufficient. Off course, some degree of political grip is needed, but these policies need to serve as support; you have to keep in mind what local trends and issues are.

Another problem which I encounter is the fact that, concerning fire prevention, several regions contact and use non-repressive volunteers. That is, volunteers who are occupied with briefings, informing and teaching the public and visiting homes. However, what this strategy is lacking, and what really is a missed opportunity, is the fact that it is not yet clear within many regions, to what extend the potential of current repressive employees can be used for this task as well. Again, I think this is caused by the fact that leaders don't talk with people within fire departments regarding their local involvement and don't know the potential of the current workforce. Thus people with leading positions live to much within their own safe islands without looking further than their own walls.

Another factor restraining the success of our initiatives is the lack of resources, facilities and assistance offered within safety regions. For example, in the case of Greet (see above) no interest was shown after she picked up responsibility for the project. It really looked like they dropped the task without asking how she experiences it, how she could be assisted and facilitated and which problems have occurred. Due to the fact that she really was not a quitter and wanted to complete the project, she succeeded in doing so. Many others, I am sure off, would not want to beg for help and resources and would have quit in that situation, including me. Therefore, I believe that many initiatives fail, without us even knowing about them. Another example is the project of Zuhair which was completed due to the strong personality of Zuhair rather than the activities of the Dutch Fire Department. These two people have indeed indicated afterwards that they really suffered from the lack of help and facilities during their activities to implement their innovative idea. For example, they had to go the fire station every time when they needed to make a call, because otherwise it would cost them personally. Also, when presentations had to be given to the public, no laptop or presentation format was present, forcing them to improvise. However, the most important thing these people indicated to have missed was an compliment, or an token of appreciation to show that it was valued that they did something more than just controlling fires. When I heard this, it really shocked me and I really felt ashamed. After the workshop in which Zuhair and Greet have told their stories, we distributed the pearls. However, a week later, we found that one of the leaders from incident control who was present during this workshop, assigned the job of awarding his pearl to someone else from the department of fire prevention (what we really don't want). This indicates that, still, the people who can really make the difference (the people hierarchically above the front-line people) don't have the incentives to find and activate innovative people within the fire stations

Another factor which I think is an barrier is the current way questions are being asked and things are being told. The way how this is done is extremely important. When someone asked to a large group: hey, do you want to help me with the prevention of fires?, the chance is relative small that many people will answer to your call. *When you adapt your language, when you listen to people and when you act like an facilitator, addressing them while acknowledging their talents, the chance is much more significant that people will follow you. Thus, the way questions are asked currently may not be the way that is needed. Bottom-up rather than top-down planning, addressing people using their insights, ideas and talents. Naturally, official policy is important, but taking local considerations and ideas into account is also very important.*

What I also see, purely the prevention-side considered, is that when fire fighters from the fire stations need to perform housing visitations and trainings to the public, that they don't do this with the full motivation needed. They joined the Fire Department to kill fires, and most of them are not really interested in preventing them or performing side-activities. This is a culture shift which really takes time and proceeds very slowly. Some large Safety Regions have distinct departments occupied with the prevention of fire and safety of houses and general life and some have not. In the large Safety Regions, these departments work together with fire fighters from the fire stations during such activities. We see that, while sometimes this runs smoothly and successfully, and sometimes this

process has to cope with high resistance. This also differs significantly between voluntary and professional fire fighters. In general, volunteers are more positively towards side-activities. However, they need to be activated and stimulated (see above) this does not happen adequately at all times.

Thus, to conclude, what I see , in general, is that Safety Regions and HQ's are indeed moving towards the stimulation of fire prevention innovative behavior with regards to fire prevention. The main problem, however, seems to lay within the levels above the working floor; with leaders not activating, stimulating and facilitating the people enough, and don't spot the value of the talent beneath them enough. They have to look outside their own silos, create and stimulate the competence of themselves and their followers and understand the local involvement of fire fighters. Thus, only indicating to want something is not enough, you have to act towards it, involving ground-floor people and intensively searching for pearls. Also, it involves stepping back sometimes, allowing people to come up with ideas and expressing their concerns/ joys.

-How do you think the challenges and problems you just described are to be handled with?

Through the finding of the pearls within our organization and to let others know about them. We are currently following the oil-puddle strategy by publishing "hero"" stories such of those of Greet and Zuhair and diffusing them through Twitter and the company Website and through conducting conversations with leaders to make them aware of the talent within their departments. The largest degrees of talent, experience and knowledge regarding fire control and fire prevention are located within the Fire Departments. I am confident that most fire fighters want and really can use their competences to help develop and implement fire prevention initiatives –and when they don't have the capabilities to do so, want to help and follow their colleagues- but due to several reasons they don't really engage in such activities yet. We also make and publish videos of such pearls, with the intention of informing people about the fact that is really is good and valued to come up with new ideas. The distribution of these pearls to be awarded has been very unstructured, mostly involving people with a leading position. But we did not really determined things such as: how much pearls per Safety Region, who can award such a pearl and who cannot; everyone can do it. Also, we provide workshops, in which we show the videos of, for example, Zuhair and let the people discuss on how they feel about the video, what they can do about and what should be done within their Safety Region. After such workshops, everyone receives a pearl to award. We also have an annual network-day of the program of incident control, in which we provide such workshops. In those workshops, Zuhair and Greet were present to tell their stories and afterwards, pearls have been distributed. I believe there are around 150 pearls within the organization right now. Currently, we try to follow who have received the pearl as an award and to publish their stories, with the ultimate goal of publishing a "pearl story' every two weeks, in which the feeling and intrinsic motivation towards fire prevention is placed central.

This whole process is done without official policy, we really try to prevent writing prescriptions and rules, in order to really make people want to act themselves, bottom-up rather than top-down style. However, what has to be kept in mind is that we cannot make official policy and practices here. That is the responsibility of the Safety Regions themselves. The only thing we can do here, in Arnhem, is the offering of advice, advocacy, collaborative projects between Safety Regions, and prescriptions that are desired to be arranged at national level. Thus, our role is purely a supporting one without official authority. The things that really are to be followed by all Safety Regions are the things regulate by law, such as the mobilization time etc.

-Do you see differences between different regions with regards to policies and the stimulation of innovative behavior?

There absolutely are differences between distinct Safety Regions regarding the way they implement policy and practices. Innovative behavior, and the stimulation of innovative can really differ between and within Safety Regions, because fire stations are different. The leading principle, to my opinion, though, remains that the best way to prevent fires is to include those people within the Fire Stations. The key to this is giving them room, facilitating them, motivating them and providing feedback. Just commission it from above, like in Amsterdam (in which the Mayor has ordered that 100.000 houses are to inspected and checked and smoke detector are to be installed) generally leads to long faces and a lack of motivation and interest. People need to be motivated and listened to before something is commissioned towards them. Thus problems may begin in the regional headquarters and by the managers who fail to lead by example, visit local stations and talk to people. The extent to which these problems differ determine the extent of differences between distinct Safety Regions.

7. Interview Template and Transcript District Commanders

Interview Template District-Commanders

1. What are your function and responsibilities?
2. When did you start working for the Fire Department?
3. Why are you searching for new and better ways to execute your work?
4. Did you ever come up with a new and better way of doing your work?
5. What happened with this idea?
6. How do you support ideas of your colleagues and subordinates regarding new ways of doing things?
7. To what extend to you think that your subordinates conduct, and want to conduct, innovative behavior?
8. To what extend do you believe that the generation and implementation of innovative techniques and work processes is important?
9. To what extend to you believe that the opinion and suggestions of your subordinates is important?
10. How would you describe the relationship with your subordinates?
11. How do you stimulate the innovative behavior of employees within your district?
12. How do you offer facilitation and support with regards to the generation and implementation of innovative ideas?
13. How do you react whenever an employee shows up with a new idea?
14. To what extend do you believe that you have personal relationships with your subordinates?
15. To what extend do you believe that the current workforce of the Dutch Fire Department has creative and innovative capabilities?
16. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?
17. To what extend are you convinced that the implementation of your ideas regarding innovative techniques and work processes can lead to increased performance of your Fire Department?
18. To what extend is innovative behavior expected of you within the Dutch Fire Department?
19. How is innovative behavior rewarded within the Dutch Fire Department?
20. What is the role of your supervisor with regards to the implementation of innovative ideas and initiatives?
21. What are, in your opinion, the most important factors inhibiting the generation and implementation of innovative ideas within the Dutch Fire Department?
22. What are, in your opinion, the most important factors stimulating innovative work behavior within the Dutch Fire Department?
23. How do you feel about the practices, currently used by the Dutch Fire Department to stimulate the innovative behavior of its employees?
24. What do you think needs to be improved in order to adequately stimulate IWB within the Dutch Fire Department?
25. Can I contact you again whenever more questions arise?

Interview Transcript DC1

1. What are your function and responsibilities?

We are the fire department of Hollands-Midden since four years now. Before the regionalization, this was region in which 25 distinct local fire departments were active. Back then, I was the commander of the fire department of Gouda; so I led the fire station you are now in. After the regionalization I became the director of Risk Control, which is occupied with offering advice on several matters, providing over-watch with regards to the fire safety and the general fire safety of our society. Next to this, I am the district-commander of one of the four districts within our region. Every of the four directors (incident control, risk control, operational preparation and concern staff) is also a commander of one of the four districts. This indicates that I am the point on contact with regards to every fire-departmental aspect for the administration of our district. Whenever I receive a question from our administration, I am the one who provides the answer; calling in the help from anyone I need. When I receive a question with regards to repression, I ask the director of repression for an answer and provide this to the administrators. So the administration has only one point of contact

within an given district. So first, I led the fire department of solely one municipality, now I lead the fire department of seven municipalities. This makes my work diverse and fun.

2. Why are you searching for new and better ways to execute your work?

Well, you ask this question precisely at the right time. Due to the fact that municipalities significantly had to cut in their costs over the last few years, and still have to do so, you see that they don't know where to cut anymore. Therefore they decided to cut in the costs of the fire department, which leads to the fact that we, risk control, have to cope with cutbacks. This is quite logical, since it is unethical to cut in the costs and quality of your response units. Therefore, the prevention-side has to cut. Therefore, we decided that we have to look towards what is happening around us, and we can anticipate to those developments. For example, we see the development that older people keep living at their homes much longer, instead of going to care houses. This means that the response units are going to have to take into account that people within the house their approaching might be lesser able to move quickly. This means, that we have to make sure that our response units know exactly who lives in a given house and how able this person or persons is/are. This is a job of our department, risk control. Therefore, we start looking at how we can help people to determine what their personal risk is and how they can decrease this risk. This indicates advising older people not to use old-fashioned gas stoves anymore. Thus, we are at the point of introducing an entirely new way of executing our work, indicating a turnaround in the way of thinking as well as the way of training. The innovativeness of this is that we shift from a rules and regulations-based approach towards a risk-based approach. So we are really trying to make an innovative turn towards giving people the insight with regards to what their personal risk is, what causes this risk and how to decrease their personal risk. This not really involves a technological innovation, but a way-of-thinking-based innovation.

3. Did you ever come up with a new and better way of doing your work?

That is a hard question. Was I that innovative personally? In my time as a commander, we had to cope increasingly with aggression towards response units. I came up with the idea of building cameras on the helmets of fire fighters or on top of fire trucks in order to be able to film that behaviour. This would not only be useful for the prosecution of those people and insurance issues, but also for the training of new fire fighters, preparing them for the real thing and checking how the fire fighters involved reacted.

Another project which we currently work in is the development of a multi tool, which allows us to open all kind of locks. This would make us able to enter any home or building as fast as possible.

4. What happened with this idea?

The idea was really good. However, legally there were several issues. What can and what can't you record, and how about the privacy of those people filmed? Due to these legal issues, the project is still not implemented today. Currently, a proposal is under construction in order to ask the administration permission to purchase a number of helmet-cameras.

The multi tool is still under development, so that project is also not implemented yet.

5. How do you support ideas of your colleagues and subordinates regarding new ways of doing things?

I will always support new ideas, also because of the fact that I am not really in a position to be very innovative; I am more in the position to strategically judge the ideas posed. I have severe time constrains and many appointments so I simply don't have the time for an individual project. But I will also support new ideas.; starting with the question whether the idea or project is achievable. During this consideration, I will not use personal considerations, so asking myself whether I personally like the idea. Rather, I will use a company-wide point of view, asking myself whether the idea is valuable for our fire department and whether the idea has future. When it has value, I will certainly support it. In my opinion, it is important that people are really dedicated to their work and when we have people who are creative and innovative; we have to make advantage of them. In order to do so, I gave one of my department supervisors total freedom to write a plan with regards to the cutbacks. I did this because this specific guy is very creative in this thinking and easily connects pieces of information. He is given the specific tasks to involve the people surrounding him during the writing of this plan in order to make sure that it has general support. If you don't work with the ideas your people pose to you, ignoring them completely, these people will not come up with ideas anymore. And that's very wrong. Therefore, totally support any input from the floor.

6. To what extend to you think that your subordinates conduct, and want to conduct, innovative behavior?

The fire department still is a relative traditional organization. There could and should be much more innovation within this firm. What I see, is that within the repressive force, so our fire fighters on the

street, there are much more inventors and creative thinkers than in the preventive force. But in both cases, the extend of innovation and change can increase significantly. We can use a lot of new blood and new insights to help us with this and to increase the general safety. Especially our regional as well as national direction of risk control is highly conservative; with a number of very traditional minds. Whenever I look around during our national meetings of the council of directors risk control; in which all the directors of the Safety Regions are present, I don't see the most creative and innovative people I know. The things discussed during these meetings are more related to rules and regulations, rather than innovation and change. This is a real pity, because some deregulations, for example with regards to the judging of building, offer great opportunities for innovation. So this can improve significantly.

7. To what extend do you believe that the generation and implementation of innovative techniques and work processes is important?

Very important; essential, I suppose. For example, there is a national project within risk control which is named no emergency by fire. This project is concerned with fire safety in care organizations and is initiated after a fire in a mental hospital which cost the life of three patients. The projects focuses on the people working in such care organizations and tries to help them increase the fire safety of their buildings. Our regional fire department, has taken this project and transformed it into project no emergency by fire 16.0. We gave it the number 16 because our Safety Region is the 16th region. We have taken the old project and further developed it as such that it could also be used to increase the fire safety of office buildings and many other types of buildings were large numbers of people are present. Thus, there are really people within this region who are innovative and who want to create new things. This project is nominated for the Jan van Heijden price of this year.

8. How would you describe the relationship with your subordinates?

Well, I think it is difficult to talk about yourself in such a way. During a training which was provided to the entire management, it was told me that I am a coaching leader. I give my departmental leaders very fee to lead their own departments because I know that they are capable of doing so. At the same time, I try to be visible and approachable for everyone. I think that people know how to find me whenever they need me. For example, my personal office is in Leiden, but I have three offices in other parts of the region. Whenever I have a meeting with one of my departmental leaders, I always go to his office. This way, people see me and I get the see the people more. I don't want to be that guy in the ivory tower who nobody knows or sees and who is not reachable for anyone. During the meetings of our management team, I don't act as an boss or leader who directs everyone, but I try to make sure that everything is open for discussion and that everyone's opinion is heard.

Also, I make sure that I lunch with every team at least once per year. This is mainly to see them and to talk about other things than work. Naturally, they can ask work-related questions to me during these lunches, but when they don't want to, and want to talk about private matters, educational matters or things going wrong, that is fine too. This depends on the team at hand. Some teams want we to fill un a survey, and other teams just play music and want to have fun. I always do this with all of my 12 teams. The same counts for my management team. After each meeting, we lunch together and speak openly.

Thus, I think that I have good relationships with the people. You have to ask them whether this is true, but I think that many things are open for discussion and I try to be reachable for everyone. Also, I provide as much freedom as I can give, which they pick up with mutual trust and respect.

9. How do you stimulate the innovative behavior of employees within your district?

Mostly, to go talk to people and showing them that their ideas are very welcome. For example, when I heard about the project no emergency by fire 16.0, I went to those people and told them that their idea was really good. I also promised and arranged speaking time for them during a meeting of our directors. Thus, they were given the change and one hour time to present their ideas to the board of directors. During this session, questions were asked about the project, forcing these people to think better about their project and how to improve it. In this case, the board of directors liked the idea, leading to a spreading of knowledge with regards to its existence and a general support. So I try to stimulate innovative work behavior my giving new ideas and projects a stage, or some publicity, and their champions a change to present it to the higher layers.

10. How do you offer facilitation and support with regards to the generation and implementation of innovative ideas?

That depends on the project at hand. You always have to make the consideration, especially whenever it comes to facilities and resources. Money can only be spent once. Luckily, we have a reasonable budget within our risk control department to spent on fire safety. However, a large variety

of aspects can be named within the category of fire safety, so we have to act innovative with our money too. This inclines creatively making sure that the finance which is left from the several budget posts after a year gets allocated to such projects. But nevertheless, considerations and choices have to be made. When there is finance, I certainly support all good ideas which have potential.

We try to inform everyone about the future goals of our department and the way to reach these goals. We have written a plan which described how we want to deal with the cutbacks of the next four years and we presented this plan to all of our departments. So, every employee should be aware of our new strategic plan and the way to get there. The last four weeks we have done this again, telling people where we stand now and what we will do next. So, theoretically, everyone should be aware of our goals, our financial picture and what is expected of them. Also, we indicated that whenever people have ideas or comments, they are very welcome to deliver these. This is not obliged because some people want to be innovative and want to do an extra step, and some people just don't want to do this and simply want to execute their work and go home. This is okay, but we really tried to make clear that whenever people want to have a share in our plans, they can ventilate this desire. I think that people know what they do well and what needs to be improved. They have annual appraisals in which they speak with their supervisor about this topic.

11. How do you react whenever an employee shows up with a new idea?

First, I determine whether the idea is good or not. When it is good, I go to those people and tell them that their idea is really good. I also then arrange speaking time for them during a meeting of our directors in order to give them the change and the time to present their ideas to the board of directors. During this session, questions are generally asked about the project, forcing these people to think better about their project and how to improve it. In the case I described above, the board of directors liked the idea, leading to a spreading of knowledge with regards to its existence and a general support. So I try to stimulate innovative work behavior my giving new ideas and projects a stage, or some publicity, and their champions a change to present it to the higher layers.

When I have given people the freedom to work on their project and something specific has been generated, I let them develop a proposal to be presented to my superiors; so the board of directors and the regional commander; which is my supervisor. Before they present it, I inform the board of directors and receive the first questions, which I ventilate to the guys. This way, they can modify their idea and are well prepared to present their insights. Finally, they present their idea and receive feedback from my supervisors. From this point on, my influence ends; the board of directors has to decide whether to provide resources or not.

12. To what extend do you believe that you have personal relationships with your subordinates?

I think it is very important to have personal relationships with my people. This is not always possible because I just am not present every day; but I try to make these relationships as personal as possible. I try to visit local fire stations as much as possible, though my time is limited. One way of compensating this is through the lunched I told you about. I also find it very important to be present at events such as the youth fire department contests. During these events, I visit the fire station and talk to the people operating within these stations. Just asking how it goes and whether they experience some problems of any kind. Thus, I try to be present and to talk with people as much as I can. My own people of the risk control department, though, can contact me anytime; so my contact with them is very personal. For the repressive force, this distance is larger. I also try to be present at events in which people are awarded for jubilee or other things.

13. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?

I bet that there are risks with regards to those aspects. But I will always make the personal consideration with regards to these aspects upfront. When I think that the risks for my reputation, or stress, are larger than the advantages of my idea, I will not come with the idea. When I am convinced that the common good is larger than the risks for me personally, I will always pose and ventilate my idea. In such cases, it is worth the stress and conflicts. During my project on the cameras I experienced some kind of stress. I had to deal with several policy makers, up to the two ministers of Safety and Justice and Home Affairs, and the opinions of these policy makers really differed, with one supporting my idea and the other not. So this leads to confusion. This really developed the attitude I have now: when I personally think that something is very valuable, I go work on it; regardless of what other people are thinking.

But this indicates our dependence of factors outside the organization. We cannot simply look at what our highest organizational policy makers think and whether they approve a given idea. We also have to look at our national administration and politics. When I want to implement an idea such as the

helmet cameras, not solely my mayor has to approve it, but 25 other mayors have to approve it. Also, the minister of Safety and Justice can interfere with this process, arguing that there are privacy matters, or simply indicating that he does not like the idea. Thus, there are many forces at play, through which we have to maneuver. This can give stress, but also makes my work attractive.

14. To what extend are you convinced that the implementation of your ideas regarding innovative techniques and work processes can lead to increased performance of your Fire Department?

Whenever the idea is good and it seems like a good improvement, it seems very likely that it will lead to improved performance. There are many things which can improve within our current organization.

15. To what extend is innovative behavior expected of you within the Dutch Fire Department?

I am convinced of the idea that whenever you decide to be a fire fighter, you have to know that you always going to have some kind of innovative ability and innovative desire within you. Every fire is different, and every crisis situation is different. When you leave this fire station towards an crisis, you don't know what you are going to have to deal with; you have heard the code, so you know the situation abstractly, but not precisely. So you are always have to be ready to improvise, to innovate, to be flexible and to think creatively. I think this is something we have to select people on. So in this sense, it is expected of everyone to be able to be innovative; and in my opinion, everyone should be aware of this expectation.

16. How is innovative behavior rewarded within the Dutch Fire Department?

Within our fire department of Hollands Midden, we have an annual summer drink and a Christmas drink. During these events, we cheer people who have done something very well or who have done an extra step; made some kind of effort. This counts for excellent repressive actions as well as preventive ideas. During these events, people who have championed innovative projects are also cheered; called forward and told a small story about them. The inventor of the no emergency by fire 16.0 project has also been cheered at this event. These people receive flowers and a cake and gift card for the entire department. We do this on purpose, because nobody does something on his/her own; the support and help of the department is needed also. When someone is absent because he needs to do something for his project, his colleagues need to take over his activities. Therefore, we cheer and reward the entire department. Last event we had 8 people receiving this attention. Next to these events, we give attention to people in extreme cases; so who have done something extremely well. So this is regionally. Nationally, there is the Jan van Heijden price. So I think that enough attention is being paid to rewarding innovative behavior.

17. What is the role of your supervisor with regards to the implementation of innovative ideas and initiatives?

When I have given people the freedom to work on their project and something specific has been generated, I let them develop a proposal to be presented to my superiors; so the board of directors and the regional commander; which is my supervisor. Before they present it, I inform the board of directors and receive the first questions, which I ventilate to the guys. This way, they can modify their idea and are well prepared to present their insights. Finally, they present their idea and receive feedback from my supervisors. From this point on, my influence ends; the board of directors has to decide whether to provide resources or not. I general, I think that the attitude and the way of feedback provided by the board of directors is good and helps the guys.

18. What are, in your opinion, the most important factors inhibiting the generation and implementation of innovative ideas within the Dutch Fire Department?

The first and greatest barrier is money. The is simply not enough budget available to support al large projects. Therefore, we are obliged to make considerations and choices with regards to which project to support and which not. The same counts for time.

Another significant barrier is the classic way of management and directing people. In general, this organization has a management which is very traditional. A given idea has to be extremely well before it is accepted and supported. New ideas are easily rejected. This may be caused by the fact that almost all current directors have experience as an fire fighter. So they have extinguished fires also. Though this is generally seen as a very good thing, it can pose barriers too. Because they have experience, they have clear opinions about how things are done and how they should be done, posing barriers for new, innovative approaches. For example, these people have used a given extinguishing method for 20 years. Whenever someone approaches them with a new extinguishing method, the possibility is high that they will say: who are you to say that we need to change a good practice which is used for 20 year? This leads to a lot of critical comments.

A final barrier is the complex organizational structure we have to cope with. We have far too much hierarchy with people on the top who find the stripes on their shoulder more important than the insights which are produced by these stripes (and especially insights provided by people with fewer stripes). When a fire fighter comes up with an idea, he has to bring it to his team chef. This chef needs to ventilate the idea to his departmental head, who communicates it to his districts commander. The district-commander informs his regional commander and the board of director, after which, 3 years later, a decision is made. Everyone within this line has his own opinion and had the possibility to hold back the project whenever they don't like it. So this process takes far too long, and the way to success knows far too much points on which it can be terminated. I think this can really hold back someone to ventilate a new idea, especially when a project of him is terminated before. So there is far too much administration within this organization.

Another barrier is the fact that many regions are still working on the regionalization, and have less time to work on innovation.

19. What are, in your opinion, the most important factors stimulating innovative work behavior within the Dutch Fire Department?

Besides a restrain, time can be a serious stimulation. I really see that, when it is possible, people are given the time to work on their idea, and that their colleagues are willing to take over his or her activities.

Another large stimulation within this organization are the national initiatives which are arising currently. There is increasing collaboration on some topics, focused on by national project groups. So this is a clear stimulation also.

Our strength with the project no emergency by fire 16.0 was that our guys looked further that just care organization and determined to what extend this project could be extended to a larger variety of buildings. So my advice to other regions is to think beyond what already exists, and take things to another level. There is significant potential within this organization and its ideas, you just have to take a wider perspective to see it. Give people the room and time whenever they approach you with a new idea. This will certainly lead to something great.

20. How do you feel about the practices, currently used by the Dutch Fire Department to stimulate the innovative behavior of its employees?

Yes I am. I am in a number of networks, I am a member of the program council on risk control, and we are continuously updated on meetings of our regional commander with the other commanders within the RBC. So he really shared everything which is talked about within the RBC with his team of directors. So in that sense, I am pretty updated with regards to issues relevant for the Dutch Fire Department.

We see some excellent things arising, for example with regards to the initiatives submitted to the Jan van Heijden price. I really love the risk factory idea of Enschede; a valuable part of risk control and prevention by actually letting people see the risks. This initiative led to the consideration within our administration to also build such an risk factory.

The Jan van Heijden price is an excellent initiative. It gives people a national stage to present their idea and to share it with others. Off course, it is impossible for all projects to be presented at the national congress, but people are allowed to vote on projects to the three most supported ideas are given the possibility to share their knowledge and ideas. I think that this price is well known within the Dutch Fire Department because you can't circle around it and deny that innovation is important within this organization. All professional fire fighters should be aware of this initiative. For the volunteers, this is slightly different; they are just less involved with such processes.

21. What do you think needs to be improved in order to adequately stimulate IWB within the Dutch Fire Department?

I think that people must be given more room and freedom to work and further develop their project. Currently, mainly bad things of projects are noted, but try to see the good things and really search for a way, as an supervisor, to let people work on their project. Give people the room to think and to be creative. Don't expect this from everyone, because some people simply don't want and are able to be occupied with innovation and change, they like to do their own thing. Off course, that is okay. But give the people who really want to, the room and time. There really is attention being paid to innovative behavior, it is certainly not ignored or seen as unimportant. Next to providing room and time, also make sure that the communication is better and wider. Make those initiatives more well-known, informing everyone what is done on innovation. People just need a stage in order for them to get general support. Offer them such a stage, time and freedom, and wonderful things will arise.

8. Interview Template and Transcript Line-Managers

Interview Template

1. What are your function and responsibilities?
2. Are you a volunteer of a professional fire fighter?
3. When did you start working for the Fire Department?
4. Why are you searching for new and better ways to execute your work?
5. Did you ever come up with a new and better way of doing your work?
6. What happened with this idea?
7. To what extend do you support ideas of your colleagues and subordinates regarding new ways of doing things?
8. To what extend to you think that your subordinates conduct, and want to conduct, innovative behavior?
9. To what extend do you believe that the generation and implementation of innovative techniques and work processes is important?
10. How important to you judge the opinion and suggestions of your subordinates?
11. How would you describe your relationship with your subordinates?
12. How do you stimulate the innovative behavior of your subordinates?
13. How do you respond whenever someone approached you with a new idea?
14. How and which facilities do you offer with regards to the generation and implementation of innovative ideas and projects
15. How do you reward subordinates who have conducted in innovative work behavior?
16. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?
17. To what extend are you convinced that the implementation of your ideas regarding innovative techniques and work processes can lead to increased performance of your Fire Department?
18. To what extend is innovative behavior expected of you and others within the Dutch Fire Department?
19. How is innovative behavior rewarded within the Dutch Fire Department?
20. What is the role of your supervisors with regards to the implementation of innovative initiatives?
21. How do you feel about the degree of sufficient support and facilitation you receive from your colleagues to implement innovative ideas and initiatives?
22. What are, in your opinion, the most important factors inhibiting the generation and implementation of innovative ideas within the Dutch Fire Department?
23. What are the most important stimulating factors for innovative behavior within the Dutch Fire Department?
24. What do you think needs to be improved in order to adequately stimulate IWB within the Dutch Fire Department?
25. Can I contact you again whenever more questions arise?

Interview Transcript LM1SR1

1. What are your function and responsibilities?

I am a team-leader operative in the 24-hour shift. I have formal authority over seven guys. My responsibility is to make sure that everyone functions well and that we perform our activities good. This includes a variety of activities ranging from holding annual appraisals to talking about private matters. So I am operative between the cluster-leader and my guys.

2. Are you a volunteer of a professional fire fighter?

I am an professional fire fighter.

3. When did you start working for the Fire Department?

I started in 1991, here in Gouda, so I am operative for 23 years now. I am operative as a team-leader for 17 years now.

4. Why are you searching for new and better ways to execute your work?

I have to make sure that I am aware of processes that run nationally. This involves keeping an eye on the internet and the implementation of new working methods. Within the organization, I am involved with a project group which focuses on perfect ionizing the diving methods of the regional fire department. This group is involved with minor changes or improvements with regards to working methods. So in that sense, you can see that I am looking for new methods and improvements.

5. Did you ever come up with a new and better way of doing your work?

Off course I initiated several changes throughout the years, but these mostly have been small changes and small improvements that needed to be done in order to make our processes easier and our performance better. This involved, for example the improvement of some procedures of our diving activities.

6. What happened with this idea?

Most of these minor improvement have been implemented. That was relatively easy because they were relatively small and their value and use was clear. Their influence with regards to money and the changing or current processes was small.

7. To what extend do you support ideas of your colleagues and subordinates regarding new ways of doing things?

I am always open for new things. Whether I really desire them is another question. Techniques change and general assumptions change so it is a natural thing to change and I believe that you have to be open towards it. Thus, I am. The ideas have to be good, though, don't approach me with something very small which really doesn't need a new application of it and on which we will waste our time.

8. To what extend to you think that your subordinates conduct, and want to conduct, innovative behavior?

I have a relatively young squad, so I have a number of guys who often come with new ideas and who like to Improve things. They have completed the training recently and have heard about new techniques and the desires of the IFV. So luckily, I have a group which is relatively open towards change and new things. It could be more, though. Within this organization, you have to do an individual effort to keep up with new developments and new techniques, and I see that especially the older, more experienced guys, don't do this to an large extend.

9. To what extend do you believe that the generation and implementation of innovative techniques and work processes is important?

I think it's is very important. Techniques change, materials change, circumstances change, so you really have to keep up with those developments. Therefore, I think that it is very important that we as an organization are open towards this and make an effort to keep up. When I look at our current organization, I see that this is not running very smoothly yet. In my opinion, we are not a very innovating region.

10. How important to you judge the opinion and suggestions of your subordinates?

Very important. They are your eyes and ears and we have to make sure that everything goes well together.

11. How would you describe your relationship with your subordinates?

In my opinion, this is very open relationship. It is not very hierarchical in the sense that I am the boss in the tower. My door is always open and I try to be always available and reachable for them. I also believe that there is mutual trust and respect. You have to ask my guys whether they trust and respect me, but I trust and respect them and I think this works both ways. We discuss all things very openly and if someone wants to talk about something, anything, this is possible; whenever I have the time off course.

I don't know whether I would support them even if this could lead to conflicts for me personally, because I cannot imagine that anything would lead to that. My supervisors are generally open towards new ideas and innovations; so it would not get that far easily. I have no experiences with that so I cannot give an answer to that question. I guess it depends on the subject at hand. When it concerns the safety of my men, I will do anything to get it done, whatever it is. When it is a relatively small thing, I'm not sure how far I would go.

I think I offer my guys with a lot of freedom and free room to execute their tasks whenever this is allowed. When someone has a new idea with regards to an exercise or something, I give them to room to try it and to experiment with it. When it's no good, I will drop it. When it is an improvement, we will continue with it. So they certainly have this room.

12. How do you stimulate the innovative behavior of your subordinates?

I am not really occupied with the stimulation of innovative behavior. I don't communicate that I expect them to innovate and to come up with new ideas. I don't think that is necessary.

13. How do you respond whenever someone approached you with a new idea?

At first, naturally, I am curious what the idea is and what it will change. So I let him demonstrate it to me. Then I will mostly communicate it to my fellow team-leaders, trying to discover how they

feel about it. When we all like it, we will either implement the idea, or will pass it to the higher lines whenever finance is needed.

14. How and which facilities do you offer with regards to the generation and implementation of innovative ideas and projects

The facilities I give and can give are mainly with regards to room and time to and experiment with the new practice; to determine whether it is okay or not and how it needs to be improved. I don't have any financial resources to give; that's not my responsibility. When someone needs this, I have to make an effort and ask my superiors.

I offer my employees information on their performance. I conduct annual appraisal during which everyone hears what goes well and what can be improved. Also, during daily activities I provide feedback on those matters. Thus, I think that all my guys know what their performance is and how this could be improved. There is less freedom during hot situations than during cold situation, but that is inevitable. During crises, everyone needs to what their trained for. Whenever there is something critical that needs to be done different, they can approach me with it during those situations. But minor things are only discussed during cold situations, at the fire station.

15. How do you reward subordinates who have conducted in innovative work behavior?

That is mostly through the way of compliments, or just telling someone that he has done a great job. Besides these things, I don't really reward my guys.

16. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?

Not at all. I am not afraid for any damages. You have to play games at a very high level before this is possible. So this is not a factor holding me down. When I think something is a good idea, I will just pass it on or work with it.

17. To what extend are you convinced that the implementation of your ideas regarding innovative techniques and work processes can lead to increased performance of your Fire Department?

When something really is an improvement compared to the old situation, it will lead to better performance. That seems quite clear to me.

18. To what extend is innovative behavior expected of you and others within the Dutch Fire Department?

I don't know. I cannot say that I receive any stimulations from anyone to be innovative and to express this expectation towards my guys.

19. How is innovative behavior rewarded within the Dutch Fire Department?

I don't think so. I haven't spoken anyone who has been rewarded with regards to a new idea of innovation. Well, that is not entirely true. I have received appreciation for our work within our diving truck-oriented project group. After making a nice product, we have received appreciation from our supervisors as well as the working floor, telling us that we done a good job. So, there is some appreciation.

20. What is the role of your supervisors with regards to the implementation of innovative initiatives?

My supervisors, in this case the cluster-leader, is going to have to pass it up above to the management team, which has to consult it with the board of directors. So they will give feedback, and then try to get it through, get approval. So their role is very essential; they are a critical factor.

21. How do you feel about the degree of sufficient support and facilitation you receive from your colleagues to implement innovative ideas and initiatives?

I am not very occupied with innovative behavior, so I don't have an opinion about the degree of support and facilitation. With regards to my diving project, I am very pleased with the facilities and resources I have available. We are one of the only working groups which have such availability to resources and finance. When we need something, we almost every time can get extra finance, resources and time. I think this is also made possible because it is an project which is monitored and watched nationally.

22. What are, in your opinion, the most important factors inhibiting the generation and implementation of innovative ideas within the Dutch Fire Department?

Again, I can't speak out of my own experiences. However, I notice that we are not a very innovative region. When I compare the developments in our region with those things I read about national development or developments in other regions, than I have to conclude that we are not a very early mover. That's a pity.

I think one of the reasons if our administration. Off course, we have to deal with cutbacks, but I am not sure to what extend our administration is open towards innovation and change. They should try

to stimulate personnel to search for improvements but personally I don't experience any stimulation from above. But I don't really have any experience with large projects, because we as a team mainly issue small changes and small improvements. The stimulation and facilitation with regards to my diving project group is excellent, but with regards to other topics it is much more limited in my opinion; more limited than in other regions. For example, we have just implemented a card system with which we can evaluate our processes. For us, this is very new. However, I noticed that many regions are already working with that system for a long time. I think this is because the fact that every region is an island, with its own subcultures, rules and administrations. Every region want to redesign an given idea and make it their own product; especially the greater regions such as Rotterdam, Amsterdam-Amstelland and Haaglanden. For example, every region want de design its own suits. Also, every region has it own types of fire trucks. I think that we rather have an administration which likes to wait and see what is happening in other regions.

23. What are the most important stimulating factors for innovative behavior within the Dutch Fire Department?

Room, thus freedom, appreciation and time.

24. What do you think needs to be improved in order to adequately stimulate IWB within the Dutch Fire Department?

A very important thing is success. Someone has to have success with a given project in order to feel confident enough to make another effort in another project. When someone's project is terminated quickly, having low support from either or both his colleagues and his supervisor, it is not very likely that he will do something again time. Thus, success is very important.

In order for this situation to improve, it is important to have very clear frameworks from the start, making clear to everyone what the available room is and what the possibilities and resources are, to prevent disappointments. When you get offered the resources and facilities to work on your project, I think it will be more easier to work than whenever you first project is shot off instantly. In the last case, you will probably try it one more time, after which you will never come with something new again.

What also is very important is the sharing of knowledge. Now, every region designs its own stuff, leading to 25 different suits and 25 different fire trucks. Just design these things nationally and spread them throughout the organization.. This would lead to an massive cost reduction, and more money will be available for other projects. A terrible waste of money, time, people and frustration.

25. Can I contact you again whenever more questions arise?

26. Sure

9. Interview Template and Transcript Fire Fighters

Interview Template

1. What are your function and responsibilities?
2. Are you an volunteer or an professional fire fighter?
3. When did you start working for the Fire Department?
4. Why are you searching for new and better ways to execute your work
5. Did you ever come up with a new and better way of doing your work?
6. What happened with this idea?
7. To what extend do desire new working methods and do you support ideas of your colleagues regarding new ways of doing things?
8. How would you describe the relationship with your supervisor?
9. To what extend do you perceive unconditional support from your supervisor, even whenever this may cause personal problems for him/her?
10. How would you describe the attitude and feedback of your supervisor with regards to new, innovative ideas regarding work methods and techniques, as posed by his colleagues and subordinates?
11. To what extend does your supervisor expects you to come up with new, innovative ideas regarding work processes and techniques?
12. In general, how does your supervisor stimulate the generation and implementation of innovative ideas among you and your colleagues?
13. How are the goals and priorities of the Dutch Fire Department communicated to you?
14. To what extend is the level of your performance known and do you know how to improve this level?
15. How are you rewarded for your performance?
16. How do you receive training on topics related to your profession?
17. To what extend do you feel that you are restrained by rules and regulations during the execution of your work?
18. To what extend do you describe your working group as one, intimate group having a shared purpose?
19. To what extend do you feel that the generation and posing of innovative ideas regarding techniques or work processes are appreciated and supported by your colleagues, even whenever these ideas are quite radical?
20. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?
21. To what extend is innovative behavior expected of you within the Dutch Fire Department?
22. How is innovative behavior rewarded within the Dutch Fire Department?
23. How do you feel about the degree of support from your supervisor and the organization to come up with and implement innovative ideas?
24. What are restraining factors for the generation and implementation of innovative ideas within the Dutch Fire Department?
25. Which initiatives of the Fire Department aimed at increasing the IWB of its employees are you aware of?
26. In your opinion, what can be improved within the Dutch Fire Department in order to increase the IWB of fire fighters?
27. Can I contact you later, whenever more question arise?

Interview Transcript E2SR1

1. What are your function and responsibilities?

I have several functions. I work for risk control, which is an subpart within the fire prevention unit. Currently, I am occupied with the judging of buildings and architectures. I check whether designs of buildings, or whether actually built buildings satisfy all the criteria to be able to be described as generally safe. After the doing of my investigation, I give an advice and recommendations towards the municipalities after which they either issue permission to build or not. I don't only do this for all types of buildings but also for small as well as great events. For example, we are currently determining and advising on how the start of the Tour de France of this year can be organized safely. Next to this main function, I have been chairman of the council for employees. Finally, I am active in the incident control, so the repressive service as an active team-leader. Thus I am operative inside

the fire truck, controlling fires, as well as outside, preventing them. Thus, mu variety of function is significant.

2. Are you an volunteer or an professional fire fighter?

I am an professional fire fighter.

3. When did you start working for the Fire Department?

Around 20 years ago.

4. Why are you searching for new and better ways to execute your work?

For me personally, it is very important that your daily work is interesting and is kept interesting. You would really have to motivate me to do the same job every day. And you will probably not succeed in this. Thus, I really like variety. From this motivation, I continuously look for improvements and change in order to keep my job interesting. I expect from my employer that this search is stimulated as well as facilitated.

5. Did you ever come up with a new and better way of doing your work?

Yes, together with colleagues, I redesigned our registration program in order to make it able to act as an file also. We also developed an app which is used for incident prevention. Using this app, our employees can search certain things anytime; for example where and how to hang up smoke alerts. When they receive a question on an private party, for example, they can instantly search such things up and answer the question. This way, me make all our employees, including those at purchasing or ICT more able to spread knowledge with a large variety of aspects with regards to the general fire safety.

6. What happened with this idea?

All the projects I just explained are work in process, they are worked on and not done yet. For the app, enough resources are available, for the administration system, this problem is more relevant.

7. To what extend do desire new working methods and do you support ideas of your colleagues regarding new ways of doing things?

I am always interested and open towards new things. I always want to know how someone plans to implement his idea and how he came to it. What I generally miss is that, during the coming up with ideas, the people at the floor; those to need to work with is, are forgotten. So there is a very smart idea, which seems very valuable, but totally does not fit with the demands and needs of our fire fighters.

8. How would you describe the relationship with your supervisor?

We have been regionalized in 2011, after which I got a different supervisor. At the beginning, the level of trust of the supervisor in us was very low. Back then, I would judge it with a 3 out of ten. Though I understand his attitude because everything was new and he did not knew us well, he controlled us very strictly and seemed to have no trust at all. Now, this is somewhat better. But the level of control is still too high if you ask me. I would now judge it with an 7 out of ten, which is far from perfect. I really expect to be trusted more and be given more freedom. I know that are also employees who you cannot and should not trust, but I need to be trusted. This has to change In the future.

The extend of freedom has improved over the last years. In the beginning, there was no freedom and independence possible at all. Nowadays, we have more freedom to operate. The level of freedom remains limited though, and is yet to improve in my opinion. Thus, the relationship with my supervisor and the amount of trust and freedom could and should all be improved.

9. To what extend do you perceive unconditional support from your supervisor, even whenever this may cause personal problems for him/her?

I don't think he would. When it would lead to trouble for him, he would certainly choose for his own reputation. This is based on some experiences I had on which I won't elaborate. But I can tell you that I experiences that he does not always have my back in troublesome times.

10. How would you describe the attitude and feedback of your supervisor with regards to new, innovative ideas regarding work methods and techniques, as posed by his colleagues and subordinates?

At this moment, he is open towards new ideas. I have the feeling that whenever I have something, I can approach him. There is only one thing: He only keeps me updated when something is through and when it is definitive; not when something is spoken about on when it is on progress so the say. So the nature of his feedback is relatively limited, he does not keep me updated or something. Often I hear after a time: there is no budget for it or no possibilities. Cutbacks are generally used as an excuse in my opinion.

11. To what extend does your supervisor expects you to come up with new, innovative ideas regarding work processes and techniques?

Not at all. He has not explicitly told me this. When I come to him with a problem or something I am not happy about, he asks me to come up with an solution. So in that sense, he does, but not explicitly upfront.

12. In general, how does your supervisor stimulate the generation and implementation of innovative ideas among you and your colleagues?

He doesn't. I have to approach him with my idea and ask him for facilities and resources. He does not stimulate me or something. It comes from within myself and then I have to wait and see whether I receive the resources I need, Mostly, I don't get them.

13. How are the goals and priorities of the Dutch Fire communicated to you?

Well, there is communication with regards to the goals, but the goals are far from clear to me. AN important current project within our region is concerning whether to do things less, different or more. This is caused by the cutbacks we have to deal with currently. However, our department of risk control has to clue at all whether we have to do less things, more things, or whether we have to do things differently and which functions disappear. Besides this, there is a change in the law coming, but we are not sure yet what this change will be. So, all things taken into account, we have relatively little clarity with regards to our goals and future. A result of this is that many people just go somewhere else; that they leave the fire department. This is a serious waste of talent. The good people leave, and the bad people stay. That gives you, as a company, a bad name.

14. To what extend is the level of your performance known and do you know how to improve this level?

My performance is clear to me. I have an annual appraisal with my supervisor, in which he tells me what is good, what is wrong and what I need to improve. Also, whenever I do something wrong during daily activities he lets me know. In general, the comments and feedback are/is positive. I am always looking to improve my performance.

15. How do you receive training on topics related to your profession?

Off course, I received training with regards to y profession. So I have had training on repressive service; how to extinguish fires and rescue people. Also, I received training with regards to prevention and the general fire safety. I haven't received any training on problem solving skills and analytical skills, though. In my opinion, the extend of investments in these types of training are far too low. If you want to be all-round as an region, you have to determine where your potential is and your needs are. Which people want to receive more training and which want to perform an extra step? Those people need to be located and facilitated. What I often see is that people do want to do an extra step, do more effort into a certain project. However, they are generally not facilitated and don't receive adequate training. The offering of training to the people who really want to get training offered to them, can really increase the motivation of such people.

16. To what extend do you feel that you are restrained by rules and regulations during the execution of your work?

The nature of my work requires a certain amount of rules and regulation. I check whether building designs satisfy certain criteria; so I need rules. Besides this, there is always room for discretion. Naturally, when something does not satisfy the criteria at all, my advice will be negative; but there is some free room for personal judgment. Thus I cannot say that I am restrained by any rules or regulation.

17. To what extend do you describe your working group as one, intimate group having a shared purpose?

Yes, that certainly is the case, though the group is getting smaller and smaller. Many contracts are not renewed and many have retired, without new people getting hired. A consequence of the cutbacks, I guess. But the atmosphere is good. When someone comes with a new idea we all discuss it and give feedback to it. I think we are all relatively favourable towards change and improvement also; we really see improvements and talk about them. Even radical ideas are brought and discussed within the group. Mostly, the idea gets better when you discuss it with others and when you receive feedback on it. However, many things we pass up to above are not dealt with; they generally just disappear due to cost issues or because people think it's impossible. So the problem is not located in the working group.

18. To what extend do you feel that the generation and posing of innovative ideas regarding techniques or work processes are appreciated and supported by your colleagues, even whenever these ideas are quite radical?

This is no problem at all. But I probably answered this question already.

19. To what extend do you feel that there are risks for your image and reputation related with the posing of innovative ideas?

Not all. I am not afraid for such things. I wouldn't have been the chairman of the council of employees if I was. In this role, I have experienced stress. People generally think that you want to destroy their current situation. The people who generally have a problem with you are the leading people; the supervisors. They don't like that you speak with the regional commander behind their back and feel threatened. You are generally seen as someone with two faces. This leads to conflicts and people who really want to damage you and your reputation. But with regards to the generation and implementation of innovative ideas: with respect to that, I am totally not afraid of doing so. I have to reason to be afraid; I simply make a plan and a proposal for a given project and the people above me make the final call with regards to the starting of this project or not. They bear the responsibility, not me.

20. To what extend is innovative behavior expected of you within the Dutch Fire Department?

I think not, or at least nog always. And when something arises, it is not picked up by the leading persons. So in that sense, I believe that it is not expected. I haven't seen any communications from above with regards to innovative behavior and innovation; I think it would be good to do so.

21. How is innovative behavior rewarded within the Dutch Fire Department?

In my opinion, not.

22. How do you feel about the degree of support from your supervisor and the organization to come up with and implement innovative ideas?

I think the role of the supervisors is, potentially, crucial. They are essential in knowing their employees, their needs, listening to them and checking who want to do something more and who not. They need to check whether a given innovation fits with the needs of their subordinates. The resources and facilities I receive to work on my ideas are limited. Time is a big problem and money off course.

23. What are restraining factors for the generation and implementation of innovative ideas within the Dutch Fire Department?

There is always the problem of finance. When you want to do something, you always have to look whether there is an available budget; which mostly is not available, though. I often get the message that there are no financial resources or possibilities to get my idea implemented. For example, we are waiting a very long time now for tablets which would really ease our work. Using them, we can see instantly where we are in a given building, and what the maps of these building are. In the current situation, we have to take entire bookwork's with us consisting out of several papers on which we have to look for everything, which simply is much more work than just using a tablet. However, we heard the same old thing: there are no resources and no possibilities to get this done. This solely consists out of reserving some kind of budget and purchasing a number of laptops. Thus, the resources and facilities are far from sufficient.

Also, I often notice that new developments, techniques or technologies are not co-developed with end-users; thus with the people on the floor. This sometimes leads to things which are not needed by them or which they cannot use; a terrible waste off course. Communication and listening to the work floor is very important. The recent cutbacks and their consequences can be understood much better when they and their causes are communicated better towards the floor. Now it is more like: This is the way and so it will be done.

Another significant problem is the nature of our organization, which can be described as an oil tanker rather than an speedboat. Our organization is too large and too rigid to be able to move quickly; to be able to change quickly. Therefore, it is very difficult to adapt to development and to arrange that change and innovation takes place easily. There are a lot of procedures which do not take into account the inputs of humans. Therefore, processes cannot be improved simply. However, these procedures should be tools of aid; rather than central, all determining mechanisms.

In my opinion, the extend of investments in these types of training are far too low. If you want to be all-round as an region, you have to determine where your potential is and your needs are. Which people want to receive more training and which want to perform an extra step? Those people need to be located and facilitated. They need to be given time to work on their project. What I often see is that people do want to do an extra step, do more effort into a certain project. However, they are generally not facilitated and don't receive adequate training. The offering of training to the people who really want to get training offered to them, can really increase the motivation of such people.

It is very important to do three things: listen to people, invest in them and motivate them. When you do this, you have motivate people who will improve their situation when they see the opportunity. Currently, these three things are not done enough. This is very risky, cause you lose people with such a policy. Thus, the role of the supervisor could be more positive.

24. Which initiatives of the Fire Department aimed at increasing the IWB of its employees are you aware of?

No, not at all. I am aware of the Jan van Heijden price. I think this is an good initiative, though I hear nothing about it from the organization. So this communication can be improved also. I don't think that the people within fire stations are aware of this price and are occupied with it. That is really a pity because I think that we have a number of people who are really smart and have potential.

25. In your opinion, what can be improved within the Dutch Fire Department in order to increase the IWB of fire fighters?

I often notice that new developments, techniques or technologies are not co-developed with end-users; thus with the people on the floor. This sometimes leads to things which are not needed by them or which they cannot use; a terrible waste off course. So I would really involve the people on the floor more during the development and implementation of such new things in order to check their needs and wants. Supervisors need to go to people and ask them: what do you need, or what are your ideas with regards to this.

I you want to have a lot of talent and a lot of innovation and good ideas, you have to give people to chance to develop such behavior. You have to trust those people and give them the freedom and time to do so. This is not as it should be yet, and should all increase.

In my opinion, the extend of investments in these types of training are far too low. If you want to be all-round as an region, you have to determine where your potential is and your needs are. Which people want to receive more training and which want to perform an extra step? Those people need to be located and facilitated and be given time to work on their project. What I often see is that people do want to do an extra step, do more effort into a certain project. However, they are generally not facilitated and don't receive adequate training. The offering of training to the people who really want to get training offered to them, can really increase the motivation of such people.

Supervisors need to be well aware of the developments arising on the working floor, need to know their employees and need to give employees what they need to perform well and better. Currently, the distance between leading persons (administration and people direct below that) is too big. The leading person in my line (risk control) knows his people relatively well, but the leading persons in other line (incident control , for example) know their people simple not well enough and are not present often.

It is very important to do three things: listen to people, invest in them and motivate them. When you do this, you have motivate people who will improve their situation when they see the opportunity. Currently, these three things are not done enough. This is very risky, cause you lose people with such a policy.

26. Can I contact you later, whenever more question arise?

sure

10. Interview Template and Transcript Innovative Employees

Interview Template

1. What are you function and responsibilities?
2. When did you start working for the Fire Department?
3. Are you an volunteer or an professional fire fighter?
4. Can you tell me something about the innovative initiative that you have come up with and championed?
5. How did you come up with this idea/ what gave rise to this idea?
6. Can you describe, as detailed as possible, the complete step-by-step process that your idea has completed, from idea generation to implementation?
7. Have you experienced any stress or reputational damages during this process?
8. What have been the most important factors that led to the successful implementation of your initiative?
9. What have been the most important factors that have restrained the implementation of your initiative?
10. How would you describe the role of your supervisor during this process?
11. How would you describe the role of your colleagues and working group during this process?
12. To what extend do you feel that innovative work behavior is expected within the Dutch Fire Department?
13. How is innovative work behavior stimulated within the Dutch Fire Department?
14. How do you feel about the resources, facilities and support which have been provided to you in order to implement your initiative?
15. Which factors restrain innovative work behavior within the Dutch Fire Department?
16. How have you been rewarded for your efforts with regards to your initiative?
17. In general, how do you judge the initiatives, meant to stimulate the innovative behavior, implemented within the Dutch Fire Department?
18. How can innovative work behavior be stimulated throughout the organization?
19. Can I contact you later, whenever more questions arise?

Interview Transcript IE3

1. What are you function and responsibilities?

I am a professional team leader at the Fire Department of The Hague. Within this Fire station, I have formal authority over 12 people. Thus, I am responsible for the full professional guidance of these people and I try to guide and support my people when needed.

2. When did you start working for the Fire Department?

I work at the Fire Department for 23 years now. What I really love about this job is its dual nature. At the fire station I deal with the human aspects of leadership: building up relationships and trust and supervising and supporting my subordinates as good as possible. During action at the streets, however, I have to lead directly, commanding people what to do and how to do it. Then, it is merely command and follow, stop asking questions; just do what you are trained for.

3. Are you an volunteer or an professional fire fighter?

I am a professional fire fighter.

4. Can you tell me something about the innovative initiative that you have come up with and championed?

During my 23 years I have led and taken part of several innovative projects. 15 years ago, I brought the technique called five-seven to The Netherlands. This technique is a new extinguishing technique using a special kind of foam. During the same period, colleagues and I developed a smaller fire truck equipped with a smaller extinguishing system in order to be better able to reach the small, narrow parts of the center of Delft. Currently, I am working at a projects with is to introduce a new low-pressure bundle extinguishing system into my local fire department. This is a technique which is used globally at a large scale, and which is used in a number of regions in the Netherlands, but not in my region yet.

5. How did you come up with this idea/ what gave rise to this idea?

Ha-ha, that is a good question. How do I developed an idea? Mostly it arises from the combination of a personal vision which you have for a given situation and the identification of a new phenomenon or development you spot. Out of this development, a problem arises which demands a solution. Then

you start thinking about a solution, and come up with an idea. Take, for example, the low-pressure bundle system. I notice that fires are changing. Buildings, architectures and interiors change, which contribute to the fact that we need more cooling ability to extinguish the same types of fires. These higher cooling abilities can only be delivered by new extinguishing systems, because the old systems are used at their maximum abilities. So, taking this problem into account, I started looking for alternatives. Thus, in general, a new idea arises from a problem demanding a new solution.

6. Can you describe, as detailed as possible, the complete step-by-step process that your idea has completed, from idea generation to implementation?

Mostly, the process from idea development to implementation takes a few years. First I see a problem and I start asking colleagues whether they see that problem too. Often, this is where the rumble starts because many people don't see that problem, or they don't want to see it. Next, when some other people agree and confirm that there is a problem, I start looking for alternatives. This starts with conducting a market research by asking colleagues about their ideas, seeking consult within my personal network or by looking to practices used abroad or in other regions. For example, during my search for a new extinguishing system based on foam, I contacted the IFV with the question whether they had ideas. Sadly, they responded that the handling of these kind of requests are not their job. (I believe though, that currently it would not go this way). When the IFV couldn't help me, I contacted suppliers of such system and started googling. After contacting a couple of suppliers, I invited one of them here and looked at their current systems. In this case, it turned out that none of the suppliers had a system which could be used instantly by our men. Next, I started developing a new product, together with the supplier, which resulted in a new system. The next step was to introduce this system into the local fire departments, through telling my supervisors about them. Then you just have to hope that your supervisor likes the idea and offers you budget. In this case, my supervisor liked the idea and arranged a budget to accommodate its implementation.

7. Have you experienced any stress or reputational damages during this process?

Yes, certainly. When you bring in something new, a new idea; people who don't want to change are taken away from their comfort zone; from their regular way of doing things. This always leads to resistance from a number of people. Then it often gets personal. For example, a lot of people call me 'the bundle guy' because of my project on low-pressure bundle systems. In every conversation with my colleague on the group app on WhatsApp, the bundle guy is mentioned. There is a general desire to cut off the heads sticking out of the corn field; having the general idea of: just act normal and too difficult. Off course, this leads to a certain level of frustration for me.

8. What have been the most important factors that led to the successful implementation of your initiative?

In general, the most important factor for the success of any project is support from above; from the management and the people with authority. When they have your back ,you can confront the people resisting your idea more easily. This doesn't mean necessarily that the project will succeed, but it will be much more easy to lead it. When they don't have your back, the project will remain a personal toy of its inventor leading to reputational destruction. In the case of the smaller fire truck in Delft, this support was present, leading to a significant backing and a more safe feeling should it lead to conflicts. Each of my successful projects have has this support from above. Currently, I am in a phase in which I question myself whether I have that support. Also, support from your colleagues is very important. For every project, it is essential that its champion makes a good proposal, shares this proposal with colleagues and has support from a number of them. You have to convince some of your colleagues Whenever you either miss top management support, or support from colleagues, your project will fail. You really need them both.

9. What have been the most important factors that have restrained the implementation of your initiative?

In the current situation, the situation has become more complex. I used to have one supervisor to which I could propose my idea and who provided feedback to me. Now, due to the regionalization and the new type of command chain, there are several people in Ten Hague who I can see as my supervisor, making the relationship less personal and less open. Now, I have to follow the formal line, which is characterized by multiple barriers. I don't really know to which I have to propose my idea, because whenever I approach one, the other feels ignored. The relationship with my supervisors is less personal than the one I had with my sole supervisor, making the distance larger. So, I don't have one person which I can approach. Currently, it really is a system of officials. I have to tell one man, who gives his judgment. Then he will tell my idea to another, who gives his judgment, etc. This

way, the chance that an initiative is terminated is much larger. I am really searching for and trying to identify where I can bring an new idea. I don't know the answer at the moment.

Another significant barrier for some projects is the lack of spoken-out management support. As I already said, whenever this support is lacking, you may have severe problems with regards to the success of your project.

Another barrier is a lack of support from colleagues. Some of my projects have had little support within my working group, which led to severe problems. Both support from above and support from your colleagues is very important. It can proof to be very hard to convince colleagues of the dangers and presence of a problem, and of the value and importance of your solution. This can really take a lot of time and effort.

Also, a lack of planning can severely constrain a project. Once, we had budget to buy a new technique. However, after this purchase, we did not have any money left. So we could not train people to use the technique and could share the practice throughout the organization. So an inadequate planning also can kill or severely delay your project. It also can cost your support from above. And off course, a lack of money can severely constrain the implementation of a new project.

10. How would you describe the role of your supervisor during this process?

Well, I few years ago this role was quite big. He often asked me to think about a solution to a certain problems and he provided me with frameworks within which to operate. Take, for example, the project in Delft on the development of a smaller fire truck. He asked to come up with an idea and gave certain requirements, such as the fact that the truck should be able to take on four men, and should be suitable to operate within the narrow streets of Delft. He also asked me how it went and helped me whenever needed. So back then, he's role really was important for me through the offering of support, guidance and feedback. In general, it is very important for the success of your project that your supervisor and people above him see the value of your project and your new idea. When they don't see the value, they won't help you and your project is doomed to fail.

Now, the role of my supervisor is very limited. I used to have one direct supervisor and one above him. Now, I have several supervisor in the line above me. I don't really know to which I have to propose my idea, because whenever I approach one, the other feels ignored. Also my relationship is less personal, making the distance larger. So, I don't have one person which I can approach. Currently, it really is a system of officials. Thus, all taken into account, this role of much less supporting and facilitating than before. I also feel that he has other interests and goals than I have. I get the impression that their current goal for me is that I am present at this fire station as much as possible. I feel that they have zero interest in me going to the streets, trying out new stuff. This really is devastating for innovative efforts.

11. How would you describe the role of your colleagues and working group during this process?

Their role is very important. As I already said, without their support your project is doomed to fail. When you are able to convince some of them that your problem is real and your solution is good, their support will really help you lead to projects towards implementation. Cutting five heads off is more difficult than cutting one. It is important though that these people support you voluntarily. The atmosphere within my working group is not very open to change. Mostly when I propose something, the general response is quite negative. They never instantly believe that your idea is good; you have to invest some time and effort into it; telling your problem and solution and their importance. Especially making people aware of the problem can be very hard; it is very weird to see that many people don't spot a problem, while I think that there is an significant and dangerous problem. For example, I really believe that the current techniques of extinguishing fires becomes too dangerous, taking the changing interiors and architectures into account. I am really concerned about my life and that of my colleagues and am convinced that we need other methods. When I visit work-shops and seminars abroad, the lectures agree with me. However, not all colleagues share this concern. This is really frustrating. Thus to summarize: the work group is very important for the success of your project, whenever you have convinced a large number of colleagues of the importance and value of the project.

12. To what extend do you feel that innovative work behavior is expected within the Dutch Fire Department?

I think we are dealing with different ideas and visions with regards to the expectations. Personally, I believe that our administration and our management really expects us to be innovative. At the same time, I believe that my colleagues expects our management to be innovative. This way, people are staring towards each other. Thus, not everyone is convinced that innovative behavior is expected of them. Some of them don't want to and want to avoid the troubles and problems. Why is this? I

think that is a matter of thinking level and recruitment. Fire fighters are not recruited based on their intrinsic motivation to improve things or on their innovative ability; they are recruited based on their ability to perform this work. So, it is not communicated to them from the start that innovative behavior is expected from them and it is not checked whether the recruited fire fighter is able and willing to be innovative. Innovation is not seen as an job description; it is seen as bonus behavior. Not everyone is ready for the conflicts and efforts associated with innovation. It is relatively easy for me to talk; I am a leading person, but for an subordinate it may be much more difficult to find support.

13. How is innovative work behavior stimulated within the Dutch Fire Department?

Personally, I really try to do so. Whenever my subordinates continuously complain about a given phenomenon, I really try to motivate them to come up with an solution and to write it on paper. I even offer to help writing it. This has led to several proposals. Some people don't want to do it. That's fine, but then they are not allowed to complain anymore. I really noticed that people like to complain rather than solving the problem.

In our region, we nog have an agency focusing on new methods for repression. This agency should be focused on innovation and the development of innovative methods. This works well, but the problem is that they focus on fixed projects only, which are initiated by our administration. There is little room for ideas arising from the working floor.

In the Dutch Fire Department, so the national organization, I see that innovative behaviour is getting more and more stimulated. I am very positive about the national level. People are really coming together in order to think about some important projects; for example the OBI tests. Five years ago, I wouldn't think this was possible. So I am very positive about national initiatives.

At the regional level, however, I see this to a much lesser extent. I see the most innovation-based commitment at organizational-wide projects, such as the Shift 2 and TS 4. These projects are initiated from above. Off course, they are very important, but I see almost no commitment towards projects which arise from the floor, from the people actually spotting problems. So the national-wide attitude is okay, but the regional not yet. I think that this is because of a lack of vision. In my opinion, there is no vision on the question how we will extinguish fires in the future. Are we going to do it with 4, 6 or 8 guy? Will we specialize or not? There are a lot of ideas, but there is no vision. And having a vision is very important for innovation. People have to have a direction; an goal. Without a goal, they won't search for alternative, better ways to achieve this goal. For example with regards to my low-pressure bundle technique. You really see the managers having doubts. They think it is a good idea, but they don't know whether it will match with the vision and demands for the future with regards to the TS4. These doubts prevent them to support me.

14. How do you feel about the resources, facilities and support which have been provided to you in order to implement your initiative?

At this moment, I really think that the resources, facilities and support are insufficient. There is ambition; at the floor as well as at the higher levels. That is not the problem. But the way in which it is facilitated totally does not match with the ambitions. The possibilities are far too low, mainly because of the rules and regulations that inhibit any innovative process to run smoothly. When you want to stimulate innovative behavior, you have to facilitate such behavior. If this means that someone who has a 24 hour shift has to make more hours than practically allowed, then so be it. Let them make those hours, or think about some construction that they can work some of their hours on their project. One way or the other, you have to facilitate it. This is not done at the moment. When I work on a given project, I have my supervisor telling me to stay at my fire station and to be ready for an emergency response. This way, it becomes impossible for me to implement my projects. I have seen several people break by those forces; stopping their projects and return to their regular works. A terrible waste.

15. Which factors restrain innovative work behavior within the Dutch Fire Department?

The most frustrating thing I experience during my work is the fact that good practices and good methods are not shared in the way they should be. While a certain practice is well-used globally, and while it has been tested successfully indicating that it is a good method, our regional administration still seem to desire to have an individual opinion about it, and seems to want to develop their own application of the method. This often leads to opinions regarding methods which are really different to those possessed by others. And why, do we have other types of fires in The Hague? This arrogance and lack of flexibility really restrains the introduction of new, well-used and well-tested methods. I think this is because of a lack of national steering and direction.

In the current situation, the situation has become more complex. I used to have one supervisor to which I could propose my idea and who provided feedback to me. Now, due to the regionalization and the new type of command chain, there are several people in Ten Hague who I can see as my supervisor, making the relationship less personal and less open. Now, I have to follow the formal line, which is characterized by multiple barriers. I don't really know to which I have to propose my idea, because whenever I approach one, the other feels ignored. The relationship with my supervisors is less personal than the one I had with my sole supervisor, making the distance larger. So, I don't have one person which I can approach. Currently, it really is a system of officials. I have to tell one man, who gives his judgment. Then he will tell my idea to another, who gives his judgment, etc. This way, the chance that an initiative is terminated is much larger. All taken into account, I don't really have the feeling that people can bring new ideas from the floor towards people above them, and that really is a pity.

Another factor restraining it, naturally, is the nature of some people within our organization. Not everyone wants to change, wants to lead an project and want to deal with the troubles, conflicts, extra time and emotions associated with innovation and change. They just want to do their job and nothing more. Some people have more professional knowledge and interest than others. When you explain passionate people the necessity of a given change, they will see this necessity and cooperate. Less passionate people, however, may be less willing to understand this necessity and want to maintain their current position.

Another significant barrier I experienced was the restraining force of more experienced fire fighters. These people have grown to be experts on their profession and teachers for more younger people. This gives them some kind of authority, or reputation. When a new working technique is implemented, they have to learn this method also, thereby losing their expert and teaching position. Therefore, they will resist the implementation of this new method. I experienced this with a colleague while I wanted to find support for my one-seven system. He resisted this project from the start, and told me when he retired why; that he did saw the benefits of this new technique for smaller fire trucks, but that he did not want to lose his power and expert position as fire guru and therefore resisted this change. Hearing this really shocked me. I realized that sometimes, resistance does not have to concern the content and the nature of my ideas, but the consequences of those ideas and personal motives. This really was an eye-opener for me.

Another barrier is a lack of professional knowledge and experience in the higher levels of command. However, people with a background as fire fighter don't have to be perfect too. On the contrary; mostly the most experienced people in top positions are unwilling towards new working methods; because they stick to the 'extinguishing fires 1990' style mentality'. They think they know best, and that their way is the best way. When someone approached them with an idea they generally say: No that's not the way to do it, son. But things change and extinguishing methods need to change. Taking this into account, it could be that someone who has zero experience and knowledge of extinguishing fires can be a perfect commander, because he listens to others and will be more open towards new working methods.

What also inhibits me is are the rules and regulations with regards to hours made. Innovating takes time and energy. Hours which you put in this process need to be paid. We are not charity workers. However, you are not allowed to make more than 48 hours every week; that is not allowed. I experienced that a good innovation needs around 60 hours extra every month. And that is practically not allowed by the current rules and regulations. When your time is up, your project is restrained. That is another thing which is really strange to my opinion. This has to be facilitated better.

16. How have you been rewarded for your efforts with regards to your initiative?

In the end I have made the promotion from fire keeper towards team supervisor. So that's a reward. Whether that is because of my innovative behavior, I don't know, but I know that it's an reward. Also, I am convinced that my projects are appreciated, which off course is an reward too, just like the fact that some projects have been implemented and have been successful. In the end, the biggest reward is too see your project get implemented. Another thing I consider as an reward is the fact that I am involved with the national OBI tests. They could have assign anyone to these tests, but they picked me. I haven't received any word of thanks, or compliments from colleagues or supervisors, tough. It would be nice to receive an reward in the form of a new course or class or something, just as a sign of appreciation. So my promotion and the succeeding of some of my projects are my rewards; I did not receive any specific rewards. I think this is another consequence of the regionalization. Because the distance between me and my supervisors has become bigger and the relationship less personal. My new supervisors don't compliment me at all. On the contrary; I

have been pointed to the fact that my job prescription as a team supervisor is a little different than seeking for new ways of performing my job. So I have received a kind of warning.

17. In general, how do you judge the initiatives, meant to stimulate the innovative behavior, implemented within the Dutch Fire Department?

Yes I am aware and involved with BRAND, which is an national effort to introduce collaboration between regions with regards to working methods and improvements. In the past, something invented in The Hague could not possible be implemented in Amsterdam, because it was considered as wrong and inferior. This is changing. I am really satisfied with this initiative, in which people from all the Safety Regions meet in order to discuss and test new applications and to see whether they are improvements. For example, they discuss and test how to reach and control complex fires which are deep into office buildings and which demands an different approach than our four current extinguishing methods?

I am aware of the Jan van Heijden price. I think that it is a good idea, but that are not the things with which you activate people at the floor. They don't see it and don't read it.

The pearl initiative also sounds really fun, but again, this does not reach people at the floor. On the contrary; I would not accept this pearl. My colleagues will surely make fun at me and I would be called mister pearl. This totally does not fit with the culture of repressive fire fighters. Offering such rewards and publishing hero stories on the internet and on newspapers or magazines can significantly irritate repressive fire fighters working in 24 hour shifts because of the making-fun-off culture. How can innovative work behavior be stimulated throughout the organization?

First of all, by introducing more national steering and guidance. When someone from a distinct region has a new idea regarding a new technique or something else, he should be invited to the IFV to present his/her idea. When this idea is agreed-upon to be good, this idea should be implemented everywhere; in all regions. In the current situation, everyone wants to redesign an given idea in order to make it their own. This is very dumb and really a waste, when you look at the time, people and money which are spent.

In our region, we nog have an agency focusing on new methods for repression. This agency should be focused in innovation and the development of innovative methods. However, they solely focus on several fixed projects. Therefore, innovations arising from the floor are kind of ignored. In my opinion, innovation has to arise from the working floor through the identification of problems and solutions by people from the field. This process has to facilitated more rather than directing innovation on certain aspects from above. Currently, I don't really have the idea that you could bring an idea from the floor towards that agency. Shouldn't that be possible?

Also, innovative behavior can be used as one of the recruitment criteria, making it an job description. Currently, people are not recruitment on their ability to be innovative and it is not communicated towards them from the start that it is expected of them. When you do this, it becomes more evident that it is part of the job.

I saw a very interesting thing in England. There, people get rewarded by asking them to be lecturer for a year at the national fire service college. This is really considered as an honor and you as an hero. After this year, these people return to their own positions and get promoted. I really like this system and I believe that this will really motivate people to perform a step more and to put more effort into innovation and improvements. Thus my idea is: ask people standing out to lecture at the IFV, and offer them a promotion in their region afterwards. These stories will become known, and people will want to achieve the same thing. This is kind of the same approach as with the pearl initiative, but then better, I guess; more fitting with our culture. Don't make people crown princes or pearls. This may satisfy volunteers, but not professional repressive fire fighters.

Another idea would be to make sure that regional leaders are aware of the people who are more or less innovative within their region. They have to assign these people with a budget and a goal. This is the problem, you have to come up with a solution. Or it could be that you just assign them with money, which they can use whenever they see an opportunity to innovate. This way, you reward people for their effort while facilitating them to innovative at the same time.

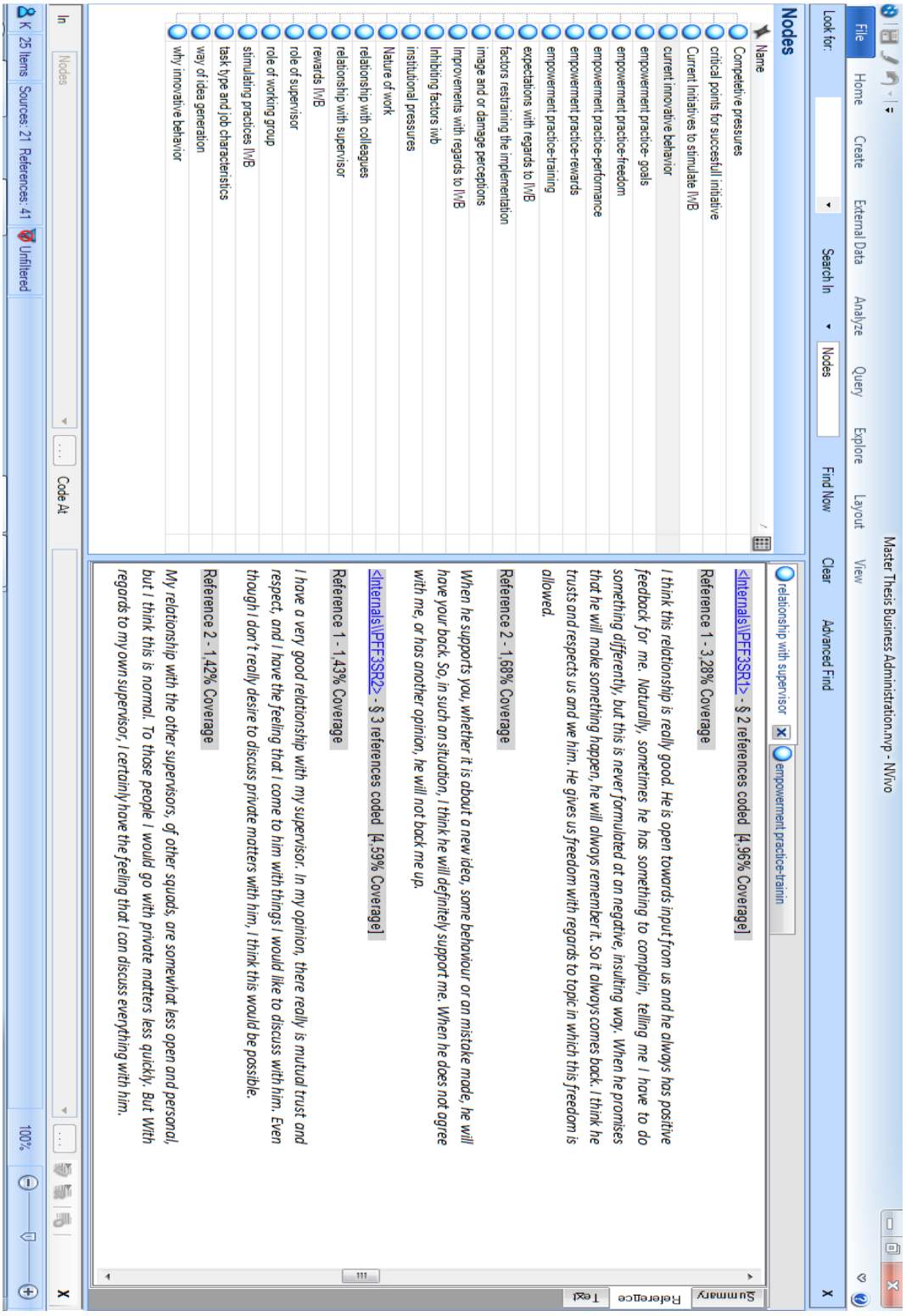
Another important aspects to stimulate innovative behavior an personalized approach. Not everyone desires money, prestige, a pearl or being a lecturer. Supervisors and managers have to know their people, and offer them the reward and facilitation they want. While one fire fighter may want to receive a sum of money in order to improve their project, the other may want to receive some free time because they could not have much time with their family lately. The role of supervisors, the people with oversight is essential for the stimulation of such behavior. They really have to know their people and their needs.

11. Observation Template and Notes

On the left: observation template; on the right: example of observation notes

Name of Session	*Towards the Core of Organizational Change: The Art of Doing Nothing is Hard Work.*
Date and Time of Session	*02-04-2015; 16:00-20:00*
Length of Session	*4 hours*
Place of Session	*IFV HQ, Arnhem*
Nature of Participants	*Variety of participants; managers originating from several agencies within the Safety Regions*
Number of Participants	*20*
Was there an presentation held?	*yes*
Were there interactions between lecturer and participants?	*Yes (participants asked to reflect on their selves and the message.*
Were there interactions between participants?	*Yes (participants are asked to discuss elements together)*
Main message of this session:	*Change processes cannot be planned. The role of coincidence and informal "off-stage" processes is significant. Managers are to be aware of, and facilitate the informal culture consisting out of multiple sub-cultures through increasing their connectivity with those sub-groups and making sure that there is variety and interactivity of, and between these groups. The disadvantages of managerialism is the arising of "what if behavior" and passivity, and the rising of a "what's in it for us" mentality. An organizational structure without hierarchy (or a low extend of) leads to a large number of informal change projects. (nurture rather than control)*
Nature of communication	*Informal, entertaining and relaxing*
First reaction of participants	*Confusion*
Ultimate reaction of participants	*Confusion (lack of answers)*
Nature of question asked by participants	*Confusion-based, seeking clarity (rather than resisting the message)*
Extend of clarity provided by the session	*Low*
IWB	
Message with regards to IWB	*Within the Dutch Fire Department, there is a general lack of knowledge sharing between distinct groups, either regions or networks.*
Factors with regards to IWB indicated to be important in this session	*Work-Group Interactions, Social Group Norms, Transformational Leadership (Coach, facilitator, sensor)*
Were this factors explicitly named as being relevant for IWB?	*No (but for change management: yes)*
Notable Words used:	*Hamster-management (managerialism), Idea-sex, Cloud of meaning, On-stage and Off-stage processes, Cloud-dynamics*

12. Display of the Coding Process



* Print screen, made from Nvivo Data file.