The Implementation of Microsoft Lync

at Sokotel Oy

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The flow, effectiveness and ease of communication can significantly impact the profitability and productivity of an organisation. This case study thesis investigated the dynamics of communication flow in Sokotel Oy and the impact the Microsoft Lync communication tool would have on the effectiveness and efficiency of communication within the organisation.

The research focused on investigating the communication needs of both the personnel and the organisation in general to determine whether the functionalities of Microsoft Lync adequately catered for those needs. The research was conducted using questionnaires and interviews to ascertain the objective, form and use of communication in the organisation.

The results retrieved from the questionnaires and interviews were analysed using the service design approach and tools. The questionnaire effectively showed that given the peculiarities of the organisational structure, there was need for a unified communication tool, such as Microsoft Lync, that would be cost effective, efficient, easy to use and manage. A comparison of the capabilities of Microsoft Lync with those of the current communication systems in the organisation, established evidence of multiple advantages that Microsoft Lync has over the current communication systems.

Although there are a few limitations to the use of Microsoft Lync, it was concluded that they are insignificant in comparison to the benefits generated from utilising the tool. For Sokotel Oy to benefit optimally from the use of Microsoft Lync, it has to be implemented not just technically, but culturally as well. This report has highlighted recommended steps in the process for cultural implementation and subsequent integration of Microsoft Lync as the main communication tool in Sokotel Oy.

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Organisaation tuottavuuteen voivat vaikuttaa merkittävästi kommukaation tehokkuus ja sujuvuus. Tällä tutkimuksella tarkasteltiin kommunikaatiovirran dynaamisuutta Sokotel Oy:ssä sekä millainen vaikutus Microsoft Lync työkalulla olisi kommunikaation vaikuttavuuteen ja tehokkuuteen yhtiössä.

Tutkimustyössä keskityttiin molempien osapuolien, Sokotel Oy:n ja sen henkilökunnan, kommunikaatiotarpeiden kartoittamiseen. Tutkimyöstyö pyrki myös selvittämään Microsoft Lync –työkalun käytettävyyden kommunikaation parantamiseen yhtiössä. Yhtiössä tapahtuvan kommunikaation käyttö, muoto ja tarkoitus selvitettiin haastatteluilla ja kyselyillä.

Palvelusuunnittelun lähestymistapaa ja työkaluja käytettiin haastatteluiden ja kyselyiden analysointiin. Kyselyistä selvisi yhtiössä tapahtuvan kommunikaation erikoisuus, mikä osoitti hyvän hinta-laatu suhteesta, yhtenäisyydestä sekä hallittavuudesta koostuvan, kuten Microsof Lync, kommunikaatiotyökalun tarpeen. Nykyisiä kommunikaatiomenelmiä ja Microsoft Lyncin käytettävyyttä vertailemalla kartoitettiin Microsoft Lyncin monet edut nykyisten kommunikaatiomenetelmiin verrattuna.

Microsoft Lyncin käytön hyödyt voittivat sen käytön harvat rajoitteet. Microsoft Lync täytyy ottaa käyttöön niin teknisesti kuin kulttuurillisesti, jotta Sokotel Oy hyötyisi optimaalisesti Microsoft Lyncin käytöstä. Tämä tutkimus esittää suositellun kulttuurisen toteutuksen sekä peräkkäiset toimenpiteet Microsoft Lyncin käyttöönottamiseksi pääkommunikaatio metodina Sokotel Oy:ssä.

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1   Introduction

Communication has progressed remarkably in today's world due to rapidly evolving technological systems and services. New information and communication technologies have transformed the way companies and organisations conduct their business operations. With so many technologies and devices available, connecting and staying in touch with colleagues, clients and customers effectively and efficiently has become more of a necessity especially in the competitive business world.

In the pre-technological era, the communication process was long, expensive and tedious. It involved sending letters via post and having to wait for long durations, depending on the destination, for a response. After receiving the response it could generate the need for further communication or clarification which would in turn lengthen the communication process even further. It also involved making telephone calls which was expensive, especially for long distance calls, and limited since one could only communicate with a single person at a time. Moreover there were no services such as voicemail, caller ID, emails and so on.

With the innovation of the internet, technology has redefined the communication process. Emails are now commonly used instead of letters which enables the instantaneous exchange of messages and information to one or multiple recipients at the same time. Furthermore, communicating in short messages to colleagues, customers, family or friends can be easily achieved in just under a few seconds through the use of instant messaging clients such as Microsoft Lync, Skype, WhatsApp, Viber, etc. Time is a key factor in ensuring that communication is both efficient and effective. Therefore, the longer it takes for the exchange of information back and forth from a sender to a receiver, the less likely the probability of achieving quality communication.

The advent of new technology architecture known as unified communications has eased and simplified the way people communicate in the corporate world. Unified communications (UC) is the term used to describe the convergence of communication technologies into one functional system. UC technologies have the potential to integrate both fixed and mobile devices and applications. Examples of applications and systems that can be integrated into a unified communication environment include; e-mail, telephone, fax, voice mail, white boards, instant messages, web-based collaboration and video and audio conferencing.

Integrating unified communication systems into business operations facilitates meetings with employees and clients without having to leave the office. In circumstances where time and resources are of concern, engaging in meetings and work collaborations are still achievable. As a result, instant messaging provides an easy and excellent way for everyone in a company

to stay up-to-date with work related information whilst allowing them to continue with their daily tasks at the same time thus facilitating multi-tasking and therefore not sacrificing productivity and company resources.

1.1   Problem statement

For organisations with multiple business lines, units, departments and large numbers of employees, scheduling meetings and communicating on a daily basis can be both tedious and expensive. Therefore, for a company such as Sokotel Oy, which has many business lines and units in various geographical locations, there is a need for a well-defined and implemented communication infrastructure.

Sokotel Oy has its head office in Helsinki, Finland. The company has centralised some of its overall departments in the head office. This means that its business lines and units rely directly on services provided by the centralised departments such as Information Technology (IT), Human Resource (HR), Finance and Operations Support. This dependency requires communication channels that are real-time, flexible, easy to use, time and cost efficient and most importantly secure. Without modern and appropriate communication channels that meet all these demands, Sokotel's centralised departments appear detached from the various business units. Therefore, both entities are unable to provide and receive quality and timely services that are a result of efficient communication.

Microsoft Lync is a popularly used communication tool in companies and organisations. The tool meets most of the requirements mentioned above and is technically available in Sokotel but not fully implemented in terms of utilisation.

1.2   Objectives

The main objectives of this research included, but were not limited to;

- Conducting research to identify and define the communication needs of Sokotel Oy.
- Researching and analysing Microsoft Lync as a communication tool, to evaluate whether it meets all the communication needs of the company identified in the research.
- Conducting research on the current communication infrastructure within the company to identify the reasons why Sokotel Oy is not fully utilising the Microsoft Lync tool despite the fact that the company has the capability and possibility to use it.
- Designing a business framework depicting the use of Microsoft Lync as a main communication tool within the company.

- Creating an implementation plan detailing how to activate and motivate relevant employees to use Microsoft Lync and the tool's user guidelines.

1.3   Scope

The scope of the thesis project was focused on developing a functional business platform within Sokotel Oy for the utilisation of Microsoft Lync unified communications tool by the company's personnel. The platform is mainly for the communication of business units with centralised departments such as Human Resources and IT services and their clientele and suppliers, communication between colleagues in the centralised department and the different branches. The project entailed conducting research and analysis of the communication needs of Sokotel Oy, exploring and analysing the functionalities and benefits of Microsoft Lync, mapping and critiquing the current communication process of the company. The project explored the utilisation of the tool by other organisations as well.

1.4   Client Company

Sokotel Oy is one of the subsidiary companies within SOK which was founded in 1904. SOK (Suomen Osuuskauppojen Keskuskunta) and its subsidiaries form the SOK Corporation which provides centralised services and support operations for S-Group's businesses. As illustrated in Figure 2, S-Group is a Finnish network of companies with multiple businesses in the retail and service sectors comprising of over 1,600 outlets in Finland. The network is owned by over 2 million co-operative members. It consists of 21 independent regional cooperatives, 8 local cooperatives and SOK which is owned by the regional cooperatives, and its subsidiaries. Figure 1 illustrates S-Group's overall business structure. The Cooperatives are independent companies that operate all over Finland on a cooperative basis. At the end of 2012, S-Group had over 43,000 employees. (S-Kanava n.d)
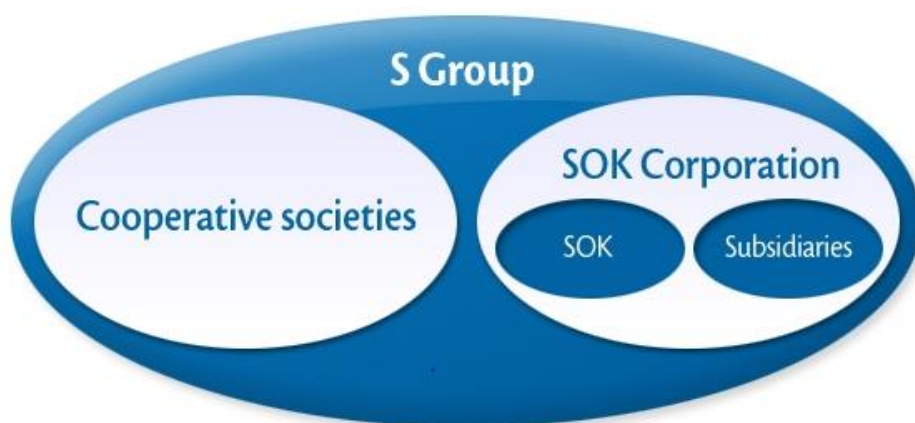
Figure 1: S-Group structure (S-Kanava n.d)

SOK operates as the central firm for the cooperatives and produces procurement, expert and support services for them. SOK is also in charge of S Group's strategic steering and the development of their various business chains. SOK's subsidiary companies include Sokotel Oy, Hankkija-Maatalous Oy, SOK Autokauppa Oy and procurement companies Inex Partners Oy and Meira Nova Oy. In addition to its subsidiaries, SOK has companies in the Baltic countries (Latvia, Estonia and Lithuania) and St Petersburg in Russia. They operate in the retail, tourism and hospitality sectors. (S-Kanava n.d)
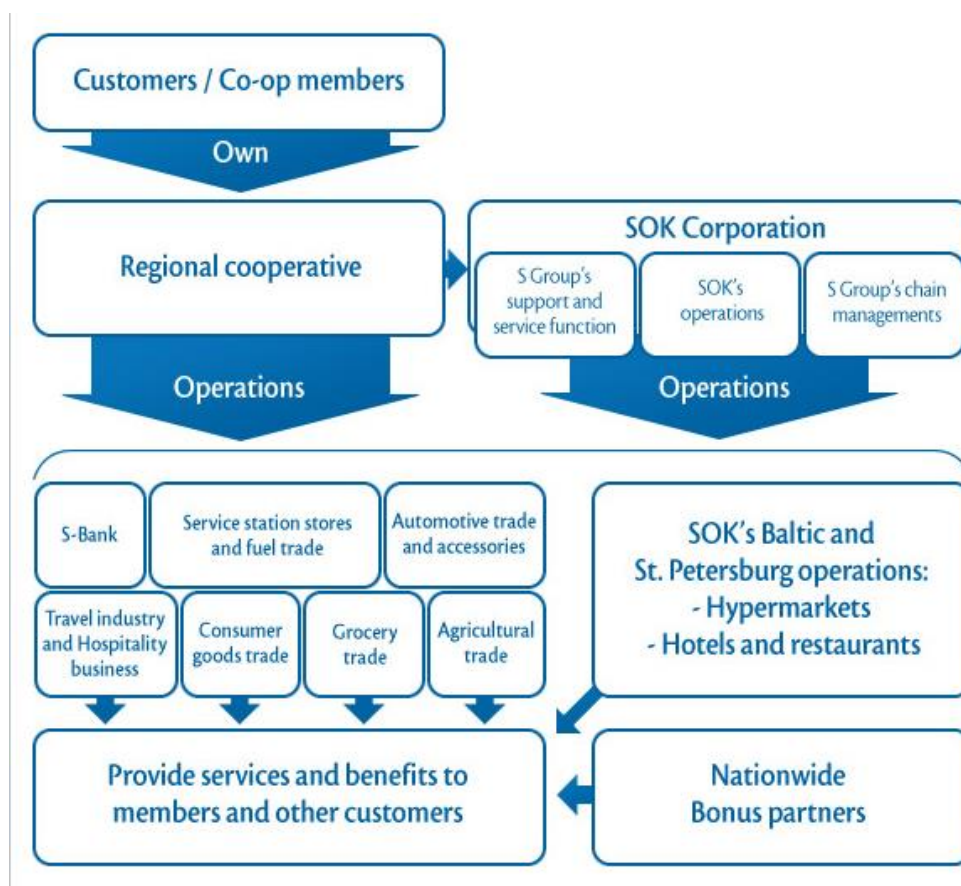
Figure 2: S-Group's organisational structure (S-kanava n.d)

Sokotel Oy is SOK's tourism and hospitality industry business subsidiary which has business operations mainly in hotels and restaurants. In Finland, it operates 15 Sokos hotels and 6 Radisson Blu hotels. The Radisson Blu hotels are operated under a franchising contract with the international hotel company Carlson Rezidor hotel group. Sokos hotels are a Finnish hotel chain and it is the largest hotel chain in Finland. Figure 3 illustrates Sokotel organisation's administration structure. (Koskela, interview 29 April 2014)
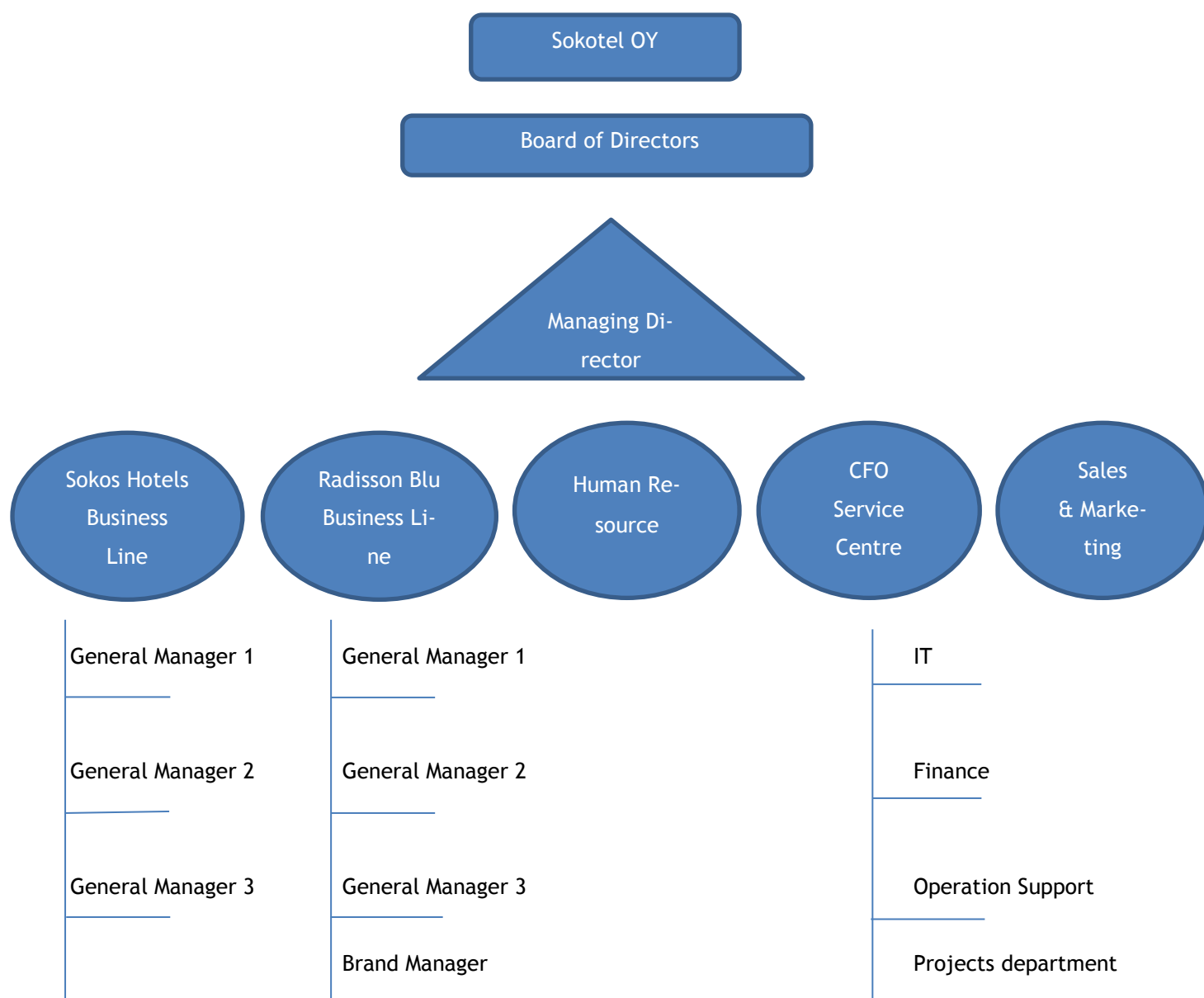
Figure 3: Sokotel's organisational structure

2   Theoretical background

Technology continues to evolve rapidly. As technology evolves so do the factors it directly affects such as communication. Technological development has been simultaneous with that of communication. These developments, such as the Internet, have resulted in the advancement of communication, communication techniques and tools.

Technology has facilitated in the advancement and development of tools designed to improve the organisational communication process. It has redefined how people, more significantly in

business, communicate. Advances in communication and information technology have impacted the way modern businesses conduct their daily operations. (Luther 2009)

In the pre-information technological days, documents were typed on a typewriter and sending mail or letters required visiting the post office. This process was tedious, costly and slow especially in urgent related issues that required immediate response. To address the speed problem, faster methods of communication were invented such as the telegram. Despite the telegram being fast it had limitations as well, such as the amount of text that could be placed on one telegram was limited and it was also very costly. (Nayab 2013)

The innovation of computers and the Internet in the 20th century revolutionised the process of creating and editing documents. This innovation offered businesses an effective and efficient way to manage their databases, business schedules and other forms of essential information (McGrath 2014). The transfer of messages and documents, audio or video, over the internet, has tremendously improved communication speed and reduced its costs. The introduction of Email as a communication system allowed people and businesses to transfer information to any part of the world within seconds, which made telegrams and ordinary letters almost obsolete (Nayab 2013).

Nayab states that technology has allowed easy storage and retrieval of communication especially verbal communication, making it is easier to rewind and clear misconceptions rather than make assumptions, or have to contact the person again to clear doubt. Communication greatly impacts the flow of business operations and processes. Modern communication technologies have made information transfer more instantaneous and inexpensive.

With the invention of mobile phones communication technology was even further improved therefore making it easily available and accessible to almost everyone within and out of the corporate world. This has improved the quality of communication within the confines of a business entity, by making it brief and concise. The possibility of high quality communication globally at low costs has led to a decline in the need for face-to-face communication and to an increase in the reliance on verbal and written communication over electronic mediums (Nayab 2013).

2.1 Organisational communication

Communication within an organisation is defined as the exchange of information among corresponding individuals and groups to achieve common or set business goals (WikiBooks 2013). It is also defined as the "process of exchanging information, ideas, thoughts, feelings and emotions through speech, signals, writing, or behaviour. In a communication process, a sender uses a communication channel to send a message to the receiver who, after processing the

information, sends back appropriate reply using a communication channel" (Business communications 2009).

Information can be transmitted through various channels of communication such as; emails, internal memos, phone conversations, meetings, teleconferencing, video conferencing, speeches and presentations (Koschmann 2012). This communication is influenced by internal and external factors specific to the business itself. Communication mainly involves messages and their flow, purpose, direction and medium, as well as the individuals involved in communicating.

Business communication assists in the accomplishment of tasks specific to different roles and responsibilities in an organisation. With effective communication, businesses are able to complete their daily tasks through maintenance of policies, procedures and regulations that support their operations, etc. Furthermore, they are able to coordinate, plan, and control their operations through proper management. Effective and efficient communication involves creating and exchanging information by utilising the most applicable and appropriate medium of communication based on the message to be transmitted and / or the urgency involved in sending the message and receiving a reply.

2.1.1   Formal communication

Formal communication structure is information exchange carried out through officially designated channels of message flow between personnel and departments within an organisation (Organisational Communication n.d). There are three types of formal communication that form communication in organisations, namely; downward communication, upward communication, horizontal or parallel communication.

Downward communication describes the flow of information and messages from upper to lower levels within an organisation, such as manager to employer or superior to subordinate.
It occurs when information and messages flow down through an organisation's formal chain of hierarchical structure (Education Portal 2014).

Upward Communication is the transmission of information and messages from lower to higher levels within an organisation. It is communication initiated by subordinates to their superiors (Education Portal 2014).

Horizontal communication describes the flow of messages across personnel or departments of an equal level within an organisation. (Education Portal 2014).

2.1.2   Organisational structure

An organisation's internal structure often defines the type of interpersonal communication carried out. Medium sized to large organisations may tend to utilise more formal methods of communication between management and personnel, while small companies may tend to use a mixture of both the formal and informal communication methods. In order for organisations to reap the communication benefits from advancement in technological systems they need to readily adapt and update their infrastructure.

There are different ways in which companies can design their organisational structure. They may structure it based on factors such as, size, geographic dispersion, and the products and services they offer. The organisation structure defines the relationship and communication process of a company. There are several types of organisational structures that a company could implement namely; functional, divisional, matrix, geographical, product and flat organisational structures. (Suttle 2014)

A functional organisational structure groups personnel within a company based on their work functions and departments within the business environment. For example, there can be different departments for marketing, accounting, IT and sales. The functional managers in these departments would report directly to the managing director or chief executive officer (CEO). This type of structure groups personnel with similar skills and knowledge together in order to be more effective. (Guzman 2014)

The geographical organisational structure groups representatives from functional departments into business units that serve a specific geographical market or region. These units can be more effective if they are located within the regions they service and carry out their operations. This structure enables a company to provide better services to their local market. (Suttle 2014)

A divisional structure is an organisational structure that divides a business into units. These units have control over their daily operations, but have a central authority or management that provides the overall strategy for the business and coordinates its implementation among the units. Large corporations utilise a divisional structure since it provides them with the most applicable management structure due to their size and number of business units. (Guzman 2014)

Product organisational structure is focused on an company's product and services lines. This type of structure is suitable for businesses that have branches, stores or offices in different cities. Since in this structure a business could be located in different cities, there may be

need to have marketing, operations, IT, and finance departments in every location or alternatively have them as centralised departments in one location. (Suttle 2014)

A matrix organisational structure is a company structure in which reporting relationships are set up as a grid, or matrix, rather than the traditional hierarchy chain of command. This means that personnel have dual reporting relationships to both a functional manager and a product manager. (Guzman 2014)

A flat organisational structure is often used by small companies that have few employees. This type of structure has few levels of management between the managers and the lower level employees. Therefore in this structure, communication is easy and decisions can be made much faster. (Suttle 2014)

Organisational structures improve business operations by providing clarity to employees at all levels, which then improves the communication efficiency of the entire company. The communication needs of a company are easily identified and then satisfied if there is a well-defined structure within the company. Without a well-defined organisational structure it would be difficult for a company to communicate efficiently and effectively.

2.2 Communication tools and channels

The communication needs of companies are different from one organisation to the other based on the differences in dynamics involved, such as size and type of business. Since different organisations have different business operations, it is important for a company to identify their communication needs. This will help the organisation to utilise tools that meets all their communication needs and facilitate efficient business operations. The communication needs of a company should guide the company or management in selecting the most applicable communication tools and channels to use. Some of the aspects that companies should consider when choosing a medium of communication are;

- The availability of communication channel
- The urgency of the message
- The message content
- The recipient of the message
- The sensitivity of the message
- The need to record or store the message

As earlier mentioned, technology has impacted the way people and organisations communicate. Therefore, innovation of electronic channels of communication, such as email, trans-

formed and redefined business as well as general communication. Communication via elec-tronic channels covers a wide range of distance at a higher speed than the traditional means of conveying information. The high speed and wide reach offered by electronic channels helps companies to meet their communication needs. Electronic channels have made it easier to differentiate between synchronous and asynchronous communication.

Synchronous communication requires both the sender and the recipient to be present or available at the same time. Examples of synchronous communication are; face-to-face meet-ings, telephone conversations, video conferencing, and instant messaging. The main strength of synchronous communication is that it is real time communication and therefore has imme-diate reply. The fact that the sender and receiver have to be available at the same time can be considered as a disadvantage as well. For example, a meeting or phone call may be con-venient for one person but not necessarily for the other, especially if when different time zones are concerned (Understanding Communication Channels 2002).

On the other hand, asynchronous communication is the opposite of synchronous communica-tion. It is not real time communication and therefore does not require the communicators to be available or present at the same time. Examples of this form of communication are; let-ters and printed documents, electronic mail, electronic conferences, voice mail, and pre-recorded video (Understanding Communication Channels 2002). The advantage of asynchro-nous communication is that messages can be sent or received at the senders or recipients convenience. Another important advantage of asynchronous communication is that there is a record or storage of the communication, unlike synchronous communication. This can be real-ly crucial especially for sensitive communication in which there is need for reference or doc-umentation.

Every company, or personnel within a company, should consider what type of message they would like to relay and the recipient before selecting which communication medium to uti-lise. The messages types to consider are;

- Interactive or static

Interactive communication is the exchange of messages or a conversation that is back-and-forth. It involves interaction by the participants involved in the communication, i.e. sender and recipient. On the other hand, static communication is the delivery of a message.
For example, messages that require immediate response may need interactivity while mes-sages such as updates can be static. (Stack 2014)

- Personal or impersonal communication

Personal communication can be defined as face-to-face or telephone conversations (Stack 2014). Personal communication does not provide recoverable data; which is probably its most defining characteristic (Walden University 2014).

On the other hand, impersonal communication is exchange of messages carried out in writing (Stack 2014).

It is therefore imperative for communicators to understand what type of message they intend to send or communicate, and whether presence is an essential component in the communication. This would enable them to choose the most appropriate medium of communication which would ultimately facilitate communication efficiency and effectiveness.

According to Stack, there are various communication channels that are readily available in most enterprises namely;

- Intranet
- Fax
- Letters
- Voice mail
- Pager
- E-mail
- Instant message
- Phone call
- Face-to-face
- Teleconference
- Video conference
- Meetings

2.3   Unified communication

Unified communications (UC) is a technology architecture that integrates communication services such as instant messaging (IM), video conferencing, data sharing, telecommunication and voice over internet protocol (VOIP) with non-real time communication services such as email, text messages, voicemail and fax. These integrated communication tools enable businesses and individuals to manage all their communications in one user interface that offers all communication services instead of separate user interfaces offering different services. These services are not necessarily offered in a single product but as various products in one user interface. (Unuth 2014)

According to Unuth (2014), there are several advantages of utilising the unified communication systems namely;

- It offers business people access to communication services whether in the office or not, therefore providing connectivity and efficiency in communication.
- Enterprises that have various business units and have some centralised departments can ease and facilitate better communication between the business units and centralised departments without delays caused by geographical distance.
- Audio and video conferencing calls or meetings allows better interactivity and improves employee productivity, by reducing the expenses incurred on mileage and telecommunication.
- It is easier for organisations to deal with one communication service provider rather than different providers for different communication services.

One of the communication tools that has UC technology infrastructure is Microsoft Lync, offered by Microsoft Office.

2.4 Microsoft Lync communication tool

Microsoft Lync, formerly known as Microsoft Office Communications, is designed to provide communication capabilities and functionalities to businesses. It supports all kinds of organisational communication such as, peer-to-peer, file transfer, instant messaging, voice and video conferencing. All these functionalities can be utilised within and outside a work environment. (TechGenie 2014)

Microsoft Lync is Microsoft Office's secure and extensible server platform for unified communications that offers an integration of communication technologies and tools over an IP network. The technology offers communication services that are available wherever there is network connectivity. Microsoft Lync enhances business operations by incorporating communication functionalities into daily business applications, such as the ability to communicate via instant messages or making telephone calls through an IP over a computer (Voice over Internet Protocol).

Microsoft Lync helps businesses to connect and collaborate internally between and among personnel and externally with customers, suppliers or other organisations that utilise the tool. Its functionalities enable enterprises to benefit from improved business agility, accuracy, convenience and most importantly speed resulting in higher productivity and reduced expenditure. The tool reduces the time and expenses associated with business related travel and telephone calls. It enables an enterprise to maximize productivity by making communication more effective and efficient (Sessa 2014).

However, many companies that have implemented Microsoft Lync use it mainly only for instant messaging but still utilise telephones or mobile phones for voice communications. This

significantly limits the benefits that the organisations could realise with Microsoft Lync as a unified communications infrastructure. (Kerravala 2012)

Microsoft Lync communication tool has been integrated with other Microsoft applications, which provides more functionality within a business infrastructure. The information stored on the integrated applications can be shared, accessed and stored within Microsoft Lync providing additional enterprise value. Microsoft Lync facilitates unified voice and video calls, virtual meetings, presence and IM in one easy-to-use client application. This makes it easier for users to select and switch between different forms of communication, based on their communication needs and preferences. (Microsoft Office 2014)

According to Microsoft Office, the communication tool offers various features and functionalities that facilitate multitasking and collaboration at the work place. These features include;

- Instant messaging (IM)
- Audio, video and web accessibility
- Real-time presence
- Mobility
- Ad hoc screen sharing and virtual whiteboards
- Virtual meetings

2.4.1   Instant Messaging (IM)

IM can be defined as the exchange of text based messages in real time over a software application via the internet (Rouse 2008). The software allows users to quickly and easily relay and exchange information with other users. The technology was initially designed for personal communication but it is readily being adopted in the corporate world. Some businesses are choosing text based IM over emails and telephone calls. The main reasons for this preference are that IM provides immediate response and is efficient in real-time communication with partners, suppliers, and colleagues working remotely or in different geographical regions. (Enbysk 2011)

IM facilitates easy collaboration at work especially for businesses that require teamwork, for instance in projects. The tool is mostly popular in businesses that need to make communication faster and cost-efficient, especially large companies with various geographical operations that would otherwise require great communication expenses. (Chekanov 2008)

IM provides a user with the ability to easily notice whether a chosen friend or colleague is online and connected through the selected service. It differs from ordinary e-mail due to its

immediate information exchange and a continued exchange is less tedious than sending e-mails back and forth. (Rouse 2008)

IM requires users to be online at the same time and the intended recipient must be willing to accept instant messages. According to Rouse (2008), the IM client can be configured to reject or accept chat sessions. An attempt to send an IM to a recipient who is offline, or who does not want to communicate via IMs, will result in a notification that the transmission was incomplete. If the IM software is set to accept messages, it will alert the recipient with a distinctive sound and / or a pop-up window that indicates that a message has been sent allowing the recipient to accept or reject it. IM communication enables users to multitask, since they can work on other tasks while sending and receiving messages concurrently. In addition, it provides users the ability to be involved in communication with different and multiple users simultaneously, or invite multiple users in the same conversation.

2.4.2   Ad hoc screen sharing

Microsoft Lync as a communication system was designed to provide instant communication and ad-hoc meetings capabilities. It provides the functionality for personnel to collaborate via desktop and application sharing. This can allow colleagues to work on projects together without the need to be at the same place. It enables users to initiate ad hoc meetings, share PowerPoint slides, collaborate on whiteboards, give presentations and share screens with multiple users simultaneously via voice and IM communication. While in a virtual meeting or IM conversation, a participant can choose to share his/her screen and can also grant control to another user. This would give permission and enable the other user to change or edit a file, help with presentation, or demonstrate something. The user has the ability to grant and take back control of a sharing session at will. (Microsoft Office 2014)

Users can share an entire desktop or just a program to everyone in a Microsoft Lync meeting, call, or IM conversation. When sharing a desktop screen, everyone present in the meeting can view the users programs, files, and notifications. Therefore confidential or sensitive information and files should be closed prior to screen sharing, or use program sharing instead. Users should share an entire desktop when they need to use multiple programs, or work on files from different programs. On the other hand, they should share a program when they need to present specific programs or files and do not want other users to view additional files or content on their desktop. (Microsoft Office 2014)

2.4.3 Mobility

With Lync mobility service, users can easily join a Lync meeting with only a single touch or click on smartphones. The mobility service enables users to take part in meetings while on the move or at any location and check the status of contacts thus increasing efficiency and productivity. Apple iOS, Android, and Windows Phone, or Nokia Symbian3 supported mobile devices enable functionalities such as sending and receiving instant messages, viewing contacts, and viewing presence. (Microsoft Office 2014)

End users can download Microsoft Lync on their mobile applications and easily configure it thus enabling communication wherever there is network service and an internet connection (Sessa 2014). Mobility service is installed on the central Microsoft Lync Server and communicates with attached mobile devices mainly via Internet. Microsoft Lync mobile client incorporates various communication options including direct audio calls, virtual conferences and IM. These communication options can be used simultaneously, if needed, which enables a user to be involved in several conversations at the same time on their respective communication window. Furthermore, users instantly get an overview of missed calls or IMs, allowing them to respond to critical and urgent issues more promptly. (UC Point AG 2013)

2.4.4 Real time presence

Presence can be defined as a user's availability and willingness to communicate at a specific time. The user's presence information is published on Microsoft Lync interface, thus enabling other users to determine an appropriate time to make contact. Microsoft Lync users have complete control over their presence status, which means they can select their preferred status at a given time. In an enterprise personnel can see a contact's presence information and then determine when it is appropriate to initiate a conversation. The conversation does not have to be necessarily IM-based but it can also be a telephone call, an audio or video conference call. However, the appropriate time and mode of communication are dependent on the presence information of the person to be contacted. For example, a user whose presence status is 'busy' may not necessarily be receptive to a telephone conversation, but might be willing to communicate through IM for short conversations on simple matters. (Lewis et al. 2013)

Microsoft Lync integrates with Microsoft Exchange and Outlook Web Applications and provides interoperability. This provides presence and IM capabilities directly within the Outlook Web application interface. (Lewis et al. 2013) Therefore, it is able to access the Outlook calendar information of a user and automatically update the user's status accordingly (Microsoft Office 2014). For instance, if an employee is having a scheduled meeting it will automatically show the status as being busy during the meeting.

However, the employee can opt to override an automatically updated Microsoft Lync status by selecting a different status from the drop down arrow below the user's name. To revert from the manually set status in order to allow Microsoft Lync to automatically update the status, the user can click on the status menu and then select reset status. (Microsoft Office 2014)

According to Microsoft Office, users should ensure that they set their status accurately by selecting the appropriate status from the various options available as described in Table 1.

Presence Status	Microsoft Lync Settings
Available (Green)	Automatically set when Lync detects the user is working on the computer. Users can also manually select this option.
Busy (Red)	Automatically set according to the users Outlook calendar. Users can also manually select this option.
In a call (Red)	Lync sets this status when it detects the user is in a Lync call. Users can also manually select this option
In a meeting (Red)	Lync sets this status when it detects the user is in a Lync meeting or is scheduled to have a meeting in the Outlook calendar. Users can also manually select this option.
In a conference call (Red)	Lync sets this status when it detects a user participating in a Lync conference call. Users can also manually select this option.
Presenting (Red)	Lync sets this status when it detects that a user is screen sharing or projecting. Users can also manually select this option
Do not disturb (Red)	Users can manually select this option.
Be right back (Orange)	Users can manually select this option.
Inactive/Away (Orange)	Lync sets the status to "inactive" or "away" when the user's computer has been idle or the status has been inactive for a pre-set period of time respectively.
Off work (Yellow)	Users can manually select this option.
Offline (Grey)	Lync sets this status when the user logs off from a computer. Users can also manually select this option.
Unknown (White)	The user's presence is not known so this option may appear for contacts that are not using Lync.

Table 1: Lync presence status options

2.4.5   Virtual meetings

Microsoft Lync server support IM conferencing, audio conferencing, web conferencing, video conferencing, and application sharing, for meetings. All these meeting functionalities are supported within a single client. The server also supports dial-in conferencing which enables users of public switched telephone network (PSTN) phones to participate in the audio conferences. (Microsoft Office 2012, 5)

Microsoft Lync provides users with the option to create face-to-face virtual meetings. Users can add multiple presenters and attendees to participate in group conferences. Microsoft Lync offers high definition (HD) video conferencing capability. Individual users within an organisation with webcams on their desktop, laptop or tablets have access to this functionality within Microsoft Lync. The application allows users to use it from their browser and enables them to join and participate in meetings and conversations. The users also have access to most of Microsoft Lync's features including HD video, instant messaging and VoIP. (Sessa 2014)

2.4.6   Microsoft Lync benefits

"Microsoft Lync is a highly-effective tool when used properly in the right enterprise. It is known to improve project management, overall enterprise communication, and collaboration." (Learn It 2013)
Microsoft Lync functionalities provide multiple benefits to organisations and users namely;

- Improves enterprise management and productivity by incorporating reference tools for contacts and project details (Learn It 2013).
- Ensures high level of security and privacy since all communication is carried out through the Microsoft Lync Server (Learn It 2013).
- Enables users to easily collaborate on projects and their daily work operations (Cabaret, interview 29 April 2014).
- Eases sharing of files and documents among colleagues in a work environment and in different geographical locations (Koskela, interview 29 April 2014).
- Maximizes on real-time communication by allowing users to control, change direction or make adjustments relative to real-time circumstances (Learn It 2013).
- Enhances personnel accessibility in an enterprise via Microsoft Lync's instant messaging capability (Koskela, interview 29 April 2014).
- Facilitates Voice over IP functionality which enables companies to utilise resources, such as time and money, efficiently especially for long distance telephone calls. It al-

so provides users with the ability to multi-task and review documents during audio conference calls (Klemola, interview 7 May 2014).

- Allows users and colleagues to show and share desktop content such as images, videos, websites, and documents therefore improving collaboration efficiency at work(Koskela, interview 29 April 2014).

- Enables personnel to create video or audio conference meetings and training sessions in which they can add multiple presenters and attendees to participate or eavesdrop (Klemola, interview 7 May 2014).

- Reduces telephone costs especially for international communication (Klemola, interview 7 May 2014).

- Enables personnel to be more informal with their colleagues, especially in IM based communication. This can help employees to be more open and comfortable with each other as opposed to being formal all the time. The informal communication can change personnel's attitude towards each other and create a positive atmosphere at work.(Koskela, interview 29 April 2014)

2.4.7   Microsoft Lync limitations

There are some limitations to using Microsoft Lync in an organisation. However, the advantages clearly outnumber the limitations which indicate that the tool could be tremendously beneficial to organisations. The identified limitations are:

- Unattainable conversation history especially when reference or documentation is required. Users are responsible in ensuring that they have documented important conversation content by archiving the conversation (Koskela, interview 29 April 2014).

- The tool has a minimum of 800 characters for initial messages and 8000 characters per message in the same conversation (Learn It 2013).

- Microsoft Lync does not have an integrated spell check capability (Learn It 2013).

- If there are no clearly defined rules and policies of use within an organisation, employees can misuse the tool by instant messaging unnecessarily or for personal communication which can negatively affect personnel productivity (Koskela, interview 29 April 2014).

2.5   Introducing new technologies in organisations

With companies searching for ways to reduce costs in the competitive business world, a common solution is to implement new technological systems that help in increasing efficiency and costs reduction. To ensure successful implementation and integration of new technologies with daily business activities, there needs to be proper preparation, planning and execution.

This involves having discussions, trainings and providing incentives to encourage personnel to utilise the new systems. (Dransfield 2011)

It is critical during the discussions to provide employees with enough information on the benefits of the new systems, not only to the company but also to them as individuals. It is also important to train employees on how such benefits will ease their daily work operations. Introducing new technologies in an organisation requires detailed personnel training; after which there should be alignment of the technology with daily business operations of the organisation, since training is easily forgotten if not used. (DeLano & Rising 1997, 14)

Improving collaboration capabilities within organisations increases and develops new ways of information sharing and decision making. As a result, businesses manage to significantly reduce production and service costs as well as time, enhance innovation, improve product and service quality, and capitalise on new investment opportunities. (Cisco Systems 2009)

To effectively and efficiently deploy new communication and collaboration systems, organisations should consider the factors and elements involved in the collaboration process.

As illustrated in Figure 4, the components that an organisation should consider are people, process and technology (Cisco Systems 2009).
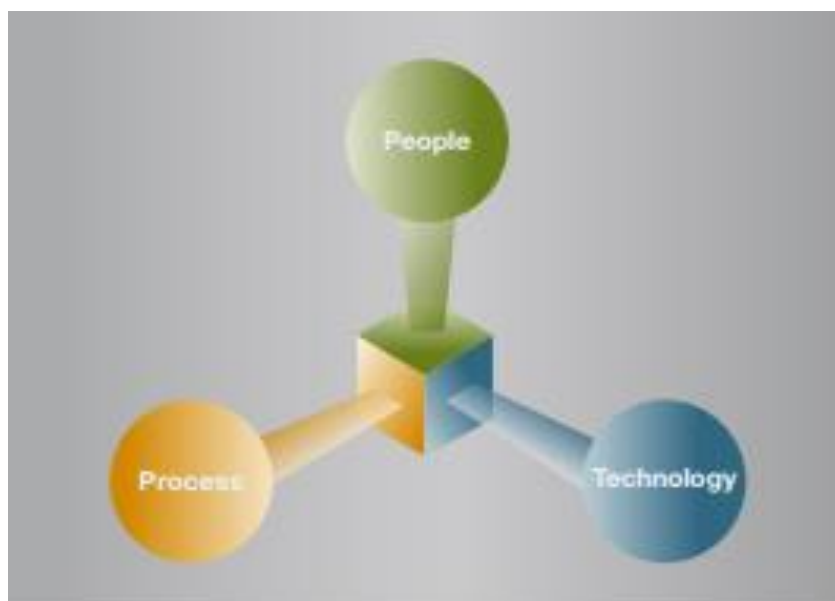
Figure 4: Collaboration components (Cisco Systems 2009)

The people component involves the cultural aspect in a business environment. Personnel are usually comfortable with traditional practices that they are used to and therefore perceive new technology as being complicated or complex to comprehend and adapt. This perception can cause them to be resistant to new technology, thus costing the company in terms of wasted equipment and capabilities. It can as well cause a major setback in the development

plans of the company. (Dransfield 2011)

According to DeLano and Rising, personnel are too busy to keep up with the latest innovations in technology. However, they are usually interested in learning if given adequate training and information. When personnel feel that they are included in the changes and transitions in an organisation, they are more optimistic and flexible to utilising applications of the new technology. (DeLano & Rising 1997, 13)

To influence personnel attitude towards adapting and utilising new technologies, organisations main areas of focus should be management expectations, daily business practices and performance measurements. New practices and expectations, in regards to incorporating new technologies, need to be clearly defined, developed, and incorporated into an organisation's culture. The defined policies and rules should be clearly explained to the concerned personnel and made readily available and accessible. Execution of new systems should be initiated at the management level of operation and then gradually adapted to the lower levels of an enterprise. (Cisco Systems 2009)

The process component involves altering traditional systems and practices in daily business operations in order to accommodate, apply and utilise new techniques and new systems. Processes include governance, decision making, communication, funding and operational logistics. Collaborative processes form the enterprise support structures necessary in assisting people to implement collaboration using the newly developed tools. (Cisco Systems 2009)

The technology component involves types of collaborative applications and systems that are available to an organisation. Virtual workspaces, video presentations, instant messaging, social networking sites, web conferencing are all examples of such applications. In UC technologies all these applications are integrated in a single network infrastructure with multiple capabilities. Therefore, organisations need to build a foundation to support these applications, or network infrastructure. The collaborative possibilities are limited to the functionalities of the network infrastructure. An effective and efficient collaborative network infrastructure should support multimedia services and provide quality-of-service (QoS) capabilities. (Cisco Systems 2009)

The technology component alone cannot create a successful system transition within a business. Often the most important change that must be well managed is the people component which defines a systematic approach to change, both from the perspective of the company and that of individual personnel. (Decker 2010, 1)

According to Cisco (2009) people and process components combine to create behavioural changes that lead to operational improvements within an organisation, while technology is the crucial component that facilitates the improved collaborative activities. For an organisation to successfully develop the people, processes, and technology capabilities that support

new forms of communication, it should align its new communication technologies with its business objectives and processes. It is also reasonably important to identify the communication needs of personnel and ensure that the new technology meets those needs. In recent times, more and more organisations have used the service oriented approach to evaluate the organisational needs and the responsiveness of technology in regards to the identified needs.

2.6 Service oriented design

During the industrial revolution, cheap products were pushed into the market with the advent of the steam engines, bigger factories and new inventions (Moritz 2005). Compared to the previous generation, products of better quality and cheaper prices were now readily available in large numbers. This revolution pushed the product orientation. According to (Byrne 2005) this has led to increased focus in product innovation over the years. Emphasis is placed on product quality and price. Before a product can be launched into the market, it has to be developed on the basis of its individual characteristics with regard to modularity, production, and service (MBTech 2014). With all the attention being given to fine-tuning the products, the people using these products were increasingly neglected. People were expected to rapidly adapt to technology.

Over the past year, products have gotten more and more similar. The over twenty washing powders in every super market are performing the same function. Selling the products is based less on function and more on branding. This has led (Moritz 2005) to conclude that the product market is satisfied. He opines that the service economy is instead booming. The basic fact that humans have individual needs, give rise to a whole new world of possibilities. Until the 1990s, it was rare to find researchers and policy makers taking the idea of service design seriously. Innovation was always associated with technological innovations flowing from the manufacturing industries. With the rise of Information technology (IT), service oriented innovation began to attract more attention (Ian 2012)

2.7 Service design

Service design is the activity of planning and organising people, infrastructure, material and communication components of a service in order to improve its quality and the interaction between service provider and customers. The purpose of service design methodologies is to design according to the needs of customers or participants, so that the service is user-friendly, competitive and relevant to the customers (Birgit 2008).
Service design as a practice generally results in the design of systems and processes aimed at providing a holistic service to the user (Stickdorn 2011)

The growing relevance of the service sector has affected not only design but several disciplines, starting from marketing and management, moving to engineering, computing, behavioural science, etc. (Meroni 2011). The realisation that no computer, machine or robot can cope with the individual needs of clients sufficiently redefines services as an opportunity to offer a totally new dimension of value (Moritz 2005). Moritz further opined that successful companies have shifted from product oriented designs to service oriented designs. According Grocki, good service design anticipates likely trouble spots in the use of a product or service, and sees them as opportunities to positively change the users' experience of the service. Service design allows us to proactively address the tough spots and address them smoothly and skillfully (Grocki 2011)

Developing the concept of service design further, Meroni (2011) describes it as Human centered design (HCD) and Design for Experience. HCD brings into service design all the complications involved with human relations. It considers human rights, ethical and behavioural issues, etc. Design for experience brings into services the challenge of understanding and designing for the emotional aspect of people's interaction with objects, the environment, and other individuals.

2.8   Service design process

The basic purpose for service design is to either create new services, or improve upon the existing services. This mind-set is what facilitates the design process. The Learning Space website describes the process as purposely considering users and their needs in terms of services, planning holistically, thinking through experiences in time, and working in an iterative way between these steps and utilising multiple tools. (Learning Space Toolkit 2014).

There are many tools available for use in Service design. Most of them can be used as stand-alone tools, but they are usually used together to complement each other, in the service design process. The tools used in the service design process include, but are not limited to;

- Personas
- Stakeholder analysis
- Storyboarding
- SWOT analysis
- Customer journey, etc

3   Methodology

This project was based on a case study on the communication needs of Sokotel Oy, in order to evaluate Microsoft Lync as a suitable tool for communication within the organisation. To achieve this, study and research was carried out on Microsoft Lync as a communication tool, its functionalities and capabilities, benefits, as well as its limitations when implemented in an organisation. Every organisation is different from the other in terms of business operations as well as communication structure, needs and tools. For instance, small companies' communication needs vary significantly to those of medium to large sized companies. This is mainly because large companies may have several branches or offices in different geographical locations, and they also have large numbers of personnel. This means that without the most appropriate and applicable communication tools and structures an organisation could lose valuable resources such as time and information.

Microsoft Lync was partially implemented in Sokotel Oy by having most of the technical implementation complete. However, a complete implementation would end with the utilisation of the communication tool in the company. Microsoft Lync is a unified communications tool, which means it has integrated most of the commonly used forms of communication in a single infrastructure. The services provided by the communication tool were evaluated in this case study to establish whether they correspond to the organisation's communication needs.

To achieve this result, the project utilised various research methods such as primary research methods, secondary research methods and service design tools for analysing the data collected in the research phase.

3.1   Primary research methods

The primary research methods utilised in this case study were used to complement the information gathered from the secondary research. This research involved collecting data directly from the subjects or users in the case study. The primary research methods enabled the project to investigate and identify the communication needs of the organisation. These methods facilitated a platform to better understand the organisation and its business operations. Understanding the organisation's daily business operations was a key factor in modelling their communication needs. The research methods used in this phase were interviews, electronic questionnaire and usability testing.

3.1.1 Interviews

Interviews are a very important method of data collection, especially if user information is required. In this project four interviews were executed with personnel from Sokotel's head office department. Ten to fifteen interview questions were prepared prior to each interview and notes and documentation were taken during the interviews. To establish a profound understanding of the implementation extent of Microsoft Lync within the company, the first two interviews were carried out with the IT manager in Sokotel Oy (Lotta Koskela). The main objective for the other two interviews was to understand the users' communication needs and attitude towards Microsoft Lync as a communication tool. Table 2 illustrates the interviews that were carried out.

Interviewee	Department	Position	Interview Date
Lotta Koskela	IT	Manager	19 March, 2014
Lotta Koskela	IT	Manager	29 April, 2014
Marja Klemola	Finance	Business controller	07 May, 2014
Katja Cabaret	Operations Support	Coordinator	07 May, 2014

Table 2: Interviews

3.1.2 Questionnaire

To collect more comprehensive data from a large number of employees, using a questionnaire was the most appropriate research method for this project. Therefore an electronic questionnaire was sent out to the intended users' in order to identify the personnel's communication needs. The project, in collaboration with Sokotel Oy IT department, issued an electronic questionnaire to Sokotel's personnel in the head office and the business units, Sokos and Radisson Blu hotels. The total number of questionnaire recipients was 58 personnel. However, the number of respondents was 19 personnel from the head office and Sokos hotels departments. Appendix 5 provides the description of the questions used in the questionnaire, and the results retrieved from the questionnaire were analysed in the results and discussion chapter.

3.1.3 Usability testing

One of the objectives of the project was to research and evaluate Microsoft Lync as the main communication tool for Sokotel. To achieve this, there was need to perform a usability testing on the tool in order to practically test its functionalities and capabilities from a user's perspective. A usability testing was executed on 7th May 2014, in collaboration with Lotta Ko-

skela (Sokotel's IT manager) who demonstrated all the crucial functionalities of the tool especially in Sokotel Oy. This testing provided the technical understanding in the utilisation of Microsoft Lync in all its capabilities. The usability testing was a crucial step in the development of the project since it provided information on the ideal situations in which users would actually be expected to use the tool. The advantages of using Microsoft Lync in an organisation were clearly and visually demonstrated. This provided a vivid understanding on the benefits the communication tool would provide to Sokotel Oy in general, and specifically to the personnel.

3.2 Secondary research methods

The purpose of the secondary research methods used in this case study was to prove or disprove, as the case may be, some existing theories on communication and communication tools, offer general background information about the research's main subjects, set the scene for the research and findings, and most importantly, put the research into the appropriate context. The secondary research was used to complement the primary research as well as to provide exhaustive research on the topic. The secondary research methods used in this project were books, journals, articles, reports and online materials. These methods were mainly used in the theoretical background research.

3.3 Data analysis

The data collected in the research phase was analysed using some of the service design tools. There are various tools available for use in the service design framework. For the purpose of this thesis, four service design tools were used namely; personas, storyboarding, stakeholder analysis and SWOT analysis.

3.3.1 Personas

Personas are fictitious characters created to embody key characteristics of a likely user of the product or service (Learning Space Toolkit 2014). The personas are built after a thorough study of the various user groups attached to the product or service. A good persona captures the demography and social characters of the real users (Tools 2009).

Even though personas are imaginary, they are meant to represent the targeted users of the application. The personas created in this project (see Appendix 3) were based on the information gathered during the various interviews carried out. The main reason for choosing this method of data analysis was to express some of the concerns, comments, ideas and needs of users, which were identified during the interviews and from the questionnaire results. Per-

sonas enabled the project to portray what real users are looking for in an efficient communication tool as well as the problems and technical issues they could be facing with current tools. It also enabled the project to showcase the cultural aspect of an organisation by using different personas.

3.3.2 Storyboarding

Storyboarding is one of the many services design tools which can simply be defined as a representation of use cases for a product or service through drawings or pictures. The drawings or pictures are then put together in order to express or narrate information. This is was a very applicable means to show all the touch points and relationship between users and the application. In this project the storyboarding tool was used to analyse the data collected in the interviews and questionnaire. Appendix 4 represents the analysed data in the form of storyboarding.

3.3.3 Stakeholder Analysis

A stakeholder analysis is a visual representation of the various groups involved in a service lifecycle. It represents the interplay of personnel, customers, partner organizations and other stakeholders involved in the deployment and use of a service (Dijk et al. 2011)
Identifying the stakeholders in any case study or project is vital, more so in service design. In this project it was important to understand who the stakeholders of the communication tool are, their expectations and requirements. This is mainly because the stakeholders may have common, as well as different communication needs. Appendix 2 gives a representation of all the stakeholders in this project. The stakeholders were identified in the interviews and from the questionnaire results.

3.3.4 SWOT analysis

SWOT analysis is a useful method that is used to evaluate the strengths, weaknesses, opportunities and threats of a product, service, or an organisation. SWOT analysis is an important part in a strategic planning process or transition within an organisation. The tool was valuable in analysing the data collected in the course of the project, especially data related to Microsoft Lync as a communication tool. The strengths, weaknesses, opportunities and threats were analysed both from the organisation's and personnel's perspectives in relation to the features and benefits of the communication tool. The benefits and features of Microsoft Lync were used as the basis for this analysis, and were each evaluated on how they would affect the organisation and targeted users in terms of communication (see Appendix 1).

4 Results and discussion

In this chapter the results of the data analysis are presented. The data was collected and processed in response to the problems posed in chapter 1 of this thesis. Two fundamental objectives steered the collection of the data and the subsequent data analysis. The objectives were to develop a base of knowledge about the organisation's communication needs, to determine whether Microsoft Lync as a communication tool is suitable to meet those needs, and to ascertain the current level of both technical and cultural implementation of Microsoft Lync in the organisation. These objectives were accomplished. The findings presented in this chapter demonstrate the potential for merging theory and practice.

4.1 Response rate

Fifty eight surveys were sent to various personnel of Sokotel Oy. Thirty were sent out to personnel with the 'SOK' email domain while twenty eight were sent to those with the 'Radisson Blu' domain. Personnel with the 'SOK' email domain work directly under the Sokotel Oy organisation either in the head office or in the business units such as restaurants and Sokos hotels. While those with the 'Radisson Blu' email domain work in Radisson Blu hotels that are operated by Sokotel Oy as well, under a franchising contract between Sokotel and Carlson Rezidor hotel group. No response was received from the Radisson Blu personnel. Due to this fact, the Radisson Blu surveys were excluded from the research analysis. Another reason for that exclusion was the fact that in the research process it was discovered that communication via Microsoft Lync between Radisson Blu and Sokotel would require the setting up of a Network federation, which was beyond the scope of this project. Therefore, thirty surveys were considered to be legitimate for this research. Nineteen useable surveys were returned. With 19 results and useable surveys out of 30, the response rate was 63.33%. 42.11% of the respondents were from the head office, 36.84% of the respondents worked in the Hotels while the other 21.04% worked in the restaurants. Among the respondents were restaurant manager, finance manager, revenue manager, etc.

4.2 Communication structure

The questionnaire recipients were asked if most of their daily communication was with their co-workers. The purpose of this question was to ascertain the prevailing structure of communication in the organization. The respondents were asked agree, disagree or mark the question as not applicable to their work situation. Agreeing meant most of their daily communication was with co-workers on the same level as they are, disagreeing meant they communicat-

ed mostly either with lower or higher level staffs or with external sources. The 'Not applicable' option represents the control. (See Appendix 5, Q3)

The questionnaire recipients were asked if most of their daily communication was in the form of directives from top management. The purpose of the question was to confirm the results obtained from the previous question. The respondents were asked agree, disagree or mark the question as not applicable to their work situation. Agreeing meant most of their daily communication was in the form of directives from top management, disagreeing meant otherwise. The 'Not applicable' option represents the control. (See Appendix 5, Q4)

4.2.1 Results

78.95% of the respondents to question 3, illustrated by Figure 5, agreed that their daily workplace communication were with colleagues on the same level with them. 21.05% disagreed, meaning they rarely communicate with colleagues on the same level with them. No result was return as not applicable.

3. Most of my communication on a daily basis is with my co-workers.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	15	78,95%					
2.	Disagree	4	21,05%					
3.	Not Applicable	0	0,00%					
	Yhteensä	19	100%					

Figure 5: Chart showing Communication structure

15.79% of the respondents to question 4 agreed, as shown in Figure 6, to the fact that most of their daily communication come as directives from top management, while 84.21% disagreed. This indicates that most of their daily communication is not in the form of management directives.

4. Most of the daily communication I receive comes in the form of "directives" from management.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	3	15,79%					
2.	Disagree	16	84,21%					
3.	Not Applicable	0	0,00%					
	Yhteensä	19	100%					

Figure 6: Chart showing communication structure

4.2.2   Analysis

As can be deduced from the results of questions 3 and 4, the communication structure in So-kotel is mostly horizontal in nature. As explained by the Educational portal (n.d), the flow of messages across personnel or departments of an equal level within an organization, whether in the same business unit or across geographical divides, is described as horizontal communi-cation. Since majority of the respondents said most of their daily communication is with same level colleagues, and agree that they mostly do not receive directives from top management, it is safe to say that communication is, for the most part, horizontal.

Given this fact, and the fact that most of this horizontal communication occurs between col-leagues in different geographical areas, Lync instant messaging service would to a large ex-tent facilitate communication in the organization. Enbysk's (2011) theory supports this con-clusion. According to him, IM provides immediate response and is efficient in real-time com-munication with partners, suppliers, and colleagues working remotely or in different geo-graphical regions. For an organisation like Sokotel that requires collaboration and team work, the IM feature of Microsoft Lync will provide a practical platform to facilitate communication. As reported by Chekanov (2008), since the tool has become popular with large companies with business units located in different geographical area because it greatly reduces the cost of communication and collaboration, and increases the speed and efficiency of communication, it could also become popular and useful in Sokotel.

4.3   Communication tools in use

The questionnaire recipients were asked to select the communication tools they used fre-quently when communicating with centralized services. The purpose of this question was to find out the tools widely used to request assistance, give reports, and organize meetings and trainings. A list of several communication tools was provided, and the respondents were ex-pected to select the tools that were applicable. (See Appendix 5, Q5)

The questionnaire recipients were asked to select the communication tools they used fre-quently when communicating with colleagues on the same level as they are. The purpose of this question was to find out the tools widely used to collaborate and carry out day to day tasks among peers in the organization. A list of several communication tools was provided, and the respondents were expected to select the tools that were applicable. (See Appendix 5, Q6)

4.3.1   Results

Figure 7 illustrates the communication of personnel with centralized services. In which 36.84%
of the respondents use the intranet, 94.74% use the email service, 5.26% use an unofficial
instant messaging tool, 63.16% use phone calls, 52.63% used face-to-face (two people), and
10.53% used video conferencing, while 42.11% use group meetings.

5. Most of my communication with centralized services is carried out via (if applicable, choose more than one option)

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Intranet/shared drive	7	36,84%					
2.	Fax	0	0,00%					
3.	Letter	0	0,00%					
4.	Voice mail	0	0,00%					
5.	Pager	0	0,00%					
6.	E-mail	18	94,74%					
7.	Instant message	1	5,26%					
8.	Phone call	12	63,16%					
9.	Face-to-face (two people)	10	52,63%					
10.	Teleconference	0	0,00%					
11.	Videoconference	2	10,53%					
12.	Meeting	8	42,11%					
	Yhteensä							

Figure 7: Responses showing communication tools in use for communicating with centralised
services

As shown in Figure 8, in collaborating with colleagues, 10.53% of the respondents use the in-
tranet, 78.95% use the email service, 15.79% use an unofficial instant messaging tool, 73.68%
used phone calls, 100% use face-to-face (two people), while 36.84% use group meetings.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Intranet/shared drive	2	10,53%					
2.	Fax	0	0,00%					
3.	Letter	0	0,00%					
4.	Voice mail	0	0,00%					
5.	Pager	0	0,00%					
6.	E-mail	15	78,95%					
7.	Instant message	3	15,79%					
8.	Phone call	14	73,68%					
9.	Face-to-face (two people)	19	100,00%					
10.	Teleconference	0	0,00%					
11.	Videoconference	0	0,00%					
12.	Meeting	7	36,84%					
	Yhteensä							

Figure 8: Responses showing communication tools in use for collaboration

4.3.2 Analysis

As can be seen from the responses to question 5, most of the communication is carried out via email. The intranet which represents 36.84% of tools used is mainly used as a notice board to pass general information and offer training.

Microsoft Lync mobile client incorporates various communication options including direct audio calls, virtual conferences and IM. As Unuth (2014) points out, it is better to use one communication tool that enables the user to manage all communication in the same interface than to have to switch from one device to the other. UC Point AG (2013) also pointed out that these communication options can be used simultaneously, if needed, which enables a user to be involved in several conversations at the same time on their respective communication window.

Trainings and meetings could be organized via Microsoft Lync. This would effectively reduce the need for face to face meetings and training via the largely ineffective intranet and also make it easier to receive support from, for example, the IT department, as they can easily see the error message or issues from the shared screen of the problematic device.

As can be seen from the responses to question 6, most of the communication is carried out via email. The need for collaboration and instant responses has given rise to an increase in the use of tools like instant messaging and phone calls as compare to responses to question 5. Face to face meetings also recorded a large increase. Microsoft Lync could significantly improve collaboration and satisfy the need for instant responses. In a documentation report ex-

plaining some of the features of Lync, Microsoft (2014) described Lync as a tool that can allow colleagues to work on projects together without the need to be at the same place.

4.4   Choice of communication tool

The questionnaire recipients were asked to select the basis for determining what communication tool to use if and when they need to communicate. The purpose of this question was to find out factors that make staff of the organization use specific communication tools. A list of options was provided, and the respondents were expected to select the tools that were applicable. (See Appendix 5, Q7)

4.4.1   Results

As can be seen in Figure 9, 21.05% choose the channel of communication based on the recipient while 73.68% choose a channel based on its effectiveness. It is also important to note that personal preferences portray a significant role in the choice of communication tool.

7. I choose my channel of communication based on (if applicable, choose more than one option)

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Recipient	4	21,05%					
2.	Most effective	14	73,68%					
3.	Personal preference	5	26,32%					
4.	What is available	5	26,32%					
5.	What I am most familiar with	3	15,79%					
	Yhteensä							

Figure 9: Responses showing reason for choosing communication tools

4.4.2   Analysis

Given that 21.05% of respondents choose a channel of communication based on the recipient, Lync may not be significantly effective if it is not culturally implemented in the workplace. People need to begin to actively use Microsoft Lync to facilitate communication.
A significantly large group (73.68%) of the respondents choose their channel of communication based on its effectiveness. This underscores the need for a communication guideline in the organization that advises staff on tools to use for various kinds of communication needs. Lync may be an efficient and effective communication tool. However, it could become a distraction for personnel if not properly utilised.

15.79% and 26.32% of respondents prefer to use tools they are familiar with and that are readily available respectively. This brings to bear the importance of training. With proper training, staffs would become accustomed to Lync and all its features. This would lead to proper and effective use of the tool.

4.5   Internal communication

The questionnaire recipients were asked if their department communicated regularly with other department. The purpose of this question was to establish the fact that inter-departmental communication and collaboration was a daily operations communication need. The recipients were asked agree, disagree or mark the question as not applicable to their work situation. Agreeing meant that their department regularly communicates with other department, disagreeing meant otherwise. The 'Not applicable' option represents the control. (See Appendix 5, Q8)

In question 9 of the survey instrument (see Appendix 5, Q9) the recipients were asked to select the departments they mostly communicate and collaborate with. The purpose of this question was to ascertain the spread of communication and collaboration, whether it is only within branches or between branches and centralized services.

4.5.1   Results

As can be seen in Figure 10 89.47%, of the respondents agreed that their departments readily communicated with other departments.

8. My department readily communicates with other departments.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	17	89,47%					
2.	Disagree	2	10,53%					
3.	Not Applicable	0	0,00%					
	Yhteensä	19	100%					

Figure 10: Chart showing level of collaboration in Sokotel

Figure 11 shows that 42.11% of the respondents communicate and collaborate frequently with other departments within the same branch, while 57.89% communicate frequently with centralised services. Of the communication with centralised services (11 respondents), 63.63% (7 respondents) communicate with the IT department, making a total of 36.84% of the total response.

9. My department mostly communicates with

	Vastaus	Lukumäärä	Prosentti					
1.	Human Resources	1	5,26%					
2.	Finance Department	3	15,79%					
3.	IT department	7	36,84%					
4.	Other departments within my branch	8	42,11%					
	Yhteensä	19	100%					

Figure 11: Chart showing level of communication with centralised services

4.5.2   Analysis

As can be seen from the above results, there is a lot of interdepartmental communication going in in the organization. According to Klemola (interview 7 May 2014), Sokotel's finance department business controller, training and support services need to be offered to other departments from the centralized services. When new IT services are about to be rolled out, it is important to discuss the plans with all the affected stakeholders (Koskela, interview 29 April 2014). The interdependence of departments on each other and on the centralized services underscored the need for a communication tool that is not only effective, but economical. The need for units in the centralized services to organize training for staff of other departments in several other locations also create the need for a tool that offers secure meeting

4.6   Form of communication

The questionnaire recipients were asked what is the type and form of their daily communication. The purpose of this question was to find out whether the communication was:

- Interactive or static: Interactive means a back-and-forth conversation; static means delivery of a message (Stack 2014).

- Personal or impersonal: Personal means face-to-face, or on the phone, basically having the need to see or hear the other party. Impersonal communication is in writing (Stack 2014).

The recipients were asked to select the most suitable form of communication to their daily work operations. (See Appendix 5, Q10 and Q11)

4.6.1 Result

As Figure 12 illustrates, 78.95% of the respondents use the personal interactive form of communication, while 10.53% use the impersonal static form of communication.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Impersonal static	2	10,53%					
2.	Personal static	1	5,26%					
3.	Impersonal interactive	1	5,26%					
4.	Personal interactive	15	78,95%					
	Yhteensä	19	100%					

10. My daily communication is mostly

Figure 12: Chart showing type of communication in use

Figure 13 illustrates that 50% of the respondents use the impersonal interactive, in real-time, form of communication. While 27.78% use the 'impersonal interactive constrained by special needs' form of communication.

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Impersonal interactive in real-time	9	50,00%					
2.	Impersonal interactive constrained by special needs	5	27,78%					
3.	Physical meetings	4	22,22%					
	Yhteensä	18	100%					

11. My daily communication is mostly

Figure 13: Chart showing type of communication in use

4.6.2 Analysis

Given that 78.95% of respondents use a personal interactive form of communication, we can easily deduce that most of the communication require hearing and or seeing the other party and receiving a response of some sort. This form of communication can easily be achieved through the use of a phone, but that is only effective when the communication is between two people. Juxtaposing this with previous analyses it can be concluded that since collaboration, trainings and meetings form a large part of communication in Sokotel Oy, a tool that

allows for personal interactive communication among a much larger group would be of high value. Microsoft Lync provides these functionalities and capabilities.

In question 10, only a minority group of respondents (5.26%) use impersonal interactive form of communication. In question 11, the figure increased to 50% for impersonal interactive in real-time. This increase underscores the importance of real time communication in the organization. The major channel for impersonal interactive communication is email. For real time communication, Microsoft Lync could become the communication tool of choice.

4.7   Microsoft Lync awareness and use

The questionnaire recipients were asked if they were familiar with Microsoft Lync communication tool. The purpose of this question was to ascertain the personnel's awareness of the tool. The recipients were asked to agree or disagree. Agreeing meant they have at least heard about the tool or know how to use it, disagreeing meant otherwise. (See Appendix 5, Q12)

In question 13 of the questionnaire, the recipients were asked if they were aware that Lync was available for use in their department. The purpose of this question was to ascertain the personnel's awareness of the availability of the tool in their organisation. The recipients were asked to agree or disagree. Agreeing meant they were aware that Microsoft Lync has been technically implemented and was available for use, disagreeing meant otherwise. (See Appendix 5, Q13)

Question 14 of the survey asked recipients if they have used or use Microsoft Lync for their communication either with colleagues and or with the centralised services. The purpose of this question was to investigate how the knowledge and awareness of the availability of the tool has translated into its actual usage. The respondents were asked to agree or disagree. Agreeing meant they have used or frequently use Microsoft Lync to communicate, disagreeing meant otherwise. (See Appendix 5, Q14)

4.7.1   Result

Fig 14 shows that 94.74% of the respondents agreed to the fact that they have at least heard about Microsoft Lync instant messaging tool and functionality.
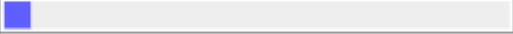
12. I am familiar with Lync instant messaging tool

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	18	94,74%					
2.	Disagree	1	5,26%					
	Yhteensä	19	100%					

Figure 14: Chart showing Microsoft Lync familiarity levels

Fig 15 shows that 94.74% of the respondents know that Microsoft Lync is available for use in their systems.

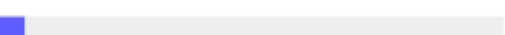**13. Lync instant messaging tool is available for use at my branch and department**

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	18	94,74%					
2.	Disagree (If so, ignore question 14)	1	5,26%					
	Yhteensä	19	100%					

Figure 15: Chart showing Microsoft Lync availability awareness

Fig 16 shows that 72.22% of the respondents do not use Microsoft Lync in their communication either with colleagues or with the centralised services.

14. I often use Lync instant messaging tool for communicating with colleagues and or with centralized services
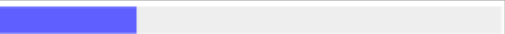
	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	5	27,78%					
2.	Disagree	13	72,22%					
	Yhteensä	18	100%					

Figure 16: Chart showing Microsoft Lync's frequency of use among respondents

4.7.2   Analysis

94.74% of respondents agreed that they have at least heard about Microsoft Lync and that they are aware that it is available for use in the organisation. However, only 27.78% of the respondents have actually utilised the tool. This shows that awareness about the availability of the tool has not positively affected its use. This underscores the need to culturally imple-ment the communication tool in the organization. Apart from being familiar with the tool,

personnel need to be motivated into the culture of using the tool for their regular communication.

4.8 Training on use of Microsoft Lync

The questionnaire recipients were asked whether they have received adequate training on the use of Microsoft Lync. The purpose of this question was to investigate the effectiveness of the training, if any, that has been offered to the targeted users. The recipients were asked to agree, disagree or mark the question as not applicable to their daily work operations. Agreeing meant they have received adequate training, disagreeing meant otherwise. The 'Not applicable' option was used to determine the relevancy of the question to the respondents. (See Appendix 5, Q15)

In question 16 of the survey, the recipients were asked to evaluate the effectiveness of training offered via the intranet. The purpose of the question was to investigate the effectiveness of the intranet as a training tool. The recipients were asked to agree, disagree or mark the question as not applicable to their daily work operations. Agreeing meant they view the intranet as an effective training tool, disagreeing meant otherwise. The 'Not applicable' option was used to determine the relevancy of the question to the respondents. (See Appendix 5, Q16)

Question 17 asked the recipients to compare the effectiveness of face-to-face training with the training offered via the intranet. The purpose of the question was to investigate the effectiveness of the intranet as a training tool in comparison face-to-face training. The recipients were asked to agree or disagree. Agreeing meant that they believe that face-to-face training is more effective, while disagreeing meant that they consider intranet training to be more effective. (See Appendix 5, Q17)

4.8.1 Results

Figure 17 illustrates that 76.68% of the respondents to question 15 disagreed that they have been provided with adequate training to use Microsoft Lync, while only a small number (21.05%) agreed.

15. I have been provided with an adequate training to enable me use Lync

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	4	21,05%					
2.	Disagree	14	73,68%					
3.	Not applicable	1	5,26%					
	Yhteensä	19	100%					

Figure 17: Chart showing user's response on availability of training

Figure 18 shows that 68.42% agreed to the fact that intranet is an effective tool for training while 21.05% disagreed.

16. Training and communication via the intranet is very effective

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	13	68,42%					
2.	Disagree	4	21,05%					
3.	Not applicable	2	10,53%					
	Yhteensä	19	100%					

Figure 18: Chart showing respondent's measurement of the Intranet as a tool for training

In Figure 19, the results show that 84.21% of the respondents to question 17 agreed that face-to-face training is more effective than intranet training.

17. Face-to-face training and communication is more effective than intranet training and communication

	Vastaus	Lukumäärä	Prosentti	20%	40%	60%	80%	100%
1.	Agree	16	84,21%					
2.	Disagree	3	15,79%					
	Yhteensä	19	100%					

Figure 19: Comparison between face-to-face training and Intranet training

4.8.2 Analysis

The fact that the high level of familiarity and awareness about Microsoft Lync has not translated into an increase in users heightens the need for adequate training. According to Klemola (interview 7 May 2014), most of the training offered and received in the organisation is via the intranet. Although 68.42% of respondents agree that the intranet is an effective way to carry out training, 84.21% of the respondents agree that face-to-face training is much more effective. One of the challenges of using the intranet as a training tool is that there is usually too many random materials and information on the site. This makes it difficult for personnel to sift through in search of what they really need (Klemola, interview 7 May 2014). As earlier described, this kind of training could be easily organised and executed via Microsoft Lync.

5   Recommendations

Reducing costs and increasing productivity is one of the main goals of several organisations, including Sokotel Oy. One of the ways companies achieve this goal is by introducing new technologies that can boost efficiency and probably cut down on costs. This can result in anxiousness among personnel since it means they may have to change the way in which they perform their work, which they are most likely more comfortable with, to adopt new systems and practices. Since the personnel of Sokotel Oy are already familiar with certain methods of communication, introducing Microsoft Lync may to them feel like a paradigm shift in the way daily operations are executed in the organisation.

One major question this research sought to answer was "Does Microsoft Lync as a communication tool cater for the communication needs of both the individual staff, and the organisation as a whole?" At the end of the research, it was evident that Microsoft Lync could be an effective and efficient communication tool that would help to not only improve communication among personnel and departments, but also increase organisational productivity.

Another problem identified from the survey was the fact that although Microsoft Lync has been technically implemented in the organisation, it has not yet been culturally implemented. To successfully achieve this, certain crucial aspects have to be implemented to ensure that personnel fully comprehend the necessary information about the tool such as its features, usability and most importantly its benefits to the organisation and to their individual daily operations.
This project identified and proposed the following steps to ensure the cultural implementation and integration of Microsoft Lync as the main communication tool in Sokotel Oy.

5.1   Build Ownership

Involving staffs in the process creates a sense of ownership. People tend to support what they have created or participated in creating. To involve staffs, lots of advance knowledge and information should be provided. This would get then used to the idea. Best practice is to inform employees of the intention to introduce a better communication tool even before the tool is technically implemented. This would spark debates, questions, etc. one way this could be effectively done would be to bring it up constantly in the weekly meetings organised at the head office. For example before implementing a new feature like auto start-up of Microsoft Lync, an avenue for discussion could be created. Gradually, every staff would begin to get familiar with the idea of the impending change.

5.2   Highlight the usefulness of the tool

One common mistake made by organisations is placing emphasis on the benefits of new technology to the organisation. While it is important for the tool to be beneficial to the organisation, it does little to motivate employees to accept it. To culturally implement Microsoft Lync in Sokotel Oy, the first step should be to determine that the tool is beneficial to most of the employees and not just a small group or the company. The benefits derivable by the employees should be highlighted. This goes beyond just stating that the tool would be beneficial to the employees, it involves highlighting clearly how the tool can improve the working condition, ease, efficiency and effectiveness of staffs. The results and analysis of the survey used in this report is a good pointer to some of the major benefits of Microsoft Lync to the personnel.

5.3   Proper technical implementation

Personnel may be discouraged when they encounter bugs or problems when trying to use a newly implemented technology. This could make them easily revert to the old system, especially if the old system works properly. To avoid this, Microsoft Lync has to be properly implemented technically. Care should be taken to ensure that the workstations operating Microsoft Lync meet the required specifications for the tool. The server configurations should also be properly configured. Regular updates to the system as necessary could also help ensure that the service runs smoothly. Apart from ensuring that the systems work properly, care should also be taken to ensure that all the necessary accessories are installed and available. Headphones and microphones are essential to the use of Microsoft Lync; they should be made available to every work station.

5.4   Create organisational user policies

Misuse of a newly introduced technology or service can quickly discourage people from using it. Therefore, an organisational policy for the proper use of Microsoft Lync should be formulated and forwarded to the targeted users. This would help them get acquainted with the best practice for using the tool. It would also provide information for the best way to use the tool effectively. See Appendix 6 for the recommended user policy and guidelines document.

5.5   Engage propagators

An individual or a small group of people that believe strongly in the importance of Microsoft Lync to Sokotel Oy can be assigned the task of "championing" the cause to spread the new technology across the organisation. One way this could be implemented would be to recruit some "champions" among the heads of department and business units, who would further

recruit local leaders in their respective departments and units to spread the word. It may be easier to accept information coming from a peer than from a boss. According to DeLano & Rising (1997), without the pro-active effort of a dedicated champion, the use of new technology can wither and die. A single motivated individual or small group brings a focus to the activities necessary to maintain a sufficient level of interest in the new technology to keep it alive.

5.6   Provide adequate training

Frustration can arise when an employee trying to use a new technology finds the interface complex. To avoid this, training should be an integral part of the process of introducing new technology into an organisation. It is profitable to determine the approach to training in advance. As discovered from the survey used in this research, the intranet is not the best form of training, especially when trying to introduce new technology. Training of all the staff may be expensive, so it may be better to train the heads of departments and business units, who would then have the responsibility of training their subordinates and colleagues. One way to achieve this could be by planning trainings and or meetings via Microsoft Lync and informing beforehand what functionality of the tool will be used and practically describing how it operates. This would create an avenue for use and training, and gradually begin to instil the Microsoft Lync culture in the organisation. Where possible, face-to-face trainings should also be planned, organised and executed.

5.7   Guarantee access to technical support

Integration of a new communication tool or system in an organisation may mean discarding the tools and systems currently in use, that personnel are more familiar and comfortable with. This, as earlier identified, may be one of the factors that could hinder personnel from making the necessary transition. Even with adequate training, the use of an unfamiliar tool may pose a few challenges to an organisation and the users. To overcome this hurdle, personnel have to be assured that there will be provision of technical support should they encounter difficulties while utilising the tool. The support staff should receive adequate training on both the tool and skills necessary for providing end-user support.

6   Conclusion

Technology is increasingly becoming the most essential element for business growth in organisations; it has become the foundation on which other elements of business operations are directly or indirectly built upon. For businesses to remain competitive in today's world, it is vital for organisations to update their knowledge and systems to accommodate advances in technology.

While this research is not exhaustive, the findings identified in this report indicate that there is a clear and definite need for a better, cheaper, easy to use communication tool within Sokotel Oy. The unified communication tool, Microsoft Lync, integrates multiple functionalities in a single infrastructure. These functionalities are currently used as stand-alone services offered by different communication tools in Sokotel Oy. As identified earlier in this project, Microsoft Lync, with its functionalities will be able to meet most of the communication needs of the company. However, it is necessary to note that a few issues could arise with the use of Microsoft Lync as the main communication tool in an organisation. Some factors to consider when adopting Microsoft Lync are;

- Communication Infrastructural failure

Although a usability testing was performed in the course of this research, it is impossible to fully predict the challenges that may arise in future with the consistent use of Microsoft Lync. Analysis of the strengths, weaknesses, opportunities and threats of the tool showed some issues that could arise with dependence on Microsoft Lync (see Appendix 1). It is important to create a back-up communication system or better still, operate Microsoft Lync concurrently with an alternative communication system to avoid the risk of collapse of the communication infrastructure.

- Alternative UC tools

Taking a cursory look at the benefits of Microsoft Lync may lead one to misjudge it as the best unified communications tool available, when in reality there are some other tools that may be equally good or even better. Research into alternative unified communications tools was beyond the scope of this case study. It is therefore recommended that further research be conducted to compare between existing UC tools as they relate to the communication needs of Sokotel Oy. This would help ensure that Sokotel Oy selects the tool that best aligns with the organisation's business objectives and communication needs.

The recommendations suggested in this project report are intended for use by Sokotel Oy's management, as a resource for implementing and integrating Microsoft Lync as the main communication tool within the organisation. Furthermore, they also provide a framework detailing how to motivate personnel to utilise the tool in their daily office communication. Therefore, effective application of these recommendations will enable the organisation to transform their business communication model and transition their communication systems. Improved daily business communication will enhance efficiency, productivity, maximise the utilisation of working time, reduce expenses and ease daily operations in Sokotel Oy.

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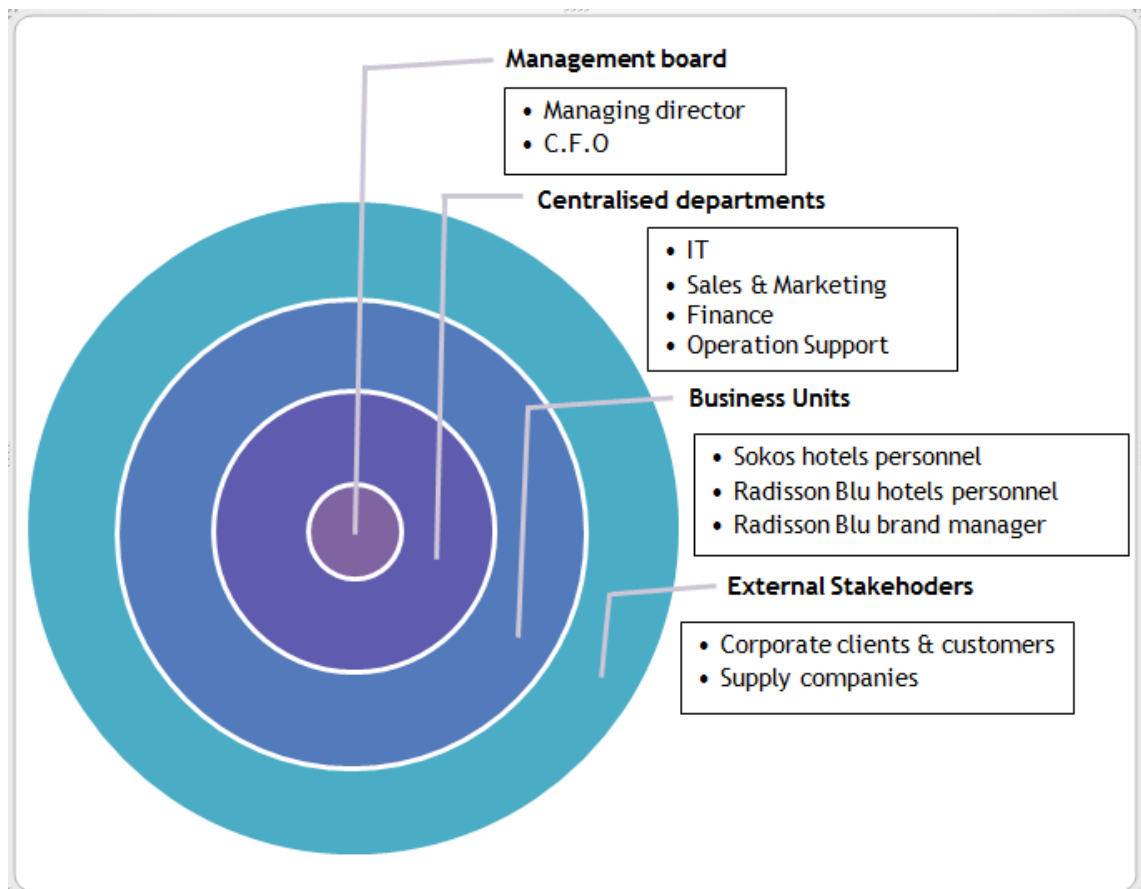
Figures

Tables

Appendices

Appendix 1 SWOT analysis (Strengths Weaknesses Opportunities Threats)

	Strengths	Weaknesses	Opportunities	Threats
Unified Communication	Having all communication tools on a single platform	Confusion over which feature to use for different communication	Could tremendously reduce costs incurred from dealing with several communication tools and suppliers.	In the event of a server failure, communication could be totally crippled
Collaboration	Could ease collaboration between personnel in either same or different locations.	It literally eliminates face-to-face contact creating an over reliance on technology.	Could largely improve teamwork and utilisation of expertise that may otherwise have been difficult to access.	Due to the lack of face-to-face contact, conflicts could easily arise from misunderstanding or miscommunication.
Meetings	• Reduced logistics in planning and organising meetings. • Reduced meeting costs. • Saves mileage costs.	• It eliminates face-to-face contact creating an over reliance on technology. • Participation could be easily compromised	Encourages frequency of meetings.	Multi-tasking during meetings could overtly reduce productivity.
Trainings	• Reduced logistics in planning and organising meetings. • Reduced meeting costs. • Saves mileage costs.	• It eliminates face-to-face contact creating an over reliance on technology. • Concentration could be easily compromised. • It is difficult to determine the level of participation of the trainees	Encourages frequency of trainings.	Multi-tasking during trainings could overtly reduce productivity and defeat the goals of the training.
Real time presence	• Automatically updates status from calendar. • Informs users on availability of others. • Notifications can still appear even when status is set to busy.	Notifications can be distracting when users are busy.		Statuses can be manually overridden. This can result in misuse. For example, users can set status to 'busy' even when not 'busy'

Instant Messaging	• Suitable for short and quick messages. • Allows group messages. • Eases collaboration between personnel in either same or different locations.	• Can be misused due to its addictive nature. • It literally eliminates face-to-face contact creating an over reliance on technology.	Could largely improve teamwork and utilisation of expertise that may otherwise have been difficult to access.	Due to the lack of face-to-face contact, conflicts could easily arise from misunderstanding or miscommunication.
Informal Communication	• Encourages informal communication • Creates a relaxed work environment	Difficult to maintain a healthy balance between formal and informal communication	Personnel can easily share ideas, thoughts, comments and feelings.	Too much informality can be hazardous to the organisational wellbeing.
File Sharing	Any type of media and files can be easily shared during collaboration.	It may be difficult to access documents if not saved properly especially in long conversations.	Increased collaboration.	Forgetting to save documents could lead to loss of valuable information.
VoIP	• Cheaper than traditional telephone calls. • More secure since it is transmitted over organisation's server.	• Requires extra hardware (e.g. headphones). • Can disturb other personnel in the same workspace.	With better call quality, international collaboration and monitoring could be facilitated.	In the event of a server failure, communication could be totally crippled if VoIP is totally depended on.
Desktop sharing	Enhances collaboration.	Data, information and system settings could be easily distorted.	Rendering direct assistance to colleagues in different locations could be enhanced.	Forgetting to close open confidential documents before screen sharing, could lead to unauthorised access.
Mobility	Users can participate in meetings, trainings, etc., from several devices, locations and while on the move.	Personal time could easily be intruded upon.	Increased availability.	Accessing meetings in public locations increases the probability of leakage of sensitive company information.

Appendix 2 Stakeholder analysis

Management board
- Managing director
- C.F.O

Centralised departments
- IT
- Sales & Marketing
- Finance
- Operation Support

Business Units
- Sokos hotels personnel
- Radisson Blu hotels personnel
- Radisson Blu brand manager

External Stakehoders
- Corporate clients & customers
- Supply companies

Appendix 3 Personas

Name: Mikko Tapiola
Age: 48 years
Position: Hotel Manager

"I am really busy with work at my branch and i have to travel for meetings all the time. By the way, it takes forever to get someone to fix our systems when they are down"
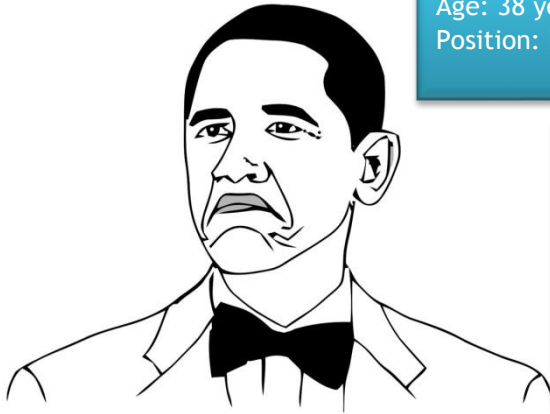
Personal Information:

- Divorced with two children
- Lives in Helsinki
- Earns €40.000 annually
- Major bills include mortgage and car loans.

Goals:

- Become a chain director before retiring.
- Cut down costs at work

Frustration:

- The need to travel often for meetings.
- Insufficient training for new technology

Name: Antti Takala
Age: 38 years
Position: Finance Manager

"Due to the changing economy, the financial report templates keep changing. I have to train and re-train staff in all our work units on how to properly use the templates. I also regularly need to correspond with our international branches"
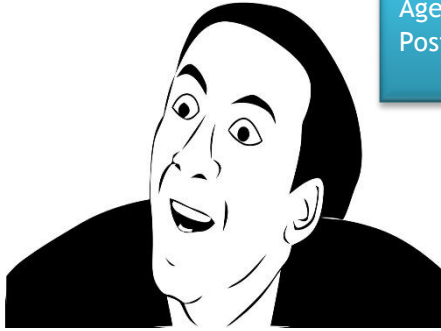
Personal Information:

- Married with one child
- Lives in Porvoo
- Earns €50.000 annually
- Major bills include house rent and other ordinary expenses.

Goals:

- To start his own Hotel chain.
- Improve financial reporting.

Frustration:

- Too many people to manage.
- Too many projects to manage
- Need to carry out more training than allowed by the budget.

Name: Mikko Heikinheimo
Age: 38 years
Position: Hotel Receptionist

"Some days are usually so busy at the hotels that we have so many customers and there are no more available rooms. It is difficult to contact another hotel branch to find out if they have any available rooms. I wish there was a fast and effective way to solve this problem"

Personal Information:

- Single
- Lives in Helsinki
- Earns €29.000 annually
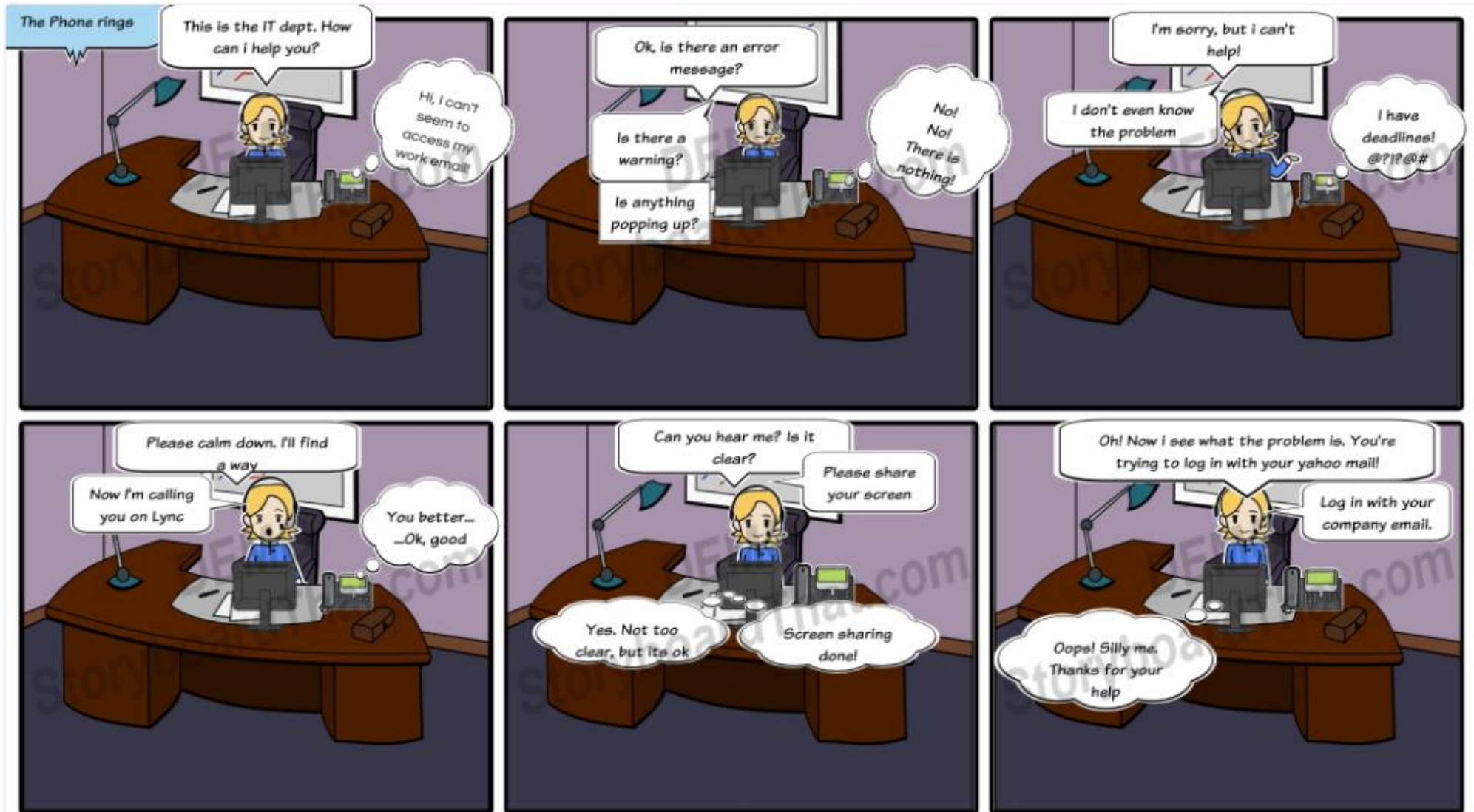- Major bills include house rent and other ordinary expenses.

Goals:

- To develop career and become and hotel manager.
- To get a master's degree in Management.

Frustration:

- The fact that I need to make a call every time there is a problem.
- Too many people to manage
- Non availability of support at some critical time

Appendix 4 Storyboarding

Appendix 5 Questionnaire

General information

1. In which part of Sokotel do you work?

    a. Head office
    b. Hotel
    c. Restaurant
    d. Others

2. In which department of do you work? What is your position in the department?

    |_____|

Communication Flow

3. Most of my communication on a daily basis is with my co-workers.

    a. Agree
    b. Disagree
    c. Not Applicable

4. Most of the daily communication I receive comes in the form of "directives" from management.

    a. Agree
    b. Disagree
    c. Not Applicable

5. Most of my communication with management is carried out via (if applicable, choose more than one option)

    a. Intranet/shared drive
    b. Fax
    c. Letter
    d. Voice mail
    e. Pager
    f. E-mail
    g. Instant message
    h. Phone call
    i. Face-to-face (two people)
    j. Teleconference
    k. Video conference
    l. Meeting

6. Most of my communication with my co-workers is carried out via (if applicable, choose more than one option)

    a. Intranet/shared drive
    b. Fax
    c. Letter
    d. Voice mail
    e. Pager

     f.   E-mail
     g. Instant message
     h. Phone call
     i.   Face-to-face (two people)
     j.   Teleconference
     k. Video conference
     l.   Meeting

7. I choose my channel of communication based on (if applicable, choose more than one option)

     a. Recipient
     b. Most effective
     c. Personal preference
     d. What is available
     e. What I am most familiar with

8. My department readily communicates with other departments.

     a. Agree
     b. Disagree
     c. Not Applicable

9. My department mostly communicates with

     a. Human Resources
     b. Finance Department
     c. IT department
     d. Other departments within my branch

Communication Needs

10. My daily communication are mostly (if applicable, select multiple options)

     a. Impersonal static
     b. Personal static
     c. Impersonal interactive
     d. Personal interactive

11. My daily communication are mostly (if applicable, select multiple options)

     a. Impersonal interactive in realtime
     b. Impersonal interactive constrained by special needs
     c. Physical meetings

Instant messaging tools

12. I am familiar with Lync instant messaging tool
     a. Agree
     b. Disagree

13. Lync instant messaging tool is available for use at my branch and department

     a. Agree
     b. Disagree (If so, Ignore question 14)

14. I often use Lync instant messaging tool for my daily communication

    a. Agree
    b. Disagree

15. I have been provided with an adequate user guideline to enable me use Lync

    a. Agree
    b. Disagree
    c. Not applicable

16. Training and communication via the intranet is very effective

    a. Agree
    b. Disagree
    c. Not applicable

17. Face-to-face training and communication is more effective than intranet training and communication

    a. Agree
    b. Disagree
    c. Not applicable

Appendix 6 Guidelines for the proper use of Microsoft Lync

Customised from (How to Lync 2011) and (Stack 2014).

General Guidelines

1. Every employee has a duty to ensure that Lync is properly set upon his/her work station. The IT department is always ready to help.

2. Ensure that Lync is up and running as soon as you log on to your work station.

3. Remember to set your Lync status correctly. Don't forget to change it from 'busy' if for example your meeting schedule was cancelled.

4. Respect the Lync status of colleagues. For example, if they appear as 'busy', then try as much as possible not to disturb.

5. Select the Lync feature to use based on the communication need at every given time. See more details in the 'select feature' section below.

6. Deliberately think of new ways to use Lync to increase your productivity.

Attending a meeting

A Lync meeting is not different from any other meeting. Here are some tips and guidelines for attending an online meeting:

7. As in any other meeting, be on time. Log on a few minutes before meeting commences and check that your audio, video and other features to be used are working properly.

8. It is better to use a wired network to ensure stability and clarity of audio and video.

9. Use the accessories provided. Using accessories like headphones and microphones prevent distraction and noise, especially to others not participating in the meeting. It also ensures confidentiality.

10. Mute your audio unless you are speaking. This will avoid introducing any unnecessary sounds and background noise.

11. Find a quiet space. If possible, join the meeting from a place free of loud background noise, otherwise, each time you speak, the other participants will find it difficult to hear you.

Hosting a meeting

If you're conducting or presenting in an online meeting, use the following tips to make your meetings more effective:

12. Make the most of your participants' time. Upload documents, prepare programs, and organize presentation slides before the meeting starts.

13. Encourage participation from remote participants. Often, those who are participating from outside the meeting room feel overlooked. As the presenter, it's a good idea to pause from time to time and ask for questions or comments from remote participants.

14. Use your mute capabilities. If a participant is creating a poor audio experience for everyone else, mute that person or ask him or her to rejoin the meeting using a recommended audio device or their telephone.

Using instant messaging

15. Remember you are at work. Keep discussions largely work related.

16. Respect the Lync status of your colleagues

17. Endeavour to respond to messages you receive. This would encourage the Lync culture to grow.

18. Think of creative ways to use this feature to collaborate and increase your productivity

Select feature

Function	Meeting (physical or Lync)	Lync Call	Email	IM	Letters
Brain Storming and negotiation	X	X			
Formality required	X				X
Informal/Quick update				X	
Formal update			X		X
Relationship building	X	X			
Distribution of lengthy complex info			X		X
Distribution of brief info				X	
Legal purposes; hard-copy requirement			X		X
Sending of detailed documents for review and response			X		X
Discussion of documents you sent	X	X			
Sending of urgent message; need for immediate response		X		X	
Discussion of familiar topic; need for little explanation				X	

Discussion of project updates and status	X	X		X	
Need for corrective action or for praise	X				
Sharing of organisational message	X	X			X
Sharing of organizational message				X	
Need for open discussion on new policy	X	X			
Quick sending of important update to many people; no need for record-keeping				X	
Quick sending of important update to many people; need for record-keeping			X		
Assurance of privacy	X	X			
Hearing of someone's voice to read between the lines		X			