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DISINTEGRATION BETWEEN COMMUNICATION TOOLS

How to avoid “Information Islands” and loss of important business data

Thesis

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ABSTRACT

Centria University of Applied Sciences	Date December 2017	Author Victoria Grankulla
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Name of thesis DISINTEGRATION BETWEEN COMMUNICATION TOOLS. How to avoid "Information Islands" and loss of important business data		
Instructor Peter Grankulla	Pages 54 + 1	
Supervisor Sara Åhman		
<p>The aim with this thesis was to give a solution on how to avoid "Information Islands" by avoiding disintegration between communication tools and to avoid loss of important business data. The objective was therefore to study different digital communication tools that could be used by the commissioner Nooga Oy Ab. The focus was on integrating the communication tool within a helpdesk, helpdesk was chosen as a concrete process within an organization since the author already had experience with working in a helpdesk.</p> <p>The theoretical framework in this thesis includes theory on digitization, digitalization and digital transformation as concepts, Microsoft Office 365, industry revolutions and how the world is affected by digital changes. "Information islands" is a new phenomenon that is caused by digital changes and was also included as part of the theoretical framework. Microsoft Office 365 was part of the theoretical framework because the author decided to mainly focus on the digital tools within Microsoft Office 365.</p> <p>This was a practice -based thesis since the research made was mainly practical with the support of theory. The practical work was to test the digital tools within Microsoft Office 365 and integrate them in the process of writing the thesis. The decision to only focus on Microsoft Office 365 and its tools was made because it includes a lot of digital tools and it is that vast that a thesis could be written alone on Microsoft Office 365.</p> <p>The conclusion was that the most important consideration that needs to be made before any new tool is implemented is whether it will solve a problem or need within an organization. The author provided the commissioner with a deeper knowledge on how the digital tools within Microsoft Office 365 perform which can be considered by the commissioner if the decision to proceed with any of the tools is made.</p>		

<p>Key words Digitalization, Digitization, Digital tools, Digital transformation, "Information Islands", Microsoft Office 365.</p>

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<p>Målet med detta examensarbete var att ge ett lösningsförslag på hur man kan undvika "Informationsöar" genom att undvika desintegration mellan olika kommunikations verktyg och på så sätt undvika att man förlorar viktig affärs data. För att uppnå målet undersöktes ett flertal digitala kommunikationsverktyg som kunde användas av uppdragsgivaren Nooga Oy Ab. Fokus var på att integrera kommunikationsverktyget i en helpdesk, helpdesk valdes som ett konkret fall som författaren kunde arbeta med eftersom att författaren redan hade erfarenhet med att jobba i en helpdesk.</p> <p>Den teoretiska delen i detta examensarbete var teori om digitization, digitalization och digital transformation som koncept, Microsoft Office 365, industri revolutioner och hur värld påverkas av digitala förändringar. "Informationsöar" är ett nytt fenomen som uppstått på grund av digitala förändringar och inkluderades därav också i den teoretiska delen. Microsoft Office 365 inkluderades i den teoretiska delen eftersom att författaren fokuserade på de digitala verktyg som Microsoft Office 365 erbjuder.</p> <p>Detta var ett praktikbaserat examensarbete eftersom att större delen av undersökningen skedde praktiskt med stöd av teoridelen. Den praktiska delen bestod av att testa de digitala verktyg som Microsoft Office 365 erbjuder och integrera dem i processen att skriva ett examensarbete. Beslutet att endast fokusera på Microsoft Office 365 och de digitala verktygen som erbjuds är för att de digitala verktygen som erbjuds är många och Microsoft Office 365 är så pass stort så man kunde skriva ett examensarbete endast om Microsoft Office 365.</p> <p>Slutsatsen var att det är viktigt att beakta ifall ett nytt verktyg kommer lösa ett problem eller behov som en organisation har innan verktyget implementeras. Författaren gav uppdragsgivaren en djupare kunskap i hur de olika verktygen som erbjuds i Microsoft Office 365 fungerar vilket kan beaktas innan man beslutar att implementera ett verktyg.</p>		

Key words

Digitalization, Digitization, Digital tools, Digital transformation, "Information Islands", Microsoft Office 365.

CONCEPT DEFINITIONS

Whitelist – Whitelisted items are the opposite of blacklisted items. Blacklisted items are often items that are unrecognized or denied.

Multi authentication – Access is granted to user after several completed authentications.

Datacenter – Datacenters include servers, firewalls, storage, networking switches, routers among others.

VPN tunnel - short for Virtual Private Network tunnel and is used to give access to a private network from a network outside the private network.

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1 INTRODUCTION

Digitalization seems to be the word on everyone's lips today and there are a lot of people wondering why digitalization is introduced as something new when it has been going on for decades. Some claim that the reason for this is incorrect use of the terms digitization, digitalization and digital transformation. The theoretical part in this thesis will focus on these concepts, Microsoft Office 365, information about industry revolutions and how the world is affected by digital changes. "Information islands" is a new phenomenon that is caused by digital changes, "Information islands" will also be included in the theoretical part. The theoretical part of the thesis will mainly be supported by the book "Get Digital or die trying" written by the two authors Arash Gilan and Jonas Hammarberg which will be compared to other digital sources.

The commissioner Nooga Oy Ab is a digital accounting firm located in Pietarsaari. Nooga Oy Ab was established 1.1.2017 by a couple of business owners with over ten years of experience within the business world. The company is relatively new on the market and Nooga Oy Ab is focusing on digital accounting, to provide their customers with an insight in their economy at present time but also in the next months and to change the view on accounting from a necessary evil to something rewarding. The focus on digital accounting also makes it necessary that internal processes within Nooga Oy Ab are as digital as possible and it was therefore decided that the focus should be on digital tools.

This thesis is a practice-based thesis which means that most of the research will be practical. My practical part includes a research of Microsoft Office 365 and its digital tools with the focus on communication tools. Microsoft 365 will both be explained theoretically and how it practically could be used by the commissioner. Microsoft Office 365 itself is that vast that the author decided to only focus on that solution alone since it could be written an entire thesis on just Microsoft Office 365. However, some of the digital tools within Microsoft Office 365 will be compared to similar tools on the market which are provided by other brands to give a better overview of the tool from Microsoft Office 365.

The aim with this thesis is to give a recommendation on how the commissioner could avoid "Information Islands" by avoiding disintegration between communication tools and to avoid loss of important business data within the support process or helpdesk. Helpdesk was added as a

concrete process that the author could work with since the author already had almost six years of working experience within a helpdesk. The aim should be that relevant business data (files, customer data and other shared data that concerns the company) shared within different platforms would be accessible when a department, manager or employee needs it from a mutual database which allows all employees to filter out the information that they do not need.

The objective is to study digital tools by using them within the process of writing the thesis. The author noticed early when the project of writing the thesis began that the problem with “Information Islands” is something that could be applied to almost every project and not just within a business. The thesis itself is a project and “Information Islands” almost immediately started to pop up during the process of writing the thesis. At one time, the author had information in notebooks, on post-it notes, in e-mails, in word documents, in power-point files and some information was stored somewhere in the back of the head. However, since avoiding “Information islands” was part of the aim it gave the perfect opportunity to make sure that the tools tested wouldn’t create “Information islands”.

2 A DIGITAL WORLD

The two writers Arash Gilan and Jonas Hammarberg of the book *Get digital or die trying* (2016) calls the time we are living in right now “The golden age of the digitalization”. The book has a silver thread which is the sentence “Everything that can be digitalized will be digitalized” and there is no doubt that this is a fact in today’s world. The world is getting more and more digital every day and even those things that have not been affected by digital changes yet will be. Businesses of today are almost forced to become digitalized or their chances of staying alive will decrease significantly. (Gilan & Hammarberg, 9-11.) Never will the pace be slower, never again will humans be less affected by change and never will technology and digitalization affect people as little as they do today (Gilan & Hammarberg, 70).

Concept or term confusion often makes it harder to study a certain topic and that is definitely the case with the concept “Digitalization”. One will find concepts or terms such as “Digitization, digitalization and digital transformation when searching for information. Unfortunately, the different terms are not used consistently which makes it a lot harder to establish turning points and even creating a proper timeline. Definition on these three concepts will be found down below. The description of the terms or concepts are based on several sources point of view but there are still a lot of disputes around the meaning. Most sources described digitization, digitalization and digital transformation in a three-step model. (Maltaverne 2017.) (FIGURE 1.)

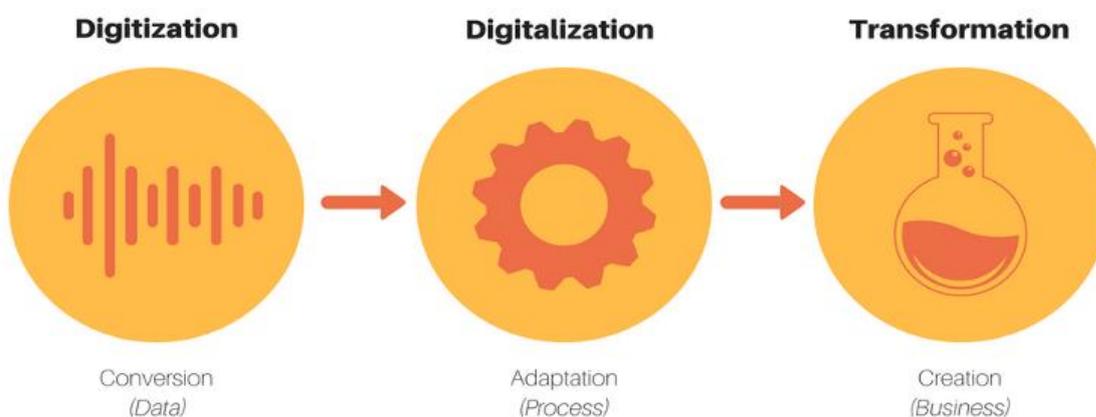


FIGURE 1. Digital steps (Maltaverne 2017.)

Digitization is a term used to describe the process of converting analogue format into digital format (Oxford University Press 2017). Digitization process is also the definition of automating former processes that has been built around manual work and the use of paper into a process using digital format, it is about fastening up the existing processes to become more efficient. The next step digitalization cannot be done before digitization has been done. (i-SCOOP 2017a; i-SCOOP 2017b.) However, Maltaverne (2017) defines digitization as the conversion of analogue format to digital format alone.

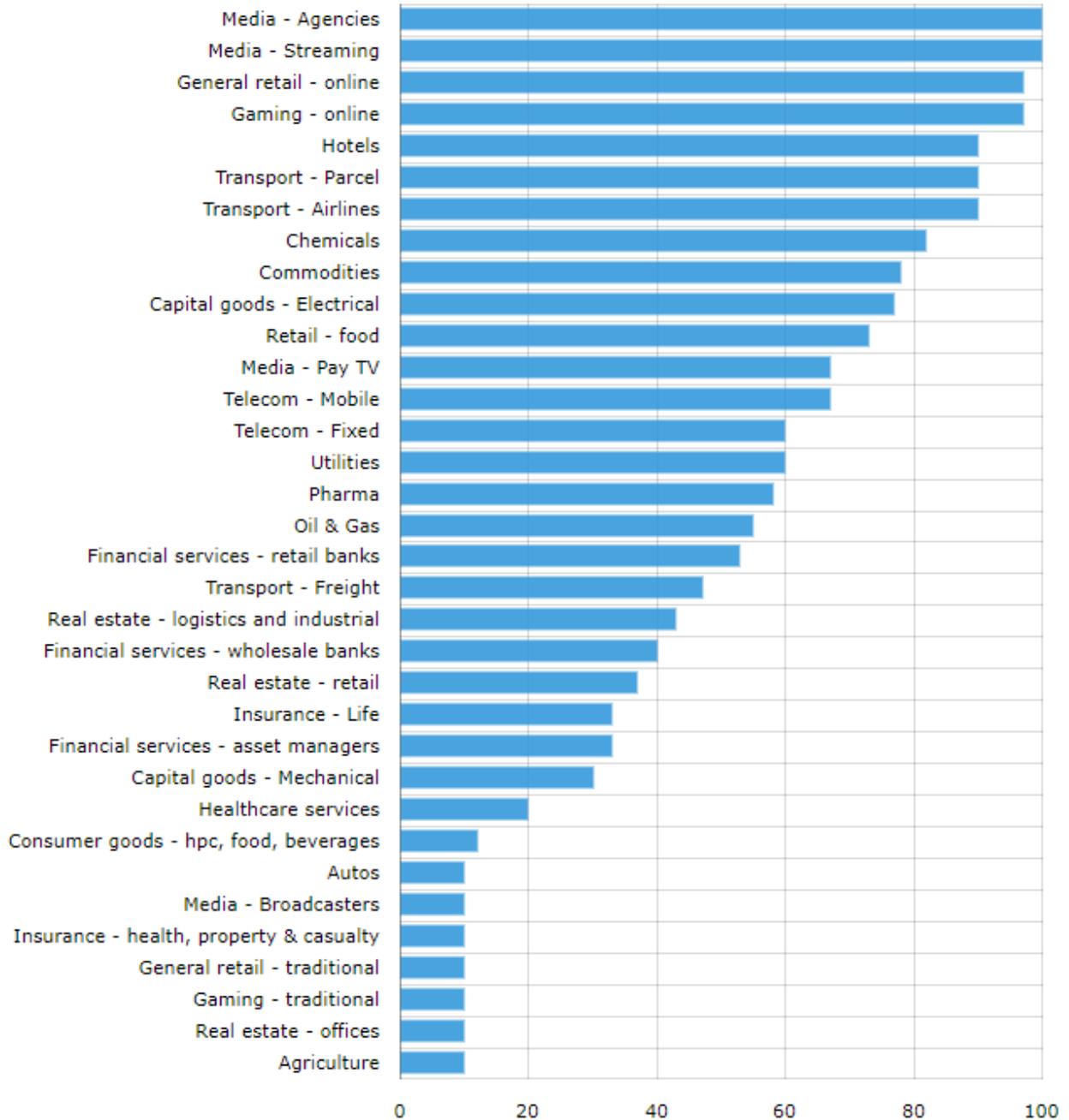
Whilst digitization enables the next step which is defined as digitalization, digitalization is defined as the process of changing business processes. Digitalization is about using the digital data together with digital technologies to create better revenue, customer satisfaction and business processes, it is about taking advantage of the digital data that has been extracted (i-SCOOP 2017b). Digitalization is also explained as a process to adapt a digital approach in already existing processes (Maltaverne 2017). The next step after digitalization is digital transformation which will be defined down below.

Maltaverne (2017) explains digital transformation as a digital-first approach meaning that a business focuses on creating something entirely new such as a new business model with the help of digital technologies and data. Digital transformation is also explained as the possibility to redesign your business by the help of digital technologies and at the same time combines the physical world and the virtual world. (Moore 2015).

There are four main revolutions, the first industrial revolution, the second industrial revolution, the third industrial (digital) revolution and the newest defined as the fourth industrial revolution (ICS & Cybersecurity 2017). The focus in this thesis will be on the third and fourth since these two are the most relevant in today's world. However, to add a little bit more confusion to the research there are also disputes on if the world has entered a new revolution, the fourth revolution, or if the third (digital) revolution is still ongoing. Some claim that the world is entering the fourth industrial revolution and some claim that the fourth industrial revolution is parallel to the third industrial industry. According to the firm Morgan Stanley there are still a lot of sectors that could benefit from the digital revolution but have not reached its full digital potential (Morgan Stanley 2016). A global research has also been made by the global research teams by Morgan Stanley, the research shows how much different sectors have developed digitally, which can be seen down below. The research gives a clear view on that there are sectors that still have

not reached its full digital potential such as Agriculture, Insurance and financial services. (Morgan Stanley 2016.) (FIGURE 2.)

Morgan Stanley's Digitalization Index



Source: Morgan Stanley Research estimates

FIGURE 2. Morgan Stanley's Digitalization Index (Morgan Stanley 2016.)

There is also a need to look at the turning points or progression based on a timeline to give a better overview on the third (digital) revolution and therefore can a timeline be found as an appendix (APPENDIX 1). The timeline clearly states that we have entered the fourth revolution also called the “Information age” and that the third (digital) revolution is still going on strong in parallel with the fourth revolution.

The fourth revolution, also called the information age, is defined as something that will change the whole humankind. The fourth revolution will have an impact on our living situations, working situations and even relationships between humans. The fourth revolution will include Artificial intelligence (AI), Internet of Things (IOT), robotics, self-driven vehicles, biotechnology, quantum computing, change in how energy are stored, Big Data, cloud and so on. The fourth revolution is also a combination of digital, physical and biological changes. (Schwab 2016; ICS & Cybersecurity 2017.) Schwab (2016) explains the fourth revolution as something that will transform us as humans and not only how things are done by us. Schwab (2016) also explains the fourth revolution has the disruption of industries all over the world and the mobile connectivity among us and the endless accessibility to knowledge. The fourth revolution includes progress within Artificial intelligence, robot technology, Internet of things, self-driving vehicles, 3D print, nanotechnology, biotechnology, storing of energy and more. (Schwab 2016)

2.1 A digital world and the impact on humans

As earlier mentioned, Schwab (2016) defined now to be the time that will transform us as humans and not only how things are done by us. Gilan & Hammarberg (2016, 9) talk about the paradox that the humanity becomes more and more important even if the world becomes more digital. Digital changes are explained as something that will help humans with those parts that humans would like to avoid and that the parts that digital changes cannot replace would be done by the hands of a human. The core is that humans should be able to continue being humanbeings. (Gilan & Hammarberg 2016, 9.)

A fear among people is that new technologies will eliminate jobs and that is partly correct. However, Gilan & Hammarberg (2016) write that this is a matter on how we look at it. Jobs will disappear but on the other hand new possibilities will arise (Gilan & Hammarberg 2016, 57). A study called “The future of jobs” made by the World Economic Forum shows how the growth

in some sectors will increase or decrease between 2015-2020 (FIGURE 3). The report also gives an overview of the set of skills that will be needed in the future (FIGURE 4). (World Economic Forum 2016.) A prediction is also made that 5 million jobs will be replaced by 2020 (Cann 2017). However, even if jobs are lost there are also new jobs coming up which will be shown in the diagram down below which are taken from the report “The future of jobs” made by the World Economic Forum (Thompson 2016).

Employment outlook across job families jobs change in thousands, 2015-2020

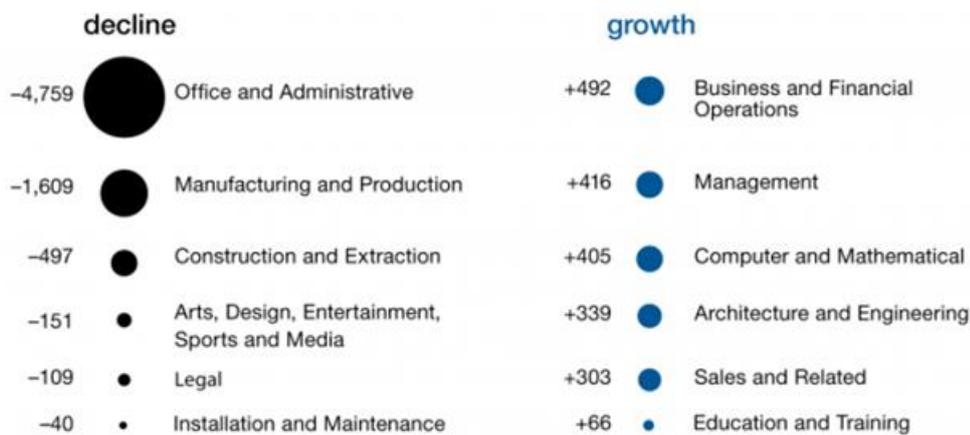


FIGURE 3. Employment outlook across job families (Thompson 2016).

According to a recent published article made by Yle, a prediction has also been made that around 4000 work tasks will disappear within the company Nordea due to investment in robot technology and Artificial intelligence. The prediction made by Yle is that around 900 employees will be let go in Finland. (Schauman 2017.)

Top 10 skills

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity



Source: Future of Jobs Report, World Economic Forum

FIGURE 4. Top 10 skills (Gray 2016).

Gilan & Hammarberg (2016) also talk about a shift in how knowledge is shared differently nowadays. Knowledge is no longer something that some people are privileged to instead knowledge belongs to the ones that want it the most. The reason for this is that knowledge is something that everyone can access online today. The two authors also talk about the shift in the skills needed in the future that the future will belong to the geeks. Geeks as a metaphor for people that like numbers, coding and systems (Gilan & Hammarberg 2016, 11; 57-58.) This will also require that the education system follows by evolving towards supporting the future skills needed (FIGURE 4) and the specific jobs that will grow in the future (FIGURE 3). Education systems should also provide a collaborative environment integrated with digital technologies. (Frezzo 2017.)

Our digital world will also change people's lifestyles. Some even believe that we in the future will have both a physical and a global (digital) citizenship (Gilan & Hammarberg 2016, 51). That one always is connected will also change the way in how one look at our privacy, the way one own things, what one devotes time for and especially when it comes to how we balance work and spare time and where and how we meet people. Smartphones together with the connectivity the smartphone comes with are a great example of something that already has changed people's lives since a lot of people tend to forget that it is important to just be in the moment, make reflections and socialize with people. (Schwab 2016.)

2.2 Definitions of a digital workplace

Gilan & Hammarberg (2016, 74) define the digital workplace as a workplace that includes the digital systems, solutions and aids, in which leaders, coworkers, customers, suppliers and partners can interact which will allow future business models to become a reality.

Work has for a long time meant the need to be at one place at a certain time. However, our digital world is changing our workplaces and it creates possibility to virtually connect to our workplace at any time, from any device and from anywhere. Fast and widespread access to internet has made this change possible (EYGM Limited 2015, 13.) Cloud technology and services also makes this change possible since it creates a possibility to store and share data in the cloud that can be accessed from anywhere and by anyone with the right permissions. Cloud-based services or products are the future and will be a necessary change for a business survival. (Gilan & Hammarberg 2016, 54.) People have also gotten used to using social technologies such as social media or social platforms as part of their daily life. This has created a need among employees to be able to use similar technologies also in their work such as ENS or Enterprise social network including an Intranet, collaborative tools or communication tools (Rouse 2012). This have made a huge impact on today's workplaces since it allows people to collaborate and share ideas easily. Mobile technology together with widespread access to internet has also made it possible to use the mobile phone from almost anywhere. Mobile technology has also made it possible to use mobile phones almost as a computer (Gilan & Hammarberg 2016, 203).

Social, mobile and cloud technology combined creates the possibility for employees to stay connected to each other from anywhere and at any time and from almost any device. These changes also require a staff that are used to using these kinds of technologies and it is therefore said that the preferred employee in the future will be young. The reason for this is that company's digital changes will be in favor of people that has been growing up with the mobile phones as part of their daily life and constantly connected via social platforms. Employees and their needs and demands have a lot of impact on a business and the business will therefore be shaped by the employees hired which in this case will be people that are used to access almost anything from anywhere. We will also see a shift in how people are hired. Permanent positions will no longer be as ordinary, and it will become more ordinary that company's hire people based on a specific need during a specific time. This will put pressure both on future leaders and employees since it will require a lot more engagement from both sides. Future employees might need to actively search for new projects and get used to not having a permanent position, future leaders on the other hand will have a hard time to lead, motivate and satisfy all employees that are widespread and at the same time keep a consistent culture within the company. (EYGM Limited 2015, 13.)

Papers with business data and information used to be stored in physical folders and catalogues but has been replaced by cloud based services such as a cloud storage, Onedrive, Google Drive or Dropbox, and document centers in for example Microsoft Sharepoint which can also can be used as a company's Intranet. Business data or files are no longer sent in paper versions instead it is sent electronically in for example EDIFACT or Xml format and can be used to send electronic invoices or e-invoice. Communication no longer requires a person to physically be present at the office instead it can be done via e-mail or other communication tools such as Skype, Skype for Business, Slack or Microsoft teams. These tools can also be used for meetings when the attendees are not present at the office. It is also possible to remotely access other's computers by for example using a program called TeamViewer which removes the need to physically be present to solve a problem. Heavy desktop computers are replaced by smaller devices such as laptops, tabs and mobile phones which can easily be moved or taken with. Companies with their own private networks can give access to an employee outside the network with the help of VPN or virtual private network technology which gives the employee access to all necessary data in a secure way even if he is not connected to the company's private network. These all are some examples of how workplaces are changing, these

are just a fraction of all changes that already exist and that will exist in the future, and allows employees to work from anywhere, anytime and from any device.

2.3 Digital technology

The digital changes made in the world would never have been able to be accomplished if it was not for the Internet, the Internet is the foundation of everything that is digital today. Gilan & Hammerberg (2016) define the Internet as a creature that has been modified and grown bigger and bigger during the time and that keeps on changing the world. The Internet creates efficiency, removes distances, creates speed and transparency which are the key elements in how one understands the digital changes. Digital or modern workplaces also depends on the Internet since the Internet removes the need to be at a specific place. The speed and removal of distances also makes it a lot easier to reach people globally and fast, products and services can easily be distributed and the time to reach masses has decreased a lot which can be seen in the chart down below (FIGURE 5). (Gilan & Hammarberg 2016, 49-50.)

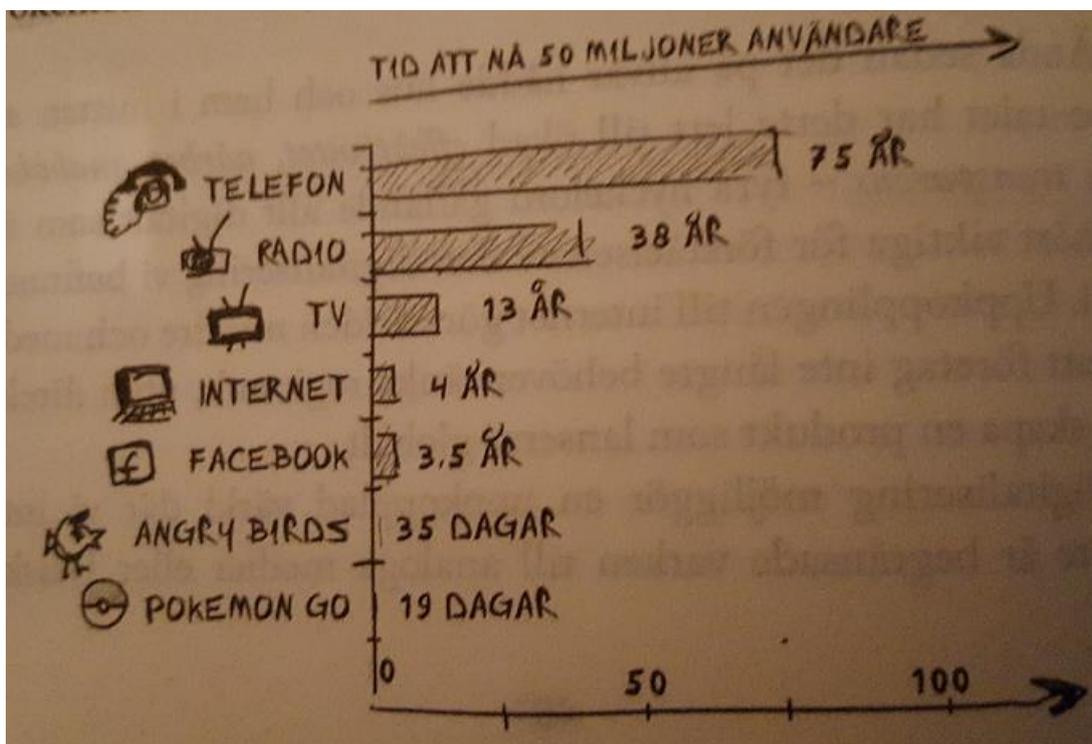


FIGURE 5. Reach people (Gilan & Hammarberg 2016, 50).

Mobility is also an important aspect of digital technology, smartphones are something that almost everyone has today. Smartphones replaces cameras, cd-players, watches, scanners,

radio, calculators and it is even possible to watch movies on that small device. Smartphones works almost as a complement to computers and people often prefer picking up their phone instead of starting a desktop or laptop. Mobility has as earlier mentioned been possible due to widespread, cheaper mobile network but also because smartphones are much cheaper today and it has therefore been possible to reach masses. Smartphones creates mobility which creates more flexibility and efficiency in the working life which also creates a need for a “Mobile first” approach. (Gilan & Hammarberg 2016, 203-208.) Connected units, wearables or Internet of Things (IOT) is also huge, connected units are for example fitness bracelets that are used by people to track exercising, pulse, sleeping habits among others, the bracelet is often connected to an application that collects data from the user (Gilan & Hammarberg 2016, 211.). Hundreds of connected units and digital channels creates a huge amount of data which is also defined as “Big Data”. “Big Data” can be used by companies to create more valuable strategies and create more value for the customer (Gilan & Hammarberg 2016, 364).

Artificial intelligence (AI) is also an aspect of digital technologies, AI is intelligence that imitates or is based on human behavior and intelligence. AI can be found in computer system but also in robots. Robot technology is also a part of the future and the digital technology, same with VR or Virtual Reality which is an environment created by a computer to simulate a real environment. (Gilan & Hammarberg 2016, 363, 371.) These are just a few technologies that are part of our digital world and it is important to remember that digital technology and its success is based on a combination of both hardware and software. (Gilan & Hammarberg 2016, 205.) There are also a lot of digital tools coming up that can be used both in work and private, read more about this in chapter 3. MICROSOFT OFFICE 365.

Digital technology is also something that causes disruption in any industry and every organization is forced to create their own digital strategy to be able to provide a solution for their customers’ needs. The use of social media platforms also changes the way a company should approach their customers. Customers are now used to get information online, read reviews and communicate with a company through social media platforms. It is therefore important that a company has a strategy on how to handle this form of digital or social technology. (Megatrends 2015, 10-11.) ENS or Enterprise social networks is a social media platform that can be used within companies, an example of an ENS is Yammer which can read more about in chapter 3.2 Office 365 communication tools.

2.4 Information Islands

The more digital our world becomes, the more common will a phenomenon called “Information Islands” become. “Information Islands” are created when critical business information (files, customer data and other data that concerns the whole organization) is widespread and not shared inside an organization. Information can be stored in different ERP systems, within digital tools (communication tools, collaboration tools and other management tools), files (Office suite, G-suite), cloud storages, e-mails, papers, post it notes and in some folder in the organizations Intranet that only a few employees are aware of. The problem is therefore not that the information does not exist instead the problem is that information is not shared properly and sometimes even spread that widely that nobody knows who has received the information in the end, there are no proper guidelines on how information should be spread (Lundalogik 2017; Grankulla 2017). A great example on this is when files within different cloud storages are shared with a lot of people and in the end hundreds of files have been shared to hundreds of different people both outside and inside an organization and there is no way to track who has information about what (Grankulla 2017). Disintegration or widespread information leads to duplications of databases (increased working hours), misunderstandings, poor customer service and misplaces market efforts (Lundalogik 2017). The author has experienced this problem when it comes to invoicing, often when customers are supposed to be invoiced and information is widespread it leads to a lot of extra work that could have been avoided if the needed information would have been integrated or stored in the same place. The challenge is to avoid these “information islands” and make sure that everyone can access the information that they need within an organization. To avoid “Information Islands” by avoiding disintegration between communication tools and to avoid loss of important business data will be the aim with this thesis.

This problem also occurs between departments since departments often focus on their own needs and way of working. Digital tools and placement of business data will be based on that specific department which will cause problems when management or other departments need to access their information. The aim should be that relevant business data would be accessible when a department, manager or employee needs it from a mutual database which allows all employees to filter out the information that they do not need. (Lundalogik 2017.)

The number of digital tools out on the market also increase the problem with “Information Islands” since it easily allows an employee to start using a tool for their own needs without thinking about the bigger picture which is something the author has noticed to be the case based on the authors own experience. The bigger picture meaning that others might not be able to access the information that a specific employee adds to a specific place and it is therefore useless for the whole organizations. It is therefore important to have a specific set of tools within an organization that supports the employees’ everyday job and at the same time keeps the information available for everyone within the organization that needs it. Gilan & Hammarberg (2016) talk about “teknikjägare” or in English “hunters for new technology”. “Hunters for new technology” often want the most recent technology on the market and seldom thinks about how the new system, tool or application will help the business or organization. It often leads to that the new tools or applications are not used which on the other hand will lead to that employees will start searching for other tools that will help them with those parts that the new system, tool or application fails to do. It will also lead to that a lot of different systems, tools, or applications will be used in different departments or parts of the organization. (Gilan & Hammarberg 2016, 72.) A lot of different systems, tools or applications are a huge factor to “Information Islands” since employees will enter different kind of information in different systems, tools or applications that should be in the same place to give easy access.

3 MICROSOFT OFFICE 365

Microsoft is offering a solution called Microsoft 365 that includes Office 365, Windows and Enterprise mobility. The solution comes in two separate solutions, the Microsoft 365 Enterprise and Microsoft 365 Business. Microsoft 365 Enterprise is aimed towards larger businesses and includes two different subscriptions, Microsoft 365 E3 and Microsoft 365 E5, each subscription offers different products or tools which a company can choose from depending on their needs (Microsoft 2017a). Microsoft 365 Business is aimed towards small- and medium sized businesses with a maximum of 300 users. Microsoft 365 business includes the same products and services as offered for Microsoft 365 Enterprise users but modified to fit small- and medium-sized businesses. Microsoft 365 business also comes in two separate subscriptions, Office 365 Business Premium or Microsoft 365 Business. (Microsoft 2017b.)

Office 365 is a subscription-based cloud service that allows employees to collaborate from anywhere and at any time. Office 365 includes cloud based versions of the original Microsoft Office suite, Outlook, Word, Excel, PowerPoint and OneNote, which are replaced by Exchange Online and all the original office applications as online versions. The online versions can also be installed as applications on your computer, but they will still be connected to the cloud. (Microsoft 2017c.) A user subscribed to office 365 will always have the newest versions of all the Office programs which is a great advantage over the original Microsoft Office that you purchase one time and install on one specific device (Microsoft 2017d). Every tool or application within Office 365 are cloud-based which makes it possible to work on any device at any time as a subscriber, by logging in with the Office 365 account. Office 365 allows the employees to share documents with each other and work on them in real-time by showing the changes made by others in the document. The installed tool or application can also be used in offline mode, the data can later be synchronized to the cloud when the user has access to internet connection. (Microsoft 2017c.) Office 365 also includes a set of digital tools that are explained in chapter 3.1 Office 365 tools.

Enterprise mobility and security is about making it possible for employees to work from anywhere and at any time from a device that they have chosen themselves. Mobile first is something that Arash Gilan and Jonas Hammarberg both talk about in their book “Get digital or die trying”. “Mobile first” experiences will be expected by employees which give them possibility to

work from their smartphone (Gilan & Hammarberg 2016, 208). Not only do the employees expect to be able to work from a specific device chosen, they also expect to be able to work on the go which means that they are not needed in the office all the time. The employees want to be able to set up their own office where they like to work and on the device, that they feel most comfortable with. This requires that the applications or tools that they are using are simple and compatible with all devices. Enterprise mobility is something that Microsoft strongly believes in and trying to support with the solution Microsoft 365. This new working style creates a need for security since the data that companies are dealing with are sensitive. Since the data will be in the cloud a lot of security measurements will be needed and that is something that Microsoft has built in, in Microsoft 365 that allows employees to work however they want but in a secure way. (Microsoft Cloud Platform 2016.) Security measurements will be discussed in chapter 3.4 Office 365 and safety.

One of the reasons that a lot of the tools get unnoticed within a company that uses Microsoft Office 365 is that it is time consuming to investigate one and each of the tools that exist. The company also need to investigate how the tools could be integrated within a company's daily business processes. Microsoft is putting a lot of effort into Office 365 and there are a lot of new tools coming out all the time which is positive in the way that there are a lot of options to choose from. The vast number of tools also makes it more likely that there exists a tool that will fit any need within a company's business processes. However as earlier mentioned it might also be that a company does not have resources to investigate all the new upcoming and already existing tools. Microsoft offers a solution called FastTrack if a company does not have the resources to investigate Microsoft Office 365 but still wants to start using services provided within Microsoft Office 365. However, it requires that the business have a subscription that enables this service such as the Office 365 Business Premium and up to 50 licenses. FastTrack is meant as a guidance to make the move to Microsoft Office 365 smoother. (Microsoft 2017e; Microsoft 2017f.) It is also a smart way for Microsoft to receive more information about how company's internal processes look like which is critical for them to be able to deliver better solutions.

The focus in this thesis will be on Microsoft Office 365 and the digital tools or applications that come with it. The author has chosen the most relevant tools or application within office 365 that might come in handy in the daily work for a helpdesk. However, the main focus will be on communication tools or collaboration tools. Based on that the commissioner Nooga Oy already

are using Microsoft Office 365 as part of their daily work it felt natural that the focus should be on Microsoft Office 365 and its tools. Microsoft Office 365 already includes a lot of unexplored tools and it would therefore be plain stupidity to not investigate which of the tools that could be integrated with the other Microsoft Office 365 tools that they are already using.

3.1 Office 365 tools

Besides the regular Office applications Office 365 also provides a lot of other tools for employees to be able to collaborate and communicate, both at the office and on the distance, such as Skype for business, OneDrive, Yammer, SharePoint, Bookings, Flow, Forms, Planner, Power BI Apps, Stream Teams, Delve and Sway (Microsoft 2017g). There are also new tools coming up all the time which shows how much focus Microsoft put on Office 365. Some of the tools and applications, Skype for Business, Yammer, Teams, SharePoint, Planner and Flow, will be further studied, compared to a similar tool on the market by another brand or described in more detail. The tools and applications that a business or enterprise can take part of depends on which subscription the company has chosen as earlier mentioned (Microsoft 2017a).

3.2 Office 365 communication tools

Skype for Business is a tool that provides possibility to chat, call, keep video conferences, and share content. Skype for Business is compatible with Android, iOS, Mac and Windows and almost any device such as tablets, pc and phones. An online meeting within Skype for Business can easily be accessed from the calendar, the meeting reminder or within the Skype for Business itself and it allows both the possibility for scheduled meetings and direct meeting. The participants can also join via a phone call in case the participant does not have the possibility to join via Skype for Business. A meeting can include up to 250 people and a webinar within Skype for Business can include 10 000 people. (Microsoft 2017n.)

Skype for Business can also be used as a phone system with regular features such as call transferring which allows the possibility for someone to answer calls and transfer them to the correct person, resuming and to set a call on hold with the help of the Office 365 phone system and call plan feature (Microsoft 2017m). Skype for Business also provides the possibility to

make calls via the internet (Voice-over-IP) and voice mail can also be used in those cases when the call cannot be answered. Skype for Business also provides encryption of data and it is therefore not needed to use a VPN (Virtual Private Network) tunnel. (Microsoft 2017n.) Microsoft is also working on integrating features within Skype for Business into Microsoft Teams to allow users to use the same features that are familiar together with collaborative environment that Microsoft is trying to create with Microsoft teams (Wright 2017).

Yammer (FIGURE 6) is a private enterprise social network equivalent to social media platforms such as Facebook. Groups can be created in Yammer, similar like a Facebook group, that allows participants to collaborate by discussing, sharing knowledge, sharing insights, sharing updates, add announcements and polls within the organization. An Office 365 group including a SharePoint team site with a document library, Notebook and Planner will also automatically be created when a Yammer group is created (Microsoft 2017k). The Yammer group also includes a feed called “Discovery” that allows you to discover new items within your network, the feed “All” shows all the updates that has been made within your network and the feed “Following” only shows content from groups that one follows. (Microsoft 2017o; Office team 2015.)

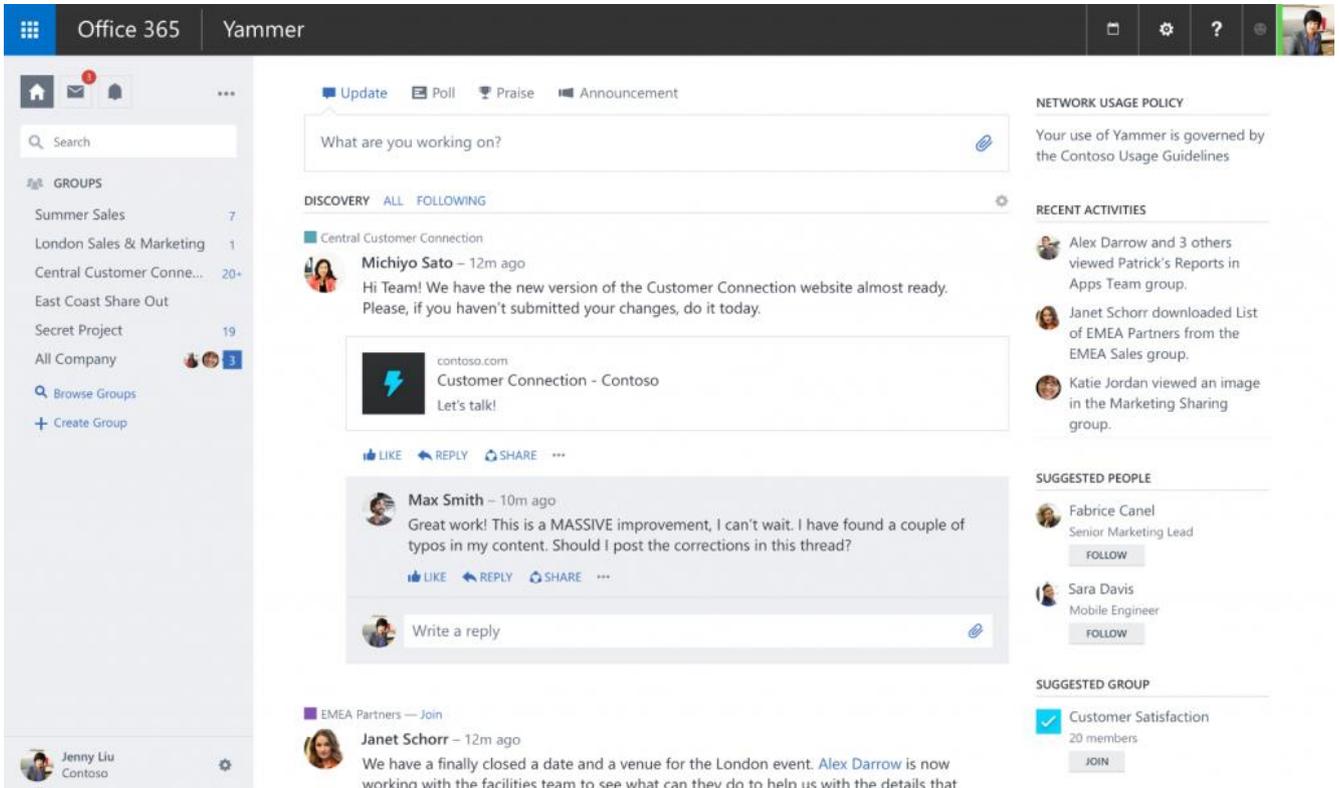


FIGURE 6. Yammer (Office team 2015).

3.3 Office 365 groups

Office 365 groups is the foundation of Microsoft Office 365 since it keeps all the Office 365 tools together (FIGURE 7).

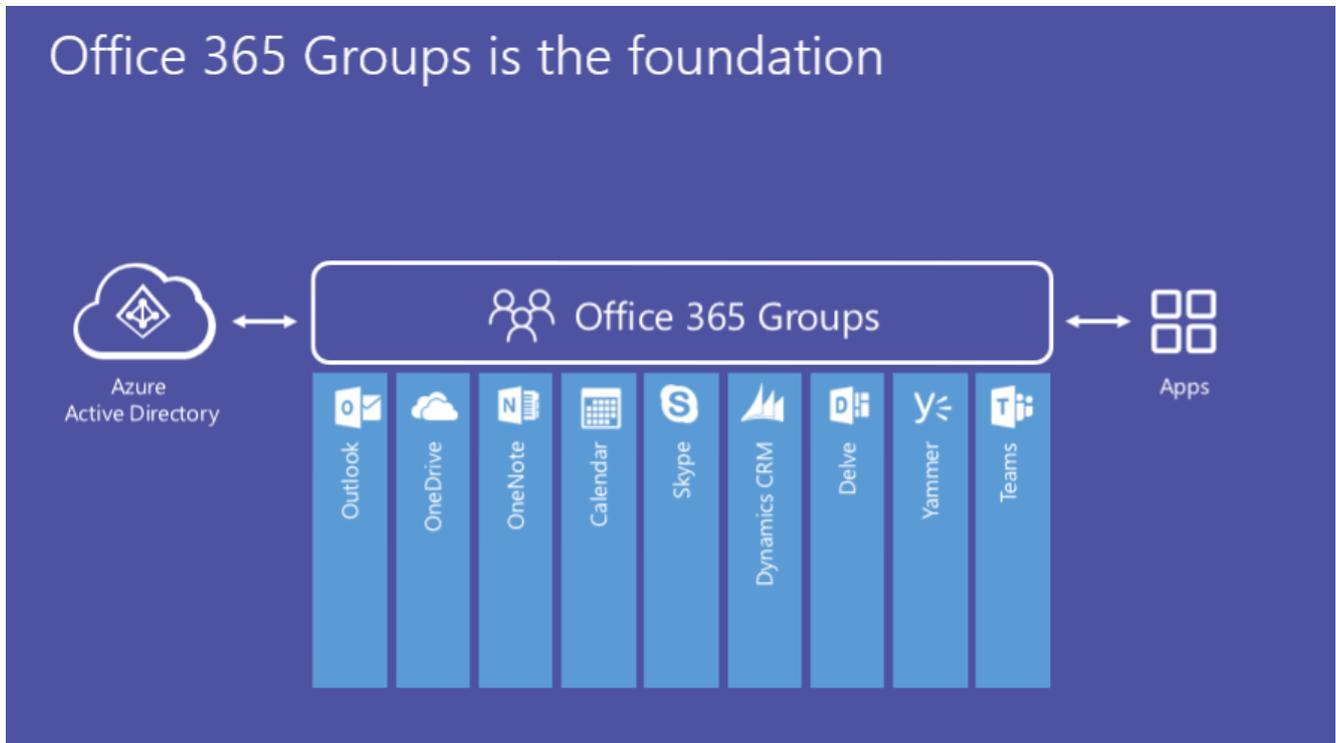


FIGURE 7. Office 365 groups (Strant 2017.)

Office 365 groups could also be compared to a similar platform called G-suite made by Google that contains functions such as Google's own suite (Google docs, sheet, slides and form) which is similar like the Office suite. However, since the focus is mainly on Office 365 and G-suite also is very vast it will only briefly be presented. The G-suite gives access to an e-mail account, calendar, Google Hangout which gives possibility to have online meetings and G+ which can be used as an internal social media platform within a company. A similar tool as G+ called Yammer can also be seen within Office 365. G-suite also provide cloud storage called Google Drive which is similar like Microsoft's OneDrive. Google is known for its search engine and this is also something that the user of G-suite will be able to take advantage of with a feature called Cloud Search. Cloud Search allows the user to easily search for data needed within the cloud and provides an application that gives all necessary data that a user might be interested in during the day. G-suite also includes admin controls including back-up or archives and mobile management which can also be found in the Microsoft Office 365. (Google 2017.)

During the research of Office 365 the author found that Office 365 groups can be created from a lot of different places which in the end causes a lot of groups that one necessarily cannot keep track of (Strant 2017). Office 365 groups can for example be created by the Office 365 admin or from Outlook including Outlook web/mobile, SharePoint, Planner, Teams and Yammer. Every Office 365 group comes with a set of tools and an Office 365 group created from Outlook includes a SharePoint team site including a document library, a shared calendar, a shared mailbox, Notebook and Planner. (Microsoft 2017k.)

An Office 365 group can either be a private or a public group. A private Office 365 group will only be visible to the members within the group and approval is needed if someone wants to be a part of the private group. A public group on the other hand is visible to everyone inside the same company and there is no need for approval to be able to be part of the group. (Microsoft 2017k.) Guests can also be given access if needed and the guest will be able to access files, conversations within the group, invitations in the calendar and OneNote. The guest will for example not be able to create new groups, delete existing ones and the guest will not be able to add or remove members within a group. The guest will not be able mentioning people in the group, managing meetings, access the calendar or add the calendar to a personal calendar. (Microsoft 2017y.) More about guest access can also be read in chapter 5.1 Microsoft Teams compared to Slack.

Management of Office 365 groups is an important aspect and Microsoft offers a set of solutions for managing Office 365 groups in the best way. Microsoft recommends creating a security group with specific people that should be able to create new Office 365 groups. Owners area also the only ones that can add people to an Office 365 group. Names on groups can also be managed by the help of Microsoft Naming Policy. The reason why it is important that not everyone within an organization can create groups is because at some point there will be groups everywhere and nobody can the control information within these groups and in some point, will that create new "information islands". Office 365 Admin center also let the administrator keep track on all existing Office 365 groups that exists within an organization. Office 365 groups also have certain limitations such as a limitation of that there can only exist 100 owners in a group, a user can create 250 groups, 1000 members can exist within a group and the whole organization have a limitation of 500 000 groups. File storage is up to one Terabyte and an additional of 500 Megabytes per person with a license. (Microsoft 2017z; Microsoft 2017k.)

3.4 Office 365 and safety

Cloud-based storage is exposed to a lot of threats and it is therefore important to know what data you store in the cloud and what kind of security measurements a service provider has taken to keep the data safe, in this case Microsoft's service Office 365. Data stored in the cloud is often exposed to theft and other threats and it is becoming a bigger problem every year and it is getting harder and harder to secure the data. (Megatrends 2015). Since Office 365 is cloud-based has the author decided to give a brief introduction to the safety within Office 365 but as earlier mentioned Office 365 is vast and therefore, will the security only briefly be discussed.

Since storing data in the cloud is something that companies still are getting used to it might sometimes arise disagreement on whether Office 365 is safe or within the law such as the privacy act or privacy law. The city of Gothenburg has experienced this since the taking in use of Office 365 was stopped by a lawyer with the reason it is uncertain whether storing data in the cloud collide with the rule of confidentiality within the public- and privacy law (Sekretessbestämmelser i offentlighets- och sekretesslagen). (Kristensson 2017.) Since an accounting firm also take care of a lot of sensitive data it is necessary to find out which data that can be stored in the cloud both according to the law and the safety. Another important thing to remember is also that the law might not be the same in Finland as in other countries and therefore might the rules not be the same for companies within Finland compared to the example above with the city of Gothenburg.

Security is taken seriously by Microsoft and a lot of effort is made to keep the security within Office 365. Microsoft talks about three layers of security, the physical, logical and data layer, together with user and admin control. The physical layer contains security such as datacenter monitoring (24/7), access to datacenter by multi-factor authentication which includes biometric scanning, internal network for the datacenter and destructions of drives and hardware that no longer work. (Microsoft 2017j.) The logical layer contains features such as the lockbox which gives a company possibility to control who has access to what data stored in the cloud (Kumar 2015), only whitelisted processes to avoid bad code, proactive threat management that protects and foresee bad access including scanning of ports. Data security contains features such as encryption of data in rest and in transit, any unauthorized access to files will also be managed and Exchange Online Protection that protects against spam and malware. (Microsoft 2017j.)

User controls mean that a user can send encrypted e-mails to anyone and Azure rights management also gives possibility to give access to files on a user-level. Admin controls includes features such as multi-factor authentication to services, data loss prevention, mobile management that give possibility to control access to business data, mobile application management that secures data in applications, antispam and -virus protection and Office 365 Cloud App Security that gives the possibility to manage the company's office 365 environment. (Microsoft 2017j.) These are just some of the security measurements that has been made by Microsoft, but it still gives an overview of the extent of security management that Microsoft provide within Office 365. However, the security features are available in certain extent depending on the subscription the company has chosen (Microsoft 2017g).

Microsoft has also added a list of top ten questions that a company should consider when choosing a cloud-based service. The most important question of them all might be who owns the data in the cloud and Microsoft answers that as the user of the service Office 365, one is the owner and controller of the data and Microsoft would neither use the data for advertisement. Microsoft has also added a list of the top ten aspects of security and privacy within Office 365. Some of them are mentioned down below such as the security on different layers as mentioned above, encryption of data (in transit and at rest), Microsoft will not access a company's data without permission and back-up of data. Data will neither be deleted at the date when the service has been dismissed until one has claimed all data needed, data is stored nearby in the region, hard passwords are required by users. (Microsoft 2017l).

4 PRACTICE-BASED THESIS

To be able to receive a bachelor degree in Business Administration one must complete a thesis, the thesis is often something that is written during the last study year. In the guide for thesis and academic writing published by several workers in Centria, it is said that the thesis is the link between studying and the working life. It is possible to choose from two different styles of a thesis, one is a research-based thesis and the other one is a practice-based thesis. This report will be a practice-based thesis since the goal is to study how a certain service or product could be implemented within the commissioner's organization. The base of a practice-based thesis is the practical work done by the author which means that the focus will be on the work done rather than on the theoretical part. However, theory to support the practical work will be included but not as extensive as if the thesis would be a research-based thesis. (Aho, Forsell, Kukkola, Leppisaari, Leppälä, Orjala, Peltoniemi, Rasehorn, Taari, Tammisto, Tolonen-Kytölä & Torkinlampi 2006.)

4.1 The process of writing a practice-based thesis

The process of writing a thesis often starts with a course that includes information about the process of writing the thesis and research methods. However, the process of writing a thesis can anyway feel overwhelming in the beginning and one might have a hard time knowing where to start. That feeling can also be strengthened if the author feels that the subject is impossible to manage and that might lead to the author giving up, but if the subject on the other hand feels too easy it will not force the author to do the best work possible. This phenomenon is also explained by the two authors Arash Gilan and Jonas Hammarberg as the "U-curve of motivation" aka "Yerkes-Dodson Law" (FIGURE 8) (Gilan & Hammarberg 2016, 39).

The authors Arash Gilan and Jonas Hammarberg also explain a phenomenon called "FLOW" which describes the feeling of being absorbed by an activity which leads to the feeling of control. The phenomenon is experienced as something positive and is associated with the feeling of being satisfied, FLOW also requires a person to create challenges to keep the feeling of satisfaction (FIGURE 9) (Gilan & Hammarberg 2016, 40). During the process of writing the thesis, the author tried to stay within this flow to be as motivated as possible.

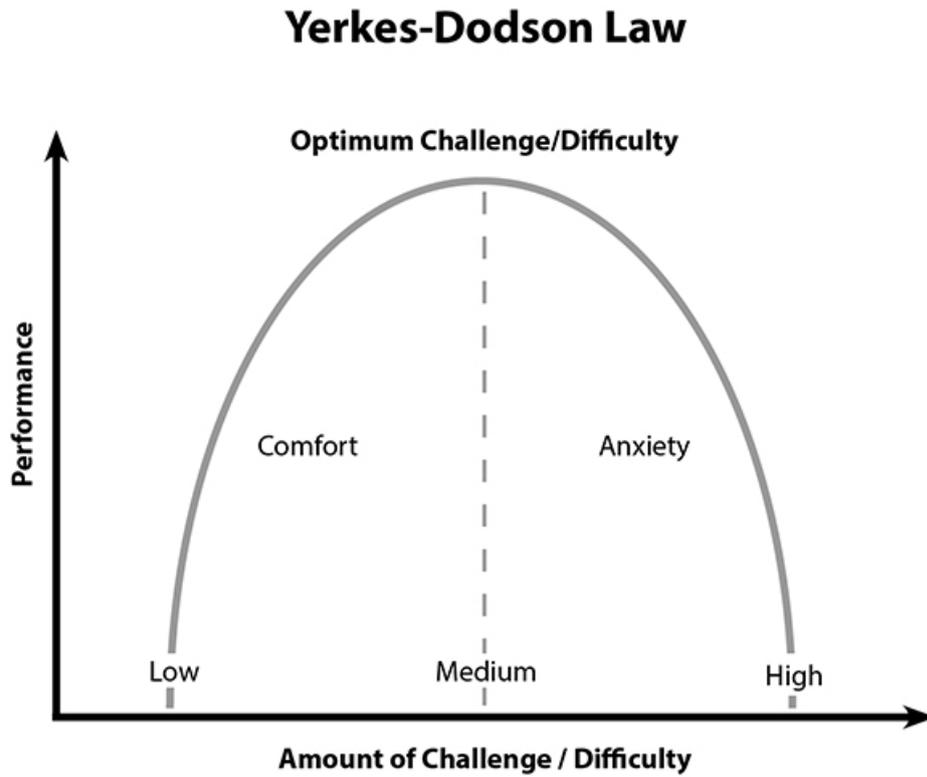


FIGURE 8. Yerkes-Dodson Law (Sunshine Coast Health Centre 2014)

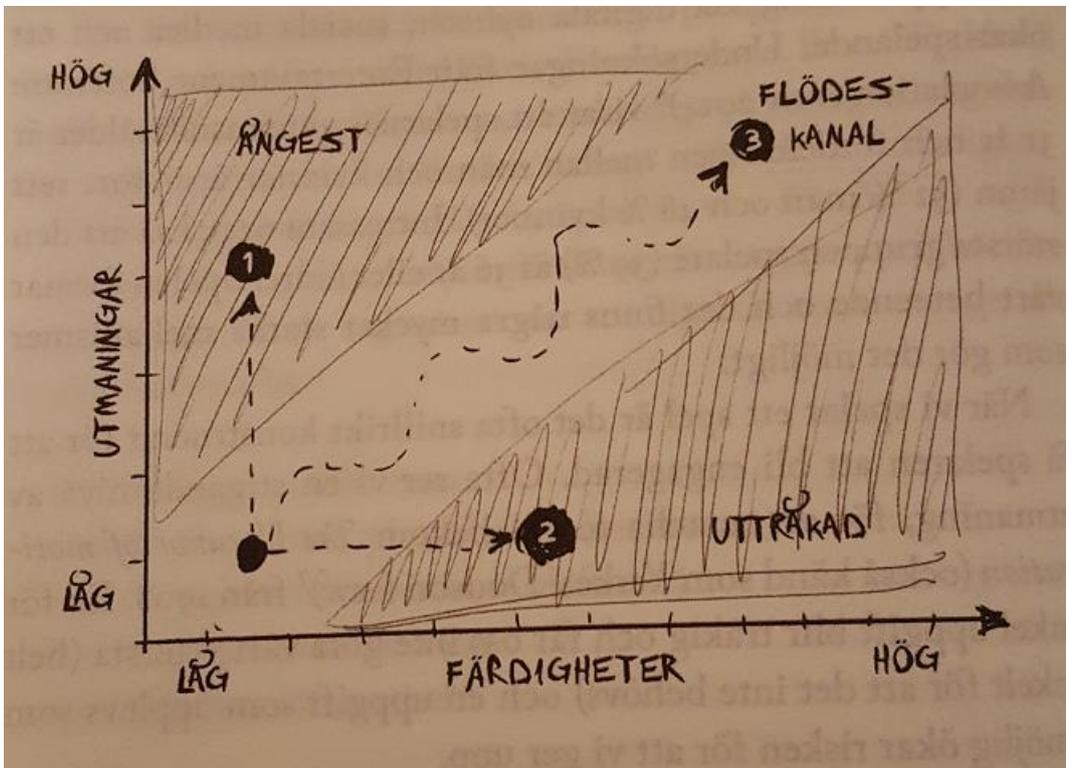


FIGURE 9. FLOW (Gilan & Hammarberg, 40)

The process of writing the thesis is also explained in the guide for thesis and academic writing published by several workers in Centria. It is important that the process of writing is planned time efficiently and that there is a well thought out plan for how the progress within the process should be done. To have knowledge within the field chosen for the thesis is also important and to have some skills in how to make a documentation which is something that is thought within multiple courses during the study time, therefore should the author already have the knowledge by the time the thesis should be written. The process of writing the thesis also includes supervision of the process which includes that the author also should keep the supervisor up to date on own initiative. This process will also be assessed in the end when the grade for the thesis is given. (Aho et al. 2006.)

4.2 Planning of the thesis

The planning of the thesis started with a meeting with Nooga Oy Ab, the commissioner, in the beginning of January 2017. The problem discussed during the meeting was disintegration between several communication tools that causes “Information Islands”, the “information islands” contains relevant business information (files, customer data and other shared data that concerns the company) which in the end is lost due to disintegration. The decision was made that the focus should be on making sure that everyone within the company can access business information that is relevant to them and to give a recommendation on how the company should handle their business data and which communication or collaboration tools could be used.

The process of writing the thesis and the planning can be found in the task list and since the task list shows both a start date and due date there was no reason to add an additional GANTT chart. (FIGURE 10). The task list contains a start date and a due date for each task but some of the due dates are however approximates. Smaller tasks during the process were also handled in Microsoft Planner, see chapter 5.3 Microsoft Planner (FIGURE 19).

 new task or edit this list

All Tasks

Calendar

Completed

...

Find an item



✓	<input checked="" type="checkbox"/>	Task Name	...	Start Date	Due Date
	<input type="checkbox"/>	Meeting with the commissioner to discuss the subject of the thesis ✱	...	January 5	January 5
	<input type="checkbox"/>	Practical work (tested applications) ✱	...	January 17	April 30
	<input type="checkbox"/>	Gathered data for the theoretical part ✱	...	January 17	April 30
	<input type="checkbox"/>	Handed in the thesis proposal ✱	...	January 13	January 13
	<input type="checkbox"/>	Thesis on hold ✱	...	May 31	August 31
	<input type="checkbox"/>	Started with the Implementation plan ✱	...	August 1	September 26
	<input type="checkbox"/>	Handed in the Implementation plan ✱	...	September 26	September 26
	<input type="checkbox"/>	Interrim report ongoing ✱	...	September 26	November 3
	<input type="checkbox"/>	Handed in the Interrim report ✱	...	November 3	November 3
	<input type="checkbox"/>	Interrim presentation ✱	...	November 6	November 6
	<input type="checkbox"/>	Final report ongoing ✱	...	November 7	November 30
	<input type="checkbox"/>	Tested out Office 365 tools ✱	...	August 1	3 days ago
	<input type="checkbox"/>	Final presentation handed in for language inspection ✱	...	Saturday	Saturday
	<input type="checkbox"/>	Final presentation ✱	...		December 22
	<input type="checkbox"/>	Maturity test ✱	...		December 22
	<input type="checkbox"/>	Corrections to the Final version of the thesis ✱	...		December 9

FIGURE 10. Planning of the thesis

5 EXECUTION OF THE PRACTICE-BASED THESIS

“Information islands” is something that occurs in several places within an organization, the “information Islands” can be found between departments, within processes (such as invoicing) and even on individual level. The project started with the aim to give a recommendation on how the commissioner Nooga Oy Ab could handle their communication channels within their support process or helpdesk and on the same time avoid “Information Islands”. Helpdesk was added as a concrete process that the author could work with since the author already had almost six years of working experience within a helpdesk.

The project started by studying communication tools on the market and the market offers a lot of different options such as Skype, Skype for Business, Stride, Yammer, Google Hangouts, HipChat, Slack and Microsoft Teams. However, Slack and Microsoft Teams as collaboration tools offered the most and the focus became around these tools. Stride created by Atlassian was found relatively late in the project and was therefore not included in this thesis but could definitely be an option together with Atlassian’s own helpdesk ticket system Jira. However, at the beginning the focus was on studying Slack as a collaboration tool but it was important to integrate Slack with Office 365 since the commissioner use Office 365 (mainly Exchange Online mail and Microsoft Office suite). Research was therefore made on how Slack could be integrated with Office 365, but it was noticeable that Slack was more compatible with Google Suite than Office 365. At that point of the project Microsoft Teams was found and since it already was a part of Office 365 was the decision made to focus mainly on Microsoft Teams and compare it with Slack.

At the same time research was made on other tools, helpdesk ticket systems or task management tools, on the market that could help the daily work in a helpdesk. The number of digital tools on the market could almost be compared to the amount of confetti that comes out of a confetti cannon. Therefore, the author decided that the focus needed to be narrowed down and a decision to mainly focus on Microsoft Office 365 and its digital tools was made, mostly because the commissioner already was using it to some extent and because Office 365 offered a lot of different digital tools. The author already had access to an Office 365 Business Premium license and could therefore test out almost every tool within Office 365. The tools Planner and Flow were tested to be able to see if these tools could have been used by a helpdesk. The

conclusion was made that planner mainly could be used for smaller projects but not to handle the workload within a helpdesk, Flow also had a lot of problems and would therefore not be that reliable, read more in chapter 5.3 Microsoft Planner and 5.4 Microsoft Flow. SharePoint was also included as part of the research as a tool to use in a helpdesk, task lists were studied but the decision was made that SharePoint was not enough flexible to use as a system to take care of helpdesk cases. At this point the author also realized that a separate thesis could be written on handling a helpdesk and its connected processes and the decision to mainly focus on collaboration tools were made at this stage.

The author started studying Microsoft Teams and its connection to Office 365 groups, read more in chapter 5.1 Microsoft Teams compared to Slack and chapter 3.3 Office 365 groups, since every team in Microsoft Teams comes with an Office 365 group and every Office 365 group includes OneNote, Planner, SharePoint and an Exchange Online mailbox. SharePoint is set as the database for all the files shared within channels in Microsoft Teams and it was therefore important to study if this solution would create or decrease the number of “Information islands”. The aim would have been that there would exist a main SharePoint site (organizational information) that keeps all subsites (one subsite per team in Microsoft Teams), this would have stored all business data in the same place and “Information islands” could have been avoided. However, a huge drawback in the research was that an existing SharePoint site could not be connected to a team in Microsoft Teams, which meant that every new team got an own team site within SharePoint. This was a huge disappointment since it would become easier to create new “information islands” in form of team sites. The conclusion was that policies and routines within an organization would become much more important to avoid hundreds of team sites that nobody is aware of, it also became clear that there had to be restrictions on who should be able to create teams in Microsoft Teams and Office 365 groups within an organization. Research were made on how restrictions could be managed and how people should be able to keep track on all the relevant SharePoint sites, read more in chapter 5.2 Microsoft SharePoint and 3.3 Office 365 groups.

5.1 Microsoft Teams compared to Slack

Microsoft offers a collaboration/ communication tool called Microsoft teams besides other communication tools such as Skype for business and Yammer. Microsoft teams is a collaboration

tool within Office 365 that are built to provide an environment that allows teams to collaborate from anywhere, at any time and from any device. Microsoft teams include possibility to chat, call, online meetings, file sharing, integrations and content recording. Microsoft teams together with Office 365 groups is created to support our digital or modern workplaces and to give accessibility to everything needed by a team during a working day in the same place. (Microsoft 2017i.)

Every team within Microsoft teams is based on an Office 365 group which also gives access to an own Exchange Online mailbox including calendar, SharePoint team site and cloud storage (Onedrive). However, it is not needed to create an entire new Office 365 group if there already exist one instead it is possible to connect the existing Office 365 group when you create a new team in Microsoft Teams, but it requires that the Office 365 group is set at "Private". Microsoft Teams is built upon Office 365 groups which can be seen as the foundation of Microsoft Teams. (Strant 2017). Each team can also have several channels which is shown down below, each channel will have an own folder in the Office 365 group's team site in SharePoint where the files shared within the channel will be saved (FIGURE 11; FIGURE 12).

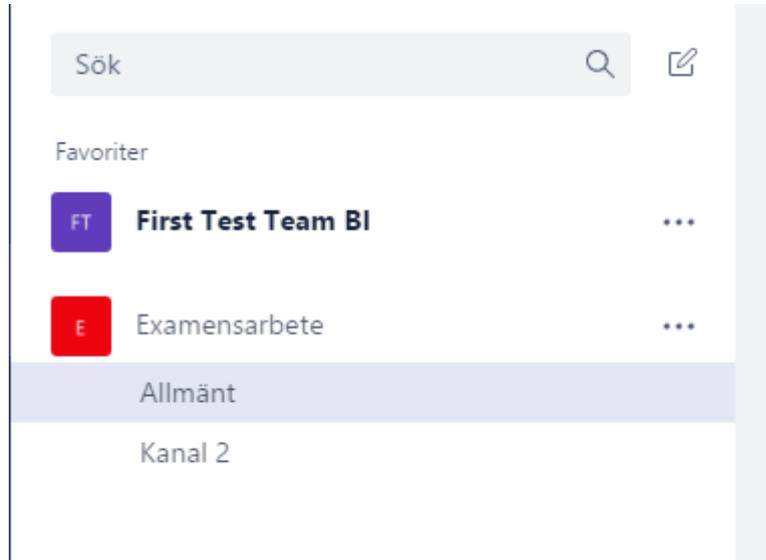


FIGURE 11. Microsoft Teams channels

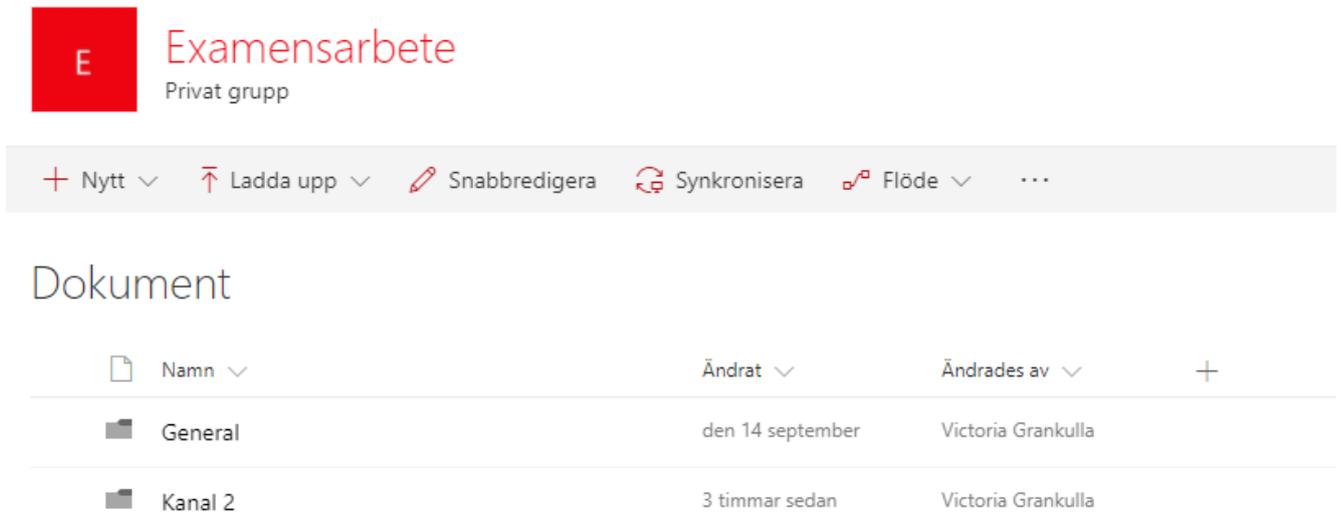


FIGURE 12. Microsoft SharePoint

Microsoft teams also allows you to integrate existing Office 365 tools such as planner, OneNote or Power BI which can be used to some extent in Microsoft teams without the need to open the actual tool. This can be done in two separate ways, either as a new tab or as a connector. A tab will be added by clicking on the “+” icon which gives the possibility to add both Office 365 tools and third-party tools. (Microsoft 2017h.) In the example down below has Shared documents from SharePoint (Examensarbete (Thesis doc)), Microsoft Planner (Examensarbete) and OneNote (examensarbete) been added as tabs (FIGURE 13).

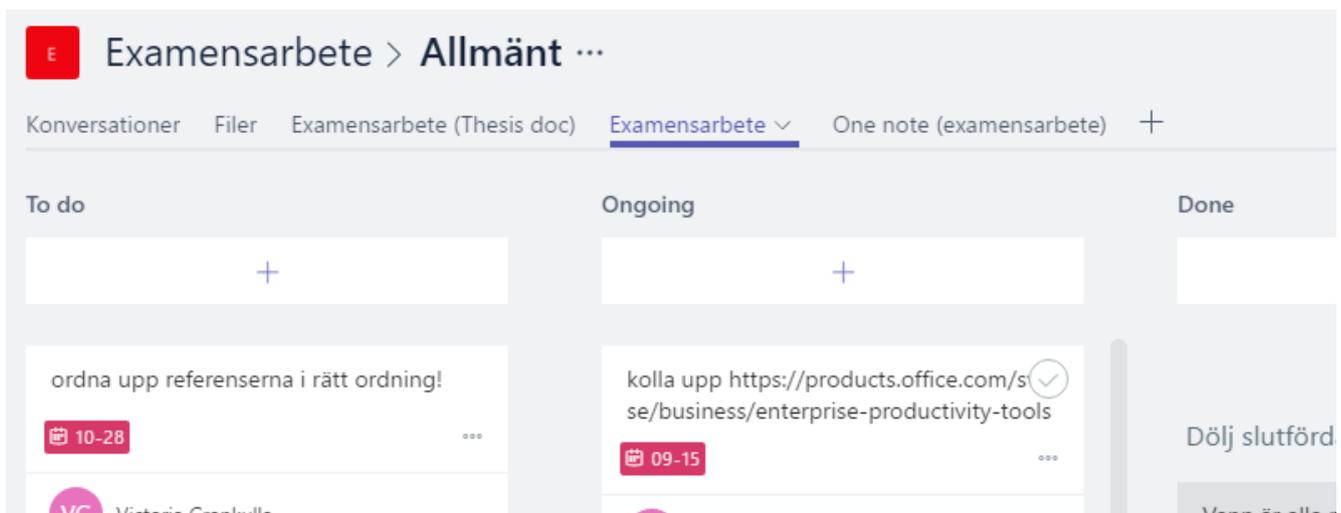


FIGURE 13. Microsoft planner

Connectors let one push data from another application or tool into a channel in Microsoft Teams. The author decided to test this by adding a helpdesk ticket system called Zendesk as a connector to one of the channels in Microsoft teams. The Zendesk connector pushes tickets into a channel depending on one's settings, New ticket created (Ny biljett har skapats), A ticket is solved (Ett ärende har lösts) and A comment is added to a ticket (En kommentar läggs till i ett ärende), in the example seen as figures all the settings were chosen (FIGURE 14; FIGURE 15).

It is possible to create one's own connectors by logging in to the Connectors Developer Dashboard to register the connector, but it is also possible to create a connector for one's use without registering it. Connector cards (FIGURE 15) can also be modified to better fit a purpose by making changes to the content or buttons but it requires programming to some extent. (Microsoft 2017p.)



Meddelanden

- Ny biljett har skapats
- Ett ärende har lösts
- En kommentar läggs till i ett ärende

Spara Ta bort Avbryt

FIGURE 14. Connector settings

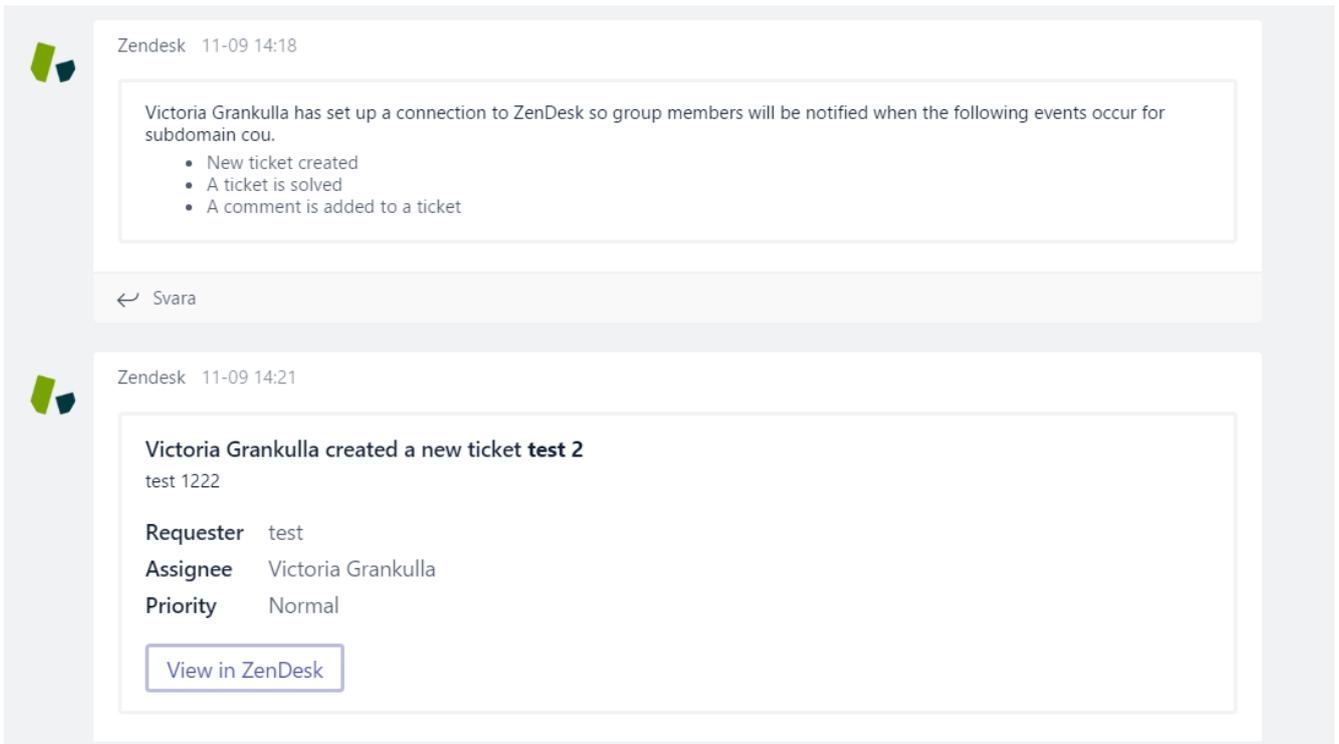


FIGURE 15. Connector card

Bots are also a part of Microsoft teams and the bot T-bot is added by default. T-bot is added to help users with functionalities within Microsoft Teams (FIGURE 16). There are also a lot of other bots that can be used for different purposes such as the bot KAYAK that tries to find flights and hotels for an upcoming trip. Polly is a bot that can be used to create polls to easily be able to vote within a chat. A bot can easily be used within a chat by mentioning them (@Polly) and the bots are always available. One is also able to create new bots both for own use and by registering them with the same principle as with connectors. (Microsoft 2017q.)

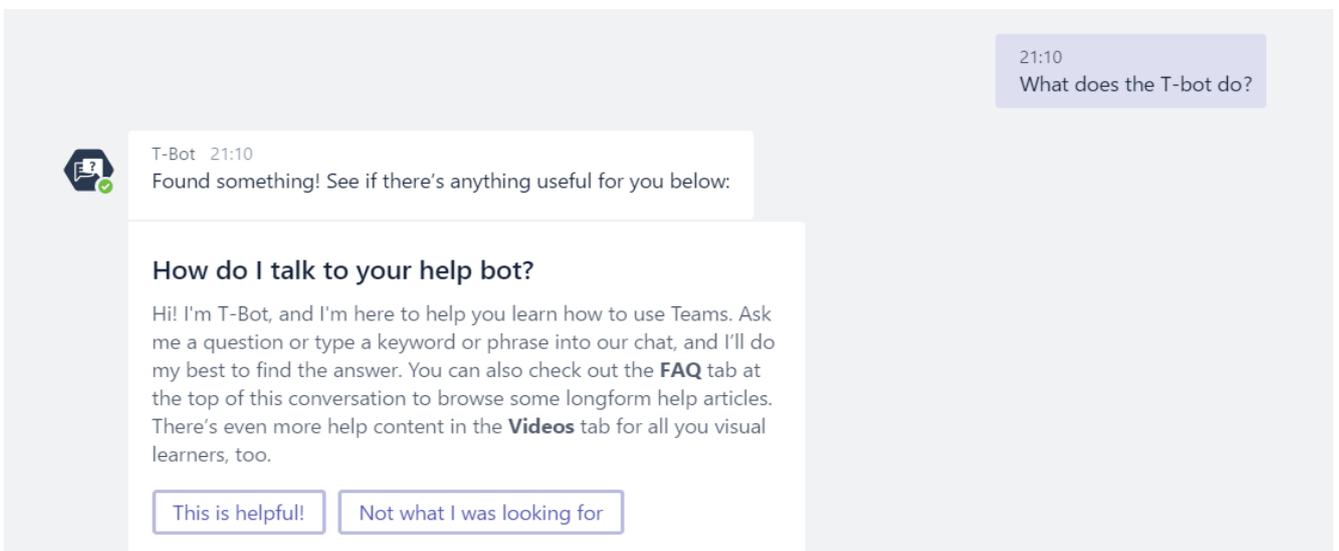


FIGURE 16. T-Bot

Microsoft Teams also provide the opportunity to invite guests, but Microsoft Teams demands that the guest added needs to have an Azure Active Directory account or Office 365 account but are working on providing people with only Microsoft accounts access as guests too, the reason for this is to keep up the security level that is expected from Microsoft Office 365. Guests do not have the possibility to share files from a chat, add connectors, add tabs, add bots, possibility to make changes to rules for guest access, create teams, join or discover public teams or access charts within the organization. One is also able to control other accessibilities by the help of Office 365 Admin controls. (Microsoft 2017w.)

Mobility is a huge part of our digital world today and it was therefore also needed to test the mobile version of Microsoft Teams. Important to know is that the application was mainly tested with an Android phone but most of the features can also be used with IOS and on windows phones. The author's first impression of the mobile applications was that the application made for Microsoft Teams was clean and it was easy to navigate within the application. However, the author did not focus that much on appearance of the applications since that would mainly have been based on personal preferences. The application for Microsoft Teams included almost every feature that can be found within the desktop version but there were some features that could only be used within the desktop version. These features were to schedule meetings and to start meetings within a channel, however it was possible to join a scheduled meeting from the mobile application, it was also possible to start a meeting in a private chat. The possibility to add connectors is also something that needs to be done from the desktop version. (Microsoft 2017x.)

Slack is a similar tool as Microsoft Teams and a close competitor to Microsoft Teams. Slack as a collaboration tool hit the market first and Microsoft answered with Microsoft teams and a lot of comparisons have therefore been made on these two tools. One thing that is made clear that based on if a company is already using Office 365 it will have a great impact on whether a company should choose Microsoft Teams or Slack. Microsoft Teams can already be used by companies with an Office 365 subscription such as Business Essentials, Business Premium, Enterprise E1, E3 or E5 without any extra cost which means that the user of Microsoft Teams will also have access to other features within Microsoft Office 365 (Microsoft 2017r). Slack has three different plans to choose from, one for free and depending on a company's needs they can choose from a plan called Standard or Plus. The price for the Standard plan is 7.50 Euro per month or 6.25 Euro per month if subscribed to for a year and the Plus plan goes for 14.10

Euro per month or if subscribed to for a year 11.75 Euro. Slack also provides a solution called “Slack Enterprise Grid” that gives the company possibility to connect several separate workplaces with each other. However, the comparison of Microsoft Teams and Slack in this thesis is between Microsoft Teams including other tools from Office 365 based on the subscription Office 365 Business Premium and the free version of Slack. That means that the comparisons will be based on both the author’s own testing and other people’s reviews. (Slack 2017a.) The price of purchasing the subscription Office 365 Business Premium is 12.70 Euro per month or 10.50 Euro per month if subscribed for a year (Microsoft 2017s). Compared to the features one gets by purchasing an Office 365 Business Premium subscription (FIGURE 7) and the safety features, included in chapter 3.4 Office 365 and safety, compared to Slack it is needed to purchase the most expensive plan “Plus” to be able to get the similar experience out of Slack and Microsoft Teams. With that said Microsoft has a stronger deal to offer their customers to a better price. The author will compare features within Slack with features within Microsoft Teams down below.

Slack security features are two-factor authentication, single sign-on and data retention meaning that the user of Slack services can decide to delete data during a specific time range and based on this will the data be deleted during the night. They also provide possibility to delete all data within 24 hours and any back-up of the data will be destroyed within 14 days. The data can also if needed be exported from Slack before all data are deleted or if the data is needed for some other reason. Slack also provides encryption of data (in transit and at rest), data is archived in several places and the network is secured in the best way, scanning of their environment for risks and they also provide logging of the actions within their service. Slack will also inform about any data breaches, Slack is analyzed by external party roles and data within a Slack environment will not be used or looked at without given permission to Slack employees by the user of Slack services. (Slack 2017b). These and other security features are also provided in Microsoft Teams which can be found in chapter 3.4 Office 365 and safety.

The biggest difference between Slack and Microsoft Teams is that in Slack you have a workspace with several channels (FIGURE 17) in Microsoft Teams you have several teams with their own channels (FIGURE 11). Slack provides possibility to integrate apps instead of Connectors, but the function is almost the same in Slack as in Microsoft Teams. However, Slack does not provide possibilities to add tabs to show data like in Microsoft Teams (FIGURE 13). Slack also provides the possibility to use own built apps and to register them. Bots are also a

part of Slack and the functions are similar to the functions within Microsoft Teams except that they have their own bots. Microsoft Team's T-bot is replaced with Slackbot that exists to help you with functions within Slack. A feature that Slackbot has that T-bot lacks is that it will give recommendations and tips within a channel without you even asking. Slack also provides the possibility to hold online meetings including content sharing up to 15 people (only for paid plans or else it is only possible to have meeting one-one) or to add an application that provides this feature such as Google Hangouts if preferred. That means that every time a Google Hangouts meeting should be held you mention Google Hangout (/hangout) in the specific channel that the meeting should be in (Bettercloud monitor 2016; Slack 2017c).

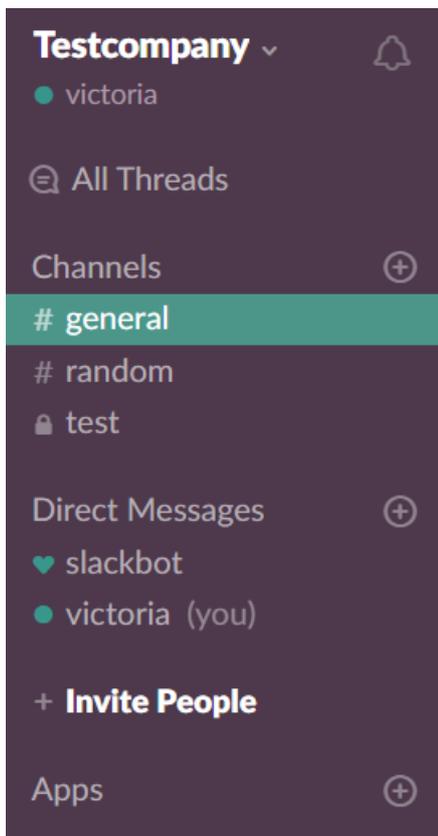


FIGURE 17. Slack workplace

The most important feature is however how files are stored within Slack compared to Microsoft Teams, Microsoft Teams files are as mentioned stored in SharePoint and in a tab that easily can be accessed. Files in Slack are saved in the environment (click on more items and choose files) and all files shared within the workspace can be found in the same place. The number of files that can be saved within a workspace is based on which plan the user has purchased, 5GB per workspaces comes with the plan "Free", the plan "Standard" includes 10 GB per member, the plan "Plus" includes 20 GB and the Slack Enterprise Grid include 1TB per member.

That means that files either need to be deleted or one needs to upgrade the plan within Slack if the limit is reached. (Slack 2017d). Slack also provide the possibility to share files from different cloud storages or file management applications such as Google Drive, files shared from Google Drive can be edited within the workspace in Slack simultaneously by several people and Slack will also give a notification if one's files if edited by someone else. It is also possible to create new Google docs that automatically are saved in Google Drive but to be able to use Google Drive within Slack you first need to download the application from the Slack App directory. (Slack 2017e.) Microsoft can provide this solution already with their own products (Microsoft Office, OneDrive and SharePoint) and without any need from third-party integrations.

Slack also provides the possibility to grant access for guests as Microsoft Teams. Slack demands that the guests added should use a paid plan and guests can either be added to only one channel (single-channel guest) or several specified channels (multi-channel guest). Within a workspace a multi-channel guest will cost as much as any other user of the Slack service, single-channel guests are free, but one can only add five guests per paying user. The features that the guest can access is based on if the owner gives access or dependent on if the guest is a multi-channel or single-channel guest. Neither of the guests are however able to create public or private channels (multi-channel users can be granted to create private channels) or rename, delete or archive a channel. Guests cannot remove people from channels or create apps or change the existing apps. Guests also only have access to the files and historical messages within the channel that the guest have access too. Slack also provide to set a limitation on for how long the guest can be a part of the channel. (Slack 2017f.)

The author also decided to compare the Slack mobile application with the mobile application for Microsoft Teams to some extent, the Slack mobile application works with Android, iOS and windows phones (Slack 2017g). Slack's mobile application felt a lot more compact and it was also harder to navigate and find information within the application but that is all personal preferences. Unfortunately, the author only had access to the free version of Slack and it was therefore not as easy to test, but based on the testing made almost every feature in the desktop version could be found in the mobile version but it took some time to find all the features within the application.

After testing both Microsoft Teams and Slack there are some smaller functions within Slack that is better than in Microsoft Teams but overall is Microsoft Teams the winner based on all

the features that comes with Microsoft Office 365. The aim was also to provide a solution that decrease “information islands” and Microsoft Teams together with other tools within Microsoft Office 365 teams makes that a lot easier to a pretty low price. Slack together with Google Suite might give a similar experience but the price will be much higher than if one chooses Microsoft Office 365 which is a complete solution already compared to Slack that more or less can be defined as a stand- alone service or product. However, Slack includes features such as the possibility to share data between channels which Microsoft Teams do not. It is also possible to choose that Slack will remind you about a specific message within a period of time, chosen by the user which is something that Microsoft Teams also lack. However, not all features within these collaboration tools have been studied since the focus has mainly been on the big picture and not all the small details and functions within the tools. These kinds of comparisons are also hard to make since both Microsoft Teams and Slack are updated with new versions all the time and some of the mentioned problems or features in this thesis might even be irrelevant at the time that it is presented during the final presentation of the thesis.

5.2 Microsoft SharePoint

SharePoint is meant as a platform that helps organizations share content that is needed by the whole organization or the members that have access to a specific site on any device needed. SharePoint is like a platform that lets one share videos, files, applications, news within an organization or information that the whole organization easily can take part of, customer data or create lists or tasks (FIGURE 18), the information shared is based on the needs by the users. SharePoint is often used as a company’s intranet meaning that it is used as the company’s own internal and private network that only contains relevant data for that specific organization.

A SharePoint site can come especially in handy when important information need to be shared if the employees within the organization are widespread. SharePoint sites can also be used for specific projects, departments or teams, a SharePoint team site is for example created every time when a new team is created in Microsoft Teams which can be used for further collaboration within the team and information that shouldn’t be forgotten can be added here. The team site can come in handy when there is information that need to be shared but should not drown in one of the channels created in Microsoft teams, this information could be added on the first page of the team site. SharePoint is also integrated with other Office 365 tools than Microsoft

Teams such as Yammer, Planner, Outlook or OneNote which will increase an organization or team's productivity. Microsoft flow, which can be read more about in chapter 5.4 Microsoft Flow, can also be used together with SharePoint to create workflows that happen automatically. (Microsoft 2017t.)

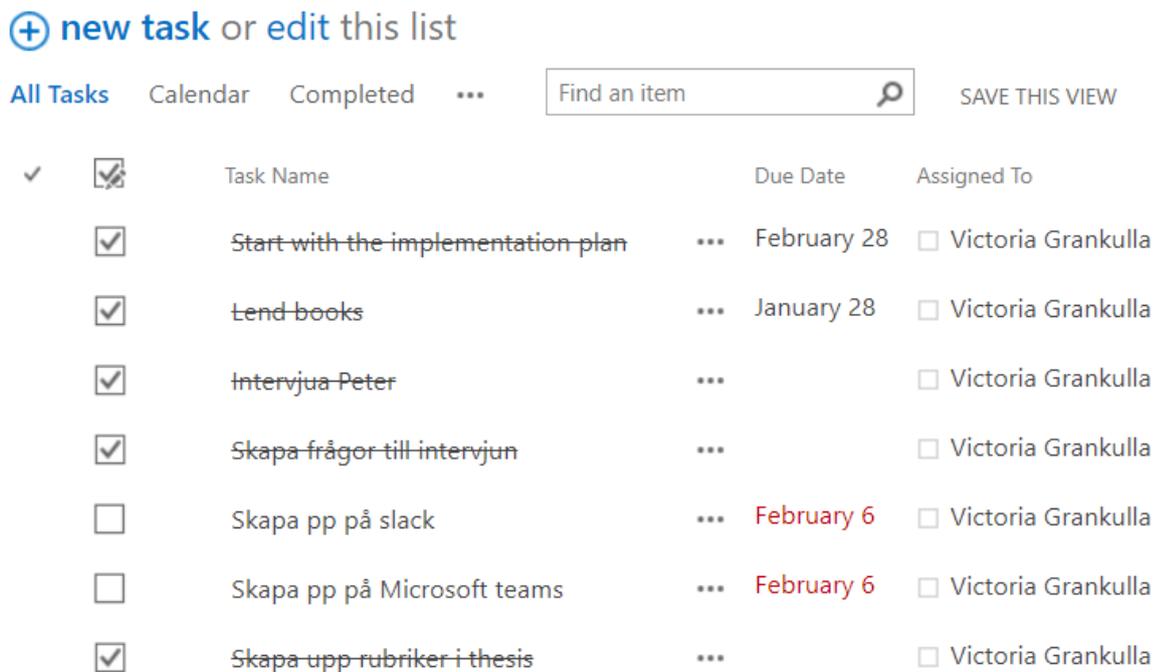


FIGURE 18. SharePoint list

If SharePoint is opened from the Office Portal one will first open the navigation page which shows all the SharePoint sites that one is following and suggested SharePoint sites within the organization. Microsoft Admin center also lets the administrator keep track on every SharePoint site and site collection that exists within the organization. (Zelfond 2016.)

Since SharePoint allows users to create task lists and shows a timeline on all the specific tasks created did the author decide that all the tasks within the process of writing the thesis would be created in a SharePoint site. However, when the SharePoint application was downloaded for the phone it soon became clear that the application mainly could be used as a read-only application. There was no possibility to create tasks from the mobile phone which was a huge drawback since the author often used the mobile phone to collect new information for the thesis. Therefore, was the decision made to use planner instead that easily could be used from the phone or by sending an e-mail to that inbox that was related to the flow that automatically

created tasks in planner, see chapter 5.4 Microsoft Flow. At that point the author decided to use the SharePoint site mainly to add important files needed within the process of writing the thesis. However, it was even easier to just add files to a channel in Microsoft Teams since that automatically saved the files added to a SharePoint team site, the only problem was that it was not possible to connect an already existing SharePoint site to a new team in Microsoft Teams and the author ended up with two SharePoint sites, see chapter 5.1 Microsoft Teams compared to Slack.

5.3 Microsoft Planner

Microsoft Planner is a tool that can be used for managing tasks within the Office 365 and the author decided to use Microsoft Planner as the tool to manage all the tasks during the process of writing the thesis. Microsoft Planner lets you create a plan and each plan contains buckets that one can choose to name (Microsoft 2017u), in this case the author decided to name the buckets to “To do”, “Ongoing” and “Done” (FIGURE 19). Tasks can easily be added to each bucket by clicking on the “+” and fill in description, deadline and assign the task to the correct person (FIGURE 20). One can also click on the created task to add more information if needed such as a start date, status of the task (progress), checklist, attachments or a comment (FIGURE 21). A symbol will also be shown on the task if a comment has been made on the specific task which makes it easier for people to keep track on new comments.

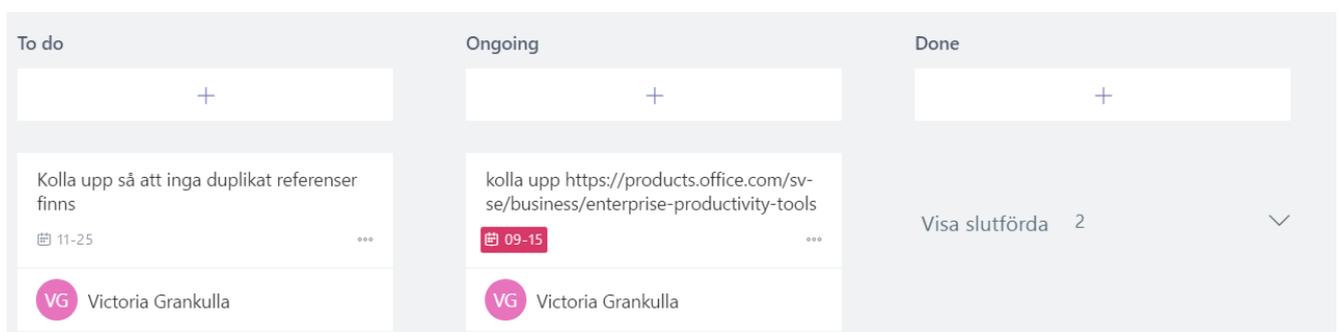


FIGURE 19. Microsoft Planner Plan

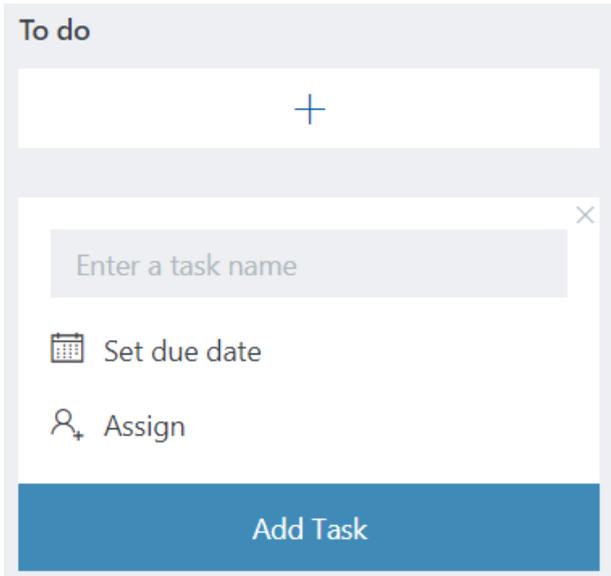


FIGURE 20. Microsoft Planner task card

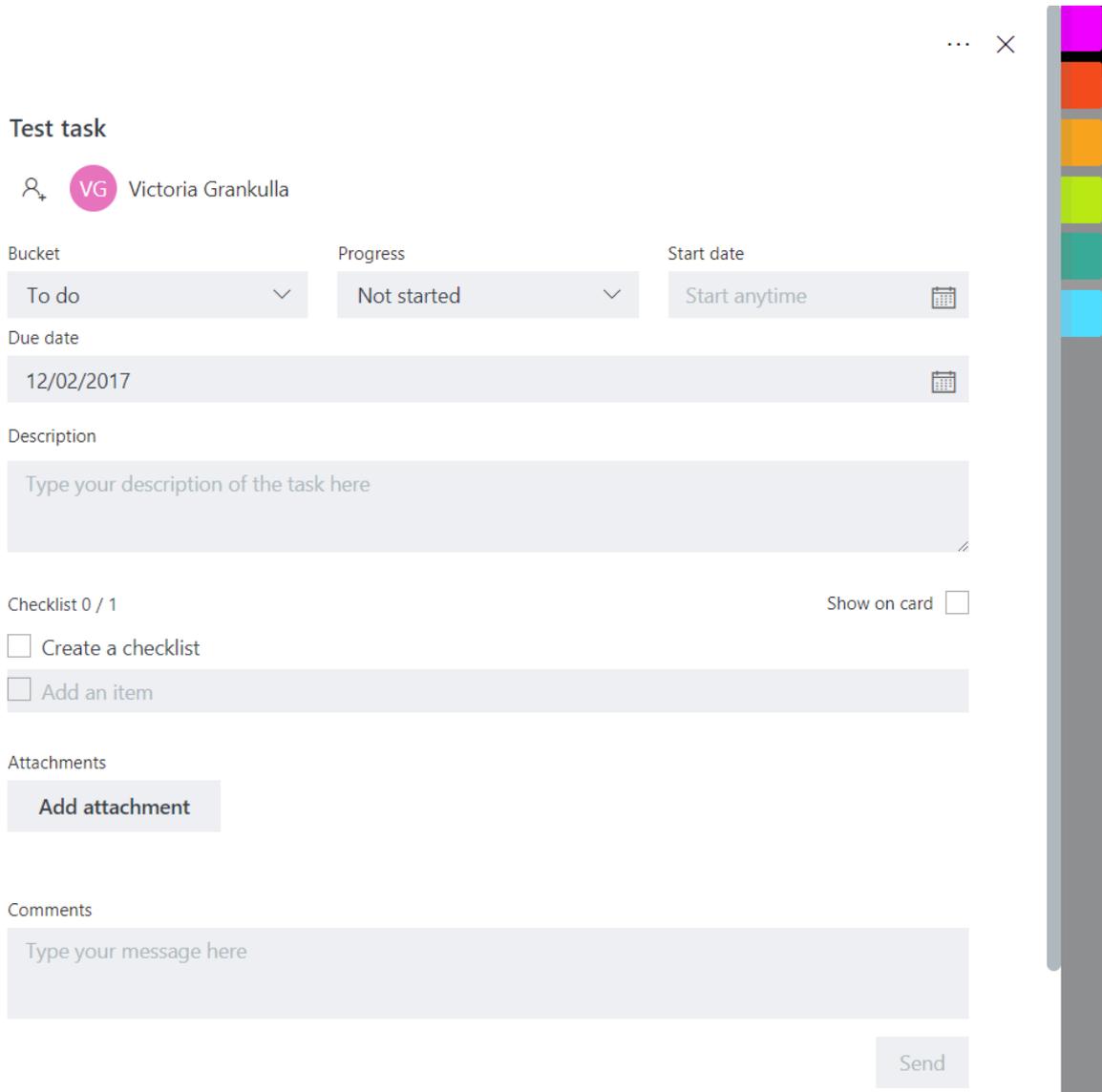


FIGURE 21. Microsoft Planner task

Microsoft Planner also makes it possible to choose the priority of the task by using colored labels (FIGURE 22). The tasks can also easily be moved from one bucket to the other or assigned by the help of drag and drop. One is also able to receive an e-mail about answers to a comment one has made on a task if the user decides to follow the plan (FIGURE 23). Planner also allows a user to receive e-mail notifications when the progress on a task changes (Microsoft 2017u).

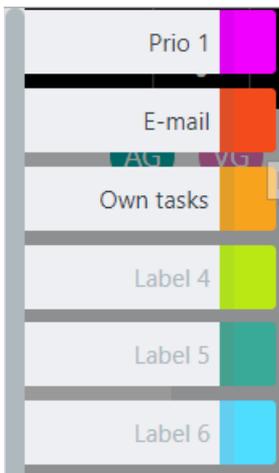


FIGURE 22. Microsoft Planner priority

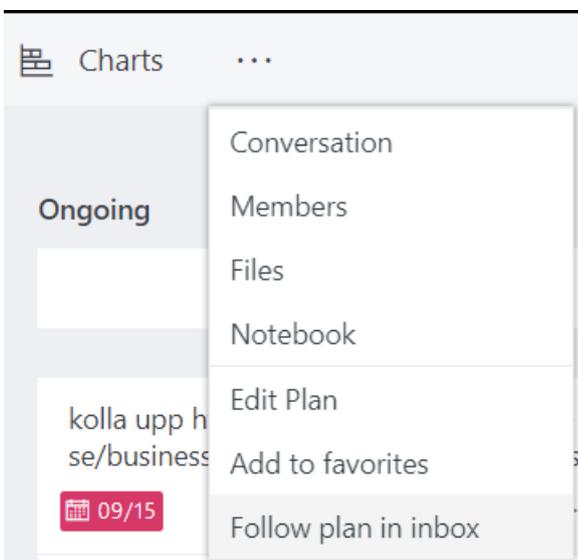


FIGURE 23. Follow plan

Another great thing with planner is that it helps one keep track of its progress with charts and tables (FIGURE 24).

To be able to have everything on the same place the author also decided to add the Planner Plan “Examensarbete” to the same Office 365 group that was connected to the team in Microsoft Team that the author used during the process of writing the thesis. The Plan was added as a new tab, tabs can be read more about in chapter 5.1 Microsoft Teams compared to Slack, which made it easy to access within Microsoft Teams and decreased the need to have several applications open on the same time.

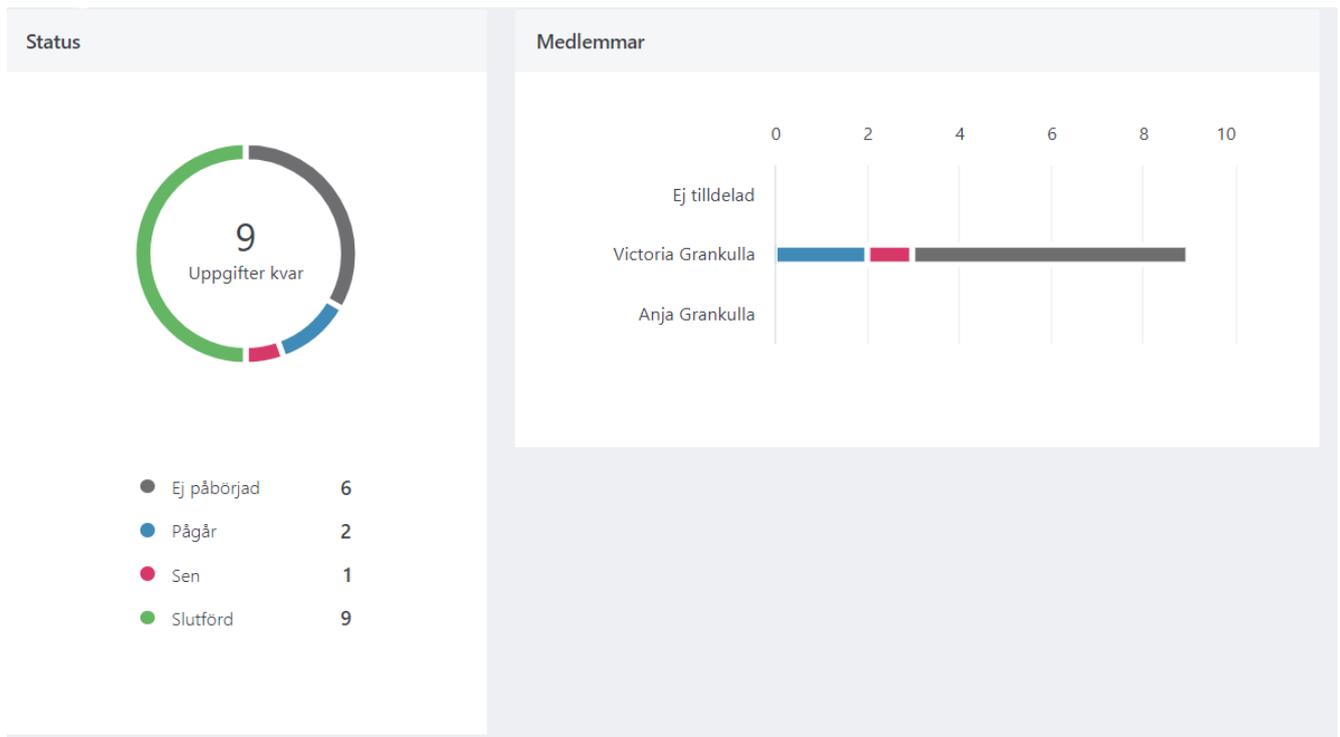


FIGURE 24. Microsoft Planner chart

5.4 Microsoft Flow

Microsoft Flow gives the possibility to create automatic workflows by making it possible for Office 365 tools and third-party tools to communicate with each other. Flows can be created to automate manual processes such as creating a new task in planner from a received e-mail, creating leads from tweets in Microsoft Dynamics CRM which is an ERP system to manage CRM processes or automatically save Office 365 e-mails to OneDrive. These are just a few of all the already existing Microsoft Flow templates that can be used by a subscriber of Office 365. It is also possible to create flows that ask a specific person to approve an action such as approving vacations or creating notification flows for reminders. (Microsoft 2017v.)

As part of the practical part of the thesis the author decided to try out one of the Microsoft Flow templates. The template chosen was called “Create planner tasks for Office 365 emails and auto-reply” and it basically created a new task in planner every time a new e-mail arrived in the specific e-mail box that was chosen by the author and when the task was created it also auto replied to the sender. This specific flow was chosen since it would allow the author to only use planner for all the tasks without the need to open Outlook which would make the goal to only use Microsoft Teams in the process of writing the thesis even closer. The flow was triggered every fifth minute which meant that new tasks was created every fifth minute if there was a new e-mail in the inbox. One also had an own page in the Office 365 portal that shows all the active or inactive flows that one has, where one also can edit the flow (FIGURE 25).

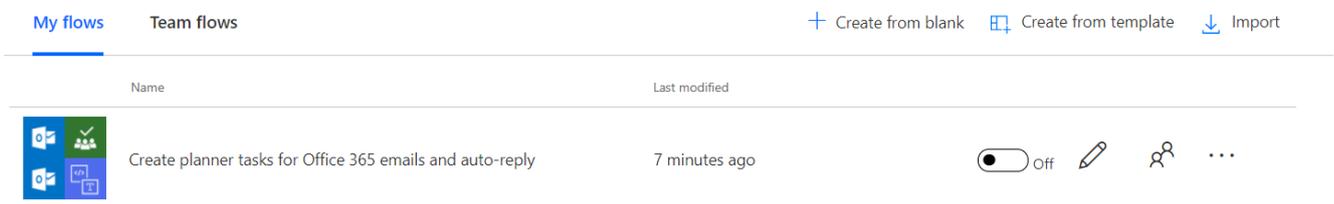


FIGURE 25. Microsoft Flow

For the most part the flow template worked properly but during the time it was tested several problems occurred. It happened that the “authentication” of the e-mail address was lost which meant that you had to check that now and then if tasks from e-mails no longer were created in Planner. The author found this really disturbing since there was no warning about that the flow had stop working instead it just stopped which is unacceptable when it comes to handling a process within an organization. It also happened that the flow for some reason broke and one had to create the flow from scratch again. Another disturbing thing was that if the flow failed to run for some reason such as that information was missing from the e-mail, it stopped the whole flow even if e-mail with correct information came in after the e-mail that the flow failed to create a planner task from. Sometimes it also took a lot of time to investigate why the flow had failed which the author had time to investigate since it was part of process of writing the thesis but for an employee to start investigating the problem besides other tasks during a working day would have been too time-consuming. It also makes the flow seem unstable and not trustworthy and the author would therefore not use the flow within a critical process. However, a positive thing was that a notification was sent as an e-mail if the flow failed to run.

6 THE RESULT OF THE PRACTICE-BASED THESIS

Since avoiding “Information Islands” is part of the aim with this thesis it was crucial that the communication or collaboration tool chosen would not create them. Microsoft Teams became a subject of interest because it promises a chat-based solution integrated with other Office 365 tools, integration with third-party tools and because the commissioner Nooga Oy Ab already were using Office 365 to some extent. Microsoft Teams also makes sure that files shared within teams and in different channels do not get lost but saved in a SharePoint team site which allows people to easily access the files later. It also gives the possibility to share the SharePoint site to people that are not part of the team in Microsoft Teams which gives accessibility to necessary files and it decreases the numbers of “information Islands”.

However, even if Microsoft Teams have great opportunities it feels like it is not really there yet. There are a lot of inconsistent behavior between Office 365 groups and Microsoft Teams that causes a lot “Information Islands” which preferably would be avoided. The inconsistent behavior between Office groups and Microsoft Teams is interesting since Microsoft Teams are said to be built upon Office 365 groups. If a Microsoft Team is created on an existing Office 365 group one would expect that already existing files, OneNote and SharePoint site would follow with but instead it creates an entire new SharePoint team site, tab for files and OneNote. In the end that means one will end up with two different SharePoint sites and if you want to access the files in Microsoft Teams from the already existing SharePoint site one need to create a new tab which will show a view of the files, example Examensarbete (Thesis doc) (FIGURE 13). That means that files from the team with corresponding channels in Microsoft Teams will be saved in one SharePoint team site and on the same time the Office 365 group will have an already existing SharePoint site with files that has been saved there from before. That also means that one has already lost the battle against “Information Islands”. The only way to avoid this problem is to either create an entire new team in Microsoft Teams that also creates an entire new Office 365 group or to move the existing files, SharePoint and OneNote content. However, both options are very insufficient if you already have existing Office 365 groups that have been used for a long time. (Strant 2017.) The number of team sites created with every Microsoft Team will also become a problem in the end if several teams are to be created in Microsoft Teams. It will become hard to keep track of and manage all the SharePoint team

sites created including the connected Office 365 groups. Microsoft Teams has great opportunities to become a solution for “Information Islands” since you are able to connect almost any application or tool that are needed by a team and files shared within the collaboration tools are also stored in an accessible place. However, Microsoft Teams seems to have communication problems between departments or “Information islands” of their own since there still are a lot of inconsistent behavior between Office 365 groups and its tools.

6.1 The commissioner

The commissioner Nooga Oy Ab is a digital accounting firm located in Pietarsaari. Nooga Oy Ab was established 1.1.2017 by a couple of business owners with over ten years of experience within the business world. Nooga Oy Ab was founded to provide more added value than a traditional accounting firm and to digitalize/ digitize financial management/administration since the founders of Nooga Oy Ab found that the accounting firms on the market today did not provide them with what they needed. Nooga Oy Ab's goal is to help companies keep a better overview over their economy with the help of digital accounting, payroll management and to provide reports that give value. Nooga also provides service such as financial consulting, budgeting, controller services and financial strategies. (Nooga 2017a; Nooga 2017b.)

Partners are A-zeta Oy Ab, A Accounting Oy Ab, Sebra Consulting Oy Ab, Monevo Oy and Business Insights Finland Ab. A press release that was released 6.7.2017 also confirms that Nooga Oy Ab has merged with Ekonovia, an accounting firm founded 2009, as part of Nooga Oy Ab's growth strategy. Nooga Oy Ab acquired Ekonovia's accounting and payroll operation which enable a much larger competence/knowledge base to give even better service. (Nooga 2017b.) Nooga's workforce includes bookkeepers, payroll, advisors of economy and the digital aspect of the company is a digital accounting system. The accounting system helps with invoicing, purchase invoices and receipts.

6.2 Recommendations

The Internet creates efficiency, removes distances, creates speed and transparency which are the key elements in how one understands the digital changes (Gilan & Hammarberg 2016, 49).

These elements need to run through the digital tools or solution that a company choose to go with therefore has these elements been considered during the research and the practical work.

The most important consideration that need to be made before any new tool is implemented is whether it will solve a problem or need within an organization. Therefore, is the first recommendation by the author to consider what needs the commissioner has when it comes to communication. Microsoft Teams is a great tool if a company want to move most of their conversation within teams from e-mails to a chat-based solution, but it might seem unnecessary if most of the conversation still will be made via e-mail. In case most of the conversation will be done via e-mail it might be a better solution to create a Yammer group that includes a mailbox, SharePoint, OneNote and Planner. Yammer could in that case be used as a communication channel to inform employees about changes or news within the organization with larger groups of people. With that said is the author's first recommendation to consider the needs when it comes to communication within the organization.

The author's second recommendation is a chat based solution by using Microsoft Teams that provide an efficient collaboration between team members, especially if someone is working outside the office. Microsoft Teams would also provide an environment where the commissioner could connect other tools used during a working day such as a helpdesk ticket system or other Office 365 tools. The commissioner would also get a better control of files shared between team members instead of that the files can be found in e-mails conversations, computers or in cloud storages, it doesn't require that files are saved manually either instead Microsoft Teams automatically saves them to a team site in SharePoint. However, as earlier mentioned every team created in Teams will have their own SharePoint site that cannot be connected to a main SharePoint site which makes it a lot harder to keep track on all the team sites, this should be considered carefully before Microsoft Teams is implemented. SharePoint team sites that someone follow will however end up on the navigation page (first page when one launch SharePoint). The team sites can also be shared to people that need access to the files but not necessarily need to be a part of the team in Microsoft Teams.

If the commissioner decides to proceed with a chat based solution by using Microsoft Teams, the author also recommends that a security group is created that manage who in the organization that should be able to create Office 365 groups and teams within Microsoft Teams, see chapter 3.3 Office 365 groups. It is also important that the commissioner have specific policies

or routines on how Office 365 groups should be handled or used. Policies and routines keeps people working towards the same goal and on the same track. The recommendation is also to check if tools that are used already can be connected or added as a tab to Microsoft Teams. It is important to keep in mind that an accounting firm often are dealing with a lot of sensitive business data such as personal and other privacy concerned data. This is something that the author has been taking into accounting during the research and it is therefore recommended to consider what information can be stored in the cloud and only use Microsoft Teams in those cases when it is safe to use. Sensitive data such as personal information or other privacy concerned data should not be shared within Microsoft Teams.

The recommendation to use Microsoft Teams as a chat based solution instead of Slack is based both on that the commissioner should have access to Microsoft Teams already which causes no extra cost and compared to Slack it also provided a better solution on avoiding "information Islands". However, it is important to keep in mind that almost no solution is perfect but to have as much knowledge as possible about a product or service is a great way to start before an organization decides to implement it. The author has tried to present both negative and positive aspects of Microsoft Teams to make it easier to decide whether Microsoft Teams is something the commissioner want to proceed with or not. Office 365 also includes a lot more digital tools than presented in this thesis and the author therefore recommend the commissioner to investigate other Office 365 tools to, which could be used within other processes for other purposes. Further research on the collaboration or communication tool Stride by Atlassian connected with Atlassian's service desk system Jira would also be important to investigate further as part of the support process.

7 CONCLUSION

This chapter will include some conclusions and thoughts based on the content in this thesis. The conclusions and thoughts are based on the author's own opinions made during and after the research was made. The freedom to work from anywhere, at any time and on any device, is something that the author has thought a lot about, both during spare time and during the process of writing the thesis. The author often finds people talking about how digital changes lead to more freedom since it gives the opportunity to work however one wants, from anywhere and at any time. Ironically, in the end it will lead to that people always stay connected and accessible which means that one never fully will be able to just go home and be done with work for today. However, as earlier mentioned Schwab (2016) said that digital changes will affect people's lifestyle including how people balance spare time and work.

A lot of people also mentioned the need for younger employees and that this will be a preference in the future. However, the author strongly believes that there needs to be a combination of both, a combination of sharing working experience that only can be obtained through years of learning together with that the younger employees are used to using digital tools. Another thing that became clear is that the ability to program will be a must in the future, already during the research the author realized that a lot of solutions, such as Office 365, provided by companies today offer the possibility to alter some aspects (connectors within Microsoft Teams) within the solution to better fit an organization needs by the help of programming.

The aim with this thesis was to give a solution on how to avoid "Information Islands" by avoiding disintegration between communication tools and to avoid loss of important business data. The author decided to mainly focus on the solution Microsoft Office 365 and its tools since the commissioner already used it to some extent. Microsoft Office 365 also promised a lot of different digital tools that were closely integrated with the help of Office 365 groups which in the end would lead to less "information islands". The objective was to use the digital tools that were part of the Microsoft Office 365 within the process of writing the thesis. Digital tools such as Planner, Flow, SharePoint and Teams were used as part of the process and integrating these tools in the process made it a lot easier to keep track on all the information and data that was handled during the process. Microsoft Teams also kept all the digital tools used in the process in one place which meant that the author had access to files, tasks and conversations in one

single place. The author got an insight in whether Microsoft Office 365 would provide a solution that would lead to less “Information Islands” by using the digital tools during the process.

The author was given a free hand finding a solution for avoiding “Information Islands” which meant that the author needed to start by deciding which direction should be chosen. The first decision made was to only focus on communication tools and how these create “Information Islands”. The second decision was to decide which digital tools the focus should be on and after some research did the decision fall on Microsoft Office 365. The process of deciding the focus was therefore a huge part of the result and it is often the foundation, in this case which direction to focus on, of a solution that takes longest. Another aspect of the result was the performance of Microsoft Office 365 based on research made both theoretically and by practical work. The result of the research and practical work of Microsoft Office 365 was that the solution has the potential to become a great solution for our modern or digital workplaces since the solution includes a lot of different tools for different needs that a company might have in our digital world. However, the author also found the disintegration between different departments within Microsoft disturbing, the tools offered in Office 365 often did not complement each other very well and the tools felt disintegrated. This made the whole solution Microsoft Office 365 seem a little bit divided.

The recommendation was therefore that the commissioner should focus both on the negative aspects and positive aspects found during the research if the decision to go forward with any of the tools was made. The recommendation was also that the commissioner should consider the needs that exist within the company before any tools are chosen.

The author has always been interested in how digital changes will affect our world, both on a human and company level, and it was therefore very educational to read more about it. The author also spent a lot of spare time on researching the subject and it felt natural to choose a topic that was already an interest. The author has also wanted to learn more about Microsoft Office 365 and the knowledge gained is something that the author will have benefit from in the future.

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APPENDIX 1

A BRIEF HISTORY OF THE DIGITAL REVOLUTION

