

# Fostering Innovation: The Influence of New Ways of Working on Innovative Work Behavior

## An Exploratory Multiple Case Study among White-Collar and Knowledge Workers

Master Thesis

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School of Management and Governance

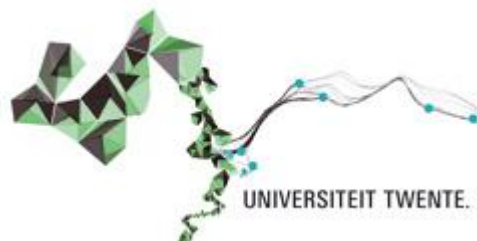
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## Management Summary

This study examined the influence of new ways of working (NWW) on innovative work behavior (IWB). NWW is an umbrella term that comprises the four core practices teleworking, flexible workspaces, flexible working hours and ICT support. It is a form of organizing work that offers employees the possibility to work anytime, anyplace and anyhow through the unlimited access to information and connectivity supported by ICT. IWB describes the way in which individual employees contribute to innovation and consists of the four phases opportunity exploration, idea generation, championing and application. Due to changing economical and societal developments, organizations all over the world are increasingly implementing NWW and are facing an ever increasing need to successfully innovate. However, while the scientific community has paid extensive attention to both concepts separately, only little is known about the relationship and potential influences of NWW on IWB. In order to add to our limited understanding of this relationship, this paper aimed to develop propositions to provide a first view on the causal relationships and to guide and stimulate future scientific efforts. Therefore, semi-structured, exploratory interviews were conducted with twelve knowledge- and white-collar workers of four Dutch companies located in central and eastern regions of the Netherlands.

The findings of this study indicate that the employment of NWW has various positive influences on all phases of IWB. Teleworking is primarily beneficial for opportunity exploration and idea generation as it allows employees to withdraw from the impressions and disturbances of the workspace and better focus and concentrate at home. Flexible workspaces provide an environment that stimulates communication and knowledge sharing among a greater number of employees with diverse functional backgrounds and facilitate both individual and collective exploration and refinement of opportunities and ideas. Furthermore, open workspaces greatly enhance the likelihood that employees successfully engage in championing. Flexible working hours allow employees to flexibly plan their tasks and spontaneously engage in innovative behaviors when they feel ready for it. This, in addition to making employees more relaxed and energetic, improves the effectiveness and likelihood of exerting IWB. ICT support, finally, serves as an important facilitator of the three previous core practices and positively influences IWB in two distinct ways. Communication tools stimulate quick and easy communication, lower thresholds of approaching colleagues and positively influence IWB by facilitating the initiation of face to face communication. Specialized social media platforms allow the selective sharing of information, increase the

visibility and longevity of information that can serve as input for IWB and enable individual employees to reach a greater audience and collectively identify and refine opportunities and ideas. In addition to these positive individual effects of the four core practices, a collective positive effect of the construct of all four core practices of NWW on IWB was also found. The freedom that is provided by NWW appears to increase commitment, evoke a greater sense of responsibility and, by forcing a general flexibilization of the conditions under which employees perform their tasks and by making change a regular part of a common workday, a higher change orientation. But besides the positive effects, the far reaching spatial and temporal freedom granted by NWW comprises the danger of isolating employees from their organizations and colleagues. Through limiting communication and engagement in interactive processes (e.g. knowledge sharing) and by deteriorating relationships among colleagues, extensive use of NWW can negatively influence IWB.

In conclusion, the findings suggest that NWW provide a coherent bundle of practices that complement each other and have both individual and synergistic positive influences on IWB. In order to reap the benefits and prevent negative effects, however, maintaining a base level of regular and predictable physical contact and communication and providing employees with the freedom of determining the extent of their NWW usage themselves are crucial. Furthermore, digital communication should not be used to an extent to which it replaces or severely limits face to face communication and, prior to relying on digital means of communication, having had face to face contact and especially having formed personal relationships is an important precondition for effectively using NWW to stimulate IWB. The findings of this study and other empirical evidence suggest that the overall extent of NWW practice usage should not exceed 50% of an employee's total working hours. For organizations, the findings imply that, through implementing NWW (i.e. teleworking, flexible workspaces, flexible working hours and ICT support), the innovative capacity of their workforce can be increased and more effectively be tapped. However, it appears crucial to pay close attention to maintain regular face to face contact, monitor the effects of NWW and to carefully and deliberately determine the extent of NWW usage to prevent professional or social isolation.

**Keywords:** *New Ways of Working (NWW), Innovative Work Behavior (IWB), Innovation, Human Resource Management (HRM)*

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## 1. Introduction and the Research Question

This research paper examines the influence of "new ways of working" (NWW) on "innovative work behavior" (IWB). In the last decades, the rigid and bureaucratic nature of most western economies, dominated by efficient manufacturing and agriculture, has undergone significant change and evolved to a knowledge-centric service economy (OECD, 1996). The importance of human talent has increased tremendously as it enables organizations to share the vast amount of dispersed knowledge and to use it to adapt and innovate (Blok, Groenesteijn, Schelvis & Vink, 2012; Gates, 2005). This development influenced the role requirements of many employees as they have to be available anytime and anyplace and need to cope with an increased information overload, making them even more important success factors (Bijl & Gray, 2011). Furthermore, investments in knowledge-based capital (such as software and databases) increased significantly throughout the western world (OECD, 2013) and developments in information and communication technologies (ICT) such as the pervasive access to the internet and social media ("the web 2.0") have lead to a digitally connected, collaborating and more individualized society. Individuals, especially the upcoming generations, have become used to having a say and personalizing a great deal of their daily life.

These developments have, quite naturally, also arrived at the workplaces and a concept has emerged that empowers employees and allows for extensive freedom in determining the time and place of their work (Blok et al., 2012). This concept has been termed "new ways of working" and includes working anytime, anyplace and anyhow through the unlimited access and connectivity supported by ICT. NWW include a broad portfolio of practices such as teleworking (i.e. doing (a part of) the work from home), having flexible working-hours or working on flexible workspaces. In practice, NWW have been found to achieve many benefits, such as higher productivity and cost savings (Baane, Houtkamp & Knotter, 2011). Meanwhile, a constantly increasing number of organizations has recognized the benefits of NWW and began implementing various forms and configurations of NWW practices (Blok et al., 2012). For example, the proportion of Dutch organizations that implemented teleworking increased from 49% in 2009 to 59% in 2012 (CBS, 2013). Understanding and implementing NWW has thus become a recurring and increasingly important topic for modern organizations.

Another prominent development in modern economies is the ever increasing importance of innovation for organizational success (Martins & Terblanche, 2003; Patterson, Kerrin &



Gatto-Roissard, 2009). In a globalized world, organizations have to deal with global competition while customers can easily identify and evaluate a broad range of alternative products via the internet. In order for companies to protect their margins and market positions, product innovations are important to continuously keep differentiating from competitors. Process innovations, too, are important to make the production process more efficient and keep products on competitive price levels. Meanwhile, innovation is often considered to be the main determinant of organizational success and competitiveness (Thornhill, 2006).

One way for organizations to become more innovative is to focus on more fully utilizing the innovative potential of their employees (De Jong & Den Hartog, 2007), as a firm's human capital can "develop organizational expertise for creating new products and services" (Chen & Huang, 2009; p. 1). In the organizational endeavor for becoming more innovative, it is therefore important to not only focus on organizational characteristics (e.g. an ambidextrous organizational structure (O'Reilly & Tushman, 2004), becoming part of collaborative networks (Schiele, 2003) or early supplier integration (Schiele, 2010)). The innovative efforts and behaviors of the individual employees are also important in realizing innovative performance (Campbell, Gasser & Oswald, 1996) as innovations often evolve from ideas of employees (Patterson et al., 2009).

Tapping the innovative potential of the individual employee and eliciting innovative behaviors, thus, has become more important than ever. According to de Jong & den Hartog (2010), innovative work behavior (IWB) consists of the four phases (i) opportunity exploration (i.e. deliberately looking for opportunities to improve firm or individual performance), (ii) idea generation (i.e. developing actual ideas how the improvement can be realized), (iii) championing (i.e. promoting the idea and seeking support throughout the organization) and (iv) application (i.e. implementing the idea).

Not surprisingly, human resource (HR) and other scientific literature paid extensive attention to this matter and already offers a wide range of practices and initiatives with regard to fostering employee innovativeness, such as staffing, training, participation, performance appraisal and compensation (Damanpour, 1991; Laursen & Foss, 2003). However, a potential influence of NWW on IWB remains surprisingly under-researched. Such a relationship between NWW and IWB appears conceivable as specific outcomes of NWW can be suspected to stimulate IWB. The employment of NWW practices has been found to lead to more autonomy and freedom (Jackson, 2002), higher employee commitment (Bijl, 2009) and increased communication among employees (Brummelhuis, Bakker, Hetland & Keulemans, 2012). These outcomes of NWW have been proposed to potentially positively influence a

wide range of innovative behaviors. Perceived autonomy and freedom are suspected to lead to a higher sense of ownership and control (Krause, 2004) which, together with an increased commitment, can make employees more inclined to engage in IWB (Dorenbosch, Engen & Verhagen, 2005). Increased communication can be assumed to stimulate knowledge sharing and thereby positively influence IWB as a larger portion of the collective organizational intellectual capital is made available for and used by the individual employees (Mura, Lettieri, Spiller & Radaelli, 2012). However, as the scientific literature only scarcely provides inconclusive evidence and the potential influence of NWW on IWB has remained largely unexamined, a significant gap still exists in our understanding of both phenomena. In order to use innovation-stimulating NWW practices and avoid NWW practices that impede the innovative potential of the employees, it appears promising to address this gap and add to our understanding of this relationship. Therefore, this study conducts a qualitative, exploratory analysis of employees' perceptions of the effects of their individual use of NWW practices on their IWB.

The scientific contribution of this research, thus, is twofold. The academic contribution is that research on the effects of NWW is still scarce. By conducting an exploratory study on the influence of NWW on IWB, this study takes a first step in investigating a further potential effect of NWW and thereby increases our knowledge and understanding of the many outcomes of employing NWW practices. This is all the more relevant for their relationship with IWB, as this potential impact has not yet been studied. Furthermore, by investigating the influence of the diverse NWW practices, this paper adds to the academic understanding of the determining factors of IWB. Very importantly, this study not only investigated positively related NWW practices but also searched for NWW practices that potentially impede IWB. Thereby, this study provides valuable input for both the scientific fields of NWW and IWB.

The practical contribution of this paper is that it enables practitioners and organizations, especially in highly competitive and innovative industries, to more deliberately stimulate IWB by implementing certain, highly influential NWW practices. At the same time, NWW practices that negatively affect IWB can be avoided or complemented by mechanisms that prevent negative effects from occurring. This ultimately enables a more effective and goal-congruent implementation of a deliberately chosen configuration of NWW practices. A better understanding of the relationship between NWW and IWB can thus support organizations in becoming more innovative by enabling them to more fully tap the innovative potential of their workforce.

In order to examine this relationship, the present paper asks the following research question:

*What is the Influence of New Ways of Working on Innovative Work Behavior?*

The remainder of this paper is structured as follows. In chapter two, the theoretical framework will be presented. In chapter three, the interviews and the methodological approach to analyzing the responses of the interviewees will be discussed. The results of the interviews will be presented in chapter four and, based on the findings, propositions on the effects of NWW on IWB will be developed. In chapter five, the findings will be discussed and the conclusions that can be drawn from the findings are presented. A discussion of the limitations of the methodological approach and the implications for further research that result from this study are included in chapter six. Finally, the managerial implications that can be derived from the findings will be presented in chapter seven.

## **2. Theoretical Framework**

### **2.1 New Ways of Working**

Irrespective of the famous name, "new ways of working" are actually not that "new" anymore. The majority of organizations is implementing some forms of NWW (CBS, 2013) and this number is expected to grow considerably. But despite its popularity and intensive scientific efforts of NWW research, no universal definition has yet been made. Existing definitions of NWW tend to revolve around working independently of time and place and being extensively connected via information and communication technology (ICT) (Baane et al., 2011; van Breukelen, Makkenze & Waterreus, 2014). Baane et al. (2011) furthermore add autonomy and flexible work relations to the definition as they, just like IT, are important antecedents that are required in order to realize the benefits of NWW. This is due to the fact that both factors empower employees and enable them to make use of the flexibility and freedom gained by NWW. Such empowerment in determining the way in which the work is to be done is an important aspect of NWW (Blok et al., 2012). Building on these arguments and the shared aspects found in the literature, this paper uses the following definition: *NWW are a form of organizing work that offers employees the possibility to work anytime, anyplace and anyhow through the unlimited access to knowledge and information and connectivity supported by*

*ICT*. Although this definition stresses freedom and independence, this is of course bounded by certain functional characteristics. While many functions allow for independence of time, place and the way in which the work is done, almost none leaves absolute freedom and most NWW practices are not suited for every group of employees. NWW are predominantly applicable to two specific groups of employees. The first group consists of white collar workers, i.e. employees whose work does not require extensive physical efforts as found in e.g. managerial and clerical functions (Bailey & Kurland, 2002; van Breukelen et al., 2014). Their work involves essentially administrative tasks that can be performed digitally on a PC, laptop or even mobile devices such as Smartphones or tablets. The second group consists of knowledge workers, i.e. employees "who work essentially with their heads rather than with their hands" (Bijl, 2009, p. 37). Their work, too, can be performed digitally with mobile devices and often leaves considerable freedom in the way in which the work is to be done, as long as the goal is achieved. In both groups, successful performance is not necessarily bound to a particular place or time and all practices of NWW can extensively be utilized. Therefore, this study applies an exclusive focus on white-collar and knowledge workers.

In contemporary organizations, NWW have been embodied in a diverse multitude of practices. An exemplary, non-exhaustive list is depicted in table 1 (e.g. Blok, Groenestijn, van den Berg & Vink, 2011; van Breukelen et al., 2014).

**Table 1.** NWW Practices

<b>NWW Practice</b>	<b>Description</b>
<i>Teleworking</i>	Doing the work (partly) from home or elsewhere outside of the organization
<i>Satellite Offices</i>	Part of teleworking - Offices outside an organization's office buildings, e.g. at customer's locations or shared workspaces with other organizations
<i>Mobile Working</i>	Part of teleworking - Enabling employees to work while commuting
<i>Flexible Workspaces</i>	Flexible workspaces in the office building that are shared among employees and offer diverse working environments that correspond to the various tasks in order to facilitate effective working
<i>Flexible Working Hours</i>	Allowing to start and end the workday outside of the core time and having a say in determining one's workdays
<i>Freedom in Choice of Tools</i>	Employees can choose themselves from a variety of digital tools to share, collaborate and work remotely
<i>ICT Support</i> <i>- Communication Tools</i>	Using smartphones and other mobile devices to enable digital collaboration and document sharing (via e.g. work-mail at home, Chat-applications, DropBox or Lync)
<i>ICT Support</i> <i>- Social Networks</i>	Using smartphones and other mobile devices to allow employees to stay digitally connected and collaborate via e.g. internal social media applications such as "Facebook at Work" or specialized and tailor-made social forums

In accordance with van Breukelen et al. (2014), this study particularly focuses on four core NWW practices. The first core practice, teleworking (TW) (also referred to as telecommuting), is an NWW practice that allows employees to do their work partly from home or elsewhere outside of the official office building, while interaction and coordination with colleagues inside and outside of the organization is enabled by the extensive use of ICT applications (Gajendran & Harrison, 2007). While teleworking, in theory, allows employees to do their work from a seemingly endless amount of possible locations (e.g. while commuting in public transportation, at customer locations, in restaurants, sharepoints etc.), research indicates that the majority of teleworkers (89%) chooses to work from home (Vega, 2003). Furthermore, although the use of teleworking is independent of an employee's work arrangement (being either part-time or fulltime), findings indicate that it is predominantly applied by part-time employees (Bailey & Kurland, 2002; Gajendran & Harrison, 2007). The common association of teleworking with mothers who combine the upbringing of their children with their work, however, lacks empirical support and no clear consensus has been reached in the scientific community about a relationship between an employee's sex and the adoption of teleworking (Garret & Danziger, 2007). While the gender distribution of teleworkers appeared to be almost equal for those employees who only make marginal use of teleworking and those who equally work at home and at the traditional office, a study of Garret et al. (2007) found the group of extensive teleworkers (those who work primarily in the field) to be significantly dominated by male employees (70%). However, as there also exists conflicting evidence (Bélanger, 1999; Peters, Tijdens & Wetzels 2004), this relationship remains to be further examined. As for the organizational levels on which teleworking is used, it was suspected that teleworking is especially applied by well educated and higher status employees (Bailey & Kurland, 2002). More recent insights, however, indicate that teleworkers can be found for all educational and on all hierarchical levels, ranging from top managers to administrative clerks. The study of Garret et al. (2007) found teleworking to be significantly more frequently applied in management, professional and sales related functions than in office or administrative support functions while education did not have a significant influence.

The second core practice, flexible workspaces (FWS), describes places within the official office building of an organization that are deliberately designed to serve as workplaces. As opposed to traditional offices, flexible workspaces are shared among employees and often offer diverse work environments that provide tailor-made work spaces to fit the diverse range of tasks. The impetus for organizations to invest in creating flexible workspaces is motivated

by beneficial expectations, such as more efficiently using the available office space, increasing performance and productivity, improving employee satisfaction, creating a more positive image of the company for customers, increasing flexibility and using resources more efficiently (e.g. reducing operating costs by requiring less office space and decreasing energy consumption and housing costs) (Voordt, 2004). Ultimately, this reasoning is based on the train of thought that the main objective of effective workspace management is to allow employees to perform a task at the time and place that most perfectly fits the requirements of the specific task at hand (McGregor, 2000). Frequent examples of flexible workspaces are open office spaces that facilitate collaboration and communication, quiet zones, project rooms for brainstorming sessions, coffee corners, lounge rooms or any other place within an organization that allows employees to choose themselves the place to most effectively perform their work tasks.

The third core practice, flexible working hours (FWH), also known as e.g. flextime or flexible work schedules, allows employees to wield influence on their working times, e.g. the start and the end of their work days (Baltes, Briggs, Huff, Wright & Neuman, 1999). Common restrictions of this influence are fixed opening hours of an organization, outside of which employees cannot perform their work tasks, and certain core times at which employees are required to be present at their workplaces. Such restrictions usually arise from the nature of the work, as some tasks require employees to be physically present or otherwise available. Sometimes, the freedom of flexible working hours is "guided" by work time carryover arrangements that allow employees to freely divide their weekly working hours over multiple days, as long as the concerted weekly working hours are reached (Baltes et al., 1999). While flexible working hours usually allow flexibility in determining the working hours, they sometimes allow employees to also determine the days on which they work, permitting to take a day off as long as the weekly working hours are fulfilled or the performance targets are achieved. Reasons for organizations to offer flexible working hours are that their availability improves the attractiveness of an organization on the labor market as a potential employer (Keliher & Anderson, 2008) and at the same time it increases the productivity and decreases the turnover among a company's workforce (McNall, Masuda & Nicklin, 2009). Motivations for employees to make use of flexibly planning their working hours include being better able to combine work and private matters such as the upbringing of children, family care responsibilities, appointments, sportive activities and general personal time (Haar, 2007).

The fourth and final core practice, ICT support (ICT), includes electronic means that allow employees to digitally communicate with colleagues and supervisors that are not located

within their direct vicinity. This is a crucial aspect of NWW as it allows to work at any location at any time (Lee & Brand, 2005), dissolving the borders of space and time and providing the leeway required to work outside of the traditional office and yet keeping in touch with the rest of the organization. ICT support can therefore be considered a critical enabler of all three other NWW core practices, without which effective teleworking for instance would not be possible (van Breukelen et al., 2014). ICT applications that facilitate employees in working remotely and independently of time include email (e.g. "Microsoft Outlook"), chat-functions (e.g. "Whatsapp for mobile devices or "Evernote Work Chat" for laptops and personal computers), videoconferencing (e.g. "Lync", "FaceTime" or "Adobe Connect"), document sharing (e.g. "Evernote" or "Sharepoint") or internal social media networks (e.g. "Facebook at Work" or self-made company social networks). All these and a surging amount of other digital applications can be considered ICT support as they can be accessed and used via the ever increasing range of mobile electronic devices such as laptops, smartphones and tablets, allowing employees to work and collaborate independently of time and space.

The increasing use and implementation of such NWW practices has had a significant impact on present organizations. By granting far reaching freedom and self-responsibility to the employees, modern day workplaces have "transformed into flexible, adaptable and collaborative learning environments where people rely more on communicating and sharing knowledge" (Greenberg, Greenberg & Antonucci, 2007; Hertel, Geister, & Konradt, 2005; Hill, Miller, Weiner, & Colihan, 1998; as cited from Kemp, 2013, p. 4). Many of the NWW practices have been implemented to maximize organizational performance on dimensions such as reduced costs and increased efficiency and productivity (Blok et al., 2011). However, the reasons for organizations to implement NWW are multifaceted as NWW offer a wide range of positive outcomes, such as improved job satisfaction, increased productivity, commitment, organizational yields (Baane et al., 2011; Bijl, 2009) and increased communication among employees (Brummelhuis et al., 2012). Furthermore, NWW can lead to cost savings and higher effectiveness (Baane et al., 2011) and decreased absences due to sickness (Baltes et al., 1999). An indirect benefit of NWW is that it meets the desires of especially the next generations of employees and thereby, the availability of NWW practices actively increases the organization's attractiveness for applicants on the labor market (Baruch, 2001; Heymans & van Hoye, 2005; Peters & Wildenbeest, 2010).

But besides these doubtlessly positive effects, NWW can also be the source of negative side effects. The pervasive digital availability, leading to the fact that the work can never

really be truly ended, can disturb an employee's work-life balance (van Breukelen et al., 2014). As NWW actively dissolves fixed structures and asks for more self-responsibility, employees with a high need for structure can suffer from the induced uncertainty (Peters, den Dulk & van der Lippe, 2009; Slijkhuis, 2012). Furthermore, the increased spatial and temporal flexibility of the employees decreases their visibility and factual presence on the workplaces. This can isolate employees from their colleagues or organization (Bailey & Kurland, 2002) and renders many traditional process-related control mechanisms useless and asks for other means (e.g. output management) to control the performance of the employees.

As evident from the mixed outcomes of NWW, the realization of their benefits is not achieved by their mere implementation. In the first place, the availability of the required ICT applications to work and communicate outside of one's fixed workspace is crucial and employees must be able and willing to correctly use these technologies (van Breukelen et al., 2014). Furthermore, implementing NWW requires empowered employees (Blok et al., 2012) who have autonomy to manage their own work and are managed by the results of their efforts rather than process (Baane et al., 2011). Flexible work relations are needed to create the leeway for employees to make use of NWW (Baane et al., 2011) and plan their work-schedules and -spaces as they see fit. This independence of place and time also creates the necessity for sufficient trust of the management that employees are capable to cope with and do not abuse the freedom (Voortman & Klamer, 2010). According to Bijl (2009), working according to NWW requires different mindsets characterized by "trust and granting freedom" for managers and "freedom and responsibility" for employees (p. 69). In this, mutual trust, a coaching leadership style, constructive feedback and self-discipline are crucial.

## **2.2 Innovative Work Behavior**

In this study, innovation is broadly defined on an individual level as the creation and implementation of something new, such as ideas, products, processes or policies (Schumpeter, 1934). Innovations can be broadly classified along two dimensions. The first dimension covers the extent to which an innovation improves a process or a product. Process innovations relate to improvements that affect e.g. manufacturing or administrative processes within an organization. Such process innovations can include increased efficiency, decreased failure-rates, improved service and process quality or improvements to better serve the customers. Product innovations, on the other hand, describe improvements of product attributes to e.g. better meet customer demands, achieve competitive advantages over products from competitors or generally improve the product performance.



The second dimension of innovations covers the extent to which an innovation gradually improves or radically changes an existing process or product. Innovations that do not affect the fundamental characteristics of a product or a process are called continuous innovations. A continuous innovation does not require extensive training or reorientation from employees or customers to understand and use the product or perform the process. Examples of continuous innovations are the small but constant improvements that are introduced with a new model of a car, such as a better steering system, better navigation or improved functionality of the cockpit. While the performance or characteristics of the product or the process improve, the basic way of production and usage is sustained. Innovations that radically alter product or process characteristics, however, are referred to as discontinuous innovations. Discontinuous innovations improve a product or a process in such a way that it renders the previous version obsolete and actually replaces it with a new and radically different alternative. An example is the introduction of the mp3 player (such as the iPod), which, in contrast to its predecessor the walkman, used digital technologies and radically changed the way in which music is purchased, stored and consumed. The production process and the customers behavior had to change drastically to align to the discontinuous innovation.

But regardless of the type of innovation, in order for a company to realize a continuous stream of innovations, it is crucial that the individual employees are willing and able to innovate (Janssen, 2000). This is especially important in knowledge intensive industries, where intangible assets, such as the ability to develop innovative ideas, are crucial. Furthermore, as the individual employees are closest to the customers and processes, they are more likely to recognize opportunities for improvement which might not be visible for employees in more distant functions that are formally responsible for innovation in the organization (Carmeli & Spreitzer, 2009). An interesting rule of thumb has been postulated by Getz & Robinson (2003), who found that "in practice, 80% of improvement ideas come from employees and only 20% come through planned improvement activities" (p. 134). In this context, it is important to highlight that such individual innovation does not negatively affect the quality and efficiency with which an employee's regular work is done (Miron, Erez & Naveh, 2004). In the light of this argumentation, it becomes obvious that solely relying on research and development (R&D) departments to entirely account for the development of innovations does not utilize an organization's full innovative potential. Therefore, fostering an innovative workforce and stimulating every single individual employee to continuously engage in and successfully elicit IWB is crucial for organizations to 1) maximize and more

fully tap their innovative potential and to 2) master the increasingly important organizational challenge of successful innovation and outperform their competitors.

The employees' contributions to innovation, thus, are vital for organizational innovation (Patterson et al., 2009) and they have been measured on many levels, such as personality (e.g. Hurt, Joseph, & Cook, 1977), outputs (e.g. West, 1987; Axtell, Holman, Unsworth, Wall, Waterson & Harrington, 2000) and behaviors (Scott & Bruce, 1994, 1998; de Jong et al., 2010). However, with regard to the goal of this study, some of these measurement levels are not well suited. An exclusive focus on output does not necessarily reflect the actual innovative behavior of employees as other factors such as a rigid, bureaucratic system or an innovation-hostile climate might impede innovation (Imram, Saeed, Anis-ul-Haq, & Fatima, 2010). Furthermore, in knowledge-intensive populations such as in this study, valid measures of innovative output are often not available outside of R&D departments. Therefore, output alone might not properly reflect the extent of innovativeness of an employee. Personality appears not to be a suitable indicator of IWB either. While having innovative personality traits of "being open to new experiences" is beneficial to innovation (Yesil & Sozlibir, 2013), it is not sufficient to explain the actual contribution to innovation on the workplace. To investigate whether NWW can influence IWB, a focus on an employee's behavior appears most promisingly.

Therefore, the present paper restricts its attention to actually exerted innovative work behaviors and borrows the definition from de Jong et al. (2010), who extensively studied IWB since 2007 (de Jong, 2007) and developed a survey to measure an employee's IWB on an individual level (de Jong et al., 2010). They found IWB to consist of the four phases (i) opportunity exploration, (ii) idea generation, (iii) championing and (iv) application.

The first phase, opportunity exploration, describes the extent to which an employee is deliberately looking for opportunities to improve firm or individual performance. Such opportunities often are the product of unexpected external or internal developments or problems that need to be solved. According to Drucker (1985), opportunities can arise from seven sources: "unexpected successes, failures or outside events; incongruities between 'what is' and 'what should be'; process needs in reaction to identified problems or causes of failure; changes in industrial and / or market structures; changes in demographics, changes in perception; and new knowledge" (Drucker (1985), as cited in de Jong & den Hartog, 2010; p. 24).

Idea generation, the second phase, refers to the development of actual ideas on how the improvement can be realized. According to Kanter (1988), successful idea generation is

facilitated by an individual's ability to consider opportunities or problems from different angles. He termed this ability "kaleidoscopic thinking" and emphasizes the importance of rearranging and differently combining known aspects into something new. This idea is empirically supported by Mumford, Whetzel & Reiter-Palmon (1997), who found that the ability of rearranging and combining known aspects is one of the best predictors of creative achievement.

Championing, the third phase, involves promoting the idea, reducing resistance and seeking support by relevant people throughout the organization to facilitate and prepare a successful implementation. After a particular idea has been created, it needs to be recognized by those employees in an organization that possess the required expertise, resources, contacts, influence and formal power to drive a successful implementation as the inventor of the idea often lacks these attributes. This is sometimes referred to as "coalition building" and becomes necessary as, even though a certain idea might appear promising, resistance can occur as it is often unclear in advance whether or not an idea's benefits will exceed its costs (Kanter, 1988). The role of champions, therefore, is usually informal and especially requires recognizing an idea's value and feasibility, identifying and involving the relevant and influential employees and stakeholders, communicating enthusiasm and confidence to 'sell' the idea to them and thereby establish support and willingness to bring the idea to life (Howell, Shea & Higgins, 2005). Furthermore, it is important to note that not only the original inventor of the idea can act as a champion, but basically any employee who is convinced of the quality of the idea and is willing to invest time and effort in driving the idea forward.

The fourth and last phase, application, describes an employee's efforts of actually implementing the idea and incorporating it into the daily operations. After the required support has been created and a formal approval of the idea has been given, implementation means to incorporate an innovation as a regular part of an organization processes or product portfolio (Kleysen & Street, 2001) and includes behaviors such as the development, testing and modification of new products or processes (see for example West & Farr, 1990; Kanter, 1988).

Having discussed the four phases of IWB, it is striking that the first two phases, opportunity exploration and idea generation, are more "creativity-related" while the last two phases, championing and application, are more "application-related". However, it is important to mention that, although the phases include quite different behaviors, they are not as distinct as it might seem. According to Dorenbosch et al. (2005), the four phases of IWB build on each other. Ideas, for example, have to be connected to opportunities that have been identified

and engagement in the championing and implementation phases requires the prior existence of ideas. Furthermore, the phases can be "iteratively connected by feedback loops" (Messman & Mulder, 2012, p.45), suggesting that e.g. the implementation of an idea may lead to the discovery of new opportunities or other ideas. Studies have indeed found all phases to be highly interrelated (de Jong et al., 2010; Janssen, 2004) and indicate that, as already suspected by Scott et al. (1994), employees can be engaged in any combinations of the four phases in any order.

### **2.3 The expected Influence of NWW on IWB**

Despite the surprising lack of empirical evidence, existing scientific efforts indicate that an influence of NWW on IWB appears conceivable because specific outcomes of NWW can be suspected to stimulate IWB. The employment of NWW practices has been found to lead to more autonomy and freedom (Jackson, 2002), higher employee commitment (Bijl, 2009; ) and increased communication among employees (Brummelhuis et al., 2012).

Autonomy and perceived freedom appear likely to stimulate a range of innovative behaviors such as the generation, testing and application of ideas as employees potentially perceive a higher sense of ownership and feel more in control of their job (Krause, 2004). This notion of a sense of ownership being positively related to IWB has been supported by Dorenbosch et al. (2005), who found that "a proactive attitude as ownership promotes the generation and implementation of ideas within the work context" (p. 139).

In a similar way, commitment can be suspected to have an impact on an employee's willingness and actually exerted effort to explore new opportunities, generate ideas on how to exploit them, act as a champion to promote the idea and finally apply it (Dorenbosch et al., 2005). They argue that employees who perceive HR practices (such as potentially NWW) as commitment-oriented, feel "more ownership for work related issues beyond their immediate operational tasks and show more IWB" (p. 139).

Increased communication among employees, finally, can potentially stimulate IWB as the increased digital and personal communication might create beneficial conditions for a greater access to different professional perspectives and the sharing of knowledge between colleagues. Knowledge sharing, in turn, can function as a mediator between an organization's human capital and IWB as it "translates the organizational potential of intellectual capital into individual efforts" (Mura et al., 2012; p. 8).

However, as deliberate research on the influence of NWW on IWB (especially with regard to the influences of the separate NWW core practices) is still sparse and the scientific

literature only provides inconclusive evidence, a significant gap still exists in the understanding of both phenomena and their relationship. Therefore, this served as impetus for this study to conduct a qualitative, exploratory analysis of the influence of the employment of NWW practices on IWB. The following chapter introduces the methodological approach of this analysis.

### **3. Methodology**

In this study, an exploratory multiple case study method was used to investigate the influence of NWW on IWB. Whereas both NWW in general and its four core practices separately (i.e. teleworking, flexible workspaces, flexible working hours and ICT support) have been the subject of extensive research, this has not been the case for their influence on IWB. Due to the lack of scientific understanding of this relationship, in-depth interviews in the respective work environments of the interviewees that are designed to inductively develop propositions are better suited than experimental or quantitative methods (Eisenhardt, 1989; Yin, 2003).

#### **3.1 Sample Selection**

In order to ensure that the sample actually resembled a broader variety of interviewee characteristics and that the respective employees were knowledgeable about and working according to NWW, this study did not randomly select employees but applied theoretical sampling (Strauss, 1987). To establish contact with a range of organizations, this study utilized as well formal channels (i.e. the ResearchGate of the university of Twente) as informal channels (i.e. organizational contact persons acquainted with fellow researchers). The companies that were willing to participate were invited to determine the employees that match the criteria of being 1) a white collar- or knowledge-worker and 2) working according to or having experience with at least some of the four NWW core practices. Then the companies were asked to approach eligible employees and invite them to participate in the interviews. Participation was deliberately emphasized to be voluntary to ensure that the respondents were willing to deeply think about their answers and openly and honestly share their perceptions. By interviewing multiple cases that experience different manifestations of the four core NWW practices, this study sought to include a greater variation on the independent variable. Thereby, due to the greater variation and the possibility to compare cases, multiple case studies are more robust than single case studies (Yin, 2003).

To allow for a more advanced comparison between cases that also includes organizational and external industrial influences, this study aimed to include employees and managers from different organizations. Due to availability issues within the organizations, it was not possible to evenly distribute the amount of interviews among the companies. In order to increase the amount of participating respondents, the researcher sent friendly reminders to the organizational contact persons and stressed that, to increase the quality of the findings of the study, it would be beneficial if more respondents could be found. Due to regulatory issues, however, the researcher was not allowed to directly send an invitation and a description of the research to the whole workforce. Ultimately, the study conducted the maximum amount of possible interviews (n = 12), which were distributed over four companies (a detailed description of the distribution and the hierarchical levels of the interviewees is depicted in table 2).

**Table 2.** Distribution of the Number of Interviews among Companies and hierarchical Levels of the Respondents

	<b>Company A</b>	<b>Company B</b>	<b>Company C</b>	<b>Company D</b>	<b>Total</b>
<i>Number of Interviews</i>	5	3	2	2	12
<i>Hierarchical levels</i>	2 Managers 3 Employees	2 Managers 1 Employee	2 Employees	1 Manager 1 Employee	5 Managers 7 Employees

Concerning the quality of the sample size of a qualitative study, it is generally accepted that sufficient information has been collected when theoretical saturation is reached, describing the "point in data collection and analysis when new information produces little or no change to the codebook" (Guest, Bunce & Johnson, 2006; p. 65). In the focal study's sample of 12 interviews, theoretical saturation was reached and, despite the respondents being in service of different organizations, interviews after the 10th one did not yield significantly new insights and no new codes emerged from the transcripts. Interestingly, although the sample can be considered as relatively small, it is not unusual that saturation was reached and that even small samples can provide complete and accurate information when interviewees are knowledgeable with regard to the topic of interest (Romney, Weller & Batchelder, 1986), when they are interviewed independently of one another and when the sample is rather homogeneous (Guest et al., 2006). Guest et al. (2006) furthermore provided empirical support for a sample of twelve interviews being sufficient when the three aforementioned conditions

are met. With regard to this study's sample, these conditions can be considered as largely fulfilled. While certain factors such as age, functional background or organizational affiliation were different, the group of interviewees was rather homogeneous with regard to the variables of interest, consisting of Dutch knowledge- and white collar workers who were experienced with and knowledgeable about working according to NWW. The fact that the respondents experienced varying degrees of NWW usage is in this study not considered as heterogeneity, but rather as a subtle gradation on the independent variables within an otherwise homogeneous sample. Furthermore, the respondents were interviewed independently from each other and the semi-structured nature of the interviews ensured that all respondents were asked the same questions. Thus, in the light of the above argumentation, the sample appears to have included a sufficient amount of respondents to reach valid conclusions and inductively develop grounded propositions for further research. Further considerations regarding the validity of this study's findings will be described in the following sub-chapters.

### 3.2 Sample Description

In this study, data was collected from twelve employees of four companies. To achieve greater variation in NWW, industrial and organizational characteristics, this study included a diverse set of organizations. A description of the companies and their respective industries is depicted in table 3 (the firm sizes are only roughly indicated to warrant anonymity).

**Table 3.** Description of the Companies

	<b>Company A</b>	<b>Company B</b>	<b>Company C</b>	<b>Company D</b>
<i>Industry</i>	Insurance	Municipality	Call-Center for telecommunications	Software
<i>Firm size</i>	>5.000 employees	~800 employees	~300 employees	~360 employees
<i>NWW available since</i>	7 years	7 years	3 years	5 years

Prior to conducting the interviews, general information on the NWW practices that are offered by the participating organizations was collected. This information provided a picture of the availability and characteristics of the NWW practices from which the employees of the respective organization could choose. These NWW offerings of the four companies are depicted in table 4.

**Table 4.** The Offerings of NWW Practices and their respective Regulations within the participating Companies

NWW Practice	Company A	Company B	Company C	Company D
<i>Teleworking</i>	<p>Teleworking one day per week is mandatory.</p> <p>7 offices for 10 full-time equivalents (FTE's), planning is done among employees on a weekly basis.</p> <p>Standard regulation is that employees are to be present at the office for at least 2 days per week. The remaining workdays / - times can be flexibly determined in consultation with the supervisor.</p>	<p>Employees are free to work wherever they see fit as long as no meetings are scheduled and as the deadlines are met.</p> <p>Participation in Deelstoel ("<i>Share-Seat</i>"), a governmental collaboration-partnership in which civil servants of public organizations, such as municipalities or ministries, can work at locations of other governmental institutions of other cities.</p>	<p>Working is possible wherever a secure Wi-Fi is available but teleworking is only allowed for Chatting after 6 p.m. or during the weekends. Calling is to be done at the official office building - exception: If a medical condition requires teleworking.</p>	<p>Generally allowed if circumstances require teleworking and if work allows to do so. Consultants are free to work wherever they see fit (they are present at the official office building for only approximately twelve days a year).</p>
<i>Flexible Workspaces</i>	<p>No fixed offices; Workspaces are arranged in "spots", each consisting of 5-6 "blocks" to generally keep teams in direct vicinity (but all employees can work on a large diversity of flexible workspaces (e.g. quiet rooms, meeting rooms, lounge rooms) throughout the whole organization and on all spot of other teams (interdepartmental groupings are explicitly encouraged); no need to reserve rooms, first come-first served.</p> <p>Coordination is achieved via open agendas (visible for all other employees) and regular (daily, weekly and monthly) meetings.</p>	<p>No fixed offices, spread over 9 locations in the city. Employees can choose one of those locations flexibly as they see fit (especially those that are in the vicinity of their appointments).</p> <p>A wide variety of quiet or collaborative workspaces are available to facilitate both communicative and quiet environments for small and large groups and individual tasks. Cannot be reserved and are open for everyone.</p> <p>Clean Desk Policy: employees leave the flexible workspaces tidily and ready to be used by the next employee.</p> <p>Coordination is achieved via open agendas, visible for all other employees and weekly meetings.</p>	<p>No fixed offices; exclusively flexible workspaces in one big room consisting of approximately 60 desks - used by approximately 48 employees at a time.</p>	<p>No flexible workspaces for most employees, only consultants, who work primarily at customer locations have one "shared office".</p>
<i>Flexible Working Hours</i>	<p>When in the office, employees can start their workday between 7 and 9:30 in the morning.</p> <p>Employees write up the hours they worked but as long as targets are achieved, no control or justification is required.</p> <p>Work time carryover is allowed.</p>	<p>Employees can freely determine their daily working hours as long as no meetings are scheduled and as the deadlines are met. Weekly working hours as determined by the contract are, over the year, to be fulfilled.</p> <p>Work time carryover is allowed.</p> <p>Office hours range from 7 to 10 o'clock but employees are not constrained to this timeframe.</p>	<p>Scheduling of days and times is done by employees 2 weeks in advance. Then, workdays and working hours are fixed.</p>	<p>Regular employees have fixed working hours. Consultants work 100% flexibly according to their appointments with customers.</p>
<i>ICT Support</i>	<p>All work related applications and systems are accessible from home.</p> <p>Telephone, Chat, Mail, Lync (not long implemented), SharePoint, Videoconferencing</p>	<p>All work related applications and systems are accessible from home.</p> <p>Telephone, Facetime, Skype, Sharepoint</p>	<p>All work related applications and systems are accessible from home.</p> <p>Chat, Mail, WhatsApp</p> <ul style="list-style-type: none"> <li>- Chat function: Besides contact with customers, employees use it to submit ideas, problems and experiences to supervisors.</li> <li>- Group E-mail for all chat employees - transmit working times and receive results; visible for everyone.</li> <li>- WhatsApp: Ask colleagues for information and advice (only used very incidentally and only with affiliated colleagues).</li> </ul>	<p>Telephone, Mail and own, internal software.</p> <p>The own intranet / integrated internal software application is also sold as a product. In this, employees can chat, teleconference, share documents and information, collaborate on projects.</p>



Table 5 provides an overview of the characteristics of the individual respondents and eventual functional relationships.

**Table 5.** Respondent Characteristics

<b>Respondent*</b>	<b>Gender</b>	<b>Age</b>	<b>Job Title</b>	<b>Department</b>	<b>Tenure / years</b>	<b>Hours / week</b>	<b>Number of subordinates</b>
<i>InsurEmp1</i>	Female	39	Product Manager	Pension & Life	16	24	Employee of InsurMan1
<i>InsurEmp2</i>	Male	44	Product Manager	Pension & Life	13	32	Employee of InsurMan1
<i>InsurMan1</i>	Male	49	Manager Pension & Life	Pension & Life	2,5	40	7
<i>InsurEmp3</i>	Male	56	Insurance Broker	Pension Support	36	34	Employee of InsurMan2
<i>InsurMan2</i>	Male	41	Manager Pension Support	Pension Support	5	50	20
<i>MunEmp1</i>	Male	56	ICT Advisor	Management & Development	32	32	-
<i>MunMan1</i>	Female	40	Strategic Advisor / Project-leader NWW	Human Resources	13	36	30
<i>MunMan2</i>	Male	60	Team Manager	Societal Development	8	40	30
<i>CallEmp1</i>	Male	24	Sales Representative	Sales / Private Customers	6	15-25	-
<i>CallEmp2</i>	Male	25	Sales Representative	Sales / Private Customers	6	14	-
<i>SoftMan1</i>	Male	46	Chief Operations Officer	Consultancy, Academy, Support & Advice	28	60	150
<i>SoftEmp2</i>	Female	25	Procesleider Team ERP	Customer Support ERP	2	40	Employee of SoftMan1

\* Key: 1st syllable: Company Identifier (Ins = Insurance; Mun = Municipality; Call = Call-Center; Soft = Software)

2nd syllable: Functional Identifier (Emp = Employee; Man = Manager)

Number: Respondent Identifier (Numbers in ascending order per company)

The respective configuration of NWW practices that the individual employees use is depicted in table 6.

**Table 6.** Individual Characteristics and NWW Usage of the Employees

Respondent	Teleworking In % of total working hours	Flexible Workspaces	Flexible Working Hours	ICT Support
<i>InsurEmp1</i>	80% (20% from home and 60% from other locations) - works at 2 locations, 1 day at location A, 2 days at location B - teleworks if no meetings are scheduled - no fixed "home-day" - no own home office	100% - No fixed office; shares spot with 20 colleagues, comes in frequent contact with many colleagues from other departments due to the flexible workspaces, often chooses workspace that best fits respective task.	Experiences complete freedom to divide weekly working hours and days as she sees fit (as long as targets are achieved), keeps track of working hours but is not checked upon. - usually starts at 7 o'clock fixed on 3 days per week	Telephone, Mail, Chat and Lync - Telephone and Chat Application for short communication - Telephone and Mail for extensive communication - Videoconferencing (Lync) for very extensive communication when face-to-face contact is impossible and for short meetings when teleworking
<i>InsurEmp2</i>	80% (50% from home and 30% from other locations) - teleworks if no meetings are scheduled - Friday is fixed "home-day" - works at 2 locations, 1 day at location A, 1 day at location B - has own home office	100% - No fixed office; shares spot with 6 colleagues, comes in frequent contact with many colleagues from other departments due to the flexible workspaces, often chooses workspace that best fits respective task.	Experiences complete freedom to divide weekly working hours and days as he sees fit (as long as targets are achieved), keeps track of working hours but is not checked upon. - uses flexibility to finish tasks and take care of children	Telephone, Mail and Lync - Lync is frequently used for both short and extensive communication with colleagues
<i>InsurEmp3</i>	20% - Thursday is fixed "home-day" - has own home office	Flexible Workspaces are available but he always uses the same workspace with the same 4 colleagues. - contact with other employees happens incidentally through changing colleagues who are sitting in his vicinity	Experiences complete freedom to divide weekly working hours and days as seen fit (as long as targets are achieved), keeps track of working hours but is not checked upon.	Telephone, Mail and Chat - Telephone and Chat for more interactive communication - Mail for extensive communication without much need for interaction - Digital communication only used if issues do not involve new information or require discussion
<i>MunEmp1</i>	No fixed or structured teleworking. - every morning, work mail and preparatory tasks (e.g. planning of activities) are done at home - Teleworks until appointments require physical presence (if none are scheduled, he works from home) - works at 3 locations as required - has own home office	Has own desk in a fixed office that is shared with 11 colleagues. - However, contact with other employees in this office happens almost daily as employees from other departments and even other municipalities and ministries come in and flexibly work on those desks that are free. Other flexible spaces are hardly used and interdepartmental contact is limited - Main location is divided into 6 separate buildings. Chooses work location that is closest to next appointment	Experiences complete freedom to divide weekly working hours and days as seen fit (if no appointment is scheduled and as long as targets are achieved). - is always available via mail or telephone, even on weekends - sometimes works on the weekend to take a day off during the week	Telephone, Mail, Chat, Skype, SharePoint, Evernote and Facetime - Mail is mostly used for short communication - SharePoint and Evernote are used for extensive communication (to collaborate and share documents and specific information with colleagues) - Skype and Facetime are used to communicate with 3-4 employees - Telephone is used for one-on-one communication
<i>CallEmp1</i>	70%	100% No fixed office; large office space that is shared with 48 colleagues.	Frequent use to align working hours to changing schedule of the study program (especially for exams).	Mail and Chat - Chat-application for customer contact and forwarding ideas and comments to supervisors - Internal e-mail-groups for information exchange - Whatsapp for incidental, informal contact with affiliated colleagues
<i>CallEmp2</i>	99%	"	"	"
<i>SoftEmp1</i>	No Teleworking	No Flexible Workspaces	Fixed attendance times with the possibility to shuffle begin- and end-times as long as enough employees are present to not endanger the operations of customer support.	Telephone, Mail and internal ICT Application (which is also sold as a product to customers) - Application serves as internal database where collective knowledge and solutions to problems are collected. When encountering problems, this is the first starting point for the employees. Also, non-work-related information can be shared with all or certain groups of colleagues - E-mail is used to easily share information with everybody for whom it is relevant

The characteristics of the average NWW usage of all employees, supervised by the respective managers that participated in this study, are depicted in table 7.

**Table 7.** Average NWW Characteristics of the Managers' Subordinates

Respondent	Teleworking	Flexible Workspaces	Flexible Working Hours	ICT Support
<i>InsurMan1</i>	<p>Most of his employees work approximately 30% of their time from home.</p> <ul style="list-style-type: none"> <li>- 2 employees work on other locations in other cities</li> <li>- Contact is kept via open agendas and digital and face-to-face meetings (Thursday is a fixed "meeting-day")</li> </ul>	<p>No fixed offices; all his employees usually work in the blocks and do not often change places but can freely work on other locations throughout the company (which is mostly done on two days a week, when, due to a lot of other employees being present, most workspaces are occupied).</p>	<p>Employees are free to divide their weekly working hours as long as no meetings are scheduled and as targets are achieved.</p> <ul style="list-style-type: none"> <li>- The majority of his employees, however, chooses to work approximately 8 hours a day, starting between 8 and 9 o'clock</li> <li>- Weekly working hours have to be kept track of on a daily basis but if no problems occur, no justification is needed</li> </ul>	<p>Telephone, Mail, Lync</p> <ul style="list-style-type: none"> <li>- Lync to chat, videoconference and collaborate on projects (work on the same documents)</li> <li>- Chat is especially used when it is busy in the office or when the an issue is rather urgent.</li> <li>- Mail is primarily used if longer response-times are acceptable.</li> </ul>
<i>InsurMan2</i>	<p>All his employees work at least 25% of their time from home.</p> <ul style="list-style-type: none"> <li>- All his employees work at the same corporate location</li> <li>- Contact is kept via open agendas, telephone conferences and digital and face-to-face meetings.</li> </ul>	<p>No fixed offices; all his employees usually work in the blocks. Workspaces are regularly switched and, regularly, approximately one third of his employees works at open, collaborative workspaces.</p>	<p>Employees are free to divide their weekly working hours as long as no meetings are scheduled and as targets are achieved.</p> <ul style="list-style-type: none"> <li>- Weekly working hours have to be kept track of on a daily basis but if no problems occur, no justification is needed.</li> </ul>	<p>Telephone, Mail, Lync, SharePoint and Videoconferencing</p> <ul style="list-style-type: none"> <li>- Telephone and Lync to conduct remote meetings, regardless of physical presence</li> <li>- Videoconferencing for large scale meetings</li> <li>- SharePoint to share documents and collaborate on projects</li> </ul>
<i>MunMan1</i>	<p>Extensively teleworking, employees can freely determine when to be present at work according to their own appointments.</p> <ul style="list-style-type: none"> <li>- Also, employees can freely choose among the 9 locations in the city and, via Deelstoel, even among workplaces of governmental agencies in other cities.</li> <li>- Contact is kept via open agendas and meetings digital and face-to-face meetings.</li> <li>- Lot of variation, no structured teleworking.</li> </ul>	<p>No fixed offices; all her employees can freely choose among the 9 locations in the city and, via Deelstoel, even among workplaces of governmental agencies in other cities.</p> <ul style="list-style-type: none"> <li>- Especially in between appointments, employees work at the location that is closest to spend less time on traveling between locations.</li> <li>- No reservations required / possible</li> </ul>	<p>Employees work at their preferred times, no restrictions in working times other than appointments and deadlines. The concerted weekly working hours have to, on a monthly average, be met)</p> <ul style="list-style-type: none"> <li>- Total freedom in determining the workdays as long as no meetings are scheduled and the deadlines are met. No formal restrictions.</li> </ul>	<p>Telephone, Mail, Facetime and Skype</p> <ul style="list-style-type: none"> <li>- Sharepoint to collaborate on projects</li> <li>- Evernote to share information, acts as a central information hub</li> </ul>
<i>MunMan2</i>	<p>Each employee works 20% of the worktime from home.</p> <ul style="list-style-type: none"> <li>- Also, employees can freely choose among the 9 locations in the city and, via Deelstoel, even among workplaces of governmental agencies in other cities.</li> <li>- Contact is kept via open agendas and meetings digital and face-to-face meetings.</li> </ul>	<p>No fixed offices; all his employees work in direct vicinity but share a number of flexible workspaces (20WS for 30 FTE) (e.g. quiet rooms, open collaboration places, project-rooms).</p> <ul style="list-style-type: none"> <li>- Especially in between appointments, employees work at the location that is closest to spend less time on traveling between locations</li> <li>- No reservations required / possible</li> </ul>	<p>Employees work at their preferred times, no restrictions in working times other than appointments and deadlines. The concerted weekly working hours have to, on a monthly average, be met)</p> <ul style="list-style-type: none"> <li>- Total freedom in determining the workdays as long as no meetings are scheduled and the deadlines are met. No formal restrictions.</li> </ul>	<p>Telephone and Mail for communication; Sharepoint to collaborate on projects</p> <ul style="list-style-type: none"> <li>- Informal and incidental use of Facetime and Evernote among colleagues.</li> </ul>
<i>SoftMan1</i>	<p>Generally allowed but only 5% of the employees make incidental use of teleworking (irregular and "only once or twice per month") - partly as all employees live in the direct vicinity of the office building</p> <ul style="list-style-type: none"> <li>- Only consultants telework (from home and from customer locations)</li> </ul>	<p>No flexible workspaces for most employees, only a small group of employees (8 consultants) do not have own workspaces but have one open, mutual space (however, they are only 12 days per year on this workplace - the rest is spent at customer locations)</p>	<p>Employees have fixed working hours with a little leeway to shuffle as long as enough employees are present to not endanger the operations of customer support.</p> <ul style="list-style-type: none"> <li>- Consultants have 100% flexibility and work only according to appointments with customers (managed by results)</li> </ul>	<p>Own intranet, an internal software application that is also sold as a product. In this, employees can chat, teleconference, share documents and information and collaborate on projects. Furthermore, employees informally use e-mail, Lync and other applications to collaborate.</p>

### 3.3 Method of Data Collection

The purpose of conducting the interviews was to gain deeper insights into the potential effects of NWW on IWB as perceived by employees and managers. To allow for exploring diverse individual perceptions while still asking the same, validated questions to all respondents, the interviews conducted in this study were semi-structured and, while each respondent was asked the same questions, the follow-up questions differed depending on the answers. To directly validate the understanding of the respondents' answers, the researcher often asked closed questions, summarizing the respondents answers and asking whether or not this interpretation / impression was correct and actually represented what the respondent meant to say. In order to assist the researcher in the process of conducting the interviews, take notes and monitor the interviews to ensure that no important aspects were overseen or left unquestioned, a second researcher was present in seven of the twelve interviews. In total, each interview consisted of six parts.

First, prior to the interview, the respondents were asked to fill in a short form that asked for the current function, age, gender, weekly working hours, tenure, the department in which the employee is currently working and, if applicable, the number of subordinates. Using a form served the purpose of most efficiently collecting this information and keeping more time available for the actual interview. The appendix of this paper contains both the English (appendix 1) and the Dutch version (appendix 2) of the general information form.

The actual interview then started with an introduction of the researcher and the context of the interview. The introduction is presented in appendix 3. After the introduction, questions about the current function and a typical workday of the employee were asked to gain insights into the functional characteristics (appendix 4).

The next part of the interview collected information on the extent to which the interviewee actually used the offered NWW practices. For this purpose, questions were borrowed from the survey by van Breukelen et al. (2014) to take an inventory of the extent to which each of the four core practices of NWW is used by the respondent (appendix 5).

Having discussed the NWW practices that the respondent uses, the next part specifically asked for the perceived effects that their personal usage of NWW has on the four phases of IWB. To ask validated questions that are specifically designed to address the four phases of IWB, this study borrows from two existing surveys. The questions for the "opportunity exploration" phase were borrowed from Kleysen et al. (2001). The questions for the "idea generation", "championing" and the "application" phases were borrowed from De Jong et al. (2010). To stimulate gaining additional information on effects of NWW on the different types

of innovation that the interviewee talks about, the researcher extensively asked the respondents to provide examples. This increased the study's ability to search for potentially different effects with regard to process- and product-innovations and to continuous or disruptive innovations.

The structuring of the questions was as follows. The questions concerning the four phases of IWB were grouped by the respective NWW practices. Respondents were asked separately for the effects of each NWW core practice on the four phases of IWB. A comprehensive list of these questions is included in appendix 6. All questions consisted of the prefix "Does the fact that you *"make use of the respective NWW practice"* have any effect on the extent to which you...?" and were complemented with the validated IWB survey items.

For reasons of keeping the duration of the interview around 60 minutes, not all questions could be asked and, therefore, some had to be removed from the interview scheme. The following questions were, after a pilot interview, asked in the interviews:

To investigate the effects of NWW on the opportunity exploration phase, the interview contained the first item by Kleysen et al. (2001) "...look for opportunities to improve an existing process, technology, product, service or work relationship?". As this question was often experienced to be difficult and many respondents did not exactly know what it specifically asked for, later interviews added the follow up question "...the extent to which you search for and identify improvement potential?". This served to clarify the intent of the question, helped to stimulate answers and keep the duration of the interviews around 60 minutes. The other two items by Kleysen et al. (2001) (i.e. "... recognize opportunities to make a positive difference in your work, department, organization or with customers?" and "...pay attention to non-routine issues in your work, department, organization or the market place?") did not yield additional information and were only asked if the first question did not stimulate any response. Furthermore, as Drucker (1985) identified seven sources for identifying improvement opportunities, a question concerning the sharing of knowledge about professional issues and improvement potential (i.e. "... share knowledge (donate or receive) in order to discover new opportunities?") was added.

The questions concerning the idea generation, championing and application phase were borrowed from de Jong et al. (2010).

The effects on the idea generation phase were examined with the items "...find new approaches to execute tasks?" and "...generate original solutions to problems?". The question "...search out new working methods, techniques or instruments?" was removed after the

second interview as respondents perceived it to be literally the same question as the first item in this phase.

The championing phase was investigated with the two items "...make important organizational members enthusiastic for innovative ideas?" and "...attempt to convince people to support an innovative idea?".

The application phase, finally, was examined with the two items "...contribute to the implementation of new ideas?" and "...put effort in the development of new things?". The item "...systematically introduce innovative ideas into work practices?" was removed as respondents indicated this to be outside of their span of control and that the systematic introduction was to be done by a formally appointed employee, assigned to implement the new work practices.

As one NWW practice was completed, the interview continued with the next practice. To keep the interviews interesting for the interviewee and begin with the most relevant NWW practice, the order in which the questions were asked was usually determined by the intensity of NWW usage. Questions concerning the effects of the NWW practice that the employee most intensively used were asked first.

Finally, the last question of the interview was meant to be of a more general nature. It asked if the respondent would like to add any further information that might have been missed so far and if anything remained to be added with regard to any perceived effect of NWW on IWB. The fact that almost no interviewee felt to have missed anything or wanted to add unaddressed information indicates that the selection of questions and the structuring of the interviews was sufficient to thoroughly examine the perceived effects of NWW on IWB.

Ultimately, the duration of the interviews ranged between 26 minutes (for one employee who only used ICT support) and 104 minutes (for one employee who answered very extensively). The average duration of the interviews was roughly 70 minutes and, in total, 13 hours, 42 minutes and 24 seconds of interview recordings served as input for this study.

As the interviews were conducted in Dutch, a full protocol of the literal Dutch questions is included in appendix 7 (7.1 to 7.5). To not endanger the validity of the interview questions, the Dutch translations were checked by four other independent researchers and were reformulated until consensus was reached.

In order to increase the validity of this study, interviews were also conducted with managers from the respective companies to examine if they share the perceived effects of NWW with their employees. The manager version of the questions is based on the same questions that the employees were asked. However, the managers were asked to not only

report over their own perceptions, but to also describe in how far they perceive any effects of the NWW usage on the IWB of their subordinates. Further sophistication of the data collection to increase the validity and generalizability of this study was sought after by conducting interviews at four different companies. The questions did not differ between companies.

### **3.4 Method of Data Analysis**

For the purpose of analyzing the data that was gathered in the interviews, this study followed the data management and analysis methods of Huberman & Miles (1994; p. 428-441). Their guidelines are frequently used to guide a structured approach to managing and analyzing qualitative data. They propose to conduct four separate but interrelated phases. The first phase is the data collection phase and includes the interviews. To analyze the answers of the respondents, all interviews were recorded and afterwards transcribed. The transcription process, in which the whole interviews were literally written out in full, required approximately five to six hours per interview-hour, resulting in a total amount of some 76 hours of transcription.

The second phase is the data reduction phase in which the interview transcripts were subdivided into smaller, more manageable pieces of information. To achieve this data reduction, this study applied a series of coding steps, involving both a priori codes that had been deduced from theory and a posteriori codes that were induced from the interview transcripts. In total, the following three rounds of coding were conducted in the analysis of the interviews.

In the first, open round of the coding process, this study used the following a priori codes. General information of the respondents was coded in eight codes (i.e. respondent identifier; gender, age, job title, department, tenure in years, weekly working hours and, if applicable, the number of subordinates). This allowed to more easily trace the answers to the respective respondent and investigate potential differences and similarities between certain categories (e.g. managers and employees, age-categories or company affiliation) of employees. Concerning the extent of NWW usage of the individual respondents, one code for each NWW practice was determined in advance (i.e. teleworking, flexible workspaces, flexible working hours and ICT support). As this study aimed at investigating any effects of NWW and its separate practices on IWB, one a priori code was assigned for each possible combination. This resulted in four codes per NWW core practice that relate to positive effects on each phase of IWB (e.g. TW+OE to code a positive effect of teleworking on opportunity

exploration) and four codes per NWW core practice that relate to negative effects on each phase of IWB (e.g. TW-OE to code a negative effect of teleworking on opportunity exploration).

A second round of open coding was conducted to validate the codes assigned in the first round and to also code each of the coded text fragments with an indication of the underlying reason for the effect (e.g. commitment, sense of ownership or knowledge sharing with colleagues) to finally allow the identification of underlying rationales by investigating co-occurrences of these codes. Co-occurrences indicate the context in which the respondents referred to certain effects and thereby give insights on which certain effects are occurring together and might therefore be somehow related. Furthermore, in order to not miss anything and to stay responsive for discovering any effects and relationships that had not been expected in advance, the researcher remained open for any a posteriori codes that emerged from the inductive, open coding process. In this second round, constant comparison was applied and all codes from the code book were considered for every new text fragment from the interview transcripts. This served to ensure consistency of the coding process and allowed an evaluation of the extent to which a new text fragment could be coded with already existing codes from the code book or if new codes had to be added. Additionally, constantly comparing existing and new codes provided deeper insights in the gradations and peculiarities of the codes.

After the two rounds of open coding were finished, a third round of coding was conducted to apply all identified codes to all text fragments and once more validate the codes assigned in the first and second rounds. Again, constant comparison was applied and no new codes emerged in this iteration.

Finally, all identified codes were examined for groupings of codes with potentially similar meanings. This served the purpose of identifying code categories that unveil fundamental phenomena and rationales underlying the effects of NWW on IWB.

For the purpose of supporting the coding process and to facilitate a valid analysis of the interview transcripts, the qualitative data analysis & research software Atlas.ti 7 was used. This software helped in the process of profoundly and thoroughly managing the data, identifying relevant quotes, assigning codes to these quotes and ultimately analyzing the interview transcripts. In total, the three rounds of coding yielded 901 text fragments (quotes) and 167 codes.

The third phase in the analysis process is the data display phase, in which the code co-occurrence analysis tool of Atlas.ti 7 was used to rearrange the data into tables and matrices to visualize the results and support the analysis. By constructing these tables and matrices, the



relationships and effects as perceived by the individual respondents could be examined for any co-occurring codes and for any potential groupings or peculiarities.

Finally, in the conclusion drawing phase, a distant view on the data was to be achieved to objectively analyze and interpret the identified codes and inductively develop valid propositions about the perceived effects of NWW on IWB. To increase the validity and the reliability of the study and make the conclusions less prone to interpretation bias, inter-coder-reliability was sought after by having the steps in the data reduction-, data display- and conclusion drawing phase cross-checked on randomly assigned transcripts by three independent researchers. Furthermore, one respondent was willing to also collaborate in this control step and discuss the coding and their reasoning. This control mechanism served to validate the identified codes and yielded only minor differences concerning the wording and assignment of the codes. All differences were discussed in a group of fellow researchers and consensus was easily reached. The conclusions drawn by the researcher, finally, were intensively discussed with fellow researchers, also being involved in NWW research, in a debriefing session to further validate the findings of this study. The results of this analysis will be presented in the following chapter.

## 4. Results

In this chapter, the findings of the interviews will be presented\*. Overall, the results indicate that NWW have the potential to both positively and negatively affect IWB and that the four core practices all exert rather distinct influences on especially the OE, IG and CH phases, while the APP phase appeared to be only slightly affected by NWW. The main rationales via which NWW affect IWB are that, through TW and FWH, employees are given the freedom of determining themselves their optimal working conditions which increases i.a. their ability to concentrate and focus and increases their ability to engage in the OE and IG phases. Additionally, FWS positively influence primarily OE, IG and CH by bringing together employees, stimulating communication and knowledge sharing among a broader variety of colleagues throughout the organization and facilitating a snowball-effect of collective OE and IG. Thereby, FWS increase the collaboration of a greater number of potential innovators in the office space and ICT support, finally, can serve to digitally connect them and make their knowledge visible and accessible. Furthermore, NWW in general were perceived to affect the mindsets of employees, making them more change oriented and less likely to hold on to the status quo. In the following, these effects will be explored in detail and, for reasons of a better understandability and readability, this chapter is sub-divided and the results are presented by the respective NWW practice.

While this chapter aims to substantiate the findings with lots of citations, it is not the goal of the author to provide respective citations for all of the findings. Furthermore, not always will the citations include completely exhaustive evidence of the findings that they substantiate. This is due to the fact that, although respondents indicated to perceive the effect as stated in the respective paragraph, it was not always clearly voiced in a nice statement and sometimes emerged from a series of open and closed follow-up questions.

### 4.1 Teleworking

Teleworking, in general, appeared to have the potential to both positively and negatively influence IWB. Its effects primarily relate to the OE and IG phases, while effects on the CH phase were perceived as rather weak and no major effects were perceived on the APP phase.

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\* To achieve a better readability in this chapter, abbreviations will be used for the four phases of IWB (opportunity exploration = OE, idea generation = IG, championing = CH and application = APP) and three of the four core practices of NWW (teleworking = TW, flexible workspaces = FWS, flexible working hours = FWH). ICT support will not be abbreviated.

#### 4.1.1 Positive Effects of Teleworking on IWB

With regard to positive effects of working from home, respondents said that TW primarily enables them to effectively withdraw from the hectic of the workplace and to work in an environment in which they are less prone to distractions, disruptions and interferences. They stated to thereby being more relaxed, having a more open mind, and being able to better concentrate and focus on the tasks at hand. Respondents also valued the ability to do something not work related for a while and that they can determine the exact circumstances of their work at home.

The effect of TW on both the OE and the IG phases appeared to be very closely connected and were often based on the same reasoning. The respondents indicated that, at home, they better spot improvement potential and develop concrete ideas as they can see things more clearly, recall the workday and better think in-depth.

*"...I get more space / freedom in my head. (...) Here [he refers to working at the office building], all the space is taken up by all the impressions that I experience. (...) The environment just disturbs with all these people sitting here and at home I have space, I see that as meditation-like, that you can see things more clearly. And that happens to me too. (...) Then the chances are that I see it much clearer and that I lose less by that pressure that is happening up here [he means the mental pressure in his head]."*

*- InsurEmp3*

Similarly, the positive effect of TW on an employee's ability to concentrate due to lesser distractions and disturbances is indicated in the following quotes:

*"Because you are being less distracted and that you have more serenity. I have a magnificent workspace at home. And here I do not. Here, you are really being disturbed by all the gallimaufry, you cannot imagine this..."*

*- InsurEmp3*

*"All the time someone comes in then you're distracted. Tells a story. I think that, when being at work, I am distracted at least 2-3 hours per day."*

*- MunEmp1*

Therefore, the option to telework was especially welcomed for tasks that require deeply thinking about something, such as generating ideas to solve a problem. Once improvement

potential has been identified and when a general direction for ideas is clear, respondents indicated that working out the details of an idea and making it more concrete was more easily done at home. Here, TW tremendously helped as it provides the chance to be undisturbed and better recall the workday, think about it in-depth and generally enable employees to better concentrate, focus, think freely and openly and work out the idea to a tangible improvement idea.

*"... I can for example have certain ideas or that I have to do tasks or have to think about something for which I really need to think in-depth, that would never be possible here. (...) Then I can better sort things out and see them more clearly, or see the process more clearly. (...) I really need the serenity to work this out.*

*- InsurEmp3*

More than half of the respondents share the opinion that the late phase of IG requires solitude to really work out an idea and that this solitude was best and most effectively achieved while teleworking. The reason for this was stated to be the fact that colleagues perceive a greater threshold to approach colleagues that are currently working at home.

*"I have tremendous serenity here. I have a magnificent office, that's not the point. But it is, my door is always open. That's my policy. I have to be available for everybody. (...) [And at home] I am also available but people know that A) I am teleworking and B) that they will try to call me less frequently."*

*- SoftMan1*

Thus, it appears that the opportunity to telework allows employees to choose when to work in solitude and to actively withdraw themselves from distractions, disturbances and impressions from the workplace. Through increasing serenity, TW allows for better concentration, focus, having a more open mind and thinking in-depth. This was ultimately perceived to positively affect both an employee's ability to engage in OE and in IG. Based on these findings, this paper postulates the following proposition:

**Proposition 1:** When teleworking, employees can better withdraw themselves from distractions and interferences and are therefore more relaxed and can better focus and concentrate. This enables them to better think in-depth to identify improvement potential and generate concrete ideas on how to exploit such identified potential. Thereby, teleworking is positively related to

IWB by improving the ability of employees to engage in opportunity exploration and the late phase of idea generation.

But besides being better able to focus, respondents also indicated that the ability and freedom to just do something not work related for a while has a positive influence on IG. Thereby, respondents said to be more relaxed at home and be better able to get a more distanced view on one's work which ultimately helps to develop more creative ideas and think out of the box. The inability to think out of the box was also twice referred to as a "strait-jacket".

*"...sometimes you really look at things differently. When at work, I kind of sit in a sort of "strait-jacket", I sit with my colleagues behind my desk and it is quite different than when I am working from home (...). I think it is a bit nicer, a bit more relaxed. (...) At home, I sometimes have the opportunity to, when I just cannot really progress, then I can do something else, no matter what, and after a quarter of an hour I think: Oh yes! And I go back and it works again. At the workplace you do not do this so easily. You are not as quickly doing something else (...).*

*- MunEmp1*

*"...when working at home, that they can put it aside for an hour, do something else and then continue an hour later. You do not do this here [at the workplace]. Here, when you are working, you just continue. So, there [at home] you have somewhat more freedom to put things aside and continue later, this gives always more freedom of the mind."*

*- MunMan2*

*"They are less distracted, have less environmental noise, they fully sit in their own environment and therefore think more freely. They think out of the box of their work, people are just more free, more creative."*

*- InsurMan2*

This argumentation leads to the following proposition:

**Proposition 2:** When teleworking, employees are able to do something not work-related for a while, which contributes to becoming more relaxed and developing a more distanced view on their work. This improves the ability of employees to think freely and 'out of the box of their work' which, again, increases their ability to identify improvement potential and to develop

more creative ideas. Thereby, teleworking is positively related to IWB by better enabling employees to engage in the early phase of idea generation.

Furthermore, respondents indicated that, due to teleworking, they perceive a lower separation between their work- and their private-life which ultimately leads to a greater likelihood of actively engaging in OE and IG, i.e. thinking about improvement potential and possible ideas / solutions outside of the office (this effect will be further elaborated upon in chapter 4.5). Closely connected to this, respondents indicated to feel a greater sense of ownership when teleworking, having a greater sense of responsibility and ownership and therefore being more likely and motivated to think about opportunities and ideas outside of their regular office.

*"...because then I kind of feel like: I am really working independently, as if I was an independent entrepreneur."*

*- InsurEmp3*

This entrepreneurial feeling of being responsible and the sense of ownership furthermore appeared to make employees exert more energy in actually looking for and identifying improvement potential, developing concrete ideas to take advantage of the opportunity and act as a champion to make sure that an idea actually gets the required support to be implemented.

An influence of TW on CH was furthermore perceived to be caused by TW's effects of making employees more relaxed, more energetic and increasing their ability to better focus and concentrate. This is i.a. voiced in the following quote:

*"...that the energy and the idea that they get at home, that they share this here [at the workspace]."*

*- MunMan2*

However, it is striking that the increased sense of ownership and control was primarily voiced by two respondents who, due to their functional characteristics, are rather to be classified as white-collar workers while typical knowledge workers did not share this perception. Whether or not MunMan2 referred to knowledge or white-collar workers remains unclear, but, as a greater portion of his subordinates can be classified as white collar workers, it appears likely that the perceived effect is less, if at all, applicable to knowledge workers. This leads to the following proposition:

**Proposition 3:** Teleworkers (especially when being white-collar workers) are more energetic and perceive a higher sense of ownership and control for their work and therefore more actively search for improvement potential, develop concrete ideas to exploit such potential and act as champions to create the support needed for a successful implementation. Thereby, teleworking is positively related to IWB by increasing the likelihood of an employee to deliberately engage in opportunity exploration, idea generation and championing.

A further effect of TW on CH was voiced by InsurMan2, who perceived that employees feel more ownership for ideas that they developed alone at home, which ultimately makes them feel more responsible and exert more energy in creating support and making the idea popular. However, such an effect of TW on CH was only voiced by MunMan2 and InsurMan2 while most respondents did not perceive a significant impact. As the interviews did not yield an explanation for why this effect was only perceived by managers, this issue remains to be subjected to further research and no proposition is based on the finding.

With regard to the application phase, most respondents said that the planned application of an idea was beyond their immediate span of control and that this was the task of formally appointed employees. Furthermore, all but one respondent indicated for TW to not have any perceivable effects on APP. This is illustrated by the following quote:

*"What I think is crucial with improvement ideas is that people come up with an idea but that the planning and the implementation of it is often dropped. So we have very many plans, many ideas and then nothing happens with them. You often need instruments such as revision meetings or a manager who says: What are you going to do with it? Which actions are you going to take? And when did you do that? You need that, a sort of mechanism, that has not so much to do with NWW."*

- InsurMan2

Concerning teleworking in its form of working elsewhere outside of the regular office building, it was pointed out that it can positively influence both OE and IG. In particular, in the case of shared work locations that bring together employees from different organizations, it was voiced that TW offers valuable input for exploring improvement opportunities and generating ideas. Due to working in diverse environments that are different than an employee's regular work environment and by getting in contact with a great variety of other workers from related or even different fields of expertise and seeing how they work and approach problems, teleworkers can have better and more diverse access to inspiration (e.g.

more diverse perspectives and thinking patterns) and are stimulated to more critically question the status quo.

*"...when you are sitting in a different, inspiring environment that you are seeing different things (...) and that you think: Hey, why do we do this or that the way we do? (...) So yes, really sitting at another organization or collaboration helps, you can really get inspiration out of it."*

*- MunMan1*

Based on this reasoning, the following proposition is formulated:

**Proposition 4:** When working at shared workspaces outside of their official office building, employees are enabled to see different examples of how things are being done elsewhere. Hence they can better compare approaches and get inspiration from their environments and employees from other companies. Thereby, teleworking elsewhere outside of the organization is positively related to IWB by increasing an employee's ability to successfully engage in opportunity exploration and idea generation.

#### **4.1.2 Negative Effects of Teleworking on IWB**

Negative effects of TW that were voiced by the respondents primarily revolved around problems concerning decreased communication as a result of the risk of isolation from colleagues and the rest of the organization. When extensively using TW, respondents perceived to be less intensively communicating with their peers, both professionally and relationally, which negatively affected inter-employee relations and ultimately created the danger of isolation. Furthermore, extensive TW was perceived to increase the threshold of approaching (and being approached by) colleagues which, in turn, can again impede communication and lead to employees missing out on all sorts of important information and sources of inspiration.

Similar to the positive effects, the negative effects of TW on the OE and IG phases were quite closely connected and often occurred together. The primary concern when extensively teleworking was to become isolated from one's colleagues, to be less involved in communication and thereby to miss out on important information.



*"When they don't see you, they forget to include you in certain discussions. They need to regularly see you in order to think: Oh yes, actually she also needs to see the review; Oh, I have a question on how it went. When I am here at the location I get a lot of questions of colleagues like: How do you do this, how does that work in [another setting] (...). When I am not here, I don't get these questions."*

*- InsurEmp1*

*"...I think that there is an impediment when someone teleworks very extensively, no matter where, is seldomly physically present, then you share less. You are used to walk up to somebody. (...) And I know I can call, but then it is just not important enough to call and then I just do it tomorrow. And when I don't meet her the next day, I have forgotten it."*

*- MunMan1*

*"...they really see less. Because when you are at home to write 100 reports, then you write 100 reports and you stop. And here, you hear, see, talk to people or (...) someone tells you something or you get involved in something. And that does not happen at home."*

*- InsurMan2*

Furthermore, respondents indicated to perceive a higher threshold to approach and include in the groups-processes their colleagues who are teleworking.

*"Calling, is the experience in our team, is not done automatically. (...) There is the assumption, although you can see that it slowly disappears, but there is the assumption that you telework to work undisturbed and go through with your tasks. So you must not be disturbed."*

*- MunMan1*

Respondents stated that due to the decreased communication, they would be less involved in knowledge sharing, not receive timely information on the latest developments and thereby not have up to date knowledge of the overall situation of their company. Ultimately, this was perceived as leading to a lack of important insights for OE and inspiration and input for IG. Especially the inability to participate in incidental communication was perceived as problematic.

*"...I think that through the informal consultations, that much more renewal, more appointments evolve than from formal consultations. Most ideas develop (...) here during the lunch break or at the coffee machine, walking with each other from one meeting to another. Just like: Hey, can't we do this, or could we do that? Well, and this leads to a continuation and you can try to hitch on if you had not been part of it but that is different than having been a part of it from the very beginning on."*

*- MunMan1*

Furthermore, when not being at the location, respondents indicated to be missing out on inspiration from their environment, not seeing and hearing other perspectives, not being stimulated to look from other perspectives at their work and miss out on incidental communication. This lack of incidental communication and environmental inspiration, in which often e.g. information about problems, new knowledge or changes within the organization or the industry are shared and discussed, was also perceived to negatively influence an employee's ability to successfully engage in OE and IG. The reason is that they lack inspiration and input and that a snowball-effect cannot take place, meaning that ideas cannot be picked up and be further elaborated or refined by colleagues.

*"I do not get ideas from others. I do not see ideas of others which I can pick up myself."*

*- InsurMan1*

*"...then you immediately have everybody at hand and someone shouts something and that can evoke ideas from others again. And when I am at home then no one will pick that up. Or if someone does it here ,this will not be picked up at home."*

*- InsurEmp3*

Furthermore, the decrease in communication was also perceived to negatively affect one's willingness and likelihood to engage in both the OE and IG phases due to decreased commitment.

*"...actually, you need to be more present at the location than flexibly at home (...) because otherwise, you do not get to talk to your colleagues anymore. There is no communication, you get distanced from the organization. (...) Then you only do your work, do your thing but further, well, your commitment is absolutely gone."*

*- CallEmp2*

Besides detrimental effects on commitment, TW was also found to have negative effects on the relations among colleagues which contributes to decreasing communication among employees.

*"I still feel committed to [my company] but the commitment towards colleagues is decreasing. (...) They give me a lot of freedom that I can work elsewhere, but if they do not regularly see me then I don't know who is ill, if they had a nice vacation. You don't know what else is going on there."*

*- InsurEmp1*

*"When they are here at the location, then they see more, experience more, hear more, which can be a trigger to develop improvement ideas. If someone is working at home for more than 2 days a week than it has a negative effect. [This is due to] the tie, the relationship with your employer and your team. And all the things that go on there. Such as the strategy, projects, developments, you create too much distance."*

*- InsurMan1*

This negative effect on the relationships, ultimately, can again cause negative effects by further worsening the isolation, increasing the threshold to approach colleagues and supervisors and excluding an employee from important group-processes such as knowledge sharing, brainstorming, sparring and the snowball-effect of picking up and refining clues and ideas from peers. Accordingly, the cumulative arguments lead to the following proposition:

**Proposition 5:** Extensive teleworking can lead to the isolation of employees from their colleagues and their organization. Hence, they are less involved in communication, become excluded from groups-processes, do not receive up to date information and thus lack inspiration and input from the workplace and their colleagues. Thereby, teleworking is negatively related to IWB by decreasing an employee's ability to successfully engage in opportunity exploration and idea generation.

Besides these negative effects on OE and IG, TW was also found to negatively affect the likelihood with which employees engage in the CH phase. Due to the greater isolation and the lower chance of being physically present at the same time and place, respondents indicated to be limited in the means of communication to use. As face to face communication cannot be relied upon to always be an option, respondents perceived it as more difficult to convey

emotions and passion (this effect will be elaborated upon in chapter 4.4.2). This, in turn, lead to a lower willingness and motivation to engage in championing via digital means of communication and the postponement of championing until physical contact was established again. Often, however, respondents indicated to either forget to tell their colleagues and supervisors about promising ideas or opportunities and that an idea generally had to be perceived as more promising or important in order for them to digitally engage in the CH phase. This effect, furthermore, was amplified because of respondents perceiving digital communication to be not as speedy and easy as compared to face to face communication. When physical contact is impossible, ideas cannot be shared as easily and especially conveying emotions, passion and making others enthusiast is experienced as very difficult if not impossible. Therefore, respondents indicated to be less likely to engage in the CH phase as it requires a lot more effort to write a document and share it.

*"...what is nice is that, when you get an idea, that you can immediately share it. But there is nobody at your kitchen table. So then you need to write it out in full (...), so there are all kinds of thresholds in this."*

*- InsurMan2*

*"...you do not need to write very long documents when you are able to simply talk with somebody. That goes a lot quicker than first having to type a document of 5 pages. So, with regard to speed, this is an advantage. But well, when you are working at home you cannot do this. You really need to be at the location."*

*- InsurEmp1*

Furthermore, the lack of incidental communication that was induced by TW also affected the likelihood to engage in CH, as is illustrated by the following quote:

*"Back then I worked half / half, I worked partly at home and partly at the office. And back then I talked to him [his manager] way more often. And then we talked about how work went, what had to be improved. (...) As a matter of fact, I did not really talk to him anymore when I started working from home full-time (...)."*

*- CallEmp2*

This lack of communication that can be caused by TW, finally, can also negatively affect the likelihood of an employee engaging in the CH phase as it deteriorated the relations and the contact among colleagues.

*"Yes, that happens automatically. That's why I always make sure to try to be at least one day per week [of her three day workweek] at the office, precisely because of the contact. And I notice that, when I was not there for some time, the contact is getting stiffer."*

*- InsurEmp1*

Negative effects of TW on APP were only stated by one respondent. She indicated to perceive that employees who extensively work at home and therefore are seldomly present at the workplace, are less likely to be actively contributing to and exerting energy in the realization of improvements as they are less involved in the actual processes at work. According to her, the reason is a combination of decreased commitment and increased isolation from the group.

*"I think that for a big deal of the implementation of improvements, we are still used to doing this with people who are at the location. So the physical, face to face contact, live being present, is considered to be very important. (...) I think that this is due to commitment. Availability and commitment. You are just not a part of the group. So the group that is currently here, (...) is busy with it, is planning things. And attaching and including people who are sitting at home, well, they just get to know it at some point."*

*- MunMan1*

Thus, another negative effect of the risk of isolating teleworkers from the rest of the organization appears to be due to deteriorated relations among colleagues, a higher perceived difficulty of successfully conveying enthusiasm and exclusion from processes at work. This leads to the following proposition:

**Proposition 6:** Extensive teleworking can lead to the isolation of employees from their colleagues and their organization. The decreased factual contact deteriorates employee relations, the extent of contact among colleagues and their involvement in work related processes. Thereby, extensive teleworking is negatively related to IWB by decreasing the willingness and motivation to engage in championing and to exert energy in the application of ideas.

#### 4.1.3 Consistency of and closing Remarks on the Results of Teleworking

Having identified both positive and negative effects of TW on IWB, it is all the more important to highlight that the respondents also stated to be very aware of the dangers and to therefore try to actively align their personal TW usage in such a way that negative effects can be prevented.

*"I usually make sure that I, at the times at which I am at the office, when I am [at the location], from the early morning until the afternoon I always sit in meetings to do these kinds of things [referring to the relational and interactional aspects]. Because I plan all these things on the one day that I am here. The other things [referring to things that can be done in solitude] wait until I am somewhere else."*

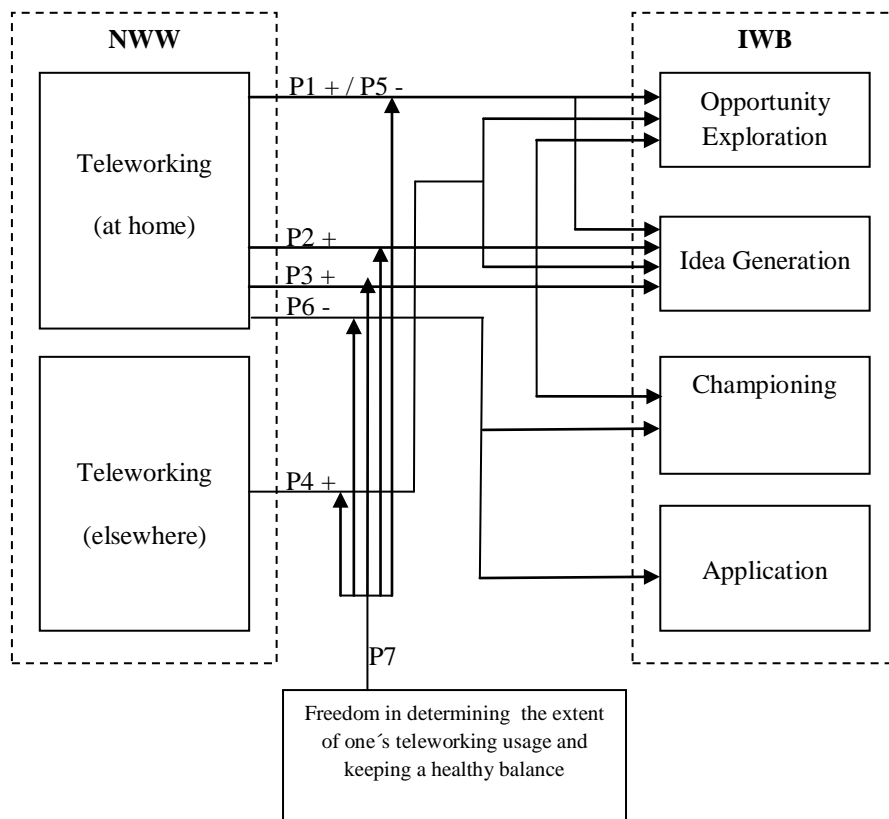
*- InsurEmp1*

Besides being indicated by the respondents, this assumption is consistent with behavioral psychology. As the desire for social interaction and belonging is one important driver of human motivation (Baumeister & Leary, 1995), employees can be expected to choose their extent of TW usage in such a way that they reap the benefits of TW while being present on the location often enough to avert isolation and thereby prevent the negative effects on their IWB. This assumption is furthermore backed by the fact that, while being quite aware of the potential drawbacks of TW, eleven of the twelve respondents from the sample indicated to not be truly suffering from any of the negative consequences of TW themselves. The only exception was CallEmp2, who had no choice but to almost exclusively work from home and therefore was unable to regulate the extent of TW himself. Based on this argumentation, it appears likely that the negative effects of TW on IWB are not deterministic and can be autonomously prevented by the employees themselves if they are given enough freedom in determining their extent of TW. The findings indicate that employees utilize TW sensitively and primarily for i.a. tasks that require solitude and concentration. Furthermore, it appears that those who use TW extensively are very aware of the dangers of isolation and therefore are more likely and willing to deliberately engage in communication, knowledge sharing and relation-building when being present at the office. This indicates that it is extremely important for employees to have far-reaching freedom in determining their TW-days themselves, so that they can arrange their presence and plan their tasks in such a way that TW does not lead to isolation and negatively affects their IWB. Therefore, this paper considers the freedom in determining the extent to which employees make use of TW themselves and keeping a

healthy balance between physical and digital communication as a vital boundary condition for TW to not exert its negative effects on IWB and postulates the following proposition:

**Proposition 7:** The positive effects of teleworking on IWB can only be fully realized if employees have the freedom to determine the extent to which they engage in teleworking themselves and a balance is maintained between physical and digital communication. Otherwise, the positive effects will be weakened and can even become negative if teleworking is used to an extent at which it causes isolation.

Figure 1 integrates propositions 1 - 7 and depicts the proposed influence of teleworking on IWB.



**Figure 1.** The proposed influence of Teleworking on IWB \*

Considering the consistency of the perceived effects of TW on IWB, it is striking that no big differences were observed between any cohorts of the respondents (e.g. employees versus managers or company affiliation). However, one minor exception was the fact that managers

\* As the propositions that are developed in this study are based on qualitative data, the arrows in the conceptual model do not depict statistical correlations but represent the signs and directions of the proposed influences of NWW on IWB.

seemed to feel that employees feel more ownership for ideas that were developed at home and are therefore more likely to actively champion them. This perception was not affirmed by any employees from the sample.

Another minor observed difference was that InsurMan2 perceived OE to be more effectively performed at home while he perceived IG to generally be more successfully done at the workplace. Most respondents, however, felt that OE and the early phase of IG require interaction to receive information and spar with colleagues, whereas it is the late phase of IG, where ideas are to be finalized, that employees perceive to be requiring solitude.

Another interesting exception is that CallEmp1 perceived a greater pressure to perform when teleworking. According to him, making use of TW had the effect that he felt a greater need to actively show that he works hard and "is still present". In order to show this, he indicated that he was more actively and more deliberately looking for opportunities and developing ideas so that he would be able to share such identified opportunities and ideas with his supervisor.

## **4.2 Flexible Workspaces**

In the course of the interviews, FWS appeared to have by far the strongest and most far reaching impact on IWB of all NWW core practices. FWS appeared to be especially influential on the respondents' abilities to engage in the OE, IG and CH phases. No effects of FWS on APP, neither positive nor negative, were voiced by any of the respondents.

### **4.2.1 Positive Effects of Flexible Workspaces on IWB**

Concerning the positive effects of FWS, the findings indicate that FWS are strong facilitators of communication and knowledge sharing and are beneficial to a wide range of innovative behaviors. FWS were perceived to drastically increase the contact and collaboration among employees, not only within their departments but especially the inter-functional and inter-departmental contact and communication was said to have increased significantly. Besides providing access to a greater amount of more diverse knowledge, FWS were also found to positively influence general relations and collaboration and facilitate groups-processes such as knowledge sharing and collective learning.

The primary contribution of FWS to both OE and IG appeared to be the fact that FWS stir up the functional silos and, by "forcing" employees to switch their workspaces on a regular basis, bring together employees from all around the organization that might otherwise not



have gotten in contact with each other. FWS thereby appeared to drastically increase communication and knowledge sharing within an organization which, in turn, was perceived as crucial input for both the OE and the IG phases of IWB.

In the first place, respondents indicated that, due to FWS, they have more contact with a greater variety of colleagues which they would have otherwise not gotten in contact with. As opposed to fixed workspaces, FWS especially increase the amount of interdepartmental contact and lead to the development of larger intra-organizational networks. This, in turn, positively influences OE and IG as employees get access to more diverse knowledge of potential improvement opportunities and, by hearing and seeing different (professional) perspectives, they get valuable input for IG.

*"You get to also sit with other colleagues. So, instead of always sitting with product management, I also sit with Finance, or I sit with Control. And ultimately, you also hear how they engage in certain discussions and you think: Oh, I need to include this in the development of the product. I need to include them. And because you sat there, you shook hands with people, you are more likely to get in contact with them to refine a product or conduct a change because your network has just become so much larger than only the group that you are always sitting with."*

*- InsurEmp1*

Furthermore, besides spatially bringing employees together, FWS were perceived to positively affect OE and IG by creating an environment that facilitates easy and speedy communication, in which employees are visible and perceive a lower threshold to actually approach their colleagues and actively engage in knowledge sharing.

*"Back then they used to sit behind a door in an office and they did not really meet anybody. At that time, you had to make a phone call to get in touch with others or even write a letter. (...) These were tremendous thresholds. Now, you see each other and you sit in the same space. You get coffee for each other. There are lots of opportunities to get in contact with each other. Everywhere people are talking, you have the opportunity to really catch a lot of information and get links. That is a thousand times more than back in the days."*

*- InsurMan1*

*"You talk much more easily with people when you see what they are doing and what they are busy with, that's easier. Yes. And it is an advantage of FWS that you also get to sit next to someone else."*

*- InsurEmp1*

*"I started here in 2007 and (...) everybody had an own office and you had to make an effort to get to another location, another office, to engage in a conversation. [Now] this is an open space (...) and people are walking to each other, discuss things or just go and sit next to each other just because it is beneficial to the respective tasks at hand. So knowledge sharing is an important benefit of FWS. (...) This happens automatically. Naturally. People just approach each other (...) which is impeded by fixed offices."*

*- MunMan2*

Besides to making it easier to approach colleagues, FWS were also said to increase the amount of incidental communication. This was experienced to positively influence OE and IG as employees get to hear and see input for both OE and IG without even being actively looking for it. Thus, merely by being present at the FWS, employees perceived to be receiving a greater amount of information that affects diverse functional and organizational aspects.

*"You hear someone, how he is busy with a certain topic and if this links to what you are doing then you are going to talk about it. You engage in a discussion. You take a different direction than I do? Why is that?"*

*- InsurEmp1*

*"Almost every time you have a different neighbor. (...) One time you sit next to an accountant, next time to an assurance and the other time next to a jurist. A jurist will have experienced something new, walks around and talks about it and then [people get to talk about such work related things]."*

*- InsurMan1*

*"Because you sit next to each other. (...) And when you sit among another team, then you also hear what is going on there, what kind of successes they celebrate or what miseries are happening there. I think that this is really good. Because, if you get to hear such things, you do look at it in another way, cause you don't know their processes and you can quite quickly [say]: It seems illogical to me to... or it appears reasonable to me to..."*

*- InsurEmp2*

In addition to the increase in information sharing, respondents also stated to perceive a positive influence of FWS on the relations among colleagues, which again positively influenced the likelihood of employees engaging in interaction with their peers.

*"You throw 10 strangers together and after 2 days they are friends. After 2 days (...) it is a group. That's kind of the idea. You do the same kind of work and you have some solidarity (...) and you get a relationship. That happens quite quickly. You can actually talk to almost everybody."*

*- CallEmp1*

Thereby, as employees get more in contact with each other and through the improved relations and the lower threshold of approaching each other, it was stated that FWS rather naturally lead to more groups processes such as brainstorming, sparring and interactive discussions. In these consultations, respondents stated to exchange knowledge, share information, discuss work related issues and talk about recent changes and developments, all aspects which are valuable input for OE and IG.

*"It happens more often. You really speak to different kinds of people than usual and they think differently about other things. So yeah, you are brainstorming a bit more about it."*

*- CallEmp1*

*"Because someone gets a phone call. And, for example, someone else says: I solve it like this and that. And the third one sighs... you know? Then they say, actually we should do it differently. By talking with each other."*

*- InsurMan1*

*"Because you get with more diverse people, you don't just talk to the same people, you don't always stay in the same circle. Because you are sitting with different people each day, you get in touch with way more ideas. And thereby you get more input for creativity."*

*- InsurMan1*

This effect is further reinforced by the fact that employees themselves can deliberately choose their working environment according to their respective needs. FWS provide the ability to just go and sit in the vicinity of those colleagues who have the knowledge and expertise that one is currently needing. Thereby, employees can easily influence their working environments and make sure that not only the workspace but also the surrounding colleagues contribute optimally to increase the chances for successful OE and IG.

*"...they are collaborating more. (...) You can much more easily and more quickly connect. If I for example know that I have to approach a certain problem or process, and I see that Jantje is sitting there who is also working in this process (...) then I choose to go and sit at his block today."*

*- InsurMan2*

This increased contact and communication, in turn, was consistently perceived to positively influence both OE and IG as employees get access to more diverse knowledge, are more up to date of recent organizational developments and generally have a better image and knowledge of the overall situation of their organization.

*"Also that you hear things which are not directly intended for you but at a later moment in time become relevant for you. That you get a broader picture of what is going on, what forces are actually driving our organization. I think that this is good. You hear all the things that are going on there and that is important."*

*- InsurEmp2*

Furthermore, respondents said that, besides simply having more knowledge, they also value the fact that, through the constantly changing working environments, they are seeing and hearing more which provides access to different and more diverse perspectives that allow them to look at their work, problems and ideas from different angles. This ultimately enables them to better identify and analyze improvement opportunities and develop concrete ideas on how to exploit them.

*"But also in the interaction at work, it is possible that someone says or someone shouts what he is busy with. That you think, yes, that's also a way to see it, thanks, I am taking this over from you, or the other way around."*

*- InsurEmp3*

*"...because when people are using someone as a sounding board, you know, even though this person might not actually have to do with it, but just to gauge the feelings. And when you are always sitting to think about a certain process with the same team then, we are all limited in our thinking, that's how it is, then you just stay in your comfortable network. Really to involve someone completely different, that is [done by] the FWS here. You can just break the circle and this does not need to be much, just enough to get you thinking."*

*- InsurEmp2*

Based on the above reasoning, it was indicated that FWS and their impact on communication and collaboration greatly enhance the extent to which employees can get inspiration from the environment.

*"You see someone do something. You see things in your environment and they inspire you to do things differently. You see someone do something and think: Hey, we should also do this over there! And so you link it to something else."*

*- InsurEmp1*

*"I think that people just see different examples. So, thereby they get, see different, have contact with other people. They hear different things, so they find and see pieces of innovation. I see this myself, when I am working somewhere else, that I talk to other people, you get involved in a conversation about what you do and what you are currently busy with. And thereby you get the contacts and hear from the other things. In our team, as we don't have fixed workspaces, you really sit with someone else every time and then you hear different stories. You get to see it from different angles, you get different aspects. So that is definitely an added value. I don't know if this directly leads to innovation but you get more ideas and a widening of your perspective."*

*- MunMan1*

*"The chance for it [developing more ideas by being inspired by the environment] is greater because sometimes you also get to sit outside of your own area of expertise. So you see and hear more."*

*- InsurMan2*

Thus, the findings indicate that FWS greatly increase inter-functional and interdepartmental communication by bringing together diverse employees in an environment that facilitates easy and low-threshold communication. Ultimately, this provides employees with more access to diverse and up-to-date knowledge of the organization and important recent developments which serves as inspiration and input to engage in OE and IG. These findings lead to the following proposition:

**Proposition 8:** Flexible Workspaces bring together a greater variety of diverse employees and, through providing an environment that facilitates easy (and incidental) communication, stimulate knowledge sharing. This gives employees greater access to other (professional) perspectives and up-to-date knowledge and thereby provides valuable input to discover improvement potential and to generate ideas on how to realize such potential. Therefore, flexible workspaces are positively related to IWB by improving the employees' abilities to engage in opportunity exploration and idea generation.

Furthermore, FWS were said to facilitate a snowball-effect of idea refinement. This means that, in the open flexible spaces, employees get in touch with each other and are more likely to hear from a greater amount and more diverse opportunities and ideas from colleagues all around the organization. The result of this interaction has often been perceived as continuous enticement of input from others and refinement or adjustment of ideas by peers who were not formally appointed to engage in doing so.

*"The one entices a reaction from the other. And especially because you are sitting there all together, you get much more ideas than if they were all sitting alone."*

*- InsurEmp1*

*"...you need the matter, the people, the organization to further improve that idea and shape it."*

*- InsurMan2*

*"What of course really helps is that someone else gives his thoughts and insights about it [an idea]. And that you also think: Hey, I had an idea about this, too, maybe I have to align it a bit. So in that sense, this helps a lot. (...) You know, there is always something sensible that helps you further."*

*- CallEmp2*

*"That you discuss it with other people, that can be a solution, an approach, it can be everything. [So the ideas are discussed together and thereby get better, complemented or adjusted]."*

*- MunMan1*

Another way in which FWS were perceived to contribute to improving OE and IG was that two respondents said to be better able to convene group-sessions in which brainstorming, sparring and snowball-effects can take place. It was voiced that, as it is much easier to set up teamwork, they are more likely to approach and gather those employees who they feel can contribute to a certain issue, quickly engage in short-term teamwork and then, after the issue has been worked out, disperse the groups again. Thereby, as FWS provide extensive freedom in determining the workspace and especially by making them available to all employees who can utilize them without a large administrative effort, waiting times or even reservation, FWS can facilitate successful OE and IG by enabling employees to more effectively and more efficiently initiate group processes.

*"[Without FWS] you had to organize a real relocation, and a relocation from A to B takes about two months. (...) Relocating costs a lot of energy to organize all this. (...) [Now she talks about the current situation with FWS] It really benefits the quality [of ideas that are generated]. Because you can do this more quickly, you can more quickly connect with each other to reach a concrete goal."*

*- InsurEmp1*

*"For short-term projects, you can relocate much more easily. We work together in this room for 2 weeks (...) and then we go back, separate again. (...) If I want to briefly discuss or debate with colleagues, then I am not so much inclined to do this in the department. Then we come and sit here [refers to the open space in which the interview was conducted], I get my laptop and we sit next to each other like: What do you have, what do I have?"*

*- InsurEmp1*

Her positive perception of the ease and speed of engaging in short-term teamwork was confirmed by MunMan2, who stated that it was daily practice that FWS make employees more likely and willing to engage colleagues in teamwork when they feel that a certain colleague might add value in a certain issue.

Thus, through facilitating the easy and speedy organization of teamwork sessions and stimulating interaction and collective groups-processes such as mutual idea refinement and collectively learning from peers, FWS appear to entice interactive processes which are perceived to improve OE and IG. Therefore, the following proposition is formulated:

**Proposition 9:** Flexible workspaces facilitate interactive groups-processes such as cross-contamination, collective learning, brainstorming and sparring with each other and mutually refining ideas with peers. Thereby, flexible workspaces are positively related to IWB by increasing the ability of employees to engage in opportunity exploration and idea generation.

Similar to the effects on OE and IG, FWS were stated to have a positive influence on CH that can basically be ascribed to the same reasoning as for the OE and IG phases. By bringing together employees from diverse departments, stimulating communication and by increasing the intra-organizational networks of all employees, respondents felt that the relations with their colleagues and their knowledge of them also improved dramatically. As a consequence, employees also get better knowledge of those key figures whom they would need to approach in order to actively champion an idea. Even more importantly, key figures are considered to be more visible and the respondents perceived a lower threshold to actually engage in championing and approach key figures with ideas and opportunities.

*"...because they are sitting right here in the departments, the threshold has become much lower to just approach them."*

*- InsurEmp1*

*"...key figures are now sitting directly among the employees. So you can share ideas with them more easily. And as a manager, I used to have a separate office, and now I don't have it anymore, I am just sitting in between here, and that makes it very easy for employees to share ideas with me. (...) You don't need to schedule an appointment with me, you see whether or not I sit here. And you know whether or not I am on the telephone and you just approach me and ask: Do you have time? And that is something different than having to go to an office and have to ask the secretary: May I speak to the boss? [So this threshold, both towards managers and among colleagues] does not exist anymore."*

*- MunMan2*



This impression was shared by InsurMan1, who said that the fact that employees and key figures share the same open spaces also contributed to the positive effect of FWS on CH by conveying signs of availability and approachability.

*"You are more willing to do so. (...) People who are sitting in a booth behind closed doors give others the impression that they do not want to be disturbed."*

*- InsurMan1*

Closely working together with key figures was furthermore said to have the advantage that employees get to know them better, which enables them to align their CH-approach to the personal characteristics and peculiarities of the respective key figure, which again positively influenced the likelihood of actually engaging in CH.

*"Because you know these people, you know what and how important it is, and that you include this in your proposal so that it does not become a problem later to get something done."*

*- InsurEmp1*

Besides better knowledge of key figures, respondents indicated that the increased interdepartmental contact among colleagues was especially beneficial for ideas that had a broader scope than only an employee's direct functional area of expertise. By having more contact-persons to spar with and by being able to discuss ideas and opportunities, the findings indicate that this can serve as a pre-step to CH, allowing employees to better gauge the impact of an idea before deciding on whether or not to engage in CH.

*"If it is applicable for the organization, in whatever form, larger than your team, well, then FWS are substantially useful to gauge how it is going around you."*

*- InsurEmp2*

Ultimately, the increased communication, caused by FWS, was also experienced to lead to a general increase in CH. The reason is that, as employees informally meet each other in the open spaces and do not have to formally get in contact, it is perceived as much easier to communicate and communication often evolves incidentally, merely by facilitating easy and low-threshold communication among employees.

*"And then it just happens in a conversation that you say: Could you ask how does this or how does that? That also happens [without FWS] but then you need a consultation-moment and now, it just comes up much more [incidentally], so it also happens a lot more quickly."*

*- MunMan1*

*"It goes more quickly because you can just immediately make contact with the one you need to get in touch with. And if this was not within a flexible working environment, then people would really need to make an effort to come into contact."*

*- MunMan2*

An interesting remark was made by MunMan1 who said that, besides stimulating individual employees to engage in CH, FWS also increased the likelihood of successful CH due to an increased feeling of solidarity, a shared responsibility and higher commitment towards the work of one's colleagues.

*"...by meeting each other more frequently and by talking more often and in other ways, and here I am really talking about working flexibly, where you sit with this colleague in an office this time and the next time there are others sitting with you, that is a larger group that has support, that enthuses, that helps with implementing this kind of things. (...) My colleagues feel much more committed to it. I myself feel more committed to what the others are doing."*

*- MunMan1*

Another interesting, yet slightly different effect of FWS on CH was voiced by InsurMan1, who indicated that it is not only employees who are more likely to act as champions, but that key figures themselves have better access to promising ideas on the workplace. He stressed that, due to FWS, key figures are more able and likely to actively search for knowledge and pick up ideas and opportunities that are discussed in the open spaces.

*"Especially they are hungry for knowledge and they get more in touch with it here [on the FWS]."*

*- InsurMan1*

Thus, it appears that FWS can create a synergetic effect on CH by not only increasing the willingness of employees to act as champions but also by facilitating key figures in becoming more active themselves as they are more likely and able to walk around the company and look for good and promising ideas. Thus, FWS appear to facilitate CH by increasing the visibility of key figures and lowering the threshold of approaching them on the workspace. Employees feel more comfortable in doing so as they can providently gauge the impact of an idea, have a better knowledge of the key figures and can thereby align their CH approach to the respective key figure in order to increase the chances of successfully creating support for an idea. Furthermore, by allowing for more incidental contact without the need for formally scheduling appointments, employees are more likely and willing to actively engage in CH. Therefore, the following proposition is formulated:

**Proposition 10:** Flexible workspaces facilitate employees in championing ideas through providing an environment in which they are more likely and better able to approach and enthuse key figures with promising ideas. Furthermore, key figures themselves are more accessible and better able to identify promising ideas themselves. Thereby, flexible workspaces are positively related to IWB by better enabling employees to successfully engage in championing and making key figures more receptive.

While having strong positive effects on all three previous phases of IWB, none of the respondents perceived any effects of FWS on APP.

#### **4.2.2 Negative Effects of Flexible Workspaces on IWB**

Aside from the many positive effects of FWS, the interviews also revealed that FWS can potentially have some negative consequences as well. However, it was striking that only two respondents from the insurance company perceived FWS to negatively affect OE and IG. First, InsurEmp3 said that, after switching from fixed to flexible workspaces, he felt less solidarity towards his company and his colleagues.

*"When I think back to the times where there were no flexible workspaces, then there was a more family-like atmosphere, yes, and I am really longing back for that. (...) Then you are a company together. Then you are together, everything you do, you do it for each other, you do it for the company, you do it to make it go well and because you have a stake in it. That is nice and you share all day long with each other. Now it is like: What am I doing this for?"*

*- InsurEmp3*

The reasons for him were that he experienced less chances to really engage in in-depth communication and that he perceived the group cohesion to be negatively affected by the increased spatial separation and the lower frequency of contact. He perceived this to be detrimental for his OE and IG as communication got more superficial and he was generally less willing to invest time and effort in communicating at all. The reason was that he perceived his efforts to often be in vein as relation building was impossible due to the ever changing colleagues in his direct vicinity.

*"I also experienced it that I saw someone sitting there, that I introduced myself and then you have a small conversation about what I do, what he does, and then you find out that he wasn't sitting there in the afternoon and never again. (...) That happened somewhat more often and at some point I thought: I am not going to do this anymore. (...) It takes me way too much energy so I take a step back."*

*- InsurEmp3*

Second, another potentially negative effect of FWS on OE and IG was voiced by InsurMan1. He indicated that the unavailability of a fixed workspace can potentially have negative effects on an employee's ability to deliberately share knowledge or engage in groups-processes such as sparring and exchanging ideas.

*"If, for example, there is a block where everybody is sitting and you want to share knowledge but you are late and the block is already occupied. Then you need to walk a bit further and go sit at the bar. Then you have just as much contact as if you were sitting at home. (...) Back then, you worked 40 hours and you always sat together. Now you work 40 or 36 or 20 hours on different places. So you really see each other less frequently."*

*InsurMan1*

Therefore, the downside of the fact that FWS can increase interdepartmental contact might be that, within departments, contact among direct colleagues might be lower as employees are not always at the same spots and workspaces in the vicinity of colleagues might not always be available. Based on the above argumentation, the following proposition is formulated:

**Proposition 11:** Flexible workspaces can decrease the group cohesion, impede in-depth communication and hinder knowledge sharing through increasing the spatial separation between employees and decreasing the frequency of regular contact. As this reduces an employees' access to information and inspiration from the environment, flexible workspaces can be negatively related to IWB by impeding an employee's ability to engage in opportunity exploration and idea generation.

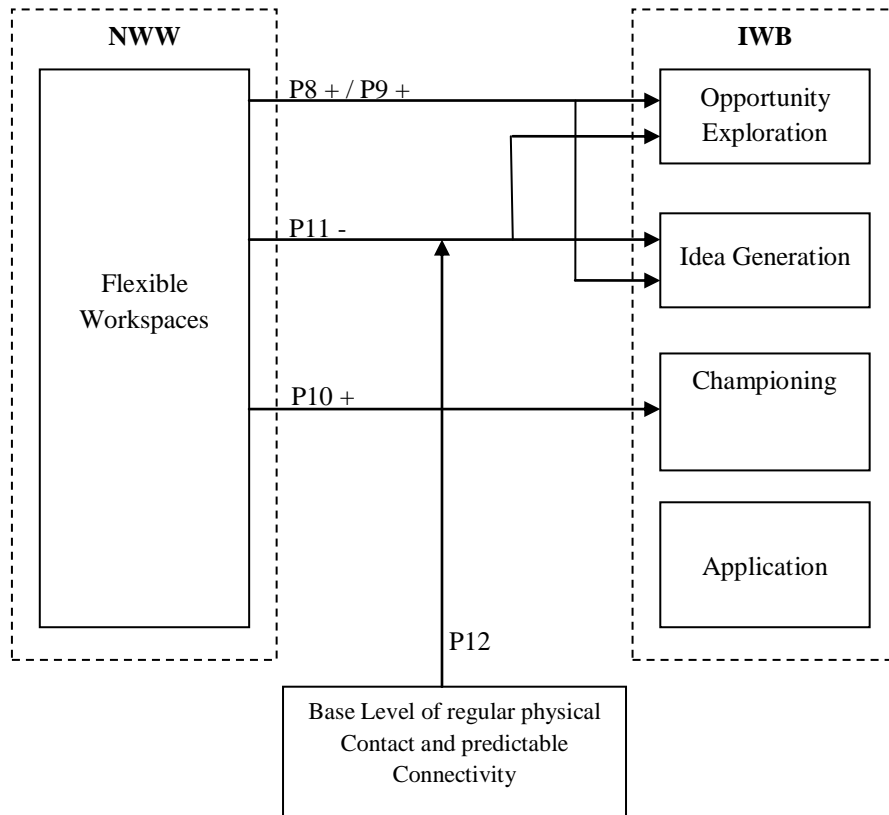
An interesting notion on this argumentation is that, although only voiced by a minority or the respondents, this finding potentially reveals an important boundary condition of FWS. In order for employees to be able to share knowledge with their direct colleagues and to not disengage from relation-building, it appears that, just as with TW, a base level of regular physical contact and predictable connectivity is required at least on department- or team-level to prevent the potential negative effects of FWS on IWB. This leads to the postulation of the following proposition:

**Proposition 12:** In order for flexible workspaces to not negatively affect IWB, a base level of regular physical contact and predictable connectivity is required. Otherwise, flexible workspaces will, through causing superficial communication, weaker inter-employee relations and the inability to deliberately engage in knowledge sharing, negatively affect the employees' ability to engage in opportunity exploration and idea generation.

But besides these potentially negative effects on OE and IG, according to all respondents, FWS did not have any negative effects on neither CH nor APP.

### 4.2.3 Consistency of and closing Remarks on the Results of Flexible Workspaces

Having examined the findings concerning FWS, it is remarkable that overall a very positive image was experienced by the majority of the respondents. The proposed influence of FWS on IWB is presented in figure 2, which integrates propositions 8 - 12.



**Figure 2.** The proposed influence of Flexible Workspaces on IWB \*

With regard to the consistency of the answers of all respondents, it appears that, with regard to the perception of the positive effects of FWS on IWB, no striking differences between managers and employees or any other cohorts were found.

\* As the propositions that are developed in this study are based on qualitative data, the arrows in the conceptual model do not depict statistical correlations but represent the signs and directions of the proposed influences of NWW on IWB.

### 4.3 Flexible Working Hours

Flexible working hours, in general, were found to primarily exert a positive influence on IWB. The findings indicate that FWH especially contribute to the OE, IG and CH phases, while its influence on APP is very weak. Negative effects were only sparsely voiced.

#### 4.3.1 Positive Effects of Flexible Working Hours on IWB

When looking at the positive effects of FWH on IWB, it is striking that they primarily affect the mindset and mental condition of the employees. The respondents quite consistently indicated that the positive effects especially relate to the ability to plan their working times according to personal preferences which allows for a better work-life balance and ultimately makes employees feel better and more energetic. According to the respondents, the freedom of having a say in determining their own working times and thereby being able to combine their private with their work-life and engage in innovative tasks when they feel ready for e.g. deliberately thinking about a problem or, if opportunities or ideas appear, to reschedule one's other tasks and immediately think the opportunity idea through, creates energy and better circumstances to successfully engage in IWB.

Concerning the positive effects of FWH, it again appears that the effects on OE and IG are closely intertwined. Respondents indicated that by being able to plan the timing of their tasks as they see fit, they deliberately choose the time at which they feel best for the respective task, which not only increases the likelihood that they actually do so but also positively affects the quality of their OE and IG.

*"...by being flexible with regard to your working hours, you can plan your tasks in such a way that they can be realized in the concerted time. But furthermore, you can also see how to approach the improvement potential, to spend time for it. I think that this really helps as opposed to being from 9 to 5 at the office, that you can play a little with it.(...) You function the best at the moments in which you are ready for it, your mind is empty and you can focus. Whereas, when you kind of thought: I just don't really feel like it... you know? Then you end up not doing anything this day, while, if you had stayed an hour longer in your bed, it might have just worked out well."*

*- InsurEmp2*

Furthermore, FWH were said to significantly increase the feeling of perceived freedom, which gives employees a more open and flexible mind and thereby positively influences OE and especially IG.

*"...by being able to more freely divide your time, you are not restricted to have your ideas in a certain period, it can be much broader and, through the flexibility, you can accomplish a lot more."*

*- InsurEmp1*

*"...working at the times when it suits you can make you more creative."*

*- MunMan2*

It appeared that the flexibility especially empowers employees to engage in innovative activities when they felt like it or, the other way around, they can spontaneously make time whenever they spot improvement opportunities or when they feel able to generate innovative ideas for known problems.

*"...if you need to be creative on command it won't work. So you are not creative on command. You are creative at the moment at which you have an idea. And that idea, you cannot say I have to develop ideas tomorrow at 12 o'clock. So making use of the time and the freedom gives more possibilities."*

*- MunMan2*

Furthermore, FWH were often perceived to improve the physical and mental conditions of an employee, making them more energetic, more relaxed and enable them to better focus. This, in combination with the perceived freedom and the ability to determine the timing of engaging in innovative activities themselves, was experienced to have a beneficial effect on OE and IG by giving employees a mindset in which they are more likely to think freely. Besides enabling an employee to better engage in OE and IG, the combination of the abovementioned effects was also said to positively affect an employee's willingness to actually engage in OE and IG.

*"Yes, also because people now are doing certain things in the evening, they perceive less pressure from the organization. And what I notice is that the more pressure (...) is applied by the organization, the less improvement ideas are coming in. So people need to*



*experience a certain freedom and ease of mind to be able to think about improvement ideas. When I tell you, tomorrow between 9 and 9.30 you are going to work on improvement ideas (...) it is not going to work"*

*- InsurMan2*

Finally, the availability of FWH was said to increase an employee's willingness to exert IWB as a way of giving back to the organization for being granted the freedom.

*"... by having the flexibility in time, if you have the freedom to choose your own moment, if you are not good at doing something at 10 in the morning, then you must not schedule this for 10 in the morning. So, employees who have the flexibility, they do not find it bad to finish something on Friday night or Thursday night or to follow through with an idea that they just had. So they give back."*

*- MunMan1*

Thus, FWH were found to be perceived as far reaching freedom as employees are facilitated in choosing the time at which they feel best for the respective task. Thereby, they can engage in IWB when they feel ready for it or can immediately and spontaneously commit to innovative behaviors whenever they identify improvement potential or are struck by an idea. Furthermore, this freedom was perceived to lead to a more open and flexible mind, make employees more energetic and more willing and able to actually engage in OE and IG. Based on these findings, the following proposition is formulated:

**Proposition 13:** Flexible working hours allow employees to plan the timing of their tasks and thereby to engage in innovative behaviors at the moments in which they feel best for it. Through this freedom, employees develop a better and more open mindset to identify problems, think about ideas and it furthermore allows them to deliberately make time whenever they spot improvement potential or when they feel able to generate improvement ideas. Thereby, flexible working hours are positively related to IWB by increasing an employee's ability to engage in opportunity exploration and idea generation.

The positive effects of FWH on CH were perceived to originate primarily from the increased energy that employees get from being able to determine themselves their work schedule that most perfectly fits both their professional and their private obligations. It was indicated that

employees who feel more energetic are more likely to engage in the championing of promising ideas and convey their enthusiasm and their energy.

*"When being enthusiastic yourself, you can convey it."*

*- InsurEmp2*

Furthermore, in combination with being more energetic, the findings indicate that employees who perceive freedom in determining their working hours are more motivated and willing to share promising ideas and exert more energy in distributing them throughout the organization.

*"I am just more motivated. Motivated, like, GO, I have the privileges. I have them all and I hear from others, they really sit in strait-jackets in their work and they have to obey all kinds of things. Yes, I am then more willing to do more, exert more energy. (...) When I have the freedom which gives me the tranquility to work in a relaxed way, then I am much more willing to do it this way [he refers to the question and means "making colleagues enthusiast about promising ideas"]."*

*- InsurEmp3*

Positive effects of FWH on APP, finally, were not perceived as being direct. Rather, employees indicated that, by being more facilitated and supported by the organization in combining their work- and their private-life and by getting a voice in aligning their work schedule to match their personal preferences, they feel more energetic, more positive and ultimately are more inclined to give back to the organization in the form of driving the realization of promising ideas.

*"You decide when to be busy and when not (...) which enables you to create a better balance in your private-work situation. That is a very important aspect, I think that this alone already gives you more positivity and gives you more energy and that everything just goes a little easier. Let's be honest, then you finish things way more easily, pick up things way more quickly."*

*- InsurEmp2*

*"Absolutely. At least, because I get the freedom, that is just very pleasant, so you follow through on it [driving the implementation of an idea]. So I feel like that I am being facilitated in this.(...) To exert extra efforts at other moments in time."*

*- MunEmp1*

Therefore, the following proposition is formulated:

**Proposition 14:** Flexible working hours provide employees with the freedom to improve their work-life balance which makes them more energetic, motivated and willing to exert energy in creating support for ideas and, through making them more inclined to give back to the organization, driving the application of promising ideas. Thereby, flexible working hours are positively related to IWB by making employees more likely to engage in the championing and application of promising ideas.

#### 4.3.2 Negative Effects of Flexible Working Hours on IWB

Concerning the negative effects of FWH on IWB, the interviews revealed that such downsides of FWH were only very sparsely indicated. Some respondents perceived FWH to involve the danger of isolation from certain groups of employees as they are less frequently physically present at the same time which negatively affects the frequency of contact and the amount of colleagues with which they communicate.

Effects of FWH on the OE and the IG phases were again closely connected. In the first place, when all employees can more or less freely determine the timing of their work, it becomes less likely that they actually work simultaneously and meet each other on a regular and predictable basis.

*"That can sometimes be difficult because everyone works flexibly. That means that you have less moments with each other. (...) So you meet each other less frequently."*

*- InsurMan1*

Furthermore, the circumstances at which colleagues meet each other are less beneficial to actually engage in communication, knowledge sharing and e.g. discuss improvement potential or exchange input for generating ideas.

*"...when you are always working from 9 to 5 and your colleague works very flexibly, then you meet each other less frequently. (...) And the moments at which you can meet each other are much less the moments that suit you. That is most definitely a disadvantage."*

*- MunMan1*

Besides this leading to a decrease in physical contact, respondents also indicated to experience detrimental effects on the extent to which they engage in knowledge sharing (with

regard to improvement opportunities and ideas) and general communication. As the chance on miscommunication is perceived to be higher when digitally communicating (this effect will be elaborated upon in chapter 4.4), respondents said to be less motivated and less likely to share and communicate digitally, and that they preferred to communicate with colleagues who were physically present at the workspace.

*"This can be negative when people are always working outside of regular hours and do not meet each other. Knowledge sharing has, to an important extent, (...) to do with meeting each other. Text in a document or text in an e-mail always has different layers. And you can read a text but when I read it, maybe I read it differently than you. And at the moment you discuss it, you are looking for agreement: Do we agree on this? Do we mean the same? And you need the conversation for it. There is no text without interpretation."*

- MunMan2

All in all, based on the abovementioned findings, FWH were experienced to have a potentially negative impact on OE and IG as it comprises the danger of causing isolation among employees and impeding knowledge sharing and information flow. Therefore, this paper postulates the following proposition:

**Proposition 15:** Extensive and widespread use of flexible working hours can reduce the frequency of physical contact among colleagues and impede collective processes such as knowledge sharing and interactive sparring about improvement opportunities or potential ideas. Thereby, flexible workspaces can negatively influence IWB by decreasing the employees' ability to engage in opportunity exploration and idea generation.

Similar to the effects on OE and IG, FWH can have negative effects on CH for almost the same reasoning. As FWH can increase the isolation, make information sharing less speedy and requires more effort to actually convey the message via digital means of communication, it can negatively affect the likelihood with which employees engage in CH.

*"It can be an impediment when you cannot [physically] reach your colleagues. Because then it requires more time to do so [digitally] and this causes delays."*

- InsurEmpl

*"...because it is especially due to the flexibility that you run the risk of not meeting these [key figures]. Flexible time means that you can individually plan your working schedule. If you do this really individually then you don't know if you can meet the key figures."*

*- MunMan2*

As the threshold of approaching colleagues digitally was said to be higher (see chapter 4.4), respondents indicated to be more likely to actually communicate with colleagues who are physically present.

*"... you are more likely to, imagine you are working in a team, you will then be more likely to approach the colleague who is working at that moment, and then you are going to share with this one. So, A is not present, then we go to B. If B is not present, we go to C."*

*InsurEmp1*

It is this preference for communicating face to face with colleagues who are physically present, which causes the isolation of employees who extensively use FWH. Therefore, CH in a work environment in which FWH were extensively used, was said to be more planned and cannot be relied upon to be possible all the time. Employees indicated to prefer face to face CH and therefore to be less likely to engage in CH when they cannot physically meet key figures or colleagues. Therefore, successful CH becomes more difficult and requires greater alignment which ultimately decreases the likelihood that employees engage in CH when they do not have regular and predictable contact with colleagues and key figures. This leads to the following proposition:

**Proposition 16:** Extensive and widespread use of flexible working hours can reduce the frequency of physical contact among colleagues and thus, as employees prefer face to face communication to convey emotions, decrease the likelihood of actively promoting promising ideas to colleagues or supervisors. Thereby, flexible working hours can negatively affect IWB by decreasing the employees willingness to engage in championing.

Finally, in the case of FWH, no negative effects were perceived on APP.

### 4.3.3 Consistency of and closing Remarks on the Results of Flexible Working Hours

Similar to the findings concerning negative effects of TW and FWS on IWB, the respondents again indicated to be aware of the danger of especially isolation and therefore to take measures such as planning their working times in consultation with colleagues to prevent negative effects from occurring. So while FWH have the potential to negatively affect IWB by contributing to an increased isolation, it appeared probable that, as long as employees have the freedom and influence to plan their flexible working hours themselves, negative effects are likely to be prevented.

*"...I am aware of the fact that key figures also have flexible schedules and they are present at certain times and not at other times. I make sure that I am present then. If I do not do this, then it is disadvantageous for the innovative possibilities that I have."*

*- InsurMan1*

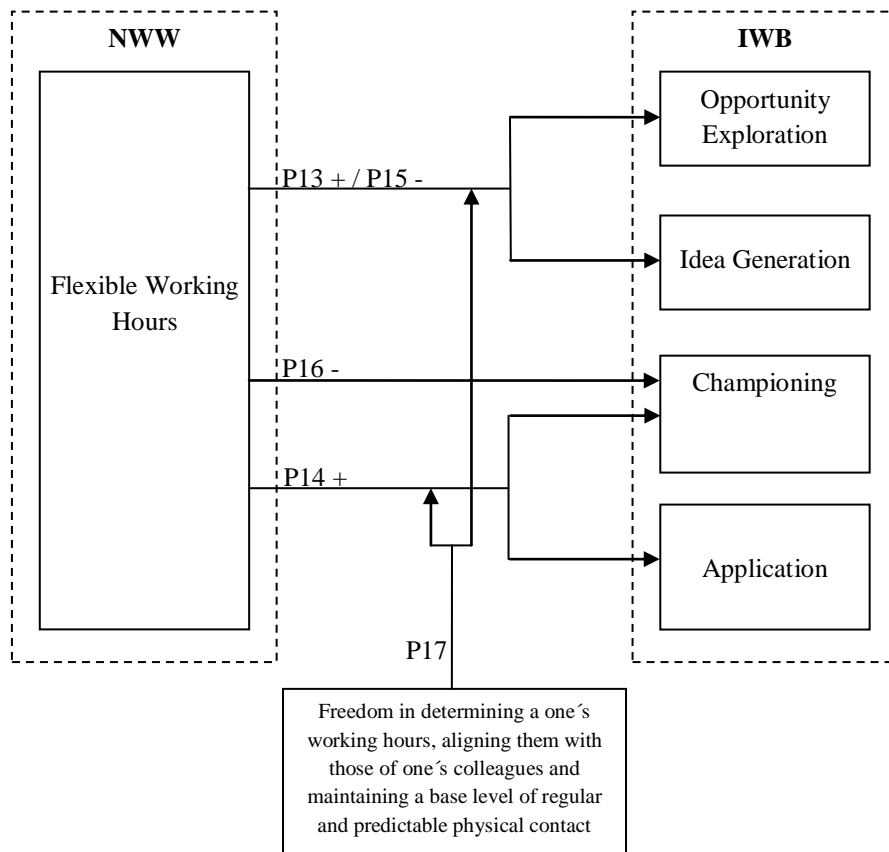
*"No, because I think that the people who are looking for flexibility, they are often quite aware that they need to take an extra step themselves."*

*- MunMan1*

In the light of this finding, the following proposition is formulated:

**Proposition 17:** The positive effects of flexible working hours on IWB can only be fully realized if employees have the freedom and autonomy to determine their working hours themselves, can align them with those of their colleagues and maintain a base level of regular and predictable physical contact. Otherwise, the positive effects will be weakened and can even become negative if flexible working hours are used to an extent at which they cause isolation.

Figure 3 integrates propositions 13 - 17 and depicts the proposed influence of teleworking on IWB.



**Figure 3.** The proposed influence of Flexible Working Hours on IWB \*

Interestingly, besides the positive and negative effects of FWH, a further remarkable finding was that one respondent said to perceive FWH as an important precondition for exerting IWB. He stated that without the company doing its best to facilitate him in combining his private- and his work-life by offering flexible working hours, he was not willing to give back in the form of looking for improvement opportunities, generating ideas or creating support for promising ideas.

*"He [the respondent is talking about his manager] just acted difficult and then I am quite quickly done with it... (...) Then you might see improvement potential but you think \*\*\*\*\*; because last week I wanted to pick up my child and you did difficult about it. So look for it yourself, I am not doing it anymore."*

- CallEmp2

\* As the propositions that are developed in this study are based on qualitative data, the arrows in the conceptual model do not depict statistical correlations but represent the signs and directions of the proposed influences of NWW on IWB.

When comparing the perceptions of the respondents, no large differences were found between any of the different cohorts. However, it was striking that employees, as opposed to managers, generally were more positive about the effects of FWH. Managers generally did not perceive the effects of FWH on OE and IG as strong as the employees and they did not perceive any effects of FWH on CH. However, no contradictory answers were given. Another notable impression was that the role of FWH as precondition for exerting IWB was only voiced by an employee who can, due to the primarily administrative nature of his work, rather be classified as a white collar worker. In this sample, no knowledge worker indicated to not engage in IWB without being given the freedom of FWH.

#### **4.4 ICT Support**

ICT support, in general, was found to have the potential to both positively and negatively influence IWB. It primarily affected OE and IG, while it also exerted an influence on CH and, to a lesser extent, to APP.

##### **4.4.1 Positive Effects of ICT support on IWB**

Concerning the positive effects of ICT, the findings indicate that ICT support primarily affects the availability of information and the extent to which employees can digitally engage in interactive communication to consult and brainstorm with each other.

The positive effects of ICT support on OE and IG that were voiced were, again, closely connected. In the first place, ICT support was experienced as indirectly beneficial for OE and IG because it enables employees to make use of the other NWW practices (i.e. TW, FWS and FWH). Therefore, respondents said to value ICT as they can thereby reap the benefits as elaborated on in chapters 4.1 to 4.3, as e.g. teleworking would not be possible without the connectivity supported by ICT.

Secondly, ICT support was voiced to positively influence OE and IG directly as it provides an easy and speedy way of communicating with colleagues and initiating teamwork or groups processes. Respondents indicated to thereby be more inclined to consult colleagues.

*"You can more easily spar with somebody. (...) Because these possibilities are there, it works better to create new ideas. (...) It is more difficult than when you are sitting together with your team but as the technology is steadily becoming better, the lines are shortening as well."*

*- InsurEmp1*



*"You can very quickly get information from someone."*

*- InsurEmp3*

*"It really accelerates the process because you can very quickly look at things together. So in this sense; it has added value."*

*- MunMan2*

Therefore, respondents indicated to feel a lower threshold to contact colleagues, ask questions and actually share more information as doing so required only little effort. Interestingly, however, ICT support was primarily used as a preparatory means and the actual contact would then be preferably face to face.

*"I get quite some questions this way because the threshold is often a bit lower to just ask a questions in between this way. So when they don't know where you are, then they do it via the chat: Where are you, can I stop by? (...) This way you can check, do I disturb at the moment and can I stop by, yes or no? So that can decrease the threshold."*

*- InsurEmp1*

Another way in which ICT can actively lower the threshold of approaching colleagues, was that software applications such as Lync, which was referred to as "presence software" by MunEmp1, can provide real-time information on the location, the activities and the schedules of colleagues and supervisors. Thereby, respondents indicated to feel more comfortable in making contact with their colleagues and supervisors because the chance of disturbing them or calling at moments that do not suit them well were significantly lower. Furthermore, the package of ICT support then enabled them to choose the means of communication (e.g. telephone, e-mail or a chat-function) that best fits the respective situation.

*"I have a question - a small question - then I do it via the chat. A more exhaustive question goes via the mail. And if I want to ask more questions I use the video. It is just, what is easiest [for the respective situation] and then, which means of communication do I choose."*

*- InsurEmp1*

Thus, based on these findings, the following proposition is formulated:

**Proposition 18:** ICT support, through being an easy and speedy way of communication that fits a broad range of situations and by providing real time information on the location and availability of colleagues, stimulates collaboration, lowers the thresholds and makes employees more comfortable to share knowledge and engage in interactive processes with their peers. Thereby, ICT is positively related to IWB by increasing the ability of employees to engage in opportunity exploration and idea generation.

As employees feel to have a more speedy and low-threshold way of communicating, they indicated that ICT support, generally, leads to an increase in communication, facilitates engaging in interdepartmental and interdisciplinary communication and potentially gives access to a larger intra-organizational network. It is this facilitation of communication that was perceived as beneficial for OE and IG.

*"It really helps with communication. In order to decrease the distance. (...) Good contact helps innovation."*

*- InsurMan1*

*"You can more easily spar with somebody. (...) Because these possibilities are there, it works better to create new ideas. (...) It is more difficult than when you are sitting together with your team but as the technology is steadily becoming better, the lines are shortening as well."*

*- InsurEmp1*

This increase in communication and the ease with which information is available, again, makes it possible to get in touch with more and a greater variation of colleagues and allows for more easy interdepartmental and interdisciplinary contact. This was perceived to lead to an increase in groups-processes such as collegial consultation, brainstorming and, especially beneficial, snowball effects in which an idea becomes known and is further refined by those employees who hear from it, happen to be inspired by it and further improve or align the idea. Furthermore, ICT allows the selective sharing of information and ideas with only a certain group of employees and thereby provides an effective means of coping with the increasing danger of information overload.

" [You can reach] *Everybody! You can also forward it to a group, let's say, only support or only consultants or only for sales. But if you put it in the whole organization, everybody will see it. (...) Because that's how we inspire people who think: Hey, this is nice but I also have an idea on this!* [So it is the collective process, someone spots some potential and others are going to spar and brainstorm about it]. *For example, some get 100 reactions. "*

- *SoftMan1*

"*When someone launches an idea and that is put on the intranet, then it is possible that someone says: That's nice but you can just [makes gesture that indicates that the idea is further improved and refined]."*

- *SoftMan1*

"*...we have groups-mails and groups-apps, so you can always ask each other for feedback. So you can just forward something, solicited or unsolicited, and the documents that go to the mayor or the alderman, they are on a special sort of sharepoint and there you can ask for collegial feedback (...) and people can react on that. "*

- *MunMan2*

"*Evernote really is a program which we find to contribute to the project I am currently working on, to use it to share information and also make ideas available to each other so that someone else can go further with it."*

- *MunMan1*

Through the increased access to information, respondents said that their knowledge of the overall situation of their company, its processes and its products was increasing and that they felt more up to date with the most recent developments and issues that their organization is facing.

"*...that piece of communication, (...) that you are involved, that you know what is going on there, that you are up to date with what is happening at the moment (...)."*

- *SoftEmp1*

This, in turn, positively affected the employees' ability to successfully engage in OE and IG as they have greater access to more information and thus have more input for both phases at their disposal.

*"...were we really just place all our ideas, everything we encounter, articles, (...) links, books, we place all this on the sharepoint so there it is, and it doesn't matter where I am, I can access it from everywhere. And I can also always access the ideas of someone else. So really a lot is being shared there. "*

*- MunMan1*

*"...because the sharepoints are open, you have access to all the pieces. So, you can also see from each other, although you might not even be directly involved, what the others are busy with. So you can get more knowledge. Back in the days, everybody had all the information on their own PC. [Now] this is a kind of open space where everyone within a team can see what someone else has done. So you can basically search unlimitedly."*

*- MunMan2*

Finally, the greater and easier access to information enables employees to see and hear more, get more inspiration and input from their environment and look from different perspectives at their work. This was ultimately perceived to lead to a significantly better input for both OE and IG.

*"...what is nice about it, is that everybody comes up with something new. So, one time it's me to come up with something new and subsequently it is my colleague, who is today sitting over there [meaning another location] and he thinks: Hey, this is useful, that is nice, I am also going to try that. And then others will react on that, too"*

*- MunEmpl*

Thus, it appears that ICT support can enhance the intra-organizational network of employees by stimulating interdepartmental and interdisciplinary communication and collaboration. The increased access to more diverse information provides employees with a better overall knowledge about their organization, its products, processes and important recent developments. This increased knowledge, in combination with the intensified interdisciplinary communication, provides individual employees with better input for OE and IG and furthermore leads to a collective snowball-effect of identifying opportunities and refining ideas. This leads to the following proposition:

**Proposition 19:** ICT support, through increasing interdisciplinary communication and collaboration, provides employees with better and more up-to-date knowledge of their company and facilitates a snowball-effect of collectively identifying improvement potential and refining and developing ideas. Thereby, ICT support is positively related to IWB by enhancing both the individual and the collective ability of employees to engage in opportunity exploration and idea generation.

With regard to the positive effects of ICT support on CH, it was perceived to have a positive impact as it provides a quick and easy way of sharing information with colleagues who are not physically present. As it requires less effort to reach peers and key figures without having to really disrupt one's workflow, employees can quickly and tentatively share and forward information and ideas.

*"It is being made much more easy, you put it forward much more easily."*

*- CallEmp1*

*"I think that through the digital communication, you are more likely to forward something than without it. (...) You can just do it in between while you continue with your work. And you can give it a continuation later on, but then it has already been made known or you have triggered something."*

*- InsurEmp3*

Respondents also indicated that ICT support, as in the case for its effects on OE and IG, can positively influence CH by actively lowering the threshold of approaching colleagues as software applications such as Lync provide real-time information on the location, the activities and the schedules of their colleagues. Thereby, respondents felt more comfortable to actually forward ideas to colleagues or key figures as they were able to choose a moment to contact them in which the sender can be confident not to disturb the receiver. Furthermore, it appears that employees feel more confident to engage in CH as they can choose the channel that best fits the respective situation.

*"What is nice about Lync is that you can see where he [e.g. a colleague or a key figure] is. So that is presence-software. So with Lync you can see, is he in the building? Is he at home? Is he available? And that is an advantage. (...) If I (...) want to call the director, I can call him but it is quite possible that he is in an important meeting. What is nice about*

*Lync is that you can indicate what your status is. The beauty of ICT is that I can approach them in different ways. If he is available then I can use Facetime. If you see someone is in a meeting then you write an email. If someone is at the office, 5 booths further, then you just walk there."*

*- MunEmpl*

Based on these findings, the following proposition is postulated:

**Proposition 20:** By allowing employees to quickly and easily communicate and by providing information on the availability and activities of the recipient, ICT support stimulates the sharing and forwarding of information. The threshold of approaching colleagues or supervisors is lower as employees can align their approach and the means of communication to the respective situation of the recipient. Thereby, ICT support is positively related to IWB by increasing the ability and the probability of employees engaging in the championing of promising ideas.

Furthermore, respondents feel that ICT support can positively influence CH as it provides the individual employee with a greater potential audience. This, however, is not done via email but via specialized platforms or forums such as Yammer.

*"...in it, you can, when you are busy with something or if you encounter anything new, then you can just place it there and everyone in the organization can see it. And you can react on it, you can like it, you can share it etc. That is also some kind of a flexible workspace, only in the cloud. (...) Whenever I encounter something of which I think, oh, my colleagues could benefit from this, then, in former times, I was able to tell this in the lounge at the coffee machine. Well, then I could reach one person. In Yammer, I can just type it in, comparable to Facebook or Twitter, and in one instance 1000 people can see it. Thereby I reach a lot more people."*

*- MunEmpl*

Another benefit of ICT support as voiced by MunEmpl is that special platforms such as Yammer can significantly increase the success of CH as they help in information selectively reaching the employees for whom it is relevant by stimulating a snowball-effect of information flow. Employees who encounter information or ideas via the platforms are said to forward the particular information to employees for whom they consider it relevant. Thereby, information, opportunities and ideas can more easily also surpass the functional boundaries,

be shared throughout departments and are more likely to be seen by a greater amount of employees.

*"...I use it to make things land in the organization. (...) What I could do is to put a piece, a blog or whatever on our intranet. Almost nobody is going to read that. But then I write a small piece, some 40 words, [put] this one on Yammer and a link that leads somewhere else. So that people are being triggered to go there. And the big advantage of this is that, when someone finds that interesting, then they can like it, and when they like it, their followers will also get to see it and so on."*

*- MunEmp1*

These findings lead to the following proposition:

**Proposition 21:** Through specialized social media platforms (e.g. Yammer), ICT support enables employees to reach a greater intra-organizational audience and selectively share information with those for whom certain information is deemed relevant. This facilitates an indirect snowball-effect in which information is being selectively forwarded throughout the whole organization and is more likely to be seen and recognized. Thereby, ICT support is positively related to IWB by increasing the ability and effectiveness of employees to successfully engage in championing.

Furthermore, the availability alone of such channels that are explicitly meant to share innovative ideas and forward improvement potential and ideas that were identified by employees, was also said to be perceived as making employees more aware of the importance of sharing such input. This, again, had beneficial effects on the extent to which employees engage in CH.

*"If there's a channel through which you can forward this [improvement potential and ideas] then you are going to look for things to forward. Or if you encounter something of which you think: Hey, I could forward this, then, of course, you make the connection and forward it. (...) [In the beginning it really] stimulated me a lot to constantly forward things. I was always very committed to my work and I always took it very seriously. And you of course want your company to run as well as possible. And then you want to optimize processes. So, via this channel, I was constantly busy with [communicating]: Boys, can't we improve this or do it better?"*

*- CallEmp2*

Furthermore, a positive effect of specialized ICT platforms that are deliberately designed for the sharing of information was voiced. It appeared that, as opposed to e-mail, platforms and forums can tremendously decrease the risk of information overload by allowing employees to selectively share information.

*"The difference between Yammer and mail is that with mail, it is not the intention to send a mail to 1000 people, everybody will find that annoying because your inbox will constantly be full. Yammer is really ideal, I can put something on it, those who are interested in it open it and, well, if you don't have any stake in it... it is just like Facebook or Twitter."*

*- MunEmp1*

Finally, as also voiced by MunEmp1, special platforms can furthermore help to make relevant information more visible for a longer time. This can make it more likely for it to reach the relevant employees.

*"We do have an intranet, and there is a newsfeed, you can put your news there and then the following message comes and then it starts sinking. If there are 6 news a day then it's gone. Then nobody will see it anymore."*

*- MunEmp1*

As opposed to traditional newsfeeds, in which information is chronologically displayed and, after a time, replaced by more recent information, specialized platforms such as Yammer can lead to a greater longevity of such information. This especially benefits the possibility of indirect information sharing and CH via "likes" and the selective sharing of information appeared to offer better potential of the opportunity or idea actually reaching the relevant person in the company. Therefore, in the light of these findings, the following proposition is formulated:

**Proposition 22:** The availability of specialized channels to share innovative ideas and information makes employees more aware of and willing to engage in creating support for innovative ideas. Furthermore, such specialized channels decrease the risk of information overload by allowing to selectively share information and increasing the visibility and longevity of shared information. Thereby, ICT support is positively related to IWB by increasing the willingness, ability and effectiveness of employees to engage in championing.



One respondent perceived ICT to also positively influence APP due to the increase in shared responsibility, increased feelings of solidarity and a higher visibility of what colleagues are currently busy with. Thus, rather than directly influencing the APP of individual employees, she perceives an indirect effect as the shared responsibility and higher visibility makes employees generally more aware of work that is done by others and that they feel a greater sense of responsibility towards such work of peers. Thereby, she says that employees are more likely to pick up things of others and exert energy in actually driving a successful implementation / finalization of the tasks at hand.

*"...that you are feeling more shared responsibility. So, as you see that someone is stagnating or is unable to proceed or has too much [work], then you see in the group: Can I help you? So, it's a lot more open, transparent, much more clearly visible what people are doing and how far this is. (...) There is a large Excel-overview with what everybody is currently doing, what's the status. Especially because the threshold to share everything is so low, there is much more openness and also on where you are stuck with."*

*- MunMan1*

While this also relates to general work related tasks, she clearly affirmed that this applies to the extent to which employees exert energy in the realization of innovative ideas.

#### **4.4.2 Negative Effects of ICT Support on IWB**

With regard to negative effects of ICT support, it is striking that they only relate to ICT in its use as a communication tool. No negative effects of platforms such as Yammer were voiced in the interviews. In its use as a communication tool, ICT support was primarily perceived as negative because of its effects on the respondents' abilities to digitally engage in interactive communication and convey and instill emotions.

Concerning negative effects of ICT support on OE and IG, it was stated that digital communication, in any form, was perceived to, as opposed to face to face communication, be exclusively used for businesswise communication. Conversations via ICT support are scheduled, planned and have a predetermined, business-related agenda.

*"You are not going to intimately talk about your vacation via these [any digital channel, both with or without video]. (...) You only get this when sitting together at the department."*

*- InsurEmp1*

Therefore, digital communication leaves very little room to explore opportunities or expatiate upon ideas and engage in wide and creative group processes such as sparring and brainstorming. Due to this detrimental effect on communication and decreased extensiveness of discussions, the findings indicate that less interaction takes place among digitally communicating employees. This, again, negatively affects OE and IG as the chance on a snowball-effect of idea refinement is lower, less information exchange takes place and employees receive less inspiration and input for both the OE and IG phases.

*"..when you are working with Skype or Lync, then the meetings are often kept as short as possible (...) due to which you, in my opinion, get much less of a dialogue than when you are sitting face to face. (...) People are expatiating more [when communicating face to face]. Often, you also have more time. A Lync meeting or a Skype meeting often is only about 15 or 30 minutes. So, you have to finish your agenda in a limited period, you must have discussed your topics. And a [face to face] meeting (...) often is an hour."*

*- InsurMan2*

*"Because especially by discussing something with each other, you are forced to think about it and you think differently. (...) I think: Why? What's the added value of this? - Whereas, when you are just reading it [via ICT], well..., will be ok... [indicates that he just accepts what he reads] This is way more active when you sit facing someone than reading a piece of paper. You just accept it and maybe you might want to make a comment about something, you know, but I think that face to face just works better with certain things. And I think that this is never going to change."*

*- InsurEmp2*

This lack of room for broader communication was also perceived to limit the extent to which incidental or relational conversations evolve.

*"I even had it this morning, I had a meeting with my boss. About stocks. Now, Lync, the audio did not work so I had the telephone in the hand and I saw him and he saw me."*

[Describes a situation in which only business related, to-the-point exchange of information took place] *And done. God, - How was your weekend?!?"*

*- InsurMan2*

InsurMan1 considered this strictness of communication and its limit to business-related, to-the-point conversations also as negative because, according to him, many ideas evolve not necessarily in the planned meeting but in the incidental occasions outside of the boundaries of a business meeting.

*"You also react on people off screen. That's more real. Cup of coffee with it. And after the meeting is finished, you walk somewhere together. Just as with football, that you often score in the extra-time, often it's just like that in a conversation."*

*- InsurMan1*

Another remark, made by InsurMan1 and InsurMan2, stated that too extensive reliance on ICT support to compensate for the isolation of TW, FWS and FWH would not work because, while ICT does allow for communication, it does not allow for relation building which they consider a vital precondition of engaging in creative in-depth communication and discussion.

*"When you make a connection, a relation, (...) people are then much more inclined to spar with you. The threshold is getting lower. Then I can always more easily ask: Yo, we've been doing it this way for 100 years, have you ever thought about doing things differently? And how would that be possible? - Try this via Lync! (...) It won't work. I am still an advocate of meeting each other physically on a frequent basis."*

*- InsurMan2*

*"They [people who communicate primarily face to face] reveal more (...). Not only the formal point of view that they tell everybody. They also tell: I believe in this and in that (...). There is more going on. (...) [Their relation] is more real. That you are a team and that you are more willing and better understand each other."*

*- InsurMan1*

Thus, as digital communication is experienced to be characterized by being very goal-directed and leaving little room for actual creative interaction and relation-building, the following proposition is formulated:

**Proposition 23:** As digital communication is planned, scheduled and has a pre-determined business-related agenda, it does not allow for relation-building and impedes interactive processes such as expatiating on opportunities and ideas or brainstorming and sparring. Thereby, ICT support can be negatively related to IWB as it impedes the ability to individually and collectively engage in opportunity exploration and idea generation.

Furthermore, as a downside of the ease and speed with which information can be digitally shared, the respondents perceived ICT support to often lead to an information overload. By receiving not only relevant and helpful information, it was said that it was much more difficult to filter and process relevant input and that ultimately a lot of information is lost and remains unused if not specifically searched for by the employees themselves.

*"...you get an overkill of information. And I think: Oh yes, I need to also read that but you never ever read it. Because you just don't know anymore where you ever saw or found it. And it really goes wrong there."*

*- InsurEmp2*

*"It is quite a lot what is on there [Evernote]. The project has been running for 1.5 years now, so there really is a lot on it, you really need to search well if you want to find anything. So it's more of a receptacle of ideas and the central themes towards the products,... I just think about myself, am not sifting through it every day."*

*- MunMan1*

Accordingly, this leads to the following proposition:

**Proposition 24:** In the absence of specific mechanisms to facilitate the sharing and identification of relevant knowledge that is digitally available, the positive effects of ICT support cannot be fully realized.

Considering the negative effects of ICT support on CH, the findings indicate that the respondents found it particularly more difficult to successfully engage in CH via digital means of communication. The reasons that were stated were that, although it was perceived as easier and speedier to communicate and share information, the respondents felt to not be able to fully convey their message and instill emotions as the digital channels were less rich than face to face communication.

*"Mail and these kinds of things are quite flat. You know, it's quite hard to convey enthusiasm, to enthuse someone with it. (...) I think that this is a big one, things very often go wrong there. You need to watch out for that. And especially when you focus on that, you can read it like this, you can read it like that, then you need to keep it neutral, you know? Then try to enthuse someone... So it is more boring to read a story. Most of the time that won't work and I try to get in contact with each other, look into each other's eyes. And just have a talk."*

*- InsurEmp2*

Furthermore, it was striking that most of the respondents did not perceive videoconferencing applications (or similar software that allows for using video in addition to sound) as sufficient substitutes for face to face contact.

*"...the passion, how you get something across, face to face works better. Via videoconferencing, it is better than via the telephone but you still miss a small bit. If you really want to carry somebody off with a plan or an idea, then you need to go and sit with them in a booth."*

*- InsurEmp1*

Furthermore, the fact that digital communication was said to be exclusively used for businesswise communication was perceived to have a negative effect on CH. As conversations are scheduled, planned and predetermined, they do not leave room for a true dialogue in which emotions can be deeply discussed. Aside from its detrimental effect on OE and IG, this fact negatively influenced CH as respondents perceived it to be more difficult to successfully convey emotions, instill enthusiasm and create support for the idea.

*"...the soft side of it, the soft skills, enthusing again, you do not achieve that [via digital communication]."*

*- InsurMan2*

*"...if you see each other, especially in a conversation, then you can more easily enthuse each other than digitally. Especially on paper and via mail and these kinds of things. Because it always comes across differently."*

*- InsurEmp2*

Furthermore, InsurMan2 indicated that the "straight-to-the-point nature" of digital communication can negatively affect the likelihood of an employee actually engaging in digital CH. He stated that, when communicating digitally, employees cannot tentatively share or propose ideas as, due to the temporal constraints, ideas had to be really worked out well beforehand and that this created a higher threshold to share as it required more work to share and discuss improvement ideas. Other respondents supported the impression that ideas, therefore, had to be perceived as generally more important in order to be felt worth the effort of digitally championing it.

*"[The threshold via ICT is higher] Because it often has to be good at once. (...). It is planned, it is time-logged, so it has to be good immediately. Hey, I have an improvement idea and... [makes gestures that indicate that it has to be kept tightly and to the point]. No, that is different when sitting at a table with a coffee next to you."*

*- InsurMan2*

As a consequence of the lower richness of the digital communication channels, ICT support was said to have a negative impact on engaging in CH as it was experienced that, when digitally communicating an idea or the like, the chance on miscommunication was significantly higher.

*"Because communicating on paper or via e-mail instead of face to face now and then goes wrong. (...) It happens frequently that we have tremendous discussions via e-mail and then it derails. So someone types something, his perception, and someone else reads it and reads something else than if you sit next to each other, then you can communicate, then it goes better, more quickly."*

*- MunEmp1*

*"Because, if you type something, whether it is an e-mail or that it's via Lync, I don't know how it arrives at the other person. I don't know if you have gotten into a fight with your girlfriend about SMSs like: God, I perceive it as if you are terribly rough and that you are angry and you say I am not at all angry, I don't get what you mean."*

*SoftEmp1*

The combination of the reasons stated above resulted in lower expectations of successfully creating support and enthusiasm for a certain idea and therefore decreased an employee's

willingness to actually engage in digital CH. Respondents indicated to, for this reason, be less likely to especially CH smaller ideas and that ideas, in general, need to be perceived as more urgent or important to be forwarded via digital means.

**Proposition 25:** Due to the lower richness of digital channels and the business-wise character of digital communication, employees cannot tentatively share or promote ideas and are discouraged by the higher chance on miscommunication as this necessitates more energy to be spent on successfully conveying a digital message. Thereby, ICT support can be negatively related to IWB as especially small and incremental ideas are likely to be disregarded and employees are generally less likely and willing to digitally engage in championing.

With regard to negative effects of ICT support on APP, it is striking that none such effects were voiced by any of the respondents.

#### 4.4.3 Consistency of and closing Remarks on the Results of ICT Support

An important notion with regard to the negative effects that were identified, is that, while most respondents agreed on the existence of the downsides of especially the lower richness of the communication channels, it was also stated by three respondents from the insurance company (i.e. InsurEmp2, InsurMan1 and InsurMan2) that after having had face to face contact, the negative effects of ICT support on the CH phase were perceived as less intense.

*"...in the first place, I would try to see if there's not an opportunity to go there. That would be my first step before approaching him digitally. (...) Because you know how someone reacts to certain issues. For one person, you might need to take away the negativity first, otherwise he is going to dump your idea and for the other person you can just immediately do it, he'll immediately be with you and even needs to be tempered. And you only see that when you are [physically] sitting with each other. Then you see their attitude.*

*- InsurEmp2*

*"[It is easier to approach a key figure after having had face to face contact.] When a new manager comes [into my area of responsibilities], I always schedule a meeting to get acquainted with him first. And then I ask what he expects from me, what I expect from him. I want to know: Who are you? Where are you from? Do you have a dog, a rabbit, a*

*cat? Sometimes I ask that literally. I ask: Are you married, do you have kids, what's your background? - And then we do business. Because then you have a basis."*

*- InsurMan2*

Although only reported by three respondents from one firm, this possibly indicates that the relational aspects and the knowledge of how to react to the respective discussion partners are more important effects on CH than the actual richness of the communication channel. This leads to the following proposition:

**Proposition 26:** After having had face to face contact, especially if a personal relationship has been formed, the negative effects of ICT support on championing are less intense.

Furthermore, similar to the cases of TW and FWH, the findings indicate that respondents were largely aware of the drawbacks of digital communication and, instead of simply accepting them, take measures themselves and to take care of a reasonable use of ICT support.

*"When I am [at the other location], it is much more difficult to enthuse people here. It is way more difficult. You need to put two to three times as much effort in enthusing someone. And I know that. So you can take that into account. Either you postpone it to the moment that you are [physically] there, or you make sure that you can devote twice as much time to it."*

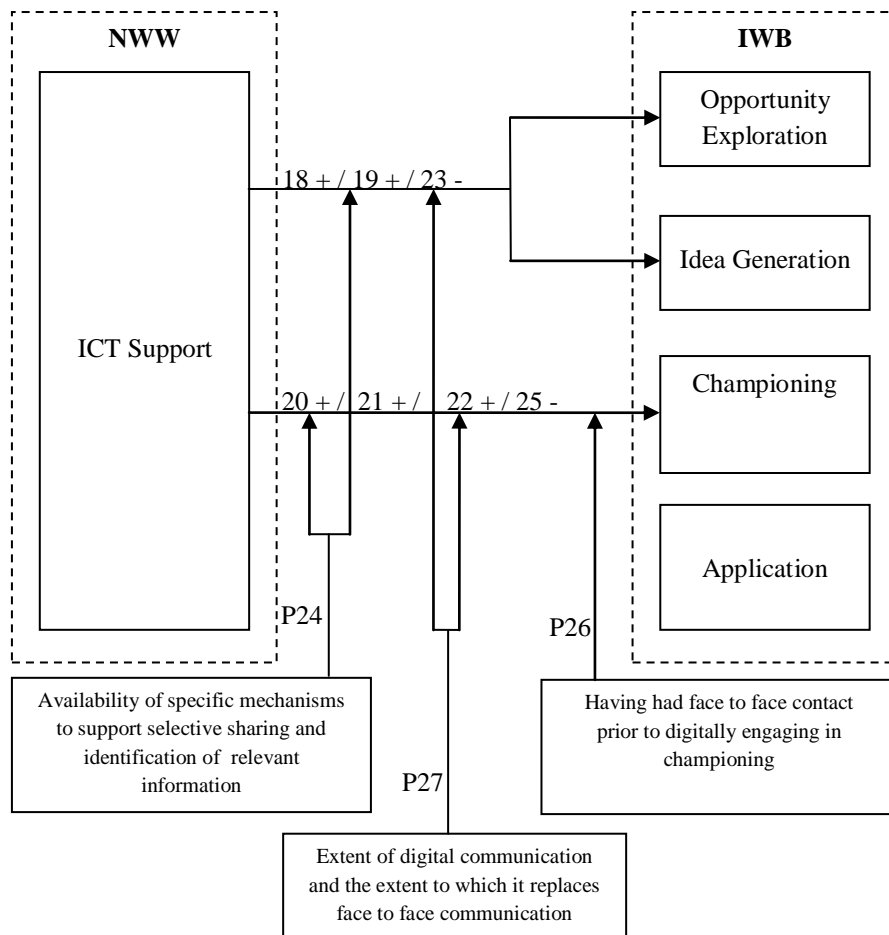
*- InsurEmp1*

Additionally, MunEmp1 indicated that, in his department, arrangements are made to prevent information overload and to promote physical contact. Employees are expected to engage in face to face communication after two e-mails have been exchanged and people still feel the need to further discuss the issue in question. He perceives this to be a beneficial arrangement in order to guide the extent of the use of ICT support and thereby prevent some of its drawbacks. Thus, the fact that employees usually are not forced to digitally engage in any of the phases of IWB and that they indicated to be aware of the drawbacks and therefore to engage in physical communication as often as possible leads to the following proposition:

**Proposition 27:** The negative effects of ICT support on IWB are not deterministic and only occur if digital communication is used to an extent to which it replaces or severely limits face to face communication.



The proposed cumulative influence of ICT support on IWB is depicted in figure 4, which integrates propositions 18 - 27.



**Figure 4.** The proposed influence of ICT Support on IWB \*

Finally, considering the consistency of the answers concerning effects of ICT on IWB, it appears that, although slightly more responses on the effects of ICT support on IWB were voiced by respondents from the insurance company, the answers were rather evenly distributed. However, a noticeable impression is that many of the positive effects of ICT were voiced by MunEmp1. As his professional background is ICT, a bias in his responses might be probable and therefore, the conclusions drawn from his answers with regard to ICT need to take this into account.

\* As the propositions that are developed in this study are based on qualitative data, the arrows in the conceptual model do not depict statistical correlations but represent the signs and directions of the proposed influences of NWW on IWB.

#### 4.5 General Findings - The Effects of NWW on IWB

In the previous sub-chapters, it was shown that all four core practices of NWW were perceived to have individual and rather distinct effects on the four phases of IWB. However, it is striking that combined effects of NWW in general (i.e. all four core practices being simultaneously experienced by an employee), too, were voiced by almost all respondents. These combined effects relate to the fact that the employment of NWW practices provides substantial freedom in determining the environment and the circumstances of one's work and, to a certain extent, forces employees to develop a more flexible mindset and become more acquainted with and oriented towards change. In the first place, almost all respondents valued the fact that NWW facilitates them in positively influencing their conditions and the environment of their work.

*"...that competences of employees can very much be facilitated by giving them an environment [here, he refers not only to the physical working environment but the general environment with regard to the freedom of NWW] in which they can work pleasantly. And what pleasantly is, is very different for one than for the other. And someone who has whining kids at home might find it much more pleasant to work at the office. Then, teleworking is not an option. So working flexibly is not a beatific concept, it is about giving employees maximum freedom to do their work as well as possible."*

*- MunMan2*

It is this facilitation that was perceived as freedom by the respondents. It appeared that this freedom has a positive effect on the extent to which they engage in IWB because employees feel less restricted and generally are in a better condition to be innovative.

*"This bit of freedom, by having this freedom you don't feel restricted, you are more likely to have creative ideas."*

*- InsurEmp1*

*"...because you give people the freedom and the trust to work in a particular way. And that gives people a certain kind of feeling of security and when people feel secure, and they know that they may make mistakes and that every idea basically is a good idea, that they are not punished, it gives a lot more serenity and thereby they also more easily come up with ideas."*

*- InsurMan2*

By being facilitated and by being granted the far reaching freedom of NWW, respondents indicated to feel four distinct positive effects of NWW on IWB. First, it was said that the freedom leads to increased commitment and loyalty which, in turn, stimulates employees to actively improve their organization.

*"...people who get the freedom to do this [make use of NWW] are happy about it and might feel more connected to the organization. A bit more loyal or so towards the organization. I think most people, and this can relate to process-renewal or that they think about new ideas (...). Improvement can occur on many areas. One will say: You know, I will just help you so that you can go on. Another one will say: I will stay for an extra meeting on organizational development or I make time to think with you about organizational development or about this and about that and I finish my work afterwards."*

*- MunMan1*

Second, the experienced freedom of NWW and the trust that it signals was said to elicit an increased sense of ownership and responsibility. This has, according to the broad majority of the respondents, a strong and positive effect on all four phases of IWB. Respondents indicated that, by being given the freedom to do their job as they see fit and being trusted to determine themselves where and when to do it, they indicated to feel more inclined to exert energy in identifying improvement potential and generating ideas to actually make the improvement happen.

*"...because [my company] trusts me, I make sure that this trust is not damaged and that it all goes well. A bit of a feeling of responsibility, yes. (...) You feel more responsible and therefore you will also realize things. Because you are responsible for them. You have to make sure that everything goes well. So, if you are responsible for it, you are going for it. You will exert more effort to achieve it as opposed to when you are largely restricted. [So you feel more as an owner of your work and therefore you exert more effort in looking for and finding opportunities to improve things]."*

*- InsurEmp1*

Based on these first two general perceived effects of NWW on IWB, the following proposition is formulated:

**Proposition 28:** Through increasing the commitment and loyalty of employees and enhancing their sense of ownership and responsibility, the employment of NWW stimulates employees to exert energy in improving their organization by deliberately searching for improvement potential, generating ideas on exploiting the identified potential, creating support for promising ideas and finally driving their implication. Thereby, the employment of NWW is positively related to IWB by increasing the energy that employees deliberately exert in opportunity exploration, idea generation, championing and application.

Third, NWW was stated to have caused a lower separation between employees' work-lives and their private-lives. It was said that it had caused a change in the mindsets, that employees do not as strictly separate their work from their private lives and, thereby, are more likely to think about work-related issues (e.g. improvement potential and ideas) outside of the regular office (hours). Furthermore, it was said that, if employees are given the freedom and are being facilitated in working remotely, it would rather automatically lead to an increase in engagement in IWB while being outside of the official office building. This finding indicates that NWW, thereby, potentially increases the time periods in which employees deliberately engage in i.a. IWB.

*"What I am doing now is, whenever I get that kind of [improvement] ideas, I immediately fixate them [in my iPad or on Evernote]. Wherever I am. (...) In my opinion, this is not related to ICT. You can also do it on paper (...) but back in the days [before the implementation of NWW] I never did that. In the past, (...), you went outside [of the office building] and work and private were completely separate. (...) [You see other people, other things and think]: Hey, I can use that for my work as well! - I immediately write it down. And in the past, I, my colleagues, never [did this]. Work and private had always been strictly separated. [Meanwhile, the train has] also become a workspace! Yes, it can be in the train but it can also be, I don't go camping, but imagine if I am at the camping. Imagine that I am sitting in front of my tent and I have a great idea. Now, I would write it down immediately and in the past I would have never done that (...). I experience that as very pleasant. (...) Because I still have the choice, I don't have to do it. (...) [I am more inclined to do it], yes, it is not an obligation. It is not imposed on us and I really like that how it's going here (...). [So, provide freedom, facilitate and then] it happens automatically."*

*- MunEmpl*

This leads to the following proposition:

**Proposition 29:** By decreasing the perceived separation between an employee's work- and private-life, the employment of NWW expands the time periods within which employees engage in IWB and stimulates them to exert more energy in improving their organization outside of their regular office (hours). Thereby, the employment of NWW is positively related to IWB by increasing the intensity and the frequency with which employees engage in opportunity exploration and idea generation.

Fourth, the concept of NWW and the increased freedom that it provides was said to have another positive effect on IWB. Respondents perceived the increased freedom and the forced flexibilization to be beneficial for stimulating IWB as it leads to employees developing a more open and flexible mind and ultimately a higher change orientation. Thereby, NWW were perceived to indirectly drive IWB as they create a mindset that makes employees more likely to engage in innovative behaviors such as questioning the status quo, looking for improvement potential and developing ideas on how the improvements could be realized.

*"...by being flexible in your workplace [in this case, he referred to not only FWS but also to TW as he works at two locations], your role that you are not constantly sitting next to the same colleagues or the same colleague, and not always sit at the same desk with the same rubbish on it, that you are also becoming a bit more flexible in your head. So, what you often see is, you can see it now, that especially the older generation is always going to sit at the same chairs and at the same desk, and they get angry when they cannot sit there. But they are very strict, they hold on to old ideas. And I really believe that, at the moment you are forced to become flexible, that it is ultimately going to be applied to your work as well. That you get better in dealing with changing situations, doesn't count for everyone but I think this helps. At least for me it does. (...) That you are being forced, you know, that every day you are being forced to go and sit somewhere else, to really scan your environment (...). With other people, you will have to engage in different kinds of conversations than with the colleagues you always have. (...) So you are forced to take an extra step and to not think: I have always been doing it this way. - No, you know, just scan and see what works best at this specific place. (...) I think that you will be less likely to just stick to the standard."*

*- InsurEmp2*

*"...these people are already flexible in their heads. So they think more freely, they think less in beaten tracks and less inside boxes. Because they are free, they are allowed to determine things themselves or coordinate. They don't have the mentality of: We need to start at 8, I do my thing and I go home. - They are not thinking like this anymore. So they also think more easily and much sooner in terms of improvements and they are not afraid of failing. If you have an idea that is a bit so-so, then we don't mind. And in the past it was like: What have you come with again... And you could be judged on it. And we are not doing this. (...) [This has to do with NWW and the flexibility], I really think that this is the new way of thinking and doing. It is all a part of it."*

*- InsurMan2*

According to these findings, NWW also affect the mindsets of employees and can thereby positively influence the full range of IWB, which leads to the following proposition:

**Proposition 30:** By forcing employees to become generally more flexible and by taking away fixed structures, the employment of NWW stimulates employees to develop a higher change orientation, critically question the status quo and exert more energy in improving the organization outside of their regular office (hours). Thereby, the employment of NWW is positively related to IWB by increasing the likelihood and the ability of employees to engage in opportunity exploration and idea generation.

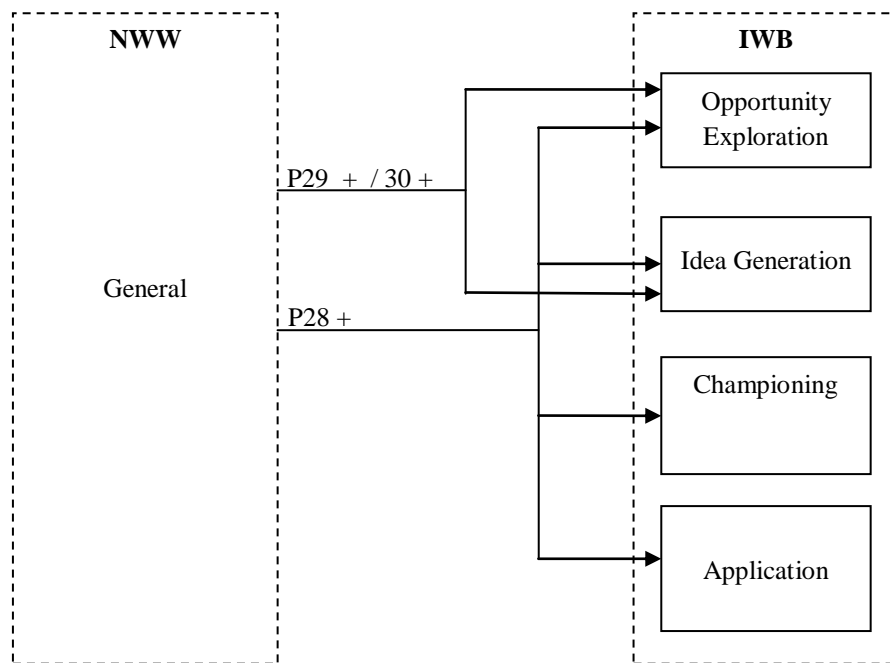
But aside from the collective positive effects of NWW, another remarkable finding is that, besides CallEmp2's perception of FWH being an important precondition of IWB, InsurEmp3 also considers NWW to be an important precondition for engaging in IWB. Both respondents indicated that, without being granted the freedom of NWW, they would not be willing to give back to the organization, especially not in the form of exerting extra energy in exploring opportunities, generating ideas, championing ideas and finally driving their implementation.

*"That every hour you have contact about what course you are on... I can already tell you, I am not going to join in on that. That is absolutely, if this that happens, then you won't get a single idea from me. To just depict it: All the freedom I have is beneficial for the creativity and what not. For my engagement, for my motivation, for how I feel about this company. You may call me in the middle of the night in my bed, I don't mind. But if my work (...) becomes the way I just described it then you must not call me out of my bed anymore."*

*- InsurEmp3*

While both these respondents differ significantly with regard to their age, functional background and education level, it is noticeable they share the common denominator of being a white collar- rather than a knowledge worker. However, as this perception was only shared among two respondents and was not voiced by the two other white-collar workers that participated in this study, other factors such as personality traits are likely to also play a role in this effect and, therefore, no proposition is based on this finding.

The proposed overall effects of NWW are depicted in figure 5, which integrates propositions 28 - 30.



**Figure 5.** The proposed influence of NWW on IWB \*

Finally, considering the consistency of the responses about general effects of NWW as a whole, it is noticeable that the broad majority of the respondents shared the perception of the positive general effects of NWW on IWB. Although not all employees stated to experience these effects, no noticeable patterns or cohorts could be identified.

\* As the propositions that are developed in this study are based on qualitative data, the arrows in the conceptual model do not depict statistical correlations but represent the signs and directions of the proposed influences of NWW on IWB.

## 5. Discussion and Conclusion

### 5.1 Discussion

The purpose of this paper was to investigate the influence of NWW on IWB. The findings of the twelve interviews that were conducted at four Dutch companies indicate that NWW exert a diverse range of primarily positive and, to a lesser extent, negative influences on IWB. For instance, all four individual NWW core practices were found to exert distinct positive effects on IWB.

Teleworking positively influences IWB by providing employees with the opportunity to withdraw from the hectic of the workplace and work in an environment where they are undisturbed, more relaxed and can better focus and concentrate. Thereby, employees can better engage in especially opportunity exploration and idea generation as they can better and more freely think in-depth, see things more clearly and thus more effectively identify improvement potential and develop and finalize concrete ideas on how to exploit this potential. It is interesting that this reasoning appears to be based on the same rationales via which teleworking was also found to positively influence productivity (Belanger, 1999; Bailey & Kurland, 2002). Teleworking elsewhere outside of the office building furthermore provides valuable inspiration from different environments and enables employees to compare different approaches of performing tasks or organizing processes, which also enhances their ability to successfully engage in opportunity exploration and idea generation.

Flexible workspaces increase both intra- and interdepartmental communication and interaction, promote knowledge sharing and, by bringing together many diverse potential innovators who are becoming more closely connected, FWS facilitate a snowball-effect of collective opportunity exploration and idea generation and lower the threshold of engaging in championing. An important notion is that the majority of FWS referred to in this study were also very open workspaces which allowed for not only regular but also incidental communication between employees and thereby provided them with broad and up-to-date knowledge of their organization. This new knowledge, in turn, as it allows employees to gain better insights in e.g. unexpected failures / successes, outside events, process needs or incongruities between 'what is' and 'what should be', serves as important input for identifying opportunities (Drucker, 1985). Furthermore, it allows employees to include more factors in their thinking and view problems from different angles which is an important precondition for generating new ideas (Kanter, 1988; Mumford et al., 1997). Thus, employees



who extensively work on FWS have better access to more information that allows them to more successfully engage in opportunity exploration and idea generation. Furthermore, through providing an environment that facilitates easy and low-threshold communication, increasing connectivity and communication and enlarging the intra-organizational network of an employee, FWS positively affect the likelihood and willingness of employees to engage in championing as it requires less effort and is perceived to be more likely to be successful. Furthermore, key figures themselves are more likely to incidentally get in touch with new and promising ideas on open workspaces and, thereby, can take a more active role in the championing process themselves.

Flexible working hours exert a positive influence on IWB as they allow employees to plan the timing of their tasks and to choose the time at which they feel best for a given activity. This allows employees to engage in IWB when they are at their peak effectiveness and are in the best condition to successfully develop innovative ideas. Furthermore, employees can more spontaneously make time and commit whenever they spot improvement potential or suddenly think of an improvement idea which again improves the effectiveness of their innovative efforts. But besides improving the circumstances, the perceived freedom of temporal flexibility also positively affects the employees' physical and mental conditions and, by making them more relaxed and energetic, facilitates them in in-depth thinking and using their energy to engage in opportunity exploration, idea generation and championing.

ICT support stands out by having very versatile positive effects on IWB. An obvious benefit of ICT support is that digital communication clearly facilitates all other core practices of NWW as the availability of ICT is a precondition for making use of teleworking, flexible workspaces and flexible working hours. But besides this it is striking that there are two distinct uses of ICT support. First, in its use as a communication tool, ICT support provides an easy and speedy way of communicating and often grants access to real time information on the location and availability of other employees. This actively lowers the thresholds to actually approach colleagues and key figures, stimulates collaboration and makes employees more comfortable to share knowledge and engage in interactive processes. Thereby, employees engage in more interdepartmental and interdisciplinary communication and collaboration and ultimately receive better and more up-to-date information of the company. Furthermore, this facilitates a snowball-effect of collectively identifying improvement potential and developing ideas and thus contributes to successful opportunity exploration, idea generation and, through closely connecting employees and lowering the thresholds, improves the employees' ability and willingness to engage in championing. However, the role of ICT

support as a communication tool in such collective processes is rather passive and primarily serves the purpose of connecting employees and preparing face to face contact if possible. Second, in its use as a specialized platform or a social (media) forum that allows employees to selectively share, discuss and champion opportunities and ideas, ICT support enables the individual employee to reach a greater intra-organizational audience and either deliberately or indirectly share information with those colleagues for whom a certain information is deemed relevant. Deliberately doing so includes directly approaching colleagues or certain sub-groups of employees (e.g. marketing, finance or sales representatives) with information. The indirect approach is made possible as employees can "like" information on internal social media platforms and thereby automatically share it with all their followers. Another benefit of ICT support is that, as opposed to traditional newsfeeds, information is more easily found and has a higher visibility and longevity. This facilitates a snowball-effect in which information is selectively forwarded throughout the organization and is more likely to be seen and, in turn, again refined or forwarded to unfold its full potential. Furthermore, the mere availability of a specialized channel to share improvement potential makes employees more aware of and willing to engage in creating support for innovative ideas (i.e. championing).

In addition to the positive effects of the separate core practices, NWW as a general construct also positively influences IWB in three distinctive ways. First, by providing employees with substantial freedom and facilitating them in doing their work, NWW lead to an increase in commitment and the sense of ownership and responsibility which makes employees feel more inclined to exert energy in identifying improvement potential and generating ideas on how to exploit this potential. This finding is consistent with social exchange theory (Blau, 1964) and can be attributed to the fact that employees who perceive their organization to exert energy in improving and facilitating their work-life, their private-life and their well-being, can be expected to reciprocate by giving back. This study suggests that exerting energy in striving to improve one's organization by contributing to innovation (i.e. exerting IWB) is one such way of reciprocating the benefits that employees gain from NWW. Second, as NWW enable working anytime and anyplace, the separation between the private- and the work-life of an employee is actively decreased and traditional boundaries (e.g. spatial boundaries of the office building or temporal boundaries of fixed business days) dissolve. This leads to employees voluntarily engaging in IWB whenever they spot improvement potential or are struck by an idea, regardless of the time or place (e.g. while being at home, while commuting or even while on vacation). Thereby, NWW enlarge the effective timeframe in which employees engage in IWB. Third, by forcing a certain degree of

flexibilization from an employee and by dissolving fixed structures at the workplaces (e.g. as employees have to continuously sit in different environments with different colleagues), employees develop a more flexible mind, a higher change orientation and more critically question the status quo. This finding is interesting because it closely resembles the effects of the personality trait openness to experiences on IWB (Yesil & Sozlibir, 2013) and suggests that employees who work according to NWW are generally more open and positive towards looking for and welcoming change and innovation as a natural part of their work. Whether NWW increases this personality trait or only has similar effects, however, cannot be answered based on this study.

But besides the positive effects, the findings indicate that NWW also comprise some important drawbacks. However, it is highly interesting that, while the separate practices all exert rather diverse positive effects, the negative effects are very similar. The main negative effects of NWW on IWB all revolve around the threat of isolating employees from their organization and their colleagues. Especially the three practices teleworking, flexible workspaces and flexible working hours comprise this particular danger as a downside of the freedom they provide. As extensive usage of NWW increases the spatial and temporal separation of employees, they are less visible at the workplace and are more likely to become isolated from their organization and their colleagues. Thereby, employees who extensively use NWW are likely to be less involved in communication, miss out on important information and become excluded from groups-processes. As a consequence, they do not receive up-to-date information and do not have access to inspiration from their environments and colleagues. Furthermore, isolation deteriorates interpersonal relationships and groups-cohesion and leads to less involvement in work-related processes. Thereby, it impedes in-depth communication and collective processes (such as knowledge sharing or interactive sparring about opportunities and ideas) which ultimately negatively affects an employee's ability and willingness to engage in opportunity exploration, idea generation and the championing of promising ideas.

In addition to this isolation, extensive usage of ICT support exhibits two distinct negative effects on IWB. First, digital communication is planned, scheduled and has a pre-determined business related-agenda. Therefore, conversations are kept short, to-the-point and do not leave sufficient room for relation-building or creatively engaging in interactive processes such as brainstorming or sparring. This limits interaction and deteriorates an employee's access to input for opportunity exploration and idea generation. Second, due to the lower richness of the digital channels and the business-wise character of digital communication, employees are less

willing to digitally engage in championing as it is more difficult to convey emotions, instill enthusiasm and perceive how and why the recipient reacts. Hence, the efforts of digital championing are less effective and the chance of successfully championing an idea via ICT support is drastically lower compared to face to face communication. The finding that this induces a lower willingness of employees to digitally champion ideas is consistent with expectancy theory which states that lower expectations for success lead to lower motivation and therefore less exerted energy in trying to achieve a goal (Vroom, 1964). Consequently, when having to rely on ICT support to engage in championing, especially small and incremental ideas are likely to be discarded and will not be shared with key figures.

Thus, having found both positive and negative effects, the findings of this study clearly indicate that it is the extent of NWW usage that is pivotal and that certain boundary conditions are required to be met for NWW to stimulate IWB and not exert its negative effects.

As isolation is a core theme and common denominator of many negative effects, maintaining a base level of predictable and regular physical contact and communication is an important boundary condition for NWW to positively influence IWB. This finding is in accordance with Bailey & Kurland (2002), who postulated that especially teleworking can lead to professional and social isolation as employees are less visible on the workspace and miss out on both formal and informal information. Only when employees have sufficient contact and physically engage in relation building, knowledge and information sharing and participate in interactive processes (e.g. sparring, brainstorming and collective idea refinement) it is possible to fully reap the benefits of NWW on IWB and avoid its drawbacks. This level of sufficiency, however, remains opaque and appears to lie within a startlingly wide continuum. While, for example, some respondents perceived that negative effects of teleworking can be prevented by being present at the office only once a week, others said that the detrimental effects on IWB immediately appeared from the first day onwards and gradually increased with the extent of teleworking. The results from this study, thus, do not allow to pinpoint and exactly quantify this "perfect balance". Although not providing a clear-cut indication of its optimal extent, existing scientific efforts suggest that extensive teleworking of more than 2.5 days per week (of a five day workweek) does not generally have negative effects (such as on work-family conflict) but starts harming a teleworkers' relationships with co-workers (Gajendran & Harrison, 2007). As relational aspects were voiced to be important factors for effective engagement in opportunity exploration, idea generation and championing, it appears that, in order to positively affect IWB, the extent of

teleworking usage should generally not exceed 2.5 days (or 50% of an employee's total working hours). Furthermore, although having been examined only for the case of teleworking, it can be suspected that the threshold of approximately 50% of physical absence also applies to the other core practices. As flexible workspaces, flexible working hours and extensive reliance on digital communication can also lead to physical absence, it can be suspected that the total physical isolation caused by the sum of NWW practice usage should not exceed 50% of an employee's total working hours. However, the fact that the perceptions of the respondents that participated in this study varied considerably might be an indication that no universal optimum exists and that the optimal extent of NWW usage differs between organizations, types of the jobs or even personalities.

This very notion seems to also apply to the negative effects of ICT support. While ICT support potentially includes negative effects on IWB, it has to be stressed that successfully implementing NWW without ICT is not possible. Therefore, although ICT does have drawbacks compared to face to face communication, it is a necessary part of NWW and it is the connectivity created by ICT that allows for the benefits of the other NWW practices to be realized at all. Therefore, the drawbacks of ICT support mirror the boundary condition of the other practices but are not necessarily arguments against the intensive use of ICT as long as a sufficient level of face to face communication is maintained. Especially with regard to its negative effects on championing, the findings indicate that when having had face to face contact prior to engaging in digital championing, the negative effects of ICT support will be less severe. Furthermore, an important remark on the negative effects of ICT support is that the mere availability of digital communication does not force individuals to use ICT to engage in any phase of IWB. Therefore, the negative effects that were identified are not inevitably related to ICT support, but rather are negative consequences of a too extensive or insufficiently complemented use of digital communication that is at the expense of face to face communication. Thus, while ICT support clearly has the potential to negatively affect IWB, it is not a deterministically negative influence and can be avoided if employees are aware of the risks and are given the freedom to determine themselves the extent to which they make use of ICT support. If sufficient face to face contact is provided for, the negative effects of ICT support are likely to be prevented and its mere use does not necessarily negatively influence IWB.

In this sense, an important impression is that the respondents were indeed generally aware of the impediments that NWW can impose to their ability to exert IWB and therefore autonomously limit the extent of their NWW usage. Besides being indicated by the

respondents, this finding is consistent with behavioral psychology. As the desire for social interaction and belonging is one important driver of human motivation (Baumeister & Leary, 1995), employees can be expected to choose their extent of NWW usage in such a way that they reap the benefits of NWW while being present on the location often enough to avert isolation and thereby prevent the negative effects on their IWB. This supports the boundary condition of a base level of regular and predictable physical contact and indicates that empowering employees to determine the timing and extent of their NWW usage themselves and align it to their specific needs and situations is a crucial precondition for NWW to positively influence IWB.

## **5.2 Consistency**

When comparing the answers given by the different respondents and comparing the different participating companies, it is striking that, although this study did not reveal any large differences between any possible cohorts, the company that most intensively implemented NWW (i.e. the insurance company) overall appeared to perceive the most positive effects. In theory, this could indicate a bias of the company which, due to the positive image of NWW and beneficial expectations, could have triggered the large scale implementation of NWW and ultimately have reversed the causal chain of events. However, as there was a noticeable agreement and consensus among managers and employees from the insurance company, it lays evidence to the assumption that, indeed, the positive effects were actually caused by NWW. Furthermore, the fact that there were no striking differences between the insurance company and the municipality might be a first indication that, potentially, a profit- versus a non-profit orientation or the organizational strategy does not have a significant impact on the influence of NWW on IWB.

## **5.3 Effects of NWW on the Types of Innovation**

Finally, another interesting insight is that, while the effect of NWW on the type of innovation (i.e. process vs. product and continuous vs. disruptive) was not the main focus of this study, the interviews did yield some indications. It seems that no clear and straight-forward effect was perceived. While some respondents voiced that NWW would only affect process innovations, others indicated the very opposite. A possible explanation is that this is due to the diverse functional backgrounds and especially the areas of expertise of the respective respondent. People being close to processes indicated to primarily perceive the effects of NWW to affect process innovations and employees working closely with products often

indicated the opposite. Also, with regard to continuous / disruptive innovations, employees stated that no clear effect was perceived. While this is not surprising, it nevertheless gives support to the idea that, in order to stimulate large scale disruptive innovations, it appears necessary to bring together and closely connect employees from all around the organization, including people with diverse functional and departmental backgrounds being responsible for processes and products. Through the complementary effects all four core practices, NWW can create such an environment that allows for effective cross-contamination and collective learning to actually affect organization-wide issues that go beyond the scope and area of responsibility of an individual employee.

#### **5.4 Contribution to Theory**

The findings of this study advance the scientific knowledge as follows. First, this paper adds to existing NWW literature by indicating that the employment of NWW can positively influence IWB. By not only highlighting how and why NWW (and the four core practices in particular) can positively influence IWB, but by also drawing attention to the potential downsides and by delineating the boundary conditions, the findings presented in this paper contribute to gaining a more complete and advanced scientific understanding of the many implications and effects of the employment of NWW. Second, this research contributes to existing IWB literature by presenting another determining factor in eliciting IWB. The findings complement the picture of the conditions that are beneficial for tapping the full innovative potential of employees by adding insights in the influence of environmental factors (e.g. working conditions that are affected by NWW), highlighting the benefits and downsides and by delineating the boundary conditions of a beneficial use of NWW practices. Finally, the propositions developed in this study provide fruitful directions for further research (see chapter 6.).

#### **5.5 Conclusion**

In conclusion, the results of the interviews with twelve Dutch white-collar and knowledge workers of four organizations indicate that NWW have far-reaching positive influences on IWB. The initial expectation that NWW might positively influence IWB via increased commitment, a sense of responsibility and ownership and increased knowledge sharing was largely confirmed. More interestingly, however, the findings furthermore indicate that all four core practices of NWW have distinct positive effects on IWB. Teleworking, flexible workspaces, flexible working hours and ICT support complement each other and, provided

that a sufficient level of regular and predictable physical contact is maintained and digital communication is preceded by physical contact and does not replace face to face communication, NWW constitute an environment that is highly beneficial to stimulating IWB. Flexible workspaces and ICT support bring together diverse employees and create conditions that lead to interactive opportunity exploration and idea generation, stimulate collective learning and facilitate the extensive sharing and bundling of previously dispersed knowledge. Teleworking and flexible working hours then provide the opportunities and freedom for an employee to effectively and efficiently use this knowledge and work out concrete improvement ideas besides doing their regular work. Finally, flexible workspaces and ICT support again enable and stimulate employees to collectively refine ideas, engage in championing and thereby make sure that promising ideas actually reach the relevant key figures to drive the implementation so that innovative ideas can be realized and benefit the organization. Furthermore, through forcing a general flexibilization of the conditions under which employees perform their tasks and by making change a regular part of a common workday, the employment of NWW contributes to stimulating IWB by affecting the mindset of employees and making them more flexible, change-oriented and less inclined to stick to the ordinary course of events. But besides these positive effects, the far-reaching freedom that is provided by NWW brings with it the inherent danger of isolating employees from their colleagues and their organization. As such isolation turned out to have detrimental effects on IWB, the extent to which NWW exclusively exert their positive effects is limited by certain boundary conditions. To avoid isolation, not negatively affect relationships among employees and thereby impede interactive processes, a base level of regular and predictable physical contact has to be maintained and digital communication must not be used to an extent to which it replaces or severely limits face to face communication. Furthermore, prior to relying on digital means of communication, having had face to face contact and especially forming personal relationships is an important precondition for effectively using NWW to stimulate IWB. The findings of this study and other empirical evidence suggest that, although not allowing for a precise estimate, the overall extent of NWW practice usage should not exceed 50% of an employee's total working hours. Thus, physical isolation caused by either teleworking, flexible workspaces, flexible working hours or too extensive reliance on digital communication should not account for more than half of an employee's employment volume. However, this study furthermore indicates that employees are generally aware of the dangers and to autonomously take measures to prevent such a too extensive use of NWW practices themselves. Therefore, it is important that employees are given freedom in determining the



extent and timing of their teleworking usage, can align their flexible working hours with those of their colleagues and do not engage in opportunity exploration, idea generation or championing via digital means of communication. If these boundary conditions are fulfilled and the use of NWW does not isolate employees from their colleagues and their organization, the benefits provided by NWW can be fully reaped while the drawbacks of isolation can be avoided. Thus, considering their influence on IWB, NWW are more than a collection of individual practices but form a coherent bundle in which teleworking, flexible workspaces, flexible working hours and ICT support complement each other and, when used in concert, create a synergistically positive influence on IWB.

## **6. Limitations and Implications for further Research**

Having discussed the findings from the interviews, this chapter highlights the limitations of this paper's methodological approach and provides directions for further research.

Attributable to the constrained timeframe of this study, the sample size remained rather small and twelve employees from four organizations were included in the sample. Even though saturation was reached and the sample size appears to be sufficient to draw valid conclusions (see chapter 3.4), only a fraction of the employees of the participating companies was interviewed. Furthermore, although the organizations were rather diverse and inter-organizational differences can, to some extent, be taken into consideration, it has to be stressed that the co-occurrence analysis with Atlas.ti 7 does not provide the same accuracy as a statistical analysis. While the sample was split by some possible cohorts and were visually examined for any differences (e.g. between managers and employees and between companies), the fact that no striking differences were found does not necessarily imply that no such differences exist. In order to gain more clarity and increase the validity, quantitative research with large sample sizes including many diverse organizations is required. For example, multi-level analysis might be a promising approach to gain deeper insights in eventual differences between managers and employees or between organizational characteristics (e.g. industry, size, strategy or the time that NWW have been implemented) and provide better knowledge of possible implications of such factors.

Furthermore, this study used theoretical sampling to ensure that the participants were knowledgeable of NWW and its potential effects. However, as participation was voluntary, the findings might be prone to self-selection bias. As an antecedent of IWB is openness to experience (Yesil et al., 2013), the fact that employees could determine themselves to

participate might have led to a disproportionate percentage of participants who score relatively high on this personality trait, which would have caused a bias to the findings. Although the findings give little reason to assume that this is actually the case, it has to be taken into consideration and be subjected to further research that can rule out this potential bias.

In the light of these limitations, some important directions for future scientific efforts arise. The first and most natural implication for further research is to quantitatively test the propositions that came forward from the findings of this study in a large sample and in diverse industrial and organizational environments. As this study was a first exploratory undertaking in investigating the influence of NWW on IWB, the findings are based on the perceptions of a rather confined group of respondents. By conducting more extensive, quantitative studies with large sample sizes, the propositions can be validated or falsified, leading to more accentuated insights into the influence of NWW on IWB.

Second, in order to examine and validate the potential causal relationships as proposed in this paper, it is necessary to perform multiple waves of measurements (i.e. longitudinal studies) including a control group and conducting pre- and post-tests. It appears promising to not only conduct studies with large sample sizes but to also conduct case studies and accompany organizations that are about to implement NWW in the near future. Thereby, pre- and post tests can be performed and, preferably, differences between control- and experimental-groups can be examined to provide valuable insights in the actual causalities. By conducting multiple measurements of the employees' IWB scores before and after the implementation of NWW and by comparing groups that use NWW with those who do not, a better and more nuanced understanding of the actual causal relationship can be achieved.

Third, the setting of this study was limited to central/eastern regions of the Netherlands. Thus, as the sample only included Dutch employees from Dutch organizations, the scope of this study was limited with regard to potential influences of cultural characteristics. As cultural factors and personality traits could potentially be of an influence on the way in which NWW influence IWB, it appears interesting to conduct similar studies in different cultural and organizational environments to validate the generalizability of the findings of this study.

Finally, it appears promising to investigate the factors that determine the "optimal extent" of NWW usage. Understanding how to configure the four core practices of NWW and determine the perfect balance of digital communication with regular and predictable physical contact would ultimately contribute to creating the most optimal conditions for reaping the benefits of NWW on IWB and simultaneously avoiding its drawbacks.

## 7. Managerial Implications

The conclusions that came forth from this study have some major practical implications. For companies that are striving to optimize their organizational capacity to innovate and more fully tap the innate IWB of a larger proportion of their workforce, the findings of this study suggest that implementing NWW is a promising step. As the four individual core practices of NWW complement each other and provide not only distinct individual but also highly beneficial general effects on IWB, this paper makes a strong case for the implementation of all four core practices of NWW.

Offering the possibility to telework enhances the employees' ability to especially engage in opportunity exploration and idea generation. By being able to effectively withdraw from the impressions and distractions of the workplace, employees are better able to concentrate, focus and think in-depth. However, for teleworking to unleash its full potential and not cause isolation, it is important that employees can deliberately and freely determine the extent and the timing of their telework usage themselves. Therefore, it seems advisable to not assign fixed and mandatory teleworking-days but to allow the employees to plan their teleworking usage themselves, according to their respective needs. Only then can teleworking be deliberately used for tasks that are better done in solitude, such as deeply thinking about processes, products or working out an idea. If this freedom is not granted, employees might have to do tasks at home for which they would have benefitted from being present at the workplace and interacting with their colleagues. Teleworking, thus, is a means that should be granted carefully and only for tasks that require in-depth thinking (e.g. discovering process needs or working out the details of an idea). While an optimal extent of teleworking occurred to not be clearly quantifiable for individual employees, it appears that to have beneficial effects on IWB, teleworking usage should generally lie between 1 and 2.5 workdays per week (or between 20% and 50% of an employee's total working hours). An important notion, furthermore, is that in order to stimulate employees to share the innovative input that they generated at home or elsewhere outside of the organization, colleagues should maintain a base level of physical contact with each other and teleworking should be complemented with mechanisms that facilitate the sharing of innovative ideas and knowledge in general. An example of such a mechanism is a specialized internal social media application via which employees can share or browse information on identified opportunities or ideas. Otherwise, especially small and incremental ideas may be discarded when employees are extensively teleworking.

Flexible workspaces were found to have the strongest potential impact on IWB of all NWW core practices and positively influence the employees' abilities to engage in opportunity exploration, idea generation and championing. By increasing the contact and communication with a greater variety of diverse colleagues throughout the organization, employees are better able to share and receive knowledge / information and more easily approach each other to champion promising ideas. Through the increased access to knowledge and information, employees get better and more up-to-date knowledge of the organization and important internal and external developments. By allowing for intensive deliberate and incidental interaction among diverse employees, a snowball-effect of collectively refining identified opportunities or ideas is facilitated. Therefore, when implementing flexible workspaces, it appears important that besides a broad range of diverse workspaces that also allow for working in solitude, a strong emphasis should be put on open spaces that stimulate intra- and inter-departmental contact. However, similar to the notion of teleworking, it appears important to maintain a certain base level of predictable and regular physical contact, especially between employees from the same functional units (e.g. project teams, workflow compartments or departments), to prevent a potential atomization of the workforce and a complication of sufficiently frequent contact. A promising way to achieve such a balance was used by the insurance company, where flexible workspaces are mandatorily implemented and employees do not have an own office anymore. By dividing the open workspace into "spots and blocks", employees from a team or other functionally coherent group primarily share a loosely defined workspace with their direct colleagues. This makes it possible to remain in close contact with peers, allows for regular communication and frequent informal contact that keeps relationships close. Although it was not perceived to perfectly alleviate the potential negative consequences of irregular and infrequent physical contact on IWB, the respondents from the insurance company generally were very satisfied with their flexible workspaces and the consent was very positive.

Implementing flexible working hours also positively influences IWB by allowing employees to engage in innovative behaviors when they feel ready for it and to spontaneously make time when they identify improvement potential or are struck by an idea. Furthermore, allowing for temporal flexibility makes employees more energetic and willing to engage in IWB. An important notion is that especially in administrative functions, the availability of flexible working hours can be a presupposition for employees to deliberately engage in IWB, which emphasizes the importance of granting at least a modest degree of temporal flexibility as long as the tasks of the respective employee allow for it. However, when implementing

flexible working hours, similar preconditions apply as in the case of teleworking. The freedom of flexibility should be limited to such an extent that employees do not become isolated from their colleagues or the organization (i.e. not be physically absent for more than 50% of their total working hours).

In order to support the first three core practices, organizations are advised to implement extensive and diverse means of ICT support. For teleworking and flexible working hours, ICT support is required for maintaining contact and coordination among colleagues and to allow employees to easily share knowledge and ideas with colleagues despite not being physically present at the same times or places. For flexible workspaces, ICT support is required to provide real-time information on the location and availability of colleagues and key figures. To achieve the full benefit of ICT support, it appears important to provide multiple ways of communicating (chat, mail and videoconferencing) and to not only focus on ICT as a means of communication but to also incorporate internal social media platforms (e.g. Yammer). Thereby, employees can more tentatively share ideas and more easily distribute them throughout the organization which enables effective cross-contamination and collective refinement to take place. This study indicates that this ability to tentatively share ideas greatly stimulates employees to share innovative input but, if not facilitated by a specialized channel, comprises the danger of leading to an information-overload. Therefore, organizations are advised to make use of social media platforms that allow the filtering and selective sharing of information via "following" certain colleagues, "liking" promising ideas or deliberately forwarding information to colleagues for whom it is deemed relevant. Such mechanisms make it possible to cope with and effectively and efficiently use the growing amount of innovative input to contribute to improving the innovative performance of the organization. Furthermore, when extensively implementing ICT support, employees should be given the chance to engage in physical communication before relying more extensively on digital communication.

However, when implementing NWW, organizations are strongly advised to pay close attention and make sure that regular and predictable physical contact among employees is consistently maintained. The findings of this study emphasize that maintaining a base level of physical contact is inevitable for NWW to exert its positive effects on IWB while negative effects are being prevented. Although it appears that employees, if given the freedom to determine the extent of their NWW usage themselves, are aware of the drawbacks and autonomously limit their NWW usage to prevent negative effects on their IWB, caution is judicious. Thus, until the valid and reliable quantification of the optimal extent of NWW usage for individual employees becomes possible, it appears advisable to not let the total

usage of NWW (i.e. the combined usage of teleworking, flexible workspaces, flexible working hours and ICT support) account for more than 50% of an employee’s total working hours and to closely monitor the effects of the usage of NWW practices on the workforce. Countermeasures (e.g. limiting the extent of NWW usage) should be taken as soon as employees perceive to get isolated from the organization and their colleagues or when measures of commitment and the feeling of solidarity are decreasing. Furthermore, it appears advisable to agree upon mandatory presence times instead of imposing mandatory teleworking days or certain flexible times to counteract a potential atomization of the workforce and to ensure that a base level or regular and predictable physical contact is maintained.

The managerial implications that arise from this study are briefly summarized in table 6.

**Table 8.** Managerial Implications - Implementing NWW to stimulate IWB

NWW Practice	Recommended Usage to positively influence IWB
<i>Teleworking</i>	<ul style="list-style-type: none"> <li>- Employees should have far reaching freedom in deliberately determining the timing and extent of their teleworking usage themselves (no fixed and mandatory teleworking days)</li> <li>- The extent of teleworking should lie between 1 and 2.5 days per week (or between 20% and 50% of an employee’s total working hours)</li> </ul>
<i>Flexible Workspaces</i>	<ul style="list-style-type: none"> <li>- Flexible Workspaces should provide a broad range of diverse working environments but strong emphasis should be put on open spaces that allow for intensive deliberate and incidental intra- and inter-departmental contact and communication</li> <li>- Functionally coherent groups of employees should retain loosely defined locations as their primary workspaces to maintain a base level of regular and predictable physical contact (to prevent isolation, colleagues should not be separated for more than 2.5 days per week or for more than 50% of their total working hours)</li> </ul>
<i>Flexible Working Hours</i>	<ul style="list-style-type: none"> <li>- Providing temporal flexibility appears highly beneficial but the freedom should be limited to an extent that it does not separate employees from each other and the organization for more than 2.5 days per week (or for more than 50% of their total working hours)</li> </ul>
<i>ICT Support</i>	<ul style="list-style-type: none"> <li>- All three prior NWW core practices should be complemented with diverse and extensive ICT support (e.g. mail, chat functions and internal social media applications)</li> <li>- Specialized channels should be made available to collect improvement ideas and selectively forward relevant information / ideas throughout the organization. The importance and appreciation of the innovative contributions of the individual employees should be emphasized by the management</li> <li>- ICT Support should not only allow the easy and speedy communication but should also provide real-time information on the locations and availabilities of colleagues and key figures throughout the organization</li> <li>- Before relying on digital communication, it is important to make employees engage in physical face to face communication to create a bond / relationship</li> <li>- Digital communication tools (e.g. mail or chat applications) should be a pre-stage to initiate face to face communication and not be used to engage in opportunity exploration, idea generation or championing</li> </ul>

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## 10. Appendix

### Appendix 1. General Information Form NWW English Version

Company: \_\_\_\_\_

Interview #: \_\_\_\_\_

#### Respondent Information:

Gender: \_\_\_\_\_

Age: \_\_\_\_\_

Function: \_\_\_\_\_

Department: \_\_\_\_\_

Tenure: \_\_\_\_\_

Weekly working hours: \_\_\_\_\_

NWW implemented since: \_\_\_\_\_

Supervises NWW'ers: \_\_\_\_\_

**Appendix 2.** General Information Form NWW Dutch Version

Bedrijf: \_\_\_\_\_

Interview #: \_\_\_\_\_

Respondent Informatie:

Geslacht: \_\_\_\_\_

Leeftijd: \_\_\_\_\_

Functie: \_\_\_\_\_

Afdeling: \_\_\_\_\_

Dienstverband: \_\_\_\_\_

Uren / Week: \_\_\_\_\_

HNW ingevoerd sinds: \_\_\_\_\_

Geeft leiding aan HNW'ers: \_\_\_\_\_

### **Appendix 3.** Introduction of the Researcher and the Context of the Interview

"First of all I would like to thank you for taking part in this interview. My name is Florian Moll and I am currently writing my master thesis to complete my Master of Business Administration at the University of Twente. In this thesis, I examine the effects of NWW on IWB. We consider NWW to basically consist of teleworking, flexible workspaces, flexible working hours and ICT support. IWB consists of four phases: looking for and finding opportunities to improve existing processes or products, generating concrete ideas to exploit these improvement opportunities, actively creating support for promising ideas at colleagues or supervisors and finally their implementation. Both NWW and IWB (or innovation in general) are becoming increasingly important topics in modern businesses but not much is known about the effects of NWW on IWB. In order to fill this gap, I conduct a series of exploratory interviews. The purpose of today's interview is, thus, to discuss your perceptions of the impact that your usage of NWW practices has on the extent to which you engage in any of the four phases of IWB. So it is not about how innovative you are, but if and how NWW is of influence on the extent to which you exert IWB. The interview will take approximately 60 minutes. Finally, some important remarks: It is explicitly not the purpose to measure your IWB score or to determine any performance related aspects of your work. It is not a problem if you indicate that you do not exert any innovative behaviors at all. Everything we discuss today will be kept strictly confidential. At no point will your organization see the transcripts or be able to trace the answers back to you. Do you have any questions before we start?"

### **Appendix 4.** Questions concerning the Job Description of the Respondent

- Could you please tell me what your current function is?
- Could you please briefly describe a typical workday?



## **Appendix 5.** Taking an Inventory of the NWW Practices used by the Respondent

### *Teleworking*

Opportunity to work outside of the official office building of the organization (teleworking) and the usage of it.

- If you work on your work days (between 8am and 18pm) at home, on how many days per week do you do this and how many hours do you telework per week?
- If you work on your work days (between 8am and 18pm) elsewhere, on how many days per week do you do this and how many hours do you telework per week?
- Where is this?

### *Flexible Workspaces*

Availability and usage of flexible workspaces within the official office building.

- Does your organization have flexible workspaces?
- Do you use these flexible workspaces to perform your work?
- How many hours do you spend on these flexible workspaces?
- When working there, with how many other employees do you share this place?

### *Flexible Working Hours*

Opportunity and usage of determining one's own work days and work times.

- Does your organization allow you to determine yourself on which days you work?
- If yes, do you use this possibility to determine your own work days?
- Does your organization allow you to determine yourself at which times you work?
- If yes, do you use this possibility to determine your own working hours?
- How many hours per week do you determine yourself when you work?

*ICT Support*

Possibility to and usage of using ICT support.

- Do you have the means (computer etc.) at home to do your work?
- Do you have digital access to (all required) business systems?
- Also on flexible workspaces?
- Do you use Video conferencing / DropBox or shared files?
- How does the collaboration with these means look like?
- Do you use other means to digitally collaborate with your colleagues?
- Which ones? Can you describe them?

**Appendix 6.** Interview Questions about the perceived Influence of NWW Usage on the Respondent's IWB

*Teleworking*

Does the fact that you work on X days per week for Y hours from home (or, if applicable, elsewhere outside of your company's office building) have any effect on the extent to which you:

- *Opportunity Exploration*

- ... look for opportunities to improve an existing process, technology, product, service or work relationship?
- ... search for and identify improvement potential?
- ... recognize opportunities to make a positive difference in your work, department, organization or with customers? \*
- ... pay attention to non-routine issues in your work, department, organization or the market place? \*
- ... share knowledge (donate or receive) in order to discover new opportunities?

- *Idea Generation*

- ... generate original solutions to problems?
- ... find new approaches to execute tasks?

- *Championing*

- ... make important organizational members enthusiastic for innovative ideas?
- ... attempt to convince people to support an innovative idea?

- *Application*

- ... contribute to the implementation of new ideas?
- ... put effort in the development of new things?

---

\* Question was only incidentally asked if the first two questions did not stimulate any response

*Flexible workspaces*

Does the fact that you work on X days and Y hours outside of your office but within your office building on flexible workspaces have any effect on the extent to which you:

*- Opportunity Exploration*

- ... look for opportunities to improve an existing process, technology, product, service or work relationship?
- ... search for and identify improvement potential?
- ... recognize opportunities to make a positive difference in your work, department, organization or with customers? \*
- ... pay attention to non-routine issues in your work, department, organization or the market place? \*
- ... share knowledge (donate or receive) in order to discover new opportunities?

*- Idea Generation*

- ... generate original solutions to problems?
- ... find new approaches to execute tasks?

*- Championing*

- ... make important organizational members enthusiastic for innovative ideas?
- ... attempt to convince people to support an innovative idea?

*- Application*

- ... contribute to the implementation of new ideas?
- ... put effort in the development of new things?

---

\* Question was only incidentally asked if the first two questions did not stimulate any response

*Flexible Working Hours*

Does the fact that you determine X hours of your workday (or Y days per week) yourself have any effect on the extent to which you:

*- Opportunity Exploration*

- ... look for opportunities to improve an existing process, technology, product, service or work relationship?
- ... search for and identify improvement potential?
- ... recognize opportunities to make a positive difference in your work, department, organization or with customers? \*
- ... pay attention to non-routine issues in your work, department, organization or the market place? \*
- ... share knowledge (donate or receive) in order to discover new opportunities?

*- Idea Generation*

- ... generate original solutions to problems?
- ... find new approaches to execute tasks?

*- Championing*

- ... make important organizational members enthusiastic for innovative ideas?
- ... attempt to convince people to support an innovative idea?

*- Application*

- ... contribute to the implementation of new ideas?
- ... put effort in the development of new things?

---

\* Question was only incidentally asked if the first two questions did not stimulate any response

*ICT support*

Does the fact that you use X ICT applications to digitally communicate with your colleagues have any effect on the extent to which you:

*- Opportunity Exploration*

- ... look for opportunities to improve an existing process, technology, product, service or work relationship?
- ... search for and identify improvement potential?
- ... recognize opportunities to make a positive difference in your work, department, organization or with customers? \*
- ... pay attention to non-routine issues in your work, department, organization or the market place? \*
- ... share knowledge (donate or receive) in order to discover new opportunities?

*- Idea Generation*

- ... generate original solutions to problems?
- ... find new approaches to execute tasks?

*- Championing*

- ... make important organizational members enthusiastic for innovative ideas?
- ... attempt to convince people to support an innovative idea?

*- Application*

- ... contribute to the implementation of new ideas?
- ... put effort in the development of new things?

---

\* Question was only incidentally asked if the first two questions did not stimulate any response

## **Appendix 7.** Dutch Version of the Interview Protocol

### *7.1 Introduction of the researcher and the context of the interview*

"Allereerst wil ik u bedanken voor uw deelname aan dit interview. Mijn naam is Florian Moll en ik ben momenteel bezig met het schrijven van mijn afstudeerscriptie om de Master of Business Administration aan de Universiteit Twente af te ronden. In deze scriptie doe ik onderzoek naar de effecten van het nieuwe werken (HNW) op het innovatief werkgedrag (IWB) van medewerkers. Onder HNW verstaan wij telewerken, flexibele werkplekken, flexibele werktijden en ICT-ondersteuning. IWB bestaat uit vier fasen: het zoeken en vinden van gelegenheden om bestaande processen of producten te verbeteren, het genereren van concrete ideeën om deze verbeteringen om te zetten, het actief aandragen van kansrijke ideeën bij collega's of leidinggevenden en uiteindelijk de implementatie daarvan. Zowel HNW als ook IWB (of innovatie in het algemeen) worden steeds belangrijker voor moderne bedrijven, maar tegenwoordig is nog niet veel bekend over de effecten van HNW op IWB. Om dit gat in onze kennis op te vullen, voer ik een aantal verkennende interviews. De bedoeling van ons interview vandaag is dus om uw perceptie te bespreken, van de effecten die uw gebruik van HNW praktijken heeft op de mate waarin u bezig gaat met de vier fasen van IWB. Het gaat dus niet om de mate waarin u innovatief bent maar wat het invloed van HNW daarop is. Het interview zal ongeveer 60 minuten duren. Tot slot nog enkele belangrijke opmerkingen: Het is uitdrukkelijk niet de bedoeling om uw IWB score te meten of eenige data over prestatiegerelateerde aspecten van uw werk te bepalen. Het is geen probleem als u aangeeft dat u helemaal geen innovatief gedrag toont. Alles wat we vandaag bespreken zal absoluut vertrouwelijk worden behandeld. Op geen enkel moment zal uw organisatie de transcripten van ons gesprek zien of in staat zijn om de antwoorden terug te traceren naar u. Heeft u, voordat we beginnen, nog eenige vragen?"

### *7.2 Functie- en werkbeschrijving*

- Wat is uw tegenwoordige functie?
- Zou u alstublieft in het kort een typische werkdag kunnen beschrijven?

### *7.3 Inventarisatie van de HNW praktijken die gebruikt worden door de respondent*

#### *Telewerken*

Mogelijkheid om buiten kantoormuren te werken op werkdagen (telewerken) en het gebruik daarvan.

- Indien u tijdens uw werkdagen (tussen 8 uur en 18 uur) thuis werkt, op hoeveel dagen per week is dat en voor hoeveel uur per week werkt u dan thuis?
- Indien u tijdens uw werkdagen (tussen 8 uur en 18 uur) elders werkt, op hoeveel dagen per week is dat en voor hoeveel uur per week werkt u op die plek?
- Waar is dat?

#### *Flexibele werkplekken op het werk*

Aanwezigheid en gebruik van flexibele werkplekken binnen de organisatie:

- Heeft de organisatie waarbij u werkt flexibele werkplekken?
- Maakt u gebruik van de flexibele werkplekken op uw werk?
- Hoeveel uur maakt u gebruik van deze flexibele werkplekken?
- Als u daar werkt, met hoeveel andere medewerkers deelt u dan dit plek?

#### *Flexibele werktijden*

Mogelijkheid en gebruik van keuze van werkdagen en werktijden:

- Mag u van de organisatie waarbij u werkt, zelf bepalen op welke dagen u werkt?
- Indien ja, maakt u gebruik van de mogelijkheid om zelf uw werkdagen te bepalen?
- Mag u van de organisatie waarbij u werkt, zelf bepalen op welke tijden u werkt?
- Indien ja, maakt u gebruik van de mogelijkheid om zelf uw werktijden te bepalen?
- Hoeveel uur per week bepaalt u zelf wanneer u werkt?



*ICT - Technologische ondersteuning*

Mogelijkheid en gebruik van ICT ondersteuning:

- Heeft u thuis de middelen (computer etc.) om te kunnen werken voor uw werk?
- Heeft u digitaal toegang tot (alle benodigde) bedrijfssystemen?
- Ook op flexplekken?
- Maakt u gebruik van Video conferencing/dropbox of shared files?
- Hoe ziet de samenwerking ermee uit?
- Maakt u gebruik van andere manieren om digitaal met je collegas samen te werken?
- Welke? Kunt u deze beschrijven?

#### 7.4 De waargenomen invloed van het persoonlijke NWW gebruik op de vier fasen van IWB

##### *Teleworking*

Heeft het feit dat u op X dagen per week X uren thuiswerkt (of indien toepasselijk elders buiten de organisatie) enige invloed op de mate waarin u:

##### *- Opportunity Exploration*

- ...naar mogelijkheden zoekt om bestaande processen, technologieën, producten, services of werk relaties te verbeteren?
- ... verbeteringspotentieel zoekt en identificeert?
- ...gelegenheden verkend om een positief verschil te maken m.b.t u werk, afdeling, organisatie of klanten? \*
- ...aandacht besteedt aan non-routine dingen in u werk, afdeling, organisatie of de markt? \*
- ...kennis deelt (ontvangt of geeft) met het doel om nieuwe mogelijkheden etc. te ontdekken?

##### *- Idea Generation*

- ...originele oplossingen voor problemen bedenkt?
- ...nieuwe manieren vindt om taken uit te voeren?

##### *- Championing*

- ...belangrijke bedrijfsleden enthousiast maakt over innovatieve ideeën?
- ...probeert om andere medewerkers van een innovatief idee te overtuigen?

##### *- Application*

- ...bijdraagt aan de implementatie van een nieuw idee?
- ...inspanning zet in de ontwikkeling van nieuwe dingen?

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\* Vraag werd slechts incidenteel gevraagd indien de eerste twee vragen geen antwoord stimuleerden

*Flexible workspaces*

Heeft het feit dat u op X dagen (of Y uren) buiten uw kantoor maar wel binnen de organisatie op flexplekken werkt enige invloed op de mate waarin u:

*- Opportunity Exploration*

- ...naar mogelijkheden zoekt om bestaande processen, technologieën, producten, services of werk relaties te verbeteren?
- ... verbeteringspotentieel zoekt en identificeert?
- ...gelegenheden verkend om een positief verschil te maken m.b.t u werk, afdeling, organisatie of klanten? \*
- ...aandacht besteedt aan non-routine dingen in u werk, afdeling, organisatie of de markt? \*
- ...kennis deelt (ontvangt of geeft) met het doel om nieuwe mogelijkheden etc. te ontdekken?

*- Idea Generation*

- ...originele oplossingen voor problemen bedenkt?
- ...nieuwe manieren vindt om taken uit te voeren?

*- Championing*

- ...belangrijke bedrijfsleden enthousiast maakt over innovatieve ideeën?
- ...probeert om andere medewerkers van een innovatief idee te overtuigen?

*- Application*

- ...bijdraagt aan de implementatie van een nieuw idee?
- ...inspanning zet in de ontwikkeling van nieuwe dingen?

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\* Vraag werd slechts incidenteel gevraagd indien de eerste twee vragen geen antwoord stimuleerden

*Flexitime*

Heeft het feit dat u X uren per werkdag (of Y dagen per week) zelfstandig bepaalt enige invloed op de mate waarin u:

*- Opportunity Exploration*

- ...naar mogelijkheden zoekt om bestaande processen, technologieën, producten, services of werk relaties te verbeteren?
- ... verbeteringspotentieel zoekt en identificeert?
- ...gelegenheden verkend om een positief verschil te maken m.b.t u werk, afdeling, organisatie of klanten? \*
- ...aandacht besteedt aan non-routine dingen in u werk, afdeling, organisatie of de markt? \*
- ...kennis deelt (ontvangt of geeft) met het doel om nieuwe mogelijkheden etc. te ontdekken?

*- Idea Generation*

- ...originele oplossingen voor problemen bedenkt?
- ...nieuwe manieren vindt om taken uit te voeren?

*- Championing*

- ...belangrijke bedrijfsleden enthousiast maakt over innovatieve ideeën?
- ...probeert om andere medewerkers van een innovatief idee te overtuigen?

*- Application*

- ...bijdraagt aan de implementatie van een nieuw idee?
- ...inspanning zet in de ontwikkeling van nieuwe dingen?

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\* Vraag werd slechts incidenteel gevraagd indien de eerste twee vragen geen antwoord stimuleerden

*ICT support*

Heeft het feit dat u gebruik maakt van X ICT applicaties om digitaal met uw collega's samen te werken enige invloed op de mate waarin u:

*- Opportunity Exploration*

- ...naar mogelijkheden zoekt om bestaande processen, technologieën, producten, services of werk relaties te verbeteren?
- ... verbeteringspotentieel zoekt en identificeert?
- ...gelegenheden verkend om een positief verschil te maken m.b.t u werk, afdeling, organisatie of klanten? \*
- ...aandacht besteedt aan non-routine dingen in u werk, afdeling, organisatie of de markt? \*
- ...kennis deelt (ontvangt of geeft) met het doel om nieuwe mogelijkheden etc. te ontdekken?

*- Idea Generation*

- ...originele oplossingen voor problemen bedenkt?
- ...nieuwe manieren vindt om taken uit te voeren?

*- Championing*

- ...belangrijke bedrijfsleden enthousiast maakt over innovatieve ideeën?
- ...probeert om andere medewerkers van een innovatief idee te overtuigen?

*- Application*

- ...bijdraagt aan de implementatie van een nieuw idee?
- ...inspanning zet in de ontwikkeling van nieuwe dingen?

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\* Vraag werd slechts incidenteel gevraagd indien de eerste twee vragen geen antwoord stimuleerden