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DIGITALISATION OF BOOK ORDERING PROCESS

Case company: Nibelungen Buchhandlung Bookstore

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The book market is being constantly developed and transferred into the online environment. However, some bookstores still exist in a physical form only and are not familiar enough with the advantages of digitalization. In this way, Nibelungen Buchhandlung, the case company, faced the need to bring digital changes to its book ordering process.

The main aim of this research was to identify the costs and delays of the current book ordering process, to define the functionality of the "perfect" state and to find a solution according to the results. Qualitative research methodology was used with a specification of a case company method. The data was mostly collected from the open sources and by interviewing the store's management.

As a result, three service providers were found. Their solutions met the defined requirements. After the comparison of the provided functionalities, the company called Libri was identified as the best option. The steps necessary for finding the solution were also described.

CONTENTS

FOREWORD

SYMBOLS AND ABBREVIATIONS

BPMN	Business Process Model and Notation
IA	Information Architecture

FIGURES AND TABLES

FIGURES

TABLES

1 INTRODUCTION

1.1 Background and Motivation

Living in a modern digital world with high-speed changes of novelties and trends became a standard. The internet plays a significant role in life of people in 2020. According to Statista, the concept called Global Digital Population reaches 4,45 billion active Internet users in January 2020 (Klement 2020). The author is not an exclusion, but an average user of social networks, media and internet in general. Additionally, the majority of companies focus on the transfer of their businesses into digital form as well. In this case, there are over 800000 online stores in Europe (Ecommerce News 2017).

Customers, in turn, were influenced by digital globalization as well. According to the statistics published by Thinkwithgoogle, 63% of shopping occasions begin online. In other words, it does not matter, where the purchase is done in the end – online or offline in the store. The customer's journey begins online when they research the product and become influenced by the company's marketing skills (Oberlo 2020).

However, not everybody follows the trends, and being up to date over time becomes a challenge especially for small-size businesses with limited recourses and opportunities. Thus, the traditional bookstore Nibelungen Buchhandlung, the author used to go to, is an example of outdated business that has faced the need to evolve in order to be able to compete on the market. As a result, the author felt personal interest in the problem and decided to participate in the store's transformation.

1.2 Brief Description of the Case Company

The research area of this Bachelor's thesis is business processes within a bookstore called Nibelungen Buchhandlung, which translates from German as Nibelungen bookstore. The store is located in the heart of Germany in Frankfurt

am Main near Nibelungenplatz corner, which reflects the name. The store consists of one room with a book range and one office. The store's owner and, in addition contact person while writing the thesis is called Arno Juhre, who has worked together with his wife and run the store since 1994. (Juhre 2020.)

The range of books in Nibelungen Buchhandlung is not wide. However, it is possible to order a book to the store with a next day delivery, which compensates for the lack of physical books. Home next-day delivery is also possible, which is implemented by the store's owner himself. Customers can make an order by calling, directly from the seller in the store, or via contact form on the website. (Nibelungen Buchhandlung 2014.) The other offered services are sorting of additional deliveries, bookbinding work and delivering copy paper.

1.3 Research Scope and Objectives

One of the main concepts of the research to be defined is digitalization, a fundamental force, which completely changed the way of relationships between businesses and customers. After the Fourth Industrial Revolution, companies need to adapt to the fast-changing business world and to gain such abilities as agility, speed and flexibility. However, the main feature of digital transformation is to focus on placing up to date and advanced technologies into provided services and products, to manage, control and generate value from the digital data. In other words, digitalization is a process of moving from traditional business to a digital one by the means of integrating technologies. (Parida 2018, 23-24.)

The main part of the research is to find a digital solution for a process of book order. It includes the analysis of "perfect" future and current situations. Then the strengths and weaknesses of the current state is described. As a conclusion, the assessment criteria for the search for a better system is identified, and the most suitable solution is chosen.

The research does not cover a real implementation, an integration of the new process or a redesign of the store's website, nor all the actions that can lead to

the real changes. The research related to the online shop's development does not include a deep programming analysis and coding.

The reason of doing the research is closely related to the Nibelungen Buchhandlung's need to increase the sales and customer awareness, as it was said by the store's owner while a research objectives discussion (Juhre 2020). Digitalization of the book ordering process can become a first step in the chain of the growth, improvement and modernization of the store. In this case, the first and main objective of the research is to reach the minimization of the employer's time being a mediator between a customer and a book, in order to use this time for an any kind of the store's development. Consequently, it will lead to the second objective which is having a higher chance to survive on the big bookstore market, which constantly becomes more digital, customized and, therefore, more preferable by the clients. The last but not least objective is to minimize the communication between a client and a service provider, specifically using phone calls to order books. One of the Forbes studies has noted, that the current generation of Millennials is not used to make calls but prefers emails (Alton 2017). Moreover, such a concept as the Phone Anxiety exists, which is followed by the feeling of a panic while a need to make a call (Romm 2017). As a result, since the problem is modern and common, a part of potential clients may lose the trust and confidence in the store as a service provider when facing the need to communicate.

However, it is to be noted, that since the size of a business is a small one, expenses should be as much affordable as possible. Nibelungen Buchhandlung's management does not have to follow the results of this research but is free to use it in its own purposes. Also, such accurate data as income, expenses or profit will not take place in the report on the owner's request.

1.4   Structure of Thesis

This research work consists of eight chapters and bibliography. The first chapter contains information about research's background and motivation, case

company's description, research scope and objectives and thesis's structure. Second chapter contains research problem's description, research questions and methodology. Third chapter includes information about prerequisites, targets and expected outcomes of digitalization as transformation method. Chapter four describes the expected case of book ordering process and such parts of it as balance between online and offline stores, customer attraction, book discovery, payment and delivery processes. Fifth chapter consists of information about the current state of book ordering process and detailed description of the roles of customer and the store itself in it. In the sixth chapter the author analyses costs and delays of the current state. Chapter seven contains the assessment criteria for the comparison between three solution providers, the chosen option and steps to go through before the solution could be taken into use. The last eighth chapter contains conclusion of the research and is followed by bibliography with a list of all the used sources.

2 RESEARCH PROBLEM, QUESTIONS AND METHODOLOGY

2.1 Research Problem

The research problem of this thesis is defined below by answering the leading questions, as it is proposed by Shona McCombes in her article for Scribbr (McCombes 2019). The questions are: "Where and when does the problem arise?" and "Who does the problem affect?".

Answering the first question, the problem announces itself every time, when a customer is about to order an item from the store. He/she expects to follow a common procedure of order process, which is "choose – add to the cart – pay". Instead he/she faces the absence of online store at all and may get confused by figuring out, how does the offered service work.

Mainly the problem affects store's owner and customers. Since the orders are being made by the phone or email, the owner needs to be ready to proceed them by reply, confirmation and order an item himself, which takes most of the working time. Customers get affected in a way of not getting the expected service which leads to the low customer satisfaction and, in turn, affects the business.

2.2 Research Questions

To be able to achieve the research objectives, two following research questions were identified:

1. How and why should the manual book ordering process in Nibelungen Buchhandlung bookstore be digitalized?

Deep study of this question will consist of three parts: current state research of the book ordering process, identification of suitable development objectives to be done and proposal of development plan. All together the results will provide several solutions, that could be applied after the second question is taken into

consideration.

2. What are the assessment criteria while choosing the most suitable solution?

The second question will be discussed in the last parts of the research when both future and current book ordering processes will be described. According to discovered information concerning delays of the current state, the list of missing features will be created, which will be the main indicator for the future software search. That list will contain all the assessment criteria categorized as "must have", "should have" and "nice to have" functionalities.

2.3   Research Methodology

There are several types of research, but the one which will be used in the current situation is qualitative, since the data is not in the meaning of numbers but is related to or involves quality or kind (Kothari 2004, 4). Therefore, qualitative research focuses more on words, people's experience and helps to understand social life through the study of targeted population (Mohajan 2018, 23-24). In the current case, the analysis of modern trends and expectation of Nibelungen Buchhandlung's management will be a basis of planning a new system.

The research method to use is a Case study method, since it is the most suitable method for studying cases with "how" and "why" questions while using qualitative research methodology (Yin, 2003, 2, 5-10). Also, it might be important to note, that "…case study is not a methodological choice but a choice of what is to be studied. By whatever methods, we choose to study the case." (Stake 2000, 435). It means, that the strategy would begin by exploring the current process of book order in Nibelungen Buchhandlung and followed by the testing of the emerging findings in wider survey-based research (Hartley, 1994, 215; 2004, 326-327). After that, the results will be compared to an improved digitalized system and the conclusions will be made.

The data will be collected by such techniques as interviews with participants, observations and artifacts (Polkinghorne 2005 137-145). Additionally, open sources and suitable up to date literature will ensure proper understanding of technologies to be provided to the case company. It is important to have more than one source of information to increase the reliability and to minimize the bias, according to the methodology or Triangulation (BetterEvaluation 2018). Moreover, the author is an active observer of the case because of assuming the role of a usual customer of the store. However, it may be difficult not to become too involved and to lose objectivity, which could lead to collecting less valid data (McLeod 2015).

3 DIGITALIZATION AS TRANSFORMATION METHOD

3.1 Prerequisites and Targets

As it was discussed earlier, digitalization is going to play a crucial role in the book ordering process transformation. In this chapter digitalization is introduced in more details, including necessary prerequisites which could serve as a basis of successful outcome of the work. Additionally, such related topics as wisdom manufacturing and servitization are described in order to demonstrate a whole picture of the idea of digitalization and to list the main strategies to be taken into account during research.

Digitalization is a process of moving from traditional business to a digital one by the means of integrating technologies, as mentioned above. However, it is important, that in addition to a high motivation and available modern technologies, necessary prerequisites exist. These conditions should provide an opportunity for businesses to start digitalization process and could be granted by the government support. One of the examples is Sweden, which presented its own digitalization plan with five strategic areas. (Parida 2018, 26-27, 35.)

Additionally, by following the idea of "wisdom manufacturing", only the tandem of computers and humans could lead to the skill revolution and, therefore, smart and sustainable manufacturing. The last but not least idea to follow is service-oriented business model called servitization. First of all, it includes the concept of transition from traditional and basic service provision to advanced and more valuable one. In this case, combination of servitization, wisdom manufacturing and digitalization itself will lead to the whole new level of the company's lifecycle and offered products. (Parida 2018, 30.)

3.2 Expected Outcomes

Since the technologies are going to be integrated more and more into companies' workflows and processes, the need in labor will be reduced and, consequently, less employees will be in demand. In this case, not only

company's environment will be changed, but also the competency of specialists will be transformed. According to Kern and Schumann, it will lead to the evolution from craftsman-like to more technical qualifications (Kern & Schumann 1974). In other words, knowledge, that employees have used and applied in traditional ways, will be integrated into smart devices in order to customize them according to the company's requirements. (Parida 2018, 29.)

If digitalization process happens in real time and immediately affects company's traditional lifecycle, its staff needs to be able to face it, accept and to start the process of adaptation as soon as possible, in order to reduce possible expenses. It means, that later on the process of education should be transformed and adapted to the skill revolution's results (Parida 2018, 30). Future employees will be taught on how to participate in and support digital organization to decrease the suddenness of necessary changes and to make people prepared.

4   MAIN POINTS AND KEY DELIVERABLES

4.1   Preconditions

In this chapter the description of desired environment and processes will be described, according to common standards and case company's requirements. To be noted that there is no perfect model or algorithm, that will work for every kind of business.

However, there are some "must have" features that should be taken into account while going digital with any type of the commercial company, such as fully functioned mobile-friendly website or an online store. Features that were required by the case company are described below. All together they create an expected outcome and description of a "perfect" book ordering process.

4.2   Balance Between Offline and Online

As it was mentioned above, 63% of shopping activities begin online. However, it does not mean that physical stores lose their necessity. By following "Bricks and clicks" business model, it is possible to achieve the synergy between traditional (brick-and-mortar) and electronic commerce (henceforth ecommerce) and to utilize the best from both techniques (Vasile & Teodorescu 2015, 102-109).

This kind of coexistence generates a more successful customer traffic in both online and offline platforms. In this way, employees from the physical store could refer customers to the online one in case if there is no specific book in the stock; at the same time, online store could refer customer to the physical store, if the needed book is already there. As a consequence, both offline and online platforms are required in order to cover as much market share as possible.

4.3   Customer Attraction and Book Discovery

Even though, working principals of the majority of businesses are analogical, there are distinctive characteristics which differ them from each other. Such

features of bookstore's functionality are customer attraction and book discovery processes, which are to be taken into account (Pettersen 2017).

Customer attraction is a comprehensive strategy of business and marketing that integrates technology, processes and all business activities around customer (Feinberg & Romano 2003). Each of online and offline platforms may use different customer attraction strategies.

In physical store the first impression of the customer is created by the showcases and bookshelves. It means, that merchandiser's job should be done thoughtfully and carefully. Online, in turn, the responsibility for the store's appearance is to be done by the web designer on the front page of the website. Compare to physical stores the visual appeal of online stores may be more important because visitors usually make their judgments about the store based on their initial impressions (Chen & Dhillon 2002). Moreover, they usually make their decisions to stay or leave the website within the first few minutes (Dahal 2011).

Another important challenge to pay attention to is book discovery. One of the ways to increase customer awareness concerning the book is recommendation. Online this process is done partly automatically by the algorithms integrated to the used software or platform. Depending on the settings, algorithms may analyze, for example, customer's previous purchases and to make recommendations according to collected data. Considering book discovery issue in physical stores, it could be done by personal recommendation of the employee or by giving an opportunity to the customers to leave feedbacks on books by using sticky notes, for example. (Pettersen 2017.)

However, information architecture (henceforth IA) of digital store may play crucial role in customer's book discovery and activity in general, as mentioned above. IA is considered as the way of arrangement of parts of something to make it understandable (Covert 2015). In the physical store the IA is implemented by carefully categorizing and manually sorting books. However, due to the restriction of the physical store, several difficulties with an information categorization may appear. For example, such way of book categorization as

genre categorization could be problematic to unequivocally implement in the physical store. One book can comply with several genres but cannot be placed on several shelves at the same time. In turn, online the book can match several genres and be shown under several categories at the same time. Therefore, intuitive user interface of online store, its structure, categorization, as well as short and logical navigations are critical to make book discovery easy and comfortable for the customer.

4.4 Payment and Delivery

Today there is many different payment methods used worldwide: cash, credit/debit card, payment gateways, cryptocurrency and other. According to statistics, credit and debit cards are still the most common way to pay (Jumpseller 2020). However, online payments become more and more popular and their variety grows as well. For example, number of Paypal users grew from 84,3 to 305 million for the past ten years (Klement 2020). It means that each customer may have own preferences concerning payment. Therefore, the company should be flexible and able to provide as many payment options as possible, considering online and offline payment. In general, offline options must include cash, credit/debit card and non-contact payment; online options must include credit/debit card and PayPal.

Delivery service should be flexible as well. It should be clearly described in the online store in order to decrease misunderstandings. Customer should see, if there are delivery fees, how long time does delivery take and other related features. Additionally, the option of self-pick-up should be available for the customers, in case he/she wants to get the book by himself/herself from the store. Therefore, in the online store should be not only option "to purchase" a book, but also "to check the availability" in the stock and "to reserve".

4.5   Summary

To conclude this chapter, the summary of all the requirements is to be done. These requirements will be the criteria, according to which the best solution will be chosen.

The expected outcome of the improved version of Nibelungen Buchhandlung should consist of following segments: fully functioned and customized online store connected to the physical one, improved accounting functionality with orders overview, availability of delivery service as well as self-pick-up. The main goal is to convert as many processes between store and customer from manual into digital as possible.

5   DESCRIPTION AND ANALYSIS OF THE CURRENT STATE

5.1   Steps to Take

In this chapter the current process of book ordering is demonstrated by creating the Business Process Model and Notation (henceforth BPMN) diagram, which is used as a global standard for process modeling (Camunda Services 2020). In the current case, there are four main entities in the diagram: customer, Nibelungen Buchhandlung store itself, Buchhandel.de, the warehouse, explained further, and a delivery company. The diagram is shown in Figure 2 in Appendix 1. Moreover, each segment of the diagram is followed by the written descriptions in following sub-chapters.

After explanation of the steps in the process, each of them is being checked against the requirements listed in the Summary of the chapter 4. If the step is contained in the requirements or follows them, it will not be changed. If the step does not meet at least one of the requirements, it will be replaced with a solution provided in further chapters.

5.2   Customer's Role in the Book Ordering Process

Customer's participation in book ordering process in Nibelungen Buchhandlung does not take a lot of time and actions. The first action included in customer's role is making an order. Nibelungen Buchhandlung provides three options for that. Firstly, customer can order a book by calling to the store. Secondly, it is possible to come in person to the store and to order a book directly there with a help of store employee. Thirdly, customer can use a form on a website, which is shown in the Figure 1 and to make an order by email. In order to cancel or modify the order all listed methods are used.

Figure 1. Contact Form of the Nibelungen Buchhandlung Website

Next time when the customer interacts with the store is the collecting of an order. There are two possible ways: self-pick-up and delivery. In both ways customer can pay with cash or credit/debit card.

5.3   Store's Role in the Book Ordering Process

The main role in the book ordering process is played by the store itself. When the employee of Nibelungen Buchhandlung receives an order, he proceeds to several wholesale websites.

First of all, he checks the overall price of the book in Germany by using databases of all the deliverable German books, for example, Buchhandel.de. After that, he makes an order from Buchkatalog.de, online store with more than 2,5 millions of titles, which could be specified as warehouse. Usually, when the store wants to collaborate with Buchkatalog.de officially, it needs to pay a certain access fee to order books online. However, for reasons of economy, store's employee calls to the customer service and makes an order as if he would be a usual customer, which is free of charge. Not very high number of clients of the store allows to make orders in this way without difficulties.

Delivery from Buchkatalog.de is a next-day one, in case an order was made before 18 PM. Therefore, books arrive to Nibelungen Buchhandlung next morning at 4-7 AM. After the customer is notified about the arrived order, it is delivered (if necessary) by the store's employee or being placed to the store to be picked up by the client. After that the payment by cash or credit/debit card is done.

5.4   Analysis of the current state

In order to simplify analysis, the whole book ordering process is divided into four parts: ordering, processing, delivery and payment. In this case, only delivery could be left in original way of implementation, since it is manual process which cannot be digitalized yet.

All the other steps, such as book ordering by the client, book order processing by the store's employer and final payment need to be improved in a way of transferring manual actions into digital ones.

6   COSTS AND DELAYS OF THE CURRENT STATE

6.1   Steps to Take

As it was mentioned in the summary of the previous chapter, such processes as book ordering by the customer, book order processing by the store's employer and final payment need to face several changes. In this chapter costs and delays within these processes as well as the requirements to the replacing solutions will be discussed. All the conclusions were made after analyzing chapter 4 with an information about key deliverables and expected outcome and chapter 5 with a description of the current state of Nibelungen Buchhandlung's book ordering process.

Additionally, another BPMN diagram with the future state of the process is shown in Figure 3 in Appendix 2. There are five entities this time: Customer, Nibelungen Buchhandlung, Online Software, Book warehouse management and Delivery company.

This version could help to visually compare the process with a current one and to show where and when the problems occur. The updated processes are highlighted with purple. Also, since the aim is to show exactly the differences between traditional and digital activities implementation, such options as book ordering by the phone/email and delivery processes are not shown, even though they remain relevant. Additionally, processes flown between Online Software, Book warehouse management and Delivery company could be illustrated partly wrong due to lack of reliable information.

6.2   Fundamental Changes

Except specific changes to be made in the processes, there is a fundamental one, that could form a basis for further improvements, which is an online store. In the current situation if Nibelungen Buchhandlung would own one, it would give customers more options on how to communicate with the store, discover books, make orders and pay. As it was already discussed, on the other side, the store itself will get such benefits as, for example, free time instead of processing

phone call/email orders. In this case, there are at least two possible ways of the system improvement. For both of them the main requirement is the ability to support an online store exploitation.

First solution is more difficult one, which includes creating an online store from the scratch and its integration into the Nibelungen Buchhandlung's website. This option will require professional programming skills or extra funds to hire a skilled person and will take more time for the implementation and maintenance. Since the store has no opportunity to afford itself any of these expenses, this solution is not an option.

However, the second alternative is to search for a platform, application or a software with an already integrated database with deliverable books which was created specifically for running online stores. This solution will rid Nibelungen Buchhandlung from the expenses listed above, and a carefully chosen platform will guarantee a high-quality and worthwhile service. In this research this alternative will be chosen and studied. In BPMN it was called Online platform.

6.3   Digital Store

As it was mentioned in previous chapters, a lot of attention should be paid at the IA of the digital store, including its user interface, structure, categorization and navigations, in order to make it attractive for customers. Usage of all of these features should be intuitive for both client and store's management implemented by its owner.

In this case, store's management should be able to customize the digital store as he wants by listing books by categories, setting up prices, payment methods, delivery options. Additionally, he should be able to see all the information concerning the orders and to manage them.

In turn, customers should feel themselves secure while making an order. It means, that such features as payment algorithms should be familiar and clear, options for feedbacks' writing and reading should be available as well.

6.4 Book Ordering and Payment Processes

Book ordering process will still begin with a customer. However, instead of making an order manually in the store, by email or by the phone, customer will be able to do it via online store.

He/she will open the Nibelungen Buchhandlung's online shop and see all the books available for a purchase. Then customer will search for a desired category of a book and/or for a book itself. If the book is available in the store, customer will be able to reserve it, in order to pick it up later or to order a delivery. If the book is not in stock, customer could order a book with a same procedure of choosing an option of receiving it.

After the book choice is complete the customer should be able to choose a payment option between online payment or cash payment. In case of online payment choice, there should be at least such options available, as by credit/debit card and PayPal. Cash payment remains traditional.

6.5 Order Processing and Delivery

After the order has been completed, it needs to be processed. As it was decided above, the new software will include database with all the available deliverable books in Germany. The solution should be responsible for all the logistics as well. For example, it could process all the current orders and prepare them all at once for a delivery. After that, the books should be delivered to Nibelungen Buchhandlung on the next day. This time limit is important because in the current situation the delivery time is exactly one day. Therefore, the solution should provide the same speed of service or faster.

As it was mentioned, the process of book delivery to the customers will remain with no changes, since it is impossible to be digitalized. In this case, after all the books arrived to Nibelungen Buchhandlung, customers will be noticed about it.

Then, depending on the requested delivery option, the order will be received and paid by the customer.

7 SOLUTIONS

7.1 Options to be Compared

In this chapter the proposals of future software will be made. By applying these solutions, the book ordering process in Nibelungen Buchhandlung could be simplified and digitalized. The process of searching and choosing the most suitable options was made according to the criteria and requirements established in the previous chapter and categorized below.

There are three German service providers that were taken into consideration: Libri, Umbreit and KNV Zeitfracht. These companies offer services related to bookstores, book retailing, selling, ordering, storing and many others. In this chapter each of these three companies will be introduced and the offered services will be reviewed. More than one option was offered in order to provide an ability to compare the variants and to increase the possibility to find the perfect one.

7.2 Assessment Criteria

In order to make a process of finding the most suitable solution easier, all the expected features were categorized into three groups: "must have", "should have" and "nice to have". In this way, the solution which meets the most "must have" functionalities are better to be chosen. Additionally, the table with all the listed features is presented below as Table 1.

Table 1. Categorization of the Expected Features of the Solution for Nibelungen Buchhandlung

Feature	Category
Implementation and customization of the online store with customer's participation	Must have
Provision of an access to the inventory information (and orders' overview, reservations, payments)	Must have
Provision of deliverable books' database	Must have

Delivery service implementation	Must have
Provision of linkable books' database to an existed online store (if no online store implementation is offered)	Should have
Online payment support	Should have
Inventory management ability (and similar digital accounting functions)	Should have
Ebooks/audiobooks' database provision	Nice to have
Bookstore's individual business plan/improvement strategy creation	Nice to have
Taking responsibility for the future online store's development	Nice to have
Taking responsibility for the customer service duties	Nice to have
Guaranteeing fixed return	Nice to have

The most important "must have" service to be provided is an ability to establish a customized online shop. Customer should get guidance and support from the provider's team in order to be fully involved into the process. After that, customer should have access to all the information concerning inventory, orders' overview, reservations and payments. Additionally, a database of deliverable books and included delivery service are required. In other words, service provider should take all the responsibility for the logistic and book delivery processes.

In case a solution provider does not offer an online bookstore creation from the scratch, its book database should be linkable to an already existed online shop, which is the first "should have" feature. Also, since the online payment feature follows the establishing of an online store, the solution should include online payment support as well as inventory management and similar functionalities which ease the accounting processes.

There are several "nice to have" functionalities, that are not necessary, but could be an advantage. For example, solution provider could offer not only physical books, but such products as Ebooks or audiobooks. Also, service could include the bookstore's support by creation of an individual business plan or

improvement strategy. Moreover, the solution could take responsibility for the online store's further development, as well as customer service duties.

7.3 Umbreit

Umbreit is an intermediate book trade company in Bietigheim-Bissingen with the ranges of assortment and book collection traffic. Its history started back in 1912, when Gustav Umbreit opend the business Süddeutsche Grosso-Buchhandlung G. Umbreit & Co., which translates as South-German Big-Bookstore G. Umbreit & Co. (G. Umbreit GmbH & Co. KG 2019.)

Today after more than a century Umbreit became a middle-size business with approximately 300 employees. It offers a wide range of services for newcomers into book business, bookstore handlers and advanced businesses. It is possible to get information about the whole process of book retail, to create a personal plan and strategy of store's opening and running, or to get advices and support in steps of bookstore's improvement. These were only some of the offered services provided by Umbreit. However, the one that is crucial for this research work is the provision of usage of book catalog data. It consists of 4 million deliverable books as well as calendars, audiobooks, DVDs, games, Ebooks and others. Catalog updates daily as well as book cover images, prices etc. (G. Umbreit GmbH & Co. KG 2019.)

There are two options of the database integration to the bookstore. The first one could be used as a linking to an already existed webshop or an ERP system to provide an access to a database via a web service interface. The second option is provision of a catalog data is a raw data delivery in BWA format on FTP server of Umbreit in order to set up own product database or to use database on marketplace. In the case of Nibelungen Buchhandlung the first option could be suitable if the online store will be created in advance. Additionally, the database integration includes UmbreitDirect delivery service, which delivers books directly to the customers. (G. Umbreit GmbH & Co. KG 2019.)

As a result, as a solution provider for Nibelungen Buchhandlung Umbreit could be useful only in case of having an online store in advance. The author left this option in case Nibelungen Buchhandlung's management will decide to create an online store independently from the book database provides. Otherwise, it is solely impossible and useless, to integrate a database of books into nonexistent webshop.

7.4 KNV Zeitfracht

KNV Zeitfracht belongs to the Zeitfracht group, which is based in Berlin and Leipzig and has more than 3000 employees. Today Zeitfracht group is involved in such areas as business areas logistics, aviation and real estate. In turn, KNV Zeitfracht provides comprehensive services for the book and media industry. The focus is on the range of books, publishing, logistics and transport, as well as other services for bookstores and publishers. The company employs around 1600 people. The administration is located in Stuttgart-Vaihingen, the logistics center - in Erfurt. KNV Zeitfracht delivers over a fifth of the goods for the German-language book market. (KNV Zeitfracht GmbH 2020.)

Compare to Umbreit, KNV Zeitfracht provides more detailed solution for book ordering process digitalization. There are three options provided, that could be obtained both separately and together. The first one offers Proven information and ordering system. It includes the international procurement database which contains all over 11 million titles from the foreign partners in one database; integrated link to the "order book"; KNV Zeitfracht shipping service and around ten more features.

The second product is called Fitbis, the merchandise management system. It includes all the IT functions the bookstore needs in its daily work and an access to extensive online bibliography and standardize key business transactions. The solution consists of many features including cash register connection, inventory program, billing program, business indicators via the Management Report (MMR online) and others.

The third provided service offers a structured online shop with individual design options. The customer could decide which areas to adapt by himself/herself and for which ones to use content from the KNV Zeitfracht's editorial team. KNV Zeitfracht's complete title portfolio including print-on-demand titles and e-books is available in the online shop as well. In addition, customer can include up to 10,000 of the own articles in the shop and search. (KNV Zeitfracht GmbH 2020.)

With over 1,300 partner bookstores already, KNV Zeitfracht's e-commerce solutions are the leading e-commerce solution for bookstores (KNV Zeitfracht GmbH 2020) Its services inspire confidence and meet the requirements of Nibelungen Buchhandlung's future software.

7.5   Libri

Libri has established itself as an innovative and permanent partner in the book trade for 90 years. When Libri reached its capacity limit in the late 1990s, the decision was made to radically renew logistics. A state-of-the-art distribution center is to be built in Bad Hersfeld, Germany's "logistic center". However, customer service, purchasing, sales, IT, marketing, human resources - all of Libri's non-logistical divisions operate from the media city of Hamburg. The administrative center was moved into in 2002 and since then has offered space for around 200 employees in the Bahrenfeld district. (Libri GmbH 2020.)

Concerning its offered services, middle-sized Libri does not concede big-sized KNV Zeitfracht. It offers consulting services, services for publishers, digital services, ordering system and cash register services and many others. Depending on the size of the bookstore, Libri offers the most suitable ordering and merchandise management systems for each client: In the online portal Mein Libri customer can search and order articles from the international Libri catalog with 6,3 million titles and more than 2,5 million audio- and Ebooks. In addition, with Mein Libri customer has access to the store's data at Libri at any time. There he/she will find overviews of orders, reservations, remissions and transported weights. (Libri GmbH 2020.)

The most important offer of Libri is an online shop establishing. The customer can customize the design and necessary features, to add events, recommendations of the shop by himself/herself. The customization is firstly done by the customer with modules in the Content Management System (CMS). With a "What You See Is What You Get" editor, it is possible to see the adjustments in real time. Everything except the design and appearance of the online store could be done by the Libri.Shopline editorial team. The team ensures that the shop is filled with up-to-date content that constantly generates new buying impulses. The editors also take care of newsletter marketing for the customer. (Libri GmbH 2020.)

Moreover, an intelligent search from 6.3 million titles (of which 1 million are immediately available) and over 2.5 million eBooks and audiobooks, intuitive operation, support for common means of payment and fast delivery for collection in the bookstore or conveniently at home round off great shopping experience. As a service provider, Libri takes over the continuous further development of the online shop, complete shipping, customer service and payment processing, thus guaranteeing a fixed return. Additionally, it offers free webinars for optimal processes and efficient work. (Libri GmbH 2020.)

As a result, services provided by Libri meet all the requirements for the future software of Nibelungen Buchhandlung. Even though the business itself does not seem as big, mature and successful, as, for example, KNV Zeitfracht, the provided services are identical.

7.6   Analysis of the Solutions

The analysis of the listed solution could be made by the comparison of met "must have", "should have" and "nice to have" features. In the Table 2 solution including a feature is marked with "+", excluding – with "-".

Table 2. Availability of the Expected Features

	Category	KNV Zeitfracht	Libri	Umbreit

Implementation and customization of the online store with customer's participation	Must have	+	+	-
Provision of an access to the inventory information (and orders' overview, reservations, payments)	Must have	+	+	-
Provision of deliverable books' database	Must have	+	+	-
Delivery service implementation	Must have	+	+	-
Provision of linkable books' database to an existed online store (if no online store implementation is offered)	Should have	-	-	+
Online payment support	Should have	+	+	-
Inventory management ability (and similar digital accounting functions)	Should have	+	+	-
Ebooks/audiobooks' database provision	Nice to have	-	+	+
Bookstore's individual business plan/improvement strategy creation	Nice to have	-	+	+
Taking responsibility for the future online store's development	Nice to have	-	+	-
Taking responsibility for the customer service duties	Nice to have	-	+	-
Guaranteeing fixed return	Nice to have	-	+	-

In this way, Umbreit does not meet the most important "must have" requirement concerning online shop provision, even though it offers delivery and logistic services. However, it meets the "should have" requirement concerning the book database linking ability and such "nice to have" features as individual development strategy provision. Additionally, Umbreit provides access to Ebooks and audiobooks databases.

KNV Zeitfracht and Libri include all the listed "must have" functionalities in their solutions, such as an ability to establish a customized online shop, access to all the information concerning orders' overview, a database of deliverable books and included delivery service. Additionally, both of them provide such important "should have" services as online payment support and accounting processes management. Libri, in turn, takes over the continuous further development of the online shop, customer service and guarantees a fixed return, which KNV Zeitfracht does not offer. Libri offers free webinars for optimal processes and efficient work as well. These functionalities give Libri an advantage compare to the similar KNV Zeitfracht.

As a result, solutions provided by Libri meet the most requirements expected by Nibelungen Buchhandlung. It means, that this option could be considered as the best mean for a book ordering process digitalization. However, the decision concerning final choice of the solution is to be made by Nibelungen Buchhandlung's management itself.

7.7   Preparations

There are several steps to be taken into account before the Libri's solution could be ready for the usage. These steps include contact of the service provider, timing and resource discussion, risk management and analysis of potential consequences (ITS Education Asia 2020).

First of all, Nibelungen Buchhandlung's management should reach a contact person of Libri. It is Ronald Voigt, the employee responsible for the issues in federal state of Hessen, where Nibelungen Buchhandlung is located (Libri GmbH 2020). His contacts could be found on the Libri's website. All the further actions and steps will depend on the results of the discussion with the contact person. It is necessary to be done, since such resources as costs and time frame could be individual for each case.

After that, risk management needs to be implemented in order to get at least the basic understanding of the potential damages without consideration of possible

profits. Risk management consists of two steps – risk measurement and risk analysis. One of the easiest ways of risk measurement is maximum and expected loss calculation. A disadvantage of the method is an inadequate and not always relevant picture as a result. However, an advantage is the simplicity of necessary mathematical operations, since the concept is based on the probability calculations. Therefore, the method could be used as an approximate reference point. (Wolke 2017, 3, 10-13.) After that, the result is being compared to the project's costs in order to calculate the sum of all the potential expenses.

In case Nibelungen Buchhandlung is still interested in collaboration with Libri despite the risks, the implementation plan is to be made. It should include all the steps necessary for accomplishment of all the features listed in 7.2 chapter with assessment criteria. As a result, Nibelungen Buchhandlung's store will become connected to its online analog and will be able to start working with a new book supplier and new delivery system. After that the solution can be considered as "ready to use".

8   CONCLUSION

The main purpose of this research work was to define how the book ordering process of Nibelungen Buchhandlung bookstore could be digitalized. In order to do so, many preparatory steps were taken. First of all, the concept of digitalization itself was identified. After that, the expected outcome was described in order to understand, where to pay more attention while further research. The next step was to study the current book ordering process deeply followed by sided processes such as book delivery. After the analysis of costs and delays of the current situation in the chapter 6 the requirements to the new system were listed. According to them three solution providers were found, and the most suitable one was chosen. The last step included preparatory actions' descriptions to be gone through before the solution could be ready to use.

The most challenging part of the research was to identify the expected outcome and the "perfect" case due to the lack of experience in the research area. However, thanks to the support provided by the case company, which has been existing for several decades on the bookstore market, many questions were clarified. All the necessary information concerning the current state was provided by Nibelungen Buchhandlung, which simplified the research a lot. As a result, the solution provided by Libri company was chosen according to the modern trends, recommendations and requirements of the case company.

The main outcome of this research work is not only the provision of the fully functioning solution that could be applied in real life. Instead it consists of such important findings as the detailed description of the costs and delays of the current state. It is possible that for some reason the full digitalization of the book ordering process will not be implemented. In that case each block of the information provided in this thesis could be still used as an advice for smaller changes. In the same way, examples of the solution providers introduced in the research could become useful in the tasks other than book ordering.

To conclude, Nibelungen Buchhandlung does not have to follow or take into account even any of the provided suggestions. However, if the store's management does so, the author will wish is to succeed.

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APPENDICES

Appendix 1.   Figure 1. Current Book Ordering Process

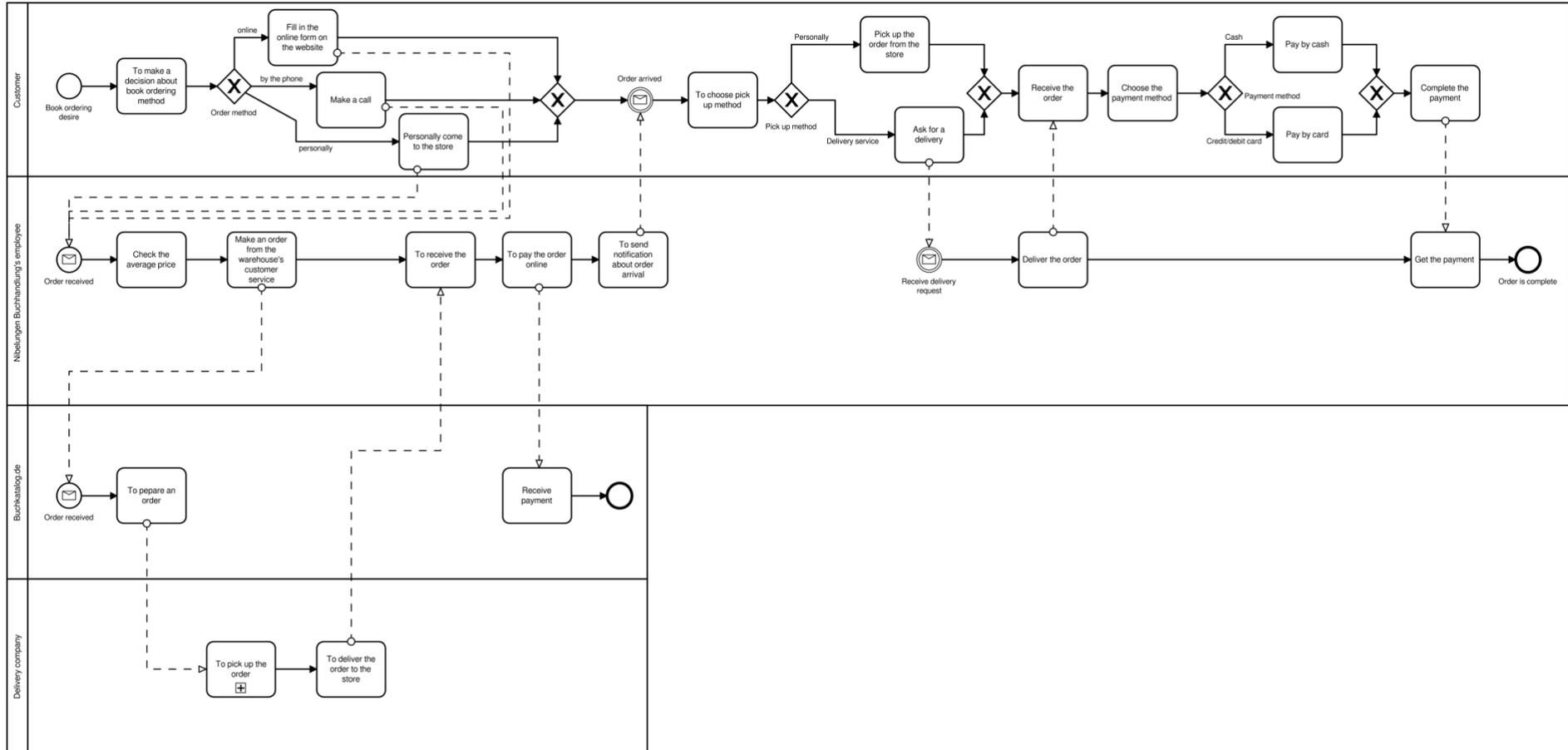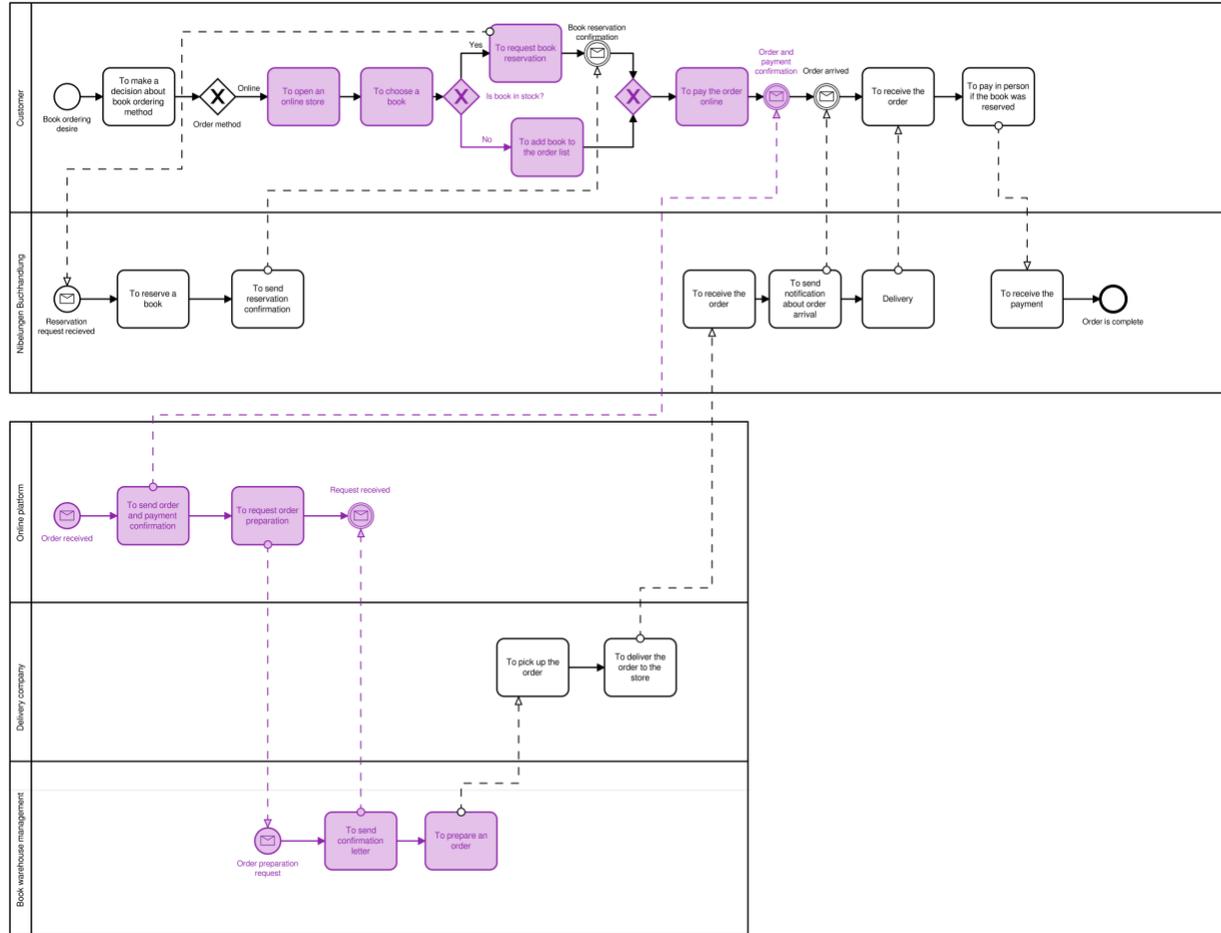Appendix 2.   Figure 3. Future Book Ordering Process

APPENDIX 1

Figure 2. Current Book Ordering Process

44

APPENDIX 2

Figure 3. Future Book Ordering Process