

# **Universiteit Leiden**

## **ICT in Business and the Public Sector**

Understanding the motivation of employees and managers in an internal work marketplace within a professional consulting firm

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#### Abstract

Organizations are increasingly using IT-enabled internal crowdsourcing initiatives to leverage the knowledge of employees to provide solutions for business tasks. An example of such an initiative is the use of an internal work marketplace to match business tasks throughout the organization with employees. However, organizations need to ensure that enough employees and managers are participating in the platform to guarantee that tasks are posted and completed adequately. Therefore, organizations need to understand the motivation of employees and managers to make use of such a platform. Seeing that employee and manager motivation are related to each other but not equal, this study employed a mixed method design to uncover the motivation of managers and employees to make use of an internal work marketplace within a global professional consulting firm. Based on the theory of extrinsic and intrinsic motivation, employee motivation was studied mainly quantitatively by using a motivation survey tool to relate the two types of motivation to self-reported participation data in regards to the platform. In addition, survey participants were asked what they liked about the platform. The survey yielded 73 responses. Manager motivation was studied qualitatively by performing interviews with five different managers that had experience with staffing people for projects. This study found that for employees the intrinsic motive "need for enjoyment" decreases the quantity of projects completed on the platform. This might be caused by a mismatch in perception of usefulness regarding the platform. Managers see the platform as a means to get manual work done, while employees see the platform as a tool to develop skills and expand their network. These findings suggest that the intended use of the platform should be clearly communicated to the parties using the platform.

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## Chapter 1

# Introduction

## **1.1** Introduction

Workforce flexibility enables companies to make use of the emerging opportunities provided by the current pace of technological innovation (Breu, Hemingway, Strathern, and Bridger, 2002; Dyer and Shafer, 2003; Joiner and Josephs, 2007; Vazquez-Bustelo, Avella, and Fernández, 2007; Weber and Tarba, 2014; Worley, Williams, and Lawler III, 2014). Nonetheless, companies struggle to obtain the right resources. Not only are the right people scarce, a new generation of employees desire increased flexibility and employers need a very specialized workforce with shifting skills during peak moments. Most companies are in the same situation and some are turning to crowdsourcing-based solutions to promote flexibility.

However, attracting employees who want to do work through crowdsourcing platforms (solvers) is relatively new and therefore organizations do not understand how to attract potential solvers. More specifically, organizations do not always know what drives employees to participate in crowdsourcing initiatives. Therefore, this study will look at a crowdsourcing initiative of a global professional consulting firm to study the effect of intrinsic and extrinsic motivation on participation in an internal crowdsourcing setting. In addition, this study will try to understand what drives managers to make use of an internal crowdsourcing work marketplace as well.

This study will accomplish this by performing a mixed method study consisting of quantitative and qualitative methods. Employee motivation will mainly be studied quantitatively by employing a survey that measures motivation. While manager motivation will be studied qualitatively by interviewing managers who use employees to help with completing their projects in their day to day activities.

At the end, this study aims to understand why employees and managers make use of an internal crowdsourcing initiative that serves as an internal work marketplace. The findings of this study will contribute to current practice because it will enable organizations to increase participation in their internal crowdsourcing initiatives. Understanding solver and manager motivation will help to design internal crowdsourcing platforms more adequately to ensure increased chances of success for the platform. The study is academically relevant because it adds to current literature on motivation in internal crowdsourcing initiatives.

## **1.2** Research questions

The main objective of this study is to understand the motivation of salaried workers to participate in an internal crowdsourcing work marketplace while also understanding what drives managers to staff people via such a work marketplace. Therefore, the main question that this study aims to answer is:

• What drives managers and employees to make use of a crowdsourcing based internal work marketplace within a professional consulting firm?

Seeing that the focus is on managers and employees, this question can be split up into two questions:

- How does motivation affect participation of salaried workers in a crowdsourcing based internal work marketplace within a professional consulting firm?
- What drives managers to make use of a crowdsourcing based internal work marketplace within a professional consulting firm?

## 1.3 Research design

To understand the motivation of managers and employees to make use of crowdsourcing based work marketplaces, this study takes different approaches to study the two research questions. The motivation of salaried workers will be studied quantitatively, using a survey measuring individual differences in motivation among participants of an internal crowdsourcing platform of a global consultancy firm. While the motivation of managers to make use of such a system will be studied qualitatively, using semi-structured interviews.

## **1.4** Scientific relevance

From a scientific perspective, many studies have discussed incentives and motivations in internal crowdsourcing (Lopez, Vukovic, and Laredo, 2010; Simula and Vuori, 2012; Kügler, Smolnik, and Raeth, 2013). Despite these efforts, no general model of motivation exists regarding the motivation of solvers for this type of crowdsourcing (Zuchowski, Posegga, Schlagwein, and Fischbach, 2016). One of the main inconsistencies within these studies is the role of financial incentives in motivating solvers (Bailey and Horvitz, 2010; Benbya and Van Alstyne, 2010; Soukhoroukova, Spann, and Skiera, 2012). This implies that further research is needed on the relationship between different forms of internal crowdsourcing and solver's motivation (Zuchowski, Posegga, et al., 2016). In addition, the different views of studies in the perceived role of financial incentives might imply that motivation of internal crowds is unique per crowdsourcing setting. Therefore, this study aims to provide an analysis of the motivation of salaried workers for participating in a crowdsourcing based work marketplace within a professional consulting firm. The added scientific value can be found in the exploration of the motivation of salaried workers within that specific context. Within this context it is important to note that solvers do not receive direct financial compensation when doing work through the crowdsourcing platform. Employees have the possibility to earn recognition points for doing jobs on the platform and in some cases this work is chargeable to the client. This chargeability rate is an important performance indicator for employees and therefore important to keep in mind when sketching the business context. Moreover, work that is done by solvers on the agile workforce platform is generally performed in addition to a worker's normal day-to-day activities. Therefore, this study will provide a description of the differences in types of motivation that individuals have for participating in a crowdsourcing based work marketplace.

## 1.5 Managerial relevance

From a business perspective, this study adds value because it provides an elaborate view on how to attract and retain solvers better by using motivation in an internal crowdsourcing initiative within a global professional consulting firm. Understanding internal crowdsourcing and work marketplaces is relevant as this type of crowdsourcing has the potential to solve mismatches between people and problems in larger and more segmented enterprises (Benbya and Van Alstyne, 2010). Uncovering what drives employees and managers to make use of an internal work marketplace enable companies to design their crowdsourcing activities more effectively. That is, to design these initiatives in such a way that they have the highest probability of attracting enough employees to ensure the success of the platform. The success of crowdsourcing initiatives that aim to solve mismatches between people and problems is highly dependent on the amount of people that use the platform. More people participating in the platform indicate a higher probability of matching people with specific tasks. Therefore, the results of this study will help larger organizations to set-up or make adjustments to their internal crowdsourcing initiatives that are focused on bringing people and problems together. In specific, the results of this study will help organizations think about the incentive design for their crowdsourcing initiatives.

## 1.6 Study outline

- Chapter 2 of this study will discuss the available literature on a variety of domains that relate to using crowdsourcing within organizations. In this section, organizational agility and workforce agility will be discussed to provide the context in which organizations may turn to crowdsourcing to increase workforce agility. Using crowdsourcing increases the potential of organizations to make use of on-demand internal/external expertise, making them better at dealing with unpredictability. In addition, this chapter will discuss the specifics of crowdsourcing and will delve deeper into the literature on motivation in general and specifically for crowdsourcing.
- Chapter 3 discusses the methodology that is used within this study. In this chapter, the qualitative and quantitative research approaches will be explained.
- Chapter 4 will provide a description of Accenture and its agile workforce.
- Chapter 5 will provide an overview of the results of the study. This chapter will relate the hypotheses that are presented in the methodology section with the data that is found.
- Chapter 6 contains the discussion in which the findings are placed into relevant context.
- Chapter 7 will provide the conclusion of this study.

## Chapter 2

## Literature review

This chapter presents an overview of the relevant concepts that come into play when discussing crowdsourcing as a sourcing strategy and subsequently the motivation of employees to participate in projects that make use of crowdsourcing. First, this literature review will discuss the relevant business context that may drive organizations to make use of crowdsourcing. In this case, the context relates to the need of companies to have a specialized workforce with shifting skills during peak moments. Related more closely to the business context, it is about maximizing the utility of employees who are within projects and improving organizational capabilities to quickly make use of innovative technology by gaining access to specialized skills. Therefore, the domains of organizational agility and workforce agility will be lightly touched upon when discussing the need for crowdsourcing by organizations. The second section discusses the theory concerning crowdsourcing. This section will cover internal and external crowdsourcing from an organizational perspective. The third and concluding section will provide general motivation theories and will delve deeper into the application of these theories for participating in crowdsourcing.

## 2.1 Organizational agility

Current management principles obstruct organizational capabilities to thrive in today's hypercompetitive and turbulent global business environment (Breu et al., 2002; Dyer and Shafer, 2003; Joiner and Josephs, 2007; Vazquez-Bustelo et al., 2007; Weber and Tarba, 2014; Worley et al., 2014). The rate of technological innovation, elevated customer expectations towards customized products, and global competition served as catalyst for the demanding market of today (Swafford, Ghosh, and Murthy, 2006). For a few decades now, business and academics have been improving their knowledge about environments that are difficult to predict, while maintaining a dynamic and constantly changing character (Sherehiy, Karwowski, and Layer, 2007). One of the most popular notions of dealing with such an unpredictive environment is that of organizational agility, which entails that organizations are required to change their strategy and structure to be more agile in order to withstand an environment in which adjustments are typical (Hannan and Freeman, 1984; Eisenhardt and Sull, 2001). In this process agility should not be considered a goal, but as a mean to maintain competitiveness in markets that are characterized by unpredictability and change (M. Jackson and Johansson, 2003).

Agility is a strategy that is used in business to respond to a competitive and changing business environment. The term originated in the 1950s in the field of air combat and was used to describe "an aircraft's ability to change manoeuvre state, or, put another way, as the time derivative of manoeuvrability" (Richards, 1996). The term was firstly used in the 1990s in the manufacturing industry, but soon gained traction in broader business context. While no commonly accepted definition of agility exists, agility is often referred to as "an enterprise's ability to quickly respond and adapt in response to continuous and unpredictable changes of competitive market environments" (Goldman, 1995; Sharifi and Zhang, 2001; Yusuf, Gunasekaran, Adeleve, and Sivayoganathan, 2004; Gunasekaran, 1999).

For an organization to be able to formulate a swift and adequate response to change, it is essential that the organization can adapt all elements of the enterprise such as goals, technology, organization, and people (Kidd, 1995). Recent literature indicates that workforce agility specifically plays a prominent role in achieving enterprise agility. That is, to have people within the organization who are readily available, can quickly adopt innovative technologies and adapt to circumstances that have not been encountered before (Youndt, Snell, Dean, and Lepak, 1996). At its core, workforce agility revolves around the timing of having human resources at your disposal. Found benefits of workforce agility include improving helping customers, improvement of conditions and enabling employees to learn more quickly (Herzenberg, Alic, and Wial, 2000; Hopp and Oyen, 2004; Bhattacharya, Gibson, and Doty, 2005; Fink and Neumann, 2007).

## 2.2 Workforce agility

## 2.2.1 The need for an agile workforce

Workforce agility is defined as "the workforce's ability to deal with uncertain scenarios, learn from them, generate innovative solutions, and deliver specific skills at any given time" (Breu et al., 2002; Muduli, 2013). An agile workforce is educated adequately and adjusts quickly enough to adjust to new opportunities and market circumstances. As a result, an agile workforce has the possibility to increase an organization's capacities to remain competitive in an environment that is typically changing on a global scale (Katayama and Bennett, 1999). In that sense, an agile workforce is essential for business agility (Kidd, 1995). If knowledge workers are the primary assets of a firm, which is often the case in service-oriented organizations, it is crucial to have an agile workforce. Following the business agility literature, two main elements make up workforce agility: the ability of a workforce to properly and timely response to change and the ability of the workforce to translate change into opportunity (Kidd, 1995). Fostering a collaborative environment by making use of cross-functional project teams, collaborative ventures with other companies, or virtual organizations are practices that seem inherent to an agile workforce (Forsythe, 1997; Oyen, Gel, and Hopp, 2001). Moreover, workforce agility revolves around estimating when certain capabilities are needed, responding to opportunities provided by clients and improving through the use of adapting resource deployment strategies (Kidd, 1995). More specifically, it's about being able to rapidly play into the advances in customer demand and their environment to ensure survival. Changing customer demand for types of services may result in the quick development of different skill sets as well as changes in size of the workforce. Within a professional services firm one of the key internal capabilities has to be managing resources, seeing that human resources are responsible for the majority of operational costs.

### 2.2.2 The characteristics of an agile workforce

Multiple attempts have been made to explore the characteristics of an agile workforce. The first description of the attributes of an agile workforce contained the following characteristics: accepting change as a second nature; getting used to innovative ideas and technologies; learning as a main ability and taking on new responsibilities (Plonka, 1997).

Gunasekaran (1999) observed the following characteristics of workforce agility: employees that are highly skilled in relation to Information Technology; the ability to work in teams; a workforce which speaks multiple languages; employees that have the ability to shape their own direction by feeling empowered and using cutting edge production strategies.

Breu et al (2002) includes the following primary indicators of workforce agility: using criteria to assess skills; being able to quickly respond to developments in the environment in which a firm operates; developing skills at a quick pace; being able to share information instantly; rapidly being able to change the Information Technology that is used; using mobile technologies that provide information access remotely; being independent within the working environment; using technologies that foster collaboration, for example by employing virtual teams; sharing knowledge between business units and employees that are empowered by the firm.

Later, Dyer and Shafer (2003) stated that for an organization to acquire organizational agility, three distinct types of behaviour within the workforce are required: proactive, adaptive and generative. Proactive behaviour consists of two constructs: initiate and improvise. Proactive initiative refers to the active search for opportunities that contribute to organizational success and taking lead by following through on promising opportunities. Proactive improvisation relates to the degree in which organizations are able to come up with creative ways to pursue opportunities and to deal with threats. Adaptive behaviour stipulates that the workforce should be able to assume multiple roles across multiple levels, and that projects often induce quick changes of roles. Generative behaviour indicates that employees have to learn in multiple areas of competency and because of active knowledge sharing will educate others as well.

As a result of the above-mentioned characteristics, Sherehiy et al. (2007) grouped the attributes into three dimensions: proactivity, adaptivity and resilience. Proactivity refers to the situation in which an individual initiates activities that have a positive effect on the changed environment (Griffin and Hesketh, 2003). The adaptive dimension refers to the adaptability of an individual to better fit into the new environment. Resilience describes the ability of an individual to function even though a constant changing environment is present or when applied strategies have not been successful.

Based on the above-mentioned studies, Muduli (2013) concludes that an agile workforce consists of the following attributes: adaptive, flexible, developmental, speed, collaborative, competent, and informative. More concretely, an agile workforce has to be comfortable with an adapting environment and to do this they need to utilize new technologies and beliefs. Related to this, the workforce should have the ability to pursue different business strategies and tactics, while being able to quickly change from one job or task to another. This means that an agile workforce should focus on learning as this enables organizations to quickly change jobs. Furthermore, speed refers to the ability to complete the requirements of all other agile characteristics in the shortest possible time. Speed in relation to the agile employee refers to the degree in which an employee acquires new skills, adapts to new work environments and speed of information sharing. In addition, an agile workforce is expected to take part in spontaneous collaboration. That means that a collaborative environment is one in which the agile workforce thrives. A related aspect to a collaborative environment is the use of technology that facilitates cooperation. The agile workforce is known to be tech-savvy. Generally, an agile workforce uses flexible technologies and infrastructure that support change and require higher cognitive demands. Lastly, an agile workforce consists of information seekers. It is important for agile employees to keep informed in order to achieve the objective or clarify problems. An agile employee uses contacts or information networks to obtain useful information.

Relating crowdsourcing to workforce agility shows that crowdsourcing relates to the situational skill delivery aspect of workforce agility. Crowdsourcing is used to induce agility by quickly tapping into internal/external knowledge that was initially not at hand. Organizations can use external crowdsourcing to acquire on-demand skills and internal crowdsourcing to rapidly shift skills within the company.

## 2.3 Crowdsourcing as a type of workforce agility

## 2.3.1 Establishing a definition of crowdsourcing

In 2006, Howe coined the term crowdsourcing and defined it as: "the act of a company or institution taking a function once performed by employees and

outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also undertaken by sole individuals (experts or novices)" (Howe, 2006). Howe's article of crowdsourcing sparked the interest of organizations and academics to delve deeper into this sourcing strategy and crowdsourcing quickly gained popularity. Not surprisingly, crowdsourcing has been used to solve a variety of problems that require sustained human involvement. For example, crowdsourcing has been used for gamification to drive employees' motivation, rewarding ideas for innovation, and paid microtasks to complete routine jobs such as text translation and data entry (Dawson and Bynghall, 2012).

The crucial prerequisite for crowdsourcing is "the use of an open call to access a large network of potential labors" (Howe, 2006). Thus, crowdsourcing works because it draws on recent technological advances which enable organizations to reach a sizeable heterogeneous group of people and transfer information to them which allows the requested task to be completed by this group of individuals in an online environment. Howe further explains that crowdsourcing "capitalizes on the deeply social nature of the human species  $(\ldots)$  and uses technology to foster unprecedented levels of collaboration and meaningful exchanges between people from every imaginable geographical location" (Howe, 2006). Since Howe's article, multiple attempts have been made to establish a definition of crowdsourcing and recently Estelles-Arolas & Gonzalez-Ladron-de-Guevara (2012) performed a meta-analysis to integrate the different existing crowdsourcing definitions (Estellés-Arolas and González-Ladrón-de-Guevara, 2012). The result of this meta-analysis was an integrated crowdsourcing definition that is used in most recent papers (Zhao and Zhu, 2014; Majchrzak and Malhotra, 2013; Ghezzi, Gabelloni, Martini, and Natalicchio, 2017):

"Crowdsourcing is a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage what the user has brought to the venture, whose form will depend on the type of activity undertaken."

### 2.3.2 Origin and relevant research areas of crowdsourcing

Research of crowdsourcing can be found in multiple academic disciplines, which approach the topic from distinct perspectives. The literature shows that the concept is mainly studied by four research areas: computing research, business management research, social science research and crowdsourcing applied to professionally oriented disciplines (Brabham, 2013). Computing research focuses on the design and technical aspects of crowdsourcing systems and is mainly executed by Internet technology research firms. The business management research stream relates crowdsourcing to innovation, profitability and business efficiency. In addition, this research stream studies the integration of crowdsourcing within business processes from a strategic and managerial perspective. Social scientists primarily study the human aspects of crowdsourcing. One of the main elements, which they study, is the motivation of individuals to participate in crowdsourcing. The applied professionally oriented disciplines focus on using crowdsourcing in specific industries.

The original definition by Howe implies that crowdsourcing originally stems from exploring the domain of co-creation. This implies that it is justified to increase the number of individuals who can participate in building added value (Chui et al., 2012; Greer and Lei, 2012). In fact, crowdsourcing is a branch of the co-creation domain that has been made possible by the rise of the web, where the 'crowd' can help authenticating and increasing the value of company ideas or resources that were posted online. (Ghezzi et al., 2017). The concept of using an external crowd for validation or input in general refers to the domain of open innovation as well. Within the domain of open innovation, crowdsourcing is relevant for the idea generation phase whenever a company is interested in integrating input from customers or other outsiders into the firm (Chui et al., 2012; Poetz and Schreier, 2012). In addition, one of the core elements of open innovation is the use of idea competitions to acquire innovative input from external sources (Leimeister, Huber, Bretschneider, and Krcmar, 2009).

In this process, crowdsourcing is one of the main tools that is used to gather external input in these innovation competitions. Even though crowdsourcing appears to be integral to open innovation, two key elements still determine whether it is suitable for this process. The first element is the intrinsic nature of the problem and its complexity (Vukovic, 2009). The second element is the role that is assigned to the crowd (Rouse, 2010).

### 2.3.3 Types of crowdsourcing

Crowdsourcing activities can be divided into four categories: contests, collaborative communities, complementors and labor markets (Boudreau and Lakhani, 2013). Figure 2.1 provides an overview of the purpose, challenges and best uses of these types of crowdsourcing.

Using crowdsourcing as a method to source individuals in business environments is accomplished via internal and external crowdsourcing. When an organization is using external crowdsourcing, it is sourcing individuals outside of the company to perform company tasks. Different versions of external crowdsourcing in business environments are already documented and include companies such as Lego, Philips Healthcare, and SAP (Schlagwein and Bjørn-Andersen, 2014; Ågerfalk and Fitzgerald, 2008).

Using crowdsourcing in an enterprise while only involving a company's own

	PURPOSE	CHALLENGES	BEST USE
Contests	Generating high-value solutions to complex or novel problems through large-scale and diverse independent experimentation	The problem must be general- ized and stripped of company- specific details	Highly challenging techni- cal, analytical, and scientific problems; design problems; creative or aesthetic projects
Collaborative Communities	Aggregating a large number of diverse contributions into a value-creating whole	The crowd lacks the shared culture and cohesiveness of a company, making it harder to control; intellectual property can't be protected	Customer support communi- ties; wikis; open-collaboration projects for information and software products with complementary assets inside the firm; FAQs
Complementors	Encouraging innovative solu- tions to users' many differ- ent problems with your core product	It can be technologically daunting to provide access to the functions and informa- tion in the core product while protecting your assets	Open operational, product, or marketing data initiatives; content mashups; apps
Labor Markets	Efficiently and flexibly match- ing talent to discrete tasks	Identifying which problems to farm out and who in the orga- nization will manage the labor pool may be difficult	Well-established categories of work that can be clearly de- scribed and evaluated; human computation; repeated tasks

Figure 2.1: Forms of crouwdsourcing (Boudreau and Lakhani, 2013)

employees is considered internal crowdsourcing. Based on a literature review by Zuchowski et al. (2016), a current formal work definition of internal crowdsourcing has been established. In this definition, internal crowdsourcing is defined as: "an (a) IT-enabled (b) group activity based on an (c) open call for participation in an (d) enterprise." Versions of internal crowdsourcing have been documented at organizations such as Deloitte, Deutsche Telekom, and IBM (Riemer and Scifleet, 2012; Rohrbeck, Thom, and Arnold, 2015; Muller, Geyer, Soule, Daniels, and Cheng, 2013) Internal crowdsourcing allows organizations to combine knowledge that is dispersed within the firm (Lopez et al., 2010; Benbya and Van Alstyne, 2010; Gaspoz, 2011; Riemer and Scifleet, 2012; Stieger, Matzler, Chatterjee, and Ladstaetter-Fussenegger, 2012; Guy, Hashavit, and Corem, 2015). In turn, internal crowdsourcing increases social interaction, therefore increasing social capital of the people involved and this amounts to an increase in overall knowledge quality within the enterprise (Bharati, Zhang, and Chaudhury, 2015). Furthermore, internal crowdsourcing can be used to access collective intelligence, offer design solutions and make crowd based decisions within an enterprise (Zuchowski, Posegga, et al., 2016). In addition, successful internal crowdsourcing integration enables companies to make better use of company-wide human resources.

### 2.3.4 Types of people in internal crowdsourcing

In internal crowdsourcing generally two types of people are recognized: requestors (organisers, crowdsourcer) and solvers (workers, crowdsourcee) (Vukovic, 2009). In external crowdsourcing it is possible that an intermediary party is involved. In internal crowdsourcing this is not typically the case.

#### Requestors

Requestors often come from upper management (Benbya and Van Alstyne, 2010) and use the effort of internal crowdsourcing carry out tasks within the organization that are linked to organizational objectives (Geiger, Seedorf, Schulze, Nickerson, and Schader, 2011). It is the responsibility of requestors to organize and manage the crowdsourcing process by either directly performing the tasks or have associates act as their agents. Requestors typically define the criteria for using crowdsourcing, make sure that people within the organization know about the initiative, determine where each resource is supposed to go and ensuring payment (Vukovic, 2009; Erickson, Petrick, and Trauth, 2012; Skopik, Schall, and Dustdar, 2012). It is essential that requestors remain open and proactive in their management.

#### Solvers

By using crowdsourcing, organizations have the potential to receive input from several types of participants. Generally, crowdsourcing solvers range from amateurs and volunteers who do projects in their free-time to part-time/full-time workers (Brabham, 2013). However, in the case of internal crowdsourcing, solvers are employees of the organization that uses crowdsourcing (Simula and Ahola, 2014). Employees that are imaginative and proactive are deemed to be the most critical type of solvers who increase the chances of success for internal crowdsourcing (Zhu, Djurjagina, and Leker, 2014). Nonetheless, a diverse range of potential solvers is imperative to the success of internal crowdsourcing (Stieger et al., 2012). Therefore, internal crowdsourcing mostly works best for large multinational organizations, as they have access to a sizeable and diverse range of solvers within the firm (Simula and Ahola, 2014). In addition, the aim of solvers and requestors of internal crowdsourcing are more in line with each other than they would have been when using external crowdsourcing (Erickson et al., 2012), as solver and requestors are part of the same organization when using internal crowdsourcing. Furthermore, because internal crowds are more familiar with the organization, their abilities to solve issues related to the organization often are superior to that of external crowds (Erickson et al., 2012). The downside of organizational familiarity is that the professional mental maps of internal crowds may obstruct out-of-the-box idea generation in comparison with external crowds (Afuah and Tucci, 2012; Schlagwein and Bjørn-Andersen, 2014). Moreover, common socio-cultural background of solvers has the potential to increase the effectiveness of internal crowdsourcing as it increases engagement (Riemer and Scifleet, 2012). However, conformity and social pressure seem to decrease internal crowdsourcing effectiveness (Stieger et al., 2012). Significant differences in motivation can be found between internal and external crowds as well. These differences are mainly explained by increased self-selection to participate in crowdsourcing initiatives by external crowds compared to internal crowds (Simula and Ahola, 2014). Some participants are motivated to contribute by the possibility of obtaining intrinsic inputs, such as meeting people and testing their knowledge, while others are motivated by extrinsic inputs, such as financial compensation or recognition (Howe, 2008).

## 2.4 Motivation

#### 2.4.1 Self-determination theory

People demonstrate distinct levels of motivation towards a task and have various levels of motivation in general (Ryan and Deci, 2000). Self-determination theory (SDT), developed by Deci and Ryan (Deci and Ryan, 1980, 2000; Ryan and Deci, 2000), is an empirically based theory of human behavior and personality development (Ryan and Deci, 2017). According to SDT, motivation can be split into intrinsic motivation, that is when an activity is performed for its own sake, and extrinsic motivation, which happens when an activity is executed for a reward (Frey, Lüthje, and Haag, 2011; Ryan and Deci, 2000). SDT provides a well-supported conceptualization which proposes that motivation consists of different but complementary types of behavioral regulations which differ per individual (Deci and Ryan, 1985). The theory focuses on the psychological level and makes it possible to study human motivation by differentiating human motivation along a continuum from controlled to autonomous motivation. SDT formulates a general theory used as an outline for studies on motivation. Furthermore, SDT is a formal theory in which intrinsic and extrinsic sources of motivation are defined, and a description of the roles of intrinsic and extrinsic motivation in cognitive and social development and in individual differences. SDT suggests that motivation related to job activities affects well-being and effectiveness of employees.

### 2.4.2 Autonomous motivation and controlled motivation

Autonomous motivation is displayed when individuals are engaged in an activity with a full sense of willingness. Most of the time, autonomously regulated activities are intrinsically motivated. However, in certain circumstances, it is possible to autonomously motivate extrinsically motivated activities. That is, to induce feelings of true engagement and energy towards a certain activity (Deci, Olafsen, and Ryan, 2017). This shift to autonomous motivation can be achieved by letting individuals understand the worth and purpose of their jobs, providing them with feelings of ownership and autonomy, and by providing constant and clear feedback and support. In turn, individuals are likely to increase performance, study better, and show increased flexibility. However, using performance based rewards or power dynamics to control motivation can decrease employees' efforts, increase the focus on targeted short-term gains, and negatively influence future functioning and work commitment (Deci et al., 2017).

## 2.4.3 Intrinsic motivation

Intrinsic motivation, which is a type of autonomous motivation is being defined as "doing an activity for its inherent satisfactions rather than for some separable consequences" (Ryan and Deci, 2000). Therefore, the motivation for a specific activity lies in the behavior itself. When intrinsically motivated, individuals experience the "rewards" of an activity by being interested in and enjoying the activity itself. Simply put, someone likes doing something for the sake of the activity itself. The prototype of intrinsic motivation is children's play, but also adults who enjoy their hobbies. It is possible for employees to be intrinsically motivated for their jobs or at least part of their jobs. Intrinsically motivated employees often perform better and display better well-being.

Cognitive Evaluation Theory (CET) is a sub-theory of SDT which addresses the effects of social contexts in hindering or supporting intrinsic motivation (Deci and Ryan, 1980). Competence and autonomy are the key components to foster intrinsic motivation. CET has showed that social context events such as providing feedback on work or rewards lead to feelings of competence and therefore enhance intrinsic motivation (Deci and Ryan, 2000). The theory explained that intrinsic and extrinsic incentives are not stackable per definition, CET has showed this by exploring the undermining effects of rewards (Deci, Koestner, and Ryan, 1999). These experiments suggest that rewards could change people's perceived sense of causality or competence, in turn lessening their sense of autonomy and/or their sense of competence. The implication of these studies therefore did not only relate to intrinsic motivation, because perceptions of autonomy and competence impact the quality of extrinsic and intrinsic motivation both.

#### 2.4.4 Extrinsic motivation

Extrinsically motivated behavior is defined as "doing an activity to attain a separable consequence, whether tangible or otherwise" (Deci et al., 2017). SDT argues that extrinsic rewards can have distinct effects on intrinsic motivation. More specifically, extrinsic rewards may improve, reduce or have no effect on intrinsic motivation (Deci, 1972). In addition, SDT distinguishes different levels of extrinsic motivation which can be observed in the workforce as well (Deci and Ryan, 1985; Ryan and Connell, 1989).

Within the extrinsic-motivation continuum of autonomy, external regulation is the least-autonomous form of extrinsic motivation. Individuals see their behavior as being directly controlled by others, frequently through dependent rewards and threats. External regulation can motivate specific behavior. However, it often harms long-term autonomous-motivation and well-being. A more autonomous form of extrinsic motivation is introjected regulation, which centers around recognition in the form of receiving approval and disapproval in their jobs. Introjected behavior is self-controlled behavior in the sense that its focus is on getting recognition and improving one's self-esteem. Even more autonomous behavior is identified regulation which essentially entails that individuals have recognized the importance of their work and behaviors and therefore personally identify with them. When individuals are accepting of their own behavior, they are more autonomously self-regulated and it easier for them to maintain their behavior. The most autonomous form of extrinsic motivation is that of integrated regulation. This occurs when the behavior of individuals is fully integrated into their personal values and beliefs. More specifically, people have integrated their identifications and are able to unreservedly engage in their target activities. When individuals have not integrated their identifications, conflict between different identifications can arise which obstruct engagement to target activities.

### 2.4.5 Psychological needs

The main assumption of SDT is that people show effort, agency and commitment in their lives because humans focus on personal growth by mastering difficult situations and enriching their sense of self with the integration of new experiences. The social environment of individuals plays a critical role in realizing the potential that is inherent to humans. SDT argues that individuals have innate psychological needs – opposed to acquired needs (Chirkov, Ryan, Kim, and Kaplan, 2003) – in the form of competence, autonomy, and relatedness (Ryan and Deci, 2000). These needs form the basis of self-motivation and assimiliation of personality. Competence relates to the innate need to feel effective, being able to control outcomes and experience mastery (White, 1959); feeling competent enables individuals to learn and grow in their functional environment (Deci and Ryan, 2000; Elkind, 1971). Relatedness, which also plays a prominent role in the current literature on identification and psychological attachment (Bowlby, 1958), refers to the innate desire to feel connected to others (Baumeister and Leary, 1995). Autonomy relates to the individual desire towards the integration of work with one's self-image (Charms, 1968; Deci and Ryan, 1980; Ryan and Connell, 1989). Conditions that support the individual's experience of these needs induce voluntary and high-quality forms of motivation and commitment to activities, enhanced performance, persistence, and creativity. Essentially, these three basic psychological needs must be satisfied to foster well-being and health. SDT also implies that when any of these three needs is unsupported within a social context, a decrease in individual wellness is expected.

The following figure shows the key elements of SDT related to the work area. The model explains the effect of workplace context and individual differences (independent variables) on basic psychological needs and motivations (mediators) which in turn affect work behaviors and health and wellness (dependent variables) (Deci et al., 2017). Workplace context relates to organizations supporting or thwarting the basic psychological needs for autonomy, competence and relatedness of employees. These needs are often influenced by managerial styles. Supporting these needs is mostly done on an integral level. However, when studies focused their attention only on autonomy support, it became apparent that when organizational and managerial support related to autonomy is present, all three psychological needs on a general level will be satisfied. Two processes explain this effect: first, managers who support autonomy, are generally supportive of other needs as well. Second, employees who have satisfied their need for autonomy, generally find ways to get their other needs satisfied as well. In other words, when employees experience autonomy, they will feel more connected to the organization and therefore experience increased effectiveness (Deci et al., 2017).



Figure 2.2: The basic Self Determination Theory in the Workplace (Deci et al. 2017)

General causality orientations (Deci and Ryan, 1985) of employees are commonly used as variables to indicate individual differences. Three motivational orientations that differ in the amount of autonomy that is displayed by an employee are at the root of these individual differences. For example, employees can exert full autonomy towards a task and therefore display full attention and willingness. However, when this sense of autonomy is diminished, employees display a controlled orientation. This entails that employees focus on the rewards of the work to guide their behavior. Lastly, when there is no autonomy, the orientation is called impersonal. In this orientation, a purpose is not displayed and avoiding evaluations and failures is key.

# 2.5 Motivation in crowdsourcing and incentive design

Considering that motivation varies between user groups, it is easy to comprehend the importance of incentive design for an internal crowdsourcing platform to succeed. In the existing literature, some different viewpoints about incentives exist. Some authors argue that incentives and motivations of (salaried) solvers are not going to cause any significant issues concerning the effectiveness of internal crowdsourcing. (Skopik et al., 2012). Some organizations use incentive schemes which are comparable to normal salary and performance bonuses to ensure successful internal crowdsourcing (Lopez et al., 2010). Other authors do stress the importance of having specific incentives in place for internal crowdsourcing to maintain employee engagement (Bonabeau, 2009). These incentives can range from payment and recognition mechanisms to instruments that induce feelings of being part of the community (Benbya and Van Alstyne, 2010; Simula and Vuori, 2012; Kügler et al., 2013). Figure 2.3 shows the main intrinsic and extrinsic motives for crowdsourcing.

		<ul> <li>entrepreneurial mindset</li> </ul>
		<ul> <li>opportunity to express individual creativity</li> </ul>
		- caring and attachment to the group, sense of membership, ideology
		<ul> <li>enjoyment, fun and entertainment</li> </ul>
	Intrinsic	<ul> <li>psychological compensation and sense of efficacy</li> </ul>
	motivations	<ul> <li>social influence and social identity</li> </ul>
		<ul> <li>exchange of information</li> </ul>
s		- sense of cooperation
ion		<ul> <li>social search</li> </ul>
/at		<ul> <li>sense of self worth</li> </ul>
otiv		- learning
M		<ul> <li>monetary rewards</li> </ul>
		- reputation
		<ul> <li>recognition of the company</li> </ul>
		<ul> <li>growth of professional status</li> </ul>
	Extrinsic	- career benefits
	motivations	- reciprocity
		<ul> <li>accountability and social capital</li> </ul>
		- self-marketing
		<ul> <li>social motives</li> </ul>
		- learning

Figure 2.3: Main intrinsic and extrinsic motivations for crowdsourcing (Ghezzi, 2017)

An important objective of understanding participant motivation is to design better incentives for specific crowdsourcing types to increase participation(Leimeister et al., 2009). The most straightforward form of incentives is offering monetary rewards. The opportunity to earn financial rewards is a key factor which people consider (Brabham, 2010; Dombek, 2014; Leimeister et al., 2009). However, studies also show that it is not the only factor and using monetary rewards potentially decreases productivity (Huang, Vir Singh, and Srinivasan, 2014; Martinez and Walton, 2014). Furthermore, if the crowdsourcing session provides an opportunity for skill development, individuals may be tempted to participate as well (Füller, Bartl, Ernst, and Mühlbacher, 2006; Kosonen, Gan, Vanhala, and Blomqvist, 2014; Ståhlbröst and Bergvall-Kåreborn, 2011). Several studies indicate that in some situations intrinsic incentives are more effective in motivating solvers (Battistella and Nonino, 2012; Leimeister et al., 2009; Zheng, Li, and Hou, 2011). Using intrinsic incentives often increases the amount and quality of submissions (Frey et al., 2011). However, structuring incentives is not only a matter of offering additional incentives. It was found that adding extra incentives may lead to lower quality proposals (Huang et al., 2014).

Thus, it is important for crowdsourcing to create relevant incentives for specific types of solvers. The literature has identified several ways to attract solvers via incentives. For example, game-based contests (Thaler, Simperl, and Wölger, 2012), learning mechanisms (Massanari, 2012; Kaikati and Kaikati, 2013), posting comments on platforms (Bayus, 2010) and better task design/ interesting problems (Ebner, Leimeister, and Krcmar, 2009; Schulze, Krug, and Schader, 2012) have proven to be effective measures of increasing solver participation. In addition, reputation and recognition mechanics have proven to motivate participants as well (Paolacci, Chandler, and Ipeirotis, 2010; Leimeister et al., 2009; Zheng et al., 2011). In some cases participants saw a crowdsourcing activity as form of entertainment (Brabham, 2008; Ståhlbröst and Bergvall-Kåreborn, 2011) or if the crowdsourcing activity was a form of charitable crowdsourcing, participants entered the activity with altruistic considerations (Choy and Schlagwein, 2016; Gerber and Hui, 2013; C. B. Jackson, Østerlund, Mugar, Hassman, and Crowston, 2015).

Incentive design depends task/problem complexity, task/problem attributes and the innovation process phase. Task complexity is important for individuals in determining whether they are motivated enough to continue with a certain task (Sun, Fang, and Lim, 2012; Zhao and Zhu, 2012). Task attributes relate to the nature of the task itself, factors such as analyzability and variability are relevant when discussing task attributes (Zheng et al., 2011). The innovation process phase dictates how tangible the intended results are of the task. More tangible results often indicate more extrinsic motivations. Furthermore, tasks which a are easy to solve in a limited amount of time were found to be more successful for crowdsourcing (Lopez et al., 2010). Moreover, these tasks should be formulated clearly without ambiguous statements (Bailey and Horvitz, 2010) and include a time estimate for completion (Vukovic and Naik, 2011). In addition it is important the larger context of the needed work is communicated (Simula and Vuori, 2012).

In their systematic analysis of the literature on internal crowdsourcing, Zuchowski et al. (2016) listed the following findings on incentive design for internal crowdsourcing:

• Participants were motivated by the use of rewards (e.g., Benbya and Van Alstyne, 2011)

- Avoid setting work of participants side by side (e.g., Benbya and Van Alstyne, 2011)
- May allow for free-riding on other's ideas (e.g., Stieger et al., 2012)
- Different incentives might be needed for different types of tasks and solvers (e.g., Vukovic and Natarajan, 2013a, b)
- Involvement of upper management increased participation of solvers (e.g., Leung et al., 2014)
- Recognition induced participation of solvers (e.g., Kügler et al., 2013)

## 2.6 Gap in literature

Currently, research on the motivation of solvers in internal crowdsourcing has not produced a general model for solver motivation. Contradictory conclusions regarding the effectiveness of financial incentives cause uncertainty for the production of a general model for solver motivation. Some scholars argue that monetary incentives work best for internal crowdsourcing (Bailey and Horvitz, 2010; Benbya and Van Alstyne, 2010), while other scholars argue that non-monetary incentives are more effective (Soukhoroukova et al., 2012; Abu El-Ella, Stoetzel, Bessant, and Pinkwart, 2013). As a result, it is uncertain whether the context of each crowdsourcing initiative is unique and therefore would obstruct attempts to establish a general model. This uncertainty would indicate that more research is needed on different internal crowdsourcing purposes and solvers' motivation. This study tries to overcome this gap regarding the role of financial incentives by answering the following research question:

• What drives managers and employees to make use of a crowdsourcing based internal work marketplace within a professional consulting firm?

## Chapter 3

## Methodology

## **3.1** Research approach

This study aims to determine the motivation of employees and managers to participate in an internal crowdsourcing initiative. Employee and manager motivation are closely linked yet require different approaches This study uses a positivistic as well as an interpretivistic stance to study the motivation of managers and employees. Employee motivation is based on well-established existing theory on intrinsic and extrinsic motivation and therefore is of deductive nature. Manager motivation refers to the subjective added business value of the platform in the eyes of managers and therefore is of inductive nature.

## **3.2** Research strategy

Motivation of employees and managers will be considered by using a mixed method study in which the motivation of employees is mainly studied quantitatively and the motivation of managers is studied qualitatively. A mixed method study was chosen because the motives for managers and employees are closely linked to each other but require different approaches.

Employee motivation is mainly studied quantitatively because motivation related to work environments has been widely studied and the theory on motivation is widely accepted. This enables this study to take a positivist approach and develop hypotheses upon pre-existing theory regarding motivation and then apply this to the internal crowdsourcing initiative at hand (Silverman, 2013). As a result, the motivation tool is used to determine the impact of intrinsic and extrinsic motives on the decision to contribute to the platform and the amount of projects completed. In addition, the survey will contain a qualitative section as well. In this section, participants are asked what they like about the platform. Using this qualitative component within the survey is useful for relating the quantitative findings with the environment in which the solvers operate. To understand manager motivation to make use of the platform, an interpretive stance is preferred. This approach makes makes it possible to study a phenomenon extensively while leaving room for context. Given a social setting, interpretivism enables a focus on the distinct experiences of individuals and facilitates sense-making on the part of both participants and researchers involved in interpreting the meaning of such settings (Gioia, Corley, and Hamilton, 2013). Seeing that internal crowdsourcing is a new phenomenon at the intersection of IT, business and social behaviour, an interpretative stance is acceptable (Zuchowski, Schlagwein, and Fischbach, 2016). Performing interviews therefore seem a fitting research strategy.

Thus, this study utilizes a standard motivation survey tool to measure individual differences in motivation to uncover solver motivation and will be performing interviews to uncover manager motivation related to the platform.

## **3.3** Data collection and analysis

The data that will be gathered is dependent on the methodological approach used (Bryman, 2016). The produced data from this study will be primary and subjective and will be the result of the survey and interviews that are to be conducted (Bryman, 2016). The survey will yield quantitative data in the form of likert scale ratings related to a motivational construct. In addition, the survey yields some qualitative data as well. Participants will be asked about their opinion in regards to the platform. The interviews with managers will produce qualitative data which reflects their view on crowdsourcing in general and specifically related to the platform. The performed study is cross sectional. The survey is going to be posted to the work marketplace and left open for two weeks. Managers are interviewed only once.

## 3.4 Quantitative research design

## 3.4.1 Work Preference Inventory

A common method to directly measure motivation related to the work environment is the Work Preference Inventory (WPI). The WPI assesses "the individual difference in the degree to which adults perceive themselves to be intrinsically and extrinsically motivated" in work situations (Amabile, Hill, Hennessey, and Tighe, 1994; Amabile, Hil, Hennessey, and Tighe, 1995). The WPI consists of 30 items that are divided into intrinsic (15 items) and extrinsic motivation (15 items). Each of these types of motivation is split into two elements. Intrinsic motivation consists of the desire for challenge (5 items) and enjoyment (10 items), while extrinsic motivation consists of the desire for compensation (5 items) and outward orientation (10 items). The items of the WPI are written in a way that captures the major elements of motivation. For intrinsic motivation this includes: self-determination, competence, task involvement, curiosity, and interest. For extrinsic motivation this includes: evaluation concerns, recognition concerns, competition concerns, focus on money or other incentives, and focus on the dictates of others. Items are written from a first-person view, and respondents are asked the extent to which each item describes them best on a 4-point scale (1 = never true for me, 4 = always true for me). The main assumption behind the WPI is that extrinsic and intrinsic motives can coexist. To enable a more elaborate scale, the version that was used in this study employed lose Preview cert scale. Figure 3.1 showcases how the questions of the adapted  $\blacksquare$ 

Please read the following statements and choose the option that describes you best:

	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
I'm more comfortable when I can set my own goals.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
The more difficult the problem is, the more I enjoy trying to solve it.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
I prefer to figure things out for myself.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
l am not that concerned about what other people think of my work.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
l prefer working on projects with clearly specified procedures.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
I seldom think about salary and promotions.	0	0	0	0	0	0
	Fully disagree	Disagree	Disagree to some extent	Agree to some extent	Agree	Fully agree
I want other people to find out how good I really can be at my work.	0	0	0	0	0	0

#### When working on projects through the agile workforce platform...

Figure 3.1: Example of questions of the WPI that were used in this study

Surveying a total of 2,418 respondents led to the development of the WPI. This group consists of 1,055 working adults and 1,363 students. In two-factor

as well as four-factor models, the WPI was found to be reasonably internal consistent. For adults, the alphas ranged from 0.62 to 0.75 and for undergraduates from 0.71 to 0.79. Both populations showed higher internal consistency in the two-factor model than the four-factor model. In addition, the test-retest reliability was found to be 0.84-0.94 for undergraduates and 0.73-0.89 for working adults, in a time span of six months.

Even though the WPI showed low model fit statistics while conducting Confirmatory Factor Analysis (CFA), the WPI is still the best tool to measure motivation in this study. Other motivation tools did not include the motive for compensation or only focused on satisfying the need for self determination (Vallerand, Fortier, and Guay, 1997; Pelletier et al., 1995).

In addition to the WPI being integrated into the survey, participants were asked to provide some demographic information and some qualitative data as well. Participants were asked to provide their age, gender, education level, career level, country and in how many agile workforce projects they had participated. Furthermore, participants were asked to rate the platform on a scale from 1 to 10, what they liked about the platform and which improvements they saw for the platform.

## 3.4.2 Measurement of variables

In this study, the dependent variables are the decision to contribute to an agile workforce project and the quantity of completed agile workforce projects. The independent variables were the motives of respondents and demographic variables that serve as control variables.

#### Decision to contribute

This study distinguished contributors and non-contributors based on the amount of completed agile workforce projects. Contributors participated in one or more agile workforce projects in the past year while non-contributors did not yet participate in an agile workforce project in the past year. The number of completed projects was self-reported.

### Project completion quantity

Participants were asked how many agile workforce projects they had completed in the past year. The amount of completed agile workforce projects acted as the quantity variable.

#### Control variables

Several field economists (Day and Devlin, 1996) state the importance of demographic factors driving free-choice behaviour. Therefore, this study has included gender, age, education level, country and career level as control variables. These variables were self-reported as well.

### 3.4.3 Statistical methods

#### **Confirmatory Factor Analysis**

This study measures a latent variable which means that it cannot be directly measured but only indirectly by measuring different aspects of motivation. For example, questions regarding the need to tackle new problems or enjoying solving complex problems relate to the intrinsic motive of challenge. When these items show high correlation, it is assumed that they measure the same variable. Latent variables are also known as factors. Therefore, grouping particular correlated items is called factor analysis (Field, 2009).

Factor analysis can be performed in two ways: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA looks at the underlying structure of the observed variables and indicates a certain factor structure based on correlations between variables. CFA differs from EFA in the sense that it allows testing a hypothesized factor structure. Therefore, when an a priori theory on the factor structure exists, it is better to make use of CFA (Hurley et al., 1997). Since, the WPI is an existing tool for measuring motivation, this study uses CFA to determine factor structure.

Structural Equation Modelling software is typically used for CFA. This study used AMOS version 25 to do its modelling and verify the pre-existing model on motivation. CFA can be verified by assessing the overall model and its validity and reliability of the indicators provided (factor loadings) by the model.

#### Model fit

Hu and Bentler (1998) state that good measures for model fit are the Root Mean Square Error of Approximation (RMSEA), Standardized root Mean of square Residual (SRMR) and Comparative Fit Index (CFI) (Hu and Bentler, 1998). This study will base the assessment of overall model fit on these indicators.

RMSEA indicates the discrepancy of the model and the observed data per degree of freedom. RMSEA is considered to be one of the most informative fit indices. A value lower than 0.10 is considered to be acceptable (Hu and Bentler, 1998).

SRMR is another fit statistic that was used; it provides the values of the residuals. If a model fits well, residuals should be relatively small compared to observed values for elements. The root mean square residual (RMR) is a measure that summarizes the fitted residuals. However, interpreting RMR can become troublesome because the size varies with the unit of measurement that varies per variable. It is possible to avoid this problem by using standardized values, hence the use of SRMR. For a reasonable fit, this measure should be lower than 0.08 (Hu and Bentler, 1998).

CFI is the last fit statistic that is used. CFI compares the model to a baseline model. A CFI value of more than 0.10 is considered to be acceptable (Hu and Bentler, 1998).

#### Reliability of the model

Internal consistency (reliability) of the four subscales (enjoyment, challenge, outward, compensation) and the higher order scales (intrinsic and extrinsic) is assessed using Cronbach's alpha. This alpha indicates how closely related a set of items are as a group (Bland and Altman, 1997).

#### **Regression** analyses

For this study, two types of statistical models were needed. The dependent variable decision to contribute is binary, while the quantity of completed projects is a count variable. Therefore, the decision to contribute is studied using binary logistic regression. The quantity of completed projects is a count variable and thus negative binomial regression is used. Normally, the standard regression method for count data is the Poisson regression. However, the data within this study is overdispersed because the variance is greater than the mean. As a result, negative binomial regression is used (Gardner, Mulvey, and Shaw, 1995).

## 3.4.4 Development of hypotheses for solver motivation

This study tries to determine the diverse levels of motivation that salaried workers display when deciding to participate in projects on voluntary basis through a work marketplace platform within an enterprise. In this work marketplace platform, recognition rewards are present and financial rewards are absent. The following research questions were established to discover the impact of motivation on participation:

- How do intrinsic motivations of salaried workers affect participation quantity in projects through an internal work marketplace?
- How do extrinsic motivations of salaried workers affect participation quantity in projects through an internal work marketplace?

#### Hypotheses regarding intrinsic motivation

Most of the work on the platform is voluntary and therefore individuals who participate in projects through the agile workforce platform will probably display more intrinsic motivation than extrinsic motivation. Doing projects through the agile workforce platform provides individuals with an opportunity to give direction to their career (Wrzesniewski and Dutton, 2001), to better fulfill personal needs that are unfilled by one's current job. Seeing that need fulfillment is a critical factor that induces intrinsic motivation, it is likely that the individuals who choose to participate will be motivated by the intrinsic value in the work. Internal crowdsourcing participants often are chosen because of their competence or expertise on a specific matter. When individuals participate in projects in which they know they can perform well, the project provides them with an opportunity to validate their expertise. If the project induced a certain amount of skill validation, the individuals will likely continue with said work as it makes the individuals feel more content with their own skills. When individuals feel good about themselves, they will internalize the work, which makes the work feel more autonomous instead of controlled. In addition, positive feedback in the form of additional consultation opportunities or compliments should increase intrinsic motivation as well (Deci and Ryan, 1980; Vallerand and Reid, 1984). Seeing the nature of the platform, this study hypothesizes:

• Hypothesis 1: Intrinsic motivation of a salaried worker has a positive effect on the decision to voluntarily participate in a project offered through an internal work marketplace.

According to the current psychology literature, intrinsic motivation has a positive effect on the number of voluntary activities (Deci et al., 1999).

• Hypothesis 2: Intrinsic motivation of a salaried worker has a positive effect on the amount of completed projects through an internal work marketplace.

#### Hypotheses regarding extrinsic motivation

While Accenture's internal crowdsourcing platform does have a reputation system in place to reward participants, it does not offer direct financial rewards to participants. However, some of the jobs on the platform are chargeable, which means that the job performed is paid directly by a client of Accenture. This chargeability metric is an important performance metric for employees of Accenture as it is an indication of how productive a specific employee is for the company. Nonetheless, this metric is not considered to be a form of financial compensation. Therefore, the agile workforce platform provides recognition rewards but not financial rewards. The psychology literature expects that when rewards are present that address specific extrinsic motives, a positive effect on free choice behaviour will occur (Kerr, 1975). To illustrate, individuals who are motivated by recognition, will demonstrate more free choice behaviour if that certain behaviour can lead to recognition. This effect can certainly be applied to the decision to contribute because participating is the only way to receive the reward. The effect on the quantity of contributions is dependent on the reward system that is in place. If this system rewards quantity of contributions, then the expectation is that extrinsic motives have a positive effect on quantity. In the absence of a certain reward, a negative effect of extrinsic motives related to this specific reward is expected because the absence of the reward is dissatisfying. The person is expected to have a lower willingness to contribute and to show lower performance, since that person will feel under-rewarded in his or her free choice behaviour. Regarding the agile workforce platform, solvers only receive a reputation score when they have completed a minimum of three tasks in which they are scored on their performance. Therefore, the hypotheses related to extrinsic motivation are:

- Hypothesis 3a: Extrinsic motivation to gain recognition of a salaried worker has a positive effect on the decision to voluntarily participate in a project offered through an internal work marketplace.
- Hypothesis 3b: Extrinsic motivation to gain recognition of a salaried worker has a positive effect on the number of completed projects through an internal work marketplace.
- Hypothesis 4a: Extrinsic motivation to gain a monetary reward of a salaried worker has a negative effect on the decision to voluntarily participate in a project offered through an internal work marketplace.
- Hypothesis 4b: Extrinsic motivation to gain a monetary reward of a salaried worker has a negative effect on the amount of completed projects through an internal work marketplace.



Figure 3.2: Theoretical model and hypotheses.

## 3.5 Qualitative research design

Next to solver motivation, this study tries to determine what motivates managers to source their employees through an internal work marketplace. The following guiding questions were established to discover what would motivate managers to make use of an internal work marketplace:

- What is the added business value for managers to make use of an internal work marketplace?
- Which tasks are deemed suitable by managers to be completed through an internal work marketplace?
- What are the barriers to using an internal work marketplace?

Manager motivation is studied qualitatively by conducting semi-structured interviews. A qualitative approach in the form of semi-structured interviews is chosen because this would enable managers to elaborate on their answers more easily. This enables the interviewer to ask through on elements of managers theirs answers that are unclear. Seeing that no elaborate theory exists regarding manager motivation to use internal crowdsourcing, it is important that managers are able to provide as much context as needed. In addition, the goal of these interviews is to gain specific knowledge about the perception of managers on an internal work marketplace. The interviews will be analyzed by distinguishing certain themes from the answers provided by the managers. These themes are established by comparing the frequency of mentions between interviews. Within these themes the answers provided by managers will be compared. This results in an overview of what managers find important when using an internal crowdsourcing alternative. The results of this part of the study will showcase for what kind of jobs and people the platform should be used from the perspective of managers. Therefore, the findings about manager motivation can also be used to approach the findings on employee motivation from a different perspective. If employees mention specific motives to be important, managers might cause this.

#### 3.5.1 Research procedure

Before conducting the interviews, an interview guide was developed to assure that interviewees would be asked the same questions. In addition, using a working guide will help avoiding pitfalls and badly timed and intrusive questions (Charmaz, 2014). The interview guide covers the specific subjects that are relevant to the study and which should be covered during the interviews. The interview guide is seen as a data collection tool that is used to determine the required domains of inquiry (Charmaz, 2014). By using an interview guide, the researcher is able to guide the interview in such a way that relevant data is gathered. In addition, it helps the researcher to ask the right interview questions. However, this does not mean that the interview should be completely fixed. Interviewees may mention topics that are also relevant to the study, but were not yet known beforehand (Charmaz, 2014).

To allow for flexibility in the interview, the performed interviews were semistructured. This entails that the interview guide indicates the topics and open questions to be discussed, but allows for possible detours. This means that the use and order of the open questions and topics to be discussed could differ per interview, depending on the flow of the conversation (Saunders and Townsend, 2016).

The interview guide consisted of 13 open questions and was divided into four sections. The first section was a general introduction in which the purpose of the interviews is stated and formalities such as personal introductions, confidentiality agreements, and approval for the recordings were discussed. In addition, the interviewee was asked about his or her current role within the consulting firm. The second section revolved around current manager staffing methods and the usage of alternative means of staffing in the past. Alternative was defined as other staffing procedures than their standard ones. The third section revolved around the notion of an internal work marketplace in general. Managers were

asked if they considered using such a marketplace and for which jobs it could possibly be used. In addition managers, were asked about important platform characteristics. The last section revolved around Accenture's own marketplace platform. In this section managers were asked to think whether they would consider using that specific platform. Furthermore, managers were asked about the potential benefits and barriers for using such a system.

### 3.5.2 Selection of interviewees

The selection of interviewees was done through non-probability sampling. More concretely, by asking available managers from distinct business units and geographies within Accenture. This is called purposive sampling, which entails selecting participants with specific characteristics. In non-probability sampling, no explicit rules exist regarding the sample size (Saunders and Townsend, 2016). However, it is advised to keep conducting interviews until data saturation is reached. This point is reached if interviews do not yield extra data and research can be produced. In this study, five interviews were conducted, which produced enough data in order to produce theory.

## Chapter 4

## **Organizational context**

## 4.1 Company description

Accenture Plc is a global management consulting and professional services firm that provides clients with strategy, consulting, digital, technology and operations services. In 2017, the company reported net revenues of \$34.9 billion, while employing more than 425,000 people. The company serves its clients in more than 200 cities in 120 countries.

## 4.2 Accenture's agile workforce

Accenture defines the agile workforce as "a workforce that is flexible and built for adaptation, where talent can move fluidly to where it's needed most and skills mix can be changed quickly." Accenture envisions a workforce in which online labour markets act as matchmakers between task owners and talent, task owners find someone who is available and has the right skills quickly and workers can pursue their interests and work in a more flexible, on-demand way.



Figure 4.1: Model of Accenture's general agile workforce composition (Accenture, 2017)
#### 4.3 Internal crowds

The agile workforce of Accenture consists of internal and external crowds. The internal crowds consist of the employees who have the standard employment relationship with Accenture. These crowds consist of employees who are unstaffed, employees in full-time roles and the newly introduced flexible employees. The employees who are unstaffed and the employees in full-time roles are characterized as the volunteer crowds. The unstaffed employees - in consulting this is called "sitting on the bench" - are typically between assignments or have been recently hired. The employees in full-time roles generally want to do another activity because they are interested in a kind of topic that is offered via the agile workforce platform or want to build specific skills via the platform. The flexible employee model is made for the people that have embraced full flexibility. Accenture currently has a few pilots running in North America in which they test flexible employee models. These employees are not required to work a fixed number of hours but pick jobs when it suits them. Therefore, these employees have the benefit of being employed but choosing their own projects. Figure 4.2 provides an overview of the different marketplaces on the agile workforce platform.



Figure 4.2: An overview of the different marketplaces on the agile workforce platform

#### 4.4 External crowds

The external crowds consist of freelancers who might have had some affiliation with Accenture in the past (not required) but are currently not part of Accenture. The external crowds consist of privately managed external crowds and publicly managed external crowds. Privately managed external crowds consist of a curated pool of people who have a warm and on-going relationship with Accenture but who are not employees. It is possible that they are Accenture alumni or have done projects for Accenture in the past; it basically boils down to the fact that Accenture is familiar with their skills and the crowd is familiar with Accenture. Therefore, the privately managed external crowds can participate in projects instantly and require little project integration effort. Accenture uses the term private because they solely have access to that specific pool. Publicly managed external crowds are crowds owned by external vendors, which Accenture can access by collaborating with a certain vendor. Thus, Accenture uses the pool of resources from the external vendor. This also implies that other companies can access the external vendor crowds as well.

#### 4.5 Implications of Accenture's agile workforce

According to Accenture, the agile workforce benefits the company as well as the people employed in the company. By implementing an agile workforce, companies gain faster access to more talent, the structure and speed of work will change, team dynamics will change and more data and insights will be used to inform talent strategy. When discussing the role of the agile workforce in informing talent strategy, it is important to note that the platform owners have access to data about the demand of employees and supply of tasks. Therefore, the platform will generate data about the popularity of certain skills and how quickly employees pick up tasks. Aggregating this data will therefore increase the amount of data and insights that are used regarding talent strategy. The employees within a company will have more choice in their work, develop new skills more easily, have more visibility and mobility across the company and are provided with more flexibility in their work.

#### 4.6 Success factors and threats of an agile workforce

Accenture has determined a variety of success factors for an agile workforce to work. First, they argue that it is essential to establish an ecosystem of partners and providers who are matched to functional and area needs. This way, the most prominent skills gaps can be filled instantly. Second, Accenture stresses the importance of having clear and present governance models in which accountability of work is integrated as well. Third, leaders in an agile workforce need to understand the capability of their current teams and capabilities they need to deliver work. If these leaders have a proper sense of the team's current capabilities to perform the work at hand, these leaders are better able to distinguish the added value of using the internal crowd for filling the possible gap in the team's capabilities and the capabilities that are needed to do the work. Fourth, Accenture argues that a culture needs to be established in which mind-sets for collaboration and empowerment are fostered and in which behaviours that express agility, a digital outlook, and relentless ethics are promoted. Lastly, Accenture states that an environment in which feedback across teams and partners is integrated within the daily processes benefits an agile workforce.

In addition to the success factors of Accenture's agile workforce, Accenture also lists some potential threats when employing an agile workforce. First, Accenture mentions that non-existent or outdated organization charts or role descriptions, with unclear or improperly defined needs for skills, levels of experience or reporting hierarchy need to be mitigated. The implication here is that teams work with employees/freelancers who are not part of the core team and that by not having a clear role definition, tensions may rise when work of external people overlaps with that of the team members. A clear task/role definition provides the teams with adequate guidance to define the distribution of work. Second, managers who are protective of existing full-time employees and/or the size of their organizations or teams can obstruct agile processes. Managers that have such a protective mindset will not embrace the possibility of using the internal and external crowds to enhance their teams, essentially undermining the concept of an agile workforce. Third, Accenture argues that when employing an agile workforce, one should watch out for technology that is unavailable to support adaptive internal/partner ecosystem role and capability need identification. Fourth, IP and proprietary information issues need to be considered as well. External workers may gain access to sensitive information, leakage of this information needs to be avoided at all costs. Fifth, remote, collaborative and rotational work induces cyber security threats as well. The information systems that facilitate this form of collaboration must be able to provide an answer to cyber security threats. Lastly, Accenture mentions that one should watch out for decreased knowledge continuity from incomplete knowledge transfer from adaptive workers.

# 4.7 The relationship of this study with the success factors and threats of the agile work-force

This study addresses the success factors and threats of Accenture's agile workforce in numerous ways. First of all, gaining knowledge about the motivation of employees and managers for using the agile workforce might enable Accenture to increase the amount of employees and managers that participate in the platform by aligning the platform incentives with the actual motivation of employees and managers. If more people participate in the platform, the probability that a task will be completed will increase as well. This applies to the completion of manual tasks as well as tasks that require specific skill sets. Thus, increasing the effectiveness of the platform in completing specialist and simple tasks. In other words, the results of this study are related to fill potential skill gaps. More employees and better task completion rates also serve as incentives for managers to make use of the system. If managers know that the system can provide the right resources in a reliable way, they are more likely to post tasks on the platform. Second, this study will directly inquire what characteristics influence the decision of managers to make use of the platform. Using this information can act as guidance for increasing the interest of managers in the platform. In turn, when more manager post tasks on the platform, employees have more projects to choose from and a higher probability that a project matches their specific wishes. However, if the results of this study manage to increase the popularity of the platform, tensions between employees and managers might increase as well. If more employees take on jobs through the platform it might harm the ability of the employees to do work for their direct managers. Without proper communication, managers might get frustrated when their tasks (to be completed by the employee) are compromised by an employee's desire to work on projects through the agile workforce. This potential lack of a clear role definition might discourage an organization its desire to truly employ an agile workforce.

### Chapter 5

### Results

#### 5.1 Descriptive data

The survey was posted on three different marketplaces on the agile workforce platform and members of these platforms could apply to it. The survey ran for two weeks and resulted in a total of 73 individual responses. Furthermore, 30 respondents (41.1%) were male and 43 respondents (58.9%) were female. The age of participants ranged from 23 to 37 with a mean age of 36.4 and a median age of 34.



Figure 5.1: Age distribution of participants

Most participants were of Indian (43.8%) and American (32.9%) origin. Other countries that were included are: Australia, Brazil, Canada, Czech Re-

public, France, Mauritius, the Netherlands, Philippines, Poland, Slovakia and the UK.



Figure 5.2: Background of participants

Furthermore, around 50% of respondents had a bachelor's degree and a little over 30% a master's degree. About 8% of respondents had some college education but not degree and 10% have completed some postgraduate education.



Education

Figure 5.3: Education distribution of participants

Looking at the career level of respondents, most prevalent were consultants (32.9%) followed by analysts (30.1%). Around 12% were associates and about 25% were managers or senior managers.



Figure 5.4: Career levels of participants

Of these responses, 36 (49.3%) had not participated in an agile workforce project in the last year and 37 (50.7%) had participated in one or more agile workforce projects in the same time frame. Data on project completion quantity was self-reported and participants stated that they completed an average of 1.6 projects per participant.



Figure 5.5: Projects completed by participants

#### 5.2 Reliability analysis

The results for the reliability of the sample, along with the results reported for the working adult sample by Amabile et al. (1994), are displayed in the following table. In this table, two models are reported next to the original model of Amabile et al. (1994). The first model is the complete model as proposed by Amabile et al. (1994) applied to the data that was found within this study while the second model is the model that is the result of the CFA that was conducted in this study to improve model fit statistics. By deleting ten items spread over all constructs, Cronbach's Alpha was increased for all primary and secondary scales. The Intrinsic-Enjoyment (.81) and the Primary Intrinsic Motivation (.85) are now above satisfactory levels of .8 (Peterson, 1994. Reliability for the new model should be satisfactory, seeing that all Cronbach's Alpha values are increased compared to the original model.

Scale	Amabile et al. 1994	Sample	Sample
	N=1,055	N=73	N=73
	4-pt. scales	6-pt. scales	New model
			6-pt. scales
Intrinsic-Challenge	.73	.54	.75
Intrinsic-Enjoyment	.67	.78	.81
Primary Intrinsic Motivation	.75	.77	.85
Extrinsic-Outward	.63	.66	.69
Extrinsic-Compensation	.62	.73	.75
Primary Extrinsic Motivation	.70	.65	.76

Figure 5.6: Cronbach alpha values

#### 5.3 Validity

Prior to testing the hypotheses, a confirmatory factor analysis (CFA) was conducted to examine the fit of the data with the proposed theoretical model. Initially, the confirmatory factor model showed low model fit statistics ( $\chi^2$ =720.13 [400, n=73]; p<0.001; RMSEA=0,106; CFI=0.549; SRMR=0.1320). In addition, six of the 30-item loadings were less than 0.30. None of the relevant indicators (RMSEA, CFI and SRMR) showed appropriate model fit.

To improve fit statistics, the model was simplified by deleting ten items that showed low factor loadings. The improved model was still not completely satis factory (SRMR > 0.08) but advances on the original confirmatory factor model  $(\chi^2 = 224.81 [164, n = 73]; p < 0.001; RMSEA = 0.072; CFI = 0.853; SRMR = 0.0913).$ RMSEA (below 0.1) and CFI (above 0.8) are now at acceptable levels. SRMR however is still a too high as it should be below 0.08. Nonetheless, Amabile et al. (1994) state that even though the model shows low model fit statistics, it still makes sense to use the primary factors of intrinsic and extrinsic motivation in combination with the secondary scales. First, the items' groupings are conceptually meaningful. Second, the fit statistics are values that are generally considered to be satisfactory for scales of this type (Lim and Carnevale, 1990; Vallerand and Richer, 1988). Last, in addition to the CFA's they conducted, they also examined how different each scale was in relationship to the others by testing if a scale correlated higher with another scale instead of correlating with its own. They argue that not a single item correlated higher with another scale than with its own scale. The original model and the improved model can be found in figure 5.7 and figure 5.8.



Figure 5.7: The original WPI model before adjusting the items due to poor factor loadings in relation to the construct.



Figure 5.8: The adjusted WPI model in which 10 items were deleted to increase factor loadings and model fit.

#### 5.4 Results correlation matrix

The correlation matrix shows that the intrinsic and extrinsic motives are correlated positively with the other motive of the same construct (r>.349, p<.01). The intrinsic motives challenge and enjoyment were highly correlated (r=.630, p<.001). The extrinsic motives compensation and outward correlated highly as well (r=p.349, p<.01). This indicates that the items of intrinsic and extrinsic motivation measure the same intended latent variables. Additionally, the intrinsic motive enjoyment and the extrinsic motive of compensation were positively correlated as well (r=.288, p<.02).

							Correlations					
		Project	Project									
		Completion	Completion									
		Binary	Quantity	Age	Gender	Education	Career Level	Countries	EM_Outward	EM_Compensation	IM_Challenge	IM_Enjoyment
Project Completion	Pearson											
Binary	Correlation											
	Sig. (2-											
	tailed)											
Project Completion	Pearson	"2 <i>TT</i> ,										
Quantity	Correlation											
	Sig. (2-	000'										
	tailed)											
Age	Spearman	,237	,228									
	Correlation											
	Sig. (2-	,044	,052									
	tailed)											
Gender	Spearman Correlation	,011	,092	-,096								
	cia la	500		007								
	olg. (2- tailed)	676'	,440	,420								
Education	Spearman	-,153	-,101	-,022	,280							
	Correlation											
	Sig. (2-	,197	,396	,855	,017							
	tailed)											
Career Level	Spearman	,373**	,350**	,565"	-,043	,108						
	Correlation											

	Sig. (2-	,001	,002	000'	,721	,362						
	tailed)											
Countries	Spearman	,324"	,290	.267	,147	-,081	,091					
	Correlation											
	Sig. (2-	,005	,013	,022	,214	,498	,442					
	tailed)											
EM_Outward	Pearson	-,251	-,173	-,454"	-,022	,139	-,328"	-,353"				
	Correlation											
	Sig. (2-	,032	,143	000'	,851	,242	,005	,002				
	tailed)											
EM_Compensation	Pearson	-,145	-,051	<u>-,257</u>	,092	-,015	-,160	-,184	,349**			
	Correlation											
	Sig. (2-	,222	,669	,028	,441	006'	,177	,118	,002			
	tailed)											
IM_Challenge	Pearson	-,041	-,144	-,032	-,217	,030	,007	-,352"	,078	,057		
	Correlation											
	Sig. (2-	,732	,224	,786	,065	667'	,951	,002	,510	,630		
	tailed)											
IM_Enjoyment	Pearson	-,237*	<u>-,255</u> *	-,096	,042	,153	-,238*	-,274	,165	,288	,630**	
	Correlation											
	Sig. (2-	,043	,030	,420	,724	,197	,043	,019	,163	,013	000'	
	tailed)											
**. Correlation is signific:	ant at the 0.01 le	vel (2-tailed).										

Figure 5.9: Correlation matrix

\*. Correlation is significant at the 0.05 level (2-tailed).

								95% C.I.fo	or EXP(B)
		В	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	Age	,004	,052	,007	1	,933	1,004	,908	1,111
	Gender	-,112	,900	,016	1	,901	,894	,153	5,215
	Education			2,768	5	,736			
	Education(1)	17,461	52648,334	,000	1	1,000	38299462,075	,000	
	Education(2)	-2,358	43620,292	,000	1	1,000	,095	,000	
	Education(3)	-21,549	40192,991	,000	1	1,000	,000	,000	
	Education(4)	-23,581	40192,991	,000	1	1,000	,000	,000	
	Education(5)	-22,737	40192,991	,000	1	1,000	,000	,000	
	Career Level			4,200	4	,380			
	Career Level(1)	-19,910	28124,531	,000	1	,999	,000	,000	
	Career Level(2)	-21,206	28124,531	,000	1	,999	,000	,000	
	Career Level(3)	-19,703	28124,531	,000	1	,999	,000	,000	
	Career Level(4)	-18,681	28124,531	,000	1	,999	,000	,000	
	Countries			3,714	12	,988			
	Countries(1)	-25,017	40192,970	,000	1	1,000	,000	,000	
	Countries(2)	-41,082	49055,724	,000	1	,999	,000	,000	
	Countries(3)	-2,412	1,850	1,699	1	,192	,090	,002	3,370
	Countries(4)	-21,050	24045,483	,000	1	,999	,000	,000	
	Countries(5)	1,057	49055,724	,000	1	1,000	2,876	,000	
	Countries(6)	-1,938	1,076	3,243	1	,072	,144	,017	1,187
	Countries(7)	20,473	40192,969	,000	1	1,000	778917903,368	,000	
	Countries(8)	-,429	43620,273	,000	1	1,000	,651	,000	
	Countries(9)	-23,260	22205,124	,000	1	,999	,000	,000	
	Countries(10)	19,658	24987,414	,000	1	,999	344648352,696	,000	
	Countries(11)	-59,808	41647,999	,000	1	,999	,000	,000	
	Countries(12)	20,501	40192,970	,000	1	1,000	800710595,132	,000	
	IM_Challenge3	,276	,306	,813	1	,367	1,318	,723	2,403
	IM_Enjoyment3	-,191	,144	1,747	1	,186	,826	,623	1,096
	EM_Compensation3	,047	,146	,103	1	,749	1,048	,787	1,395
	EM_Outward3	,058	,098	,348	1	,555	1,059	,875	1,282
	Constant	43,412	49055,767	,000	1	,999	7135963524996556800,000		

### Variables in the Equation

**Regression results** 

5.5

a. Variable(s) entered on step 1: IM\_Challenge3, IM\_Enjoyment3, EM\_Compensation3, EM\_Outward3.

Figure 5.10: Binary logistic regression results

Parameter Estimates										
			95% Wald						95% Wal	d Confidence
			Confidenc	e Interval	Hypothes	is T	est		Interva	l for Exp(B)
		Std.			Wald Chi-					
Parameter	В	Error	Lower	Upper	Square	df	Sig.	Exp(B)	Lower	Upper
(Intercept)	3,462	2,8908	-2,204	9,127	1,434	1	,231	31,865	,110	9204,010
IM_Challenge3	,147	,1402	-,128	,421	1,093	1	,296	1,158	,880	1,524
IM_Enjoyment3	-,148	,0649	-,276	-,021	5,223	1	,022	,862	,759	,979
EM_Compensation3	,057	,0653	-,071	,185	,764	1	,382	1,059	,932	1,203
EM_Outward3	-,027	,0470	-,119	,065	,337	1	,562	,973	,887	1,067
Age	,027	,0221	-,017	,070	1,454	1	,228	1,027	,983	1,072
Gender	,354	,4285	-,486	1,194	,681	1	,409	1,424	,615	3,299
[Education=2]	-,969	1,5554	-4,018	2,079	,388	1	,533	,379	,018	7,997
[Education=3]	-	1,4002	-4,032	1,457	,846	1	,358	,276	,018	4,292
	1,288									
[Education=5]	-	1,2358	-3,667	1,177	1,015	1	,314	,288	,026	3,244
	1,245									
[Education=6]	-	1,5074	-5,823	,085	3,623	1	,057	,057	,003	1,089
	2,869									
[Education=7]	-	1,2218	-3,587	1,203	,952	1	,329	,304	,028	3,329
	1,192									
[Education=9]	<b>0</b> <sup>a</sup>							1		
[Career Level=2]	-,689	,8953	-2,444	1,066	,592	1	,442	,502	,087	2,904
[Career Level=3]	-,521	,8878	-2,261	1,219	,345	1	,557	,594	,104	3,384
[Career Level=4]	,299	,8114	-1,291	1,889	,136	1	,712	1,349	,275	6,615
[Career Level=5]	-,381	,7909	-1,931	1,169	,232	1	,630	,683	,145	3,218
[Career Level=6]	0 <sup>a</sup>							1		
(Scale)	1 <sup>b</sup>									
(Negative binomial)	1 <sup>b</sup>									

Dependent Variable: ProjectCompletionFinal

Model: (Intercept), IM\_Challenge3, IM\_Enjoyment3, EM\_Compensation3, EM\_Outward3, Age, Gender, Education, Career Level

a. Set to zero because this parameter is redundant.

b. Fixed at the displayed value.

Figure 5.11: Negative binomial regression analysis

#### 5.6 Intrinsic motivation hypotheses testing

Hypothesis 1 posits that intrinsic motivation of a salaried worker will have a positive effect on the voluntary decision to participate in a project that is offered through an internal work marketplace. This hypothesis is rejected. This study found through binary logistic regression that the coefficients of the intrinsic challenge and enjoyment variables (B=.276, p<.367; B=-.191, p<.186) on the decision to contribute were not significant. This indicates that the intrinsic

motivation of salaried workers does not influence the decision to participate in a project that is offered through an internal work marketplace.

Hypothesis 2 states that intrinsic motivation of a salaried worker has a positive effect on the amount of completed projects through an internal work marketplace. Running a negative binomial regression analysis showed that the coefficient for the intrinsic challenge motive had a non-significant positive effect on the quantity of projects completed (B=.147, p<.296). The intrinsic enjoyment motive however found a negative significant coefficient on the quantity of projects completed (B=-.148, p<.03). This implies that employees who value motives of enjoyment tend to participate in fewer projects through a work marketplace. Therefore, hypothesis 2 is rejected.

#### 5.7 Extrinsic motivation hypotheses testing

According to hypothesis 3a, a positive relationship is expected between the need for recognition and the decision to contribute. The coefficient of the extrinsic motive outward is non-significantly related to the decision to contribute (B=.058, p<.348). Therefore, hypothesis 3a is rejected. It seems that the need for recognition is not a driving force of the decision to contribute to work that is offered through a work marketplace.

Hypothesis 3b describes a positive relationship between the need for recognition and the quantity of projects in which an employee has participated. The coefficient of the extrinsic outward variable is non-significantly and negatively related to the quantity of contributions (B=-.027, p<.562). Therefore, hypothesis 3b is rejected. There does not seem to be a significant relation between the need for recognition and the quantity of projects participated.

Hypothesis 4a posits that extrinsic motivation to gain a monetary reward of a salaried worker has a negative effect on the decision to voluntarily participate in a project offered through an internal work marketplace. Through binary logistic regression, this study found that the coefficient of the extrinsic need for compensation variable was non-significantly related to the decision to contribute (B=.047, p<.749). Thus, hypothesis 4a is rejected. There does not seem to be a relation between the need for compensation and the decision to contribute. Hypothesis 4b states that extrinsic motivation to gain a monetary reward of a salaried worker has a negative effect on the amount of completed projects through an internal work marketplace. Through negative binomial regression, this paper found that no significant relationship exists between the extrinsic motivation of employees to gain a monetary reward and the quantity of contributions (B=.057, p<.382). This entails that the extrinsic motivation to gain a monetary reward does not influence the quantity of projects completed.

#### 5.8 Qualitative survey results

#### 5.8.1 Opportunities provided by the platform

When asked what participants liked about the platform, most often they mentioned that the platform provided them with opportunities. Naturally, each participant has a different idea of what opportunities the platform then actually provides. Nonetheless, most frequently, participants referred to the general opportunities the platform provided. For example, one participant mentioned:

"It is possible to support even for minimum hours and it gives an idea about the available opportunities within the organization"

To provide a deeper understanding of the opportunities the participants are referring to, it is important to understand the different dimensions that come into play when discussing the opportunities. The most mentioned opportunity mentioned by the participants is that the platform provides them with the opportunity to be exposed to different work activities. Related to this exposure to new work activities, participants stated that the platform helped them to expand their skills while also increasing the alignment between their skills and interests. In their eyes, the platform provides access to work that is different than their day-to-day activities. Some participants also mention the relative ease with which they get opportunities sent to them by e-mail and the advantages of being able to support for minimum hours. Regarding the opportunities provided by the platform, one participant emphasizes:

"The platform provides access to work on interesting topics, (internal) initiatives etc, also outside 'typical' areas of work - possibility to get to know other people, gain different perspectives, etc through (usually) short-term work/jobs - overall, good concept and right direction to have possibility to engage in short(er) term activities e.g. when not on a project or to contribute to something in line with interests and/or skills"

Another participant states:

"I can easily find/fill needs that align to my skills and interests. I can support projects that expand my skill set. I can expand my network of professionals with similar interests and work demands."

To extend on the last participant's response, participants favoured the social aspect that goes hand in hand with doing projects for other people outside of your usual network. For example, participants stated that they like meeting new colleagues. More specifically, participants liked that they could expand their network of professionals with similar interests and exchange knowledge/share expertise with colleagues. Moreover, the possibility of helping colleagues in general terms is one of the main driving forces to participate in projects on the platform. To exemplify, one participant specified: "I get to exchange knowledge and it is easy and quick collaboration challenge where we can reach out to entire Accenture audience and get answers and also help others."

In addition, participants stress the importance of using the platform to use idle time more effectively.

"I like the ease in applying for and accepting jobs. I like the ease in finding jobs. I like the ability to be able to quickly and easily find small ways to add value to Accenture while I'm not otherwise engaged. I also like the small amount of experience that performing a job can give you, as well as the chance to connect with others in the company that I wouldn't ordinarily have the chance to."

#### 5.9 Interview results

Five interviews were conducted with managers from Accenture. These managers were from different business units (strategy, research and products) and had experience with hiring people to do projects for them. The interviews were conducted using Skype for business. Distinct themes were established on the basis of the answers by the managers. These themes were established by carefully interpreting and coding the answers provided by managers. Within these themes, the answers of managers were compared to draw up an accurate description of their vision on internal crowdsourcing. Part of achieving this description was the interview guide that was used. By asking managers about their current staffing methods, view on crowdsourcing in general and specifically on the platform within Accenture, a complete analysis could be provided to uncover manager motives for using internal crowdsourcing. The following table showcases the themes and how often its relative importance.

Themes	Frequency of mentions
Priority to familiar employees	3/5
Project complexity determines employ- ees to approach	3/5
Using external sources to fill skill gaps	2/5
Experience with crowdsourcing	3/5
Favouring manual tasks for crowdsourc- ing	4/5
Platform useful for specialized work	2/5
Usability as important platform characteristic	3/5
Quantity of people as important plat- form characteristic	3/5
Skills as important platform character- istic	3/5
Consider using crowdsourcing	5/5
Reaching out to people outside of con- ventional network	2/5
Visibility within the organization moti- vates employees	4/5
Skill development and alignment as in- centive for employees to participate in internal crowdsourcing	3/5
Gathering resources quickly	2/5
Difficulties providing proper incentives for employees	2/5
Trusting the system is difficult because skills are difficult to assess	2/5

Table 5.1: Resulting themes from manager interviews and frequency of mentions

#### 5.9.1 Current manager staffing methods

In order to understand what motivates managers to make use of crowdsourcing, it is important to define the advantages and shortcomings of current manager staffing methods. When managers were asked about their current staffing methods, it was apparent that a strong focus was given to familiar employees. Three out of five managers acknowledged that their first staffing priority is with employees they already have work experience with. That way, they know what to expect and are minimizing the chances of not being able to deliver at a specified deadline. To exemplify:

"So how I staff. You can think of it like a decision tree kind of process flow. So the first stage or box on that map would be: Is one of the people that I've worked with before currently available? And if the answer is yes, then I've pretty much finished my hiring process there. Because over the years, you know what it's like, you develop a network of go to people whom you trust and whom you want to work with again. So my very first step is to reach out to people in that network." – Strategy Manager

In addition to employee familiarity, project complexity and project focus also impacts the decision of the managers to staff certain individuals to projects. As a result, an individual's skills are more important for a manager when staffing more complex projects. The following quote states it quite clearly:

"So industry expertise would be my first protocol. Second, it depends on the complexity. If think it's very complex then, you know like a thought leadership, or a client presentation where you have to present to a CEO and you have to prepare that as well. Then I would perhaps reach out to someone who has the experience or who has the confidence and trust, which has done that before, who comes from strategy for example. They would probably understand a situation like this better so I will reach out to them based on their skills." – Products Industries Senior Research Manager

Furthermore, two other managers mentioned the use of external sources to fill certain skill gaps that may arise when staffing projects. One of the managers spoke about using ecosystem partners to help differentiating research. The institutions that are used range from universities and other research organizations to clients that have subject matter expert on a certain topic. In an attempt to drive costs down for longer-term projects, the skills of promising students can also be leveraged in this process. On the other end, if there is budget available, one manager made use of expert networks. That is, when the organization is lacking in certain knowledge, an expert from a vendor is hired to educate the organization about a specific matter. To illustrate the openness of managers to external sources:

"Another option is to leverage ecosystem partners. We tend to use ecosystem partners or what we call open research to help differentiate our research for few reasons. One reason would be that we need a subject matter expert on a certain topic that we don't have in house. Therefore, we look at academia or universities or other research organizations. Sometimes even our clients who have these type of skills that can provide input. Another reason would be, for longer-term projects in which the costs have to be driven down, we could leverage students for universities to have certain skills, for example economic modelling, and they could work on it." - Geography lead Growth & Strategy Research

#### 5.9.2 Manager experience with crowdsourcing

Managers with internal crowdsourcing experience had mixed feelings about the concept. One manager indicated that it was easy to find analysts in past crowd-sourcing initiatives. He specifically mentioned the suitability of crowdsourcing for simple tasks:

"So in the past I've used that and it has worked quite well. So once I've used it I was bidding on a piece of work and I needed help basically, you know easy stuff turning into a word document into a PowerPoint or something like that or formatting slides or something. I put that out on the job jar and I had about 4 people reply to me either that day or the next day. With this piece of work I was doing, I needed additional support with research, but not the kind of sophisticated research. But basic go to their website and copy the logo or something. And again I had like three or four analysts reach out and get in touch, yeah it was easy." – Strategy Manager

Another manager recalled her crowdsourcing experience to be underwhelming. She stated that the platform that she used could not guarantee adequate quality of solvers when she did not know about the skills of solvers. One of the issues that she mentioned was the misinterpretation between the manager and the solver regarding the specific wishes of a client. As a result, she had to do the work of the solver again. Moreover, she notices that research work is increasingly complex and therefore does not see crowdsourcing working for her in the future:

"Because you're just reaching out to a broad pool of people and I've not really defined the skills and I'm not trying to get any really... I've not got the quality that I've expected because I don't know the person beforehand. When you're close to a design and we understand the client differently. And it could be very genuine because that person doesn't work on this industry or geography or these kinds of projects regularly so there maybe reasons for the degree of quality. But I had to work on them myself and redo stuff to make the deadline. So it has not always worked for me. In fact, the degree of complexity for research projects is increasing more and more everyday. So for me now this type of crowdsourcing in which you can reach out to a broad group of people without knowing the skill set doesn't seem to be working. So I prefer refusing the project beforehand than taking the risk of being unsure about the quality."

- Products Industries Senior Research Manager

#### 5.9.3 Types of jobs and people suitable for crowdsourcing

4 out of 5 managers stated that the relatively simple jobs are most suitable for crowdsourcing. When speaking about relatively simple jobs, managers mean jobs that require little formal education such as: data gathering, turning a word document into a PowerPoint, copying logo's and formatting slides. The line of reasoning here is that often managers need to acquire sources quickly without too much explanation. Two managers mentioned that they would consider the platform for highly skilled work as well. To illustrate:

"Look, I see there's two levels and from a research perspective. One is the relatively less experienced individuals who are ... If you look at research there's a lot of ... a core first part of research is gathering information and data and stuff like that. I think a model in which a chunk should suit more those levels of people who are not necessarily experts but are really in gathering info, data etc. You know relevant information. So that's a good chunk of this sourcing model. And then there's another layer of people who are a bit more experience in a topic. So you get a few of them in this model as something you would want to actually tap into to bring in the actual benefit. To get some more experience to add value to the project." - Geography lead Growth & Strategy Research

#### 5.9.4 Relevant platform characteristics

The characteristics of a crowdsourcing platform that are deemed most important by managers are usability and the quantity of people that are available to participate in tasks on the platform. Managers stated that they favour high usability, since the approach of the platform is to gather resources quickly. Some managers therefore stated that they do not want to provide too much information. The information that they are required to give should revolve around the task. Furthermore, the concept of the platform does not work if no solvers are around to do projects in the first place. Managers have short deadlines and therefore need to be able to rely that someone picks up their jobs quickly. To extend on that, managers also need to be able to trust in the platform and its solvers as well. Managers stated that they needed to have some sort of assurance that the people on the platform could provide work with adequate quality. Other favourable platform characteristics mentioned by managers are: skill filters, reputations systems and proper closure of completed tasks. The general attitude towards relevant platform characteristics is captured in the following quote:

"So I guess two main things and these kind of go hand in hand. One: How easy is it to use? And two: How many other people use it? Because I think that with these kinds of things there is a huge dependency on what you could call critical mass. So the ADP volunteering thing is a good example, because I was around four years ago when it was just being setup. And I just completely ignored it because there was no one else around it. Soon as it became popular I wanted to use it. So adoption is certainly a big component of it. And you know SharePoint is a pretty annoying tool to use, and that is honestly one of the main reasons that I don't use it more" – Strategy Manager

#### 5.9.5 Openness of managers for using the agile workforce

All the managers that were interviewed indicated that they were open to using the platform. These managers all had different reasons. One manager was interested in the different domains in which work is offered on the Agile Workforce platform. In addition, he mentioned that the platform could overtake other internal crowdsourcing platforms as well and act as single source of truth within the organization. Two managers stated that they found it interesting to be able to reach out to people outside of their usual community. Especially when their usual community does not have the necessary skills for a certain project. Another manager would consider the platform for projects in which she does not need industry expertise. The last manager would only use it on the condition that enough solvers were available and he could filter skills. After showing the platform, one manager indicated:

"Yeah this looks pretty cool. It looks usable from a user interface and experience kind of view. It looks pretty easy, like I would be able to understand it and easily offer a job on it. And it's interesting that it's global." – Strategy Consultant

# 5.9.6 Manager POV of employee motivation for using the agile workforce

When managers were asked to indicate what would motivate employees to make use of the agile workforce platform, 4 out of 5 managers stated that they thought visibility within the organization would be a key consideration for employees. According to these managers, visibility can be gained on the way employees work and the type of work that employees do. Furthermore, two managers stated that they thought the platform could be used by employees to increase alignment between the projects that they do and the skills they wish to develop. To extend on that, three other managers named skill development as a motivation for employees to participate in the platform. Lastly managers stated that the opportunity to do chargeable work also was one of the main reasons for employees to participate in the platform. One of the managers stated:

"The reason why people would use this platform is to receive some feedback. The recognition that they earn can motivate people. Anything that relates to people validating their status as an expert on blockchain suppose. I think that getting a medal for example that shows their recognition would motivate people. The person knew a lot about the topic etc." - Research Manager Growth & Strategy

#### 5.9.7 Benefits of the agile workforce

Concerning the general benefits of the platform, the managers envisioned distinct benefits. One of the managers stated that the platform provides an opportunity to outsource manual tasks, and therefore provides managers with more time to add value (e.g. seeing clients) to the company. In the same regard, one manager mentioned that using the agile workforce could help organizational capabilities to deliver projects to the client more quickly. In addition, this manager mentioned that the platform could provide an overview of the relevant skills that are in demand at a specific time. Another manager spoke about the increased efficiency for the hiring process due to the marked segments, which the platform provides. In addition, it provides the organization with higher margins because consultants on the bench have the possibility to increase their chargeability. Lastly, two managers noticed that the platform could be used to gather resources quickly. To illustrate:

"Very quickly, I think there are three. For hiring people, it's more efficient I imagine. You may find more appropriate resources if you got marked segments such as social or operations or whatever. For the supply side, it's another opportunity to do volunteering stuff and you get all the performance and recognition and networking stuff. From a company point of view: Every time there is someone on the bench, it's eating into our profits right. If you get more people productive more of the time, then you get a more efficient organization and our margin goes up. And none of that is less than obvious, but that's how I see It." – Strategy Manager

#### 5.9.8 Barriers to adopting the agile workforce

In addition to the perceived benefits of the platform, managers were also asked what they thought were barriers to adoption of the agile workforce. Two managers noticed that it might be difficult to incentivize employees to do work for unknown managers, since they do not receive direct recognition for doing so. As a result, it could be possible that not enough people make use of the system. Another manager felt that she still was not able to trust the platform, as she doesn't have information on the time it takes to receive an offer to help. To add on this, another manager stated that it is difficult to trust the platform, as one does not know the amount of skills a potential solver has. It still remains to be seen if a solver has skills that are adequate in the eyes of the manager. Lastly, one manager stated that a bad experience might result in a reluctance to use the system. Therefore, the system should be able to guarantee a first encounter that properly shows the platform its capabilities.

"I think you've already hit on the biggest barrier, which is about motivating and I prefer to use the word incentivizing because it needs the... With the social stuff, you've got the whole like giving back thing, which is enough to motivate a lot of people. But, in general I think it's tough. Getting people to volunteer is tough. So I would say that lack of incentives is your biggest barrier for adoption" – Strategy Manager

Ideas by managers to overcome the abovementioned barriers are distinct as well. The most straightforward answer by one manager revolved around increasing the room for feedback from users. Related to the issue of not enough people using it, one manager noticed that it would probably be a marketing issue. Therefore, involving employees in the project can resolve this issue. Furthermore, one manager mentioned the use of HR to vouch for employee skills. That is, when a manager is uncertain about the skills of a certain employee, he/she is able to contact HR and get validation on someone's skillset. Moreover, this manager also stated that when he has a certain task available, he would like to get suggestions from the platform which people he could approach. To overcome the issue of not wanting to do work for managers on the other side of the world, local adoption has the potential of solving this issue. Lastly, one manager suggested a sort of notification system for interested solvers to increase real-time availability. To illustrate:

"So the barrier on the supply is that I don't think many people are using it. Even though they have enough capacity. That's a marketing issue. Direct people more to the agile workforce thing. That's a first one. How do we convince people that they use this platform? How do you overcome the skills barrier? I think you have a team and you could create a partnership with HR or something. To actually vet the skills level. The last one was around either usability. To rethink the design of minimal and quicker turnarounds. Maybe you categorize or put tags on people. That way you know who is in the pool. A list in which the people are showed that are relevant to me based on the skill." - Geography lead Growth & Strategy Research

### Chapter 6

### Discussion

Conflicting conclusions regarding the effectiveness of monetary incentives in internal crowdsourcing suggest that more research is needed between different purposes of internal crowdsourcing and solvers' motivation (Zuchowski, Posegga, et al., 2016). Therefore, this study aims to understand the motivation of employees and managers to make use of an internal work marketplace that is based on crowdsourcing within a professional consulting firm. The results of this study can be used to argue whether a general model for solvers' motivation in internal crowdsourcing exists or whether the context of each internal crowdsourcing initiative is unique and therefore not generalizable.

This study answered the research question by using qualitative and quantitative methods. First of all, to understand the motivation of employees (solvers), the WPI survey was used to study individual differences of solvers' motivation. In addition, these solvers were asked to provide qualitative data reflecting their preferences for the platform as well. Second, managers were interviewed to ask which characteristics they deemed important for an internal work marketplace and what their general stance on internal crowdsourcing is as well.

#### 6.1 Solver motivation towards the platform

# 6.1.1 Impact of the need for enjoyment on the amount of projects completed

The main finding of the quantitative part of this study is that solvers who value enjoyment contribute to fewer projects in an internal crowdsourcing work marketplace within a professional consulting firm. The intrinsic motive "need for challenge" and the extrinsic motives "need for recognition" and "need for compensation" showed no significant influence on the number of projects. These findings are not in line with Deci, Koestner, and Ryan (1999) who argue that intrinsic motivation has a positive effect on the number of voluntary activities. These findings are also not in line with the findings by Kerr (1975) on extrinsic

motivation which stated that when rewards are present that address specific extrinsic motives, a positive effect on free choice behaviour will occur. Seeing that the platform has a reputation system, it is expected that individuals who value recognition would be more likely to contribute to the platform. So, why are these findings not in in line with general theory on motivation?

First of all, why do solvers who value enjoyment contribute to fewer projects? To come up with a solid explanation, it is important to note that the motive "need for enjoyment" only significantly impacts the amount of projects completed, not the decision to contribute. This would imply that employees who have contributed to the platform already have a different perception of the platform than the non-contributors or the contributors with few projects. Therefore there has to be some kind of mismatch between the expectations of employees in regards to the opportunities provided by the platform and the actual work on the platform.

### 6.1.2 Mismatch between solver motivation and manager motivation

The employees that participated in the survey are relatively young of age. Based on the answers that were provided when being directly asked what they liked about the platform, most answers focused on the opportunities that the platform could provide. Due to their junior position, these employees are mostly not able to pick their own projects. Therefore, they are seeking for ways to develop their own niche and discovering what kind of jobs are out there. Looking at the qualitative answers, they perceive the platform as a tool to do this. The solvers explicitly state that they participate in the platform because of the opportunities it may provide. When relating these findings to the literature on crowdsourcing in general, it is clear that these forms of motivation are not new to crowdsourcing (Ghezzi et al., 2017). Skill development is typically seen as a form of intrinsic motivation, while meeting new people, gaining recognition and the potential career benefits are forms of extrinsic motivation. It is known that solvers are motivated by gaining recognition within the enterprise (Simula and Vuori, 2012). However, when managers were being asked about the possibilities of the platform, most mentioned their intention to use the platform for manual tasks. These findings would predict the platform to be more successful because it was found that easy to solve tasks in a limited amount of time are more successful for crowdsourcing ((Lopez et al., 2010)). Nonetheless, this mismatch between the expectations of managers and solvers could explain why solvers who value enjoyment are not satisfied by the work opportunities on the platform, and therefore complete fewer projects. More specifically, solvers want to develop their skills by doing interesting work, which can be perceived as enjoyable, but managers see the platform as a means to get manual work done.

#### 6.1.3 The effectiveness of financial incentives

The discussed mismatch might also imply that financial incentives are not effective for this type of crowdsourcing within this specific context. The employees that are drawn to the agile workforce are younger and are searching for ways to increase their network and skills. In that sense, this study acknowledges that financial incentives might not be effective in situations where employees are already paid and the crowdsourcing initiative is seen as a means for skill development and networking. Therefore, regarding the debate between scholars concerning the effectiveness of monetary incentives, this paper argues that within the specific context of an internal work marketplace within a professional global consulting firm, monetary incentives are not deemed effective because solvers are not looking for extra pay. Does this mean that the effectiveness of a certain reward is determined by the crowdsourcing initiative in which it is employed?

The literature often indicates that for idea generation internal crowdsourcing initiatives, the main driving forces for participating are intrinsic motives and non-monetary incentives Abu El-Ella et al., 2013; Bailey and Horvitz, 2010. In these studies, participants want to see their ideas happen and even would participate if there were no rewards. A case could be made that this construction might be different for an internal crowdsourcing initiative which serves as a work marketplace. Specifically if the platform is used for manual tasks. This study showed that solvers who value the need for enjoyment participate in fewer projects on the platform. However, qualitative answers provided by these solvers indicate that solvers in general value skill development and networking. This implies that non-monetary incentives such as gaining recognition may be an effective tool but using solvers their intrinsic motivation might not. Due to the nature of the platform (manual work), solvers feel under-rewarded in their need for skill development and need for enjoyment. Seeing that the need for recognition also did not impact participation, there is a possibility that the platform that was observed within this study also did not reward solvers adequately with their reputation system. Involving managers more directly has the possibility to overcome this issue. Therefore, this study also acknowledges the claims in literature that it is important to visibly involve manager and other leaders in the crowdsourcing activities since it has a positive impact on the motivation of other to participate (Leung, van Rooij, and van Deen, 2014). In addition, these findings indicate that it might be difficult to come up with a general model for motivation in internal crowdsourcing. This also implies that motivation differs per internal crowdsourcing initiative.

# 6.1.4 Consequences of the mismatch between solver and manager motivation

The consequences of this mismatch are that solvers do not get the satisfaction of doing interesting work and therefore will be frustrated in their attempts to develop specific skills while doing something that they enjoy and that managers might end up with unmotivated solvers who are under-performing on a certain task because solvers do not enjoy the tasks. Therefore, the jobs on the platform are still seen as 'work' (Hasan, Meloche, Pfaff, and Willis, 2007). More concretely, even though employees have more freedom in choosing their projects, they do not perceive the projects as 'fun' activities. Therefore, employees that have the need for enjoyment as motive for participating in the platform will feel under-rewarded in their free choice behaviour. Solvers realize this when doing more projects. The consequence of this mismatch is that participants are not really drawn to the platform and therefore participation decreases. Tasks that would be posted to the platform will remain with the manager. The managers will have to do the tasks themselves and therefore lose valuable time that could be be spend interacting with clients. As a result, the designed internal crowdsourcing initiative is not effective and idle time is not used as effectively as possible throughout the firm.

### 6.1.5 Do platform contributors and non-contributors value the same motives?

It is surprising that the findings concerning the need for skill development and networking are stated by the general sample but no real difference exists on these motives by skill development and network development between the contributors and non-contributors. More concretely, the decision to contribute or the quantity of contributions is not triggered by a difference in motivation between contributors and non-contributors. It is possible that the two groups are relatively homogeneous. The groups are distinguished on the premise that people who have participated in an agile workforce project display higher intrinsic and to some extent extrinsic motivation related to the platform. Seeing the qualitative results, it would be expected that questions relating to doing new tasks, skill development and meeting new people would trigger higher responses. The data shows that is not the case.

Comparing the differences in scores provided by the two groups shows that they are relatively similar. That is, non-contributors also value doing new tasks, developing skills and meeting new people. Seeing the age and place in hierarchy of the respondents, this could be a sensible explanation. As stated above, younger employees within Accenture have not acquired a specific niche and therefore value knowing people and doing different sorts of work. Even though they do not aim to participate in the agile workforce, they still possess the same traits as the contributors. Thus, differences in motivation do not seem to influence the decision to contribute to the agile workforce. The qualitative part of the survey makes it evident that contributors and non-contributors value skill development and meeting new people.

# 6.1.6 The importance of skill development and networking explained

Looking at the interviews of managers there is reason to believe that skill development and networking are important and that solvers know the importance of it. Most managers stated that they favoured to reach out to their usual network of people before using alternative means of staffing such as crowdsourcing. Therefore, it is essential for relatively young employees to become part of these networks and to become an expert in a specific domain. This might also explain why employees put so much emphasis on acquiring new skills and meeting new people. They know that becoming part of a network and specializing in a certain skill will yield the most results career-wise. It also provides solvers with the opportunity to change their day-to-day routine. Accenture is a company with 400.000 employees, therefore solvers must be curious to find out which tasks are out there.

#### 6.1.7 Do solvers get enough recognition from the platform?

An interesting point made by some managers when speaking about the barriers to adoption of the platform for solvers revolved around the platform not being able to provide direct recognition and therefore solvers would not be motivated to participate on the platform. This is an interesting thought. The reasoning behind this thought is that most of the work on the platform is done for unknown managers with different geographical backgrounds. So even though solvers get to meet new people, they will feel under-rewarded in their drive to gain recognition because the recognition will be from someone who is from a different location and therefore the recognition does not seem to impact the decision to contribute or the amount of contributions. Following the same line of reasoning, it is of added value to ask if the reputation system provides solvers who value getting recognition with enough satisfaction. In line with Leung et al. (2014) this shows that manager involvement is important since it has a positive impact on the motivation of others to participate.

#### 6.2 Manager motivation towards the platform

#### 6.2.1 Skills as a prominent concept

One of the most prominent concepts for employees as well as managers is skills. Employees use the platform for skill development and managers use it to search for skills that are relevant to their specific need. In their search for skills, managers need to be able to rely on the platform. They need to make sure that the platform can provide them with competent people. Otherwise, the risk of not being able to deliver is too large to make use of the platform when deadlines are tight. This problem might not be considerable for the manual tasks where the deadline is flexible, but certainly can be sizeable when specific expertise is promised to a client and the manager cannot deliver because the solver is lacking in skills. This also raises the question whether the platform is suitable to find deep experts on specific topics. In theory, the platform can be used to quickly gain access to some helping hands and to gain specific expertise. However, in practice, it is much more difficult to make use of the experts. The platform cannot guarantee that a certain expert will have adequate knowledge. This issue is not present when the manager just needs some extra hands with manual tasks because these tasks can be completed much more easily. For more elaborate tasks they mostly reach out to their current network of people. Therefore most managers deem the platform more helpful for manual tasks than for specialist knowledge. The following quote exemplifies that for complex projects managers need to be able to trust a person to do an adequate job:

"So industry expertise would be my first protocol. Second, it depends on the complexity. If think it's very complex then, you know like a thought leadership, or a client presentation where you have to present to a CEO and you have to prepare that as well. Then I would perhaps reach out to someone who has the experience or who has the confidence and trust, which has done that before, who comes from strategy for example. They would probably understand a situation like this better so I will reach out to them based on their skills." – Products Industries Senior Research Manager

Which in turn indicates a mismatch between the motivation for using the platform of solvers and for managers. Managers deem it to be helpful for manual tasks, while solvers deem it to be a helpful tool for skill development and networking.

#### 6.2.2 Preferred platform characteristics

Regarding the platform itself, it is vital that the platform is easy to use. Managers made it apparent that in their eyes, the platform should accommodate fast job searching without providing too much information. This prioritization of usability is logical, seeing that managers perceive the platform mainly to be for quick help. Which again is another indication that the platform is more useful for manual labour. To exemplify:

"So in the past I've used that and it has worked quite well. So once I've used it I was bidding on a piece of work and I needed help basically, you know easy stuff turning into a word document into a PowerPoint or something like that or formatting slides or something. I put that out on the job jar and I had about 4 people reply to me either that day or the next day. With this piece of work I was doing, I needed additional support with research, but not the kind of sophisticated research. But basic go to their website and copy the logo or something. And again I had like three or four analysts reach out and get in touch, yeah it was easy." – Strategy Manager

Therefore, managers favour to put jobs on the platform that require little context to be completed adequately. It is possible that managers think this way because it might be too much of a hassle to provide much context through a digital medium. In that sense, managers do not want to take the time to spend their time explaining a project completely in an online environment. In addition, managers expect the platform to quickly deliver the right people. An essential part of that is the quantity of people that use the platform. Providing a bigger pool of available employees dramatically increases the chances of managers to employ people through the platform.

#### 6.3 Adapting the Work Preference Inventory

Seeing that the WPI model during CFA showed low fit statistics and low item loadings, adjustments to the WPI were made to increase model fit. It was actually quite surprising that the original CFA did not fit the data of this study. This might be caused by the specific population that was used in this study. Amabile et al. (1994) obtained data from two specific groups: undergraduates and adults working in a variety of professional positions. The sample of this study consisted mainly of young professionals within a global consultancy firm. Therefore, the sample that was used in this study is quite homogeneous and therefore display different motivations than the original sample.

While adjusting the model, it became clear that the questions that were reverse scored often were the ones to be removed. This indicates that it is better to ask questions positively so that a high score on the likert scale also represents a high value of the construct that such a question is supposed to measure. Furthermore, the literature already shows examples of the WPI being shortened (Robinson et al., 2014). This study is yet another indication that it is possible to shorten the WPI while maintaining validity and reliability. Using the shortened version decreases the response burden of the WPI. This might be useful when the WPI is being used in combination with other surveys.

### Chapter 7

### Conclusion

Attracting employees who want to do work through crowdsourcing platforms (solvers) is relatively new and therefore organizations do not understand how to attract potential solvers. In addition, conflicting conclusions regarding the effectiveness of monetary incentives in internal crowdsourcing suggested that more research was needed between different purposes of internal crowdsourcing and solvers' motivation (Zuchowski, Posegga, et al., 2016). Therefore, this study set out to understand the motivation of solvers and managers to make use of an internal work marketplace within a professional consulting firm. Solver motivation was studied mainly quantitatively by posting a survey to the internal crowdsourcing initiative within the professional consulting firm. The survey measured individual differences in motivation and studied the effects of intrinsic and extrinsic motivation on the decision to contribute and the quantity of projects. In addition, solvers were directly asked what they liked about the platform. The survey yielded 73 responses. Manager motivation was studied qualitatively by interviewing 5 managers within the firm about their stance to using work marketplaces for internal crowdsourcing in general and using the platform present within the organization specifically.

By studying the effect of intrinsic and extrinsic motivation on the decision to contribute to the platform and the amount of projects completed on the platform, this study found that solvers who value enjoyment contribute to fewer projects on an internal work marketplace. A mismatch in the perception of solvers and managers in regards to the usability of the platform might cause this downturn in contributions. This gives cause to position the platform differently. Solvers in this study are generally at the start of their career and see the platform as a tool for skill development, exposure to different work activities and networking, while managers see the platform as a means to get manual work done. One of the issues that managers state is that it is difficult to assess the skill level of an individual on an online platform. They rather work with someone they are familiar with to accurately predict the added value of person. If they use the platform, their preference is to use it for manual tasks. Therefore, by doing projects on the platform, solvers feel under-rewarded in their behaviour because the manual tasks are not perceived as enjoyable activities. Thus, it is questionable whether an internal work marketplace within a global firm is useful for fulfilling the needs of the solvers. Furthermore, this study adapted a survey to measure individual differences in motivation called the Work Preference Inventory. Certain reverse scored items were deleted to increase fit statistics. By doing this, the WPI is shortened to 20 items instead of 30, thus decreasing the response burden.

Based on the performed research, this study concludes that managers and employees have different motives for making use of an internal work marketplace. Employees (solvers) within a global professional consulting firm use an internal work marketplace for skill development and networking. The participating solvers were relatively young and therefore intrigued by the opportunities that platform could provide. Managers on the other hand see the platform as a means to acquire quick resources to do manual work for them. For managers the platform is an easy way to outsource manual labour.

#### 7.1 Study limitations and avenues for future research

Concerning the limitations that are caused by study design, the self-reported contribution numbers of participants causes the most prominent limitation. Using self-reported data may potentially cause common method variance (Pod-sakoff, 2003). That happens when variance is attributable to the measurement method rather than to the construct the measures present. Generally, method biases are a problem because they threaten the validity of the conclusions about the relationships between measures. Having a data archive in which the actual projects completed per individual are listed would be preferred for this study. Using archived data increases the objectivity of the study and therefore paints a more accurate picture of the motivation of solvers. Therefore, future research should focus on getting objective data to represent the decision to contribute and the quantity of projects completed.

Even though 73 people participated in the survey, it is preferable to have more participants. Future research should aim to increase the number of participants. Furthermore, the majority of the solvers were at the start of their careers, from India or the US, and held a bachelor's degree. This significantly limits the generalizability of the results from this study. A case could be made that this type of internal crowdsourcing only works for younger people because they are the ones that are searching for their own niche and have not really specialized yet, while older employees generally have more responsibilities and are not looking to take on extra work. However, it would be valuable to see if solver motives differ per region and therefore would be cultural. If organizations know how better understand different types of solvers, better initiatives can be established. Therefore, future research could look into the geographical differences of solver motivation. Another interesting aspect to delve deeper into is the mismatch between solvers motives and manager motives for using an internal work marketplace. If other internal work marketplaces in different organizations varying in size also display a mismatch between the wishes of managers and solvers in regards to the platform, it is justifiable to ask whether such a platform will ever be truly successful. If solvers find out that the platform is not ideal for skill development, how does this affect quality of work? Are different types of work (not related to consultancy) more suitable for such a platform? More specifically, future work should not only focus on quantity of contributions. Other measures such as quality and novelty of contributions might tell more about how successful the platform really can be.

#### 7.2 Recommendations for practice

This study argues that there is a mismatch between the expectations of solvers and managers in regards to a specific internal work marketplace. Solvers see the platform as a means to develop skills and network, while managers mainly see the platform for manual tasks. Thus, the purpose of the platform that is defined at its inception should be communicated clearly to both parties. Both purposes can be within the same platform, if properly distinguished. If the platform is built to gain access to specialist knowledge as well, it is essential that managers can assess the skill level of a certain person quickly. For that reason, attention should be given to displaying solvers their skill level. This decreases the uncertainty that managers experience when using the platform. If the platform is established to quickly perform manual tasks, solvers need to be made aware of this. In addition, it is possible that recognition systems do not provide solvers enough recognition to satisfy their need for recognition. Increasing manager sponsorship of these platforms may encourage solvers to do work on the platforms.

#### 7.3 Recommendations for future research

Seeing that the research domain of internal crowdsourcing is relatively new and a variety of different initiatives exist, there still are unknown elements left in regards to motivation. Generally, future research should increase focus on the relationship between different internal crowdsourcing initiatives and solver/manager motivation. It is still unknown what specifically motivates solvers per initiative. Therefore, it is difficult to continuously develop effective incentives in new internal crowdsourcing initiatives. Furthermore, this study found that there is a mismatch between solver and manager motivation. Thus, it is valuable to ask if motivation mismatches are also present in other initiatives and what effect this has on the quality of work. These questions are relevant when discussing how successful a specific internal crowdsourcing initiative may turn out to be.

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## Appendices

Appendix A

The motivation survey

# Motivation survey Agile Workforce platform

**Start of Block: General introduction block** 

### Welcome to Accenture's motivation survey for the agile workforce platform

Thank you for agreeing to take part in this survey measuring motivation to doing work on the agile workforce platform. Today we will be gaining your thoughts and opinions in order to see what drives you to participate in projects on the agile workforce platform. This survey should only take 5 minutes of your time to complete.

Your responses are voluntary and will be kept confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed as a group.

Please click on the arrow to begin.

End of Block: General introduction block

**Start of Block: Demographic introduction block** 

First of all, we would like to acquire some demographical data about our respondents. This data can be used to place our findings into relevant context.

Responses will be kept confidential and will not be identified by individual.

End of Block: Demographic introduction block

**Start of Block: Demographic information block** 

Q1 What is your age in years?

0 10 20 30 40 50 60 70 80 90 100

Your age: (1)
Q2 What is your gender?
O Male (1)
O Female (2)
Q3 What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.
O Less than high school (1)
O High school graduate (2)
O Some college, no degree (3)
O Associate degree (4)
O Bachelor degree (5)
O Completed some postgraduate (6)
O Master degree (7)
O Ph.D., law or medical degree (8)
$\bigcirc$ Other advance degrees beyond a master's degree (9)

Q4 What is your current career level within Accenture?

O Intern (1)		
Associate (2)		
O Analyst (3)		
O Consultant (4)		
O Manager (5)		
O Senior manager (6)		
Associate director (7)		

 $X \rightarrow$ 

Q5 In which country are you mostly associated to the agile workforce platform?

▼ Afghanistan (1) ... Zimbabwe (1357) Q6 Have you done work on the agile workforce platform in the past?  $\bigcirc$  Yes (1)

O No (2)

Display This Question:

If Have you done work on the agile workforce platform in the past? = Yes

Q7 How many projects have you done on the agile workforce platform?

1 (1)
2 (2)
3 (3)
4 (4)
5 (5)
6 (6)
>6 (7)

End of Block: Demographic information block

**Start of Block: WPI introduction block** 

The following questions are related to your motivation towards the agile workforce platform. Please indicate per statement to what extent this relates to your attitute to doing work on the agile workforce platform.

End of Block: WPI introduction block

**Start of Block: Work Preference Inventory block** 



	Fully disagree (1)	Disagree (2)	Disagree to some extent (3)	Agree to some extent (4)	Agree (5)	Fully agree (6)
The more difficult the problem is, the more I enjoy trying to solve it. (1)	0	0	0	0	0	0
I enjoy tackling problems that are completely new to me. (2)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
I enjoy trying to solve complex problems. (3)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
I enjoy relatively simple, straightforward tasks. (4)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
l prefer work l know l can do well over work that stretches my abilities. (5)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
I want my work to provide me with opportunities for increasing my knowledge and skills. (6)	0	0	$\bigcirc$	$\bigcirc$	0	$\bigcirc$
I prefer to figure things out for myself. (7)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
No matter what the outcome of a project, I am	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

Q8 When doing work on the agile workforce platform...

satisfied if I feel I gained a new experience. (8)						
Curiosity is the driving force behind much of what I do. (9)	0	0	0	$\bigcirc$	0	0
I'm more comfortable when I can set my own goals. (10)	0	0	0	$\bigcirc$	$\bigcirc$	0
It is important for me to be able to do what I most enjoy. (11)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
I enjoy doing work that is so absorbing that I forget about everything else. (12)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
It is important for me to have an outlet for self- expression. (13)	0	0	0	$\bigcirc$	$\bigcirc$	0
I want to find out how good I really can be at my work. (14)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
What matters most to me is enjoying what I do. (15)	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
I am not that concerned about what other people	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0

think of my work. (16)

I prefer having someone set clear goals for me in my work. (17)

To me, success means doing better than other people. (18)

I'm less concerned with what work I do than what I get for it. (19)

I'm concerned about how other people are going to react to my ideas. (20)

I believe that there is no point in doing a good job if nobody else knows about it. (21)

l prefer working on projects with clearly specified procedures. (22)

I am strongly motivated by the recognition I can earn from other people. (23)

$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0
0	$\bigcirc$	0	0	$\bigcirc$	0

I have to feel that I'm earning something for what I do. (24)	0	0	0	0	$\bigcirc$	0
I want other people to find out how good I really can be at my work. (25)	$\bigcirc$	0	0	$\bigcirc$	$\bigcirc$	0
I am keenly aware of the income goals I have for myself. (26)	0	0	0	0	0	0
I am keenly aware of the promotion goals I have set for myself. (27)	0	0	0	0	$\bigcirc$	0
l seldom think about salary and promotions. (28)	0	0	0	$\bigcirc$	$\bigcirc$	0
I am strongly motivated by the money. (29)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
As long as I can do what I enjoy, I'm not that concerned about exactly what I'm paid. (30)	0	0	0	0	$\bigcirc$	0

End of Block: Work Preference Inventory block

Start of Block: Feedback introduction block

The following questions provide you with the opportunity to provide feedback on the agile workforce platform.

End of Block: Feedback introduction block

Start of Block: Feedback block

Q9 What do you like about the agile workforce platform?

Q10 Do you have any suggestions on how to improve the agile workforce platform?

Q11 On a scale of 1 - 10, how satisfied are you with the agile workforce platform?

- 0 0 (0)
- 0 1 (1)
- O 2 (2)
- O 3 (3)
- O 4 (4)
- 05 (5)
- 06 (6)
- 07(7)
- 0 8 (8)
- 09 (9)
- 0 10 (10)

End of Block: Feedback block

**Start of Block: Block 6** 

Thank you for taking the time to complete this survey. We truly value the information that you have provided. Your responses will contribute to our understanding of the motivation of employees to participate in agile workforce projects.

If you have any comments on the survey or the project, please leave a comment below.

Q12 General feedback:

End of Block: Block 6

### Appendix B

## The interview guide

### Interview guide Agile Workforce

### Introduction

- Intern at Accenture Research / student at Leiden University
- Doing crowdsourcing research
- Consent to record

Can you tell me a bit about your role within Accenture?

#### **Current situation**

How do you staff projects at this moment? What is important in this process?

Have you used alternative means of staffing in the past?

#### Agile workforce general

What if you had access to a work marketplace in which you could approach people for staffing based on your specifications within Accenture or using external crowds.

Would you consider using such a staffing method? Why/ why not?

For what kind of jobs and what kind of people would you consider using such a platform?

What characteristics about the platform would encourage you to use it?

Which characteristics would stop you from using this platform?

#### Agile workforce platform specific

Show agile workforce platform

Would you consider using this?

When using such a platform, what do you think will motivate employees to participate in this platform?

What would be the potential benefits of using such a system?

What would be potential barriers for you to make use of such a system?

What would be necessary to overcome these barriers?