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*Study of development of the new
digital products within the advertising
industry*

Case of: Cheetah Digital

Abstract

Purpose- Digital products within the advertising sector gain significantly more and more attention, as the marketers decide to target the audience through digital media. It seems compelling to investigate further how the digital product differs in comparison to the non-digital one in the industry. Through, the work of several authors it was possible to understand how the development process of such a non-digital product is executed. Nevertheless, there is very little about such a process from the digital product's perspective. Hence, this paper seeks to conceptualize the key terms and test them through qualitative research.

Approach- An exhaustive introduction to the topic, including theoretical conceptualization of this thesis' key terms, and a chapter of the methodological decisions together with the case study, will serve as the basis for answering the research question and its sub-questions.

Findings- The process of developing a new digital product in the advertising industry is complex and very flexible at the same time. Multiple stages are included in the model; nevertheless, they can be freely amended, skipped, or added. Some phases included in the process are creation of product roadmap, idea development, product development, and post-launch evaluation.

Research Limitations- Due to the scope and time constraints, certain limitations of this paper were discovered. For example, the interviewing process can be seen as an issue, since it is incoherent to some extent. What is more, the choice of a single-case study is perceived as somewhat inferior. This could be solved if the multiple-case study would be used. It would improve the generalizability of this thesis.

Practical Implications- This paper can function as an inspirational tool for companies concerned with the development of digital products within the advertising sector. Moreover, this study can provide an interesting lecture for the company it was based on. The study may provide an interesting perspective on how the process of development of a new digital product is conducted in the advertising industry.

Originality- Several authors examined the concepts of new product development and the advertising industry. However, just a few focus their research on digital new product development. What is more, most of these studies focused on the theoretical implications, whereas the goal of this paper is to bring a more practical view.

Keywords- new product development, advertising industry, Cheetah Digital, digital product

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Introduction

In today's world, that is saturated with the fierce technology-driven Internet of Things and Smart Industry 4.0, companies are exponentially engaging not only with the physical but also with the digital product development (Ardito, D'Adda, & Messeni Petruzzelli, 2017). It is not surprising that in the times of technology widely available in not only physical but also virtual forms (such as tablets, smartphones or laptops, but also AI or VR), companies seek to engage with the customer on new and very different ground. Particularly, the advertising sector is keen to implement available on the market technology into the goods and services offered to the clients. This is especially the case, as the technologically saturated era requires the marketers to come across the expectations of the end-users and to develop interesting and adequate solutions.

Thus, this project will focus on understanding how the development of a new digital product is structured and executed. This will be even more engaging when examined on the basis of an international advertising company, which creates digital services offered directly to other businesses. The bespoke company is Cheetah Digital working in the advertising sector and promoting itself as a "cross-marketing firm". The main activity of the business is digital campaigns, especially email campaigns, created on behalf of big companies. Nevertheless, the focus on this thesis will not be directed towards the execution of the campaigns but rather towards the development of the software used for the delivery of these campaigns. Thus, it can be said, that this thesis will focus rather on the behind-the-scenes process.

Thus, the research question is as follows:

"How the process of new product development is structured in the context of digital products in the advertising industry?"

This research question will be further investigated through the sub-questions:

"What is the difference between digital and non-digital products?"

"What are the challenges and opportunities connected with digital product development?"

"What are the expected results of the development process?"

"What are the differences between the development process of non-digital and digital products in the advertising industry?"

These questions will be first investigated on the basis of the literature. Only after gathering enough of preliminary knowledge, obtaining structured information from the company will be possible. The results will be then contracted with each other in order to find reliable answers to the research question and its sub-questions.

As already mentioned, this thesis will be based on a singular company case. Information obtained from the firm will be generalized and perceived as valid for each company from the correspondent sector. The firm chosen for this thesis is regarded to be appropriate due to its perceived expertise and knowledge. What is more, the researcher has a personal interest in both, the topic of this study and the chosen firm. As the researcher is currently employed in the company, it is appealing to understand better the internal processes of how new digital products are developed not only within the company but also generally in the industry. Additionally, it is highly attractive to gain an in-depth overview of the industry as it brings a more accurate insight into the competition not only from the point of view of the thesis' author but also of the interviewed company. Lastly, the topic of new product development interests the researcher, as it compromises the deployment of marketing in a significant amount.

Concluding, this project is directed towards the understanding of how the process of developing new digital product looks like from the perspective of the advertising companies, such as of Cheetah Digital. This paper will gradually present the different facets of the main concepts and will consist of ten chapters. After this introduction, the core concepts will be shortly defined in the form of a syllabus and will be followed by the methodology, including techniques and methods on which this project is based.

Subsequently, the conceptualization of the key concepts and theories, including own knowledge of the author, will be thoroughly illustrated. This chapter will be followed by the conceptual framework. Next, the introduction to the case study will be presented. Following, the findings chapter will be placed, in order to sum up the results and compare them with the initial research question as seen above. Afterward, the chapters of the summary and criticism will conclude this project. Lastly, the discussion with regard to the philosophy of science will provide an insight into how the author's own reflections influenced whole research and its framework.

Definitions

The following chapter includes short definitions of this study's key concepts; new product development, and advertising industry. The reason for the inclusion of this section in the study is to ensure a common understanding of the main concepts as well as to allow the reader to come back to the definitions at any point of the time without having to go through the detailed conceptualization.

New product development is a term focusing on the elements responsible for the process of development. It can be said that *“the new product development (NPD) process involves the task of collecting knowledge, putting it all together, and making it work with the objective of creating new things in a similar way to the approach followed by a scientific research team”* (Vila & Albiñana, 2016, p.2857).

The advertising industry is a business sector heavily concerned with the marketing activities. Although the definition of the term was introduced relatively recently, advertising activities were not alien to the business affairs since a much longer period of time. Advertising is visible through different forms, such as radio, press, television broadcasting but also digital campaigns (House of Lords, 2018, p.7).

Methodology

The objective of this chapter is to illustrate the general outline of the methodology used in this project. The section will focus on the explanations of the applied methods and techniques employed in this thesis. Thus, the research design of the study, an explanation of the chosen method for data collection, and a brief description of how to assess the quality of the study will be described accordingly.

Methods and techniques

The aim of this chapter is to explain what methods were used in this project. Consequently, this chapter discusses adopted techniques on the research design and the data collection. Followingly, the description of how the collected data was assessed regarding its quality will be included. The purpose of this chapter is to strengthen the reliability of this study as well as provide the basis for the future investigation on the topic and for its replication.

Research Design

As indicated in the introductory chapter of this thesis, the main purpose of this paper is to investigate the development process of new digital products in the advertising industry. This is further supported through the focus on discovering the main challenges and opportunities, and the resulting outcomes of such a development. Thus, the above questions and issues serve as the primary point in developing the appropriate research design.

The process of designing research carries significant importance for the study; as argued by Johnson and Van Haneghan (2016), “*a research design is an attempt to answer questions about how research will be carried out before it begins, thus allowing it to be possibly more successful than it would be otherwise*” (Johnson & Van Haneghan, 2016, p.803). Thus, it is clear that without agreeing upon a specific design it would be much less probable to achieve the same results as in the case where a specific design is followed.

There are different types of research design. As stated by Eduardsen (2018b), some of the most popular ones include experimental design, cross-sectional design, longitudinal design, case study design, and comparative design (Eduardsen, 2018b). This paper will follow the premises of the case study design. The reasoning behind this choice is the overall goal of understanding and interpreting how the advertising companies, presented on the basis of the company case of Cheetah Digital, conduct the development process of their new digital products. Thus, there is a need to gain a complex view of how the company of interest perceives the topic of this study. This can be achieved only through an in-depth investigation of the chosen company’s perspective, as it will serve as a basis for generalizations for the whole sector.

One of the most important arguments justifying the choice of this research design is provided by Stacks (2013), who argues that the case study is a descriptive, qualitative method of research with the purpose of analysis a person, an organization, or an event in great detail (Stacks, 2013, p.99). In the case of this thesis, the research question posed before is based on a specific firm, which in consequence supports the use of a specific case study.

After deciding on the research design, it is necessary to choose the method of data collection. There are two types of data collection methods, the qualitative and the quantitative approach. As supported by Thanh and Thanh (2015), a qualitative approach is often perceived as a basis for the rich reports that are necessary for the researcher to fully understand the context of the studied topic. The reasoning behind that is that the “*qualitative research is a means for*

exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (Thanh & Thanh, 2015, p.25). Therefore, it can be said that during the exhaustive investigation of a specific phenomenon understood by a group of people, the most suitable method of data collection lies in the qualitative approach. This is the case, as the topic can be understood and research throughout. In comparison, the quantitative method mostly focuses on numerical values, and thus on a rather simple form of presenting results. What is more, these statistical values are not very useful when it comes to complex topics.

As the research question is embedded in the issue of how the new product is developed by the advertising companies, it will be most appropriate to use the qualitative research method. In the context of this thesis and its premises of collaboration with a representative advertising company, Cheetah Digital, the qualitative perceived as the most suitable data collection method. This is due to the fact that this method allows gaining an understanding of how Cheetah Digital (*an individual*) perceives the main issue of this paper, the development process of new products. On the basis of the obtained information, the research question and its sub-question will be answered from the level of the advertising industry (*a group*). This understanding would not be possible to gain if the quantitative approach would be applied. As emphasized above, this is due to the fact that this method focuses rather on numerical results and not on the abstract understanding of the phenomena.

To sum up, this project is based on a single-case study examined through the qualitative approach. As argued by Bryman and Bell (2011), when choosing multiple-case study researchers often pay less attention to the specific context and focus rather on the way how the cases can be contrasted (Bryman & Bell, 2011, p.67). What is more, a single-case study was chosen due to the scope of this project, as the number of pages was confined beforehand, and the time limit applied. In connection to that, it is believed that the working process and achieved results could be somewhat hindered as the time issues would not allow for equally valuable in-depth investigation of multiple company cases. Nevertheless, it should be mentioned that in order to achieve more precise and reliable results, it is advised to include more than one case study. This could lead the researcher to achieve a more critical point of view if staying objective during the analyzing process.

Data collection

The data collection includes information on what type of data is gathered, from where exactly, and by use of what. In this thesis, there will be three types of data collected. These are primary data, secondary data, and additional data.

The primary data constitutes the empirical part of the project and is presented in the form of the interviews with the representatives of the chosen case company. The secondary data is presented in the form of additional statistics and reports issued by the interviewed company as well as its competitors. Here the focus is put on the reports with regards to the industry, as they allow on a better understanding of the market conditions as well as greater generalization of the findings. Additional data was collected in the form of the desk-research. Thus, it includes relevant for this thesis articles which contain existing theories. All these data sources are perceived as valuable and supporting a general outline of the case study. What is more, the collection of secondary and additional data is seen as a great help in constructing and conducting semi-structured interviews. This is due to the prior creation of the interviewing structure which is centered around own knowledge of the author and information obtained from these two sources. What is more, this knowledge allowed for a better understanding of the researched topic and more insightful collection of primary data. As stated by Eduardsen (2018b), interviews present a good way of obtaining information which could not be gathered in any other way (Eduardsen, 2018b). Therefore, this is supporting, raised in the previous section, issue of the qualitative and quantitative research design.

In the following section are presented all three types of data sources and their importance for this thesis.

Primary Data

As already explained, the purpose of this study is to understand how a new digital product is developed within the advertising industry, with a special focus on the main process, corresponding challenges and opportunities, and the following it results. In order to gain that understanding, it was crucial to conduct few interviews with the company of interest. This action was considered as unavoidable since it granted access to a specific level of in-depth insights into a topic and served as the basis for answering the research question and its sub-questions. Only through the conduct of the interviews, it was possible to establish a true dialogue with the company's representatives and obtain necessary for this thesis information.

In general, there are three types of interviews. These are a structured, semi-structured, and unstructured interview. As explained by Bryman and Bell (2011), the structured interview is based on the principle of standardization. This standardization refers to both, the manner of asking questions and the way of recording answers. In order to conduct such a type of interview, the researcher usually develops a strict, fixed structure which is followed without any kind of digressions. In consequence, the researcher can be sure of obtaining answers that will vary rather in terms of true/false than in terms of provided context (Bryman & Bell, 2011, p.202-204). Due to that reasoning, the structured interview is used rather in the quantitative types of the research, in which the focus is directed preferably towards the numerical results or towards simplifying the analysis. On the other hand, the semi-structured and unstructured interviews represent more flexible forms and therefore are rarely used in the quantitative studies. According to Bryman and Bell (2011), a semi-structured interview is built on the basis of the so-called interview guide which includes a number of questions on the fairly specific topics. The unstructured interview is regarded as the most free form of the interview. This is due to the fact, that the researcher has not prepared before questions to ask but rather focuses on a true conversation, in which topics arise by themselves (Bryman & Bell, 2011, p.467). Therefore, it can be said, that while the semi-structured interview allows the interviewee to freely express own opinion, the unstructured one requires it.

As already mentioned, the purpose of data collection in this project is to understand how the process of new digital product development is formed and executed, from the perspective of the advertising sector. To assure that these topics are covered, the semi-structured interview is chosen as an adequate method to collect primary data. Although the unstructured interview gives a bigger room to maneuver and the possibility to cover researched fields, the strict specification of the topic of this research did not allow on conducting a completely flexible conversation. This is further confirmed by Bryman and Bell (2011), who claim that in order to cover a list of topics, some kind of guide needs to be established and followed (Bryman & Bell, 2011, p.467). For this reason, the interview guide was developed and included in the last section of this paper (Appendix 1).

The purpose of the interview guide is to provide a set of questions conforming to the topics of the research. As explained by Bryman and Bell (2011), it is “(...) *used to refer to the brief list of memory prompts of areas to be covered (...) or to the somewhat more structured list of issues to be addressed or questions to be asked (...)*” (Bryman & Bell, 2011, p.715). Therefore, the

interview guide should serve as a flexible framework and general guidance rather than as a strict skeleton of an interview. In fact, the interviewer has the choice of following developed in advance questions in their initial form or amending them according to the arising situational needs. What is more, the interviewer can choose to skip specific questions if she feels that they will not bring additional insights or were answered beforehand. Additionally, there is also the possibility to ask questions which are not included in the interview guide as the conversation progresses. Moreover, the questions do not have to be followed in the exact same order during the actual interview, as the main point is to be flexible and to adapt to the arising situation. Nevertheless, the interview should be somewhat centered around these pre-stated questions, in order to assure that the conversation with the interviewee does not diverge too much from the thesis' topic. Thus, it can be concluded that the interview guide has an objective of providing a loosely followed structure to the interview conducted with Cheetah Digital.

An important part of the interview guide is the introductory section, during which the parties have the possibility to share some background information. This section is insofar important as it serves further contextualization of the answers provided by the interviewee (Bryman & Bell, 2011, p.467). It allows for the familiarization with each other and with the purpose of the interview. In addition, it serves as a first step in maintaining a specific interviewer-interviewee relationship. Thus, it helps in providing some kind of reassurance and calm into the situation, allowing for a less tensed atmosphere.

Another important element of the interview guide concerns the type of questions used during the process of interviewing. In general, there is a suggestion of nine types of questions. These are introducing, follow-up, probing, specifying, direct, indirect, structuring, interpreting questions and silence (Bryman & Bell, 2011, p.477-478). It is believed, that these different types of questions have the function of improving the results of the interview since they help it to become more conversation-alike.

The interview guide is seen as an instrument developed beforehand. Yet, there are also specific procedures to follow during the interview. Thus, it should be noted that there are ten criteria of a successful interviewer. The list contains such characteristics as being knowledgeable, structuring, clear, gentle, sensitive, open, steering, critical, remembering, and interpreting (Eduardsen, 2018a). These criteria serve the purpose of coming through as a reliable researcher, who is ready to listen actively and collaborate when needed. Thus, they provide a basis for building a more trustworthy relationship between the two parties taking part in the interview.

Interview with Cheetah Digital

The collection of primary data was achieved through a series of conversations between the author and three employees of the company, Cheetah Digital. As already argued, the semi-structured guide (Appendix 1) was used as a supporting instrument. The interviews. Were conducted separately.

The reason for choosing Cheetah Digital as a suitable company was based on the fact, that the company is highly engaged in developing new digital products within its product portfolio and use them in order to facilitate the advertising capabilities of its clients. Furthermore, the company, although relatively new in the UK as it operates in the country for two years solely, has a long background in the industry. As it will be explained in one of the subsequent chapters, Cheetah Digital was operating before under different names with slightly different product portfolio. Thus, the company depicts an interesting case of an internationally presented firm operating in the advertising industry for a period of time. Its product portfolio consists of modern software available for marketers in order to advertise their companies digitally. Interestingly, Cheetah Digital offers its client service of building advertisement campaigns on their behalf.

In addition to that, the author's internal knowledge of the company and its operations in the industry played a role in choosing it as a suitable case for this project. The author believes that by approaching the company through the semi-structured interviews it was possible to collect an interesting material and reveal it in the further part of this study. Thus, Cheetah Digital was a source of insights into the relevant topic and allowed for a better understanding of how the development process of a new digital product looks like from the advertising industry's perspective, what are the opportunities linked to it, and how does it differ from the development process of a physical product. Due to the generality of the answers collected and the relevant approvals of the interviewees, these insights are used here as a generalization for the whole industry.

The European headquarter of the company is based in London, 1 St Katharine's Way, International House, 6th floor. However, as all of the interviewees are based outside of Europe, only the interviewer was present in the London office. The conversations were conducted with three representatives and all were arranged online. The tool used for the conducting of the conversations was Zoom, an equivalent of Skype, used internally within the whole company. The first interview took place on 15th May with Ed Federici, CTO of Cheetah Digital; who

works in the company since two past years (Appendix 2). This conversation took approximately 30 minutes. The second interview was organized with Michael Murdza, VP of Product Management, who works in Cheetah Digital a bit over a year (Appendix 3). This interview took around 25 minutes. Third, and the last conversation, was scheduled for 21st of May, a day after the second interview happened. Unfortunately, the approached interviewee, Alessandra Jacques, had an unexpected project to execute. Hence, she asked for the written form of questions. The questions were formed and sent to Alessandra, the Senior Product Manager in the evening of Tuesday 21st May, and the answers were received early in the morning of the following day. The questionnaire is included in this thesis under Appendix 4.

Before beginning every interview, the interviewees were asked for permission to record the conversation, and during the interview - to use their names in the thesis. For the last conversation, all the agreements occurred during the exchange of messages between interviewer and Alessandra, and written information about the thesis format was included at the beginning of the questionnaire.

As this thesis is one-person work, the interviews were conducted in 1-to-1 settings; including the author of the thesis and the representative of the company. In order to cover relevant areas and supplement the lack of another perspective provided if there would be at least two interviewers, the interview guide was used (Appendix 1).

During the interviews, the interviewer tried to follow already discussed criteria of a successful interview. The author tried to keep an open mind, listen actively, be responsive and remembering while following the structure of the prepared interview guide in order to keep the conversation within the designated area. Additionally, the interviewer tried to include different types of questions during the interview, as she believed they would keep the attention of the interviewees. As seen in Appendix 2, some of the questions are probing, interpreting and specifying. These are also present in the second interview (Appendix 3). Additionally, the author also included direct, indirect, and introducing questions in the interview guide (Appendix 1) as well as in the questionnaire built on that guide (Appendix 4).

It is held that throughout the interviews some issues can be encountered; in fact, few apply to this paper. Firstly, the problem of online conducted interviews is lying in its digital aspect. It is true, that during the use of communicating software, the interviewing process is prone to some technical issues. In fact, some of them were present during all interviews, such as signal interruptions and video visibility problems. Secondly, a significant issue could be seen in the

different backgrounds of interviewees and interviewer. The issue of language barriers occurs when the interviewee and/or interviewer do not use their native language during the interview; which in consequence can lead to the limitations in expressing themselves (Eduardsen, 2018a). Since the interviews were conducted in English, the language barriers were somewhat visible. Thus, some expressions' limitations were experienced especially from the side of the interviewer who is not English-native. Thirdly, cultural differences could be seen as a threat. Differences in the cultural background could lead to problems in establishing trust and a good relationship during the interview. This is due to the fact, that some non-verbal expressions could be misunderstood or lost in translation. As the interviewees were based in the USA and native to the English language, some idioms or linguistic expressions were posing a difficulty in understanding to a non-native English interviewer. Nonetheless, it should be noted that as the author of this thesis is based in the UK and not alien to its cultural settings, these two last concerns were somewhat leveled out. Therefore, cultural differences and language barriers are not perceived as significant sources of issues.

Lastly, as already mentioned, all the interviewees are based in the USA, and thus the time difference was not without the significance. What is more, they all represent a higher organizational level within the company. Thus, to some extent, it was challenging to find suitable timeframe in order to conduct the interviews. This is especially visible in the case of the last interview with Alessandra Jacques, which did not take place in the initially proposed form. This concern can be broadened to some other employees who did not have sufficient time at all and thus were eliminated from the interviewing process beforehand.

Secondary Data

In addition to the primary data, the secondary data was collected and analyzed by the interviewer. This source of data includes additional internal statistics, figures, and reports shared by the interviewed company. What is more, here are found also industry reports as well as information collected by other companies running with the advertising industry. An example of the secondary data is the industry report produced by the House of Lords.

The purpose of using this source of data is the opportunity to gain better and more valid insight into the advertising market. In consequence, this leads not only to better understanding of the topic and obtained through the interview results but also to more accurate generalization and more precise application of the findings.

Additional Data Sources

The additional data sources represent an important part of this project. The collection of this type of data was conducted remotely through desk research. The research was mainly conducted through the resources included in the AAU database. Nonetheless, these were broadened by the specifically targeted research on such platforms like ResearchGate and ScienceDirect. Moreover, secondary data collection included investigation of the web-based articles through generally available search engines, such as Google, or its extension Google Scholars and Google Books.

Since this project has the purpose of finding the answer to the question of how the new digital product development process looks like from the perspective of the advertising companies, on the basis of Cheetah Digital, it was necessary to understand the basic concepts relevant the research question. Therefore, the topics researched exhaustively were the development of new products and the advertising industry. Worth mentioning, these concepts were further divided into smaller, yet important sections. It was crucial for this study to understand the process, issues and opportunities related to the main concepts of this thesis as, otherwise, the author could not reflect on the insights provided by the company.

The process of the additional research of data included specific characteristics. The research in the online library included variations of the important for this study terms combined together. These terms included such phrases as “development of new product”, “new product development”, “development of digital product”, “digital advertising process”, “digital production stages”, “advertising sector”, “advertising industry”, etc. Additionally, for the non-library search of the relevant articles specific technique was used in the Search Engine Google. This technique included the use of search commands and operators, such as *AND* and *OR*. Examples of this are, “new product development *AND* advertising sector”, “digital advertising *AND* production stages *OR* phases”. What is more, in order to conduct research covering the topic to a great extent, a number of synonyms were used, such as “product” versus “service”, “industry” versus “sector”, “stage” versus “phase” versus “step”.

Quality Assessment

Quality of the research and collected data can be assessed in multiple ways. Though, with regard to the case study design, the most common measures are internal validity, external validity, and reliability (Yin, 1994; Bryman & Bell, 2011). Although, according to Yin (1994), there is also

a measure of construct validity, this will not be included in this study as the author himself argues that this is especially problematic to measure in the case study research (Yin, 1994, p.34). This is further supported by Bryman and Bell (2015), who say that “*this criterion applies primarily to quantitative research and to the search for measures of the social scientific concepts*” (Bryman & Bell, 2015, p.50). Hence, construct validity will not be used as a factor in the assessment of the research quality.

It is argued, that these measures are often disregarded, especially when the qualitative approach, instead of the quantitative one, is used in the case studies (Bryman & Bell, 2011). Nevertheless, Yin (1994) argues that it is possible and desirable to measure the quality of the study based on these three factors in particular (Yin, 1994, p.32-34).

The internal validity is mainly connected with the occurrence of causality. Thus, it can be said, that the premises of this measurement are based on the visibility and understanding of the causal chain between factors x and y ; for example, whether factor x is responsible for the generation of factor y (Yin, 1994, p.35; Bryman & Bell, 2015, p.50). Nevertheless, this is not the only focus of internal validity. As argued by Yin (1994), this measurement is also concerned with the occurrence of inference. An inference will occur each time an event cannot be observed directly, thus, leading to a need to infer from the situation (Yin, 1994, p.35). This can be seen often in the interviews, as the data collected is made through a “forced” conversation, in which the interviewee investigates the problem through deeper research. Hence, the interviews will highly influence the internal validity of a case study.

The external validity is concerned with the generalizations of the researched problem and the achieved findings (Yin, 1994, p.35-36; Bryman & Bell, 2015, p.50-51). Nevertheless, this measure poses an important issue in doing a qualitative case study. The criticism is focused mainly on the poor basis for generalizing (Yin, 1994, p.36). Nevertheless, as argued by Yin (1994), the external validity of case studies is simply focusing on a different type of generalizations. The scientist states, that the external validity in the case of qualitative studies should be interpreted in terms of its analytical characteristics and not the statistical ones. The analytical generalization relies on premises of generalizing some specific set of results to a broader theory. Nevertheless, it is also argued, that this type of generalization needs to be tested through replication of the results (Yin, 1994, p.36). On the other hand, Bryman & Bell (2015) argue that generalization is not desirable and should not be a goal in the case study design. Instead, the authors state that the uniqueness of the case study is more important to understand (Bryman & Bell, 2015, p.69). Thus, the conflict between generalizability and non-generalizability of a qualitative case study is continuously present, and often diminish the

reputation of case study as appropriate scientific tool. Nevertheless, it should be noted, that the qualitative case study is based on multiple sources of evidence, such as multiple interviews or extensive theoretical research.; hence, increasing the external validity of a study.

Lastly, reliability is focusing on the repeatability of the results of a specific case study. Yin (1994) argues, that reliability is based on the objective, that if another investigator would apply the same procedures and conduct the same case study, he or she would arrive at exact same results as were formed initially (Yin, 1994, p.36). Thus, it can be concluded that in order to achieve the reliability it is important to document each step of the research to its fullest. This will then provide the basis for repeating the case study in the same manner as it was conducted in its initial form. Therefore, the main objective of reliable research is to minimize the biases and errors that could occur in additional investigations and that could lead to different outcomes.

Data Analysis

The first step to undertake, before proceeding with the analysis of the data obtained through the interview with Cheetah Digital, is the transcription of the interview. As articulated by Bailey (2008), *“transcription involves close observation of data through repeated careful listening (and/or watching), and this is an important first step in data analysis”*. Additionally, the contextual information about the research seems to help the researcher to interpret the recorded dialogue (Bailey, 2008, p.129). Thus, by including the transcription in the research process the reliability of the study increases. Therefore, both transcriptions and the questionnaire are included in the Appendixes; Appendix 2, Appendix 3 and Appendix 4, respectively. They are incorporated in their full versions in order to not lose any meaningful information and to increase the reliability of the study.

In order to successfully analyze the data, a specific technique has to be implemented. For the purpose of this project and a better understanding of the results, the pattern-technique was used. As argued by Sinkovics (2018), the pattern-matching technique is very useful in the qualitative research and *“aims at externalising implicit mental models and assumptions as much as possible”* (Sinkovics, 2018, p.468). This may be due to the fact that the pattern-matching is seen as *“the comparison of two patterns to determine whether they match (i.e., that they are the same) or do not match (i.e., that they differ). Pattern matching is the core procedure of theory-testing with cases”* (Mills, Durepos & Wiebe, 2010, p.664). Thus, the importance of this

technique can be concluded in its implicit explanations of how the researcher arrived at a specific conclusion and why it happened. This technique is portrayed as suitable for this thesis' case study design. This is due to the fact that the objective is to test the theories of the new digital product development process in the advertising industry against the obtained in the interviews knowledge.

Nevertheless, it should be noted that there will be no full pattern-matching conducted, as it is strongly embedded in the theoretical frames and focuses on "*as much conceptualisation and operationalisation prior to data collection as possible*" (Sinkovics, 2018, p.453). Instead, flexible pattern-matching will be implemented in this thesis. This type of pattern-matching technique provides a greater extent of flexibility. This can be seen in the fact, that while the research question needs to be specified prior to the research, the theoretical section does not need to be exhaustive before the actual research takes place. In fact, it needs to provide some kind of contextual hints and analytical template. What is more, this kind of technique assumes that at the end of the research, both the research question and the initial theoretical dimensions can shift (Sinkovics, 2018, p.454-455). Thus, by using the flexible pattern-matching the author had the chance to complete the theoretical section of this thesis during and after gathering insights from the company. This was, for example, the case of the section *NPD within the advertising industry*, where the literature review was completed after conducting the interviews.

The logic behind using the technique of the pattern-matching is that it allows for the identification and comparison of similar topics between the theoretical and the empirical parts. These topics are uncovered within the research question and its sub-questions. These questions are based on the understanding of the concepts of new digital product, its development process, and the advertising industry. What is more, as this thesis is based on more than one interview, the pattern-matching technique can be used in order to encounter the similarities in the obtained information regarding duplicating topics. Thus, the purpose of this technique is to understand whether obtained parts of knowledge can form some specific pattern and/or be confirmed with the theoretical settings. It should be noted, that if the patterns match, the internal validity of the thesis can be improved. This is due to the correspondence of the achieved results with the already established theories. Thus, the internal validity is being affected less by the inference of the researcher.

Conceptualization

This chapter has the purpose of conceptualizing important fields of this thesis, i.e. the development of the new product and the advertising sector.

In this project, the narrative literature review including the reflection and interpretation of the author is used as the source of the conceptualization. The choice of the narrative review was made on the basis of its purpose, which is described as a “*critical analysis of the literature published in books and electronic or paper-based journal articles*” (Rother, 2007, p.5). This type of literature review is regarded as an important source of up-to-date knowledge about a specific topic. Therefore, in comparison to the systematic literature review which is conducted in order to spot unresearched or under-researched gaps, the narrative review has its main purpose in the fundamental understanding of the investigated theme. Consequently, by using this approach, the author has decided that it will be easier to obtain the necessary information prior to conducting data collection and analysis and to answering stated already research question. This is because of the arising possibility of the comparison, connection, and interpretation of the obtained from the articles knowledge with the one gained during the interview.

New product development

In order to understand the process of product development, it is necessary to start with the definition of what the new product may be and how it is presented. According to the Organisation for Economic Co-operation and Development (2019), a new product is presented as goods and services that differ significantly in their characteristics or intended uses from products previously produced by the firm (OECD, 2019). Though, this is not the only definition of a new product. Crawford and Di Benedetto (2003) argue that new product is „*a statement about anticipated product features (form or technology) that will yield selected benefits relative to other products or problem solutions already available*” (Crawford & Di Benedetto, 2003, p.184) , whereas Cooper (2001) assumes that the new product has to be available on the market for five or fewer years and includes extensions or improvements (Cooper, 2001).

As seen, defining the concept of the new product, although seemingly easy, brings some troubles along with. It is not unified across researchers and dictionaries. Nevertheless, even though a number of marketers have different definitions, there is generally accepted classification of new product types, which serves as a compromise ground. This classification includes (Choi, Powell & Cassill, 2005, p.2-4):

- 1) New-to-the-world products, which as explained by Cooper (2001) are the first of their kind and for this reason have the ability to create a completely new market (Cooper, 2001, p.131). As suggested by the name itself, these are the products that never existed before not only from the single company point of view but rather from the industry perspective. In other words, these products should be regarded as new inventions. Some of the examples here are iPod or 3D printer.
- 2) New product lines, in comparison to the first type, are not concerned with being new to the market but are rather completely new to a single company (Choi, Powell & Cassill, 2005, p.2-3). This is the case of, for example, the first shampoo for Procter & Gamble or first kitchenware for Hanes & Mauritz.
- 3) Addition to product lines is represented as a new product line which fits into already existing product categories offered by a company (Cooper, 2001, p.134). Thus, this classification can be interpreted as supplementing from the company's point of view. Here we can talk about Ariel's washing capsules (PODS) as a complimentary form to already well-established washing powders.
- 4) Product improvements are nothing else than simple elevations of existing product's value. This is, for example, the case of Pepsi which was revisited many times throughout history or all the car brands that improve their products with a hybrid system.
- 5) Repositioning concerns the product retargeted for a new use or application, for a new market place, for solving a new problem and/or for serving another need of the market. An example is aspirin, which initially was used solely against headaches and fever. Though, as the new aspirin's benefits were discovered, the product could position itself anew as not only headache reliever but also preventer of heart attacks and strokes (Choi, Powell & Cassill, 2005, p.3). It's important though that the repositioning is not exactly the same as rebranding. While the latter one is concerned solely with *the looks*, the former one goes deeper into *the personality* of the product.
- 6) Cost reductions are simply products designed to replace existing goods and/or services at lower costs (Choi, Powell & Cassill, 2005, p.3).

All these categories fall under the concept of a *new product*. Nevertheless, it is clear to see that the risks, uncertainties, and opportunities differ between them, and thus, each of the categories needs to be managed in a different way.

As the general concept of the new product was introduced, it is necessary to focus on the understanding of the digital product. Especially for this thesis, the digital product presents an

important and differentiating element. The digital products are representing every good which is native to the online world. This means that for the product to be classified as a digital one, it does not need to be solely sold through the internet. It rather has to be used over the internet. There are many terms used to describe digital products; *digital goods*, *digital information*, *digital culture goods*, *digital information product*, *digital services*, *digital intangible goods*, *intangible products*, and *digital markets*. The companies operating in terms of digital products portray a novel business phenomenon that emerged with the eruption of the digital business era. These companies have a purpose of executing their business activities via an electronic business channel for the search, distribution, and sale of a broad variety of digital goods, including software, digital games, digital music, digital movies, digital images, and e-books (Bradley, Kim, Kim & Lee, 2012, p.235-236). Based on the definition above, it can be concluded that some of the most important characteristics of digital goods are their intangibility and online presence.

As the fundamental concepts were explained it is possible to proceed with the definitions. Followingly, the next section will investigate the steps necessary to undertake from the perspective of the development process. Next, the focus will be directed towards the understanding of what the arising issues and opportunities are. After this, the expected results of the development process will be analyzed.

Development process

New product development (NPD) is essential for satisfying the needs and requirements of the customers and differentiating the business from the competitors active in the market. The process of new product development includes many stages and involve multiple departments. NPD usually includes such phases as planning, concept and product design, testing, and production start. These phases are traditionally executed one after another, in a subsequential model, and thus cannot be moved around. Nonetheless, in the simultaneous model, the stages can be freely moved around and executed at the same time. Hence, some product specifications may drastically change due to specific decisions undertaken at a specific moment (Gopalakrishnan, Libby, Samuels & Swenson, 2015, p.1-2). As argued by Vila and Albiñana (2016), “*the new product development (NPD) process involves the task of collecting knowledge, putting it all together, and making it work with the objective of creating new things in a similar way to the approach followed by a scientific research team*” (Vila & Albiñana, 2016, p.2857). Thus, it indicates that although the process concerns the development of new products, the company is using a standardized model to do so.

The classical model of NPD involves multiple stages (Oduola & Yakubu, 2017, p.3):

1. New product strategy and idea creation - This is the first stage of the new product development process. It involves analyzing current marketing trends of existing products and generating innovative ideas that can be used for future products (Oduola & Yakubu, 2017, p.3). This stage serves the basis for understanding the market conditions and customer demands. It is possible here to collect data from different sources, such as gathering the customers' and employees' suggestions, studying the products of competitors, and researching different markets. Thus, this stage can be seen as the backbone of the whole process, without which it would be impossible to initiate NPD.
2. Sorting and evaluation of idea - This stage has the task of setting specific criteria in order to understand the importance, uniqueness, probability, initial profitability, etc. of the ideas (Oduola & Yakubu, 2016, p.3). This step can be also called "idea screening". It plays an important role in deciding which idea to proceed with. This influences avoidance of unnecessary costs connected to the further stages and to the product failure.
3. Business analysis – This stage focuses foremost on the analysis of the existing business. The goal of the business analysis is the evaluation of what are the downfall times, average time spent in each stage, the value of launched products, the percentage of new product sales, etc. Thus, both input and output metrics are analyzed in this phase in order to build a system that monitors progress (Oduola & Yakubu, 2016, p.3). Therefore, this stage is directed rather towards an already gained experience of the company when introducing similar products in the past. At the same time, the company can conduct surveys with customers in order to forecast initial financial results.
4. Development - This stage entails the transformation of the documented design into a product that is actually demonstrable and producible. The design could involve such elements as an imperial sketch and Virtual Manufacturing techniques (Oduola & Yakubu, 2016, p.3). It can be summarized that at this stage, the company will undertake all the necessary steps to finalize the development/production of the product. Hence, the production department will make plans to produce the product, the marketing department will make plans to distribute the product, the finance department will provide finance for introducing the new product, and the advertising department will plan the advertisements for the new product.

5. Testing – The stage of testing is related to the commercial experiments that are conducted as necessary in order to validate earlier business judgments (Oduola & Yakubu, 2016, p.3).
6. Quality control and assurance – This phase, as the previous stage, focuses on checking whether specific characteristics of the products are sustained on the satisfactory level. Here, quality control is seen as the primary factor needed to be verified. The quality control has the purpose of testing a sample of the output against the specifications agreed upon. The second part of this stage concerns the quality assurance, which is directed towards ensuring that a product in development stage meets specified requirements (Oduola & Yakubu, 2016, p.3). Thus, it can be said that the difference between these two elements is, that the quality assurance is a set of activities for ensuring the quality in the development process, whereas quality control is focusing of the quality in the product itself.
7. Testing market – This stage is based around introducing the developed product into the test market which is substantially smaller than the designated one. The experiment regarding product success is done in actual stores and real-life buy situations without the buyers being aware of the test. The purpose of market testing is to obtain as many additional information as possible before commercializing the product on a bigger scale. This information may indicate on necessary changes in marketing strategies or in customer demands (Oduola & Yakubu, 2016, p.3). The latter one is especially important in case of the seasonal products. Additionally, test marketing can reduce the risk of large-scale marketing. Therefore, it is perceived as a safety device, especially for these companies which introduce products requiring high investments, or those which uncover high risks.
8. Commercialization – The phase of commercialization contains the process of introducing the new product into the market. The advertisement and promotion activities can be executed in multiple ways, for example, through social media, PR, word-of-mouth (Oduola & Yakubu, 2016, p.3). This stage results directly from the previous one, as it gives *the green light* for the company to launch the new product. At this point, the company can expect the highest costs. These costs incur not only in the manufacturing elements but also in promotional and marketing efforts.
9. Review of market performance - The company must review the status of the product in the market to evaluate the level of product acceptance, customers' demand, achieved sales and profit, and customers' satisfaction (Oduola & Yakubu, 2016, p.3).

Additionally, the company can review whether competitors introduced or are about to introduce a similar product on the market, whether the middlemen are satisfied, whether the marketing mix is changed according to the environmental changes. If the company will not monitor these indicators and amend strategies accurately, it can expect the product to fail.

The cycle presented above is not binding and can be shortened, extended or modified according to the need and the industry. Nevertheless, as seen, the NPD is rather a long and complicated process which includes multiple departments and teams working together towards one goal. In addition to the model above, the concept development and marketing strategy development can be included somewhere before the business analysis. The first element could be included in the second stage of the idea screening. This is because concept development simply assumes transforming plain ideas into a specific product concept, which is simply a detailed version of the new product idea in appealing to the customer's terms. The development of the marketing strategy can be included in the business analysis, as it assumes the introduction of the initial marketing strategy, which then can be developed on the basis of the conducted business research.

Challenges and Opportunities

NPD as any other business-connected disruption brings along some issues and opportunities. Any company engaged in the process of new product development has to be aware of these, as they should indicate when the development process is worth its price and whether at all.

On the one hand, NPD is connected with various challenges. One of the issues involved in new product development is the uncertainty of consumer behavior (Oduola & Yukubu, 2016, p.6). Although the product is developed on the basis of the customers' demand, the company cannot be sure of the product's success after its launch. This is due to the change in taste, or unrevealed and/or unfulfilled requirements. Additionally, as stated by Rautiainen, Lassenius, Nihtilä, and Sulonen (1999), "*in highly innovative businesses (...) the customer does not always know what technology is able to do*" (Rautiainen, Lassenius, Nihtilä & Sulonen, 1999, p.4), leading to the uncertainty from the business point of view. Another issue is connected with the lifecycle of the product. Every change in technology brings new opportunities, and thus, is followed by the development of newer goods (Oduola & Yukubu, 2016, p.6). Hence, in some specific industries, it may be impossible to develop new products with a long lifecycle. Other, equally important challenge is the relation of the costs to the sales. This is insofar important, as in the

case when the new product not profitable in the end, the company will waste not only financial resources but also time. Additionally, the human resources used in the process could be deployed more efficiently if the company would predict the correct cost to sales ratio.

On the other hand, there are multiple opportunities connected with new product development. An important part of the NPD is the knowledge obtained by the company during the process. It is said, that the firms “*capture, encode, represent and manage information, transforming it into knowledge which they can reuse at their convenience in the future*” while developing new products (Vila & Albiñana, 2016, p.2857). Subsequently, obtained knowledge serves as the basis for further standardizations and improvements of the NPD process. What is more, the company can utilize gained knowledge as the source of innovation, since the new information is coming from the design process, suppliers, customers, studies, and provided customer services (Vila & Albiñana, 2016, p.2857). Hence, through the process of NPD, the company is in a position not only to discover the specific wants and needs of customers but also to reveal market gaps, and weaknesses and strengths of the competitors. These are insofar valuable as they may influence the overall strategy of the company used in order to gain leverage in front of the rivals.

Summarizing, the process of the new product development presents not only a challenge but also a potential source for the improvement from the perspective of a company. It allows on gaining additional, competitive knowledge, which, when used deliberately and accurately, can be seen as massive leverage on the market; especially the one with fierce rivalry.

Expected results

As noted already, there is a number of opportunities available to obtain from the NPD process. These opportunities are the main source of forming expectations regarding the results.

Unsurprisingly, one of the biggest expectations created on the basis of the new product development is sustaining a satisfactory profit (Menon, Chowdhury & Lukas, 2002, p.317). As no business works with the mission of losing money, when thinking of the NPD, the companies' main purpose will be to create revenues satisfactory for the future operational activities of the firm. The process of new product development is often very costly; especially in the stage of the commercialization of the product. Based simply on that fact, the company proceeding with the NPD often needs to weight all the pros and cons very carefully a long time before initiating any of the product development's steps. At the same time, the firms which evaluate the cost-revenue ratio as optimistic can expect success in profits. This may be even more emphasized if

the competitors do not own similar goods in their portfolio and the customers' demand is relatively high.

Additionally, the outcome of the successful execution of the NPD results in developing innovative product development skills internally among engaged employees. It is to say, that in order to develop next-generation products and services there is a need to improve product development skills within the industry. It is necessary not only to focus on evolving new leadership skills but also on methods used to generate new creative ideas; which then will be translated into highly successful goods (Ekman & Jackson, 2006, p.523). Thus, the potential of nourishing innovative development skills of employees will be more successful when they will be exposed to the projects characterized by heavy team-work. This way each of them will learn a new perspective and will be able to come up with new interesting creative propositions in the future. As supported by Ekman & Jackson (2006), *"to compete successfully in the future it also requires a combination of leadership, organizational and different creative skills – competencies with their heart in psychology and human behavior"* (Ekman & Jackson, 2006, p.523).

What is more, obtained knowledge and created innovation, mentioned in the previous section, can be perceived as a possible result. This is due to the fact, that they both serve as the basis for business intelligence. As the employees will gain more insights into the development process and the industry environment, they will be able to predict more accurate future events. Following, this will lead to increased analytical skills contained in the company which at last will allow for better, more informed end decision.

Lastly, some other aspects can be seen as the expected results of the NPD process. Among these are the competitive leverage, a significant cost reduction, a shortened cycle, a greater market segment coverage, a more dominant leadership on the market (Menon, Chowdhury & Lukas, 2002, p.317).

Advertising sector

According to the Gale Encyclopedia of U.S. Economic History (2019), the earliest forms of advertising included simple signs that the merchants put outdoors in order to inform the potential public about the happening sale. Advertising became a part of newspapers during different points of time in England and in America. In the former one, newspaper advertisements appeared for the first time in the seventeenth century, while in the latter - one

century later (Encyclopedia.com, 2019). The concept of advertising is not new, although the industry of advertising was not formed at the very same time.

The advertising sector, also known as the advertising industry and advertising market, is portrayed as an important field of business nowadays. According to the UK's House of Lords (2018), "*advertising is essential for growth and competition in the economy, and for producing jobs*" (House of Lords, 2018, p.7). This is due to the fact, that rarely the company does not need a representative in the marketing or advertising sector. Thus, advertising is creating multiple job positions worldwide.

Lastly, it's important to talk about the communication ways used within the advertising industry. As pointed out by House of Lords (2018): "*advertisements have long funded media, including radio, press and television broadcasting, and now sponsor a vast quantity of content and services available online*" (House of Lords, 2018, p.7). Thus, it can be concluded that the industry of advertising, although present for quite a time already, is still in development. It does not stagnate, but rather accelerate with every moment. The possibility of the advertising services and products to be translated and introduced in the digital sphere allowed the sector to appeal to a wider range of target groups; whether it is non-institutional end-customer or a client in form of another company. Therefore, it is important to focus on the digital advertising market; even more so because of the research question of this thesis, which is indirectly focusing on the companies rather native to the digital world.

Digital Advertising

With the creation of the World Wide Web, the Internet, and the Internet of things (IoT) the world entered into a new era. This expansion as well as the growing amount of information shared due digitally, allowed also the advertising industry to start a new chapter. In fact, digital advertising is growing very quickly and taking a large share of advertising spending (House of Lords, 2018, p.10).

From the historical point of view though, there is no consensus on when the online advertising began. According to different sources, the first presence of advertising in the digital world is stipulated to occur in 1993 or 1994 (Rubinfeld & Ratliff, 2011, p.3). Baring this in mind, digital advertising is a relatively new concept. It exists for barely 25 years, which in terms of business and economics is a rather small amount of time. During the period of the 1990s, the traditional methods of advertising were mimicked on the web. An example is the introduction of online directories such as online Yellow Pages which were created in order to finally substitute the

physical services like that (Evans, 2009, p.39). These intangible goods started to spread all over different verticals until almost everything was possible to find online. Additional examples are covering restaurants, special services where it is possible to order food online, or even utilities, customized for individual home applications with specifications of the used electrical power and water. Additionally, the substitutes of direct mail started to be present on the market; these were available in the form of email services, for example, offered by CheetahMail.

Today the advertising services in the digital world are widely spread and very successful. There are specific advantages of digital advertising over the physical one. The first one is that the online presence allows the advertisers to learn considerably more about the customer than the physical presence does (Evans, 2009, p.42). Example giving, by using online services the digital marketers are able to observe what customer type, when he or she views their services, for what amount of time, what draws most of the attention, how the customer reached this service, etc. This is not as clear when it comes to the physical media, where the way to gather this data lies in field observations, experiments, surveys or a focus group; these are much more time and money consuming. Consequently, digital marketers are more capable of introducing targeted advertising (Evans, 2009, p.42). The advertiser concerned with the digital world can decide much easier when and where to *post* its advertisements. Example giving, pop-ups can be targeted to the most often visited websites by the customer, or the email can contain weather-related items; such as flipflops during warm days or raincoats during rainy days when in summer.

As already proven, there are many techniques and possible specialties within the sector of digital advertising. Nevertheless, for the purpose of this thesis, the focus will be put on the companies concerned with such advertising media as emails, SMS and push. What is more, these techniques will be analyzed from the internal point of view, meaning that the attention will be directed towards the service offered by the company chosen as the focal point for this study. This service should be understood as both the software offered to the organizational clients as well as the offering of creating the advertising campaigns by Cheetah Digital on behalf of its business clients. Arguing on the basis of the given explanation it can be assumed that instead of focusing on B2C advertising, the center of attention will be rather directed into some form of the use of B2B advertising.

It can be concluded, that digital advertising is offering a different perspective on the advertising matters. It is a viable source of creativity for all the parties involved. It also brings new

opportunities for marketers to connect with the customer groups and to understand previously unnoticed or unobserved phenomena.

Challenges and Opportunities

Like any other industry, the advertising sector is also facing challenges and opportunities. These may be country specific but can also be unified and generalized in terms of the whole industry.

The overall goal of the advertising is to inform, persuade, remind, and build brand loyalty or awareness. When executed correctly, advertising can lead to increased sales and even in reductions in the price elasticity of customers' demands (Rubinfeld & Ratliff, 2011, p.4). These two elements, presented together or separately, will lead to improvements in the revenues of the company engaged with the advertising activities.

One of the opportunities is formed by the fact that advertising activities contribute to society and culture. It is a great source of inspiration and nurtures the talent of content creators, such as graphic designers, graphic musicians, film-makers, and special effects technicians (House of Lords, 2018, p.7). Moreover, when thinking about the digital aspect of the industry, engineers, developers and marketers are heavily affected by the advertising activities. Therefore, the industry of advertising has implications not only on the companies involved in the sector but also on the individuals and societies, as they are able to develop a specific set of skills.

On the other hand, there are some significant challenges in the advertising industry, especially when thinking about the digital one. One of these issues concerns the limitations in the choice of media (Rubinfeld & Ratliff, 2011, p.7). It should not surprise that when exposed to so many broadcasting ways of the advertised material, some companies may use wrong media. The choice of media should rely on the targeted customers' group. For example, the customers over a specific age are more probable not to use social media in the same or comparative manner as the younger generations. Thus, the company would need to restrain from using this specific media as the appropriate one when the target group falls into higher age limits.

Another problem is the one related to privacy regulations. Especially now, after the introduction of and heavy focus on the GDPR regulation, some digital activities may be hindered or even impossible from the perspective of the marketer. For example, collection of a third-party data is impossible as it is breaching the GDPR clause. Because of this, some services offered by the companies creating digital campaigns on behalf of others may not be executed with the same success rate as previously.

NPD within the advertising industry

Advertising industry seems to be especially interesting when connected with the product presented in the form of a specific service. It becomes even more intriguing when this product can be rather observed from-behind scenes. As stated by Kindström (2010), “*many product-based companies are seeking to increase their competitiveness by moving towards a service-based business model*” (Kindström, 2010, p.479). Therefore, the main focus here is on the development of the service offered by the company rather than on the use of that offering. This chapter will serve as a review of the literature with regard to the new product development and the advertising industry. It should be noted, that as already explained in the previous chapter, term *new product* is understood in form of a service offered by the firm to the organizational clients. This service is formed as the software built in order to create the advertisement campaigns on behalf of the organizational clients.

The advertising sector, just as any other sector develops new products, and therefore needs some form of a process cycle illustrating the necessary stages. Most development processes in this industry include multiple phases which compromise objective setting, idea generation, idea screening, development, business analysis, introduction, and post-launch evaluation (Easingwood, 1986, p.264). When comparing this template with the general NPD cycle presented in the previous chapter, it becomes visible that there are some discrepancies between the stages included in both. Example giving, some of the steps, such as quality control and testing market, were removed from the general model. Additionally, development and business analysis are switched in their order. Thus, it indicates different market settings, and internally assumed requirements and goals of the advertising company in comparison to another industry. On top of that, Easingwood emphasizes setting of the new product strategy as the most important step (Easingwood, 1986, p.264). This may be resulting from the fact, that without stipulated *prior* goals, the evolvement of next steps would be hindered, or even impossible to complete in the worst case.

It is important to understand that there are some threats linked to new product development within the advertising industry. One of these difficulties is seen in the “*development time, during which the project is at risk of being overtaken by technological change, competitor actions, or by changes in customer tastes, is also high*” (Easingwood, 1986, p.264). Thus, it becomes clear, that the advertising sector needs to pay attention to the new technologies emerging on the market with rather high frequency. This is especially true for the new digital

products which are especially prone to become outdated if based on modern technologies that can be easily replaced by new, more disruptive changes. What is more, the development process of a new product depends on the competitive landscape and market attitudes. Hence, the companies established within the advertising industry, regardless if in the broader sense of the word or in the narrow service sector, need to pay attention to changes in the market environment and in the demands of the client.

Lastly, it should be noted that there is no clear indication of the difference in the development process of digital and non-digital products within the industry. As argued by Hendler (2019), the difference between the physical and digital product is that the former one requires rather sustained predictability of the process outcomes and the market demands. Additionally, the scientist states, that the physical product development requires extensive up-front preparation and specification, and “*typically involves a plan-driven approach with clear phases (...)*” (Hendler, 2019, p.316). Thus, it can be concluded that there is no significant difference in the development process between digital and non-digital product. The only important dissimilarity is seen in not so clearly definable phases as in the physical, tangible product development process. Nevertheless, there is no further mention of how these phases should look like, and therefore, it is assumed for the purpose of this thesis and its research question, that no substantial difference can be concluded before collection of the empirical results.

To sum up, it should be noted that the amount of literature regarding the NPD within advertising sector is remarkably limited in comparison to other sectors, such as manufacturing or financial industries; even more narrow is the literature regarding the new digital product development within the advertising industry. Nonetheless, for the purpose of this paper, it was crucial to provide a general template of how this specific development process could look like within the sector. Hence, the next chapter will serve the purpose of unifying presented concepts and their underlying assumptions and will be critically evaluated with the insight from a real-case advertising company. This criticism will be presented in the chapter of conclusion where the revised framework will be illustrated.

Conceptual Framework

As the basic concepts used in this thesis were thoroughly explained, it is possible to move to the next stage. In this chapter, the definitions used above will be confronted with each other in order to conceptualize the NPD process used in the advertising industry. This model will be described in detail. It is important to develop such a conceptual framework as it will be

challenged in the further sections of this thesis in order to validate or falsify its elements. This way, the general understanding of how the process of new product development is structured in the context of digital products in advertising industry will be possible to achieve.

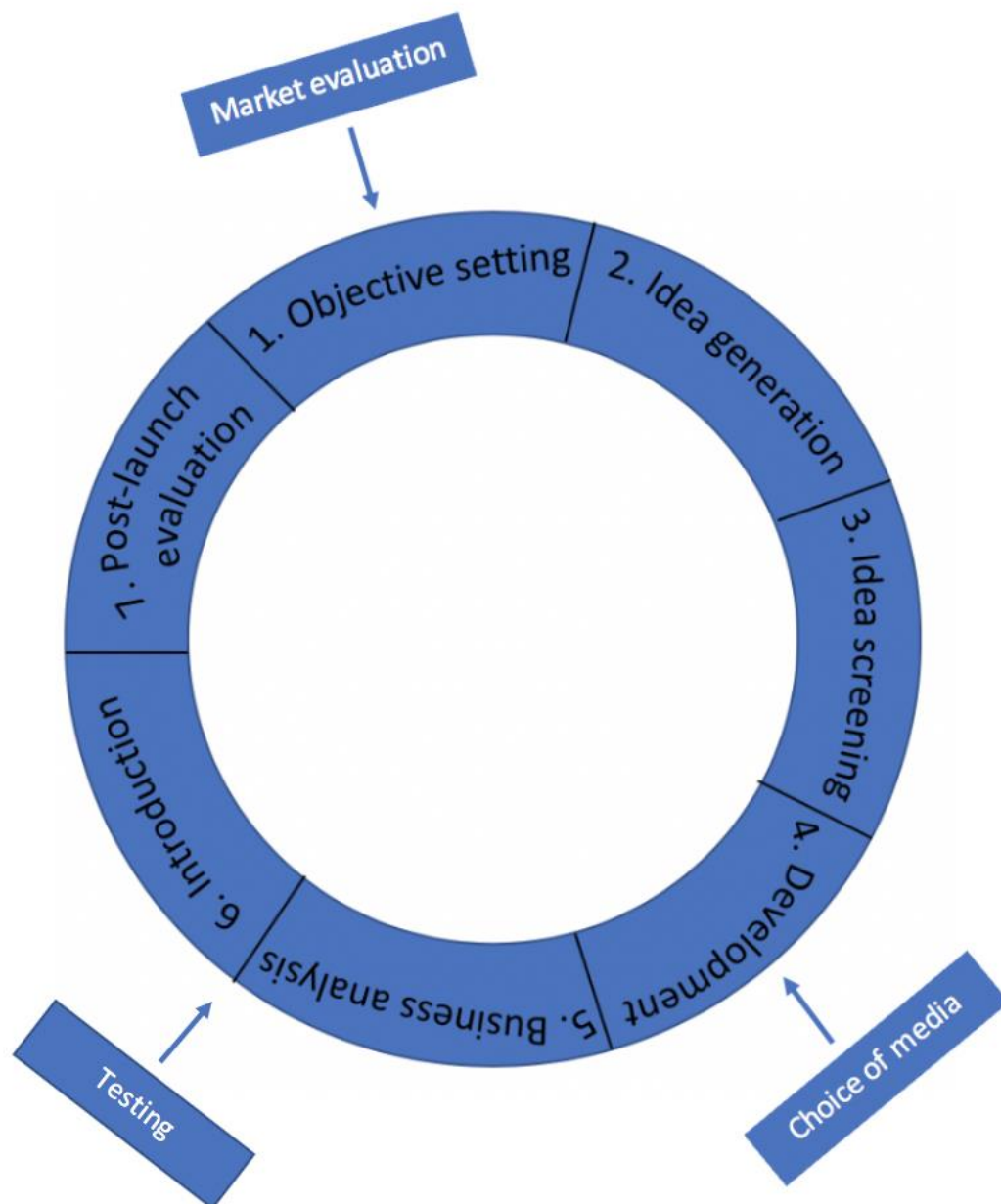


Figure 1 – Conceptual Framework (Own manufacture)

As seen in Figure 1, the first step in the path to develop a new digital product is to set an objective. This phase is insofar important as it allows to frame goals and expected results in a simple form. What is more, if these outcomes would not be visualized some significant

problems could arise during the execution of the rest of the steps. Thus, this stage is especially important, as it gives the company a particular framework and sets expectations on a specific level. Nevertheless, in order to set the objectives, market evaluation has to be conducted beforehand. In comparison to the non-digital products, here the companies have more different ways to evaluate the market. It can be done traditionally, for example using surveys, feedback and focus group, or it can be done in more digitally embedded ways, such as observation of online traffic and measurements of the time spent on the website by the potential customer. Evaluation of the market environment including the existing and anticipated demand, competitive landscape and other relevant factors will serve as the basis for the objective setting. Otherwise, the company could fall in the trap of false assumptions and develop an outline impossible to achieve.

Following the first step, idea generation must be done. Here, the focus is put on creating compelling thoughts. It is important to propose more than one idea. In the case, when only one idea is generated there is a threat of lack of objectivity. In result, this can lead either to misconception or abandonment of the development process. After multiple propositions are presented, the phase of idea screening begins. This stage focuses mainly on the evaluation and choice of a suitable idea. This process is not much different from the traditional product's development process. The goal is to decide whether the created idea could be transformed into something that will be compelling to the targeted audience.

Subsequently, the development stage begins. Here, the chosen idea will start to transform into an actual product. As it is not any more non-digital product, the focus will not be put on tangible qualities, but rather on the rightly written code lines, the desired digital features and functions, as well as the visuals. The phase of development will also include the choice of media. As for any advertising product, especially the digital one, the question of what media to use will lead to specific decisions, such as involvement of particular teams and focus on the product optimization for the chosen media. The choice of media is insofar important as today's customers require more and more from the advertisers and marketers. This means, that the more targeted advertisement will be, the bigger the chances for the success. For example, for a teen computer geek, an advertisement for new computer games releasing in the commencing month will be more suitable than an advertisement for cars fair.

Nevertheless, as argued beforehand, the development process of new digital products is not as specified and *untouchable* as of the non-digital goods. Thus, it should be noted, that the phase of business analysis will be introduced somewhere along the fourth stage. This is due to the

fact, that since the digital products are highly embedded in the technology, analysis of the business environment and internal processes of the company need to be precisely monitored. This phase will mostly aim at evaluating internal measurements and indexes. Its main objective is to decide whether the company has capacity, time and resources to proceed with the development of the idea, or whether it should start the process from the scratch and focus on something more graspable.

The next step is the introduction of the new product into the market. Nevertheless, before this happens some form of testing should be done from the company's point of view. This testing will be mostly conducted in controlled settings and will serve as a basis for confirmation of whether the product is received positively or not. Here, the feedback from the individuals reviewing product will play a significant role. After this testing, the full release of the product will be conducted. Here the clients will gain full access to the final version of the product. In this phase, all purchases will be made.

The last stage of the process is the post-launch evaluation; which implies the focus on how the digital product succeeded on the market, what are the results it brought, what could be done better and what was good. This step is the indication of how competitive and desired the product was after all when released on the market. In this stage, the results will be compared with the objectives set at the beginning.

Case Study

This thesis has the purpose of answering *how the process of new product development is structured in the context of digital products in the advertising industry?* As already explained, this research question is executed on the basis of a specific company, Cheetah Digital, with the purpose of forming further generalizations. For the purpose of a better understanding of the following chapters and the context of this paper, the company of interest will be presented.

Cheetah Digital is an international cross-marketing company. The firm was established in 1998 under the name *CheetahMail*. The service offered in the early stages of the company's existence were circled around the digital marketing industry and focused on email services solely. In the year 2004, the company became part of Experian, and thus, was marketed under this name. After 13 years since the acquisition, some of the former employees completed the buy-back, making the company independent again. This was the time when the firm gained its current trade name (Cheetah Digital, 2019a).

The company is based in 13 countries all around the world, including the USA, Germany, Japan, Singapore, and the UK. It is employing over 1,300 people worldwide in order to provide services to clients based in different time zones (Cheetah Digital, 2019a). Cheetah Digital is currently helping some of the biggest international brands. Some of the clients are Hilton Hotels, Barclays, Atlantis The Palm, American Eagle, American Express, and AO (Cheetah Digital, 2019e; LinkedIn, 2019).

The company is offering three products: CheetahMail, Marketing Suite, and Cheetah Loyalty; with the first being the oldest, and the last being the newest (Cheetah Digital, 2019a). All these offerings are strongly embodied in the digital world. They are developed with the purpose of serving the need of marketers, and thus ease their daily routine, position them better among the competitors, and drive their revenues. CheetahMail has a purpose to deliver personalized, highly-segmented email marketing campaigns to millions of customers in a timely, effective manner (Cheetah Digital, 2019b). Marketing Suite can be described as a service providing *“real-time insights needed to connect all your data sources, create effective cross-channel marketing strategies, and achieve desired revenue goals”*. This product provides not only services regarding email campaigns but focuses also on the true robust cross-channel marketing (Cheetah Digital, 2019d). Hence, it includes such medium as SMS and push. Lastly, Cheetah Loyalty presents the newest offering, introduced in April 2019, with the purpose to *“deliver unique experiences that will create an emotional connection between your brand and customers”* (Cheetah Digital, 2019c). This service, as suggested through the name, focuses on the different aspect of marketing, which is loyalty and reward. Therefore, the idea standing behind this offering is to target the reward programs and marketers in need of them. Although all three services are available internationally, some of them are used more in specific parts of the world than in the others.

Findings

This chapter has the goal of answering the research question of *“how the process of new product development is structured in the context of digital products in the advertising industry?”* together with a number of sub-questions, based on the information provided by the company and conducted interviews. These findings will be further discussed and confronted with the collected theoretical knowledge.

Digital versus non-digital product

One of the main points was to understand the difference in the digital and non-digital product in general. This was insofar crucial, as it pointed out on the further importance in differentiating and understanding the process of development of the new digital product. Without the general explanation of how contrasting are these two types of goods, it would be hard to sustain the focus on the challenges and opportunities created with the digital product.

Through asking the question regarding differentiating digital and non-digital products to Ed Federici, it became clear that these two types cannot be classified identically regarding the amount of work put into them. The CTO pinpointed that the productivity of the workers included in the development of digital products is much more difficult to measure than when talking about the tangible, non-digital goods. He argued, that digital products are connected with unique development qualities which are not necessarily present when talking about non-digital products. CTO further emphasized that *“most of the metrics you can find are for non-digital products”* (Appendix 2, 02:14). As in every process of developing the product, there is a specific amount of work needed to put into the goods. In order to keep the work consistent and do not lose the quality aspect, it is important to measure it against specific metrics. The CTO argues that in the case of digital products, these metrics are not as simple to evaluate as they may seem to be. He states, that it is not possible to evaluate the quality versus quantity of the code used by two different people in the creation of a digital tool (Appendix 2, 02:14). This is simply due to the fact, that the tangibility of non-digital product is used as a quality factor and something that can be repeated; whereas the digital product is living on its own. Thus, there is a very small possibility that two software developers will use exactly the same lines of code, as the two manufacturers would use exactly the same type of material to build the product.

At the same time, Michael Murdza provides additional insight into how the digital product differs from the non-digital one. He states, that the lifecycle of a digital product is much faster. Vice President argues, that *“with physical products, umm, there is whole production element to it that kind of takes a long time”* (Appendix 3, 01:12). This comment proves that the digital product brings much more flexibility for the teams involved in its development process than the non-digital product does. The production process of the tangible goods often requires a sequenced process, while the non-tangible product is more freely embedded in this process. The latter one allows multiple developers to work at the same time while developing different parts of the code, and then simply putting them together and correcting what does not work correctly.

The statement of Michael is confirmed by Alessandra Jacques, Senior Product Manager, who argues that *“the primary difference I would think would be the speed with which it can be created”* (Appendix 4). Again, the focus is put on the timeframe within which the digital product can be developed. Alessandra further elaborates that the physical products are often tightly related to the tangible materials which are time-constrained to create. Instead, the digital products are free of the tangibility of the materials. The only substance they are composed of are, is the code. The only limitation of the code is the developers’ ability to write it quickly and the quality of it (Appendix 4). This last point refers back to the opinion of CTO, who emphasized somewhat difficult quality measurements of developed code.

Thus, it can be assumed that digital products do not have the same qualities as the non-digital ones. The digital good will not only be based on different internal characteristics, such as the timeframe of the work needed to put into it but also on different external characteristics, such as inability to truly touch it. What is more, the work put into the development of the digital product is much more difficult to measure. Thus, these insights broaden the perspective provided in the theoretical part, as it was stating that the biggest difference in the two types of the product is visible in their environmental embedment; where the digital product is native to the online world, and the non-digital one – to its material environment.

Competitive landscape

Before proceeding to the discovery of the actual development process of a new digital product, it’s good to understand what kind of competitive landscape the advertising companies operate in. As the competition serves as an important element for every business, it will further have consequences on how the development process of a new digital product is constructed.

Conversations with the representatives of Cheetah Digital allowed for a better understanding of the marketing/technology sector. As pointed out during the interviews there are at least 5000 competitors (Appendix 3, 16:56) with the maximum number of almost 8000 (Appendix 2, 22:08). This information gives an important indication of how big the advertising industry is, and how competitive the landscape can become with such a big number of players in it. This is further illustrated in Appendix 5, on the Martech 5000 visuals, which was pulled out by Ed Federici during the interview (Appendix 2, 21:33).

According to the CTO, it is hard to say exactly what is the number of competitors at the moment, from a single company’s perspective. This is because some specific changes occurred in the industry (Appendix 2, 22:08). Nevertheless, Michael Murdza goes a step further, explaining

that even if it is impossible to characterize all competitors, number of direct ones would be “*probably less than a dozen that really, we compete with them on daily basis*” (Appendix 3, 16:56). Thus, it seems to be important to acknowledge that today’s reality puts many companies in a difficult situation of not understanding their competitive landscape to the full extent. Instead, the firms would rather focus on targeting direct rivals with whom they are competing on a regular basis, head-to-head. This can be seen as a result of digitalization and digitation of the competitive landscape; each year there are arising more companies native to the digital word, start-ups that are focused on e-commercial activities. In turn, this leads to the inability to track the advertising industry to its maximum as some changes are happening outside of a company’s sight.

This theory is acknowledged by the VP of Product Management who argues that “*we have all these smaller companies that are starting up, that are really nimble. Because they’re all developed on modern technology, more modern than us and they’re, they’re faster and they’re, umm, they’re iterating a lot quicker*” (Appendix 3, 16:56). Thus, it becomes obvious that the smaller, the more feature-oriented new company is, the more technology-adaptive it is. Therefore, it should be noted that the big companies, the top players in the market are often slower when it comes to adopting new disruptive technologies. This may be due to the fact that they are built on specific premises and developed already a unique framework for work; every change may require from such a company to implement a long, ongoing process in order to enable new technology into each of the company’s relevant department. This is not a case of the bespoke *nimble* companies, which in their structure have a much shorter implementing process and thus can adapt much more quickly. Michael further elaborates that these small companies are very smart and very efficient, that they release their products much faster than the bigger firms (Appendix 3, 16:56). Michael’s perspective is confirmed by the CTO, who says that “*they’re [the small companies] doing very specific things, just segmentation or just personalization. (...) But companies are consuming them because they can do one thing really, really well*” (Appendix 2, 22:08). Thus, Ed agrees with previous statements that these small competitors are dangerous in a way that they specialize with one activity and master it. It can be also assumed that, as they do not provide a full range of products and services, their costs may be smaller for the end users. Ed offers an additional point stating that the pressure comes not only from these small innovators but also from big companies. He argues that it is not uncommon to lose new business or even existing client to companies that would not be thought as of competitor in many cases (Appendix 2, 22:08). Thus, it can be said, that in the advertising

sector there are two competition sources, one being small innovators, and the other one being big well-established enterprises. But the ones seen on a daily basis are rather the big fishes (Appendix 3, 16:56). Michael Murdza further says that this is due to the fact, that the big players compete in a completely different way, “(...) *they’ll compete in a way that is hard for a customer to not buy from them. (...) the customer has dollar signs in their, in their head*” (Appendix 3, 18:30). Here Ed Federici pinpoints that although the majority of the companies competing with the advertising sector is differentiating on the price, “*differentiation on price can be a losing game because it becomes a race to the bottom*” (Appendix 2, 18:42). This can be reasoned back by a number of competitors on the market. If there are between 5000 and 8000 competitors in total, offering a different range of services, it is clear that there will be always someone offering a cheaper product. Additionally, as in any other industry cheaper price does not necessarily determine the final price since some hidden costs may be included.

Interestingly, Ed also approaches the problem of what the clients want nowadays. He states that the forms of information the client requires from the companies in the market are increasingly growing. The firms are not able to perform on such a big scale as the clients expect them to do. CTO indicates that this is the reason why it’s important not to focus on the differentiation of the price but rather on the quality and relationship (Appendix 2, 18:24). It’s important to understand that the relationship does not necessarily come just in the form of the company-client approach. It should be seen as a much broader setting. The differentiation in the relationship includes also specific departments of the company internally. This lies with the agreement of CTO’s perspective when he emphasizes that Cheetah Digital, in comparison to the competitors, invests in the service and support groups as the internal department of the company, whereas many competitors focus on outsourcing these activities (Appendix 2, 18:42). The outsourcing is insofar useful as it may resolve some internal issues, nonetheless, it does not provide full service to the client. It does not let the client know that he is important, understood and treated as a partner.

Thus, it can be said that the competitive landscape of the advertising industry is fierce and complex. There are two types of competitors, the small start-ups and the big enterprises. In order to understand these, the company needs to sustain a specific strategy which should be rather focused on building a relationship with the client than on differentiating products’ price.

End User

Question of *who is the end user of the offered services and products?* has a special position in the discussion concerning the development process of a new digital product. Understanding of who is the very last element in the chain allows gaining better insights into how the product should be developed and what the main features should be included in it. Hence, it is in the company's best interest to gather as much information about the end user(s) and to present them in an approachable form.

As stated by Alessandra Jacques, there are “*multiple personas for end users, but is typically members of the direct marketing department of enterprise level companies*” (Appendix 4). Here it is important to put the focus on the word *multiple*. Although the Senior Product Manager specifies the mostly approached end user, she also gives a hint that this is not the only one. This statement is further emphasized when Ed Federici approaches the topic of the end user. He states that the company developed five personas, who are treated as the ultimate users. Among them are the Data Marketer, CMO, and VP of Digital (Appendix 2, 09:50). On the basis of the provided answer of CTO of Cheetah Digital, it is easy to notice that each of these personas hold different status within the company. Therefore, each of them will focus his attention on the different features and functions of the digital product. For example, while the Data Marketer may be using the product on a daily basis, the CMO will likely rarely see it and will be focused solely on the outcomes it brings. What is more, Ed Federici argues that when building the new digital product, it is important to ask yourself a question whether this specific end user will need this feature in his job or will this make his work even harder (Appendix 2, 09:50). This leads to understanding that each product, or rather each version of the product and granted to it access, differs among different end user.

Thus, it can be concluded that the process of developing specific characteristics of the end user depends on the way how this person will use the product and what this person expects to achieve. CTO confirms this when stating that every user, or rather every group of users use the application released on the market in a different way (Appendix 2, 09:50). What is more, Alessandra emphasizes this statement by providing even more specific insight when saying that due to the customer base the highest priority of the product is its good usability, that “*anything we build needs to be very performant (fast and reliable) but easy to use*” (Appendix 4).

Development process

The process of development of a new digital product is the main focus of this thesis. Therefore, most attention will be put on this part. As already stated in the theoretical part of this paper, the development process of the product consists of multiple stages and phases. These can be cut or added accordingly to the needs. Nevertheless, it is important to understand how the development process looks like for the digital products since, as already argued, they do not have the same characteristics as the tangible, non-digital goods. Before the specific phases will be examined it should be noted that “(...) *it's very common pattern. Especially in the software*” (Appendix 3, 11:33) and they can be applied to many companies developing technologies within the advertising industry. The main goal is to develop the product as quickly as possible in order to make it better and better with the received feedback.

The interesting viewpoint was provided by Alessandra Jacques, who stated that the development process is based on specific stages but only to some extent. She argued, that “*in the software world there is generally not as much time as one would like in order to follow the traditional phases – they tend to blur more*” (Appendix 4). Thus, it can be assumed that although the development process of a digital product needs some general outline, there is not much of strong differentiation between the phases. This may be due to the fact that the digital world is self-propelled, and the changes are emerging very quickly. Thus, it is impossible to spend a lot of time in each of the development stages as the company would become less and less capable of introducing disruptive technologies, and, in consequence, the competitiveness of the developed product would decrease substantially. What is more, lack of a clearly defined list of development processes may be a consequence of non-tangibility of digital product and its qualities, which were already discussed. The fact, that the lines of code can be written simultaneously by a few developers, and that there is no need to wait a longer period of time for the materials, brings greater flexibility.

In accordance with the perspective of Senior Product Manager, CTO of Cheetah Digital confirms the view of somewhat less defined phases. The CTO of the company focuses on the two stages of the development process of the new digital product. These are the development of the idea and the execution of the idea (Appendix 2, 03:16). It can be said that in order to develop a new product it is important to find out what is needed on the market at the moment. This is further supported by Ed Federici when he states that the first phase is heavily concerned with such activities as “*talk to clients, try to understand where are the gaps in our products. What the clients are doing today and what the clients want to do in the future*” (Appendix 2,

03:16). The position of the CTO is further confirmed by Michael Murdza, the VP of Product Management. He states that in order to start building something, it is necessary to know what needs to be built. According to Michael, this can be done by gathering a “*solicit feedback from customers, solicit feedback from the industry, figure out where everybody’s going, and where everybody wants to be in about year or two*” (Appendix 3, 01:45). These activities are driven by the Product Team and Product Marketing (Appendix 2, 03:16). Thus, it is to say that the first step of the development process is heavily loaded with market research. The first step in the idea creation is to find out what the client needs at the moment or what he or she will need in the approachable future. This is done not only through the direct conversations with the clients but also through the products’ gap research, competitors’ assessment, and anticipation of changes in the marketplace.

Interestingly, the creation of ideas can have different sources. As said by Ed Federici, clients and their feedback are only one source. These ideas are either gathered or created by the Client facing teams, “*like services or support*” (Appendix 2, 07:39). This may be due to the fact, that these teams are the closest to the clients and thus constantly have insight into what works correctly, what needs to be improved and what needs to be added. Michael Murdza confirms this by saying that the ideas come often from either customer directly or people working closely with the customer, such as in professional services (Appendix 3, 04:26), who can observe how the customer is interacting with the product on the daily basis. Other sources of idea creation are Developers and the Product Owners (Appendix 2, 07:36). Therefore, the idea can be created both internally and externally; and regarding the source of the idea, some future development stages will differ appropriately (Appendix 4).

Further, the CTO and Senior Product Manager argue that after the idea is created the next step is to create the roadmap for the product (Appendix 2, 03:16; Appendix 4). This roadmap has a very important task, of defining the characteristics of a new product, for example, how it will look like and how it should behave (Appendix 2, 03:16). Additionally, the product roadmap, apart from including all features and characteristics of the product, also emphasizes the priorities that need to be delivered (Appendix 2, 15:42). Therefore, it can be said that the roadmap of a product is used as a plan or map of what has to be achieved, what needs to be developed in the first place and what can wait. This is perceived as an important set of information, as it includes all the important elements which have to be embedded in the process of developing product. It is important to understand, that the product roadmap consists of the phases on its own, and as declared by Alessandra, the first stage is to define Minimum Viable

Product, which is “*the minimum set of features that we can release while still solving the problem*” (Appendix 4). The roadmap for the new digital product is therefore characterized with special care and attention as it will serve as a basis for any future iteration. Thus, it should be said, that without the product roadmap it would be impossible to truly understand what should be achieved at the end of the process. The task of preparing product roadmap is assigned to the Chief Product Officer (Appendix 2, 15:42), who is in power to constantly redefine chosen features according to the situation (Appendix 4).

Before proceeding to the next development stage, it should be further explained who takes over the control. Michael Murdza points out that the Product Manager is the person responsible for carrying out the development process of the new digital product. He is the one to understand what it is that needs to be built, what is the purpose of building it and who is the targeted group to use the product at the end (Appendix 3, 03:13). What is more, the Vice President argues, that the Product Manager is responsible for assessing whether the product that needs to be built is feasible and will bring some kind of competitive advantage (Appendix 3, 04:26). Therefore, it can be concluded that the role of the Product Manager is extensive and extremely important in the development process of the new digital product. He is the right person to carry out the premises of what was added to the product roadmap and make sure that these features are executed correctly. This is further confirmed by Alessandra who say that the Product Manager is responsible for overseeing the project beginning with the ideation stage (Appendix 4). Additionally, the Product Manager can meet here with the Product Marketing team in order to better understand the market conditions and the competitive landscape (Appendix 3, 04:26).

At this point in time, the process of development is undertaken by the development team, and the idea execution kicks off (Appendix 2, 03:16). The CTO argues further that the development teams use the information provided in the product roadmap and for two weeks, more or less, translate them into the lines of the code. At the point of time when the code is completed, it is possible to release it (Appendix 2, 03:16). It should be noted that even here the Product Manager is the person in charge. Nevertheless, he teams up with additional people such as Development Manager, and Agile Officer (Appendix 3, 03:12; Appendix 4). As the ideation is completed and the development process starts fully, some specific activities cannot be carried out just by one person or even by one team anymore. Thus, there is a need to bring additional support and skills into the game. While the Development Manager oversees what elements need to be executed first when developing the code and specific features of the product that will serve as a basis for next activities (Appendix 3, 03:13), the Agile Officer “*is responsible for the logistics of the*

product, such as keeping the development cycle on track and releasing the code to production” (Appendix 4).

Nevertheless, before the final release of the new product, some form of testing is necessary. The VP of Product Management argues that instead of delivering a raw version of the digital product on the market it is important to create the prototype. According to Michael, prototyping serves the purpose of understanding whether or not *“you’re building the right thing”* (Appendix 3, 01:45). As the prototyping includes very specific, non-standardized yet version of the product, it may be useful to test it in a less conditioned environment. Thus, the VP talks about taking *“that prototype in front of customers”* (Appendix 2, 01:45). In addition, Ed confirms the requirement of getting feedback from the customers by stating that there is a need to bring the clickable prototype in order to show it to the client and make him or her understand of how it will work when finished and released (Appendix 2, 05:06). The importance of this statement is not only that the company needs to test the product before its release but rather that the prototype needs to be interactive. This may be explained by the desire of understanding how the product will behave in the natural environment and how the customer will perceive it. Michael Murdza provides an additional point of view by stating that the prototype is not meant to be functional, but instead, it just has to provide *“the feel, the flow, the functionality, the layout of the UP”* (Appendix 3, 08:19). In order to test the developed prototype, the company takes it to either special events which are attended by the clients or to individual clients. The process of testing by the users can be either very simple or quite sophisticated and different methods are employed, such as use of hidden cameras and observations (Appendix 2, 08:40) or face-to-face meeting with the customer including explanations of functions by the UX Designer (Appendix 3, 06:54; Appendix 3, 09:28). The CTO adds that it is necessary to get feedback from a *“wide variety of clients across different industries, verticals”* (Appendix 2, 05:06). It seems to be crucial to include feedback from the potential and actual clients, as this brings the opportunity of changing some specific undesirable or undeveloped features into something more appealing and needed (Appendix 4). The phase of prototyping brings also great flexibility in erasing some of the product’s characteristics which make no sense from the clients’ perspective and thus can be replaced by something more needed. The importance of the prototyping is inestimable. This phase of the development process for a new digital product is a valuable source of feedback needed for all iterations and amendments applied to the product. The important role here devolves to the Design Team, consisting of Interface Designer and UX Designer (Appendix 2, 08:40; Appendix 2, 05:06; Appendix 3, 06:54). It should be mentioned, that the designing of a

prototype can take a very long period of time. What is more, for some specific new product there is a need to introduce more than one prototype. As argued by Alessandra, there are at least two prototypes involved with the large new digital products; *“for large new products, we will release an alpha to a few select volunteer clients, make iterative improvements, then release a Beta to a slightly larger pool of clients (...)”* (Appendix 4). This is further confirmed by Michael who says that the prototyping phase finishes after the release of beta versions (Appendix 3, 05:44). Only after the prototyping phase is completed and all the iterations are introduced and tested again over and over, the actual development phase can be introduced.

The phase of the actual development the product is initiated by the Engineering team (Appendix 3, 08:19), which *“(...) is responsible for the code implementation and quality testing of the product. They design how the feature or product will be implemented, and they write and test the code”* (Appendix 4). In this phase, the engineers take the responsibility of delivering the results as agreed on the product roadmap. They are accountable for producing lines of code which will be then included in the final product. As argued during the interviews, the actual process of development starts with some specified through the prototyping touchpoints (Appendix 3, 06:54) and can take anything between six months to a year (Appendix 2, 07:39).

After the technical development of the product, the Product Marketing team is involved in the process. This team *“is responsible for creating sales and enablement collateral, pricing and creating a go-to-market strategy”* (Appendix 4). The importance of the pricing and selling strategy serves as the basis for the expected end results, which will be discussed in one of the following sections. At the moment the product has specific strategies linked to it, it can be released to the market, where the Account Manager starts to work with the Product Manager in order to bring the software to a specific customer or potential client and present the demo (Appendix 3, 05:44).

Nevertheless, there is one last stage in the process of creating a new digital product. This is the validation of the product being released on the market for a period of time. As said by the CTO, *“and then we go back and do follow-ups with some of the clients, not all of them, to see whether that what we delivered works the way that expected (...)”* (Appendix 2, 05:06). It is important to collect after-release feedback, as there is a possibility to iterate the product again when the update will be ready to apply. Ed confirms this by stating that the feedback received is not always positive. Sometimes the negative opinions about the new product are collected by the company, and in consequence, they are incorporated into the improved model of the product (Appendix 2, 05:06). These additions often influence the product roadmap afterward as some

specific requirements are added or changed. For example, the company focuses on uptime requirements. What is more, through the introduction of the changes to the fully developed product, the company needs to correct the estimations of how many customers would buy it and how many new businesses could be won over (Appendix 2, 16:27).

Lastly, the timeframe of the development process should be shortly explained. It was already argued that specific elements of the process take more time than the others, for example, designing is often quite time-consuming. Building a specific feature, such as mobile wallet functionality or sending architecture can take anything between six to twelve months, according to Michales Murdza (Appendix 3, 02:38). Thus, it should be easy to understand that the more complex and unique the new digital product, the more time it will take to fully develop it, especially if the workforce is limited and specific teams need to work on multiple features simultaneously.

According to the presented development process of a new digital product, there is a big focus on constant iterations and amendments of the features developed alongside. This is the big advantage of a digital good as it is very flexible and can be freely appropriate to the evolving requirements. Additionally, the accountability for every single stage of the process is carried out by the Product Manager, who “(...) *owns the development from beginning to end and is responsible for seeing the project through from ideation to release*” (Appendix 4). Summing up, it can be said, that the process of development of the new digital product is somewhat less definable than of regular non-digital goods, as specific phases and roles involved in these stages are less visible. Nonetheless, there is still a specific silhouette of core phases to follow. The typical phases would include “*idea generation, proof of concept and user testing, technical development & testing, commercialization*” (Appendix 4).

Thus, it can be concluded that the process of developing a new digital product involves many departments and teams. It concerns multiple stages that are influenced by specific factors. Presented model is very distant from the theoretical framework. For this reason, it will be presented and discussed in the chapter of conclusions.

Additional services

Although the development process of a new digital product was already characterized it seems to be necessary to include additionally offered services in a separate section. This is mostly because of their indirect role in the development process. These services should be seen rather

as the ways of easing the usability of a product from the perspective of the end user and not as a stable part of the product's development process.

One of the additional services offered by companies developing a digital product is that it can be changed or amended. During the interview, Michael Murdza classified two types of product amendments, one being a major change that needs gradual release, and the other one being a simple change that can be released immediately (Appendix 3, 12:55). The type of change indicates the way how the company and the client will behave. It can be expected that with bigger changes, the company needs to prepare its client and not shock him. Michael further confirms this by saying that while conducting bigger amendments it is necessary to constantly communicate with the client not only before but also after the change happened (Appendix 3, 12:55). Additionally, Ed Federici brings into perspective the need for having product changed. He argues that every change in the workflow of the product, in its design results in some kind of trade-off *"because it's something like zero game; we can't do two things at one time with the same resource"* (Appendix 2, 17:42). Thus, before commencing the amendments very detailed diagnosis of a problem and of a need presented on the market should be conducted. CTO states that every change needs to be weighted against specific characteristics, such as whether the change is monetizable, whether it provides a competitive advantage, whether the client who asked for a change is someone company wants to keep close (Appendix 2, 17:42). If the company decides to introduce client-specific change after the actual process of product development finished, the firm has to be careful not to change things that bigger group of customers are relying on (Appendix 3, 12:55).

Another additional service concerns support activities that help the end user to understand the released product. In accordance with the CTO of Cheetah Digital, there are different types of support services. Some clients may be using standard support services or premium ones. Depending on the type of chosen service they will be able to engage with the support team which will explain how to use specific functions of the product. Additionally, there are online materials available to clients as additional service. These include videos, tutorials, etc. (Appendix 2, 11:24). The support system is often useful, especially if the digital product is not necessarily standardized and can be accessed manually by the client. Such as in the case of Cheetah Digital, and its biggest competitors, the advertising product offered allows to access the interface of an advertising campaign by the user, who then is able to alter specific elements (Cheetah Digital, 2019d).

Summing up, there are two types of additional services. These are product updates or amendments, and support. They are new to the development process visualized in the conceptual framework (Figure 1). Nevertheless, they are of great importance and should be included in the new framework illustrated in the chapter of conclusions.

Expected results

As in any industry, the companies involved in the advertising sector have specific expectations regarding the results yielded by the newly released product. These results are often understood from the financial point of view; but there are specific situations in which the companies go beyond the revenues and focus on some more intangible elements.

To start with it should be said, that the expected results are registered in the written form in a specific document. It encompasses specific for the new product details, such as “*the problem, the proposed solution, the unique value proposition, key metrics for measuring, unfair advantage, target audience, and revenue streams*” (Appendix 4). This form of documentation allows on gathering all the important metrics in one place and reviewing them whenever needed. Thus, it will not only be more sure that the product will be adequate for the demand but also it will bring the expected revenues.

According to Ed Federici, there are two big expectations with regard to the new digital product; first is the element of money, and the second is the element of time on the market (Appendix 2, 12:33). This should not be surprising, as the general rule in the business world concerns sustaining profits in the long term and not just surviving in the short term. This is further confirmed by the CTO, who says that the company exists with the purpose to generate money. Thus, there is so-called Return on Investment (ROI) analysis (Appendix 2, 12:33), which has the purpose of stating what is the right price for a specific product, what are the costs, and weight these factors against each other. This, again, leads to a better understanding of what kind of financial return can the company expect after releasing new investment in the form of the digital product. Interestingly, the ROI analysis allows also to measure the timely element (Appendix 2, 12:33), since it will emphasize the moment in which the product should be removed from the marketplace as it will not yield sufficient revenues anymore. This may result from the technological progression on the market and the lack of sufficient features in the product; which in consequence will suggest additional investments in order to upgrade the product.

Nevertheless, apart from the expected financial results, the advertising industry focuses also on other elements. One of them is innovation. As emphasized by Senior Product Manager, it is important to constantly look to innovate, although, not for innovation's sake. Instead, the company needs to ask itself a number of questions before starting the development process which may lead to a *fiasco*. Here the focus mostly lies in the competitiveness and uniqueness of the proposed solution (Appendix 4). This is insofar important, as when the innovation brings something new to the market and is perceived as useful from the customer's point of view, it will result in increased interest on the market. That interest seems to be another important expectation. CTO emphasizes that the reason for innovating, for releasing new digital products is making potential clients and existing customers happy (Appendix 2, 24:30).

Therefore, it can be concluded that although the main focus lies on the financial measurements, there are some other, more intangible elements to the expected results. It's not only about the money obtained as this not necessarily will give the full overview of the success of the new digital product. Much more often, it is about the underlying satisfaction of the user, as this could evolve in a positive image and good word-of-mouth for the innovating company.

Process accelerators

As already explained, the development process of a new digital product is time-consuming and very detail oriented. In order to speed it up, from time to time the company can afford and use services of a third party or use the knowledge of the partner. These activities, although not always possible to employ, can often bring additional advantages as some specific services or types of products are available already. Thus, it seems to be useful to direct the focus on the process accelerators in order to grasp the process of new digital product's development more comprehensively.

The term we are talking about is regarded as so-called "coopetition"; which means that *"someone might be a competitor, but we've joined together to sell a product for a client"* (Appendix 2, 14:11). Thus, this form of cooperation is based on simple agreement and single-time sharing information between usual competitors. It is not a form of partnership in any sense. The reason for taking part in the coopetition is that the company will gain revenues regardless, which would not be the case of not cooperating with the competitor.

Additionally, the partnerships are often accelerating the development process as well. There is a specific department within the company screening the competitive landscape and reporting back on possible opportunities of a partnership (Appendix 2, 14:11). The reason for partnering

with some specific companies may be that the company does not need the knowledge stack of a partner constantly but rather it is a one-time shot. Thus, from the financial point of view, it may be more useful to invest a very specific amount of money in this way instead of spending much more and acquiring a company that not necessarily provides any additional useful knowledge or technology.

Another form of the accelerator is the acquisition of a firm that has interesting assets. The CTO says, that this is the case when the company wants to own the intellectual property of the competitor because the core business is too similar and poses a threat of losing potential and actual clients (Appendix 2, 14:11). What is more, the reason to acquire some competitors may lie in the fact that they own specific trademark or interesting technology not accessed by other companies, and thus they would provide additional leverage in the market. Additionally, as argued by Michael Murdza, some specific development may take more than two years to be built if done without acquiring specialized companies. Nevertheless, some acquisitions may not necessarily be desired if the market diligence is not done properly. This is the case when the acquired company was not screened correctly and in consequence, it becomes clear that it has some form of debt or internal issues (Appendix 3, 21:54). Therefore, the diligence is an important aspect of looking for new companies not only to acquire, but also to *coopete* with, and to partner with. Without properly conducted diligence a very toxic relationship can evolve.

Lastly, third parties pose some form of process accelerators. Alessandra Jacques states that in some cases, especially when talking about stand-alone features, it is possible to hire contractors to help with development (Appendix 4). This is also emphasized by Michael Murdza, who gives an example of UX firm that helps with specific projects, but also of market researchers who are employed in order to evaluate a piece of software (Appendix 2, 15:11). Hence, third parties, although without a clear connection to the company, are used sometimes as a form of additional service.

Challenges and Opportunities

Like any other industry, the advertising sector is also prone to the arising challenges as well as opportunities. Both of these present very dangerous but also viable sources for a company to mark its position on the market. Thus, it is important to fully understand what these challenges and opportunities may be and how they are approached by the companies operating in the advertising industry.

Michael Murdza stated during the interview that sometimes it is difficult to get the minimum viable product on the market. There is a constant struggle between sacrificing as minimal amount of the work as possible and adding the functionality to the product (Appendix 3, 09:28). It should not be a surprise, that the companies active in the advertising sector focus on the efficiency of the development process, which indicates maximum output with minimum input. Additionally, Michael points out the timely matter related to the development process. He concludes that from the company's point of view it is important to release products or rather initial versions to the market and get feedback on them. Thus, the company needs to understand what the minimum amount of product to build (Appendix 3, 09:28). This understanding is insofar important, as it presents a way of smarter use of available resources, especially when it comes to scarce resources such as time or the workforce. The better comprehension from a company regarding what the minimum to be released is, the less unnecessarily wasted resources. This is further confirmed by the Vice President, when he states that "*it's a constant prioritization game between what customers want, what the industry is asking for, what can get your product super competitive, and, and have a huge advantage*" (Appendix 3, 09:28).

What is more, as the technology is the prime source of digital products, the need to release them as soon as possible is a requirement. Nevertheless, this is sometimes not the best practice as it requires a delicate balance. There are cases in which products released too soon, resulted in double work for the teams as it needed to not only be fixed but also to get additions desired by the customer (Appendix 3, 11:33). Therefore, the fact that digital product can be easily tested, as it is not the case of all non-digital goods, poses a major advantage but also disadvantage. If shown on the market too quickly, it can result in unnecessary bugs created by the developers because of the time pressure and, thus, lead to additional work which might have been avoided.

On the other hand, there are some advantages presented when thinking about the development process of the new digital product. As already mentioned, the digital product is not necessarily characterized in the same way as the non-digital product. The digital version of a good is often loaded with many complicated, technical functions which are difficult to grasp. Nevertheless, this is also an advantage of this type of products. As stated by Murdza, one of the features native to the digital product is its flexibility and relative ability to be simplified. This is an example of a function of the orchestration, or journey building, which allows the end user to control the product to his likings. Michael explains that the organization of the advertising methods such as email, mobile, social often is difficult. The overwhelming messaging is often not under control. He argues that "*If you get 10 emails a day from, from your favorite brand, you're not*

gonna be very happy with that, right?” (Appendix 3, 20:31). The Vice President tries to show the point from the perspective of the receiver of the messages who is constantly under the fire from different sides and different sources, either it's email, SMS, or tweet. This situation leads the receiving person often to block specific numbers, mark emails as spam, or unfollow some accounts. Thus, Michael states that the possibility to orchestrate the use of messaging formats and actually govern it is an advantage of newly developed digital products.

What is more, the flexibility of the digital products allows on incorporating changes evolved from the feedback of the customers after the final release. The importance of the digital product is that there are expectations of adding a new feature to the product every year (Appendix 2, 16:27). Thus, in comparison to the non-digital goods, digital products can be easily altered during such a small time-frame as is one year. The reason for this is that the production process is intangible and thus there are no real manufacturing issues apart from writing a specific amount of code that can be applied for one product released to multiple clients. In the case of the non-digital goods, these changes might be often characterized by additional design, production process, packing, or logistic activities.

Conclusion

This thesis had the purpose of answering the research question of *“how the process of new product development is structured in the context of digital products in the advertising industry?”*. This question was further supported by the number of subquestions:

“What is the difference between digital and non-digital products?”

“What are the challenges and opportunities connected with digital product development?”

“What are the expected results of the development process?”

“What are the differences between the development process of non-digital and digital products in the advertising industry?”

The answers to these questions will be included in this section. Afterward, the research question will be examined through the visualization of an updated conceptual framework.

Looking at the provided theoretical framework and the empirical findings, it becomes clear that there is much more of a difference between digital and non-digital product than simply the form they exist in. Although it is important to remember that the digital product is embedded in the

online world, there is much more than this. As proven through the collection of empirical data, the digital product differs significantly in the internal characteristics when compared to the non-digital good. The timeframe needed to develop the digital product is one of the examples. Additionally, needed work is much more difficult to measure and understand than in the case of the physical product.

Moving forward to the next question, it should be noted that like any other type of product, the digital one is concerned with some specific challenges and opportunities. Apart from the ones that result from the theory; which include the opportunity of the creation and becoming more creative, but also challenge of misunderstanding the appropriate media channel and the limitations posed by the GDPR; some additional ones were spotted during the interviews. One of the challenges is presented in the constant balancing act of what the customer expectations are, what features will make product competitive, and what the industry expects as the minimum. What is more, the time pressure is also included in the development process of new digital product, since there are specific expectations regarding releasing updates into the market. The latter threat has to be treated with special care in order not to release unfinished or malfunctioning product which then will require additional reparation work. On the other hand, there are some possibilities as well. For example, one of the major advantages of this kind of product is its flexibility or ability to be updated regularly, without causing bigger costs. It is important, as the technology is changing quickly and the competition in the advertising market is fierce. Moreover, it should be mentioned that the manufacturing process is much more feasible as there are no tangible materials used. Thus, all changes included in the digital product are easy to conduct.

Followingly, the focus will be directed towards the expected results of the development process. The theory is mainly focusing on the financial aspect of the development process of new digital products. Although the interviews prove it as a correctly specified expectation, there is much more than this. During conducting the empirical investigation, it became clear that additional big expectation is formed in terms of the relationships. One of the objectives of the companies operating within the advertising sector is to make their customers happy. Thus, the expected result is to form a satisfactory, interactive, and ongoing relationship with the customer. This way, the innovating process becomes easier as the company gains better insight into what the client actually wants.

At last, the question regarding the difference in the development process of digital and non-digital products can be answered. As mentioned in the conceptualization, there is not much of

a difference seen in the development processes of these two. According to the literature, as well as the empirical study, the biggest difference is the lack of a specified framework. Thus, the steps included in the development process are somewhat undefined and rather flexible. This is due to the fact that some processes can occur at the same time, some phases can be skipped, and some may be added accordingly. Nevertheless, it does not mean that there is no general silhouette of how the development process looks like in most cases.

Updated conceptual framework

Only after finding answers to the sub-questions, the focus can be directed towards the research question of *“how the process of new product development is structured in the context of digital products in the advertising industry?”*. This question was attempted to be answered through the development of a theory-based conceptual framework in one of the previous chapters. Nevertheless, after conducting interviews and gathering insights, a new perspective was developed on the matter. Therefore, the updated version of the conceptual framework will be presented and discussed below. This framework is based on the findings concluded from the interviews.

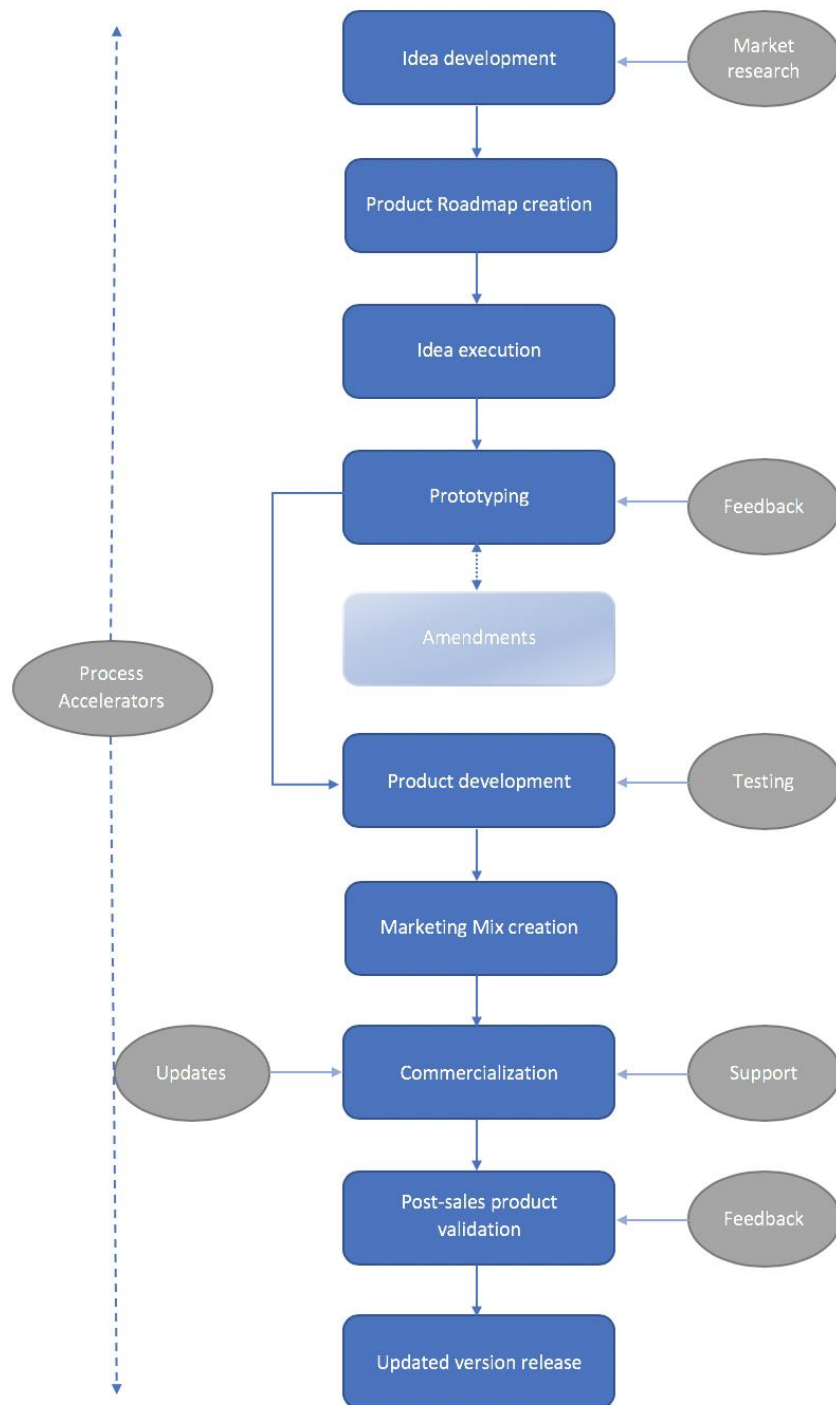


Figure 2 – Updated Conceptual Framework (Own manufacture)

As seen in Figure 2, the development process starts with idea creation. This indicates the development of a very general outline of what should be built and how. Nevertheless, in order to create an idea, some market research is required. Through this research, feedback from both customers and internal teams is collected and form a basis for the generation of the product idea. What is more, the market research includes also investigation in the competitive

landscape, the industry requirements, the technology changes, and the anticipating future market demands.

The next step is the creation of a product roadmap. This instrument allows to better understand how the anticipated product should look like, what features should it include, and how should it behave. Additionally, it focuses on the prioritizing of the development of specific product elements. Thus, it should be clear that the product roadmap serves as some sort of a detailed plan which helps with the logical execution of the development process of a new digital product.

After specifying the roadmap, the phase of idea development begins. In this stage, the very first lines of code are written, which then are released in the form of prototypes. Thus, the fourth step starts. The prototype is understood as not yet functional version of the product and has the objective of generating the flow and the feel of how the final product will look like. This phase is heavily marked with testing activities, which can be conducted either in front of a bigger group of unaware customers or during a planned individually meeting. Thus, here the feedback is an important source of information. It is important to gather as much of the evaluations as possible since this will result in more adequate next step, which concerns amendments. Through the feedback gathered from the targeted group, the company is able to introduce some changes to the product. These amendments have the purpose of erasing unwanted or badly received features of the product and improving the design, visuals, and flow of it. Interestingly, after the new prototype is released and tested, the feedback of the customers is collected again, and the amendments introduced once more. This process takes time until the company achieves the desired results.

Following the prototyping, actual product development starts. The obtained in the previous phase touchpoints and suggestions are used as the basis for the development process here. This stage is concerned with hours of working and developing completed, long lines of codes. It should be mentioned, that here testing element plays a significant role. The team of engineers is responsible not only for the development of the code but also for regular checking if it is free of mistakes. In this phase, features and characteristics included in the product roadmap have to be implemented.

Afterward, the marketing mix is created, where specific advertising and pricing strategies are determined. This leads to the commercialization of the product. In this stage developed digital product is brought to the clients and presented in the form of a demo. Worth mentioning, here some services are offered to the clients. These include not only contact with a designated

representative but also such materials like webinars, videos, and online articles. The reason for this is the expectation of building a strong relationship with the customers by enabling them easier and more approachable onboarding. Importantly, during the stage of commercialization, some updates may occur. These can result from a technological change on the market, or from the expectation set by the customers. Nevertheless, they are communicated with the targeted group in order not to break the established relationship.

Following, the post-sale evaluation takes place regularly. Here the customers are submitting feedback, either positive or negative, to the company. The firm goes through it, evaluate it, and decides on further updates. In comparison to the updates in the step of commercialization, here it is much more about what the customer thinks, what worked well and what did not. Thus, the point is not anymore to make the product up-to-date, but rather to respond to the actual needs and requirements of the customers.

Lastly, it should be mentioned that the element of process accelerators is available throughout the whole development process. This is due to the fact, that the company of interest, may want to interact with the third party in different ways. It can be expected that competing companies will join forces in so-called *coopetition*, that some form of the partnership will emerge, or that the company will pay for independent service of another firm. What is more, in the most extreme case, acquisitions can occur. Thus, the accelerators of the process may not only provide access to a better understanding of the market and the customer, but also to their internal knowledge and trademarks, or their services.

As seen, the conceptual framework based on the theory differs substantially from the updated framework. Such elements like the choice of media or idea screening were removed, and multiple stages were added. This may be due to the fact, that the complexity of the advertising industry in the digital environment is significant and that its development process changes significantly with every technological update.

Reflections

In this chapter, the focus will be directed towards the author of the thesis and the entire paper. Here will be presented and discussed the assessment of the quality of this study as well as the thoughts on this thesis' limitations.

Assessment of the Quality of the study

One of the most interesting and crucial parts of the reflections is the assessment of the quality of the study. As already explained in the section of *data collection*, this assessment is conducted on the basis of three measurements. Following introduced in the previous chapters order, the internal validity, external validity, and reliability will be discussed respectively.

First, internal validity needs to be addressed. As already discussed, this measurement is concerned with the inference with the case. In order to minimize the possible inferences, the pattern-matching technique was adopted. As argued already, this technique allows following some specific pattern, in case of this thesis the themes of the sub- and research questions, in order to sustain some form of compatible structure. What is more, this technique allows for immediate confirmation of the chosen patterns as these are analyzed separately and on their own. Thus, obtained information and collected knowledge do not get mixed and do not lead to confusing, duplicating statements.

Nevertheless, the interview, as a tool for the collection of primary data, is perceived as full if inferences. This is due to the fact, that some form of influence is executed during the conversation. This is especially the case of the interviewer influencing the interviewees during the dialogue. The influencing process is significantly enhanced when the interviewer does not have significant experience in conducting interviews and, thus, may have major problems in formulating questions in an objective way. This is especially the case when the interviewer tries to respond immediately with a follow-up question that is a reaction to the obtained from the interviewee information.

Another source of inference is the interview guide, which has specifically fixed topics to be approached during the conversation. Although, the interview guide should serve the purpose of easing the process of interviewing by containing specific questions to ask, in some situations it can have an adverse effect. Sometimes, especially if the interviewer is inexperienced with conducting interviews, he or she can stick too rigidly with the pre-developed questions in a way that the flexibility of dialogue would be reduced and, in the worst case, it could lead to uncomfortable situation and lack of openness from the interviewee. What is more, the mindset of the interviewees, even if the interviewer escapes the threats of using the interview guide, can be still influenced. This is due to the fact, that the interviewee may decide to give the most beneficial answers to the interviewer, and thus bias the whole conversation. Additionally, it can be observed that in some specific cases the interviewer tries to direct the answers of the

interviewees by indirectly imposing some form of favorable answers onto the interviewee. This absence of objectivity from the interviewer can be observed during the transcription and analysis of the recorded interviews. This can be visualized in quoting an example of a question, such as “(...) *are there any other characteristics you include in the brainstorming, the idea developing beforehand? Apart from price, or costs, or revenues but something like quality or reliability or performance*” (Appendix 2, 15:55), where the interviewer indicates directly on what to focus instead of giving the freedom of thought to the interviewee. Instead of asking the question in that way, it could be formed in the following manner: “*What other characteristics apart from price, costs, and revenue do you include in the brainstorming and development of idea?*”. In this way, the interviewer does not interfere with the answer of the interviewee and so the achieved answer would be less biased. For the above reasons, the study is not regarded as of a great internal validity.

Second, the issues of external validity, or of generalization, need to be evaluated. As argued by Yin (1994) the case study design does not rely on the statistical generalization but on the analytical one (Yin, 1994, p.36). This implies that although there is no possibility to generalize the results in the same way as in other research designs, it is still possible to maintain a good level of external validity. Nevertheless, the scientist argues also that in order to sustain the analytical generalization it is necessary to provide replication of the results (Yin, 1994, p.36). Although there are no multiple case studies included in this thesis, the replication of the results can be somewhat sustained on the basis of multiple interviews. What is more, it can be regarded as improved due to the past experience of the interviewees in similar companies to Cheetah Digital and their confirmation regarding the sector-unique and not company-unique development process of the new digital product. Additionally, all interviewees were asked to think of the questions in terms of the industry and not the company-specific case. Nevertheless, as already argued this could lead to some sort of inference resulting in biased opinions. Thus, the external validity is perceived as of moderate level and could be strengthened if additional company case(s) would be included. Nonetheless, due to the scope and time limitations of the project, this was impossible to do.

Last, reliability needs to be examined. As already argued, reliability serves the purpose of delivering very objective research. Thus, reliability is said to be sustained, if the process of conducting the research is documented in the way that if the same study would be conducted multiple times it would deliver exactly the same results. For this case study, the author believes that the reliability is somewhat sufficient. Along with the whole thesis, the research process has

been written down, and the interview has been explicitly documented by the inclusion of the interview guide and fully transcribed recordings. Thus, it is believed that it might be possible to repeat the research with the same company case following the same process, and thus achieving the same results as presented in this paper. However, although objectivity has been used as a primary goal of this study, the qualitative character of this study brings bias into the research on its own. This might be visible not only in the process of documentation but also in the data collection. Hence, the reliability of this thesis becomes reduced due to the qualitative character.

Interviewing process

This thesis is focused on researching how the advertising sector maintains the development process of a new digital product. This, simply through its wording, can and should be seen as a long-term process. Thus, it would be useful to use a longitudinal research design where the author would observe and interview appropriate representatives over the course of developing new digital product. This would allow the author to follow the process over a period of time in order to examine the developing of new digital product in-depth and thus gather more sufficient data.

The research question and the sub-questions were based on the concept of the development process of a new digital product within the advertising sector. Thus, naturally, the interview questions were structured around it as well. Nonetheless, during the process of reviewing and analyzing the answers provided by the interviewees, it became clear that some dissonance between the answers and proposed themes were present. Thus, a different formulation of the questions might have enhanced the quality and the outcome of the interviews. It is possible, that if the questions were formulated in a different way, the interviewees would answer them differently, providing more insightful information. Nevertheless, in the case of too specific questions, the interview would become more structured losing its flexibility and limiting the interviewees in their thoughts.

Lastly, the form of conducting conversations with all three representatives of Cheetah Digital should be more unified. This is especially visible in the last interview with Alessandra Jacques, which had to be made in the written form due to the time restrictions. Nevertheless, the author believes that it brings less insights into the problem of this thesis in comparison to the other two interviews. Due to the time constraints, the author did not have time to prepare a written form of questions that would be easy to answer in a satisfactory manner without vocal clarifications.

What is more, the author believes that if the last interview would be conducted in the same way as the previous two, the whole thesis would provide more integrated results.

Choice of Case

In the process of building this paper, a specific approach was introduced. Instead of using the commonly approved practice of developing a research question and its sub-questions primarily, the company used as a basis for this paper was chosen first. After the choice of a company, the necessary questions and the problem formulation were developed as suitable for the whole project.

The choice of a company was made without any hesitations and with dual agreement and understanding from the author's point of view and the perspective of the company. The reason for choosing Cheetah Digital as representative of the advertising sector resulted from the close acquaintance between the researcher of this paper and the company itself. The author is employed in the company since December 2018 and had the possibility to gain better insights into the work field of the firm. What is more, with the support of co-workers the researcher decided to proceed with Cheetah Digital as the chosen company knowing that the gaining necessary information will be easy and less structured, time-consuming and unsure as in case of choosing different company. After deciding on the company used as a basis for this thesis, compatible topics were specified and one was chosen.

Despite the fact, that the chosen company brought an interesting understanding of the development process of new digital products within the advertising sector, it should be noted that additional insight would be helpful. Including additional cases would be insofar beneficial as it would show a different perspective or deepened the view on the topic, resulting in either correction of the collected findings or their approval. This would, therefore, lead to a more valid study as its generalizability would increase. What is more, it could be insightful to gain access to one or few design companies cooperating with the firms like Cheetah Digital, in order to enhance the understanding of the development process of a new digital product and the role of these firms in this process.

This is further acknowledged by Yin (2014) who argues that “(...) *multiple-case designs may be preferred over single-case designs. Even if you can only do a “two-case” case study, your chances of doing a good case study will be better than using a single-case design*” (Yin, 2014, p.53). Thus, the scientist emphasized the importance of use at least two case studies in order to discover more fruitful and precise information. In consequence, having additional firm or firms

would be more beneficial for this thesis. In connection to that, it would be interesting to gain insights from the company having a unique development process or a firm having significant difficulties in understanding and conducting the process of developing a new digital product. In any case, the enabled comparative design would result in a better understanding of what factors play a significant role in that process and which ones are brought as unnecessary and could be skipped.

Quantitative approach

The choice of the qualitative approach was fully intended and has not be regretted during the process of collecting data. Although it brings many advantages, some disadvantages are connected with this approach. It should be noted, that during the adaptation of the qualitative approach, some researchers have a tendency to look for confirmations of the assumed propositions. Although there are no propositions in this paper, the thesis is structured on the basis of the research question and its sub-questions, and the author tried to be as objective as possible, there is a chance of biasing results of the study due to the expectations held by the researcher. These expectations did not have to be conscious in order to affect the study and its results. Thus, this may lead to falsified confirmations of the researched areas. In order to minimize this distortion, a quantitative study could be introduced as a form of statistical measurements which are objective *per se*.

Nevertheless, it should be noted that the topic of this thesis and connected with its research question together with its sub-questions are not easy to measure numerically. Thus, the quantitative approach would not be as suitable in this paper, even though it could bring the objectivity into the play. However, if the subsequent study would be executed, the quantitative approach could be used in the research. If the following study would focus on how important the stages of the development process of new digital product in the advertising industry are; or if the new research would present the outcomes of which sector needs to follow specifically determined development process, the statistical results would be more useful.

Thus, according to the discussion above, the reduced flexibility of the quantitative approach presented an important reason for choosing the qualitative approach, as the latter one allowed for the interviews. The author believed that the semi-structured interviews would not only cover the prepared beforehand questions but would also allow on gathering additional insights and, therefore, deepening the understanding of the development process of digital product in the advertising industry.

Discussion of Philosophy of Science

At last, the discussion regarding the philosophy of science will be included in this thesis. This discussion serves the purpose of understanding how the author's own reflections and assumptions influenced the research. Thus, this chapter will include a short introduction into the philosophy of science, and small sections with a discussion regarding ontology, epistemology and methodological considerations.

As argued by Kuada (2012), assumptions of the researcher, either consciously or not-consciously developed, concerning ontology, epistemology, human nature, and methodology pose an important feature of the research. The scientist argues, that explicit articulation of these assumptions helps the researchers *"in reflecting on their work and help their readers to make better sense of it"* (Kuada, 2012, p.71). Thus, these are essential elements on defining how the research is conducted, how particular elements and actors are perceived, how the knowledge is formed, and what results may be achieved. These thoughts are in alignment with Arbnor and Bjerke (2009), who argue that *"the different methodological views make certain ultimate presumptions beforehand"* (Arbnor & Bjerke, 2009, p.4). Thus, it can be assumed that these presumptions will present different perspectives not only on how the reality should be perceived, but also on the observations, data collection methods, and the obtained findings. Therefore, the processes and outcomes of the research are highly influenced through the conscious or unconscious use of specific methodological views. Therefore, it should be argued that *"methodological views make ultimate presumptions about reality"* and in consequence serve as *"a guide for the creator of knowledge"* (Arbnor & Bjerke, p.6).

As the importance of the methodological views was explained the focus can be shifted in more extensive explanation of the philosophy of science. As argued by Kuada (2012), there are specific paradigms which are *"now accepted in the philosophy of science literature as providing a summary description of (...) assumptions"* (Kuada, 2012, p.71). The generally accepted distinction within paradigms focuses on the objective and subjective approach. They are further defined as the positivistic paradigm and the interpretive paradigm.

It is believed, that this study takes the perspective of the positivistic paradigm. According to Burrell and Morgan (1979), positivism *"seek to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements"* (Burrell & Morgan, 1979, p.5). This is further in agreement with thoughts of Kuada (2012), who states that the researcher can *"study the constituent parts of a social phenomenon in order*

to understand the whole; that is, the positivist looks for regularities and causal relationships to understand and predict the social world” (Kuada, 2012, p.74). Thus, it can be assumed that the positivistic paradigm is based upon generalizations. As the author focused her work on achieving generalizable results, she believes that the positivistic paradigm suits this thesis as the best. This is further proved, as the main objective of this paper is to encounter a general view of how the development process of new digital product looks like in the advertising industry as a whole. It should be noted that the positivistic paradigm reflects the objective approach. Nevertheless, as it will be proved in the following sections, it was not always possible to maintain objectivity, from the author’s perspective.

Ontology

Ontology, as the first element of philosophy of science, *“makes a number of assumptions about fundamental issues such as the nature of truth”* (Willis, 2007, p.8). According to Bryman and Bell (2015), the assumptions of ontology are concerning the nature of reality (Bryman & Bell, 2015, p.32). The ontological considerations are thus related with the question of how the scientist perceives surrounding her world and the environment, and whether he or she takes objective or subjective position towards them. These considerations can take two forms; the social world is external to the human being and so there are no significant interferences between these two that can lead to changes, or the human being is influencing surrounding him environment which in consequence leads to significant amendments. This is confirmed by Kuada (2012), who argues that the first case is an example of objective viewpoint, while the second one of subjective perspective (Kuada, 2012, p.59). Therefore, the assumptions made about the human beings and their environment will determine how the researcher sees the reality, and therefore what he or she perceived as a truth.

In accordance to this explanation, the author of this thesis believes to follow the assumptions of the objective view. Therefore, she holds that the surrounding world is free from influences of the human being. Thus, it leads to assumption that the concept of the development process can be seen as something observable and measurable. The author of this study believes that there are some characteristics and factors that can be used to explain the process of development of a new digital product in the advertising industry, and whether or not it differs from the tangible, non-digital product development. It is generally assumed in this paper, that it is possible to find these elements through the execution of objective research.

Epistemology

“Epistemology is a term that describes the nature of knowledge and the means of knowing” (Kuada, 2012, p.59). The epistemological considerations are rather concerned with the questions of what knowledge is, how the knowledge can be acquired, and how to be sure of knowledge (Willis, 2007, p.10). Therefore, the assumptions of epistemology are focusing on how the author of this research obtained the knowledge, processed it, decided what is true and false, and communicated it with others. It is important to remember that knowledge can be either experienced personally or obtained from an external source (Burrell & Morgan, 1979, p.1-2).

In alignment of the epistemological considerations, the author of this thesis formed a unique view on how to determine the underlying elements of the development process of new digital products. The researcher tried to be as objective as possible. Nevertheless, it is not always true, as in some cases the author developed her own assumptions. For example, during the interview, the interviewer assumed some information to be true or false without clarifications. What is more, she sometimes introduced some questions as valid, due to the sought for this thesis answers. At the same time, the author developed the assumptions on the basis of the existing and researched theoretical knowledge.

Methodological Decisions

The methodological approach *“describes the reasons underlying the choice and use of specific methods in the research process”* (Kuada, 2012, p.59). The decisions concerning methodology are responsible for the choice of distinctive methods in the study. They are also concerned with the description of how the researcher will find needed knowledge. In connection to that Andersen, Ingstrup and Hansen (2018) argue, that in an empirically-based research it is crucial to keep in one’s mind that the methodological choice along with the decisions regarding the planning and executing the process of the research must fit both, the investigated problem and the ultimate presumptions presented by the researcher (Andersen, Ingstrup & Hansen, 2012, p.21). Hence, the decision of the methodology has a consequential impact on the whole research. It not only mandate tools used for obtaining the information but also the opportunities resulting from this knowledge. In order to better understand the methodological decision used in this thesis, the three approaches developed by Arbnor and Bjerke will be explained.

According to the theory of Arbnor and Bjerke, there are three methodological approaches influencing the research; the analytical approach, the systems approach, and the actors approach

(Kuada, 2012, p.85). These approaches will be briefly described and the chosen one will be further justified in terms of this study objectives.

The analytical approach is built upon presumption that the reality relies on the facts. According to Andersen, Ingstrup and Hansen (2012), the reality in this approach is objective, alien from the individuals (Andersen et al., 2012, p.26). This approach induces that the reality has a summative character, meaning that the whole is perceived as the total sum of all its parts. Thus, it is possible for the researcher to study parts of the whole separately without changing the meaning of the whole. What is more, this approach says that the subjective experiences are not reliable factors, and thus do not compose the reality; in fact, only formal logic forms surrounding one's reality (Kuada, 2012, p.85).

In accordance to the analytical approach, the systems approach sees the reality through its objective assumptions. Nevertheless, an important difference between these two lies in the general of perceived *whole*. Following thoughts of systems approach, the reality does not have summative character; instead, the approach builds on the belief that multiple social entities, such as organization, group, or community are seen as system consisting of underlying elements among which relations exist (Kada, 2012, p.86). Thus, it can be said that the system consists of sub-systems. The systems approach focuses on examining the synergies which are created as a consequence of the relations among different independent parts of the whole system (Andersen et al., 2012, p.29). Therefore, in this approach researchers are interested in understanding how a change in single element can influence other elements and the whole system, as well as how the synergies between the elements are forming.

Lastly, the actors approach relies on the assumptions that the reality is formed based on the subjective experiences of individuals from a community over a period of a time. In other words, reality is seen as community-dependent and meanings-dependent (Kuada, 2012, p.88). Hence, an important noticeable difference with the two other approaches is the lack of objectivity. At the same time, this approach can be associated with the interpretive paradigm (Kuada, 2012, p.88).

The objective of this study is to investigate how the development process of new digital products is carried out in the advertising sector. The main objective of this study is to provide an overall view of the product on only from the perspective of the studied company but rather as the general knowledge suitable for broader audience. The study includes focus on what is the logical sequence of steps and phases in order to create new digital product, and in

consequence achieve expected results. The author of this study, therefore, view reality as an objective, alien from individuals construct. Therefore, for the purpose of this thesis the analytical approach is used. This is due to the fact, that the author wishes to discover a logical sequence and the perception of the development process as of summative character where some formal logic has to be sustained in order to achieved desired outcomes. The systems approach would not be suitable to use as there is no need to investigate the synergies between individual parts of the system. On the same note, the actors approach is formed on the subjective premises which are against of the author's assumptions.

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Appendixes

Appendix 1

Interview guide

1. Opening questions
 - Introduce yourself; introduce project.

- Ask for introduction from interviewee (Name, position, time in the company)
- Ask for permission to record and to use names.

2. Interview

- Would you say that there is a difference between developing non-digital and digital product?
- Do you conceptualize products regarding its layers? For example, the core of the product (the purpose and basic benefits), the actual product (features, appearance, quality), augmented product (delivery, warranty, installation).
- How well is the innovation embedded into the concept of product development? Is it something that you are looking for constantly or only in specific events?
- What are the phases concerning development process of new product? (Idea generation, product concept development & screening, marketing strategy development, business analysis, technical development, test marketing, commercialization)?
- Who is in charge of the product development process?
- Which teams are involved in the product development process? Which team takes initiative in which stage?
- How do you validate ideas?
- How do you validate your product design?
- What is your business model for acquiring customers and how does it impact your development process? Do you include customers in the process? If yes, how? (surveys, collaboration, polls, feedback)
- Who is the end user? Who are the clients?
- What are the features when developing new product (are you including future outcomes of, e.g., how the product will compete, what will make it unique, how will it be positioned on the market)?
- What other characteristics do you include in the brainstorming (compatibility, complexity, trialability, observability (others can see new product and the benefits it includes))?
- Are you using prototyping? If yes, in which conditions, on what target group, for how long?
- Do you make drafts of how the product roadmap will look like? What are typical roadmaps for the new digital products? Are these roadmaps made before or after

the product is released on the market? Do you validate it after product is developed and on the market?

- Do you use external services? What type of external services do you use? Are they in form of partnerships, acquisitions or independent companies sourcing you with knowledge and technologies?
- How many competitors are there in the market? Who?
- What results do you expect the new products to bring? What is the priority for the company and what do you think is important for the competitors? How reliable is the forecasting in comparison to the reality?
- Do you have larger product portfolio? Are there plans for development new products?

3. Closing part

- Ask if the interviewee would like to add something; whether some topic was not talked through
- Thank for the interview

Appendix 2

Interview with Ed Federici

00:10

Dominika Tyliszczak: Ok... So, as you know, I'm going to write my thesis, master thesis. The thesis is about developing new digital product in technology sector which is dealing with advertising. So basically, that is exactly the profile of Cheetah Digital, as a company which is... which is dealing with technology products but it's advertising... making campaigns on behalf of the customers.

00:48

Ed Federici: Okay.

00:49

DT: Emmm... Before we will start do you mind introducing yourself? So, what's your name, what is your position, how much time are you already in the company?

01:00

EF: Okay, sure. So at the receipt, I'm Chief Technology Officer of Cheetah Digital. Cheetah Digital was founded as a company in June of 2017. I've been with the company since then. I also did all the due diligence for the [inaudible] Cheetah Digital from Experian. So, I really started working in December 2016.

01:23

DT: Ok, great. Emmmm, for my master thesis I need to ask you for permission to use your name in the thesis.

01:33

EF: Sure, sure go ahead.

01:34

DT: Is it ok? Great. So... Straight to the interview. As I said the topic is the process of developing new digital product. So, would you say that there is a difference between developing non-digital and digital product?

01:53

ED: Can you define digital for me? By digital do you mean that... rather digital marketing or do you mean digital as in [inaudible]?

02:01

DT: Digital as in the form that it doesn't... appear in physical form. It doesn't have to be marketing. It doesn't have to have anything to do with marketing or advertising. It's just the type of product which is non-tangible.

02:14

EF: Okay. Ummm... well that's interesting, because... that's one of things we have been looking at lately is... as you assess the productivity of our workforce and try to understand whether or not we are moving quickly, moving slowly. Most of the metrics you can find are for non-digital products. And really manufacturing and tangible things you can touch. And there is not necessarily a great coordinary because I can measure how many widgets a factory worker makes, measure how many lines of code a developer writes -isn't really the same. I may write a hundred lines of code you may write a hundred lines of code, we may accomplish two different

things. So, I think there are unique qualities to developing digital products that don't exist in the rest of the world.

02:56

DT: Mhm. I see. Umm... I assume that there is some kind of process of developing new product in the company, right?

03:09

EF: Yeah.

03:10

DT: There is some kind of road map? Could you tell me what are the steps concerning this process?

03:16

EF: Umm.. Okay, so hahaha. There's... ? The whole process falls in two categories; one is the ideation and the development of the idea, and the other is the execution of the idea. Right? So, the ideation portion is driven by the product team, obviously right? And the product marketing. They assess the state-of-work client base.. They talk to clients, try to understand where are the gap in our products. What the clients are doing today and what the clients want to do in the future. They look at our competitors and see what our competitors are doing, so that we stay competitive with them. But they also try to anticipate changes in the market space and how people should be doing digital marketing in the future. So, you take those three factors, combine them together. You create new product ideas, create roadmap for those. Define them, right? In detail, what they will look like how they will behave, all those other things. And you handle that off to the development teams. Then development teams work on in an agile methodology here in Cheetah Digital. So, the teams do... they'll take those stories, those epics, all those definitions, break them in the small pieces, create tickets for them. And then work them in sprints, they're run in about two weeks long. We have a release train. So, every team has its own branch of the code. Once you are... to a point where your branch is being QA, it's ready to go. You promote it to the release branch, it gets put to the release and go. In the most simple form that's how it works.

04:41

DT: Okay, I see. Umm... so you said that there is developed something like the roadmap for the product that you are creating according to the ideas, and, and development team, and so on, and so on. Umm... So, the product roadmap is developed beforehand. Is it evaluated after the product is released?

05:06

EF: It is. So... Aaa, if you. I don't know if you belong to the Slack channel "product feedback". You know, we just released changes to the UI. Right? So, what we, what we do is... We work with design firm; we design those changes to optimize the workflow whatever we wanna optimize for. We prototype them and map them out in detail. In that process the design team will go to clients and walk through clickable prototypes to show the clients how it's going to work and get client feedback. And they'll do that with wide variety of clients across different industries, verticals, etc. Incorporate that feedback, make the change, we develop it, we release it. And then we go back and do follow-ups with some of the clients, not all of them, to see whether that what we delivered works the way that expected, is it making no needs. Many times, we hear both positive and negative feedback. You know one of the pieces of feedback we got this time is too much white space, it requires you to scroll too much and slows down employment of the campaigns. So, we'll take that and incorporate it next time for the changes and improve model, product.

06:14

DT: Okay. And do you know on average how much time it takes to prototype the product?

06:20

EF: Now, that's a much tougher question. It depends on what you're doing. So... if you think about... So, we came in and we looked at Marketing Suite in particular and what it did, right? And then we've been working with design firm for 18 months. We have done with them pretty much every single page or screen in the product. That takes incredible long time. If you look at some of the more recent things we've been doing like two-steps file upload and the new editor. We protect those under a mark. Right? So, it depends on how radically you are changing the workflow and user experience to how long it take to do it and whether or not what you're creating is brand new and doesn't exist in the industry today.

07:05

DT: Okay. Okay, you said also before that the first step to develop product is to gather the ideas and to, I guess, brainstorm around them. Umm, and you said that the ideas are coming basically from the clients when you talk with them, when all these discussions are happening. But is it the only source? Or are there also sources inside the company? Someone who is saying “yes, we need to develop product right now, at this moment there is a need on the market”.

07:39

EF: Sure... So, umm the clients are receiving feedback, and they are one source. Umm, our client facing teams, as well as...I mean, really anybody in the company can provide an idea for example what we should develop. Most of the time these come from client facing teams, like services or support. Developers sometimes do it. And of course, the product owners, they're really responsible for coming up with these things. So yes, these two [inaudible] come up with new things they wanna do. Then you look at the competition, you look at trends on the marketspace and try to... we call that skating towards the pack is gonna be. And that's what we do from the product standpoint too. You skate towards where the industry is moving, because if it's gonna take you 6 months a year to develop it, you're gonna be behind if you're not looking forward in what you develop.

08:29

DT: Mhm, Okay, I see. And how you validate product design, specifically? Not idea itself but design of the product. How does it looks like?

08:40

EF: Sure, so we have... Umm, [inaudible]. So, when we do the Dedicated to Marketers Tour, or when we have the Signals Conference later in the year, or we go see individual clients, [employee's name] who is the head of our design group, goes out and they do very simple or very sophisticated things. So, they may just walk you through the set of screens they show you or they may develop clickable prototypes with a script, where they will put you in the room. They will be hidden cameras in the room, they will be out of the room observing you. And you will try to work through the script and use the UI to do that. That's super sophisticated user experience testing. We do everything across the spectrum of that to assure what we design is consumable.

09: 27

DT: Okay. Okay, okay, I see... Jumping a bit forward, because you pretty much answered my questions without me having to ask them. Who would you define as the end user of the product? Either it is Marketing Suite, or Cheetah Loyalty, or CheetahMail.

09:50

EF: Sure, so umm... What we do... That's actually a complicated question to answer. Because there are different personas within the digital marketing space that use our application, and they use it very differently. So, we have develop I think five personas that we try to treat as the ultimate user. Umm, the database or the data marketer, who really understands the data structure and the data that's there. He's very technical. Umm, a content creator. Umm, a data scientist or analyst. Umm, a CMO. And then the person who's... like a VP of Digital for a company. The CMO only wants analytics and the executive level reports and to see how... the outcomes are correct. The database guy or data person may be out there... need to be able to develop complex data models, do the segmentation, etc. And so, we, we drive across those five personas and as we build individual pieces of application that one person is more or less likely to use, we build for that person. But we have like... no I used to have memorized but not anymore. We have named personas like Phil. And so, we'll talk in examinings "well, Phil will never use this" or "this will make Phil's job hard". And we... that's how we try to stay true to the end user is by bucking them in logical groups of how they will consume the application.

11:08

DT: Mhm, Okay. And let's say that Phil have some problems with use of the product. Is there any kind of service team which will come across and help Phil to use the product which he's, he applies for?

11:24

EF: That's...So, that's a great question. Umm, it depends. So, it depends on what type of relationship Phil's company is contracting with us for. Right? So there are two avenues generally speaking for you...well there are three. [inaudible] One is are you a full-service, hybrid-service or self-service team. If you have service members who work with you, they will help educate you how to use it. Support; if you engage with support, and you, you say "I don't know how to crop an image". Support will engage with you, help you to do that. And that's free support or one of the premium support offerings. In the degree to which they'll engage with you depends whether or not you have free support or really expensive premium offering. And

then we have enablement, umm, high enablement, videos, tutorials, etc. We can go around the web, how to do it yourself.

12:15

DT: Mhm. Okay. Umm, when the process of developing the new product starts, do you take into account any future outcomes it should bring? For example, how the product will compete on the market?

12:33

EF: Yep, so we do. So, the two big ones that we are talking about are time on the market and term of the money. Right? So, if you think about it, we exist not necessarily to let digital marketers to market to their subscribers. We exist to make money. The marketing aspect is just how we do it, right? So, umm, there is a... return on investment analysis you're going to do, that says why I think I can sell this for so many dollars per unit, how long it is gonna take, how much does it cost, does it move our revenue model in the right direction at the right speed, right? So, we are looking at time on market, time to dollars and then how much costs is involved in developing it. And we analysis of do we build it ourselves, do we partner with someone, or do we buy it and acquire another company and then put that company in our software. So, we look at loyalty, right? We just acquired loyalty company back in July 2018. We knew it will take us two months to build loyalty product, but we knew there is a lot of revenue associated with loyalty. So, we went out and looked at tens, hundreds of loyalty companies that were in the space that we could afford to buy. And then we ended up picking Stellar and acquiring that. And that brought loyalty and their data platform which is turning into our and [inaudible] platform.

13:51

DT: Mhm, okay. You started to talk about loyalty platform and Stellar. Is there any other kind of company which you partner with or acquired? Or any other example you could give me with an independent company which is sourcing Cheetah with knowledge or technology?

14:11

EF: Yes, so... Umm, so, there is a phrase we just called coopetition. Someone might be a competitor, but we've joined together to sell a product for a client. So, if you look at Live Clicker, or...umm... not, not like... LiveClicker, Litmus, ReturnPath, umm, some other CDPs rather like SessionM. We do have partnerships with them. Some are formal, some are not. But

if a client wants to use a third party to cut all of their segments and give us campaigns ready files. We'll do that immigration and [inaudible] because ultimately it drives revenue for us, right? Umm, so we are always... we always... So, there is partnership group. The partnership group is always assessing what emerging companies are out there that will sell to the client need, and maybe we don't want to acquire a bill but rather partner with them. And then we are looking at companies that are who we gonna acquire that...that we wanna own their intellectual property and not necessarily be in a partnership because we think it's too core-ware business to leave in someone else's hands. Does it make sense?

15:26

DT: Yes, perfect sense. Umm... we've talked before about product roadmaps. Just to clarify, who is in charge of developing the roadmap of the product?

15:42

EF: So, umm in our company it's the Chief Product Officer, which is [employee's name]. So [employee's name] has ultimate authority responsibility for choosing what's on the product roadmap and what the priorities are.

15:55

DT: Okay, emmm... Okay... Emmm, just a moment. Umm, are there any other characteristics you include in the brainstorming, the idea developing beforehand? Apart from price, or costs, or revenues but something like quality or reliability or performance.

16: 27

EF: Sure. So, the specifications not only have what it should do but it has all those non-visual, below the waterlines specifications about how fast it needs to be. It has to conform to our, our, you know our uptime requirements, etc. But we also look at what percentage of existing client base will buy it, in what amount of new logos it will help us win, right? So, as you build the financial model around the new product then you will monetize. Not everything you do is monetize, right? Sometimes you're just improving the quality of the product, you don't charge for that, right? There is expectation, every year the product has new features, it's better. And then when you release big feature that you want to monetize, you figure out how many emerging clients will buy it, at what price point, and whether or not that allows you to help... to win new business, and how much new business you think you can drive. We build a one-year financial model around that and then we track our performance against that financial model.

17:25

DT: Mhm, okay. And if there is anything else what client needs from the company to include in the product which he's using, can Cheetah actually develop additional service or additional feature just for this specific client?

17:42

EF: So, that's a good question. Umm, we can. Doing that... So if we got... if you think we have a final amount of resources available to execute our roadmap. Whenever you do a client-specific request, you are taking something off your roadmap. Because it's something like zero game; we can't do two things at one time with the same resource. So, we assess whether or not that new feature is gonna be used by other clients, is it monetizable, does it differentiate us from the competition somewhere, or the client who's asking for it, is such a big client that we wanna continue to win their good-will and make sure they'll not go on a trip to look somewhere else. So we go through... we actually have defined workflow, of how you assess whether or not a client request and the estimate is, or is not developed.

18:30

DT: Okay, and how Cheetah wants to differentiate from the competitors? Is it with regard to price, is it with regard to quality, or is it mix, or something else?

18:42

EF: Sure, so that changes as time goes back. We are very focus on differentiating today on quality and relationship. Right? So, if you'll look at our competitors, most of them have invested themselves of their service and support groups and you have to partner with third party to do that. You'll see that we have internal, a very large service group and a decent size support group. Because we believe that that's a differentiator, it's a white glove treatment if you will. That shows that we care about you. We understand your business. We understand our allocation better than anyone. We can help you be successful. Umm, we do differentiation on price. But differentiation on price can be a losing game, because it becomes a race to the bottom, right? And so, you know, generally most of our things are priced on CPM, right? So how much will be thousand emails sent. If you... we have a, we have a floor; now there is a cost to us to send an email. So, if that cost is 13 cents, I can't put my CPM, I won't put my CPM below 13 cents, I know I won't close 13 cents cause I want to have a large margin, right? When you see what our competitions are doing they have changed their pricing model, where they give you 0 cents

CPM, but then they charge you for the number of IP calls, number of records stored and they... they end up charging you more than if they would charge you for straight CPM. But if you're not a savvy consumer, and you say, "We want 15 cents CPM" and they offer 0 cents CPM, it seems like we are charging you inequivalent amount of money, right? So, the hidden fees, and the phoning bill, that type of things.... If that translates across cultures. Umm, so...we look at differentiating our products, we look at differentiating on quality of service, we look at differentiating on quality duplication; is it faster, are we up more, can we send more emails, do our segmentation more quickly. These are all things that allow us to differentiate. Umm...if you look at the RFPs that's coming from the new businesses we are trying to win. The sending rates clients are asking us to commit to are insane. There's so much harder than it used to be. Umm, you know, we have... we have experienced people here from Adobe, from Responsys, from Exact Target. We do not believe any company out there today can meet these send speeds, but they are in our every RFP. And one of things we're doing is we've built on a new platform, is building it so that we can meet not just those sent speed, but double or triple those. Which makes us a huge differentiator, because for whatever reason, marketers believe that factor of sent email, the more likely they are to have, the faster the result.

21:13

DT: Okay, alright. Would you be able to answer, roughly, how many competitors in the specific industry we are in are there on the market?

21:28

EF: Well that... Hmm...can I show you a visual?

21:32

DT: Ehm, sure.

21:33

EF: Just give me a second to pull it out. We are almost there. There we go. [Visual on the screen- Appendix 5] Okay, so that is a list of competitor landscape from Martech. I don't know if you've seen it before or not...

22:10

DT: Yes.

22:08

EF: But it's almost 8 thousand companies. And they all in some way compete inside our business. And you can see they've been buckled in into these 6 categories, right? But we do some pieces of all six of these. And somewhere way down there in the middle on the red... yellow is Cheetah Digital. So, when you say how many competitors, we have that has changed pretty wildly. Before we would have said, we have 5 or 6, right? We have Adobe, Responsys, Oracle, IBM, Salesforce; big clouds, right? Well, what work funny, it's no longer truth because there are two things happening in our industry. One is, you have a bunch of innovator-dilemma companies coming along, right? They're doing very specific things, just segmentation or just personalization. They're... they're really point-solutions, that aren't tied maybe to the date, aren't tied to the execution channel. But companies are consuming them because they can do one thing really, really well. Mix that with... if you look at especially with respect to the retail, companies that are growing through acquisition for a very long, long time have very, very...ummm...non-homogeneous technical stacks internal. And a lot of our clients are reinventing their internal technical stack, and as they did that, they are assessing whether, for everybody not just us, whether they can do what we do, and then they will save costs for having us do it. So, you see a lot of our big clients who have sophisticated technology departments looking at building their own data legs, building their own send engines, etc. And so, we are being pressured from the big clouds but also from these tiny innovators doing one thing and are all stealing parts of our business. So, defining word competitor is...is much harder. We have lost new business deals and lost existing clients to people we would never thought as of competitor.

24:08

DT: I see. Okay. Umm, I guess the last question I have is what results do you expect the new product to bring and how reliable is the expectation in confrontation to reality?

24:30

EF: Sure. So, everything we do... everything I, I well... everything we do in my group, we look at three things. Does it help stop attrition of clients? Does it help us sell additional features to existing clients, who doesn't help us win new business? Cause really those are all the things we really care about, right? And, umm, sometimes they're very intangible, right? So, if I make... We just went through big exercise to make the system send faster. Some clients really care and were super excited. Some clients don't care at all. And so, it was very hard to judge the outcome.

And there is no way to tie tangible dollars to that, because all we really do is to keep someone happy, right, some relationships. But when we do... new enhancements in the features, we do model out the financial values that we expect to see. And we hold ourselves accountable. So, like when we acquired Stellar. We've built a... we've built a 24-months model of how much we expect to sell in term of loyalty every quarter. Across every geo that we do business. And then we measure ourselves and that gets whether or not we did better or worse. And actually, there is upcoming... Yeah, I'm not sure it had included it. The next town hall, I mean the next one-to-one from Kazi, he'll actually talk about we exceeded our loyalty goals since acquisition, right? We sold more than... And we are very conservative. One of the things you have to decide to do is are you going to be aggressive in your estimates or conservative in your estimates. We are always conservative in our estimates so that we hold ourselves accountable to the costs of the development, right? We are not sitting on a little bar that's easy to exceed. We're saying, hey if we're going to sell 3 million, for example, of additional product so we need to build it from very cheap so that there... we're trying investments there, right? So, umm, I hope I've answered your question.

26:28

DT: Yes, you did. So, as I said, that was the last question from me. Is there anything else that you would like to talk about that I didn't cover?

26:44

EF: Umm, not that I can think of. So, when are you finishing your thesis?

26:50

DT: Emm, I have to submit it by 6th of June.

26:56

EF: Oh, wow. Okay.

26:58

DT: Haha, yes, so it's pretty close.

27:02

EF: Sure.

27:03

DT: Umm, is it okay in case I would have any other question just to Slack you or email you?

27:07

EF: Yeah, feel free. I'll be glad to help you.

27:09

DT: Okay, great. Then, thank you very much for the interview.

27:14

EF: You're welcome.

27:14

DT: [Inaudible] for spending this time with me.

27:17

EF: You're totally welcome.

Appendix 3

Interview with Michael Murdza

00:07

Dominika Tyliczszak: To begin with, as I said, I'm going to write a master thesis about, umm...process of developing new digital products for companies such as Cheetah Digital which is basically working in this industry of technology, advertising, marketing. Everything at once. If you don't mind, could you introduce yourself, your name, your position, how much time are you already in company?

00:40

Michael Murdza: Sure. So, my name is Michael Murdza. I'm a Vice President of Product Management, umm on innovation of products. I've been here just over a year. Probably a year and three months.

00:53

DT: Mhm. Okay, so I guess we can jump straight to the proper interview. Umm, first of all. Let's say the warm-up question. Would you say that there is a difference between developing non-digital and digital products?

01:12

MM: Non-digital and digital products... Yeah, I think there is a huge difference. Umm, digital products, umm... the lifecycle is a lot more, aaa, sped up. Because you can iterate a lot quickly. With physical products, umm, there is whole production element to it that kind of takes a long time. So, you can iterate a lot faster with digital products, I would think.

01:32

DT: Okay, alright. And if you would have to think about the steps which are concerning the process of developing digital product what are they? How would you define them?

01:45

MM: Umm, I guess first of you have to know what to build. So, umm, you have to solicit feedback from customers, solicit feedback from the industry, figure out where everybody's going, and where everybody want to be in about year or two, whatever your client frame is. And then, really once you figure out what you want to build, you kind of, you do some prototyping, and just to prove out that you're building the right thing. Ideally, you get that prototype in front of customers. You take your feedback; you iterate as often as needed. And then, once you feel good enough about what you going...need to build then you start the process of actually building it. That's kind of it in a nutshell compressed. But, umm... Definitely, quite a lot of iteration and feedback.

02:33

DT: Okay. And how much time would you say that it takes, more or less, on average?

02:38

MM: Umm... It depends on what you're building. So, for example, we've just built a... we've just built a mobile wallet piece of functionality for Williams Sonoma and that... I think we have done in, in less than six months. That was a pretty comprehensive piece of software. So, it really depends. On another front we're building something, we're building new sending architecture and that's gonna take over a year to build. So...It really depends on what you're, what you're building.

03:04

DT: Okay. Umm, and if we would jump to the whole process of developing product, who is in charge of this?

03:13

MM: So, usually our Product Manager that understands the roadmap, that understands what you're gonna build, why you're building it, who you're building it for, and the various kind of progressive steps. Because you can't just go into a room for a year, build it, and then come out in a year with a product. It doesn't work that way. We have to constantly be releasing stuff. So, I would say that Product Manager should be a person that understands completely what we're building. Umm, and then he or she relies on his Development Manager to partner with, to really understand, umm, if...if the progression or the roadmap that the Product Manager laid up is compatible with the development model, right? Because if I'd say I wanna do this this and this and then Development Manager says no, Development Manager says no we need to first do this cause that's the base and then build on top of that. So, so it's a partnership but ultimately the Product Manager is responsible for working what is built.

04:12

DT: Okay. And apart from the Product Manager, what other teams are involved in the whole process? From... from making, from gathering ideas to designing, and so on, and so on.

04:26

MM: Yeah, so a lot of times the ideas come from... umm, either come from customers or come from people working with customers so it's professional services. They may come and say "Wow, you know, this... William Sonoma can really use this functionality. They, you know, it takes them so long to do this. And if we could eliminate 20 minutes, you know, times hundreds campaigns, that's, you know, 200 minutes." So... Aaa, typically it comes from either user or a customer. At that point, the Product Manager kind of looks at that and understands what the landscape looks like, see if it's something feasible that they want to build, see if it's something other customers can take advantage of. That Product Manager may also meet with Product Marketing to understand what the industry looks like, umm, to understand what the competitive landscape looks like. Umm, because it might be a great opportunity if there is no competition and if it's a really hot feature. So, they may work with Product Management. Umm, they would definitely work with Engineering, umm, to see the feasibility of what they want to build. Umm, and then they would.... I typically like to partner up with Development Manager to really help

me understand, umm, how it's going to get build. Because if you know how it's going to get build then you can, you can be smarter about building it.

05:42

DT: Okay. I see.

05:44

MM: And then, and then once the product is done, or once it's in the state where it's ready to be used in, in a kind of a beta or an alpha version. Umm, typically I got to work right now with umm, with Account Management to get in front of the customers to try to show them the software and demo to them. So, so it's a thing, it's, it's definitely a team event.

06:08

DT: Okay. Okay, and do you have any kind of...frame I guess to validate ideas, validate the product design? Is there anything that is already pre-made?

06:25

MM: I'm, I'm sorry I didn't understand that word.

06:28

DT: Is there anything what would serve the... you know kind of like a, like a form which has specific bullet point which you have to follow in order to validate whether the idea for the product is correct, whether the design of the product is something that will appeal to the broader customer group?

06:50

MM: Is there a form, that's what you're asking? Like is there a process?

06:53

DT: Yeah.

06:54

MM: I'm sure there are processes out there, but, umm... generally, generally umm, the way I've done it historically is... you, you get the requirements from the customer, you understand what they want, you try to validate that with other customers if possible, otherwise use cases. Then

you typically will go design a prototype, umm, with a, with an Interface Designer, a User Experience Designer. Umm, you develop a rough prototype and then either we have a UX Designer work with the customer, to understand what their...how they're using it or you just kind of, umm, informally meet with customer and sit down and share with them. Umm, you listen...you get their feedback, you incorporate it into further revisions. Umm, and then you start the development process with some touchpoints. So, I'm sure there is probably a form out there if you went and looked. There's probably some very, kind of rigid, forms of process. Umm, but that's generally the process I follow with customers.

07:56

DT: Okay. And, you were talking about prototyping now and few minutes ago. When you're saying prototyping, to which moment is it still prototype and when does it become real product. Which, so... what I mean is what characteristics does the prototype have?

08:19

MM: Um, so the prototype, just to be clear is not functional. It's like, usually it's click-through. Usually... it's almost like a...a PowerPoint, where it doesn't do anything. It just gets you the understanding, the feel, the flow, the functionality, the layout of the UI. So it's really not, it's really not functional. It's just a click-through of, of static pages. Umm, it's really not until... it comes real until engineers start actually taking a part, and working, on it and buling it.

08:48

DT: Okay. Eee, okay. Umm, umm, so we've talked about gathering ideas from, umm, customers...

09:02

MM: Yep.

09:03

DT: And then, umm, implementing them, eee, in form of product or prototype...

09:09

MM: Yep.

09:09

DT: Umm, are there specific other features you have to include? For example, I don't know, do you focus on such criteria as would it make the product as a unique one, how will it compete in the future on the marketplace, etc., etc.

09:28

MM: Yeah, there's always, umm... So, sometimes, sometimes you're in the rush just to get out like a minimum, a minimum product; a minimum viable product, that minimum amount of work that you can do and still have a viable product. But there's a constant struggle between that and then adding the functionality you're talking about. Umm, so it's a balance. You want to get something out sooner rather than later so customers can, can use it and, and give you feedback on it. Umm, so typically, typically you kind of figure out what the minimum amount of product you need to build is. And then you iterate, and then...and that's when you really, umm, when you sit down with customers and you watch them use it, you can start to understand how they're using it and start to formulate new features or, or better ways to do things. So, if you see them constantly clicking 7 times to do one thing, you say "Well, maybe we need 7 down to 2 clicks if we move that over here and incorporate that into a, you know, dull-function button". I'm making stuff up here, but, but... so, so usually you want to get the base down. And then, once you get the base then you have to constantly... it's, it's a constant balancing act. It's like "I only have this many people to do the work, I need this much work done, what gets prioritized?". So, it's a constant prioritization game between what customers want, what the industry is asking for, what can get your product super competitive, and, and have a huge advantage. Umm, it's taking all these things into account and deal with a minimum, the minimum amount of resources that you have to build it. Um, so really that... I... I think I've answered your question. It's kind of a long answer.

11:03

DT: You did though.

11:04

MM: Okay.

11:05

DT: And, umm... Umm, eee, so I know that you've worked in other company before. Exact Target, right?

11:18

MM: Mhm.

11:19

DT: Just, I guess to validate, the process of developing product that we were talking right now...would you say that it's something general what applies to other companies on the market as well, or is it Cheetah Digital-specific?

11:33

MM: No, it's very, it's very common pattern. Especially in the software. I, I haven't worked in anything outside of digital. I haven't made products, physical products. Umm, so I know in digital it's pretty, it's, it's very similar. You want to get something out as quick as possible that still works so that you can get feedback and just make it better and better and better. Umm, and that's generally the pattern. Sometimes though, umm, if you're in a really fast-paced environment you might get it out to quick and it might not be good enough. So that's the delicate balance. Umm, at Exact Target we've released couple of things too soon. Umm, and it backfired on us, umm and then we had... and that takes double the work cause now we have to fix what's out there and add the new stuff that you want to add. So that's... if you get in that spot it's a really sticky situation.

12:26

DT: Mhm, okay. I see. Coming back to the product development that we've talked before. Umm, is it possible that you can improve product when it's already released? For example, there is a company, there is a client which is coming back to you with feedback that it, I don't know, "the characteristic x, y, and z is amazing, but I don't like this one". Is it possible to change it after the product is released?

12:55

MM: Absolutely. And that's the benefit of digital. Because with the physical product, if you change it, you still have all the old product out there the old way. Umm, so, umm... if it's a major change you might want to gradually release it to the customers. Like... we call it putting it behind killswitch. So you put the feature out there but you put a switch on it and then you... if it's, if it's a major change and you gradually either talk to customers that are using it and say "hey, this is coming out, we're changing the way you do this, it's gonna happen on this day",

and then you communicate with them quite often and then you flip it to the other way. So, it's a... you can definitely change things; you have to be careful that you don't change things that customers are relying on cause you can break their workflow and make them unhappy. Umm, so it's again, it's, it's another delicate balance. Everything I keep saying is a delicate balance.

13:49

DT: I see. And is it possible to create product which is customized from the scratch? Let's say that there is a customer which has very specific needs and he doesn't want anything what exists on the market at the moment. He wants something very specific.

14:07

MM: Yeah, so, so for Product Manager that's a scary idea. Because you don't, you don't want to sell, you don't want to create product that's only good for one person. You want to create product that's good for a lot of customers. Because if you make something very, very specific to a customer, then you just spent a lot of money, and time, and research developing that, and you can only sell it to one customer. So that's a dangerous, slippery slope. So, what, what we do in situations like that is instead we'll build a workflow that is adaptable. Right? That the customer can adapt the workflow but then the same workflow is kind of generic so other customers can use it. So, you really never wanna build something for one customer. That's a bad world.

14:53

DT: I see. Umm, do you use any kind of external service [interruption]... any external services, anyone who, I don't know, you're partnering with, with other companies, you're using their technological assets or knowledge?

15:11

MM: Yep, so we use a company called DesignMap out in San Francisco. They're UX design firm specific for marketing software. So, they're really good. Umm, I've worked with them for years at Exact Target, and then here. Umm, so they help us understand what the industry trends are in terms of, aaa, user experience, mmm, paradigms. Umm, and they help us to make sure that, what we're building doesn't look like something from 10 years ago. It looks like something that's gonna be out in 5 or 10 years. So, they're, they're going the opposite way. So, they help us quite a bit. Umm, we, umm, we sometimes rely on... well we rely on tools, external tools, like Jira. Jira helps us keep organized and helps us focus on what we need to build and how we,

how we keep track of everything. Umm, sometimes we'll use market research but not that often where we'll... we'll, umm, aaa, like umm, one of my, one of my co-workers was releasing a piece of new functionality, so he used a service where you pay like 30 or 40 bucks for half hour of somebody's time. And they... you go through their expert, and you go through and ask him a bunch of questions and they answer the questions and then you pay them with usually a gift card or something, some service. Aaa, so we do that sometimes too.

16:30

DT: Okay. Umm, then I guess, we're coming to the last part of the interview.

16:36

MM: That's fast.

16:37

DT: I know. I also saw your schedule, so I don't want to drag it, aaa, I know you're quite busy. Umm, very generally, how many competitors do you think there are, roughly, in the industry, in the sector, on the market? I know it's a big number but...

16:56

MM: Yeah. Umm, well there're.... have you seen Martech 7000 slide? Right, or 5000... whatever it is. Umm, so I would say there's 5000 competitors at least. But it really...in our space... so we're very specific, right, we're target enterprise marketers, right? So, in our space I would say that there not that many competitors; direct, head-to-head competitors. Probably less than a dozen that really, we compete with them on daily basis. Umm, it's when you get to the all, all that could be, umm, little, little features, like the social features, or the social listening, or, umm, advanced analytics, and business intelligence, and, and like, umm, machine learning. We have all these smaller companies that are starting up, that are really nimble. Because they're all developed on modern technology, more modern than us and they're, they're faster and they're, umm, they're iterating a lot quicker. So, there's a lot of competitor space. So, there's really, when I look at competitors, I see the competitors that compete with us on the top; with the enterprise. And then I see all these hundreds or thousands of little guys. They're starting up, but they're very nimble, they're very smart, they're very efficient. And they can release stuff a lot faster than us. Really, there's two areas of competition that I see. It's big guys, which are very many, and little guys. Umm, and then, I've add there's something in between. But those are the kind, the big ones I see on a daily... when I, when I go to talk with the customers.

18:24

DT: And which type of competitors between these two would you say is more dangerous?

18:30

MM: Hahaha, umm... that's a good question, umm... aaa, probably the bigger guys like Salesforce [inaudible]. So, Salesforce would come in and... they'll compete on a different, they'll compete in a way that is hard for a customer to not buy from them. For example, if a, if a Cheetah customer has 6 months left on the contract, Salesforce would come in and say, "we'll pay you, we'll buy you out of your contract", right? So even though we have a better product, right? The marketer sees that I could get all this for a lot cheaper, even though it's inferior, but it's less money. I could give more with that money and spread it up further, umm, so I think, when you, when you have something like that come at you, it's really hard to compete with that because, it doesn't matter at that point what's better... the, the customer has dollar signs in their, in their head. That they, they only want to kind of... they only wanna make a decision based on price and not functionality. That work is dangerous.

19:37

DT: Mhm. Okay, I see. And I guess, last thing... Are there... You don't have to be very specific; I know it's internal knowledge, it's something what shouldn't really leave the company... Are there any plans for development new products? Is there something already in your minds?

19:57

MM: Yeah, so, umm... [technical interruption]

20:31

DT: There we go... Sorry about that, I hit my, umm... my phone rang, and it started to trigger the audio that kicked right on, okay... Umm, yes, one of the big things we're thinking about right now is orchestration. So, you think like marketers, and you think about all the different Martech 5000 products they can use. Umm, and then you look at email, and mobile, and social, and everything... When you try to organize, and... you try to, you try to make sure that you're, you're talking to your customers at the, at right pace, and you're not overwhelming them with messaging on different channels. It's really hard to orchestrate all of that and make sure you're not abusing your customer base. Because, if you start abusing them, they're gonna start falling off and going somewhere else, right? If you get 10 emails a day from, from your favorite brand,

you're not gonna be very happy with that, right? And if they're hitting you on your phone and SMS and your web browser... So, the ability to really control that and govern it and orchestrate it... that's, that's the next thing I'm working on right now. Umm, we're just calling it orchestration; Salesforce calls it journey builder. Umm, we have different functionality like that, but that's what I'm focused on right now. I'm starting that work.

21:43

MM: Okay. Cool, so, as I said, that's it. Is there anything you would like to add; what you think I didn't tackle?

21:54

DT: Yeah, there is one thing that... there's accelerator that you didn't talk about... and, umm, how do we accelerate our product development. And that's through acquisitions. Right? So, if you look at the Stellar Loyalty acquisition from last year... we looked at building what they have and we've... we realized that'll probably take 2 to 3 years to build that from scratch. So, sometimes, if you have the money, you have the funding, you can accelerate your product roadmap by buying things and plugging them in. Sometimes it's, sometimes that actually backfires and it's harder. Like if you buy a platform that's outdated and not as skilled what you thought and has a lot of inherited problems and technical debt then you can wind up taking more time just fixing that than if you would have built something from scratch. So, you really have to do your diligence properly. Umm, but if you do it right, it could be, umm, it could be a homerun.

22:52

MM: Okay. Great.

22:54

DT: So that's a big thing. Yep.

22:55

MM: Thank you, thank you for adding this up. Umm, yeah, so, as I said that, that would be pretty much it.

23:06

DT: Okay.

23:06

MM: Thank you very much for spending time with me...

23:09

DT: Yep. Good luck.

23:09

MM: ...and answering my questions. Thank you.

23:12

DT: Take care. Umm, good luck with your studies, and umm I'll see you later.

23:18

MM: See you. Bye.

23:19

DT: Nice meeting you. Bye.

Appendix 4

Questionnaire of Alessandra Jacques

Hi Alessandra, as agreed you can find below a list of questions covering the topic I am interested in getting insights into.

Regarding the background of this questionnaire; I am currently writing my Master Thesis for a Danish university, Aalborg University. The topic of the thesis concerns the development process of new digital products in companies engaged in the advertising industry. Since Cheetah Digital is providing technology-oriented services to the marketers it is classified into the advertising sector. What I hope to achieve, is to get a better understanding of how the whole development process looks like for companies developing digital product, in general.

Please, feel free to provide exhaustive answers to the questions below, as this should substitute the interview.

- Please introduce yourself (include such information as who are you, what is your position, for how long are you in the company already, what is your relevant

experience, etc.). My name is Alessandra, and I am a Senior Product Manager. I have worked in the software space for 12 years, and have been in Product Management for 4 years.

- Is there a difference between digital and non-digital product? If yes, what is it? I haven't worked in non-digital product, but I would assume there is. The primary difference I would think would be the speed with which it can be created. Non-digital product is tied to materials and limited by the time it takes to create them. Code is not tied to any real materials, and is only limited by the speed at which the developer can write it, and the quality engineer can test it.
- Do you conceptualize products according to its layers? For example, the core of the product (i.e. the purpose and basic benefits), the actual product (i.e. features, appearance, quality), augmented product (i.e. delivery, warranty, installation). Yes. We usually start with a value proposition (what problem does the product solve?) and from there we tease out more layers.
- How deeply is the innovation embedded in the concept of product development? Is it something that you are looking for constantly or only under specific circumstances? We are constantly looking to innovate, but with the caveat of not innovating for innovation's sake. Anytime we start a new project, we ask ourselves:
 - o How we can make the product better?
 - o How can we solve problems the market is facing in a way no one else has?
 - o Does a good solution for this already exist, and if so can we use it?
- What are the phases concerning the development process of a new product? (Do you follow the traditional phases such as idea generation, product concept development & screening, marketing strategy development, business analysis, technical development, test marketing, commercialization?) Yes, to an extent. In the software world there is generally not as much time as one would like in order to follow the traditional phases – they tend to blur more. The typical process we follow is idea generation, proof of concept and user testing, technical development & testing, commercialization.
- Who is in charge of the product development process? Typically the product managers are in charge of the development process, with input from many other stakeholders such as engineering and product leadership.
- Which teams are involved in the product development process? Which team takes initiative in what stage? The typical teams consist of product management, an engineering team (developers and QA), product marketing, and the Agile Office.

Depending on the scope of the project, we might also involve Architecture and Site Reliability Engineering for input on technical aspects. Initiatives are as follows:

- Product Management owns the development from beginning to end, and is responsible for seeing the project through from ideation to release.
 - Engineering is responsible for the code implementation and quality testing of the product. They design how the feature or product will be implemented, and they write and test the code.
 - Agile Office is responsible for the logistics of the product, such as keeping the development cycle on track and releasing the code to production.
 - Product Marketing is responsible for creating sales and enablement collateral, pricing and creating a go-to-market strategy.
- How do you validate ideas? This depends on where the idea originated. If the feature or product was a client ask, we will typically validate our design with that client, as well as any other clients that are asking for it (or something similar). If the feature/product is something we came up with, we will typically validate it with a cross-section of internal users and clients that we think fit the user profile.
 - How do you validate your product design? Same as above.
 - What is your business model for acquiring customers and how does it impact your development process? Do you include customers in the process? If yes, how? (surveys, collaboration, polls, feedback) I can't really speak to the business model, but someone from Sales should be able to. As far as impact to the development process, we often will re-prioritize projects in our backlog to accommodate a prospect's need.
 - Who is the end user? We have multiple personas for end users, but is typically members of the direct marketing department of enterprise level companies.
 - What characteristics do you include in the brainstorming? Not sure I understand this question 😞
 - Are you including future outcomes of, for example, how the product will compete, what will make it unique, how will it be positioned on the market? Yes, we typically start a new project with a Lean Canvas. This is a one page document that details the problem, the proposed solution, the unique value proposition, key metrics for measuring, unfair advantage, target audience and revenue streams.
 - What are the features when developing new product? For example, do you focus on compatibility, complexity, trialability, observability (chance for others to see the new

product and its benefits)? Given our customer base, we focus mostly on usability.

Anything we build needs to be very performant (fast and reliable) but easy to use.

- Are you using prototyping? If yes, under which conditions, on what target group, for how long? For large new products, we will release an alpha to a few select volunteer clients, make iterative improvements, then release a Beta to a slightly larger pool of clients, and then we finally release it to the general audience.
- Do you make drafts of how the product roadmap will look like? Yes, over and over and over 😊
- What are typical roadmaps for the new digital products? This depends entirely on the product, but for a brand new product the first phase of the roadmap usually consists of a Minimum Viable Product – this is the minimum set of features that we can release while still solving the problem. After that we will generally do iterative releases to expand upon features, and then we will focus on performance and making the product scale for enterprise-level volumes.
- Are these roadmaps made before or after the product is released on the market? Before, but they are continually refined.
- Do you validate the roadmap after the product is developed and on the market? Yes.
- Do you use external services to accelerate the development process? If yes, what type of external services do you use (partnership, acquisition, independent third party)? Depending on what we are trying to accomplish and what our timelines are, we might. If a fantastic product already exists in the marketplace and we can white-label it faster than we could develop it ourselves, we will definitely consider it. Same with acquisition. As far as 3rd parties, if we have stand-alone features that need to be developed, we might look at hiring contractors to help with development.
- What outcomes do you expect new products to bring? We expect our products to help retain our existing customers as well as attract new ones.
- Which of these results are the priority for the company and what do you think is important for the competitors? Both are important for the company as well as competitors, as they are trying to do the same thing.
- Would you say that the competitors follow a similar process of product development? From my experience, yes.

Thank you very much!

Appendix 5

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