A Business Communication Design for Information Technology (IT) Organizations based on Information Technology Infrastructure Library (ITIL)

M. Tarek Gerdewal¹ and Prof. Dr. Hikmet Seçim²

Abstract
The main objective of this research project is to evaluate the extent to which business communication could contribute to an effective IT service management. In addition, this project intends to clarify the entire role of business communication in terms of organizing the information technology into the value chain of IT service providers. Two research questions are derived from the research model which predicts the intervention of business communication in the relationship between predictor and outcome variables of an IT organization. To answer the research questions, a quantitative approach based on a survey using the questionnaire utility is conducted. Business communication covers a variety of subjects. Each of them actually represents a research object in its own right. The focus of this study, however, is to analyze the business communication in terms of IT service management processes and its realization. ITIL as an IT service management concept is known predominantly in Europe as a de facto standard. Therefore the business communication for ITSM is analyzed based on ITIL. The chief result of the quantitative analysis is that there is a significant mediation effect of interaction, as one element of the business communication constructs, in the relationship between assets management and value generation.

Key words: Business Communication, ITIL, Information Technology, Service Oriented Architecture, SOA

INTRODUCTION
Companies or departments which exclusively provide IT services for their customers are called IT service providers (OGC, 2005). To be successful in the market an IT service provider must be able to continuously offer effective, cost-efficient and up-to-date technology. At the same time IT service providers must support the current activity of their customers and facilitate any future developments with the appropriate technology. Critical to the success of an IT service provider is its ability to understand the customer’s business and strategic alignment (Akpan & Carter, 2007). It is essential for an IT service provider to seamlessly integrate information technology into the customer’s value chain and build up a trendsetting IT strategy. This does not simply mean to implement the latest technology but also to create the right products (IT services), set up the right processes, manage suppliers, define the right concept for further training and in particular manage the customer’s entire knowledge base. Therefore building up a proper IT strategy and its implementation is a key topic and a big challenge for IT service providers (Chew & Gottschalk, 2009). An essential function to cope with this challenge is communication (Cornelissen, 2011). To cite a few examples an IT service provider needs to communicate and negotiate with its customers and its suppliers. Internal resources needs to be managed to serve the customer with the right IT services at the right time and the Service Desk of the IT service provider needs to solve incidents and service requests reported from the end-user. Nowadays, companies are faced with a multiplicity of requirements of customers, constant innovations within IT, short product life cycles and increased competition. An effective IT service provider must deliver solutions quicker than its competitors. This means that IT service providers must not only be able to align itself to new situations but to be constantly aware of potential challenges to the system. As companies have a variety of places where their employees can work, such as remote working desk, the organization and distribution of

¹ Cyprus International University, Institute of Graduate Studies and Research
E-mail: mthlabib@gmail.com

² Cyprus International University, Economics/ Business Administration
E-mail: hsecim@ciu.edu.tr

©Society for Business and Management Dynamics
information has become critical. To support companies in their attempt to effectively and efficiently organize their IT resources, some best practice frameworks like ITIL, ISO 20000, MOF, COBIT etc. have been established in the market. These frameworks provide a code of practice to set up a proper IT service management (ITSM), which is able to provide customers with appropriate IT services. However, ITIL as an IT service management framework is known worldwide as a de facto standard (OGC, 2005; Barafort et. al., 2009; Lytras et. al., 2010; Bider et. al., 2010). Therefore the focus of this study is on ITIL. In practice it is a huge challenge to implement the framework ITIL and its recommendations entirely within a company while involving partners and customers in the ITIL processes. Setting up new processes with new activities does mean additional work for the employees, resulting in some employees having problems with understanding the benefits of the processes and actions recommended by ITIL. This leads to marginal acceptance of ITIL by the employees and a misunderstanding with the management as they are not provided with any satisfactory answers to the benefits of the change (Thibodeau, 2007). As a result, employees could lose trust in the organization and may not support their objectives. Additionally it could lead to a failure in communication with key clients resulting in the loss of important customers or partners (Cramm, 2003). In such a competitive industry such failures can threaten the survival of a company.

Subsequently this study aims to understand how appropriate business communication can help IT service providers get complete acceptance of ITIL by the employees and how to integrate partners and customers in the essential communication processes needed to provide high-value IT services. The main objective of this research project is to evaluate the extent to which business communication can contribute to an effective IT service management. In addition, this project intends to clarify the role of business communication in terms of organizing the information technology into the value chain of IT service providers. This study is explorative in its nature and makes use of a quantitative research approach. First, the explorative research is used to find out how far business communication is recognized as a key factor for ITSM by IT service providers. Secondly, how business communication affects operations within ITSM in order to generate valuable IT services. Lastly, it seeks to identify how do employees within IT organizations assess business communication in order to manage organizational changes, assets and stakeholders. Therefore, in the current study, a quantitative analysis will be conducted based on a survey. The population interested in this study is comprised of small and medium-sized companies primarily located in Germany. The sampling frame of the population is built up by IT organizations and IT departments primarily located in Germany which are faced with or are working with the ITIL framework. The number of small and medium sized companies in Germany is approximately two million, of these around 300,000 are medium sized employing approximately five million people3. Derived from the literature review, it is expected that in every medium sized company at least one IT department will exist. As ITIL is defined as a de facto standard for IT service management, it is furthermore expected that nearly all of the medium-sized companies are familiar with the ITIL framework. Thus, the five million employees of those companies will be defined as the population for this study.

LITERATURE REVIEW AND THEORETICAL BACKGROUND
Over the last two decades, information technology (IT) has had a major impact on individuals, organizations and society. Galliers & Leidner (2003:1-2) describe precisely how IT has spread throughout organizations at a rapid rate, although some organizations would prefer to be without it. Today IT is widely used across every department within a company and only a few companies can afford the luxury to be free from it. With the latest developments in IT, information can be passed comparatively quickly from one place to another at any time. Companies are eager to use IT, not only to support their businesses but also to improve their efficiency and effectiveness. Galliers & Baets (1998, as cited in Galliers &

Leidner, 2003:2) argues that IT has the potential to change the nature of a company. However, employees have to cope with such changes and require excellent communication skills to succeed. Additionally to that challenge employees have to cope with the rapid developments within the IT sector. Benamati & Lederer (2010:1-16) found that because of this development the complexity of IT management is also increasing. The use of new IT systems might cause incompatibilities and the need for developing interfaces between different IT systems. Concurrently employees have to stay informed of new IT developments in order to give training and provide support for its use. The integration of new IT systems might result in user resistance. This is why many companies use external consultants to bring about any drastic changes to their IT systems. IT management is no longer limited to the IT system, but now includes consultants, vendors and the end users. The nature of the global market means competition amongst companies is fierce with everyone seeking a competitive advantage and a successful IT management program can help achieve this. Ensuring that the correct information is communicated to the correct individual at the right time can be critical for a company to stay ahead of the competition. To enable this several IT systems or system interfaces may be required. Due to this, the use of IT in companies can hold numerous security risks. In an attempt to gain access to important business information, malicious attackers may use social engineering techniques to take advantage of flaws in human logic (Luo et. al., 2011:1-8). Employees are continuously being asked to consider what information they are sharing, with who and how. Therefore information security management is always a key topic of concern for every company which shares IT systems with third parties or is simply connected to the internet.

Organizational and Technical Changes

Organizations are described in literature as goal oriented social entities with nominal boundaries which always involve people and in which activities are deliberately designed and coordinated to achieve objectives (Martin & Fellenz, 2010:5-36). This definition becomes more interesting in the light of using numerous theories that treat organizations as information processing systems (Choo, 2003:5). Considering two research orientations, information is either processed in order to reduce/avoid uncertainty or to reduce/avoid equivocality of information. Organizations reduce or avoid uncertainty of information to make appropriate decisions and to solve problems. The reducing or avoiding of equivocality of information is used by managers as information processors to appropriately interpret the organizational environment to which they will attend (Choo, 2003:5-30). This concludes that information is processed in organizations by interactions among individual members to execute deliberately designed and coordinated activities. Doom (2009:9) defines these activities as part of one or many business processes which produce added value to the customers of the organization. Furthermore he argues that information systems are used to support and automate business processes. The support and automated functions range from automated systems to full business integrated systems (Doom, 2009:9-20). From the organizational point of view, it means that with the rapid distribution of information technology, several workplaces will be assigned to automated systems and others were merged together and filled by employees. Therefore employees have to manage information processed by automated systems and will also have to gain new skills in order to implement and maintain integrated information systems. This addresses the need for a process or a set of processes which defines the appropriate rights and responsibilities under which the organization can make decisions and operate IT systems. Such processes are described in reference models like ITIL. The set of processes can also be called IT governance which is an essential element of corporate governance. IT governance provides organizations with the best practices on how to organize their IT environment including processes to control the IT aspects and to minimize IT risks (Brown et. al., 2009:11-35). It is also worthy to mention that with the evolution of the Internet, the connectivity of information systems has increased rapidly. This has led to the perception that requirements to one system could actually be met by capabilities offered by another system. Therefore, the procedure of dividing systems and capabilities into different services has become popular. IT-organizations tried to avoid implementing every single capability to every single need but began to create technically Service Oriented Architectures (SOA) (Krafzig et. al., 2005:55-65). Brown et. al. (2009:11-35)
argues that SOA governance has the goal to bind the business world with the world of IT to facilitate a symbiotic and synergistic relationship between them and to bring more efficiency in using IT. Concluding, IT governance has therefore a deep impact to the organizational side of change and SOA governance affects the technical side. From the business communication perspective both IT governance and SOA governance are critical in appropriately managing the information flow and the information systems management itself.

**Information Systems Strategy**

Boddy et.al. (2008:99-154) point out that there is a relationship between the strategic direction of a company and the use of information systems. Decisions in relation to information systems are driven or steered to gain competitive advantages and to differentiate the company's capabilities from its competitors. Managers no longer use information systems only for administrative tasks but also to seek new possibilities and to accelerate business processes. Information systems become part of the broader strategy and are giving answers to more long-term questions such as: "whether a company can use information systems in order to:

- improve quality for customers;
- reduce costs and work more efficiently;
- differentiate products or services;
- lock in suppliers and buyers;
- raise barriers to market entrants;
- improve employee satisfaction;" (Boddy et.al. 2008:101)

The necessity of communication within the company and between third parties can be derived from the questions posted above. Answers to these questions can be given if the questions are clearly communicated without any other interpretations. For example improving quality for customers needs a process where initially the customer’s demands are perceived/understood and secondly an interaction with the customer is given to understand the right demands by getting constantly customers feedback.

The second question of reducing costs and working more efficiently needs to be explained in terms of how the costs should be when reduced and what does it mean to work more efficiently. The differentiation of products and services need also to be agreed with several departments within the organization e.g. the marketing and human resource department. Managing suppliers needs a specific management process wherein suppliers are continuously reviewed and agreements and contracts are renegotiated. The question of how information systems can help to raise barriers to competition can be answered by IT personnel if they know the capabilities of the competitors. Today competitors and their capabilities change quickly, so that the continuous communication to the IT personnel should be maintained. The answer to the last and the most important question, how to improve employees satisfaction with information systems, requires a straightforward communication with the company staff and the consistent backflow of the employees feedback on the strategic plan for Information Systems.

**Information Technology Infrastructure**

IT Infrastructure can be regarded as the foundation of any business today. Investments on IT are made for different purposes. For example to provide a technological platform which ensures a competitive advantage, accurate information flow, reducing the cost of doing business and providing the flexibility to compete in the marketplace. This kind of technological platform which shares IT services throughout the firm is often referred to as infrastructure (Weill, 1992:1). In an exploratory case analysis Broadbent (1999:159-182) found that the success of a Business Process Redesign approach depends on the capabilities of IT Infrastructure. With a comparatively higher level of IT Infrastructure capability companies are able to make extensive changes to their business processes over a relatively short time frame. Broadbent (1999:159-182) describes IT Infrastructure capabilities as a combination of technical and managerial expertise “required to provide reliable physical services and extensive electronic connectivity within and outside the firm” Broadbent (1999:159).
The description above is chosen in this work, because it points to the relation of business communication. Providing reliable services and the right electronic connectivity needs the correct understanding of the customer’s expectation on the one hand. Additionally it demands effective coordination of organizational capabilities among the personnel. And this can continuously be obtained by maintaining appropriate communication not only between the provider and the customer but between all parties involved.

**Information Technology Service Management**

In literature there are numerous definitions given for services and service management given. As this work is based on the ITIL framework and ITIL is known worldwide as a de facto standard, the definition for a service is taken from the Publishers of ITIL. Based on ITIL, a service is “a means of delivering value to customers by facilitating outcomes customers want to achieve, without the ownership of specific costs and risks” (TSO (Service Operation), 2007:11). ITIL defines service management as “a set of specialized organizational capabilities for providing value to customers in form of services” (TSO (Service Operation), 2007:11). According to this definition IT service management is a discipline which has the function to organize a set of specialized capabilities to provide IT services to customers. When capabilities are seen as methods, resources and processes; it can be said that IT service management has the mission to ensure accurate communication with the correct resources, using the right processes and methods. The present study aims to find how IT service management could do with using the ITIL framework. In the following a short overview of the IT Infrastructure Library, the ITIL framework, will be given. The purpose is not to describe all the processes in detail but to point out certain interactions between processes and interfaces in the context of communication. ITIL describes twenty seven processes which are grouped into five phases illustrated in Figure 1. These five phases are deliberately described in five books and these books are defined by the ITIL foundation as libraries.

![Service Strategy Diagram](image)

*Figure 1: ITIL framework (amended from Kneller, 2010:5)*

In the phase Service Strategy strategic and financial decision are made e.g. what kind of service to provide to which customer or which services should be turned off when it seems to be economically unfeasible. If there is a decision made to provide a new service or to change a specific service, then the service design will be activated to gather all relevant information to design the service. Designing the service means to get all requirements from the customer including functionality, capacity, availability and security. In this phase there is a significant amount of communication between a representative of the IT service provider, called a service level manager, and the customer. The service level manager can be regarded as a requirement manager but is also allowed to negotiate with the customer to assign service contracts, known as Service Level Agreements (SLA). After all the requirements have been processed
and the service is ready to use, then the Service Transition phase will be activated. These activities ensure that the service can be implemented without any risks and lack of resources. The implementation activities will be agreed between the customer and the users. In this phase there is less communication with the customers’ and users but a higher degree within the IT-department. After a plan with all required resources and timeslots has been provided, the service can be implemented by the Service Operation phase. The Service Operation phase provides processes and capabilities to ensure the smooth operation of IT services. In this phase there is a high level of communication between the users and the IT-staff within the Service Operation team. All incidents and problems with services, users, feedback and service requests are sent to the service desk where the process incident management has the task of getting the service operational as soon as possible. The Continual Service Improvement phase provides processes, methods and tools to ensure the quality during the whole lifecycle of a service incipient from Service Strategy to Service Operation. Non critical changes to processes or resources can be directly addressed by the respective phase. Critical changes which require decisions from senior management are first addressed in the Service Strategy phase. The agreed change is then implemented within the respective phase. The phase in which a serious change is needed will have a higher flow of communication within the IT service provider. Figure 2 illustrates the general communication flow within the ITIL framework. The communication lines to the Service Operation Team are red because there are three information and communication sources for the Service Operation Team. In case of operating a new service or even changing a service these three sources need not send necessarily the same information. Of course they can differ. Users have a different side of view to the customer and the customer cannot transmit the same information as the user. The customer is automatically changing the information by telling the story from their point of view. The same can be said for the Service Level Manager, the Service Design Team, the Service Transition Team and the Continual Service Improvement Team.

![Figure 2: General communication flow within the ITIL framework (amended from Kneller, 2010:5)](image)

**RESEARCH MODEL**

In Social Research an effect and its cause is described with variables and the relationship between them (Neuman, 2011:179). Furthermore, testing hypothesis can be achieved by measuring variables (Field, 2009:7). Variables that cause an effect are widely known as independent variables whereas variables that
are the effect are known as dependent variables. Field (2009:7) points out that the terms dependent variable and independent variable are closely tied to experimental methods where causal statements about the relationships between variables can be made as opposed to cross-sectional research. In cross-sectional research, the data is collected simultaneously and the researcher is not able to manipulate any of the variables. The researcher therefore cannot be certain whether a causal relationship between two or more variables exists (Bryman, 2012:59). Field (2009:7) recommends abandoning the terms dependent and independent variables and to use instead the terms predictor and outcome variable. The current study follows the recommendation of Field (2009:7). In simple causal relationship the use of predictor and outcome variable might be sufficient, but in more complex causal relations another intervening variable is needed. Neuman (2011:179) describes this intervening variable as dependent to the predictor variables but independent to the outcome variables. Figure 3 illustrates the relationship between the predictor variables, the intervening variables and the outcome variables. It shows that the organizational structure, the assets and the stakeholders cause the effectiveness of business communication, which affects the value of an IT service and its costs and risks. The figure also shows that the effect of the predictor variables on the outcome variables depends on how the business communication variables: content, media and the interaction between individuals are defined. This assumption leads to the research questions as stated below.

![Figure 3: Research model](image)

Interaction is chosen as an intervening variable because in recent studies interaction is seen as essential means of human communication. The accuracy of the sequence, frequency and the quality of messages depends on the interaction between the communication partners (Heath & Bryant, 2000:82-83). The stability of the communication can be identified by the double interact, which is described as the act, the response to the act and the response to the response (Putnam, 1989:174). Interaction ends in conversations and can also be an indicator to unfinished business (Heath & Bryant, 2000:84). Based on new technologies, today’s communication must be regarded as transactional mediated communication whereby all involved parties assume the role of sender, receiver and information processor by exchanging information. With the help of media many users may be involved in communication transactions to exchange business content (Heath & Bryant, 2011: 377-378). Costs are defined in ITIL as the expense of financial resources. In industrial economics there is no ultimate agreement regarding the definition of financial costs. Wöhe (2008:922) cites Schmalenbach with the leading definition of costs as the consumption of goods and services supplied. Jansson (2006:4-6) shows in his four categories of service production plants that the largest service sub-category in economics is the personal service, whereby people are the direct recipients. Risks are defined in ITIL as events that could result in disservice or impede the achievement of goals. This can also be regarded as failure to provide IT services. ITIL defines value as the composition of utility and warranty. Both must be achieved to label an IT service as

©Society for Business and Management Dynamics
valuable, otherwise there is no value generated. As warranty is defined by the continuity, availability, sufficient capacity and the adequate security of the IT service, it can be asserted that the value is not generated if any one of these elements is missing. Providing an IT service is described in ITIL as delivering value to the customer without having accountability of specific costs and risks on the customer’s side (see chapter 2.2.3.1). In other words, it can be said that the outcome for the customer is expected as the value of the IT service, its minimized costs and risks. This outcome is caused by the capabilities of the IT service provider. The outcome therefore depends on the way the capabilities of the IT service provider are organized and managed. The outcome variables: value, cost and risks are affected by the following predictor variables:

Organizational Structure
The behaviour of people within an organization depends largely on the structure of the organization and the constraints and demands that it causes (Buchanan & Huczynski, 2010:453). As ITIL describes an organizational framework, the level of the implementation of the framework within the organization could have an impact on the dependent variables. Greater results can be achieved by a effective use of the framework. Another factor is the stage of IT growth of the organization (see chapter 2.2.2). The ITIL framework describes established methods, roles, functions and processes. There are 32 processes and four functions distinguished in ITIL. Functions could be regarded as organizational units where processes and activities are operated (TSO (Service Strategy), 2007:263-309). In particular, functions and processes are architectural units in which all elements of organizational structure as defined by Buchanan & Huczynski (2010:454) can be considered and which also link roles and methods (TSO (Service Strategy), 2007:22).

Assets
Assets are built up of resources and capabilities and are the basis for providing valuable services (Van Bon et. al., 2008:28-29). Resources are tangible types of assets, such as human resources, capital, infrastructure, applications and information; while capabilities are needed to bring the right resources together at the right time to develop valuable services. A capability could therefore be seen as management power, organizational skills, or process or knowledge competences. Van Bon et. al. (2008:28) points out that while resources are comparatively easier to acquire, capabilities have to develop over a specific time.

Stakeholders
With an increasing number of stakeholders, the IT service provider needs more resources and capabilities to serve their customers, who may also have different requirements. The concept of stakeholders was originally defined by the Stanford Research Institute as “those groups without whose support the organization would cease to exist” (Freeman, 2010:31). To cite a few examples a stakeholder can be a customer, a system user, a sponsor, a client or simply a colleague. The development of capabilities is enhanced by the experience gained from different customers, which may lead to providing further valuable services. However with an increasing number of stakeholders the costs and risks also rise (TSO (Service Strategy), 2007:39).

Research Questions and Hypotheses
There are two main research questions that can be derived from the research model and the research purpose. The first addresses whether a specific design of business communication plays an essential role in an IT organization using the ITIL framework. In addition it should conclude whether or not the communication conflict within the ITIL framework, as described above, is recognized and how organizations are handling this conflict. The first research question is therefore stated as following:

RQ1: How Does Business Communication Affect IT Service Management?

It is anticipated that the first research question will lead to an answer that confirms the essential role of business communication for IT organizations. Hence, the following hypothesis states that business communication is a key factor for IT service management. Furthermore, the ITIL framework can be
adapted effectively and efficiently as interactions increase within the IT organization and among stakeholders.

RH1: Business Communication is Intervening in the Relationship between Organizational Structure, Assets and Stakeholders with Value, Costs and Risks of IT Services.

To be more precise and to avoid double-barreled hypothesis, the first hypothesis is split down into 27 hypotheses where the intervention of each variable in the relationship between the predictor and outcome variable is predicted. When it is clear that business communication plays an essential role for IT service management, then it is interesting to know whether business communication affects the achievement of the higher levels of organizational growth. The second research question is thus stated as follows:

RQ2: What Impact Does Business Communication Have on the Achievement of the Maturity Level of Organizational Growth?

It is expected that the costs and risks of IT service management who do not attend to business communication aspects will be comparatively higher than if a business communication strategy were implemented and adhered to. The management of assets will entail a higher level of failure, resulting in more time and effort wasted, if there is no business communication concept, which designs the communication content, media, interaction and the communication methods and processes. Based on the definition of Freeman (2010:31) that without stakeholders, an organization would cease to exist, the following hypotheses are defined:

RH2: There is a positive relationship between the amount of stakeholders and the level of interaction.

RH3: There is a positive relationship between the amount of stakeholders and the business content.

RH4: There is a positive relationship between the amount of stakeholders and the media used in business communication.

Without an appropriate design of business communication, the IT organization might remain constantly between the lowest and the middle maturity level of the organizational growth. Consequently the achievement of the higher maturity level of organizational growth will be challenging to the IT service provider. Therefore there is a relationship between the type of organizational structure and the value generated in the IT organization. Structured IT organizations with defined roles, methods, functions and processes will produce a higher level of value for their stakeholders if business content, media and interaction are conceptually managed. The more roles within the IT organization are defined, the more interaction is required to produce a higher level of value of IT services. For each process, specific media must be defined to ensure the value of IT services and in each function within the IT organization specific business content must be communicated to avoid uncertainty. Therefore the following hypotheses are developed:

RH5: There is a positive relationship between the roles within the IT organization and the level of interaction in business communication.

RH6: There is a positive relationship between the processes of IT organization and the number of used media in business communication.

RH7: There is a positive relationship between the functions of IT organization and the business content.
METHODOLOGY

Regarding methodology this study conducts a quantitative approach to obtain explorative results. In the quantitative approach, this study will analyze the specific point of view from different types of stakeholders on business communication aspects. The following section describes how to find indicators with an auxiliary theory to link the conceptual definitions of the variables described in the Research Model. The auxiliary theory uses the rules of correspondence which are logical statements to operationalize abstract constructs (Neuman, 2011:204). Table 1 lists the constructs and its operationalization as well as the source from which the operationalization is derived.

Organizational Structure
As a process and a function has been defined previously as an architectural unit within the IT organization the number of implemented ITIL processes and functions will be regarded as the level of organizational structure. The number of changes to processes and functions can indicate the stability of the organizational structure. The more changes are operated, the more the risk, due to incompatible organizational systems and conflicting team dynamics which, among others issues, could result in resistance to the change by the employees (McShane & Von Glinow, 2008:490-491). A function is described by the ITIL framework as an organizational unit. As ITIL defines only four specific functions, all business units (including non-ITIL functions) within the IT organization will be considered.

Assets
Assets are defined by resources and capabilities. Since employees are human resources the number of employees working in an IT organization will be one indicator of the number of the resources. Another indicator will be the amount of training an employee has taken during their employment. This indicator therefore measures a part of capability. Both indicators give information to the amount of assets within the IT organization. Furthermore the number of applications, infrastructure and processes indicate the amount of assets.

Stakeholders
Stakeholders are those of vested interest in the IT organization. The majority of stakeholders deal with employees, customers and suppliers. The number of customers and suppliers as well as the number of employees of an IT organization will therefore be defined as indicators.

Value
By virtue of ITIL, a value can only be achieved when both the utility and warranty together are ensured. Therefore, as an indicator only the measuring of either utility or warranty will be sufficient to state the failure of the IT service to provide value. As warranty is defined by the continuity, availability, sufficient capacity and the adequate security to an IT service, the amount of failure of those elements will indicate the quantity of non-achievement of value. Otherwise, if a high number of constraints are moved with the help of IT services with less failure to the warranty of those IT services, a greater achievement of value is indicated.

Costs
As a conclusion to the definition of the variable costs depicted in the previous chapter, costs will be indicated as time and effort of employees within the IT service management to represent a part of the expenditure of financial resources. To represent the variation in expense, the time and effort spent will be offset in relation to the number of unexpected changes. Evidently, every change results in the expense of financial resources. Due to the definition of an IT service the costs to every unexpected change will be at the expense of the IT service provider. Therefore the number of unexpected changes will also indicate the cost variable. In general the expense of financial resources indicates the level of the cost variable.

Risks
Based on the definition of the variable risks this will be indicated as the number of failure and the number of changes, because generally, every change runs the risk of inconsistency of systems and applications.
Interaction
Interaction is defined as conversation between people. In this study the frequency of conversations between co-workers, employees and stakeholders will be indicated. The greater the number of conversations that occur within the IT organization, the higher the level of interaction.

Content and Media
Regarding new communication technologies, the indicator for media is the number of information-exchanging technologies used (e.g. email services, communication boards etc.) during interactions and exchanging business content.

Table 1: Operationalization

<table>
<thead>
<tr>
<th>Construct</th>
<th>Operationalization</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Structure</td>
<td>• The amount of established methods, roles, functions and processes&lt;br&gt;• Amount of changes to the IT infrastructure</td>
<td>Literature Review, Derived from ITIL</td>
</tr>
<tr>
<td>Assets</td>
<td>• Amount of employees&lt;br&gt;• Amount of training an employee has taken during his or her employment&lt;br&gt;• Amount of IT services</td>
<td>New Developed, Derived from ITIL</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>• Amount of employees&lt;br&gt;• Amount of customers</td>
<td>Literature Review</td>
</tr>
<tr>
<td>Interaction</td>
<td>• The frequency of conversations between co-workers, employees and stakeholders</td>
<td>Literature Review</td>
</tr>
<tr>
<td>Costs</td>
<td>• The time and effort spent will be offset in relation to the amount of unexpected changes</td>
<td>New Developed, Derived from ITIL</td>
</tr>
<tr>
<td>Risks</td>
<td>• The amount of failures and the amount of changes</td>
<td>New Developed, Derived from ITIL</td>
</tr>
<tr>
<td>Media and content</td>
<td>• The amount of information-exchanging technologies used</td>
<td>Literature Review</td>
</tr>
</tbody>
</table>

Among the various methods in quantitative research, the survey technique using the questionnaire utility is chosen for this study. A survey is a defined method of quickly and efficiently collecting primary data from a representative sample of the population (Zikmund, 2003:175). As the literature review did not yield findings regarding communication practices and methods within the ITIL framework, the survey technique will be an effective way of gathering primary information from a representative sample of individuals and to test the hypotheses defined in the previous chapter. The questionnaire is divided into three parts. The first part gathers general information from the participant including employment history and knowledge of ITIL. The second part of the questionnaire intends to gather information about the situation of the company. An example of the types of questions asked include: 'What is the average length of time from obtaining customer requirements to delivering the complete IT service?'. To answer the question, a five point Likert scale from “too long” to “too short” is used. The main body of the
questionnaire attempts to ascertain how the participant assesses the significance of business communication in general and with regards to IT service management at their company. Table 2 shows the questions and scales used in this study.

<table>
<thead>
<tr>
<th>Question</th>
<th>Constructs</th>
<th>Variable Codes</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of employees within the organization</td>
<td>Stakeholders</td>
<td>EMPLOYC</td>
<td>Interval: 6 point scale From &quot;Up to 10&quot; to &quot;More than 500&quot;</td>
</tr>
<tr>
<td>Amount of Customers</td>
<td>Stakeholders</td>
<td>AMOCUST</td>
<td>Interval: 5 point scale From &quot;Too few&quot; to &quot;Too many&quot;</td>
</tr>
<tr>
<td>Amount of unexpected changes to the IT infrastructure</td>
<td>Organizational structure</td>
<td>TMUNEXP</td>
<td>Interval: 7 point Likert from Strongly Disagree – Strongly Agree</td>
</tr>
<tr>
<td>Structure of the organization</td>
<td>Organizational structure</td>
<td>STRUCME</td>
<td>Interval: 5 point scale From &quot;Very low&quot; to &quot;Too many&quot;</td>
</tr>
<tr>
<td>Amount of IT services</td>
<td>Assets</td>
<td>PROVITSV</td>
<td>Interval: 7 point scale From &quot;Far too few&quot; to &quot;Far too many&quot;</td>
</tr>
<tr>
<td>Interaction in business communication</td>
<td>Interaction</td>
<td>ASSINTAC</td>
<td>Interval: 5 point scale From &quot;Too low&quot; to &quot;Very high&quot;</td>
</tr>
<tr>
<td>Media used in business communication</td>
<td>Media</td>
<td>USEMEDIA</td>
<td>Interval: 7 point Likert scale from Strongly Disagree – Strongly Agree</td>
</tr>
<tr>
<td>Question</td>
<td>Constructs</td>
<td>Variable Codes</td>
<td>Scale</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Assessment of value</td>
<td>Value</td>
<td>F_VALUE</td>
<td>Interval: 7 point Likert scale from</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ASSITSBU ASSITSGW ASSITAVA</td>
<td>Strongly Disagree – Strongly Agree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ASSITCAP ASSITCAVA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ASSITISEC</td>
<td></td>
</tr>
<tr>
<td>Assessment of costs</td>
<td>Cost</td>
<td>ASSCOST</td>
<td>Interval: 5 point scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>From &quot;Higher than revenue&quot; to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Lower than revenue&quot;</td>
</tr>
<tr>
<td>Assessment of risks</td>
<td>Risk</td>
<td>ASSRISK</td>
<td>Interval: 6 point scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>From &quot;Heavily impacted&quot; to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Not impacted&quot;</td>
</tr>
</tbody>
</table>

### Quantitative Analysis Techniques

This study follows the process of analysis recommended by Zikmund (2003: 453) and Field (2013). The research model described above uses a conceptual model of mediation to depict the assumption that the relationship between the predictor variable and the outcome variable is explained by the communication variable. The latter is also known as the mediator variable. This study follows the approach of Hayes (2013) and the recommendations of Field (2013) to conduct mediation analysis. The mediation analysis and the computation of the measure described above is performed within SPSS with the tool PROCESS, provided by Hayes (2013)\(^4\).

### DATA ANALYSIS AND RESULTS

The survey based on a questionnaire with thirty-four questions was conducted from March 2014 until June 2014. Some questions were set up as a matrix, resulting in the questionnaire having 129 variables to be analyzed. A total of 139 participants took part in the survey. The data analysis started with the identification of the underlying structures as dimensions within the variables. The data analysis started with the identification of the underlying structures as dimensions within the variables. The exploratory principal component analysis (PCA) was used to extract factors/components for further analysis. Although the factor analysis and the principal component analysis have methodological differences, both are linear models and both have similarities (Field, 2009:638). As like Field (2009), the current study uses the terms components and factors interchangeably throughout this chapter. The principal component analysis was tested with multiple combinations of variables. The results of the tests revealed accomplished factor analysis with variables belonging to each variable of the three constructs which are organizational structure, assets, stakeholders, content, media, interaction and value, costs and risks. As an example, the factor analysis with the outcome variables is described as follows. The Anti-image correlation matrix provides for each variable a MSA value greater than 0.5 and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is calculated at 0.68. The Bartlett's test of sphericity df (45) = 241.32, p ≤ .001, indicated that correlations between items were sufficiently large for PCA. From here the factor

---

analysis can be continued. After several run of the factor analysis three factors were selected with eigenvalues greater than 1, which demonstrated a total variance of almost 61%. After varimax rotation the three factors as shown in table 3 were calculated.

Table 3: Rotated Factor Matrix of Outcome Variables

<table>
<thead>
<tr>
<th>Rotated Component Matrix(^a)</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO_VALUE</td>
</tr>
<tr>
<td>CO_VALUE. Component which describes the value of IT services.</td>
<td>ASSITSBU</td>
</tr>
<tr>
<td></td>
<td>ASSITSGW</td>
</tr>
<tr>
<td></td>
<td>ASSITAVA</td>
</tr>
<tr>
<td></td>
<td>ASSITCAP</td>
</tr>
<tr>
<td></td>
<td>ASSITISEC</td>
</tr>
<tr>
<td>CO_RISKS. Component which comprises the risks of IT services.</td>
<td>CONUNEXP</td>
</tr>
<tr>
<td></td>
<td>TMUNEXP</td>
</tr>
<tr>
<td>CO_COSTS. Component which comprises the costs of IT services.</td>
<td>ASSCOST2_R</td>
</tr>
<tr>
<td></td>
<td>ASSCOST_R</td>
</tr>
<tr>
<td></td>
<td>ATREQDLV_R</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.\(^a\)

a. Rotation converged in 4 iterations.

The first factor comprises the value of IT services. The second factor describes the risks of IT services due to unexpected change to the services or the IT infrastructure. The third factor describes the assessment of costs of IT services. Table 3 shows the total variance explained by the selected factors for the outcome variables related to media.
### Table 4: Total Variance Explained of Outcome Variables

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total % of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>1</td>
<td>3.363</td>
<td>33.627</td>
<td>33.627</td>
</tr>
<tr>
<td>2</td>
<td>1.610</td>
<td>16.104</td>
<td>49.731</td>
</tr>
<tr>
<td>3</td>
<td>1.155</td>
<td>11.553</td>
<td>61.284</td>
</tr>
<tr>
<td>4</td>
<td>.914</td>
<td>9.142</td>
<td>70.425</td>
</tr>
<tr>
<td>5</td>
<td>.889</td>
<td>8.886</td>
<td>79.311</td>
</tr>
<tr>
<td>6</td>
<td>.682</td>
<td>6.817</td>
<td>86.128</td>
</tr>
<tr>
<td>7</td>
<td>.603</td>
<td>6.031</td>
<td>92.159</td>
</tr>
<tr>
<td>8</td>
<td>.324</td>
<td>3.244</td>
<td>95.403</td>
</tr>
<tr>
<td>9</td>
<td>.269</td>
<td>2.693</td>
<td>98.096</td>
</tr>
<tr>
<td>10</td>
<td>.190</td>
<td>1.904</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

After the factor analysis has produced new variables, the hypothesis can begin to be tested. The first hypothesis declares business communication as a key factor and that business communication is intervening in the relationship between organizational structure, assets and stakeholders with the value, costs and risks of IT services. As the efficiency and effectiveness of the management of IT is stated in ITIL as the generation of value derived from IT services the intervention of the business communication variables should also increase by ensuring the utility and warranty of IT services. Based on this assumption the following null hypothesis is stated:

H0: There is no intervention in the relationship between organizational structure, assets and stakeholders with the value, costs and risks of IT services.

First, the correlation between the interaction variable ASSINTAC and the utility variables ASSITSBU and ASSITSGW is tested. In the second step the correlation between the interaction variable ASSINTAC and the warranty variables ASSITAVA, ASSITCAP, ASSITCAVA and ASSITISEC is checked. As described before, for warranty all four conditions must be given whereas for utility it is sufficient if either the business process are or the general work is supported. The Spearman's rho method is chosen for the
correlation test. Before starting the Spearman's rho test, all variables are checked for normal distribution and the normal distribution was applied for all further statistical tests. It is observed that the correlation between the interaction variable and the utility and warranty variables is weak but significant at $p=0.01$. The significance at a low value indicates that there is low variance which is also ascertained in the descriptive analysis.

After the exploratory analysis of the correlation tests between the predictor, the mediator and the outcome variables, the mediation and moderation analysis is conducted with the statistical tool PROCESS as described above. The extracted construct factors were used for the analysis. The explorative analysis revealed that there is only a statistical significant mediation measured of interaction in the relationship between assets and value of IT services. The analysis output shows that CP_ASSETS significantly predicts CO_VALUE, $b = 0.327$, $t = 2.427$, $p = 0.018$, $= 0.096$, $F(1,64) = 5.890$. Furthermore, CP_ASSETS significantly predicts CM_INTAC, $b = 0.398$, $t = 3.155$, $p = 0.024$, $= 0.147$, $F(1,64) = 9.95$. After adding the mediator variable CM_INTAC in the regression model of CP_ASSETS and CO_VALUE, the relationship between CP_ASSETS and CO_VALUE is less apparent and not significant, $b = 0.197$, $t = 1.395$, $p = 0.167$, $= 0.185$, $F(2,63) = 3.913$.

The indirect effect is calculated as the effect size of 0.131 and the confidence interval of CI $[0.0227, 0.2873]$ which is bootstrapped based on 1000 samples. The completely standardized effect size is measured as 0.123 with CI $[0.0221, 0.2815]$. As the confidence intervals do not contain zero, the analysis results indicate that CM_INTAC significantly affects the relationship between CP_ASSETS and CO_VALUE. As the scale of the factor CP_ASSETS has relatively low reliability, Cronbach's $\alpha = 0.4$, the result should be taken with caution. However, based on the low sample size of this study this result is seen as significant. Figure 4 shows the model of the effect of the amount of assets on the value, mediated by interaction.

Unfortunately no other mediating effect is measured with the factor variables. Within the explorative analysis a mediation analysis is also tested with the original variables and the factor variables. There is a dissenion between statisticians using this approach. However, it is possible and it was used to search for another mediating effect.

Actually the variable TMUNEXP, which asks for too many unexpected changes to the IT infrastructure, was considered with risks of IT services and defined as outcome variable. However, changes to the IT infrastructure could also be regarded as a factor of organizational structure. Therefore, a mediation analysis is conducted where TMUNEXP is the predictor variable, CM_INTAC, CM_MEDIA and CM_CONT are mediator variables and CO_VALUE the outcome variable. But, a significant mediation effect is not measured in the relationship between TMUNEXP and CO_VALUE.

For the second research question, five hypotheses were stated to verify the impact business communication has on the achievement of the maturity level of organizational growth.
hypothesis RH2 predicts that each stakeholder needs its own level of interaction to be effectively managed. As described in the previous chapter, the effectiveness of stakeholder management refers to the management of stakeholder expectations and minimizing the time spent delivering complete IT services to the stakeholders. This is the correlation between the variable ATREQDLV, which asks for the average length of time from obtaining customer requirements to delivering the complete IT services, and the variable ASSINTAC, which asks for interaction level in business communication of the participant’s organization. There is no significant relationship observed between the variable ASSINTAC and ATREQDLV. The null hypothesis therefore cannot be rejected. RH3 predicts that to each stakeholder, specific business content must be communicated to avoid uncertainty. As the testing of RH3 does not exhibit a relationship between the variable stakeholder and content, the null hypothesis of RH3 will not be rejected.

RH4 declares that the more media used in communication with stakeholders, the greater the clarity of expectations is achieved. The constructs used in this hypothesis are media and stakeholders. The variables USEMEDIA and AMOCUST described above are used in a Spearman correlation and Cramer’s V test. There is no significant relationship between the variables USEMEDIA and AMOCUST measured at $p < .05$ and the null hypothesis therefore cannot be rejected for hypothesis RH4. The results of the questions, where the participants are directly asked how they assess the use of media in order to manage stakeholders revealed that on average the participants do not agree that the number of media used in business communication does not matter when managing stakeholders.

RH5 predicts that the more roles within the IT organization are defined, the greater the level of interactions required to produce a higher level of value of IT services. Using the Spearman’s rho correlation test, no significant correlation was found between the variables ASSINTAC and STRUCRO, which captures the number of defined roles within the participant’s organization. However, the results of the question, where the participants were asked directly to assess the impact of roles on interaction in business communication, indicate that from the perspective of the participants, the level of interaction rises alongside the number of roles and vice versa.

The relationship between process management and media used is predicted in RH6. The variables USEMEDIA and STRUCPR, which capture the assessment of the number of processes within the participant’s organization, were used to conduct the Spearman’s rho correlation test. The results showed that there was no significant correlation between the variables.

The last hypothesis RH15 declares that, in each function within the IT organization, specific business content must be communicated to avoid uncertainty. To test this hypothesis, a correlation test is conducted between the factor variables ORGCONTADJ, ORGCONTSAM, ORGCONTNOM, COSTCONTADJ and STRUCDE. The results showed that there was no significant correlation between the number of departments and the assessment of impact on business content to organizational units. The null hypothesis therefore cannot be rejected.

INTERPRETATION AND CONCLUSIONS
It is observed that within the communication variables only the interaction variable has a mediating effect on the value generation of IT services. This mediating effect is observed between the assets of the organization and the value of IT services. For other variables of the construct organizational structure, an effect on value generation could not be observed. Another observation is that, from the perspective of the participants, the level of interaction rises alongside the number of roles defined in the IT organization and vice versa. Furthermore, it is observed that the amount of stakeholders do significantly affect either the level of interaction. But, a mediating effect of the variable interaction could not be determined between the amount of stakeholders with the outcome variables value, costs and risks. The results were compared with the participant’s opinion on the level of interaction with regards to managing stakeholders and the assessment of risks and costs. It reveals that a very low level of interaction actually affects the costs and risks of IT services. It can therefore be concluded that interaction as a communication variable might have a low effect on the outcome variable costs and risks but it does not exclusively affect the cost and risk.
variables in order of the amount of stakeholders. Furthermore, business content do also affect significantly the management of stakeholders. The analysis of the other communication variable media provides no significant relationship to the outcome and independent variables. The independent variables, except stakeholders, do not significantly affect the variable content and media and there is also no significant relationship observed between content and media with the outcome variables. However, the personal opinion of the participants reveals that with regard to business content there is a difference between people in companies with a high level of stakeholders and departments compared with people in companies with a low level of organizational structure and stakeholders. The latter do not agree that to all stakeholders the same type of business content can be defined and that the adjustment of business content should be applied to each stakeholder. However, there is no mediating effect of business content as communication variables observed between the independent and the outcome variable. The same observation is made between media and the independent and the outcome variables. The number of media do not significantly affect either the value nor the costs and risks of IT services. It is observed that at least one form of media but not more than two support business communication in general and contribute to minimize the costs and risks of IT services. A mediating function between the independent and the outcome variable, however, cannot be proven.

As a result of the explorative analysis, it can be concluded that from the perspective of this underlying study the communication variable interaction is regarded as a key figure in business communication. The variable media and content, though important elements of business communication, do not play a significant role in generating value for IT services or in minimizing the costs and risks in IT service management. The following model is a result of the explorative analysis as shown in Figure 5. The model emphasizes that the value of IT services depends on asset management and that this relationship is mediated through interaction as a business communication variable.

![Figure 5: Revised model of dependent and outcome variable mediating through interaction](image)

The confirmatory results support the explorative analysis and it shows that only one hypotheses in which the constructs interaction, value and the organizational structure are declared, is accepted. All other hypotheses could not be accepted due to a lack of correlation between their underlying variables. However, the validity of the measurement constructs may be questionable. For further research this should be considered and investigated.

**Hypothesis RH1**

The first hypothesis which declares that business communication is intervening in the relationship between organizational structure, assets and stakeholders with the value, costs and risks of IT services, is partially accepted. It is observed that interaction has an effect in the relationship between assets and the value of IT services. Any other intervening effect of business communication variables in the relationship between organizational structure, assets and stakeholders with the value, costs and risks of IT services could not be measured or confirmed. Furthermore, it is measured that the level of interaction during meetings is significantly related to the utility and warranty carried out by the IT services.
Hypothesis RH2
The difference in interaction levels between the stakeholders could not be measured and the hypothesis is therefore not accepted. The effectiveness of stakeholder management, which refers to the management of stakeholder expectations and minimizing the time spent delivering complete IT services to the stakeholders, is independent of the level of interaction in stakeholder communication. The participants’ personal opinions on the question of whether the level of interaction must be adjusted to each stakeholder reveal that most participants tend to agree but there are still a considerable number of participants who tend to neither agree nor disagree to strongly disagree. The responses to the assessment of the question of whether the level of interaction is equal to all stakeholders also show that most participants tend to disagree with this assessment. These results suggest that the design of the questionnaire may not be optimal and the participants could have interpreted some of the questions regarding interaction level and stakeholder management differently. This should be addressed for further research.

Hypothesis RH3
A statistically significant relationship is observed between the business content and the amount of stakeholders. It was expected that with the increasing amount of stakeholders the business content must be adjusted to each stakeholder. However, the survey reveals that there is a difference in opinion between participants who serve a few stakeholders compared to those who serve many. The latter tend to disagree that business content is equal to all stakeholders and think that business content must be adjusted to each stakeholder. Therefore it can be said that business content does matter in business communication and in managing stakeholders and the hypothesized relationship between the type of business content and the number of stakeholder can be accepted.

Hypothesis RH4
The hypothesized clarity of expectations by increasing use of media in stakeholder communication is not confirmed. The results of the participant assessments show that on average the participants believed that the communication effort is “not” and “strongly not” supported through more than two forms of media and with at least one, the communication is supported.

Hypothesis RH5
No significant link between the number of roles and the interaction within business communication is observed. The hypothesis which predicts that the greater the number of roles within the IT organization are defined, the increased level of interaction is required to produce a higher level of value of IT services, is not accepted. However, the survey reveals that the level of interaction rises alongside the number of roles and vice versa. As with hypothesis RH10, it is assumed at this point that the questionnaire design may be problematic and should be analyzed in further research.

Hypothesis RH6
There is no significant correlation observed between media and processes. Also, the participants asserted that the number of media systems does not affect the management of processes.

Hypothesis RH7
It is not confirmed that business content is significantly related to the functions (organizational units) within the IT organization. No significant correlation between the number of departments and the assessment of the impact of business content to organizational units is observed and therefore the null hypothesis could not be rejected. However, the correlation tests also show a slightly positive correlation between the number of departments within the IT organization and participants that work for organizations with a tendency to have a low number of departments and who tend to agree, that to each organizational unit specific business content must be defined. On the other side there is a slightly negative correlation between the number of departments within the IT organization and participants who work for organizations with a tendency to have a high number of departments and who tend to agree that for all organization units the same business content can be defined. Otherwise, participants of organizations with a tendency to have a low number of departments tend to disagree that for all organization units the same business content can be defined.
The first research question asks how business communication affects IT service management. The test results show that, in this underlying study, a significant effect to value and assets management is observed for just one element of business communication, namely interaction. Therefore, it can be assumed that the management of assets within the IT infrastructure can be supported by a higher level of interaction between the parties involved within the Service Transition. The support in this case means that with a higher level of interaction the value of IT services at the very least remains or is increased. Within the business communication it is assumed that no more than two media forms should be used to retain efficiency because more than two will not significantly contribute to the effect. Regarding business communication content, it can be assumed that the greater the number of stakeholders the more an adjustment of content should be considered. This was not observed, in this underlying study, that business communication significantly affects the costs and risks within the IT service management. There must be other variables which have a greater effect on the costs and risks of IT service management than business communication. In this study, there is no differentiation between the different roles in ITIL. It is possible that an effect of business communication on IT service management is observed differently between roles. This aspect is noted for further research.

The second research question asks about the impact of business communication on the achievement of the maturity level of organizational growth. As revealed in the literature review, without stakeholders, an organization would cease to exist, therefore stakeholders are viewed as one important factor of organizational growth. Additionally, as this research study uses the ITIL framework as a base, the organizational structure, which is defined in roles, processes and functions, is viewed as the second important factor. For both factors, no significant impact from business communication variables is observed. It is therefore assumed that there are variables which impact the maturity level of organizational growth, other than business communication. It is self-evident that without communication, no process will function. Due to the results it can be asserted that business communication does support the processes in order to manage stakeholders, assets and organizational structure therefore contributing to organizational growth. This support function is the only impact which can be observed in this underlying study. Any additional impact of business communication on the achievement of the maturity level of organizational growth can neither be observed nor can it be confirmed.

Finally, the communication problem within the ITIL framework, which is described above, should be discussed after the results of the analysis. The communication problem is that the Service Operation team has three sources of information to operate the services. The first source is the users, the second the Service Transition team and the third the team of continual service improvement. In the case of delivering one or more IT services, the information regarding the same topic could be sent from each source to the Service Operation team via different method of transmission, if sufficient coordination between the parties has not taken place. The results indicate the level of interaction, especially in the communication processes of the Service Transition team, is instrumental, which can significantly contribute towards management of assets and to retaining the value of IT services. The IT organization should consider that the level of interaction within the Service Transition team as a non-negligible factor to providing IT services. The Service Transition Team should be involved within the communication flow between the Continual Service Improvement Team and the Service Operation. This approach will reduce the communication conflict as instead of three communication sources the SO Team will then have only two sources. Without involving the Service Transition Team, a communication between the CSI Team and SO Team could lead to actions which may be counterproductive to the value of IT services. Therefore, in a business communication design within the ITIL framework, the following aspects must be taken into consideration:

- For all organizational changes, within the IT infrastructure, the level of interaction between the communication parties must be adjusted.
- The number of communication media used should be set no higher than two to ensure the efficiency of the business communication.
• Within every communication to the Service Operation team, the level of interaction should be assessed and, where necessary, adjusted.

• However, due to the small sample size of the survey and the relatively unreliable nature of some extracted components measured with the Cronbach's alpha value, the results described above should be considered with caution. But, it is the intention of the author that the objectives and the structure of the study, including the research model, will serve as a base for further research.

REFERENCES


Weill, P. (2012). "The Role and Value of Information Technology Infrastructure: Some Empirical Observations", Center for Information Systems Research, Sloan School of Management, Massachusetts Institute of Technology, Internet:

