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INFORMATION TECHNOLOGY AND PERFORMANCE WITHIN THE UNITED NATIONS DEVELOPMENT PROGRAMME

A case study of the influence of information technology on ineffectiveness in the United Nations Development Programme

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Abstract

The United Nations Development Programme is a highly bureaucratic, fragmented, inefficient and ineffective organisation (Mühlen-Schulte, 2010; The Advisory Committee on Administrative and Budgetary Questions, 2014). Information technology can potentially increase performance and effectiveness for any organisation (Melville, Kraemer, and Gurbaxani, 2004). Yet, many organisations fail to exploit this potential. Why is that?

As most of the existing literature on IT business value has dealt with the for-profit sector, we explored its validity in the non-profit sector. Specifically, we studied the contextual factors that influence the relationship between IT and performance in the United Nation's Country Office ICT Advisory unit. Our exploratory and insight-based critical realist approach allowed us to revise and adapt Melville et al.'s (2004) IT Business Value model to the unit's context. We triangulated data through our semi-structured interviews, various secondary data sources, and client satisfaction surveys.

Our evidence demonstrated that the Country Office ICT Advisory unit is performing surprisingly well despite the inefficient, hierarchical, and bureaucratic environment that it operates in. The unit's extraordinary manner of integrating IT into their daily working routines and the services they provide to the Country Offices has enhanced their performance.

In sum, it is the combination of the variables strategy, culture, motivation, ISO 9001 standard, and IT resources, conditioned by industry and macro characteristics, that maximise the unit's IT usage and its effect on performance. Our research suggests that our model and the unit's exceptional use of IT could be applied to the rest of the organisation to address the abovementioned issues of ineffectiveness. We will test the external validity of our model on 16 May 2017 during our presentation of the Executive Summary to the unit's Director.

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1. Introduction

Wireless communication has become a delivery platform of choice for many kinds of digitized products, including games, music, images, and news, as well as instant messaging that covers the entire range of human activity, from personal support networks to professional tasks and political mobilizations. Thus the grid of electronic communication overlies everything we do, wherever and whenever we do it. Even though information technology (IT) is found in most parts of the world and in, arguably, all sectors, organisations differ in successfully implementing IT. Moreover, in the midst of the information age, organisations worldwide are faced with fierce competition from new IT making it even more difficult to successfully exploit IT benefits (Castells, 2011). Why do some organisations succeed while others do not?

Brynjolfsson, Hitt, and Yang (2002) have researched how information communication technology (ICT) can reduce costs, enhance communication, and improve processes in organisations. The potential benefits of IT might urge organisations to be the forerunner of implementing new technology to maintain a competitive advantage. However, simply installing a new software or adopting a new ICT will most likely not lead to increased performance. Oftentimes, organisations fail to incorporate the human aspect to IT, for instance the role of employees. There are several factors that need to be aligned to fully exploit the potential of the relationship between IT and performance including organisational structure, strategy, and culture (Brynjolfsson, Hitt & Yang, 2002; Croteau & Bergeron, 2001; Leidner & Kayworth, 2006; Melville, Kraemer, & Gurbaxani, 2004).

Currently, most of the existing literature on the relationship between IT and performance has dealt with businesses. To what extent does this relationship apply to non-profit organisations? This United Nation (UN) is one, if not the, largest non-profit organisations in the world.

Furthermore, given the complex nature of the UN, it becomes especially interesting to study the role of ICT here. As will be demonstrated in this paper, it is a prime example for the potential benefits and disadvantages of how ICT and performance relate. The UN's Advisory Committee stated:

> The Advisory Committee has frequently expressed its concerns regarding the high level of fragmentation of the ICT environment of the United Nations. Offices and departments maintain their own independent ICT units, resulting in a legacy of decentralized, non-standardized and fragmented ICT environments across the Organization which has built up over decades and leading to the proliferation of duplicate, incompatible and outdated systems, a limited ability to share and process information, incomplete coverage of user requirements and a lack of transparency regarding ICT expenditure and staffing across the Organization. The Secretary-General has indicated that this fragmentation also drives up the costs of operations and prevents the Organization from realizing economies of scale (…) In his current report (…) the Secretary-General indicates that there are currently almost 2,000 applications, 70 ICT units, over 130 ICT help desks, 44 data centres and 177 server rooms across the Organization (The Advisory Committee on Administrative and Budgetary Questions, 2014, pp. 1-2)

For example, the United Nations Development Programme's (UNDP) Country Offices had different contact persons for the endless amounts of ICT issues leading to confusion, inefficiency, and ineffectiveness (IM Strategy 2008-11). Consequently, the UNDP decided to centralise their ICT efforts giving birth to the Country Office ICT Advisory Services (CIAS) unit. Specifically, the CIAS unit assists UNDP's Country Offices globally by delivering ICT advice and support with tools, such as mobile devices, ICT infrastructure, connectivity, email, intranets, and knowledge portals. Given the high dependence on the availability and performance of these tools, the CIAS unit plays a vital role in improving interoperability and making data more accessible to enhance organisational growth, managing crises, mitigating risks, and business harmonisation. Additionally, the UNDP (2008) said, "the value of ICT and its potential as an innovating force coupled by a new perspective

in governance and risk management leads to efficiency gains with fiscal responsibility for the organization" (p. 3).

Christopher Dahl conducted an internship at the CIAS unit during the fall of 2016, which sparked his interest and concern for the CIAS unit. According to Christopher, the UNDP was full of inefficiency and bureaucratic functions. He asked himself – Given the CIAS unit's purpose to improve Country Office's performance through delivering IT solutions: what factors effect their ability to deliver on this purpose? What is impeding, if at all, the CIAS unit from accelerating performance within the unit as well as in the Country Offices? These questions defined the rationale behind our project, and propelled us to the following research question:

2. Research Questions

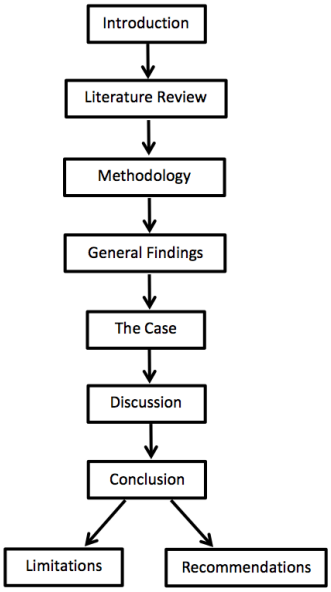
1. What variables influence the relationship between information technology and performance in the Country Office ICT Advisory unit?

2. To what extent may the case of the Country Office ICT Advisory unit be an example to the United Nations in ameliorating ineffectiveness?

3. Structure of the Paper

The paper is structured in the following manner (see Figure 1): Firstly, we present our review of the existing literature relevant to our research issue ending with an initial analytical framework. Secondly, we discuss our methodology. Thirdly, we offer our general findings. Additionally, we end this section with our analysis of the case, including the CIAS unit and the UN as a whole. Fourthly, we

Figure 1: Structure of the Paper



discuss these general findings in light with the theoretical foundation of our project. Lastly, we conclude our research endeavour by stating the limitations to our paper as well as offering recommendations for further research.

4. Literature Review

4.1. Approaches, Theories and Models Used in IS Research

Researchers of Information Systems (IS) have applied a wide variety of theories and methods to study phenomenon within this field (Sanghee, Saldanha, Malladi, & Melville, 2013). But, which theories are dominant? And how do they relate to each other? These questions are important to consider before setting out to conduct research in this area. In their research study, Sanghee, Saldanha, Malladi, and Melville (2013) tried to answer these questions. They identified five research fields for theories used in IS research based on the work of Sidorova, Evangelopoulos, Valacich, and Ramakrishnan (2008): IT and Organisation (ITO), Information Systems Development (ISD), IT and Individuals (ITI), IT and Markets (ITM), and IT and Groups (ITG). Five theories were found to be dominant for the entire IS field: Technology Acceptance Model (TAM), Resource Based View (RBV), Game Theory, Theory of Reasoned Action, and Theory of Planned Behaviour. However, the IS field is divided into streams of research rather than being a complete system of research. Therefore, it is more meaningful to look at what theories are dominant within the different research streams. Table 1 below provides an overview of the dominant theories by research stream according to on Sanghee et al. (2013).

Table 1: Top 5 Most Frequently Used Theories by Streams

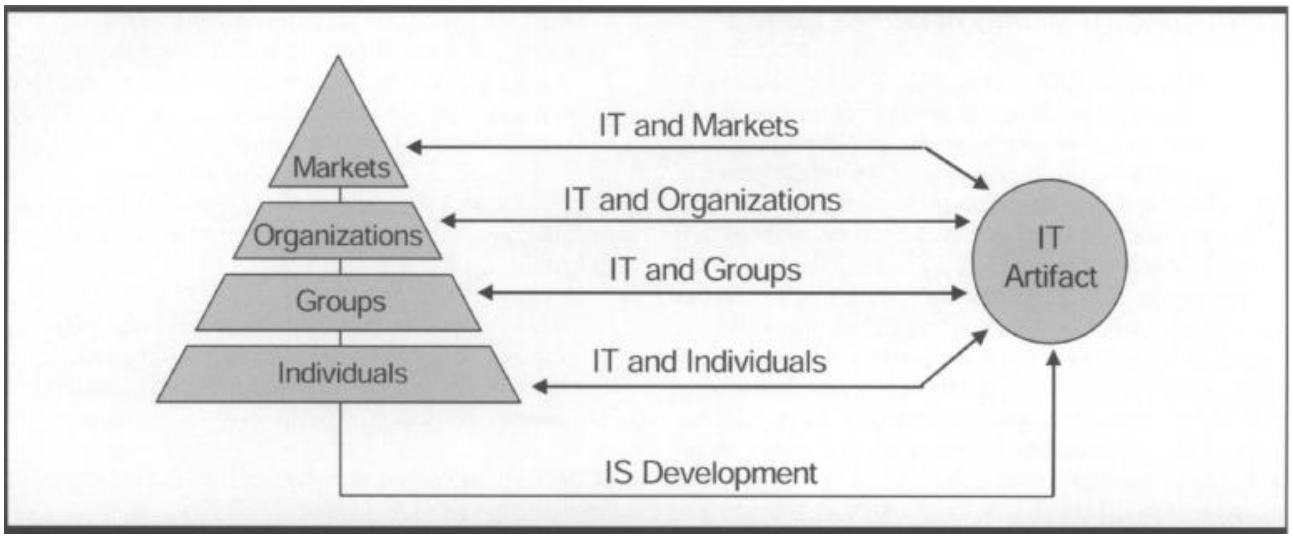
	Overall	**IT and Organizations**	**IS Development**
1	Technology Acceptance Model	Resource Based View	Decision Theory
2	Resource Based View	Dynamic Capability Theory	Cognitive Fit Theory
3	Game Theory	Organizational Learning Theory	Bayesian Decision Theory
4	Theory of Reasoned Action	Transaction Cost Theory	Activity Theory
5	Theory of Planned Behavior	Absorptive Capacity Theory	Agency Theory
	IT and Individuals	**IT and Markets**	**IT and Groups**
1	Technology Acceptance Model	Game Theory	Media Richness Theory
2	Theory of Reasoned Action	Transaction Cost Theory	Resource Based View
3	Innovation Diffusion Theory	Network Externality	Social Presence Theory
4	Theory of Planned Behavior	Option Theory	Channel Expansion Theory
5	Social Cognitive Theory	Production Theory	Media Choice Theory

Source: Created based on Sanghee et al. (2013, p. 15).

Moreover, Sanghee et al. (2013) found a connection between the dominant theories in each stream and the main research question of each stream, which is visually presented in Figure 2 below. It appears that the research question is directly related to the theories applied in IS research. Firstly, ITO centres on the effects of IT use for organisations, including the influence of IT investments on organisational performance, the strategic role of IT, and the implications of IT on business processes. Secondly, ISD "examines the information technology itself, and how it is developed" (Sidorova et al., 2008, p. 475). Thirdly, ITI mainly deals with the psychological features of human-computer interactions, such as computer self-efficacy, end-user computing, and HR issues within IS. Fourthly, given that IT is used in inter-organisational interactions, ITM revolves around how this use effects these types of relationships as well as markets in general. Finally, ITG "focuses on various types of systems used to support group work, including group decision support systems, as well as how such systems influence group dynamics or trust in IT-enabled

relationship" (Sidorova et al., 2008, p. 475). Historically, IS research has moved from being more concerned with the technical aspects of IT to nowadays being more concerned with the social context of IS development and use.

Figure 2: Model of IS Research Identity



Source: Sanghee et al., 2008, p. 476.

Melville, Kraemer, and Gurbaxani (2004) examined what theories are used in IT business value research. They found that microeconomic theory, industrial organization theory, and sociology and socio-political perspectives were most common within IT business value research. Firstly, microeconomics has contributed via theoretical models and mathematical specifications. This has been particularly useful in estimating the economic impact of IT. Secondly, industrial organization theory has enlightened the debate on "how firms jointly interact in IT investment decisions and how the resulting benefits are divided" (Melville et al., 2004, p. 288). Thirdly, sociology and socio-political perspectives have informed the discussion on the relationship between IT investment and organisational performance because economic activity is embedded in social networks. From the work of Melville et al. (2004) and Sanghee et al. (2008), it becomes apparent that researchers of IT business value draw primarily on theories from ITO and ITM.

Melville et al. (2004) proceeded to develop their own integrative model of IT business value. For that purpose they found it fitting to apply the RBV as their theoretical base because they "seek to develop a conceptual model that is not only based in theory, but rooted in one that is inherently suitable for analyzing the complexity of IT and firm performance" (Melville et al., 2004, p. 289). The RBV claims that some firm resources are sources of competitive advantage. Resources that are valuable, rare, inimitable, and non-substitutable form a sustainable competitive advantage (Barney, 1991). In previous works, the RBV has been used to study the efficiency and competitive advantage implications of specific firm resources such as entrepreneurship, culture, and organizational routine. Similarly, the RBV could be used to analyse how IT may be related to competitive advantage (Melville et al., 2004). Previous studies have applied the RBV to analyse the competitive advantage effects of information technology (Mata, Fuerst, & Barney, 1995) and to measure empirically the complementarities between IT and other firm resources (Powell and Dent-Micallef, 1997).

Melville et al. (2004) reviewed previous models of IT business value models to construct their integrative model. They uncovered four important insights:

1. IT impacts organisational performance through intermediate business processes;
2. Other organisational resources including work place practices interrelate with IT, whether as mediator or moderator, in the realisation of organisational performance impacts;
3. It is important to segregate the IT construct into meaningful sub-parts;
4. The external environment plays a role in IT business value generation.

Melville et al. (2004) summarised, "if the right IT is applied within the right business process, improved processes and organizational performance result, conditional upon appropriate

complementary investments in workplace practices and organizational structure and shaped by the competitive environment" (p. 292).

IT business value studies would benefit from using a variety of measures and levels of analysis (Chan, 2000) as well as combining and integrating various theories (Sanghee et al., 2013). In our research study, we draw on theories primarily from ITO (Organisation), but also from ITI (Individual) and ITG (Group). We based our analytical framework on Melville et al.'s (2004) IT Business Value model.

As previously mentioned, the IT Business Value model is based on the RBV. However, in more recent years, the institutional based view (IBV) has gained ground. In institutional theory, institutions are usually referred to as 'the rules of the game'. Economist Douglass North (1990) regarded institutions as "the humanly devised constraints that structure human interaction" (p. 3). He categorised institutions by their degree of formality. Formal institutions include laws, regulations and rules; informal institutions include norms, cultures and ethics. Sociologist W. Richard Scott (1995) expanded this idea and categorised institutions into three pillars, "regulative, normative, and cognitive structures and activities that provide stability and meaning to social behavior" (p. 33). North's (1990) scheme to divide institutions into formal and informal groups is complementary to Scott's (1995) idea of three supportive pillars. Peng, Sun, Pinkham, and Chen (2009) argued that the IBV is the third leading perspective along with the RBV and the industry based view in strategic management. They argue that the three perspectives effect strategy, which, in turn, has implications for performance.

We view the IBV as a contribution to the idea put forward by Melville et al. (2004). The IT Business Value model already has elements inspired by the IBV such as its integration of the macro

environment. Moreover, we want to highlight the contextual variables, including culture, strategy and external IT resources.

4.2. What is IT?

One of the core concepts of our research is IT. Hence, we extensively reviewed the literature in order to account for this concept. In the following section, we examine the concept of IT and IT business value research. We conclude this section with our definition of IT and IT business value.

Several research studies have tried to answer whether information technology (IT) has an impact on organisational performance. Moreover, researchers have developed a wide range of approaches to measure the mechanisms by which IT creates value and to estimate scales of such value. Previous studies have certainly found that IT may lead to improvements in organisational performance (Brynjolfsson & Hitt, 1996; Kohli & Devaraj, 2003; Mukhopadhyay, Kekre, & Kalathur, 1995).

Nevertheless, whether, or to what degree, IT actually impacts performance in an organisation clearly depends on a series of variables, such as the kind of IT, management practices, organisational structure, as well as the competitive and macro environment (Brynjolfsson, Hitt, & Yang, 2002; Cooper, Watson, Wixom, & Goodhue, 2000; Dewan & Kraemer, 2000; Melville, Gurbaxani, & Kraemer, 2007). Moreover, several studies suggest that firms do not absorb all of the value they generate from IT; value may be apprehended by business partners or competed away and value may be captured by end customers in the shape of lower prices and better quality (Bresnahan, 1986; Hitt & Brynjolfsson, 1996).

The concept of IT differs greatly across IT business value research studies. Researchers have drawn upon several academic disciplines in addition to IS, including economics, strategy, accounting, and operations research. Likewise, researchers have applied various conceptual,

theoretical, and analytical approaches and utilised several empirical methodologies at multiple levels of analysis.

Melville et al. (2004) reviewed the vast literature on IT business value in order to develop their IT business value model. They identified five conceptualisations of the IT artefact, which have been adopted in IS research: (1) tool view, (2) proxy view, (3) ensemble view, (4) computational view, and (5) nominal view. Firstly, as the name applies, the tool view observes IT as a tool intended to generate value, such as productivity enhancement, cost reduction, competitive advantage, and improved supplier relationships. IT is engineered for a specific purpose, which it is expected to realise. Secondly, the proxy view is often adopted in empirical studies using measures or proxies, such as capital stock denominated in dollars. Thirdly, the ensemble view focuses on the interaction between IT and people in both development and use of IT. This is often done through case or field studies using rich context analysis. Fourthly, the computational view is less applicable to business value research because of its emphasis on algorithm and systems development, testing as well as data modelling and simulation. Lastly, the nominal view utilises IT in an abstract manner by applying technology in name but not in fact. In other words, IT is used in a hypothetical manner. An example of this approach would be analysing the theoretical impact of IT to a given situation where IT does not appear in real life.

From their review of the five conceptualisations of IT, Melville et al. (2004) identified three prevalent assumptions in IT business value research. Firstly, most studies apply the proxy view and thereby use aggregate variables measured in dollars or counts of systems. Software is often employed implicitly or even omitted from the analysis. However, there is evidence of its association with organisational performance (Hitt, Wu, & Zhou, 2002), which is why there is a need to include software when conceptualising IT. Secondly, in accordance with the tool view, IT is

often limited to its engineered purpose, which is why we have an incomplete understanding of its unintended consequences. Thirdly, the role of IT employees is often understated or even excluded from the analysis (ensemble view).

Now that the concept of IT has been discussed, we will take a closer look at the concept of IT business value. Essentially, IT business value refers to the performance impacts of IT, whether it is profitability improvement, productivity enhancement, competitive advantage, cost reduction, inventory reduction or other measures of performance (Devaraj & Kohli, 2000; Hitt & Brynjolfsson, 1996; Kriebel, & Kauffman, 1988). Researchers within the IT business value field use the term performance to refer to both "intermediate process-level measures", such as inventory turnover as well as "organisational measures", such as market share (Melville et al., 2004, p. 287). In their study of IT and the anticipated economic benefits, Barua, Kriebel, and Mukhopadhyay (1995) categorised performance measurements into "first order effects on operational level variables" (p. 7), which relates to the performance of firm activities such as production or marketing as well as "higher level variables" (p. 7), which in turn reflect the performance of firm activities in measures such as profitability or market share.

In conclusion, and in respect of our stated research issue, we define IT as hardware and software (technological IT resources) as well as the human expertise and knowledge of IT (human IT resources). In our research study we primarily used the tool and ensemble view of IT, because we view IT as an enabler for business process performance that, in turn, is highly dependent on the interaction between people and IT. Moreover, we use the Melville et al. (2004) definition of IT business value: "the organizational performance impacts of information technology at both the intermediate process level and the organization wide level, and comprising both efficiency impacts

and competitive impacts" (p. 287). Lastly, IT and ICT are used interchangeably in this research paper.

4.3. What is performance?

Performance is another core concept in our research paper and the dependent variable in our analytical framework. The concept of performance is often used interchangeably as efficiency, effectiveness, or a combination of the two. In the following section, we discuss the concept of performance at various levels and conclude it with our definition of performance.

Many studies use organisational performance as either the dependent or independent variable for their research, especially within the field of management (Richard, Devinney, Yip, & Johnson, 2009). However, most studies lack an adequate accounting for the theoretical foundations of such a concept. In fact, the definition and structure of organisational performance are rarely explicitly justified. Very little consistency exists regarding the definition and measurement of organisational performance (Richard et al., 2009).

Peter Drucker (1966), described as the founder of modern management, argued that efficiency centres on "…the ability to do things right" (p. 2) while effectiveness focuses on "…the ability to get the right things done" (p. 2). Efficiency is concerned with metrics, such as cost reduction and productivity enhancement in the assessment of a given business process. Effectiveness, on the other hand, is a broader construct that measures the capability of the organisation as a whole. Furthermore, it is related to the external environment of the organisation or rather what is expected of the organisation from its stakeholders (Drucker, 1966).

Richard et al. (2009) differentiated between organisational performance and organisational effectiveness. They argued that organisational effectiveness is a broader concept that integrates organisational performance, but with a basis in organisational theory that accommodates

alternate performance goals. Researchers often use innovation and efficiency variables as their dependent performance measures even though these are generally considered to belong to organisational effectiveness. On the one hand, they divide organisational performance intro three sections of firm outcomes: (1) product market performance, which includes sales and market share, (2) financial performance, such as return on assets, profits as well as return on investment, and (3) shareholder return, including economic added value and total shareholder return. On the other hand, organisational effectiveness is a broader concept that incorporates organisational performance and a wide range of internal performance outcomes as well as other external measures that are broader than those of related to economic valuation, such as corporate social responsibility (Richard et al., 2009).

Similarly, Venkatraman and Ramanujam (1986) found that business [organisational] performance usually refers to financial indicators, which reflect the economic goals of the firm. However, a broader conceptualisation of business performance would include indicators of operational performance (i.e. nonfinancial). Within such a framework, it would be useful to include measures, such as marketing effectiveness, product quality, market-share, manufacturing value-added, new product introduction, and other measures of technological efficiency within the realm of business performance.

As previously discussed, in IT business value research, performance variables are often categorised in what is referred to as higher level variables and operational level variables (Barua et al., 1995). The former is similar to Richard et al.'s (2009) concept of organisational performance, whereas the latter is partly what makes up organisational effectiveness belonging to internal performance outcomes.

We wish to operationalise performance in two parts: organisational performance and business process performance. Organisational performance refers to higher level variables whereas business process performance refers to operational level variables. Once more, IT has implications primarily for business processes that, in turn, can effect organisational performance. We follow Richard et al.'s (2009) view of effectiveness being an umbrella concept for performance. Efficiency has been used interchangeably with performance, but throughout this paper we refer to efficiency as business process performance.

4.3.1. ISO 9001

The CIAS unit is ISO 9001 certified, which is an international quality standard. The ISO 9001 certification requires the implementing organisation to develop a quality management system that adheres to the requirements of the International Organization for Standardization (ISO). ISO, founded in 1947, is an independent, non-governmental organisation that works towards making international standards (ISO, 2016). As part of the ISO 9001 standard, the CIAS unit is required to measure performance through an annual client satisfaction survey. The standard has implications for business processes and performance. While the ISO 9001 standard is not directly related to IT, it can be complementary. Thus, we review the concept of the ISO 9001 standard and its influence on performance.

Business firms and public organisations often use popular management methods to measure performance and manage based on the generated data. The ISO 9001 standard is one of the leading methods for quality management (Sampaio, Saraiva, and Rodrigues, 2009). The core purposes of the ISO 9001 standard are to help businesses and organisations improve customer satisfaction and to be more efficient (ISO, 2016). According to ISO (2016), "a quality management system is a way of defining how an organization can meet the requirements of its customers and

other stakeholders affected by its work" (p. 3). At the core of the ISO 9001 standard is the concept of continuous improvement. The ISO 9001 certified organisation should always look to continuously improve processes in order to reach the quality related objectives (ISO, 2016).

ISO claims that the ISO 9001 standard brings several benefits to the ISO 9001 certified organisation, such as efficiency, identifying new business opportunities, customer satisfaction, as well as meeting statutory and regulatory requirements (ISO, 2016). Numerous researchers have put this claim to the test. Sampaio, Saraiva, and Rodrigues (2009) conducted an exhaustive literature review on ISO 9001 certification research studies with the aim of accumulating the leading insights from ISO 9001 certification research. ISO 9001 certification benefits are dependent upon ISO 9001 certification motivations. ISO 9001 certification motivations can either be internal or external. Internal motivations are related with the purpose of improving performance, while external motivations are typically related with improvement of market share, promotional and marketing issues, and customer pressures. Similarly, ISO 9001 certification benefits can be categorised as internal or external. Internal benefits are related with improving performance, while external benefits are related to advances in marketing and PR perspectives. In general, companies that become ISO 9001 certified based on external motivations experience mostly external benefits, while companies that become certified based on internal motivations experience both internal and external benefits (Sampaio et al., 2009). Sampaio et al. (2009) stated, "the manager that sees certification as an opportunity to improve internal processes and systems, rather than simply wanting to get a certificate on the wall, will get broader positive results from ISO 9001 certification" (p. 46).

Whether ISO 9001 certification improves performance is a matter of dispute. Various studies concluded that implementation of quality management practices does improve performance.

However, a minority of research studies did not find sufficient evidence to support this relationship (Sampaio et al., 2009). Sampaio et al. (2009) argued that the differences across the studies could be explained by benefits being related to motivations. Moreover, Dick, Heras, and Casadesús (2008) learned that "reverse attribution (better performance preceding quality management system certification) is a major mechanism that explains the superior performance of certified firms found in our earlier study" (p. 688). In others words, companies that already have a functional QMS in place will not receive the same benefits as companies that do not.

4.3.2. Performance in Non-Profit Organisations

The UN is an international organisation that operates within the non-profit sector. Naturally, non-profits measure and manage performance differently than for-profits. Moreover, most of the literature on IT business value focused primarily on for-profit firms. In the absence of many prior studies, our project offers a basis to see whether the same theories and methods developed for business firms may also be used for non-profit organisations. To this end, we can and should consider the relevance of performance measurement in non-profit organisations.

Walsh and Lenihan (2006) found that many of the management tools developed for business firms can also be applied to non-governmental organisations (NGOs) to make them more effective and accountable. Nonetheless, non-profit organisations do differ from for-profit firms. Drucker (1966) differentiated businesses from non-profits. He found that the most important difference is in the performance area. On the one hand, for businesses it is much easier to quantify performance, usually through the financial bottom line. However, businesses would benefit from using more holistic measures of performance. On the other hand, non-profit organisations do not have such a bottom line – it is much harder to quantify their performance. The results of non-profits are not found within the organisation (Drucker, 1966). Drucker (1966) argued:

> The non-profits are human-change agents. And their results are therefore always a change in people – in their behaviour, in their circumstances, in their vision, in their health, in their hopes, above all, in their competence and capacity … the non-profit institution therefore needs to set specific goals in terms of its service to people. And it needs constantly to raise these goals – or its performance will go down. (Drucker, 1966, p. 85).

Even though it is more difficult for non-profit organisations, it is possible to measure their performance. Kaplan (2001) found that non-profit organisations that shifted their focus from measuring programs and initiatives to measuring the outcomes of such programs and initiatives are supposed to accomplish great performance improvements. Similarly, Drucker (1966) advocated non-profits start with the mission and then translate this mission into some key performance areas or goals.

4.3.3. The Problem with Performance Measurement

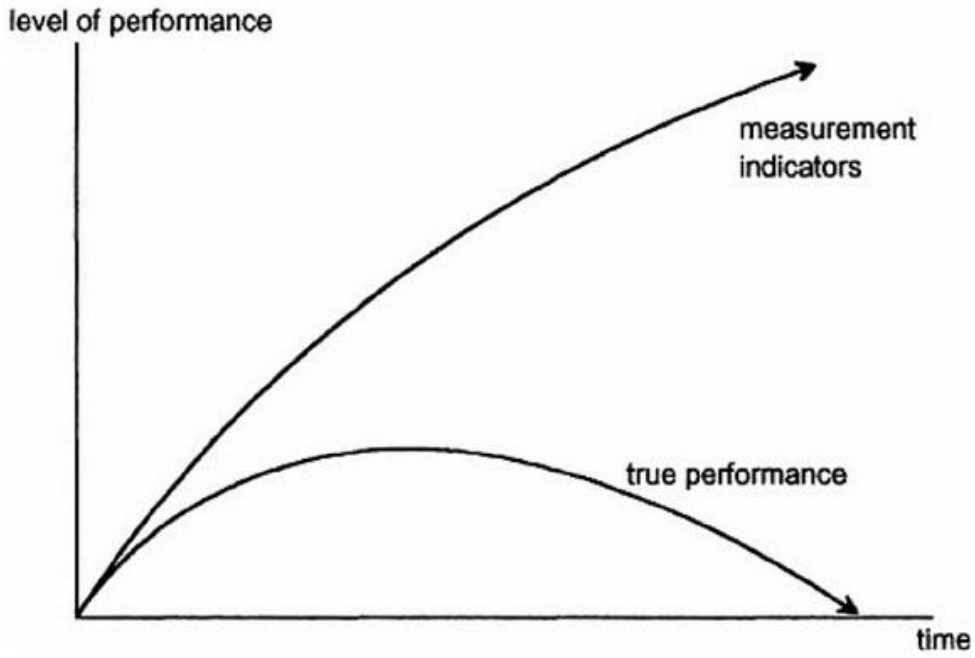
Robert Austin (1996) investigated how organisations measure and manage performance in a comprehensive study of the dangers and pitfalls of such measurement. He drew on experiences from several fields, including economics, management theory, statistics, and theatre. He emphasised the behavioural aspects of measurement situations rather than the technical aspects of measuring, analysing or graphing specific measurements, because he was interested in the human aspect of measurement.

Measurement is a common practice for most organisations. Business firms measure just about everything: costs, profits, financial and material flows. Public organisations measure compliance through these and other means, including laws and regulations, demographic variation, and effectiveness of programs. Nonetheless, the use of measurement is rarely questioned or justified. Austin (1996) argued, “measurement is a constructive practice that requires little or no justification” (p. 3). Despite this obvious assertion, there is a surprising lack of consensus among

management experts and practitioners regarding the use of measurement. Experts and practitioners often disagree on: how measurement works, its usefulness, and appropriate uses.

According to Austin (1996), the core problem with measurement is dysfunction (see Figure 3). Blau (1963) defined dysfunction as "those observed consequences of social patterns that change existing conditions in the direction opposite to socially valued objectives, or consequences that interfere with the attainment of valued objectives" (p. 10). Austin (1996) refined his definition to apply it in an organisational context as, "consequences of organizational actions that interfere with attainment of the spirit of stated intentions of the organization" (p. 10). It is essential to emphasise the 'spirit of stated intentions', because an individual or group may manipulate measurements in order to achieve the stated intentions, but not the 'spirit of the stated intentions'. In sum, in an organisational setting, dysfunction happens when the values of the measurement go up while the values of the goal go down.

Figure 3: How dysfunction unfolds



Source: Austin, 1996, p. 16.

Austin (1996) offered various examples on how the implementation of performance measurement actually worsened performance. For instance, an infamous study conducted by Blau (1963) of an employment office that had the stated purpose "to serve workers seeking employment and employees seeking workers" (Austin, 1996, p. 11). In the beginning, employment interviewers were evaluated on the number of interviews they conducted. As a result, interviewers spent almost all of their time conducting interviews and spent very little time on locating jobs for clients to receive a good performance rating. When the office managers discovered that very few job placements had been made, they replaced the single indicator with eight indicators. It seemed that performance was improving. However, it was revealed that employment agents were involved in downright falsification, such as destroying evidence so as to manipulate performance indicators (Blau, 1963). Thus, a good performance rating does not necessarily imply 'actual' good performance.

One of the issues that contribute to dysfunction is that measurements rarely perfectly measure what they intend to measure. Researchers and practitioners settle for substitute measures or imperfect measures. This is particularly true in an organisational context when measuring performance. The true output of employees is intangible and difficult to measure, which is why organisations choose to measure inputs (Austin, 1996). Peter Drucker (1966) found it inappropriate to measure the performance of knowledge workers and stated:

> The imposing system of measurements and tests which we have developed for manual work—from industrial engineering to quality control—is not applicable to knowledge work (…) the knowledge worker cannot be supervised closely or in detail. He can only be helped. But he must direct himself, and he must direct himself toward performance and contribution, that is, toward effectiveness. (Drucker, 1966, pp. 3-4).

Austin (1996) determined two categories of performance measurements: motivational measurements and informational measurements. Motivational measurements are put into effect to provoke a change in the people being measured—to encourage a greater effort. Informational measurements are valued for the status, logistical, and research information they produce, which are often used for short-term management and long-term improvement of organisational processes. Austin (1996) distinguished the two "by the observation that motivational measurement is, by definition, intended to cause reactions in the people being measured, while informational measurement should be careful *not* to change the actions of the people being measured" (p. 21). Sometimes when these two are not separated, the problem of dysfunction arises.

While some of the ideas presented by Austin (1996) seem a little gloomy, he did offer a solution to the problem of dysfunction. He emphasised that *organisational measurement* is difficult—other forms of measurement may not experience the same issues. Managers need to formulate a plan for dealing with the problems. It is crucial to create a culture in which "measurement is seen as a useful way to learn but not as the be-all and end-all of performance management" (Austin, 1996, p. 181). Employee motivation is another key relationship for managing performance. Managers need to ask themselves what kind of culture that seems to be driving the people to do a good job. Is worker motivation mostly internal or external? Namely, are employees "driven primarily by feelings of identification with the organization and their fellow team members? (…) Or, are they driven mostly by a desire to do well on their next performance review and get a big raise?" (Austin, 1996, p. 181). Another way of making this distinction is whether the employees in their daily decisions choose what is best for the organisation or for themselves.

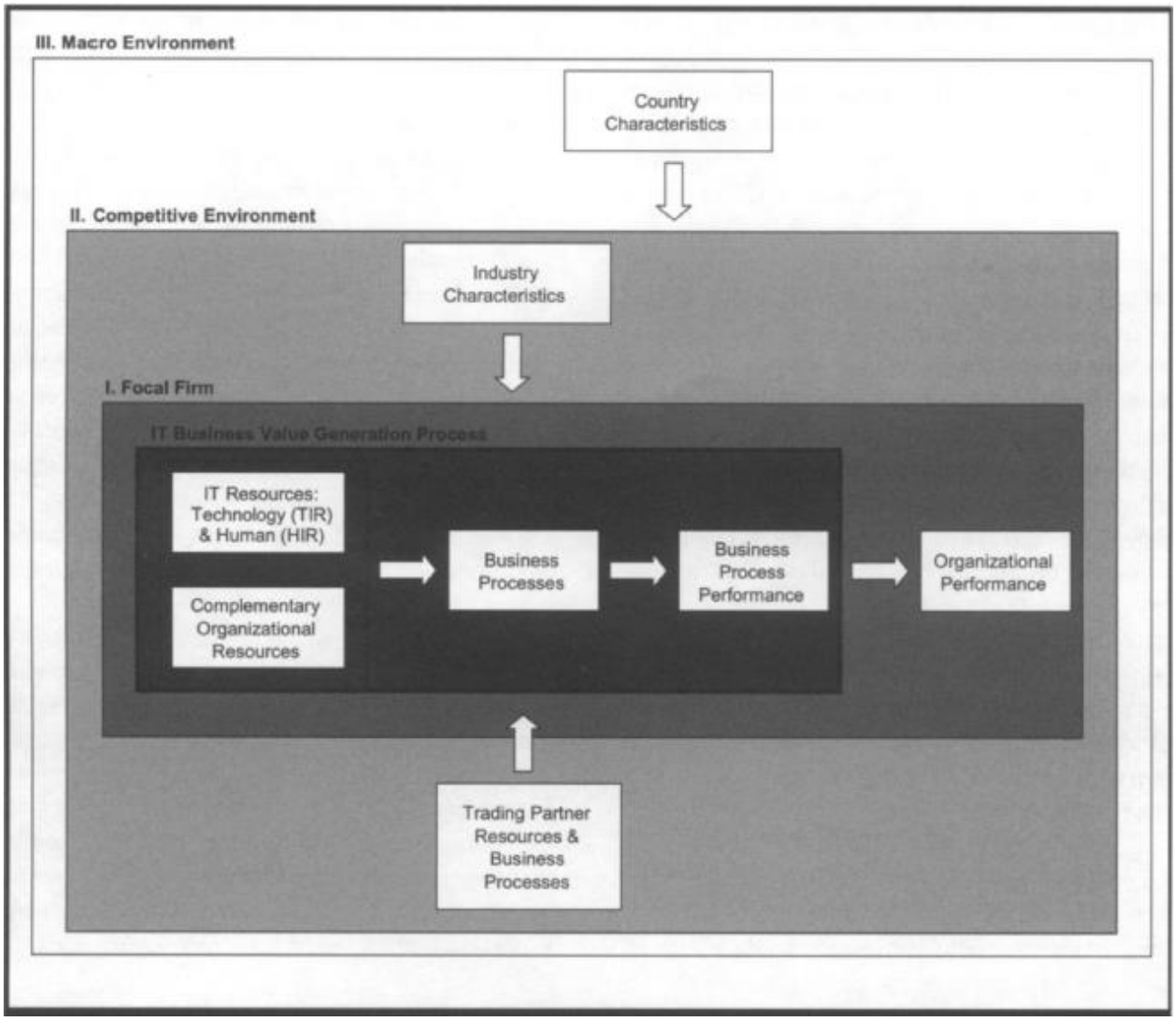
Austin (1996) dealt with the problem of measurement from the perspective of the manager. In contrast, Richard et al. (2009) are concerned with measuring organisational performance from the perspective of the researcher. From their review of the management literature, they found that any study that examines organisational performance must contain strong theory that addresses two main issues: "(a) the dimensionality of performance (i.e., establishing which measures are appropriate to the research context) and (b) the selection and combination of performance measures (i.e., establishing which measures can be usefully combined and the method of doing so)" (Richard et al., 2009, p. 744).

We agree with Austin's (1996) conclusions regarding the difficulty of managing and measuring performance. Therefore, we acknowledge that measuring performance is necessary, but it should not be the core driver of performance management. Given that the CIAS unit is composed of knowledge workers they should not be strictly measured, but rather encouraged and guided. This acknowledgement will become increasingly apparent throughout our paper, and evident in the discussion section.

4.4. IT Business Value Model

In the following section we present Melville et al.'s (2004) IT Business Value model since that is the base for our initial analytical framework (see Figure 4). They developed three overarching domains that effect the relationship between IT and organisational performance, namely the focal firm, the competitive environment, and the macro environment.

Figure 4: IT Business Value Model



Source: Melville et al., 2004, p. 293.

4.4.1. Focal Firm

The focal firm generates IT business value through the deployment of IT and other complementary organisational resources to improve business processes (Melville et al., 2004). The improvement in business processes may enhance the firm's organisational performance. As a result, IT in itself may have an indirect effect on organisational performance, but only through its effect on business processes. Furthermore, they made the distinction between technical IT

resources (TIR) and human IT resources (HIR). Overall, they based these two sub-parts of IT on Barney's (1991) classification of organisational resources from his research on the role of firm resources in developing and maintaining a sustained competitive advantage. Here, he split firm resources into three main areas: physical capital resources, human capital resources, and organisational capital resources.

Physical capital resources refer to resources, such as plant and equipment, access to raw materials, geographical location, and physical technology (Barney, 1991). Melville et al. (2004) defined TIR as a subset of physical capital resources. Additionally, TIR is split into (1) IT infrastructure, which includes technology services and shared technology across an organisation; and (2) particular business applications that use said infrastructure, such as sales analysis tools and purchasing systems (Melville et al., 2004).

Human capital resources include experience, judgement, relationships, intelligence, as well as managers and workers' individual insight (Barney, 1991). Melville et al. (2004) outlined HIR as a subset of Barney's (1991) definition of human capital resources. HIR relates to both technical (e.g. application development, maintenance of current systems, and integration of multiple systems), and managerial knowledge, such as to arrange appropriate resources, to identify adequate projects, as well as to lead and motivate development teams to complete projects within budget and time frames. In addition, HIR can be found at various levels of the organisation, from the entire organisation all the way to a specific business process (Melville et al., 2004).

Melville et al.'s (2004) complementary organisational resources are based on Barney's (1991) organisational capital resources. Barney (1991) stated that organisational capital resources are related to structure, and include formal and informal planning, formal reporting structure, informal relationships among groups within a firm, as well as controlling and coordinating systems.

Melville et al. (2004) adopted relevant parts of Barney's (1991) definition of organisational capital resources, physical capital resources, and human capital resources to the complementary organisational resources category in their model, such as organisational structure, policies and rules, workplace practices, and culture (Melville et al., 2004).

As mentioned above, the IT, which includes both HIR and TIR, together with other complementary organisational resources may improve business processes (Melville et al., 2004). But, what do we mean by business processes? Melville et al. (2004) use Davenport's (1993) definition of a business process, "the specific ordering of work activities across time and space, with a beginning, an end, and clearly identified inputs and outputs" (p. 5). Examples of business processes include distribution, pc assembly, and order taking (Melville et al., 2004). Organisations perform numerous business processes in order to reach their strategic objective. Thus, there are many opportunities for IT to improve individual business processes, the synthesis between business processes, as well as to enhance organisational performance. They divided performance into business process performance and organisational performance that is similar to Barua et al.'s (1995) operational and higher level variables mentioned earlier (Melville et al., 2004).

4.4.2. Competitive Environment

The focal firm operates within a competitive environment, which is separated into two areas: industry characteristics and trading partners (Melville et al., 2004). The former includes regulation, technological change, competitiveness, and clock speed, while the latter refers to the focal firm's trading partners. Moreover, "industry characteristics apply to all firms in an industry. However, the response of industry competitors vis-à-vis information technology is not necessarily uniform" (Melville et al., 2004, p. 297). Thus, it becomes highly relevant to investigate the heterogeneity of IT use in the focal firm's industry to examine the industry characteristics' effect on IT business

value. IT continuously expands organisational boundaries, and can link multiple organisations through software applications and electronic networks. Hence, the focal firm's trading partners become increasingly more important to the IT business value progress. For instance, if one of the focal firm's trading partners has significantly out-dated technology, and inefficient business processes, it may hamper the achievement of IT business value in relation to this inter-organisational system introduced by the focal firm (Melville et al., 2004).

4.4.3. Macro Environment

The third domain, macro environment, refers to country characteristics (Melville et al., 2004). Specifically, it relates to the "country- and meta-country specific factors that shape IT application for the improvement of organizational performance" (Melville et al., 2004, p. 297). Examples of country characteristics include government regulation and promotion of technology deployment and information industries, information infrastructure, IT talent, and dominant information and IT culture. In sum, the macro environment highlights the role of country characteristics in forming the attainment of IT business values and the importance to understand the elements that pertain to different educational, political, regulatory, cultural, and social contexts (Melville et al., 2004).

4.4.4. External Focus

Following the line of thought that the advantage lay not necessarily in the firm itself, but rather in other factors, such as competitive and macro environment brings light upon the importance of external factors overall (Melville et al., 2004). Tambe, Hitt, and Brynjolfsson (2012) explored the linking factor – external focus – between IT and organisational performance in 253 firms. External focus is "a set of practices firms use to detect changes in their external operating environment" (Tambe et al., 2012, p. 3). They found that the combination of external focus, decentralisation, and IT intensity raised organisational performance significantly. The effect of IT on organisational

performance was highest out of these factors, and especially so when the organisation had the right structures in place. Extroverted firms that stress the importance of learning from its customers, suppliers and other benchmarks are more productive and gain more from IT investments than others. Tambe et al. (2012) concluded, “Managers in firms with decentralized structures may not realize productive returns to IT-related investments unless they also find a way to also promote cross-boundary information flows through external practices such as competitive benchmarking and inter-organizational product teams” (p. 19). In sum, we adopted the institutional-based approach because it incorporates the external focus with factors, such as competitive and macro environment.

4.5. Expanding the IT Business Value Model

This section highlights the most important areas of Melville et al.’s (2004) IT Business Value model in relation to our case. Their model provides an overarching framework that allows researchers to grasp the holistic relationship between IT and organisational performance in a given organisation. However, the UNDP´s uniqueness and, specifically, that of the CIAS unit requires a particular emphasis on the following elements: strategy, bureaucracy, culture, and external focus.

4.5.1. Strategy, IT, and Performance

Even though Melville et al. (2004) mentioned the importance of strategy in regards to its effect on performance, we emphasise its significant relevance to our case in the section below. The UNDP has an official IT strategy that trickles down to all subunits including the CIAS unit, and it effects, among others, their working practices, and performance outcomes (UNDP, 2008). Thus, strategy needs to be addressed as a subject of its own rather than loosely mentioned as it is their model.

The concept of strategy has been used in various contexts, and has taken on different meanings in different scenarios making it easily misused. Michael Porter (1996) distinguished between two terminologies often incorrectly used interchangeably, namely operational effectiveness and strategy. On the one hand, operational effectiveness is making the organisation's activities more efficient by having fewer inputs and defects than that of its competitors. On the other hand, strategy refers to, "… performing different activities from rivals, or performing similar activities in different ways" (Porter, 1996, p. 3). The operational effectiveness lead to higher efficiency, but may be copied by competitors; whereas, successful strategy leads to a sustained competitive advantage. Porter (1996) identified three key principles of strategy: (1) positioning, (2) choosing what not to do, and (3) 'fit' among organisation's activities. Firstly, a successful strategy differentiates itself from competitors by creating a unique and valuable position. For instance, by serving the wide needs of just a few customers or by serving the few needs of many customers. Secondly, in strategy, organisations are faced with trade-offs that forces them to choose what to do and, correspondingly, what not to do to remain competitive. Lastly, 'fit' refers to the alignment of organisational activities to strengthen one another (Porter, 1996).

Anne-Marie Croteau and François Bergeron (2001) examined the interconnectedness between business strategy, technological deployment, and organisational performance. Having already defined strategy and performance, technological deployment is the manner organisations design and manage IT to take advantage of its potential and effectiveness. They concluded that these three areas needed to be aligned to achieve top organisational performance and profit maximisation. For example, an organisation that has an overall proactive strategy (e.g. focused on innovation) should also proactively deploy new technologies. This alignment enhances the possibility of organisational performance (Croteau & Bergeron, 2001). In Powell and Dent-

Micallef's (1997) study of the effect of IT as a competitive advantage, they found that IT could be of competitive advantage, but only in alignment with complementary human and business resources. Similarly, Mata, Fuerst, and Barney (1995) concluded that the competitive advantage of IT lay in the, "the process of organizing and managing IT within a firm" rather than in the IT itself (p. 500).

4.5.2. Bureaucracy

The UN is one of the most complex organisations in the world. Unsurprisingly, bureaucracy is widespread in such an organisation. The UN system has been extensively criticised for being very inefficient, which is often attributed to its bureaucracy (Malloch-Brown, 2015). Thus, we emphasise bureaucracy in our analytical framework presented later on. Accordingly, we review the concept of bureaucracy and its influence on performance as well as its interrelation with IT.

The term bureaucracy comes from the word bureau, which is a synonym to office. It is widely researched, and as a result, has countless definitions. However, we found that there are general similarities in the majority of definitions. For instance, Peter Blau (1956) defined bureaucracy as an organisation that achieves large-scale tasks by systematically coordinating tasks with its employees. Further, the primary traits of a bureaucratic organisation are hierarchy, a system of rules, authority, impersonality, and specialisation (Blau, 1956). Roth and Wittich (1968) found a similar definition to bureaucracy in their translation of Max Weber's work on economy and society. They translated the definition of bureaucracy, "…is always the carrier of a comprehensive sober rationalism and, at the same time, the ideal of a disciplined "order" and security as absolute standards of value" (Weber, 1968, p. 476). Drawing upon these similarities, a bureaucracy is a hierarchic organisation that has a systematic division of tasks and a system of rules.

How does bureaucracy effect an organisation? John and Martin (1984) investigated the effects of bureaucracy on the perceived and utilization of marketing plans of 46 organisations and a total of 292 individuals. The term bureaucracy was divided into the following factors: formalisation, centralisation, and structural differentiation. They concluded that centralisation had negative effects on bureaucracy while formalisation had positive effects. Individuals that are omitted from decision making in highly centralised organisations become frustrated and feel alienated. However, formalised structures help visualise the importance of each individual's task for the overall success of the organisation. As such, it reduces uncertainty and makes individuals feel more important (John & Martin, 1984). George John (1984) found that increased bureaucratisation had negative effects on working relationships in his study of retail petroleum dealers. In detail, the dealer's attitude was significantly more negative towards transacting with their suppliers when the level of bureaucracy was higher (John, 1984).

Evidently, bureaucracy has both positive and negative effects on an organisation. Following this line of thought, Adler and Borys (1996) found that bureaucracy could either be enabling or coercive. Organisations enable individuals to become more efficient in their work and increase their motivation up to a certain degree of bureaucracy (formalisation, centralisation, and hierarchy). Automation of work processes allows individuals to be more efficient until it starts to fully govern the individual's working process, which is when individuals begin to loose motivation. This is the point where bureaucracy stops being enabling and starts being coercive (Adler & Borys, 1996).

Johan Olsen (2005) criticised the existing literature on bureaucracy including Weber's work from the early 1920s, and argued that the term bureaucracy needed to be rediscovered. Specifically, the terms bureaucracy, bureaucrat, and bureaucratic are used in derogative meanings

nowadays, which Olsen (2005) claimed is incorrect. Further, bureaucracy can have positive effects since, "…merit-based bureaucracy fosters economic growth in developing countries and contributes to poverty reduction" (Olsen, 2005, p. 9). Similar to bureaucracy that seems to have both negative and positive effects; rules have positive effects up to a certain extent until it reaches the tipping point, and start to negatively effect outcomes (Evans & Rauch, 1999). For example, "Detailed rules and rigid rule following might under some conditions make policy making, implementation, and enforcement more effective, but a well-working system may also need rules that allow discretion and flexibility" (Olsen, 2005, p. 9).

As seen above, the effects of bureaucracy have been highly disputed, and one these effects that is highly relevant for this paper is its relationship with efficiency. Both Gajduschek (2003) and Novaes and Zingales (1998) contended that bureaucracy does not necessarily have to be inefficient, but can actually be efficient. Novaes and Zingales (1998) studied the outcome of bureaucratization, and specifically examined the dependence of employees' compensation on input versus output. In brief, if the employees' salary is based more on input than on output, the degree of bureaucracy in the organisation is inefficient. Additionally, they concluded, "While from the employees' point of view both the rules and the turnover might appear inefficient, they are in fact a necessary evil aimed at minimizing the managerial agency costs" (Novaes & Zingales, 1998, p. 30). Gajduschek (2003) posed a thought-provoking question; if most scholars argue that bureaucracy is inefficient, how come most organisations are bureaucratic? On the one hand, bureaucracy is efficient for similar reasons to Novaes and Zingales (1998) that it establishes a necessary structure and establishes rules to what and how employees should accomplish (Gajduschek, 2003). On the other hand, he argued that bureaucracy could be inefficient because, "In several spheres of the – presently – public services, debureaucratization may be desirable due

to the overall insensitivity of bureaucracies to the requirement of efficacy" (Gajduschek, 2003, p. 721).

What role does bureaucracy play in IT? IT itself does not directly result in a bureaucracy reduction, but in combination with organisational arrangements and practices it may contribute to bureaucracy reduction (Zamutto, Griffith, Majchrzak, Dougherty, and Faraj, 2007). They visualised bureaucratic organisations as drawers where each drawer represented a different department. Each department gathered and stowed information pertaining to its activities in its drawer. Here, IT plays a vital role in accelerating and making activities within each drawer more efficient. Moreover, IT has opened the possibilities for firms to reorganise themselves for the better (Zamutto et al., 2007). In detail, "…IT is supplanting hierarchy's role in coordinating and controlling activities" (Zamutto et al., 2007, p. 750). These authors claimed that IT has directly improved organisations in five areas. First, IT has facilitated organisations in visualising entire work processes, which refers to work processes from end-to-end. Second, real-time/flexible product and service innovation has improved because IT has made it possible for organisations to create more software enhanced products and services in innovative manners. Third, IT has paved the way for virtual collaboration across teams, departments, and entire organisations. Fourth, similar to the third area, IT has enabled mass collaboration meaning that it is possible to interact many-to-many rather than one-to-one as it previously was. Last, IT has developed simulations/synthetic realities that allow organisations to create what-if scenarios and, consequently, reduce uncertainties of various processes (Zamutto et al., 2007).

4.5.3. Culture and IT

The importance of culture in regards to IT and performance is briefly presented in Melville et al.'s (2004) IT Business Value model. However, the CIAS unit operates in a unique manner, and has

developed a unique culture that affects its business processes (G. Demeules, March 2017; Consultant 1; Intern 2). Hence, the concept of culture and its effect on IT and performance is vital for our study, and needs to be addressed accordingly. Culture, both in the national and organisational form, affects an organisation's development, use, and outcome of IT (Leidner & Kayworth, 2006). Thus, we delve into the meaning of national culture and organisational culture in the following section. Thereafter, we present its impact on IT and vice versa.

Scott, Mannion, Davies, and Marshall (2003) found that the concept of culture to be fundamentally and infamously ambiguous. They found that for some anthropologists culture is social behaviour while for others it is merely an abstraction of social behaviour. The disputes of whether culture is comprised of physical objects or only abstract ones seem never-ending. These debates highlight the challenges that researches have when incorporating culture into their work. Thus, in the following section we discuss the key concepts that are relevant for the scope of our paper while acknowledging their shortcomings.

National culture is a major part of the concept of culture and one that the famous scholar, Geert Hofstede, has researched extensively. Hofstede (1994) studied the differences among national cultures in IBM offices from over 50 countries. Here, he developed five dimensions that helped to establish the characteristics of any national culture: (1) power distance, (2) individualism vs. collectivism, (3) masculinity vs. femininity, (4) uncertainty avoidance, and (5) long-term vs. short-term orientation. Overall, given the complexity of the concept of culture, Hoftede's dimensions make it easy to classify national cultures in a comprehensive manner.

As culture exists and varies between nations, so it does with organisations. In organisational theory, there have been suggested numerous views on the concept of culture. In addition, there continues to prevail a strong disagreement in how to approach culture. Martin (2002) refers to

this fight as, “paradigm proliferation problem” (p. 49). Unsurprisingly, an exact definition of organisational culture does not exist (Scott et al., 2003). Nonetheless, several scholars have attempted to define organisational culture. According to Scott et al. (2003), organisational culture refers to a “wide range of social phenomena, including an organization’s customary dress, language, behavior, beliefs, values, assumptions, symbols of status and authority, myths, ceremonies and rituals, and modes of deference and subversion; all of which help to define an organization’s character and norms” (p.925). Similarly, Schein (1990) defines organisational culture as a pattern of shared basic assumptions that are discovered or developed by a certain group as it learns from internal integration as well as external adaptation. Moreover, these assumptions have been deemed successful and, as a result, are taught to new group-members as the correct way of thinking, perceiving, acting, and feeling in regards to those issues. Schein (1990) presented three layers of organisational culture: artefacts, espoused values, and basic assumptions. Artefacts refer to tangible, explicit or vocal elements, for example office dress codes, furniture, architecture and so on. Further, they are elements that are recognised by people that are not part of the culture. Espoused values are organisations’ rules of behaviour and other stated values. In addition, it is the way members represent the organisation with themselves and to others, and is often done through public statements of identity, such as what the members hope to become. The notion of shared basic assumptions was introduced further above, and essentially are the behaviours that are deeply rooted and often taken for granted – unconscious elements. Oftentimes, these basic assumptions are so deep within an organisation that it is difficult to identify them from within (Schein, 1990).

Having discussed the long disputed term culture, we are ready to discuss it in relation to other concepts. Countless scholars have addressed the research on the relationship between culture and

IT, and consequently, the existing literature is vast (Leidner & Kayworth, 2006). The main research areas can be grouped into three sections: the impact of culture on IT, the impact of IT on culture, and the IT culture. The main findings in these areas will be presented in the following section, but an in-depth examination of these concepts is beyond the scope of this paper.

4.5.3.1. Culture's Influence on IT

In regards to the impact of culture on IT there have been numerous studies on either organizational culture or national culture's effect on IT (Leidner & Kayworth, 2006). One of the main themes here is that different cultural values may impact the views and approaches of the development of IS in dissimilar manners (Leidner & Kayworth, 2006). For instance, Kumar, Bjorn-Andersen, and King (1990) investigated the impact of national values on IS design in a study of Danish and Canadian system designers. Here, they discovered that the Danish respondents (more socialist values) fixated more on people-related concerns while the Canadian respondents (more capitalist values) focused more on technical matters (Kumar et al., 1990).

A second main topic within the impact of culture on IT was how (if at all) culture impacts the implementation and distribution of IT (Leidner & Kayworth, 2006). On the national culture level, uncertainty avoidance was a common influence on IT acceptance and use (Leidner & Kayworth, 2006). For example, Thatcher, Srite, Stepina, and Liu (2003) concluded that countries with high uncertainty avoidance were less likely to adopt new IT tools. In relation to the organisational level, Kitchell (1995) studied the adoption of new manufacturing technology and discovered that organisations with more flexible, open, and long-term oriented cultures showed a higher interest and acceptance for this new technology.

The influence of culture on IT use and outcomes was a third major theme of culture's impact on IT (Leidner & Kayworth, 2006). They found that there are differences in the way national cultures

affect the usage and benefits of the same IT system. Also, they attempted to determine the most suitable organisational cultural values in predicting the acceptance of users and the success of a given IT implementation. However, most of the literature that addresses this question concluded that different organisational cultures have different effects rather than having one best organisational culture (Leidner & Kayworth, 2006).

Leidner and Kayworth (2006) also examined culture's influence on IT management and strategy. The majority of studies concluded that national culture does affect IT management. Similarly, the studies that focused on organisational culture examined its connection to IT strategy (Leidner & Kayworth, 2006). For instance, Grover, Teng, and Fiedler (1998) determined, "…an IS planning culture at the top of the organization seems to facilitate recognition of the importance of strategic system investments" (p. 48).

4.5.3.2. IT's Influence on Culture

Having presented an extensive review of culture's impact on IT, we examine the opposite relationship – IT's impact on culture. There is a limited amount of research on this topic. Madon (1992) researched a number of Indian firms (national culture) and discovered, "…Information technology is also a vehicle for cultural transformation in organizations. This notion is supported in the findings which described that cultural transformations in development administration is occurring in modifying practices, attitudes and patterns of behaviour" (p. 256). In regard to organisational culture, Doherty and Doig (2003) studied the effect new ICT implementation had on organisational culture. Here, they found that ICT enhancements led to higher flexibility, empowerment, customer service, and integration values (Doherty & Doig, 2003).

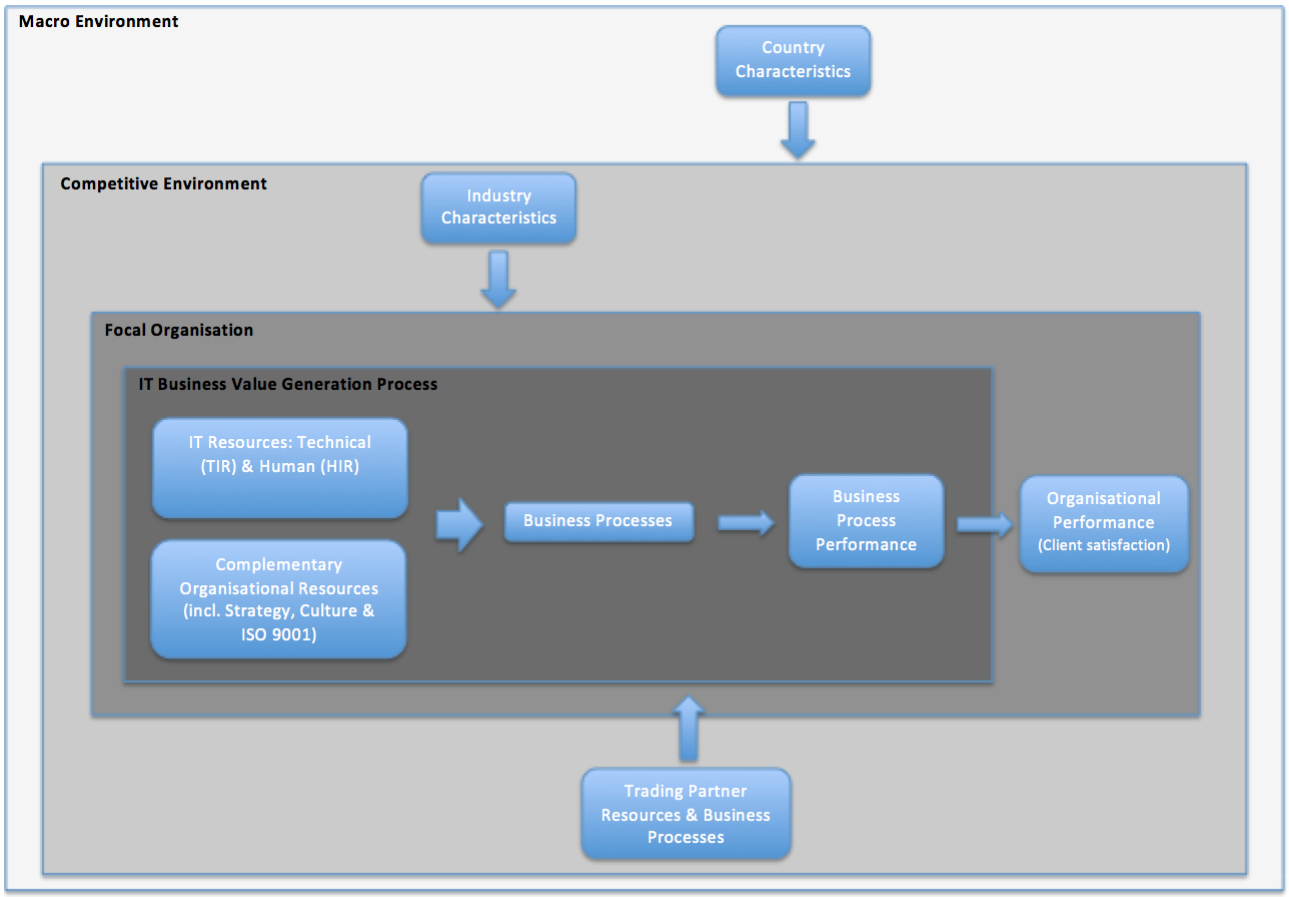
4.5.3.3. IT Culture

By examining how IT and culture affect one another, it is important to discuss the concept itself, namely IT culture. Leidner and Kayworth (2006) defined IT culture as, "…the values attributed to IT by a group" (p. 371). Scholz (1990) examined the different values that could be attributed to IT by a particular group, and discovered values including community vs. isolation, equality vs. subordination, emotionally vs. insensibility, sympathy vs. antipathy, and progressivism vs. conservatism. As individuals use IT they develop these values, and eventually it leads to a standardisation of communication, data collection and processing, and knowledge and information distribution. Further, Scholz (1990) suggested that by understanding these values, organisations would be better at predicting how a particular group would perceive and react to IT-based change.

4.5.3.4. Revised IT Business Value Model

We conclude the literature review by presenting our revised and adapted version of Melville et al.'s (2004) IT Business Value Model, as seen in Figure 5. The most notable change is the addition of the concepts strategy and culture as complementary organisational resources. Also, we use the CIAS unit's annual client satisfaction surveys as a measurement of organisational performance. Moreover, we examine what factors that influence the CIAS unit's performance through various sources, such as our qualitative interviews and several secondary data sources.

Figure 5: Revised IT Business Value Model



Source: Revised from Melville et al., 2004, p. 293.

5. Methodology

In the following section, we present the methodological considerations for our research. Firstly, we recount the research process and the decisions we made with implications for methodology. Secondly, we review the data collection methods and the sources of data. Thirdly, we examine the data analysis methods. Lastly, we present the structure of the data and discussion.

In May 2016, we attended an introduction meeting on writing the Master Thesis at Copenhagen Business School (CBS). We were informed that the Master Thesis was to be written in pairs. Consequently, we decided that we would write our thesis together, because we had prior experience working together on various projects, for instance our Bachelor Project. We knew each

other well and we already had an established approach to teamwork, which had proven fruitful on several occasions.

In July 2016, Christopher started an internship with the CIAS unit at the UNDP in Copenhagen as a part of his studies of M.Sc. Business, Language and Culture. On that basis, he needed to write an Internship Report on an issue within the organisation. After a few months working in the CIAS unit, a couple of issues became apparent. He experienced first-hand how the UN system is plagued by extensive bureaucracy that, in turn, fosters ineffectiveness and inefficiencies. Moreover, he was puzzled how this played out in the CIAS unit that is a headquarter unit dealing with IT solutions. IT should make things more efficient, right?

In November 2016, we met to discuss the focus of our Master Thesis. We discussed which organisation would be the subject of our thesis. Christopher presented the issues he confronted in the CIAS unit and suggested that we focus on the unit. In our Bachelor Project, we wrote about an application development firm and we thought it would be interesting to continue with a focus on IT. We decided to make the CIAS unit the subject of our analysis with an initial focus on IT and performance.

Consequently, we make use of the single case study research design rather than a multiple case study because it focuses on one case rather than comparing several (Bryman, 2016). Such an approach has particular merit if a single case is also in some way exemplary of focus on competing research issues. Our single case study appeared to offer such circumstances. For instance, we apply Melville et al.'s (2004) model to a non-profit organisation, the UN, which has not been explored yet. Yin (2014) stated that a critical case has, "a clear set of circumstances within which its propositions are believed to be true. The single case then can be used to determine whether

the propositions are correct or whether some alternative set of explanations might be more relevant" (p. 51).

Following this line of methods inquiry, we realised that the case offered an exploration of the relationship between IT and performance in the CIAS unit. As will be described in the case analysis, the CIAS unit operates in a very particular way that differentiates itself from others not only in contrast to the private sector, being part of a non-profit organisation, but also internally because of its business processes and staffing policies within the specific UN organizational matrix.

Taking an exploratory approach, we thought to examine IT as a whole because we are looking into both the technical side (software and hardware), and the human side (IT capacity/capabilities). Thus, we opted not to narrow our IT focus down to a specific tool because that would disregard the human aspect. Lastly, we are taking a holistic view, adapting Melville et al.'s (2004) IT Business Value model to a non-profit rather than private sector model. Thus, our thesis study approach is best characterised as a single, critical (or exemplary) case study.

Furthermore, we considered whether critical realism should be our philosophical approach. We found that our research question was particularly fitting for a critical realist approach, because it allows for an exploratory and explanatory iterative process (Saunders et al., 2009). Moreover, critical realism agrees to a multiple conjunctural view where "case researchers explain by factoring in the combination of conditions found in the case rather than seeking to measure the net effect of an isolated variable" (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011, p. 749). This multiple conjunctural view is at the essence of our analytical framework, based on Melville et al.'s (2004) IT Business Value model, which takes into account several variables without emphasising the importance of one over the other in advance. Ragin (2000) claimed that not only are case studies conjunctural, but also 'multiple' in respect to causal attribution. The causality of

case study research explores the relation of how in order for A to result in O, there needs to be a particular B, C, D and E, as well as the possibility of A resulting in O given F, G, H, and I. In other words, the 'multiple' of case study research accepts the notion that a different causal pathway may produce the same outcome (Rihoux & Ragin, 2009). This makes the case study through the critical realist philosophy particularly adequate for our research since we are exploring the causal relationship between the role of IT in the CIAS unit and its effect on performance. Also, we accept the possibility that there may be different causal pathways that lead to the same effect on performance.

Meanwhile, Christopher started working on his Internship Report. The focus of the report was ISO 9001 certification and performance, which turned out to be complementary to the Master Thesis. In December 2016, he conducted several semi-structured interviews with members of the CIAS unit, information that would later serve as a useful background for our thesis research.

In February 2017, we started reviewing the literature on IT business value. In March 2017, after a preliminary search in the literature, we had our first interview with the Director of the CIAS unit, G. Demeules. This interview was based on the themes highlighted in the preliminary literature review. Subsequently, we were able to better define the parameters of our research issue and further review the literature. For example, it was during this process that we found strategy and culture to be areas of interest. In conclusion, based on the insights from the literature and the first interview, Melville et al.'s (2004) IT Business Value model became central to our research issue.

Taking a critical realist approach, we recognise our own role in the research process as active participants. Research findings are arrived at from judgments that are decisions based on experience, knowledge, and appropriate grasp of that which is to be understood. Lonergan noted:

> Only the critical realist can acknowledge the facts of human knowing and pronounce the world mediated by meaning to be the real world; and he can do so only inasmuch as he shows that the process of experiencing, understanding, and judging is a process of self-transcendence. (Lonergan 1971, p. 239).

One of our most surprising insights was that the CIAS unit is performing well. Initially, we assumed that the UN, and thus, the CIAS unit, was highly bureaucratic, inefficient, and needed a major restructuring. Our evidence showed that the CIAS unit is performing exceptionally well in spite of the UN's bureaucratic and hierarchical environment.

We thought our case analysis, as it was developing, would offer a functional test of Lonergan's epistemological theorem; "knowledge in the proper sense is knowledge of reality or, more fully, that knowledge is intrinsically objective, that objectivity is the intrinsic relation of knowing to being, and that being and reality are identical" (Lonergan, 1988, p. 211).

This functional test will take place on 16 May 2017 when we present the Executive Summary to the Director of the CIAS unit. Here, we will verify whether or not our findings, including our judgments, deliberations, and insights, hold true to those of the Director. The results of this test will be an important part of our paper and the presentation during the oral exam in June 2017.

5.1. Data Collection Methods

We opted for a mixed methods approach combining both quantitative and qualitative data in order to assess and resolve the research issue. Collecting data from various sources, and in different manners, allowed us to broaden our data collection in order to remain open to unforeseen outcomes (Bryman, 2016). We utilized triangulation by using more than two independent data sources within our study to strengthen the validity of our results. While triangulation nominally refers to alternative data types, we noted our own "contribution" in our

separate reviews of interview content for thematic analysis, which itself, in support of inter-rater reliability, triangulated method through several data sets (Bryman, 2016).

5.1.1. Gaining Access

Gaining access is a frequent issue among researchers. Even though the researcher might have completed all of the preliminary research including reviewing the existing literature, formulating a research question and hypothesis, the company gatekeeper might put the research to an abrupt stop by denying access.

Fortunately, this was not the case for us given Christopher's internship with the Country Office ICT Advisory Services Unit. This allowed us to easily gain access to the necessary data for the research. Firstly, Christopher made a verbal agreement with the officer-in-charge to begin such an endeavour on 9 November 2016. Secondly, it was relatively easy to attain information about the organisation through his personal experiences as well as accessing and navigating through the organisation's restricted intranet pages with Christopher's credentials. Lastly, during his internship he scheduled several face-to-face interviews, which made it easy to plan ahead. Since he had previously worked as an intern, the interviewees were at ease with his presence.

5.1.2. Primary Data

The primary data is our main data source and will be in the form of semi-structured interviews[1]. In March 2017 we held an interview with the director of the CIAS unit, Gerald Demeules, because we wanted to explore the factors comprising Melville et al.'s (2004) IT Business Value model before we conducted the remaining interviews. These findings, given our exploratory approach, allowed us to revise their model and our interview guide to ensure that we asked the most

[1] Throughout this paper interviewees are cited with only their title (see Tables 2 and 3)

relevant questions. Specifically, we used the findings from our first interview to conceptually narrow down the scope of our paper from the UNDP to the CIAS unit itself as a case study focus.

Our semi-structured interviews were based on an interview guide where we listed various themes and questions to be covered. Moreover, this was done in a loose manner where some questions were not asked and other probing questions were added throughout the interview process. Thus, it gave the interviewers and interviewees more room for deviation from the protocol. Also, the order of the questions changed according to the flow of the conversation (Saunders et al., 2009).

Even though our interviews were semi-structured, we thought to create an 'interview guide' to help us communicate our questions to the interviewees. The guide derived from an extensive literature review from which we identified key themes within the chosen problematic while remaining open for the appearance of new themes throughout. Specifically, we wanted to explore and validate the significance of key themes: role of IT in the CIAS unit, performance, strategy, culture, complementary organisational resources, and ISO 9001. Thereafter, we designed open-ended questions to give both the interviewer and the interviewee room for follow-up questions as well as clarifications that could otherwise possibly be unnoticed (see Appendix 1).

We started the interviews with some background questions about education and working experience. We asked questions in relation to our core themes as well as a few probing questions, for instance "what do you mean by..." and "Could you give an example of…" to clarify the interviewee's views and to better understand how they made sense of reality. To finalise the interview we asked the respondents where they saw the role of the CIAS unit in five years, as well as a concluding and open question about if they had anything they would like to add, or if there was anything that we missed. During the process of interviewing, we gathered more knowledge

and thus, adapted the interview guide to better fit the research purpose. For instance, after the second interview with the Director of the CIAS unit, we realised that employee motivation and department motivation could be a potential factor in relation to our framework. Therefore, we added a question about motivation for the remaining interviews (see Appendix 2).

We already had eight semi-structured interviews with employees of levels ranging from interns to the Director as Internship-based field data. These interviews were conducted in December 2016 and lasted between 8-25 minutes. Apart from these eight interviews, we conducted an additional six individual interviews as well as one group interview: the Director, several managers, one consultant, and four interns (group). These interviews were carried out in March and April 2017 and lasted between 28-55 minutes. An overview of all 15 interviews is presented in Table 2 and Table 3 in the data section further below.

The interviewees did not know beforehand what questions were going to be asked, and thus, their answers were clearly improvised. However, they were aware of the general research issue. Since Christopher had an established relation to most of the interviewees, he acted as the interviewer while Axel took on a more observing role, making note of any particularities, and asking probing questions. Thus, we placed additional attention on the interviewing process to ensure that we collected as much detail as possible.

5.1.3. Secondary Data

Apart from primary data in the form of interviews, we also gathered several secondary data to further triangulate and strengthen our findings. In relation to the ISO 9001 certification of the CIAS unit, the unit conducts an annual client satisfaction survey. This is part of the ISO 9001 standard's policy of continuous improvement. The surveys are intended for UNDP's Country Offices' IT Managers, Operations Managers and Deputy Country Directors, i.e. both technical and non-

technical staff. The purposes of the annual client satisfaction surveys are to measure the relevance and impact of products and services, to guide continuous improvement efforts, and to give stakeholders influence over corporate plans and strategies[2].

We gathered the compiled data from the client satisfaction surveys from 2013 and 2016. Consequently, we reviewed the data to select the most relevant questions for our research issue, which was then recompiled into a table. We utilised the previous survey from 2013 to determine any consistencies and inconsistencies over the years. In turn, this allowed us to establish a general understanding of the Country Offices' satisfaction of the CIAS unit over time. Thus, the survey helped to shed light on the relationship between IT and performance.

Apart from the surveys, we collected secondary data from both internal and external sources. We obtained unpublished internal documents that are normally only accessible by personnel. However, Christopher's internship allowed us to easily attain said information. For example, we gathered the several documents from the organisation's restricted intranet, including the UNDP IM Strategies from 2008-2011, 2012-2013, and 2014-2017, respectively, and the Report of the Advisory Committee on Administrative and Budgetary Questions from 2014. Moreover, we gathered external data through several articles and books discussing the UN, such as the doctoral thesis of Mühlen-Schulte (2010) on the UNDP.

5.2. Data Analysis Methods

There are countless ways of analysing the collected data, and we decided upon pattern matching, and in particular, explanation building. To facilitate this process we transcribed all interviews, which are available on request. Transcribing 30 minutes of interview took

[2] Surveys were accessed through UNDP's restricted intranet: https://intranet.undp.org/unit/oolts/oimt/CIAS/SitePages/CIAS.aspx

approximately 3 hours. Transcribing the interviews allowed us to view the data in a more comprehensible manner since it converted the audio file into a readable and manageable document. We opted for a denaturalised transcription rather than a naturalised one, since we were more interested in the informational content (MacLean et al., 2004) than the spoken language (Hutchby & Wooffitt, 1988). Denaturalised transcription omits noises and incorrect pronunciations. Further, denaturalised transcription was more fitting since we were interested in the respondents' content rather than the way they said it (Oliver et al., 2005).

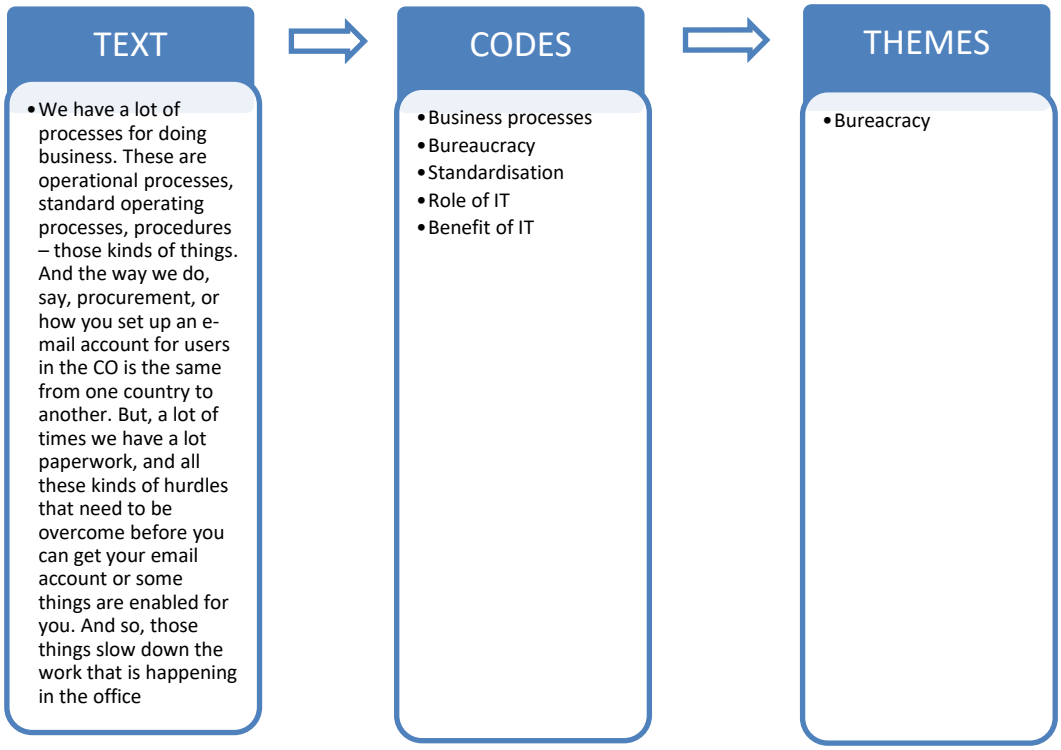
Explanation building, which is a type of pattern matching, attempts to construct an explanation while collecting data and analysing them, instead of testing a predicted explanation as is the case of pattern matching (Yin, 2014). Taking this approach allowed us to have an initial framework, test said framework, and amend it until fully satisfied.

The nature of our study propelled us to use a combination of pattern matching methods to analyse the collected interview data. We used summarisation and categorisation. By summarising each of our many interviews into short and concise words, we were then able to attach these groups of words into categories through categorisation. In addition, it allowed us to strengthen the existing categories as well as to develop new categories for our analytical framework (Saunders et al., 2009). Again, the strength primarily lays in the combination of the two since we saw them as complementary in our analytical methods.

We used the concepts of summarisation and categorisation in a so-called thematic analysis process, which is also known as meaning condensation. This process allowed us to make sense of a vast amount of data by grouping them into themes that we used in extending our analytical framework (Boyatzis, 1998). In Figure 6 below, we offer an illustration of our thematic analysis process. We commenced by extracting pieces of text from each transcribed interview to a

separate document. Throughout this process we extracted texts that we believed could be linked to the core themes, as well as developing into new themes. Thereafter we applied several tags, such as role of IT, and bureaucracy to said extracted texts. This facilitated the last step of the process, which was to identify new themes, and strengthen existing core themes. Lastly, these newly formed themes together with the existing themes helped form our revised version of Melville et al.'s (2004) IT Business Value model.

Figure 6. Thematic Analysis – Illustrating the process of transforming data into themes



Source: Own production.

5.3. Literature Selection

Our research question drove us to obtain literature from outside of the Business, Language, and Culture's Bachelor and Master curriculum. The research issue led us into theoretical concepts from

several fields, including IT and performance, from numerous sources, such as CBS Lib-search, scholar.google.com, SAGE, and JSTOR. The bachelor courses Interdisciplinary Research Methods; Culture, Economy, and Organization, as well as the master courses Leading Complex Organizations, Business Strategies in Developing Countries and Emerging Markets, and International Strategic Management contributed to the theoretical and methodological basis of our study.

5.4. Data and Discussion

The data is divided into three main sections: case description, interviews and survey results. Firstly, in the case description, we present the CIAS unit within its context. We examine the UN system and UNDP's role herein and review relevant corporate strategies. Moreover, we take a closer look at the history of the CIAS unit, what makes it unique, its products and services. Secondly, we offer the findings from the interviews. This section is organised around the selected themes from the literature review. More specifically, we scrutinise the themes directly related to Melville et al.'s (2004) IT Business Value model. Consequently, we expand on other themes that we found relevant to the model. Thirdly, we present the findings from the client satisfaction surveys. We briefly describe the survey and provide an overview followed by the findings. At the end of this section, we summarise the findings from the survey in Table 4.

Following the data section, we discuss the findings. The discussion section is organised around the themes that we found most relevant to our case, which forms the basis of our revised IT business value model at the end of this section. Each theme we discuss in relation to the findings from the data and literature review. For example, strategy is a theme that is discussed by linking the literature review, the case description, survey findings and interview findings.

6. General Findings

The following sections offers: the case analysis, our findings of both primary data in the form of semi-structured interviews, and secondary data in the form of questionnaires. Firstly, we examine the CIAS unit within the UN context. Secondly, we present the interview results, and thereafter we reveal the survey findings. Christopher Dahl's personal experiences from his internship at the CIAS unit are incorporated throughout these sections.

6.1. Case Analysis

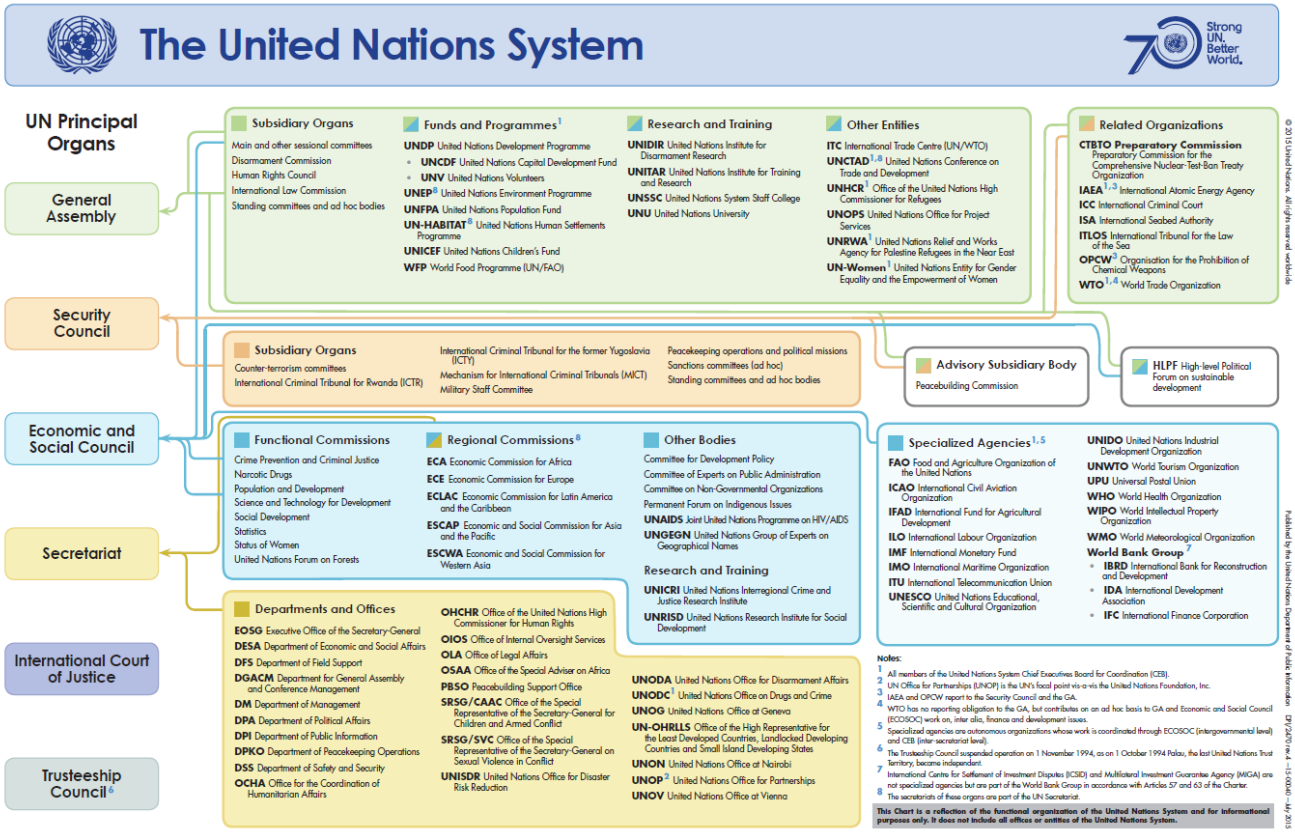
In this section we offer a thorough analysis of the Country Office ICT Advisory unit. We begin by presenting the overarching UNDP organisation and reveal some criticisms to the UN in general. Thereafter, we discuss the official UNDP strategies and its implications to the CIAS unit. Lastly, we examine the history of the CIAS unit, and present their business model, organisational structure, internship programme as well as their service lines.

The CIAS unit, also formerly known as the Global ICT Advisory (GIA) unit, is part of the United Nations Development Programme (UNDP). The CIAS unit has the stated vision: "Understand and address Country Offices' technology needs through suitable tools and innovation" (CIAS, 2016, slide 8). Moreover, the CIAS unit has the following mission statement: "Support and guide Country Offices in leveraging technology for efficient delivery on the organization's mandate" (CIAS, 2016, slide 8). The Country Offices that are referred to in the statements are UNDP's Country Offices around the world. To further understand, we examine the UNDP as an organisation within the UN system.

6.1.1. United Nations Development Programme

The UNDP was established in 1965 by the General Assembly of the United Nations (UNDP, n.d.). The United Nations (UN) is an intergovernmental organisation that promotes international cooperation (Mühlen-Schulte, 2010). UNDP is one of the main programmes of the complex UN system (see Figure 7 below). UNDP is the largest UN programme with presence in more than 170 countries and territories. UNDP support countries' efforts to confront development challenges as well as developing national and local capacities that will help them achieve the Sustainable Development Goals (SDGs) and human development (UNDP, n.d.). The SDGs, also known as the Global Goals, are 17 goals to "end poverty, protect the planet and ensure that all people enjoy peace and prosperity" (UNDP, n.d.). UNDP focuses its work in three main areas: (1) sustainable development, (2) democratic governance and peacebuilding, and (3) climate and disaster resilience. The organisation is to "help countries to develop policies, leadership skills, partnering abilities, institutional capabilities and build resilience in order to sustain development results" (UNDP, n.d.).

Figure 7: The United Nations System Chart

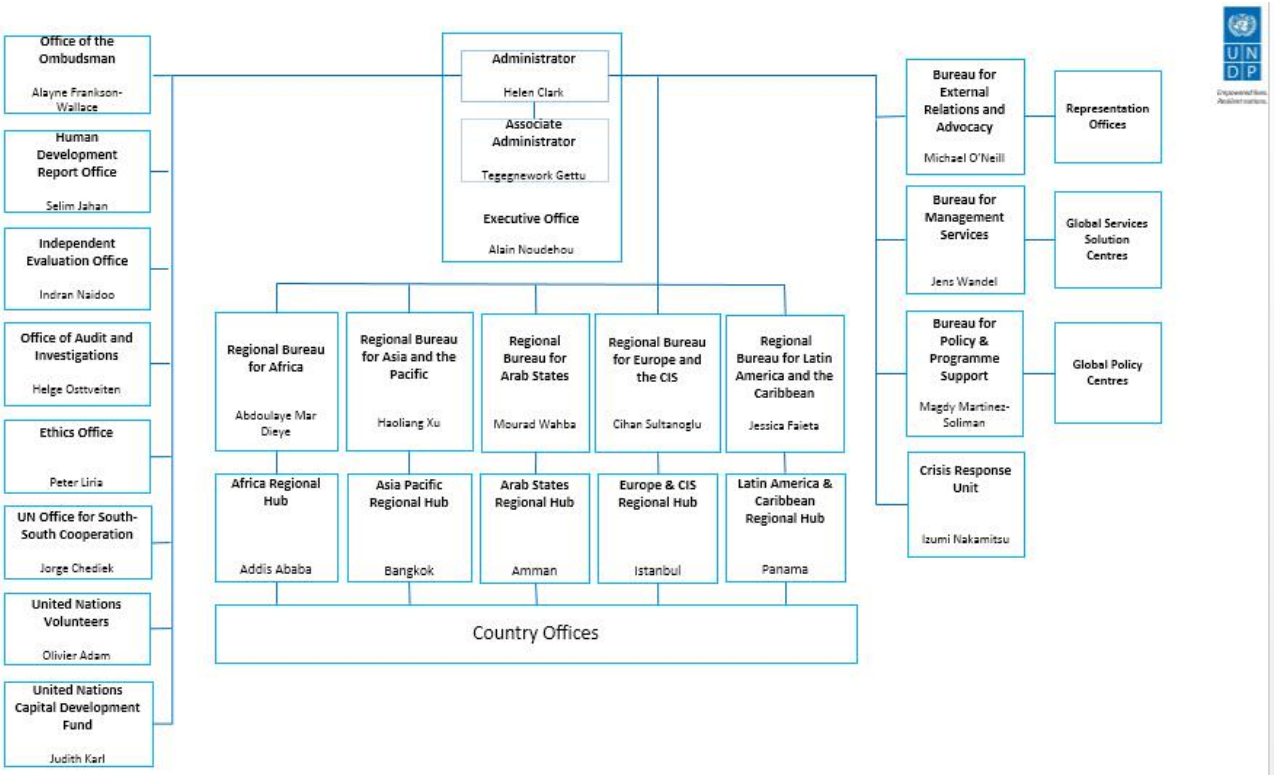


Source: https://www.un.org/en/aboutun/structure/pdfs/UN_System_Chart_30June2015.pdf.

6.1.2. Organisation

Mühlen-Schulte (2010) analysed the structure of UNDP, which can be divided into four levels of authority. Firstly, the Executive Board consists of 36 states, including donor and recipient countries. Secondly, there are the Administrator and management offices such as the Bureau for Management Services (BMS), which is where the CIAS unit is located. The third level comprises the 5 Regional Bureaux. Lastly, the final level of authority is the Resident Representatives in UNDP's Country Offices (see Figure 8 below). About 8000 people are employed under contract by UNDP divided between national and international levels (Mühlen-Schulte, 2010).

Figure 8: The UNDP Organisational Chart



Source:

http://www.undp.org/content/undp/en/home/operations/about_us/organisational_chart.html.

6.1.3. UN Values

The United Nations' organisational culture is grounded in three core values, which they look for in their employees: integrity, professionalism and respect for diversity (United Nations, n.d.). Firstly, integrity is defined as "performing in a selfless, impartial and honest manner at all times" (United Nations, n.d.). Employees are not only expected to uphold this principle at the workplace but, also, in every aspect of their everyday life. Secondly, professionalism means "to be dedicated, conscientious and efficient in meeting deadlines and achieving results … demonstrating competence in your area of expertise, and in any situation, presenting the best possible appearance, commitment and pride in your work" (United Nations, n.d.). Thirdly, the UN

recognises “that the diversity of its staff is an asset in tackling its complex tasks” and employees are “called to respect and learn from each other’s differences and rely on them to find more creative ways to solve everyday challenges” (United Nations, n.d.).

Furthermore, the UN thinks highly of a distinct set of competencies in their employees and managers. The core competencies are: teamwork, client orientation, creativity, commitment to continuous learning, communication, planning and organising, accountability, and technological awareness. In their managers they look for: vision, leadership, empowering others, managing performance, and building trust (United Nations, n.d.).

6.1.4. Criticism of the UN

Mühlen-Schulte (2010) argued, “The dispersed nature of its [the UNDPs] bureaucracy and management has often led to criticism of its functionality and efficiency as it has struggled to assume its proper role as head of coordination for the UN Development System” (p. 12). Bureaucracy seems to be a problem across the entire UN system. The UN system has been extensively criticised for being very inefficient, with this inefficiency often attributed to its bureaucracy (Malloch-Brown, 2015). Franz Baumann, who was the former Assistant Secretary-General, Special Adviser on Environment and Peace Operations, personally encountered the insufficiencies of the UN during his 30-year tenure with the organisation. Baumann (2016) criticised the UN for its silo-mentality and inability to rationalise and integrate processes into larger schemes. Moreover, he complained, “the Official Documents System – early 1990s technology – has no search function. Unless one knows the precise code, a document cannot be located. Information is buried, unretrievable and therefore useless” (Baumann, 2016).

6.1.5. Delivering as One

In 2006, a report made by the UN Secretary-General's High-Level Panel outlined a new strategy for reform of the entire UN: Delivering as One (DaO). This came as a response to the decline in UN's status as a central actor in the multilateral system[3] and to a lack of focus on results. In particular, the UN's work on development and environment had become fragmented and weak. DaO's main goal is to overcome this systemic fragmentation to deliver better focus on organisational performance, efficiency, accountability and results within the UN system (Secretary-General's High-Level Panel, 2006).

The UN Secretary-General's High-Level Panel (2006) summed up the main reasons why the UN had become fragmented and weak: "from a lack of buy-in and mixed messages from members states between capitals and representatives in various bodies, to a proliferation of agencies, mandates and offices, creating duplication and dulling the focus on outcomes, with moribund entities never discontinued" (p. 9). At the country level, operational incoherence between UN funds, programmes, and agencies has been and, it appears, still remains prevalent. Many countries have several agencies on the ground often performing overlapping activities. At the regional level, fragmentation continues to be apparent. Regional offices of different UN agencies are dispersed in different locations while definitions of regions can differ from one agency to another. At the global level, duplication and overlapping functions are still prevalent issues. For example, in sectors, such as water and energy, more than 20 UN agencies are active and compete for limited resources without a clear collaborative framework. Lastly, inadequate and unpredictable funding of the system exacerbates fragmentation. Exponential growth in extra-budgetary versus core funding changed the structure to be supply-driven rather than demand-

[3] Multilateralism is a type of alliance where numerous countries progress any given goal.

driven. In other words, UN agencies spend considerable time competing for non-core resources, undermining the UN's ability to make long-term strategic decisions. Fundamentally, the UN does not have a common system for measuring results transparently and systematically (Secretary-General's High-Level Panel, 2006).

The UN Secretary-General's High-Level Panel (2006) envisioned for the UN to deliver as one in the areas of development, humanitarian assistance and the environment at the levels described above. To achieve this, "the UN must be coherent and flexible enough to respond to demands for a variety of policy and operational services. A one-size-fits-all approach would be inappropriate." (Secretary-General's High-Level Panel, 2006, p. 10).

6.1.6. UNDP IM Strategy 2008-2011

UNDP's Information Management (IM) Strategy 2008-2011 (UNDP, 2008) addressed some of the problems outlined in the DaO report (Secretary-General's High-Level Panel, 2006). Moreover, the IM Strategy came as a response to increased reliance on technology especially in terms of communications and knowledge sharing. According to UNDP:

> …The strategic use of information and communications technology (ICT) has significant impact and adds value to the overall delivery of our program and operations. Pervasive tools such as telephone, mobile devices, connectivity, internet, email, video and voice conferencing, Atlas, dashboards, intranets and knowledge portals are so integral to our daily programs and operations that the organization has become highly dependent on their availability, performance and reliability … the value of ICT and its potential as an innovating force coupled by a new perspective in governance and risk management leads to efficiency gains with fiscal responsibility for the organization. (UNDP, 2008, p. 3)

By 2008, the IT infrastructure was becoming out-dated and expensive to maintain compared to new technologies. It was expected that the IM Strategy effort would lead to the several benefits,

including enhanced strategic planning, improved effectiveness and efficiency, and better delivery capabilities due to the implementation of best practices and standards (UNDP, 2008).

Based on the IT Governance Institute's Value of IT Framework 2.0, UNDP view IT as one of the most valuable, yet often least understood, assets. IT has the potential to bring about dramatic results and benefits to an organisation. Nonetheless, IT does not create these results and benefits in itself, but is an enabler for key business processes. According to UNDP, "ICT is no longer about implementing technology, but about enabling business through effective change management. With the right governance and management processes and full engagement from all management levels, ICT-enabled investments can thus deliver its value." (UNDP, 2008, p. 3).

The IM Strategy 2008-2011 proposed a new vision of 'Connecting UNDP'. The strategy focused on an open and integrated UNDP, meaning all relevant parties "are connected and have the ability to access, interpret and analyze the same set of data" (UNDP, 2008, p. 9) as well as leveraging technology for making the best use of knowledge. The strategy put forth five concrete goals to achieve this vision:

- "Access – Ensure **access** to UNDP users and enable connectivity
- Collaboration – Improve **collaboration** through sharing and access to knowledge and information
- Efficiency – Leverage technology to increase **efficiency**
- IT skills – Develop or acquire **IT skills** to serve UNDP missions more effectively
- Innovation – Embrace **Innovation** as a key aspect of UNDP's culture" (UNDP, 2008, p. 9)

Moreover, the IM Strategy 2008-2011 was built on previous IM strategies (2002-2003 and 2004-2005) and aligned with other UN strategies, including the broader UNDP Strategic Plan and DaO. The previous IM strategies transformed UNDP business practices by combining standard business processes and automation of new business areas (UNDP, 2008). The largest

transformation was the implementation of UNDP's enterprise resource planning (ERP) system, Atlas. According to UNDP, "ICT initiatives should always take into account, and whenever possible promote, the delivery of the UNDP's Strategic Plan and support to the UN Reform, towards a higher level of integration with UN Agencies and UNDP development partners" (UNDP, 2008, p. 10). Similarly, the IM Strategy 2008-2011 was influenced by globally prevailing technology trends such as volatility in software market, IP-based technology, and green IT.

In line with the new strategic direction, the IM Strategy 2008-2011 suggested that all ICT projects should follow the PRINCE2 (PRojects IN Controlled Environments) methodology in order to track and measure performance and results (UNDP, 2008). PRINCE2 is a process-based method for effective project management (AXELOS, n.d.).

In conclusion, the IM Strategy 2008-2011 made recommendations in several areas, including Country Offices, document management, talent management, ICT security, infrastructure and telecommunications, green ICT as well as budget and funding (UNDP, 2008). We highlight the most important recommendations to clarify the focus of our research issue. Firstly, Country Offices were recommended to upgrade their ICT skills by upgrading the skills of current personnel and hiring more experienced personnel. Secondly, document management was a challenging area that needed to be amended. Thirdly, short-term contracts for on-going core functions were highlighted as a risk area. Junior national officers or UN volunteers often filled critical ICT roles. Fourthly, UNDP had poor ICT security. Further development of ICT security policies was needed. Fifthly, connectivity and telecommunications are core ICT functions that are crucial to delivering value. More investments in this area were recommended. Sixthly, UNDP needed to adopt green principles in UNDP ICT facilities, equipment purchases and disposal. Lastly, UNDP ICT had experienced several issues related to budget and funding in prior years. The annual budget for ICT

had failed to reflect increases in maintenance costs. Consequently, UNDP proposed a new ICT funding model where cost recovery is a key element.

6.1.7. UNDP IM Strategy 2012-2013

In 2010, the Executive Board extended the UNDP Strategic Plan 2008-2001 to 2013 (UNDP, 2011). Likewise, the IM Strategy 2008-2011 was extended to 2013, because of its strong ties to the Strategic Plan. Thus, the IM Strategy 2012-2013 continued to focus on the same recommendations made from the UNDP Strategic Plan 2008-2011, particularly, using corporate ICT initiatives to achieve greater business efficiencies (UNDP, 2011). UNDP noted, "The IM Strategy Extension 2012-2013 will ensure that ICT continues to be a critical enabler of front line, customer-centric performance in corporate services." (UNDP, 2011).

6.1.8. UNDP IM Strategy 2014-2017

Similarly to previous strategies, the IM Strategy 2014-2017 continues to employ IT as an enabler for business processes to effectively achieve UNDP goals (UNDP, 2012). In light of the 2009 economic crisis, the strategy emphasises even further delivering results through efficiencies, enhanced productivity, and cost containment. In order to achieve these goals, the strategy focuses on three core areas: people (performance, talent management, and learning and development), processes (simplified to reduce Country Office burdens) and technology (cutting-edge solutions). Moreover, the strategy requires an external focus, meaning that the organisation responds quickly to the changing needs of its organizational and external environments (UNDP, 2012).

The Office of Information Systems and Technology (OIST) provides leadership in implementing the IM Strategy and guidance to the organization on strategic ICT governance (UNDP, 2012). Moreover, OIST gives technical leadership in the procurement, development, management and enhancement of ICT systems and services; provides technical support for mission-critical

enterprise ICT systems; implements fraud prevention controls; and enables the appropriate assessment and management of ICT risk.

The IM Strategy 2014-2017 has the title “Sustainable Development through ICT”. Several guiding principles were put forward to achieve this strategy, including supporting business needs with ICT systems and services, ensuring that ICT investments are environmentally sound, supporting Country Office effectiveness, building in flexibility for local needs, consolidating technology standards as well as learning from and leveraging work from others in the sector (UNDP, 2012).

As with previous strategies, the IM Strategy 2014-2017 has strong links to other strategies. The strategy builds on previous IM strategies and takes into account key lessons learned. Moreover, it continues to link to the UNDP Strategic Plan and the DaO strategy (UNDP, 2012).

The IM Strategy 2014-2017 is expected to deliver several benefits to UNDP. ICT Governance will strengthen recognition of technology value in business terms (savings, effectiveness, productivity), Regional and Country Offices will be able to more tightly link their ICT planning to strategic planning, enforcing a technology baseline and industry standards will make support easier and costs predictable, and employing best practices and standards coupled with ICT resources professionalization will improve UNDP’s delivery capabilities.

Previous IM strategies have successfully employed industry consultants such as Cutter and Gartner in order to reach its goals – The IM Strategy 2014-2017 continues to do so. External consultants provide business recommendations based on developments in the external environment, such as technology trends.

6.1.9. The History of the CIAS Unit

According to the Director of the CIAS unit, was formed in continuation of the implementation of the organisation's ERP system (G. Demeules, March 2017). In 2004, UNDP started implementing its ERP system, which integrates elements such as finance and HR. Prior to 2004, each Country Office had their own IT infrastructure and IT managers. However, with the implementation of the ERP system, Country Offices needed to connect to this centralised system. This created a greater need for connectivity. However, in developing countries, such as North Korea, Sudan and Liberia, connectivity was very poor or non-existent. Consequently, the Office of Information System Technology (OIST)—nowadays called the Office of Information Management and Technology (OIMT)—started to offer connectivity through very small aperture terminals (VSATs). Eventually, OIST created a particular unit to offer VSAT services to all Country Offices, the Connectivity Support Unit (CSU). At the same time, the Regional IT offices grew and grew up until a point where it was decided to restructure them. In the end, the CSU and the Regional IT offices were joined together in order to make one global office. In 2010, the Global ICT Advisory Services (GIA) unit was born. Ultimately, the GIA unit was renamed to the Country Office ICT Advisory (CIAS) unit. The CIAS unit grew bigger by adding more products and services to their catalogue. Nowadays, they deliver products and services ranging from connectivity to green energy (G. Demeules, March 2017).

6.1.10. The CIAS Unit in OIMT Context

The Office of Information Management and Technology is headed by the Chief Technology Officer (CTO) and consists of the Portfolio Management Office (PMO), the Cyber Security Team (CST), the CIAS unit, the Technology Innovation Services (TIS) unit, the Business Solutions Services (BSS) unit, and the Global Service Desk (GSD). The CIAS unit often works in close collaboration with

the other business units of OIMT. This is especially true for the collaboration with BSS. The CIAS unit and BSS have the same set of clients, the Country Offices. Manager 2 of BSS voiced,

> A lot of the times our technologies rely on each other. I'm delivering intranet, which is you know, sitting in a server, say, somewhere in Europe, but they can't access it unless they have good internet connection, bandwidths, you know, stuff like that. And that's where the CIAS, they deliver those kinds of services. (Manager 2).

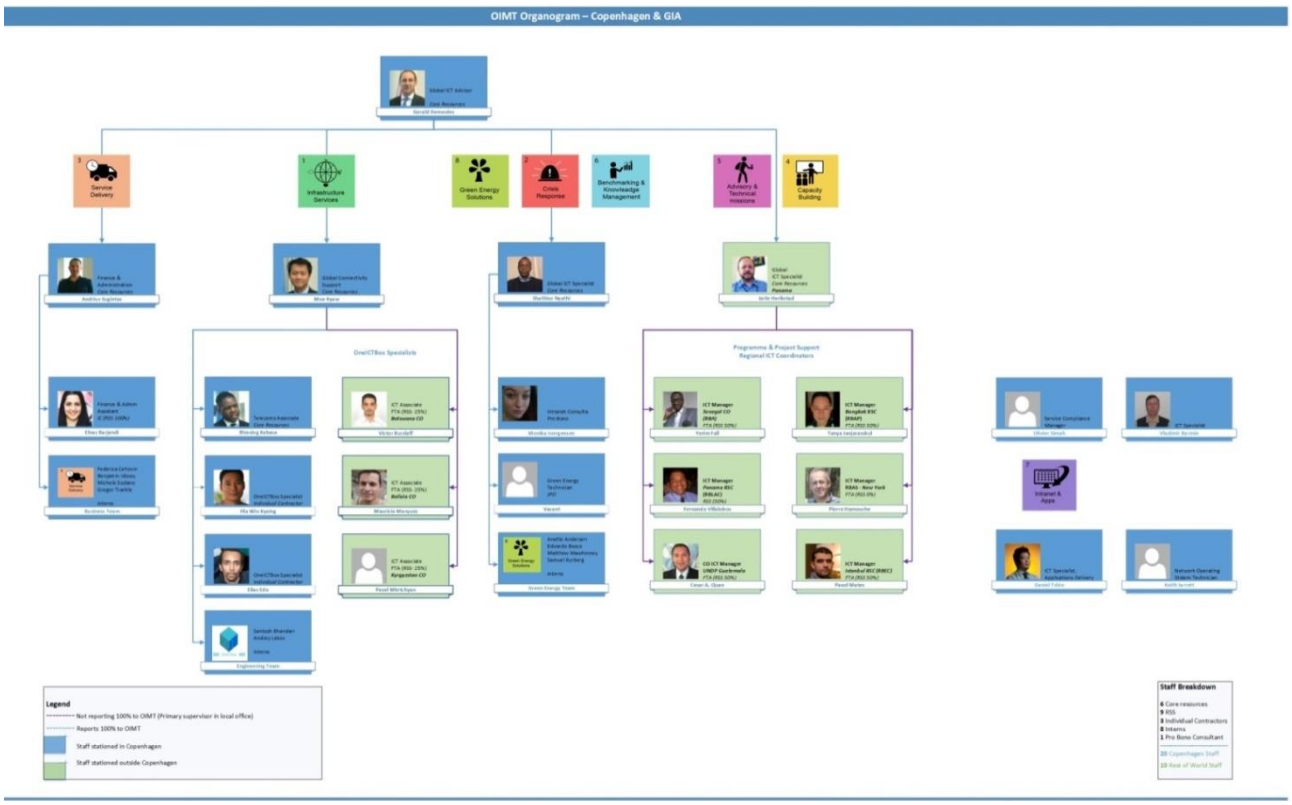
6.1.11. Business Model

As previously discussed, the UN funding system is problematic. The CIAS unit created a unique business model that increases their budget and which they can dispose of more freely, for instance by investing in innovation (Manager 1). Rather than simply providing the products and services through core funding or a charge-back fee; the CIAS unit 'sells' its products and services to its clients (i.e. UNDP Country Offices). The CIAS unit sells its products and services with a 5 per cent service fee, which gives room in the budget for innovation. Furthermore, the CIAS unit has an extraordinary internship programme that fosters this innovation (Consultant 1, March 2017).

6.1.12. Organisation

Similarly to the business model, the organisation of the CIAS unit is quite distinctive. This unit comprises the Global ICT Manager, five service line managers, between 4-6 individual contractors, and between 8-10 interns as well as staff from other units whom dedicate 25% of their time to the CIAS unit – a number of additional staff is stationed elsewhere and/or do not report fully to the CIAS unit (see Figure 9 below). Thus, the CIAS unit experiences a constant turnover of a large part of the staff. Moreover, since a large part of the personnel and its clients are scattered around the world, the CIAS unit relies largely on IT for communication. One of the consultants expressed, "It's a key part of communication since we are working with the Country Offices on a daily basis" (Consultant 1).

Figure 9: OIMT Organogram



Source:

https://intranet.undp.org/unit/oolts/oimt/CIAS/SiteAssets/OIMT%20Organigram%20CPH%20GIA.jpg.

6.1.13. Internship Programme

The CIAS unit has an uncommon internship programme unlike many other UN agencies and units. The CIAS unit relies on student interns to run a large part of day-to-day operations. Interns are given a lot of responsibility. As one manager put it, “Nobody really treats you as an intern … you are treated as equal to do your job. You have to deliver” (Manager 1). The CIAS unit offers 8-10 internships two times a year. Internship periods overlap because ‘old’ interns train and hand-over their tasks to the new interns coming in. The interns are divided into three intern teams: Business Administrative, ICT Green Energy, and ICT Engineer. Firstly, the Business Administrative

team assists in the daily running of the office, including communication with Country Offices, financial tasks, creating reports and documents as well as organising events, seminars and meetings. Secondly, the ICT Green Energy team is solely responsible for running the Green Energy Solutions service line with the supervision of the service line manager. Their daily tasks include communication with Country Offices and vendors, marketing of green energy solutions, and writing business cases based on analysis of Country Office's energy situation. Thirdly, the ICT Engineer team work with improving the ICT infrastructure in Country Offices such as the implementation of the OneICTbox.

6.1.14. The CIAS Unit's Service Lines[4]

The CIAS unit is organised into the following eight service lines (see Figure 10 below):

Figure 10: The CIAS Unit's 8 Service Lines

Source: UNDP intranet, n.d.

Firstly, Infrastructure Services are related to connectivity issues. Most of UNDP's Country Offices are connected to the Internet via local solutions, such as fiber or broadband. However, in a

[4] The following section is sourced from various restricted parts of the UNDP Intranet from the main page: https://intranet.undp.org/unit/oolts/oimt/CIAS/SitePages/CIAS.aspx.

range of developing countries, connectivity is non-existent or unstable at the very best. Therefore, the CIAS unit offers satellite connectivity (VSAT) through two long-term agreements (LTAs) with different VSAT vendors. The CIAS unit also manages Link Load Balancing for all Country Offices, which enables simultaneous use of two or more connectivity links in Country Offices. Moreover, in 2013, the CIAS unit introduced a new product to their service catalogue: the OneICTbox (see Figure 11 below). The OneICTbox is a state-of-the-art data centre in a portable rack. By relying on cloud-based solutions, it replaces an entire traditional data centre and its hardware is scalable to serve up to 1000 users. The OneICTbox is highly customisable with functions spanning ISR router, virtual servers, Link Load Balancer, WAN acceleration, security services, wireless, voice, UCS and monitoring.

Figure 11: The OneICTbox

Source: UNDP intranet, n.d.

Secondly, the Crisis Response service line focuses on areas in crisis. In a crisis situation it is crucial to have reliable and efficient connectivity. The CIAS unit offers a range of innovative solutions designed explicitly to leverage support in critical mission operations. These solutions allow UNDP actors to coordinate and orchestrate coherently their mission critical operations in

challenging environments where Internet, telephony and electricity are limited or unavailable. For example, the OneICTbox can be prepared and shipped within a short time, permitting users to access key network services.

Thirdly, Service Delivery handles all the administrative and financial backup of the CIAS unit. Service Delivery ensures the administrative and financial workflow behind products and operations. The main task of Service Delivery is the establishment of a delivery model (cost recovery and ordering) for the managed ICT services to Country Offices. This is accomplished through the CIAS unit's own online store, E-Store, where clients can review and order products and services.

Fourthly, Capacity Building refers to the hiring of new staff and further development of current staff. Key areas of work are compilation of a roster of ICT experts, review of mission terms of reference (TORs), hiring of ICT staff, and review of material for planned webinars. The CIAS unit provides training to ICT managers in workshops, through webinars and online courses in the organisation's learning management system (LMS).

Fifthly, Advisory and Technical Missions carry out advisory and technical missions on the ground and/or remotely through agreed terms of reference or Remote ICT Assessment Procedures. Outcomes are mission reports with specific recommendations, draft budgets where possible, work plans where required, updated Country Office Profile in ICT Registry, enhanced capacity in case of technical missions.

Sixthly, Benchmarking and Knowledge Management has the main purpose of monitoring compliance and provision of standard tools for the ICT community in UNDP. Therefore, this service line has a lot of overlap and interaction with other service lines in the CIAS unit.

Seventhly, Intranet and Apps covers a wide range of services related to the eRegistry, the Intranet Starter Kit (ISK) and many other services. The UNDP intranet is built on Microsoft SharePoint, a centrally hosted and managed web-based platform for document management and user productivity gains. Intranet and Apps provides support on Microsoft SharePoint and administers deployment of Country Office's intranet pages. Moreover, the eRegistry Application enables Country Office Registry units to register documents that are received in physical, paper format, as well as emailed documents digitally. The application replaces routing from paper-based to electronic-based.

Lastly, Green Energy Solutions has become a core area of the CIAS unit's activities. The Green Energy Team supports Country Offices to transition towards sustainable energy for covering the offices' energy needs. Sustainable energy also decreases Country Offices reliance on often-unstable local energy solutions, thereby ensuring that offices function at all times. The service line works on the basis of a step-by-step approach. The first step is the introduction of the Power Consumption Monitoring & Measuring (PCMM) device, which measures the energy consumption of Country Offices, enabling optimisation of such. The final step is the implementation of solar panels or windmills for a reliable and sustainable energy supply.

In sum, the CIAS unit provides a large variety of products and services. According to the director of the CIAS unit, the service catalogue now includes more than 20 products and services ranging from ICT infrastructure to green energy solutions (G. Demeules, March 2017).

6.2. Interview Results

Since we wanted to obtain a holistic view of the role of IT and its effect on performance in the CIAS unit, we gathered qualitative data through six individual interviews and one group interview with employees from all levels. Also, we used the results from Christopher's eight internship

interviews. An overview of our interviews and the interviews conducted during Christopher's internship is found in Tables 2 and 3. In this section, we present: (1) the findings that support the IT business value model, and (2) other salient themes that expand said model. These additional themes are: strategy, bureaucracy, culture, motivation, and ISO 9001.

Table 2: Overview of Thesis Interviews

Title	Date	Duration
Director, G. Demeules	March 10, 2017	40 minutes
	April 6, 2017	42 minutes
Manager 1, IA[5]	April 7, 2017	55 minutes
Manager 2, IA	April 6, 2017	28 minutes
Country Office ICT Manager 1, IA	April 13, 2017	34 minutes
Consultant 1, IA	April 7, 2017	42 minutes
Group interview, Intern 1, IA	April 7, 2017	45 minutes
Group interview, Intern 2, IA	April 7, 2017	45 minutes
Group interview, Intern 3, IA	April 7, 2017	45 minutes
Group interview, Intern 4, IA	April 7, 2017	45 minutes

Table 3: Overview of Internship Interviews

Title	Date	Duration
Director, G. Demeules	December 20, 2016	19 minutes
Manager 3, IA	December 16, 2016	16 minutes
Manager 4, IA	December 16, 2016	11 minutes
Consultant 2, IA	December 19, 2016	9 minutes
Intern 5, IA	December 15, 2016	8 minutes
Intern 6, IA	December 15, 2016	8 minutes
Intern 7, IA	December 19, 2016	8 minutes
Intern 8, IA	December 19, 2016	8 minutes

[5] IA: Interviewee Anonymous

6.2.1. Validating the IT Business Value Model

As mentioned above, this section gathers the interview findings that enabled us to find support for Melville et al.'s (2004) IT Business Value model. The themes are presented in the following manner: IT resources, complementary organisational resources, business processes, trading partner resources, and macro environment.

6.2.1.1. IT Resources

After analysing the data, we discovered that the interviewees had put forth a unanimous strong emphasis on the importance of both technical (TIR) and human (HIR) skills when it comes to IT resources. As Consultant 1 stated, "If we wouldn't have had the productivity tools and the skills of the people here, I think most of the work would have been slowed down". One of the mangers expressed it slightly differently, "IT is a tool. It works really well depending on how you use the tool … If the user doesn't see a benefit in his everyday life the tool is dead" (Manager 1). In terms of the CIAS unit, we found that the role of IT was crucial to them. Manager 1 continued, "It's the core of the business". Similarly, the Director G. Demeules expressed it; "I see the role of CIAS as one of the pillars to make everybody IT and technology aware"(April, 2017).

Interestingly, the level of IT knowledge and background among the CIAS unit's employees differed significantly depending on the employee level. For instance, the Director has an extensive educational and professional background in IT while the interns had close to no educational and a limited professional IT background. Similar to the Director, other managers that we interviewed (i.e. Country Office manager, and BSS managers) had extensive IT backgrounds both in terms of education and working experience.

6.2.1.2. Complementary Organisational Resources

As the name entails, and as Melville et al. (2004) expressed, complementary organisational resources is a broad concept that includes structures, policies and rules, and workplace practices. All interviewees agreed that there are other organisational resources that effect the relationship between IT and performance, and they are addressed in the following sub-sections.

6.2.1.2.1. Workplace Pratices

We found compelling evidence in support of workplace practices as a complementary organisational resource in the relationship between IT and performance. For instance, Consultant 1 believed that their workplace practices made the CIAS unit more effective. She said, "Small things like instead of attaching a document, putting a link to a document, which is online and accessible to everyone" and continued, "The unit has established a good sense about using the tools in a good way to be able to preserve and keep the communication smooth". In contrast, Manager 1 voiced his concern for the current staffing practices in terms of hiring new managers by stating:

> Unfortunately, in UN in general, we have a very good capacity to choose the wrong managers because we actually don't evaluate manager skills. We just evaluate technical skills, which is hard because a manager is 99% managing human more than technical system.

Moreover, we found negative views not only on staffing practices, but also in the way the UNDP evaluates their employees. A common practice is to give all employees a good rating making it difficult to differentiate between the true performers and the rest. As one Manager 1 put it:

> That's also one thing we should do – evaluation of staff. For a manager … giving good rankings, good ratings to their staff is one way to say I'm the best manager and my staff is the best, and I don't think that's a good way of doing things, because by doing this … you give … perfect scoring to everybody. Then what's the point of doing any better than the other one?

6.2.1.2.2. Policies and Rules

Manager 1 stressed the importance of policies in launching new products. He voiced his concern about a lack of training; "Right now, we don't do that [training in relation to newly launched products]. We just launch something and we hope the user community is going to adopt it". However, he mentioned that there are exceptions to this when he expressed this in terms of the ERP system, Atlas that was implemented throughout all of UNDP. He said:

> When it came to Atlas, everybody had to use it – that was it. And training, and training, and training, until everybody knew what it is, at this point when new staff arrived, you have 20 persons around using Atlas so you will have to learn. And there is still training provided for that.

6.2.1.3. Business Processes

The central aspect of business processes is evident in the Melville et al.'s (2004) IT Business Value model, and so it was throughout our interviews. As one of the managers expressed it, "For me, IT is here to improve processes. If your processes are good, and well defined, and well organised, it can help you" (Manager 1). Another manager strengthened the importance of IT in terms of business processes by claiming that it improves business process performance. He stated, "Offices have seen that technology can help reduce those kinds of unnecessary timewasters or those kinds of burdens" (Manager 2). Specifically, in regards to the CIAS unit, Consultant 1 expressed, "With the OneICTbox that we are shipping out to the Country Offices, having it being cloud based, they are able to monitor … what's happening in the respective networks from here". Moreover, we found that IT can improve business processes by enhancing communication between individuals and teams. Here, Consultant 1 voiced, "It's a key part of communication since we are working with the Country Offices on a daily basis … with the cloud we also can effectivise (sic) some decision-making processes in the sense that it's online approval".

According to Christopher's observation, in many areas, policies and rules are created at the corporate level of UNDP where the CIAS unit has little or no influence. These policies and rules are gathered in the Programme and Operations Policies and Procedures (POPP) that cover areas including programme and project management, financial resources management, human resources management, procurement, security, information and communications technology, and partnerships. Some of these policies and rules are based on best practices. For example, in the financial area UNDP follows the International Public Sector Accounting Standards (IPSAS).

6.2.1.4. Trading Partner Resources

After analysing the trading partner resources, we found that it was fundamental to the CIAS unit. The Business Solutions Services (BSS) unit can be seen as a trading partner, because it delivers products to the CIAS unit that then distributes it to the Country Offices worldwide. One of the managers from the BSS unit voiced that the relationship between the CIAS unit and the BSS is critical. He stated, "For my services to succeed, it really needs to depend on their services being delivered successfully" (Manager 2). According to Christopher, BSS is an internal partner within the UNDP. However, the CIAS unit also has several external trading partners. Most of the products and services offered by the CIAS unit are procured through business partners from the private sector. For the most essential products and services, the CIAS unit negotiated long-term agreements (LTAs) in order to enjoy increased stability and favourable prices. Moreover, by engaging in LTAs, the CIAS unit circumvent some of the bureaucratic processes involved in procurement. For example, all procurements above 5000 US dollars must have at least three tenders. However, this is not the case when buying from vendors with LTAs.

6.2.1.5. Competitive and Macro Environment

As for the competitive and macro environment, the traditional use of Melville et al.'s (2004) IT Business Value model is not particularly relevant for our case. As mentioned in the case description, the UN is such a diverse organisation that country characteristics are very difficult to measure. Similarly, the competitive environment is quite different from the private sector because the CIAS unit is part of a non-profit organisation and because it operates in a unique manner. This is not to say that the competitive and macro environment are irrelevant, but rather that the factors part of these domains are significantly different from the private sector.

We found that the CIAS unit has an external focus by proactively keeping up to date on the latest technologies worldwide. One of the consultants reasoned, "Society is becoming more and more IT dependent" (Consultant 1). The Director argued that the gap between the consumer and enterprise market are closing. He stated, "Now, they are converting to a point where that is blurred into one. Skype, now you have Skype for business" (G. Demeules, April 2017). Additionally, the external focus of examining the macro environment also effected the CIAS unit's decision of which specific IT product to offer to a particular Country Office. The Director explained this effect by giving the following examples," What we do consider is the context … where access is difficult; where the political system makes the logistics extremely difficult; where there's restriction to the internet" (G. Demeules, April 2017).

6.2.2. Expanding the IT Business Value Model

We have mentioned throughout this paper that the CIAS unit operates in a unique manner, and that there are parts of Melville et al.'s (2004) IT Business Value model that we found to be of significant value, such as strategy, bureaucracy, and culture. These themes as well as a newly found theme that surfaced from the interviews, namely motivation, are presented below.

6.2.2.1. Strategy

This theme was mentioned countless times throughout the interviews, and was particularly emphasised by the Director of the CIAS unit. The Director sets the CIAS unit's strategy in accordance with the overall UNDP strategy. He stated, "I have a strategy … which come from the OIMT strategy, and their strategy come from the UNDP strategy" (G. Demeules, March 2017). The lower level employees had a peculiar view of strategy. On the one hand, they believed strategy was important to them, and viewed strategy as being infused in their work. On the other hand, most of them did not know the official IT strategy, and could not identify how it affected them. As Consultant 1 uttered, "I definitely think it should be mainstreamed across the whole hierarchy … But yes, at this point it doesn't trickle down to commoners … except for it being so infused in the unit".

6.2.2.2. Bureaucracy

Bureaucracy is another theme that had a major impact on the CIAS unit's performance. Consultant 1 expressed concern with the multitude of approvals that was needed for a simple transaction:

> The process based on the policy is duplicating the efforts of collecting approval. First, you do it on paper form … then you do the same thing, but basically uploading it on SharePoint … And then again, when you submit the case there is an approval process in there as well.

One of the managers expressed the effect bureaucracy had on the UN. He claimed that even though the UN is trying to reduce bureaucracy by 'delivering as one' it has not worked. He stated:

> But we are still so fractured, and our systems are so fractured. And users cannot seamlessly go from one system to another to … see the internal documents, or to collaborate internally … so this is where technology hasn't really worked out for us yet (Manager 2).

Nonetheless, we also found positive effects of bureaucracy in the CIAS unit. The ISO 9001 certification has created certain structures within the CIAS unit, and led to a more systematic and efficient way of conducting their daily tasks. Thus, it increased performance within the CIAS unit. A more detailed explanation of the ISO 9001 effect is found further below in its own section.

6.2.2.3. Culture

Culture is mentioned as an example of a complementary organisational resource in Melville et al.'s (2004) IT Business Value model, but in our case it is essential and is addressed accordingly. We found that organisational culture had a significantly larger impact on the relationship between IT and performance in the CIAS unit than rather than national culture. Again, given the diversity of national culture in the CIAS unit and the UNDP as a whole, the effect of a specific national culture on them is difficult to analyse.

Consultant 1 described the importance of organisational culture to IT and performance, "Definitely the culture of the unit makes people make you to adapt easier to this whole relationship between, let's say using IT tools to be able to move business forward". Additionally, we found that culture influences the speed of implementing new IT. The Director explained the difficulty of implementing new IT, "We could maybe have done that before, but again, it was just not in the culture" (G. Demeules, April 2017). Some of the interviewees believed that culture plays an important role in the implementation of the quality management system ISO 9001. As G. Demeules put it, "Before you get the ISO 9000 certification, you need to change the mind-set and the culture as well" (April, 2017).

6.2.2.4. Motivation

Motivation was a theme that arose from the interviews, and is not part of Melville et al.'s (2004) IT Business Value model. It is possible that it is a part of the complementary organisational resources since it is such a broad concept, but it is not directly mentioned in their model. This debate will be addressed further below in the discussion section. Nevertheless, it is a variable that increased the employees' effort in providing the best possible IT service to the Country Offices they service. This was a unanimous opinion among the interviewees. However, one of the managers raised his concern for how long motivation could last given that they work for a non-profit organisation where financial motivation is not high. Therefore, there was no financial bonus that they could attain no matter how hard they worked. He stated that this did not concern the interns:

> If I perform at my best for this year and I have the same as the guy who is sitting just looking at me – ok, I'm going to stop eventually … but for an internship, it's so short that you don't have this risk (Manager 1).

Below, we present the several parts of motivation that became apparent from the interviews.

6.2.2.4.1. Personal Motivation

Firstly, we found that personal motivation was a driver for the individual employee to perform at his or her best. Even though these exact motivations differed somewhat among employees there was a general agreement that personal motivation increased performance. Notable, there was one unanimous personal motivation – doing good. Consultant 1 explained the good feeling she received when she has partaken in the support of a country during a crisis. She continued by stating that everyone in the CIAS unit shared that feeling, "I think every single person has similar kind of motivation that I just explained, that we know, in the end, the work and the small actions

that we do is helping the Country Offices". One of the managers explained this motivation by differentiating his line of work to the private sector. He stated, "I work for the UN, I don't work for the private sector. So, my goal is not to make money, my goal is to deliver to the Country Offices" (Manager 1).

Also, we found that the internship was a motivational factor in itself because it inspired them to perform well in order to increase their chances of a full time job in the UN or elsewhere. As one of the interns voiced, "It's really difficult to get a job in this industry without experience", and continued "to just have it as a stepping-stone to move on. Plus, I mean – the brand" (Intern 4).

As mentioned above, personal motivation differed among employees in the CIAS unit. For instance, one of the interns was motivated simply to learn and grow. He stated, "I came here to learn, because, you know, I'm still very early in my career" (Intern 1). In contrast, one of the managers was motivated because it allowed him to provide for his family. He said, "My two kids … and hoping that I will leave them a better world, or at least not a crappy one. That's the only reason I'm doing this job" (Manager 1). One of the managers in a Country Office explained that motivation to perform from their side was slightly different. He informed that the general motivation from a Country Office's perspective is to attain an international position. Interestingly, since he was not interested in an international position, his motivation was similar to Manager 1 in providing for his family. He stated, "You know, I bought a lot of stuff for my family, clothes to my family, and so on" (Country Office ICT Manager 1).

6.2.2.4.2. Team Motivation

One of the main drivers for increasing performance lay in team dynamics. As one of the interns expressed it, "Efficiency, in our terms, it comes from internal team dynamics" (Intern 3). Moreover, we found that good team dynamics increased trust within a team, which led to higher

performance. One of the managers voiced, “Building a good team is … a team that really trusts each other more than people that work together” (Manager 1). Intern 1 explained that his reason for remaining in the CIAS unit was the team, and that it motivated him to perform. He stated, “Because I’m working with this team, my contribution to that motivation has increased, because everyone has sort of inspired me to stay and contribute”.

6.2.2.4.3. Mentor/Intern Motivation

A third part of motivation was the relationship between the mentor (senior CIAS employees) and the mentee (interns). One of the interns explained the importance of his mentors by; “But, the motivation … for me it’s … those people that worked for 15-20 years here in organisation – it bring a lot of motivation” (Intern 3).

We found that the mentors received positive feelings from sharing their extensive knowledge with the interns, and strengthened their commitment to work. As one mentor stated, “Personally, I just try to share as much knowledge as I have with the person, and try to make them like it in a way” (Consultant). One of the interns voiced the motivation he felt from his mentor as; “You can see how aggressive, how they tackle business, how they do. I mean, I don’t see this in my university or the environment where I usually work, so I really appreciate this” (Intern 3).

Furthermore, the responsibility that the mentor gives the mentee was a chief motivational factor. One of the managers described this responsibility as; “Nobody really treats you as an intern … you are treated as equal to do your job. You have to deliver” (Manager 1). In turn, one of the interns referred to this by:

> I also see that when I talk to other interns here in the UN city that we actually here in our unit are getting so much more responsibility … and we’re actually doing real work, and not just do this slide, and read this (Intern 2).

6.2.2.5. ISO 9001

We found that the ISO 9001 standard was a significant influencer to the CIAS unit's performance. The Director explained the purpose of the ISO 9001 standard, "So the main pillars of the ISO 9000 is (sic) continuous improvement, measuring everything that you do and documenting it, and I think improving our own operation and best practices" (G. Demeules, December 2016). Consultant 1 expressed this effect on her workplace practices and structure, "I mean, for me, it basically tells me how I should do things". Moreover, there was a general agreement that this quality management system made the CIAS unit more client oriented. One of the managers stated:

> ISO 9001 is something like being responsible for your clients (…) we always have to get feedback, how did we serve them, cause (sic) we do provide some services to them. After we get feedback we have to understand what was maybe done wrong and how we can improve (Manager 4).

The ISO 9001 certification of the CIAS unit also influenced the working practices in the Country Offices. One of the managers from the Country Offices explained the so-called PDCA (Plan, Do, Check, Act), which is a part of the ISO 9001 system. He explained that the PDCA governs the way to tackle new challenges in the form of a cycle for continuous improvement. He voiced, "And the last step for us, is for managers to make a decision with information we are given – make decision to improve, and so on, and so forth. And come back to the same … cycle" (Country Office ICT Manager 1).

Conversely, there was a general disagreement among the interns in relation to how it affected their workplace practices. One intern claimed that the ISO 9001 certification was unnecessary, and viewed it as a branding tool. He stated, "I could create an entire document without putting the ISO branding, and it doesn't change the importance of my document" (Intern 1). In contrast, another

intern expressed a positive view to the ISO 9001 certification, “just thinking about templates and so on, I think that it makes everything easier and faster to do it in a more efficient way” (Intern 5).

6.3. Survey Results

In the following section, we present the findings from internal surveys from 2013 and 2016 that the CIAS unit conducts annually. The overall purpose of the surveys is to measure the client satisfaction of the products and services offered by OIMT including the global ICT and Green Energy services provided by the CIAS unit. Additionally, we include survey results from these years to display the consistencies and inconsistencies during this time period. We have selected questions that help clarify the scope of the research question, specifically, in terms of our analytical framework.

6.3.1. Brief Description of the Survey

The surveys were organized around questions that required respondents to rate a number of options. These ratings differed slightly between questions, but overall were setup between 1 (negative rating) and 5 (positive rating). The exact wording differed among questions and surveys. For instance, instead of 1 signifying very poor, it could mean not critical, or not likely, which depended on the nature of the question itself. The first few questions of both surveys were background questions, such as work location, job relation to ICT, and office size. The remaining questions were more specific about the respondent’s satisfaction with different ICT products and services. In total, 28 respondents (out of approximately 140 possible in total) answered the 2013 survey, which significantly increased to 119 respondents (out of approximately 200 possible in total) in the 2016 survey. However, throughout the 2016 survey more and more respondents dropped out or skipped questions, ending with a total of 94 respondents for the last question.

6.3.2. Brief Overview of Survey Respondents

The respondents stemmed from the following five regions as well as the Central Bureau: Africa/RBA (21.85% in 2016, and 36% in 2013), Arab States/RBAS (10.08% in 2016, and 4% in 2013), Asia and the Pacific/RBAP (21.01% in 2016, and 18% in 2013), Europe and the CIS/RBEC (21.01% in 2016, and 11% in 2013), Latin America and the Caribbean/RBLAC (20.17% in 2016, and 29% in 2013) and Central Bureau (5.88% in 2016, and 4% in 2013). The majority of the respondents work with ICT within the Country Offices (74.79% in 2016, and 82% in 2013). Otherwise, the respondents are affiliated with Country Office Management (12.61% in 2016, and 4% in 2013), Central Bureau ICT (4.2% in 2016, and 4% in 2013), Central Bureau Management (1.68% in 2016, and 0% in 2013), Programme (4.2% in 2016, and 0% in 2013), and Other (2.52% in 2016, and 11% in 2013). Finally, the respondents varied in office size in the following manner: less than 35 (16% in 2016, and 25% in 2013), 35-50 (17% in 2016, and 14% in 2013), 51-100 (35% in 2016, and 18% in 2013), 101-150 (16% in 2016, and 25% in 2013), and above 150 (17% in 2016, and 18% in 2013).

6.3.3. Survey Findings

The main findings are summarised in Table 4 below. In general, satisfaction of products and services offered by the CIAS unit increased from 2013 to 2016. The only decrease in satisfaction between these years was the management of Managed Firewall (MSS2) service. However, it is important to note that it was a minor decrease, and that the satisfaction remained positive in both years.

In terms of the performance rating of several technology principles in Question 4, the highest rated performance was allocated to ‘openness and transparency’ in both 2013 and 2016. In 2016, this principle was viewed as very satisfactory with a WA of 4.2. Moreover, the largest increase in

performance satisfaction over these years was in Lean ICT. However, all technology principles were viewed as satisfactory or higher in both 2013 and 2016.

Respondents were posed the question of rating satisfaction of the management of several services in Question 5. All services except for the MSS2 mentioned earlier increased during these years. Remarkably, all services remained at around 3 or 3.5 indicating a general satisfaction these management services. Furthermore, Question 6 dealt with the technical performance of various IT services. Some of the services from the 2016 survey were not present in the 2013 survey, because they were not offered at this point of time. Nonetheless, for the common services there was a general increase in satisfaction of the technical performance from 2013 and 2016. On average, this increase was from a rating of 3 to 4, or from average to good. The largest increase over these years was found in the ISK, which increased by 0.5 points.

Question 12 asked respondents how familiar they were with the OneICTbox, which was not part of the 2013 survey. Nevertheless, 62% of the 2016 respondents were familiar with the OneICTbox, and around 15% were either in the process of installing it, or had already done so.

Respondents were asked to rate how critical the ICT-enabled DaO strategy and Business Operation Strategy were in relation to effectiveness for their Country Office in Question 19. Notably, this question showed the largest increase in ratings from 2013 to 2016, which indicates that respondents view these ICT-enabled strategies as more critical in 2016 than three years earlier. Specifically, the ratings went from 2.74 or below average in 2013 to 3.51 or above average in 2016. In Question 20 respondents rated the likelihood of sharing resources with inter-agencies in the Country Office. 18% of them already share resources, and over 60% responded that it was either averagely or highly likely. These ratings were consistent between 2013 and 2016 where the WA increased slightly from 3.42 to 3.53.

Table 4: Overview of Survey Results

Questions		Weighted Average (WA)		
		2013	2016	Difference
4. To date, how do you rate UNDP performance vis-à-vis the below listed technology principles?	4.1 Innovation	3,53	3,90	0,37
	4.2 Integration/Interoperability	3,52	3,80	0,28
	4.3 Openness and transparency	3,72	4,21	0,49
	4.4 Lean ICT	3,26	3,85	0,59
	4.5 Sustainable (Green) IT	3,10	3,65	0,55
	4.6 Enhancing collaboration and knowledge sharing	3,70	4,02	0,32
	4.7 Building confidence and securing in the use of ICT	3,61	4,02	0,41
	4.8 UN coordination	3,09	3,56	0,47
5. How do you rate management of the below services by OIMT?	5.1 Managed Firewall (MSS2)	4,11	3,99	-0,12
	5.2 Public Cloud Computing (Office 365)	N/A	4,22	N/A
	5.3 VSAT Connectivity	3,10	3,61	0,51
	5.4 Intranet Starter Kit (ISK)	3,30	3,65	0,35
	5.5 Cost Recovery and Reconciliation	3,20	3,73	0,53
	5.6 eStore for Managed Services	3,47	3,73	0,26
	5.7 OneICTbox	N/A	3,98	N/A
	5.8 Elfiq Link Load Balancer	N/A	3,89	N/A
6. How do you rate technical performance (availability, effectiveness, user-friendliness, etc.) of the following?	6.1 Managed Firewall (MSS2)	3,70	4,02	0,32
	6.2 Public Cloud Computing (Office 365)	N/A	4,28	N/A
	6.3 VSAT Connectivity	3,27	3,67	0,40
	6.4 Intranet Starter Kit (ISK)	3,36	3,86	0,50
	6.5 eStore for Managed Services	3,79	3,89	0,10
	6.6 OneICTbox	N/A	4,04	N/A
	6.7 Elfiq Link Load Balancer	N/A	3,98	N/A
12. How familiar are you with the OneICTbox kit aimed at replacing a bulk of infrastructure in UNDP Offices?		N/A	3,00	N/A
19. How critical is ICT-enabled Delivering as One (DaO)/Business Operation Strategy (BoS) arrangement to UN effectiveness in the country you are located in?		2,74	3,51	0,77
20. What would be the likelihood of CO management buy-in should the local ICT Working Group suggest inter-agency sharing of resources like connectivity, security gateway, telephony system, backup facilities, etc.?		3,42	3,53	0,11

Source: Own production based on client satisfaction surveys (UNDP, n.d.)

7. Discussion

The following section addresses the theoretical concepts in light of our findings. We discuss the parts that comprise our revised IT Business Value model: strategy, IT resources, complementary organisational resources, culture, trading partner resources, business processes, as well as competitive and macro environment. We conclude the section by presenting our final revision of the IT Business Value model.

7.1. Strategy

Porter (1996) defined one of the three key principles of strategy to be 'fit' among an organisation's activities. This is especially true for IT business value, which according to Melville et al. (2004) is a combination of IT resources and complementary organisational resources. In research practice, we found that strategy defines this 'fit' among IT resources and complementary organisational resources. Thus, in our expanded version of the IT Business Value model, we emphasise the importance of strategy in shaping this relationship. In the following section, we discuss the relationship between strategy and IT business value.

During our initial interview with the Director of the CIAS unit, he suggested that we research the UNDP strategy and the governance, "it's important you understand when you look at a big and complex organisation, the governance structure of this" (G. Demeules, March 2017). He pointed out that the CIAS unit has a strategy that is derived from a broader UNDP strategy. Furthermore, while the UNDP strategy influences strategy at the CIAS unit's level, the CIAS unit's strategy also influences the UNDP strategy, "It's a circle. It's a circle" (G. Demeules, March 2017). In the case analysis, we examined strategy at several levels of the UN. Given the evidence, there is a clear link between the different strategies.

Moreover, we have identified two core problems within the UN and the UNDP, issues generally known, but now more clearly specified in our research context: bureaucracy and fragmentation. These two are viewed as inhibitors for the UN to be able to deliver on its various mandates as well as being significant contributors to inefficiencies and ineffectiveness.

In 2006, the UN Secretary-General's High-Level Panel outlined the Delivering as One strategy as a response to these issues. The main purpose was to break down the walls between UN agencies to enhance cooperation in core work areas. In the client satisfaction surveys respondents were asked how critical the DaO Strategy was to UN effectiveness in their given country. Respondents found it to be of increased critical importance in 2016 compared to 2013. It appears that the DaO strategy has failed to meet its objectives since its importance increases every year.

Accordingly, the UNDP IM Strategy 2008-2011 presented a strategic direction in line with the DaO strategy (UNDP, 2008). The strategy specifically mentions its linkages with other strategies, including DaO and the UNDP Strategic Plan. In this IM Strategy, the UNDP presented their view of IT business value as an enabler for key business processes. This is very much in correspondence to the literature on IT business value and Melville et al.'s (2004) key findings. Similarly, most of the interviewees mentioned that they view IT as an enabler. Interestingly, most of the lower level employees of the CIAS unit were not aware of the contents of the UNDP IM strategies. However, since the CIAS unit's strategy is linked to the UNDP's strategy and vice versa, it could be that those employees simply reflect what they know from the CIAS unit's strategy.

The UNDP IM Strategy 2008-2011 (UNDP, 2008) made recommendations for the future direction of IT in the organisation. These strategic recommendations played a major role in the establishment of the CIAS unit. Moreover, these recommendations are clearly reflected in the sections on the history of the CIAS unit and the CIAS unit's service lines. For example, this IM

Strategy recommended that more investments be made in connectivity and telecommunications, which is at the heart of the service line, Infrastructure Services. Similarly, the strategy recommended that the UNDP adopt green principles in UNDP ICT facilities, equipment purchases, and disposal. The CIAS unit has a service line called Green Energy Solutions and implements green principles in the infrastructure devices offered.

The UNDP IM Strategy 2014-2017 is similar to previous strategies (UNDP, 2012), because it builds on the same principles and views IT in the same manner. Yet, the strategy does have a stronger focus on IT as a means for creating efficiency. To achieve this efficiency, the strategy emphasises linkages between People, Processes and Technology, which is very similar to the idea that IT resources and complementary organisational resources together increase business process performance. Moreover, the role of OIST and, thereby, the CIAS unit is especially mentioned in the UNDP IM Strategy 2014-2017. The strategy suggests that OIST should lead in implementing the aims of the strategy and in guiding the organisation on strategic ICT governance (UNDP, 2012).

At the CIAS unit's level, they do not develop strategies but, rather, they develop 'ICT Roadmaps'. 'ICT Roadmaps' are more short-term and specific. The Director observed that the 'ICT Roadmap' "is more like a work plan, a task or a list of projects" (G. Demeules, March 2017). Nonetheless, the 'ICT Roadmaps' take point of departure in the strategies formulated at a higher level of the organisation, by defining strategy into specific projects (G. Demeules, March 2017).

The DaO report discussed how funding within the UN is inadequate and unpredictable (Secretary-General's High-Level Panel, 2006). Similarly, the UNDP IM Strategy 2008-2011 suggested a new ICT funding model (UNDP, 2008). As mentioned in the case analysis, the CIAS unit has a unique business model to deal with these issues. Several of the interviewees mentioned the importance of the CIAS unit's business model in being able to deliver its products and services.

Thus, the CIAS unit's business model allows them to circumvent the flawed funding system within the UN. Could this model be the solution to the funding problem across the organisation? Their business model appears to be the optimal solution for the unit given its context. However, in the long-term, replicating this model across the organisation could create other issues, such as increased competition between units and hoarding of funds. Therefore, it is not a sustainable solution for the UN as a whole.

In sum, strategy is crucial to the IT business value process. Specifically, strategy shapes the IT resources and the complementary organisational resources of the CIAS unit. The evidence shows that strategy at the various levels effects this relationship. Strategies, shaped at the corporate level of the UNDP, trickle down through the organisation to the individual units. Corporate strategy defines how the organisation views IT, its usage, and benefits.

7.2. IT Resources

From the data, it is evident that the CIAS unit has several IT resources and that these contribute to business process performance. We found that all employees viewed IT as critical for generating performance. Specifically, most employees considered IT to be an enabler for key business processes, which is in accordance with the literature on IT business value (Melville et al., 2004). Being the ICT advisory unit, the CIAS unit has a critical role in shaping the IT resources of the UNDP.

The CIAS unit's numerous technical IT resources, including the OneICTbox, the Intranet, Office 365, and E-Store, have many potential benefits. Firstly, the OneICTbox can provide key network infrastructure to the UNDP's Country Offices. Secondly, the Intranet could function as a knowledge sharing platform, which is crucial to UNDP's operations. Moreover, since it is built on SharePoint, it integrates perfectly with the Office 365 services, such as Outlook and OneDrive. Thirdly, Office 365

is a fundamental service that can enable the organisation to communicate across continents and countries, to share important knowledge through document libraries, and to organise events and meetings among others. Lastly, the E-Store simplifies the purchasing function by assimilating the Amazon experience.

Nonetheless, whether these TIRs create benefits for the organisation depend highly on the human counterpart. For example, the OneICTbox is useless unless installed and managed properly. The CIAS unit has succeeded in aligning the necessary business processes to capture these benefits. In fact, the OneICTbox has been adopted as the standard in the organisation. Internally, the CIAS unit appears to have achieved great results due to the complementary workplace practices in place. In contrast, this level of performance is not always reached across the organisation, which could be attributed to the lack of training and similar workplace practices.

Furthermore, the CIAS unit's various human IT resources are crucial to IT business value. For instance, the Capacity Building service line focuses on upgrading IT skills, whether through hiring of new employees or training of current staff. Most of the CIAS unit's managers have an extensive IT background both in terms of education and experience. During Christopher's internship, he was offered to take several certifications in relation to IT and project management. Additionally, he was encouraged to seek out relevant training that could improve his work performance.

In conclusion, the CIAS unit's IT resources enable key business processes, such as communication and knowledge sharing, which can lead to higher business process performance. However, business process performance enhancement depends on various other factors, including how the tools are being put to use, user perception, and the technical skills of the user.

7.3. Complementary Organisational Resources

We found both positive and negative aspects of the complementary organisational resource concept in Melville et al.'s (2004) IT Business Value model. On the one hand, the concept's broadness makes it possible to include unforeseen aspects. Also, it stresses the collected effect rather than the individual effect of the complementary organisational resources. On the other hand, the concept's broadness might lead to overlooking the significance of certain elements, which is one of our findings. For example, they place culture as a part within complementary organisational resources, which we found was inadequate for our study. Specifically, culture had such an important impact on the CIAS unit's IT business value process that it needed to be addressed as its own concept rather than as an example of a complementary organisational resource. In the following section, we offer a more detailed discussion on the implications of complementary organisational resources, namely workplace practices, policies and rules, motivation, internship programme, and ISO 9001.

7.3.1. Workplace Practices

We found that workplace practices have both positive and negative effects on business process performance. The positive effects were IT related, such as attaching links in documents and sending e-mails with the complete conversation history rather than separate e-mails with attached PDFs. This made the team more effective. In contrast, damaging workplace practices, such as hiring managers without evaluating managerial skills led to unfit managers. Moreover, the (flawed) employee rating system led to false ratings since all employees were given good ratings. These workplace practices make it difficult to identify the high performing employees that contribute to increased business process performance, and in turn organisational performance. How are you going to promote a particular employee when all employees are rated as equal? It

would appear that the UN has a dysfunctional measurement system in place with regards to employee ratings, which has a negative influence on its performance.

7.3.2. Policies and Rules

We found that the CIAS unit's policies and rules have an influence on their business process performance. The inconsistency of training services offered by the CIAS unit to Country Offices that implemented new IT products had a negative effect on business process performance. Overall, there was a lack of consistency in training services, which meant that training for products and services was not offered in a systematic way. However, when corporate policy required systematic training then the implementation of a new product or service was successful. For example, when the UNDP decided that all their employees were obliged to use the ERP system, Atlas, they were required to undergo necessary training.

This leads us to the effect that policies have on bureaucracy. We discovered that the UNDP has numerous policies in terms of approvals that its subunits, such as the CIAS unit, are obligated to follow. In turn, we found that the magnitude of approvals was overwhelming, and that employees are often faced with an unnecessary repetition of processes. For instance, the fact that a simple transaction needed three different approvals (i.e. one paper, and two digital) between the same people reduced the unit's business process performance. This indirect effect of bureaucracy on IT and performance is consistent with Zamutto et al.'s (2007) finding that IT does not reduce bureaucracy, but does so only in combination with the right policies. Thus, the UNDP's corporate policies led to increased bureaucracy and exacerbated performance even though there are IT tools that could eliminate this worsened performance.

7.3.3. Motivation

We learned that motivation was a major contributor to business process performance in the CIAS unit, which is why we added it to our final revision of Melville et al.'s (2004) IT Business Value model (see Figure 12). We found that the effect of motivation on business process performance took on various forms: personal, team, and mentor/intern relationship. One of the interns was thinking about ending the internship early, but was inspired to stay and motivated to perform better by the CIAS unit's team dynamics. We found that the majority of the CIAS unit's employees were not entirely financially motivated, also given the non-profit nature of the UN as a whole. Hence, the importance of individual motivation was a vital factor in terms of performance. As we discussed earlier, individual motivation took on many forms including a do-good feeling, such as helping others, brand benefit of working within the UN, and high degree of work responsibility.

Nonetheless, as one of the managers mentioned, it is equally important to identify one's motivation as it is to maintain it. He raised this concern mainly for the full time staff, as interns were employed too briefly to loose motivation. The evidence indicates that for motivation to have a consistent and long-term effect on performance, it needs to be continually nurtured. In fact, the CIAS unit has partially addressed this concern with the internship programme, despite their short tenure, through the mentor/intern relationship. We discovered that this relationship benefitted the interns because they found a role model that they could learn from, but also from the mentor's perspective because they reinforced a sense of importance and were able to share their knowledge. It would appear that the CIAS unit successfully created a culture where workers are driven primarily by internal motivation by doing what is best for the organisation rather than for themselves (Austin, 1996).

7.3.4. Internship Programme

The internship programme is a major complementary organisational resource in the CIAS unit. During the past few years, the UNDP has engaged in harsh budget constraints limiting the organisation, especially in terms of hiring new staff. The CIAS unit's Director managed to find a loophole to the harsh budgetary controls by forming an internship programme. Since interns are unpaid, there is more leeway to hire staff. Additionally, there is a high turnover of interns because the internship lasts for six months before being replaced. Thus, this allows for a fresh set of eyes every six months, which fosters an environment where new ideas and innovation are encouraged. However, this high turnover rate of interns can be problematic because the unit risks a loss of knowledge (UNDP, 2008). To minimise this risk the CIAS unit has an extensive on-boarding procedure, which is partly derived from the ISO 9001 certification. This procedure is regularly modified. The current interns were in the process of developing a new system for on-boarding future interns. One of the interns described this system, "We would like the interns to come in 2 weeks before we leave, and they're going to share a desk with us, and the same computers. So we have a direct knowledge transfer" (Intern 1).

7.3.5. ISO 9001 Standard

We found the ISO 9001 standard to be an important complementary organisational resource in the CIAS unit. Notably, the CIAS unit chose to adopt the ISO 9001 standard even though the UNDP IM Strategy 2008-2011 recommended units to implement the PRINCE2 methodology. The strongest advocators for this quality management system argued that it helped them to work more efficiently. In turn, this system created standard procedures in dealing with the Country Offices, which enhanced delivery of the products and services. One of the core goals of the ISO 9001 standard is to improve an organisation's customer satisfaction. Given the increase in overall

satisfaction of IT services provided by the CIAS unit from 2013 to 2016, it would appear that the implementation of the ISO 9001 standard in 2013 has had its intended effect. Another intended effect of the ISO 9001 standard is that of identifying new business opportunities. Since its implementation in 2013, the CIAS unit has grown significantly and expanded its portfolio to include products and services, such as the OneICTbox and Solar Energy Solutions. We do not draw the direct link between the implementation of the ISO 9001 standard and the product portfolio expansion, but the evidence suggests that it has been a significant contributor through continuous improvement. In accordance with Sampaio et al. (2009), the ISO 9001 certification does not directly lead to increased organisational performance. Instead, the ISO 9001 certification together with the motivation for pursuing this certificate increases the efficiency of implementing such a quality management system.

7.4. Culture

In the previous sections, we discussed how strategy influences IT and complementary organisational resources as well as how these affect its business processes. This leads us to the overarching concept of culture, which impacts the overall focal organisation, and in this case its IT business value generating process. We disagree with Melville et al.'s (2004) view of culture as a complementary organisational resource, because in the case of the CIAS unit, culture is not complementary, but fundamental, and should be addressed accordingly. In accordance with Leidner and Kayworth (2006), we discuss: (1) culture's effect on IT, (2) IT's effect on culture, and (3) the organisation's IT culture.

Firstly, we discovered that CIAS unit's culture effected the relationship between the IT resources and business process performance. The employees of the CIAS unit shared a similar work motivation. Rather than being motivated by financial gains, it had become an innate part of

their culture to be motivated by 'doing good'. Furthermore, the CIAS unit's culture appears to be in line with the core UN values: integrity, professionalism and respect for diversity. This suggests that culture can indirectly improve business process performance. However, we also found that the CIAS unit's culture could sometimes reduce the speed of new IT implementation. Moreover, the CIAS unit's hiring/promoting criteria do not explicitly specify what types of skill are most valuable. As mentioned earlier, the workplace practice of hiring managers based on technical rather than managerial skills was deeply rooted in the organisation's culture.

Secondly, we discovered that IT effected the CIAS unit's culture. As one of the consultants put it, "The unit has established a good sense about using the tools in a good way to be able to preserve and keep the communication smooth" (Consultant 1). This suggests that IT changed specific workplace practices and ultimately the values with regards to IT and its usage.

This leads up to the third finding – IT culture. The CIAS unit has, as the Director put it, "(…) gone from being a trusted supplier of an IT service to basically a business partner, an equal" (G. Demeules, April 2017). Moreover, we found a consensus in the CIAS unit that IT was critical to their unit in terms of: the nature of their products and services, the manner they adopt new IT products, and how they deliver their products and services. This finding was reinforced in the Country Offices given their improved satisfaction ratings during the past few years. Finally, given the agreement between the strategies and our interviews, the CIAS unit has an IT culture that views IT as an enabler for key business processes.

7.5. Trading Partner Resources

The CIAS unit has several important trading partners that, according to our findings, indirectly improve the unit's performance. Being able to negotiate LTAs with several trading partners reduces overall costs. For example, the LTA with ATEA for network equipment is highly significant

given that this equipment is used for the OneICTbox, which is one of the unit's core products. Moreover, the LTAs with the various shipping companies are vital since the CIAS unit frequently ships its products worldwide. Even more so, these LTAs allow the CIAS unit to work around the UNDP's bureaucratic functions since they do not need to acquire three offers from different tenders for procurements above 5000 US Dollars. Thus, it appears that these trading partner resources allow the CIAS unit to deliver cheaper products and services as well as making key business processes more efficient.

The CIAS unit also has internal trading partners, such as the BSS unit, which they cooperate with especially in terms of the intranet. As one of the interviewees put it, "A lot of the times our technologies rely on each other. I'm delivering intranet … but they can't access it unless they have good Internet connection … and that's where the CIAS, they deliver those kinds of services" (Manager 2). Working so closely together with a trading partner where their products support one another enhances communication across departments and, in turn, enriches the service the CIAS unit provides to the Country Offices. Thus, this suggests that these trading partner resources indirectly improve the CIAS unit's performance.

7.6. Business Processes

We view the concept of business processes as a sponge that soaks up all the effects from: strategy, IT resources, complementary organisational resources, culture, and trading partner resources as well as the competitive and macro environment. Our evidence indicates that the strength in improving business processes lays in the combination of these resources. For example, one might argue that without the TIR there is no IT to use to enhance business processes. However, if the user does not know how to use the TIR, because he or she has not been trained properly, which might be due to inefficient workplace practices or the organisational culture, the

TIR becomes useless. Therefore, it is important to take a holistic stance when examining the effect on business processes.

In relation to the CIAS unit, we discovered how each of these areas effects business processes. For instance, IT was viewed as critical by the CIAS unit to deliver their services and an enabler for business processes. Moreover, complementary organisational resources, such as the CIAS unit's workplace practice of attaching links to documents in emails rather than attaching the document itself, was found to enhance their business processes performance. In contrast, we identified that their hiring policies disregarded evaluation of managerial skill, which had a negative effect on business processes. As seen above, these hiring practices were entrenched in the UNDP's culture. Additionally, the CIAS unit's culture limited the speed of implementing new IT. The CIAS unit's trading partner resources, such as the LTAs, tore down bureaucratic functions and reduced costs. In sum, our findings suggest that it is not one or two of these areas that improve business processes, but rather the joint effort of all areas.

7.7. Competitive and Macro Environment

We found that industry characteristics, such as global IT developments and an increasingly IT dependent society, effected the CIAS unit. For instance, the development of Skype for business changed the way in which the CIAS unit communicates with the Country Offices. The CIAS unit often works together with business partners from the private sector. For instance, the OneICTbox was developed in cooperation with a private partner and initially supplied, configured, and installed by this partner. As knowledge increased, the CIAS unit were able to create their own dedicated team to configure, install and support the OneICTbox. Moreover, the evidence shows that the macro environment effected the choice of products and services offered by the unit to the Country Offices. For example, the CIAS unit examines country characteristics including political

stability and Internet access, when recommending a particular product or service to a Country Office.

According to Tambe et al. (2012), external focus, decentralisation, and IT intensity lead to increased organisational performance. However, it is difficult to determine whether or not this is true in our case, because they have chosen both centralised and decentralised paths. On the one hand, the CIAS unit was created in order to centralise the service of IT. On the other hand, the CIAS unit aims to globalise local solutions, and localise global solutions. Nonetheless, we acknowledge the importance of the influence an external focus of both competitive and macro environments can have. By taking both the competitive and the macro environment into consideration, it appears that the CIAS unit is applying Tambe et al.'s (2012) notion of external focus.

7.8. Concluding IT Business Value Model

Interestingly, the DaO report was presented 11 years ago, yet, the issues that were presented still exist nowadays. One employee stated:

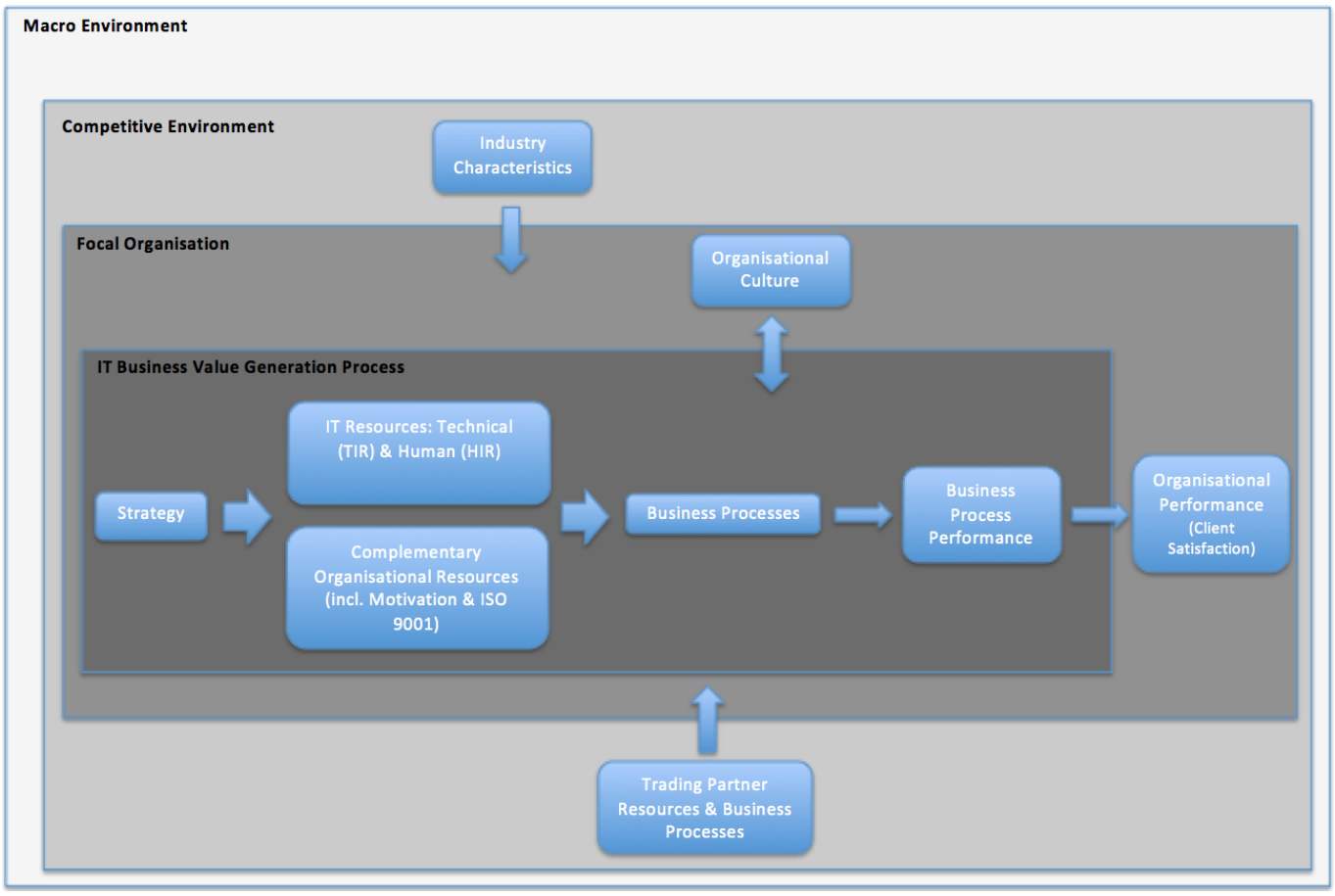
> We're trying to present … this one UN … but we are still so fractured, and our systems are so fractured. And users cannot seamlessly go from one system to another to kind of see the internal documents, or to collaborate internally … so this is where technology hasn't really worked out for us yet. (Manager 2).

When we started our research, we expected that these issues would have a negative effect on the CIAS unit as well. Surprisingly, we found that the CIAS unit is doing exceptionally well in spite of these issues. Thus, we wonder whether some of the aspects of the CIAS unit may be replicated across the UN to capture the benefits of IT.

The evidence shows that IT applied in the right way within the right business process, conditioned by complementary organisational resources, can improve business processes and, thus, improve organisational performance. The CIAS unit appears to have formed a culture that promotes a beneficial usage of IT. This applies to most aspects of the unit: its workplace practices, policies, motivation, and internship programme. Our research suggests that the UN system can benefit from this way of thinking. Specifically, the UN can learn from the culture of CIAS unit to improve communication and cooperation across the organisation.

We present our final revision of Melville et al.'s (2004) IT Business Value model (see Figure 12) and discuss its external validity. The internal validity is addressed in the conclusion.

Figure 12: The Concluding IT Business Value Model



Source: Revised from Melville et al., 2004, p. 293.

Strategy is the variable shaping IT resources and complementary organisational resources. Consecutively, IT resources together with complementary organisational resources form the business processes. The business process performance is then conditional upon its context, including organisational culture, trading partner resources, industry characteristics, and macro environment. Finally, business process performance may influence organisational performance but it depends on whether the added value is captured by end customers, apprehended by business partners, or competed away.

As mentioned in the methodology section, our research offers a functional test of Lonergan's epistemological theorem. Moreover, this functional test will verify the external validity of our model. However, due to time constrictions this was not possible to conduct before handing in our thesis. Hence, on 16 May 2017, we will verify whether or not our findings, including our judgments, deliberations, and insights, remain true to those of the Director of the CIAS unit.

8. Conclusion

1. What variables influence the relationship between information technology and performance in the Country Office ICT Advisory unit?

In this paper, we explored the relationship between IT and performance in the CIAS unit and determined what factors effect this relationship. We undertook a mixed-methods case study where we conducted several semi-structured interviews, made use of Christopher's personal observations, and gathered results from two client satisfaction surveys as well as obtained information from other secondary data. While reviewing the existing literature, we discovered the relevance of Melville et al.'s (2004) IT business value model to our study. Given our exploratory insight-based critical realist approach, we were able to study their model and adapt it to our research.

After analysing the data, our findings revealed that the CIAS unit views IT as an enabler. Additionally, the interviewees claimed that IT is critical to their ability to deliver on their mandate and that it is a performance enhancer. We found strong support for Melville et al.'s (2004) holistic view of IT. It is the combination of several factors that enable IT business value. Specifically, the combination of IT resources, complementary organisational resources, business processes, and trading partner resources created IT business value in the CIAS unit.

We uncovered additional variables that we used to revise our model throughout our research. Firstly, the UNDP's strategies trickled down to the CIAS unit, which shaped their IT resources and complementary organisational resources. In turn, this led to business process performance. Secondly, we discovered that the CIAS unit's culture is enabling key business processes related to IT, such as communication and knowledge sharing. Thirdly, the ISO 9001 standard instated bureaucratic structures in the CIAS unit that contributed to increased business process performance. Fourthly, we discovered that the UN has a problematic funding system, but the CIAS unit had found several workarounds, such as the internship programme and their commission-based business model. The CIAS unit's internship programme fostered innovation since interns were encouraged to take on responsibility and generate new ideas. Lastly, motivation became a significant factor for driving performance because employees were not financially incentivised. In sum, given the CIAS unit's context, these unique business processes and structures together with the aforementioned variables rationalise the unit's high performance.

In Melville et al.'s (2004) IT Business Value model, culture and strategy are seen as complementary organisational resources. However, our findings challenge this view. Specifically, we found that culture was an overarching concept that effected all aspects of the focal organisation rather than being a complementary variable. Similarly, our evidence suggests that

strategy should not be treated as a complementary organisational resource, but as the variable that shapes the organisation's IT resources and complementary organisational resources. Therefore, we extracted these variables from its original position within complementary organisational resources. Moreover, we add motivation to complementary organisational resources, which was not in their original model (see Figure 12).

2. To what extent may the case of the Country Office ICT Advisory unit be an example to the United Nations in ameliorating ineffectiveness?

Our study suggests that the CIAS unit can be an example to the UN in amending ineffectiveness. Specifically, the unit's culture is particularly skilled at communicating and sharing knowledge. This is in line with the DaO report that recommends that the UN should be better at cooperating across agencies and units. We will conduct an external validity test of our model on 16 May 2017 when we present the Executive Summary to the CIAS unit's Director.

9. Limitations

We encountered several limitations to our project that are important to mention. First and foremost, we identified a potential flaw in collecting data from the semi-structured interviews we conducted. The coherence of several of our quotes used throughout our paper was affected because English was not the native language for most of the interviewees. We were aware of this flaw and paraphrased the interviewee's response where we believed the meaning could be misunderstood.

Secondly, we discovered several flaws concerning the surveys. Both surveys had questions that were formulated in a very technical and complex manner and could, therefore, be misinterpreted. For instance, "What would be the likelihood of Country Office management buy-in should the local ICT Working Group suggest inter-agency sharing of resources like connectivity, security gateway,

telephony system, backup facilities, etc.?". Moreover, the surveys were plagued by minor mistakes, which might have effected the results. For example, there was a missing label and number for the fifth option in Question 11.

Lastly, scarcity of time limited us primarily in data collection and analysis. As such, we chose to analyse surveys from 2013 and 2016 even though these were annually conducted surveys. Similarly, we decided to examine the UNDP strategies from 2008-2011, 2012-2013, and 2014-2017. We deemed these strategies to be most fitting because they cover the majority of the CIAS unit's lifespan, but given more time it would have been interesting to analyse all strategies that influenced the CIAS unit. Moreover, we were unable to undertake a competitive analysis, which would have been useful for a better understanding of the competitive environment. Given the extensive playing field that the UN operates in, this would have required more time.

10. Further Research

Our research uncovers that there exists a gap in the current literature on IT and performance. Specifically, it highlighted strategy's effect on IT resources and complementary organisational resources. Moreover, we identified motivation as a key complementary organisational resource. As a result, we suggest that both strategy and motivation should be implemented as variables in IT business value research. Further research is needed to empirically test the effect of strategy and motivation on the relationship between IT and performance.

Having researched, arguably, the largest non-profit organisation in the world, it would be interesting to study how our proposed model applies to other non-profits both large and small. Given the diversity of national cultures in our study, national culture did not have a large effect on our model. Therefore, we suggest further research be conducted on smaller non-profits where we

assume national culture plays a larger role. Similarly, this research could also be studied through larger non-profits that have a smaller diversity of national cultures.

Finally, the concept of measurement and the measurement problem (Austin, 1996) was touched upon throughout our research, but not fully addressed. It would have been interesting to examine the role of measuring business process performance in terms of the CIAS unit over time. For example, in a longitudinal study, one could explore the performance of certain business processes where IT is involved to find the variables that influence performance.

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12. Appendix

12.1. Appendix 1: Initial Interview Guide

Interview Guide

Introduction

- Who we are, what we are doing etc.
    - Narrow down IT beforehand
- Could you briefly introduce yourself and explain what your role is in the unit?
    - How many years with the unit?
    - What is your IT expertise?
- Examples of IT when it works or does not work

IT and Performance

- What is the role of IT in the Business Solutions unit?
    - Could you explain how you collaborate with the CIAS unit in regards to IT?
- In your opinion, does IT improve performance?
    - Mention that IT resources is both human and technology
- What factors influence this relationship?
    - Strategy, culture
        - Did you know that UNDP has an official IT strategy? Does it affect your work?
        - How would you characterise the organisational culture of the unit?
    - Complementary organisational resources
        - Organisational structure, policies and rules, workplace practices
        - Non-IT physical resources
        - Non-IT human resources

Conclusion

- Summation
- How do you see the role of CIAS within the UNDP in 5 years? Specifically, for IT?
- Is there anything we are missing that we did not ask?
- If we have further questions, may we contact you again?
- Would you like to see the end product?

12.2. Appendix 2: Revised Interview Guide

Interview Guide

Introduction

- Who we are, what we are doing etc.
    - Narrow down IT beforehand
- Could you briefly introduce yourself and explain what your role is in the unit?
    - How many years with the unit?
    - What is your IT expertise?
- Examples of IT when it works or does not work

IT and Performance

- What is the role of IT in the Business Solutions unit?
    - Could you explain how you collaborate with the CIAS unit in regards to IT?
- In your opinion, does IT improve performance?
    - Mention that IT resources is both human and technology
- What factors influence this relationship?
    - Strategy, culture
        - Did you know that UNDP has an official IT strategy? Does it affect your work?
        - How would you characterise the organisational culture of the unit?
    - Complementary organisational resources
        - Organisational structure, policies and rules, workplace practices
        - Non-IT physical resources
        - Non-IT human resources
- What motivates you to do a good job? What do you think motivates the team to accomplish its goals?
    - Emphasis on difference to for-profit employee motivation

Conclusion

- Summation
- How do you see the role of CIAS within the UNDP in 5 years? Specifically, for IT?
- Is there anything we are missing that we did not ask?
- If we have further questions, may we contact you again?
- Would you like to see the end product?