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Anderson MacGyver.

The OMC Approach

Master Thesis by Crystal Reijnen



Towards a method for digital business strategy formulation

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Abstract

Digital business strategies provide an answer for organisations to the technological developments that have occurred over the past decades. The traditional paradigm of business and IT strategy alignment has shifted to the perspective where business and IT strategies are fused into one transfunctional, organisation-wide strategy; the digital business strategy. The concept of digital business strategy has been the subject of several scientific studies. However, limited scientific research was conducted on the practical formulation of such strategies so far. This study aimed to address the caveat by standardising and codifying the *OMC Approach*, an approach that supports digital business strategy formulation that is currently applied in practice but is in need of more in-depth scientific research. To that end, this study consisted of three parts: (1) a literature review was conducted to gain more insight on the context of digital business strategies and their formulation, (2) a reference method for the OMC Approach was constructed to standardise and codify the approach, and (3) situational models were created to support future projects applying the OMC Approach.

The literature review showed that several definitions and expressions were used for the concept of digital business strategies. Due to the inclusion of organisational and digital aspects and its appearance in multiple studies, this study adopted the following definition: *"A digital business strategy is an organisational strategy formulated and executed by leveraging digital resources to create differential value"*. Despite the existence of numerous frameworks for traditional business strategy formulation, no frameworks for the formulation of digital business strategy were found. Hence, this study proposed the OMC Approach, which facilitates the interactive development of the Operating Model Canvas (OMC). The OMC is based on the Business Model Canvas and the Value Chain, and shows all business activities, channels, and actors of an organisation.

Five retrospective case studies were conducted in this study. A comparison of their activities and subsequent deliverables together with input gathered during an expert validation session resulted in the reference method for the OMC Approach. Two core principles of the method were identified: (1) the usage of the client's documentation and conduction of interviews as main source of input for the OMC and (2) the interactive workshops during which the client can develop a shared vision that provides the foundation for the fusion of business and IT. In addition to the method, a reference model was developed that shows the generic elements and their positioning of the OMC. The situationality of the OMC was also studied by comparing the OMCs of the five cases. It was found that the industry of the client affects the OMC and creates variability in the primary and supporting business activities. Five situational models were created in addition to the reference model to complement the model in specific situations.

The development of the reference method and the situational models evoked curiosity on the role of the OMC Approach in the context of digital business strategy formulation. The literature review showed that the most important challenges of such formulations were the onboarding of the entire organisation, the design of a fast decision-making-supportive organisation structure, and the development of competitive value propositions. It was found that the OMC Approach can support each of those challenges. Onboarding the entire organisation is realised by developing an integral digital perspective during the workshops. Organisation-design is initiated by visualising all required business activities for the organisation on the OMC. New value propositions are conceptually developed during the workshops as well, and their implementation is supported by modelling the required business activities on the OMC. Additionally, it was found that on one hand the OMC Approach realises the fusion of business and IT departments by generating a shared vision between the two, and on the other hand supports the fusion of their activities by integrally modelling them on the OMC. The OMC Approach is therefore proposed as a framework that supports digital business strategy formulation.

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1. Introduction

Over the past decades, ample digital trends have arisen. Innovations such as cloud services, new connectivity technologies, and business intelligence have found their way into the professional world and are shaping the economy. As a result, a paradigm shift concerning the relation between business- and IT strategies has occurred. Where a few years ago there existed a strong common understanding that IT strategies should be *aligned* with business strategies (Henderson & Venkatraman, 1993; Ward & Peppard, 2002), the perspective has changed into IT strategies being *fused* with business strategies. IS and IT can deliver or support the core value of an organisation when utilised correctly. Thus, employing technology to move the business- and operating model of an organisation from a traditional to a digital business-focused perspective could be essential to stay competitive (Berman, 2013; Jentsch & Beimborn, 2014; Lipitakis & Phillips, 2016; Parmar, Mackenzie, Cohn, & Gann, 2014). This implies that the IT strategy should shape the business strategy.

This fusion of business- and IT strategies is called the *digital business strategy* (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013). Digital business strategies are transfunctional (i.e. encompass all functional and process strategies), consider digital trends and innovations (Bharadwaj et al., 2013), and aim to create business value through IT (Bharadwaj et al., 2013; Sprokholz, Haijenga, & Boersen, 2015). Thus, to create a digital business strategy, not only must there exist a vision on economic changes and competitors' future behaviour, but a view regarding possible technological developments and their implications for the capturing of business value must be present as well. Therefore, formulating a digital business strategy can be a complicated task. Some scholars (Bharadwaj et al., 2013; Bounfour, 2015; Matt, Hess, & Benlian, 2015) acknowledge that business and IT strategies should be fused or that IT strategies should at least have a greater influence on business strategy. However, their research has mainly focused on the conceptual principles that entail this new insight, lacking to provide concrete methods or techniques that can be used to formulate a digital business strategy.

1.1. Problem Statement

Over the past few years, ample scholars (Cash, Dekoninck, & Ahmed-Kristensen, 2017; Horlacher, 2016; Jentsch & Beimborn, 2014; Leonard, 2007; Preston & Karahanna, 2009) have acknowledged the need for a shared vision in order for an organisation to successfully pursue digital initiatives. However, most research focuses on strategic collaborations and the notion of importance of a shared vision, rather than how to practically generate a shared vision (Jentsch & Beimborn, 2014).

One organisation that, among other services, is concerned with formulating digital business strategies for its clients, is Anderson MacGyver¹. To guide clients in formulating a digital business strategy, Anderson MacGyver has developed the Operating Model Canvas (OMC). The OMC is a modelling technique, the fundamentals of which are found in two business models: (1) the Business Model Canvas (Osterwalder & Pigneur, 2010) and (2) the Value Chain Model (Porter, 1985). The resulting model shows the organisation's business activities and organisational context, which can be used as a starting point for digital business strategy formulation. Its purpose is to create a shared vision for both business and IT, which will be the basis for a digital business strategy. Several OMCs were created for multiple clients over the years, and Anderson MacGyver has noticed high variability among different types of clients. It was therefore suggested to **research the principles of the OMC and the method of its development, i.e. the OMC Approach, beyond the already established foundations**, to increase the understanding of the value the OMC can add to formulating a digital business strategy.

¹ For more information on Anderson MacGyver's propositions, refer to <http://www.andersonmacgyver.com/>.

To summarise, the problem at hand can be stated as follows:

- The perspective that IT strategy should be fused with business strategy, rather than aligned, has arisen;
- Limited scientific research has been conducted on the formulation of digital business strategies;
- The OMC supports such formulation, but should be researched more in-depth.

1.2. Relevance

Answering the problem statement that was explained above generates new knowledge for both the scientific community as well as for practitioners in the fields of digital business strategy, business strategy, IT strategy, and advisory. The merit of this research for both are elaborated upon below.

1.2.1. Scientific Relevance

Building upon the work of Jentsch and Beimborn (2014), who acknowledge the lack of concrete approaches to generate a shared vision and subsequently formulate a (digital business) strategy, this research proposes a method for creating a shared vision among business and IT managers as a basis for digital business strategy formulation: the Operating Model Canvas Approach (OMC Approach). The scientific contribution of this research is hence to codify and describe a method and its principles for generating a shared vision among business and IT managers as a foundation for digital business strategy.

1.2.2. Social Relevance

Describing the OMC Approach does not only provide merit for the scientific community. Practitioners can benefit from this research as well by applying the lessons learned of this research into practice. Additionally, they can adopt the approach when in need of a method for digital business strategy formulation. Since empirical experience with the OMC Approach is available in vast amounts, this research will go beyond the description of the generic method and aims to define specific situations to which the method can be tailored. Subsequently, the method will be adjusted to those situations. These situational methods can be applied by practitioners and serve as a source of additional inspiration for developing an OMC.

1.3. Objective, Scope, and Thesis Structure

The objective of this research is to add to the body of knowledge on digital business strategies and their formulation, by **codifying a method that supports the formulation of digital business strategies**. In addition, it aims to **define situational models** that will provide additional support for digital business strategy formulation in specific situations. The scope of this research ranges from the method to develop the OMC to the content of the OMC, focusing as much as possible on digital business strategy projects. An exploration of specific situations and their implication for the OMC Approach are also within scope. However, in-depth investigation of situations is not. Applications of the OMC beyond strategy formulation are out of scope as well.

This thesis is structured as follows. In Chapter 2 the research method is described, explaining the approach for the literature review, case studies, and development of reference and situational methods. Chapter 3 then shows the results of the conducted literature review by providing an elaboration upon the existing theoretical knowledge regarding digital business strategies and an overview of business strategy formulation approaches. The main artefact of this research, the OMC, is described in-depth in Chapter 4. This is followed by Chapter 5 showing the outcomes of the conducted five case studies. Based on the case studies, the reference method for the OMC Approach and corresponding reference model for the OMC were developed and are described in Chapter 6. Chapter 7 describes the situational models for the OMC. Next, in Chapter 8, results of the two interviews regarding client experience with the OMC Approach are provided. Chapter 9 then describes the relation between the OMC Approach and the formulation of digital business strategy. This is followed by the discussion of the research in Chapter 10. The conclusion, lastly, is provided in Chapter 11.

2. Research Approach

This chapter describes the research approach that was followed during this research. First, the research questions are presented, which shaped the structure of the research. Next, the research method is described in-depth, covering the general research approach and the approach per sub research question.

2.1. Research Questions

The field in which the previously described problem statement occurred provided ample research direction. The following main research question and corresponding sub-questions were selected to provide the direction of this research. It focused on the Operating Model Canvas (OMC), a newly practiced technique for digital business strategy formulation. The main research question (MRQ) for this thesis was:

“How does the Operating Model Canvas support the formulation of digital business strategy and what are the determinants that contribute to that formulation?”

In order to answer the MRQ, five sub-questions (SQ's) were formulated. With the objective to define the scope of the project and create a common understanding of the subject, SQ1 aimed at defining the field of digital business strategy formulation and the methods and techniques that currently exist to practice it.

1. What is digital business strategy formulation?

- 1a. How is digital business strategy defined?
- 1b. What approaches exist to formulate a digital business strategy?

The OMC is a method for digital business strategy formulation. To generate a thorough understanding of the technique, SQ2 aimed to provide a description of the OMC, including its purposes, fundamentals, and concepts.

2. What is the Operating Model Canvas?

- 2a. What is the purpose of the OMC?
- 2b. What are the scientific fundamentals on which the OMC is built?
- 2c. What are concepts and mechanisms of the OMC?

Besides describing the content of the OMC, the process of creating an OMC is of scientific importance. SQ3 therefore aimed to answer how the OMC is constructed, how client acceptance is achieved during this construction, and what experience has taught so far.

3. How is the Operating Model Canvas constructed?

- 3a. What is the method for OMC construction?
- 3b. What are best practices for constructing the OMC?
- 3c. How do the process and deliverables of the OMC construction influence client acceptance?

The OMC has been constructed for several types of clients. SQ4 had the objective to create an understanding of situational factors that can influence the visualisations and applicability of the OMC.

4. What are the situational factors that influence the Operating Model Canvas?

- 4a. How does the type of client influence the construction OMC?
- 4b. How does the reference model of the OMC change for different client types?

In order to understand the value of the OMC when formulating a digital business strategy, SQ5 aimed to define the themes that are of significant importance in the topic of digital business strategy. In addition, it aimed to discover the role of the OMC in the fusion of business and IT strategies.

5. How does the Operating Model Canvas support digital business strategy related decision-making?

- 5a. To what themes in digital business strategy decision-making can the OMC contribute?
- 5b. What is the role of the OMC in integrating business and IT strategies?

2.2. Research Method

The main purpose of this research was to investigate the possibilities the OMC offers and ultimately scientifically establish it as a method that can be applied for formulating a digital business strategy. To that end, the research focused on solidly formulating the OMC as a structural method and developing it in such a way that it can be used and applied in digital business strategy formulation projects. Therefore, this research was considered to be design science as described by Wieringa (2010) and Hevner (2007). Peffers, Tuunanen, Rothenberger, and Chatterjee (2007) developed an IS-specific design science research method including a six-step iterative design process: (1) problem identification, (2) objectives definition, (3) design and development, (4) demonstration, (5) evaluation, and (6) communication (Peffers et al., 2007). Part of the research problem was the need to provide scientific fundamentals for an in practice existing approach for digital business strategy formulation (Sprokholt, Haijenga & Boersen, 2015). Thus, the objective of this study was to describe an operational method for the OMC. The research design aimed to develop the meta-model of the OMC Approach by investigating the process and deliverables of the approach and analysing several versions of the OMC. The method was demonstrated via five case studies and communication of the method took place via this thesis. The evaluation step of the process of Peffers et al. (2007) should be performed in future research. In addition to codifying the OMC Approach, this research contributed to theory building in digital business strategy research by using case study data (Eisenhardt & Graebner, 2007). This section describes the design science approach that was followed during this research. Subsequently, the sub-approaches that were followed to answer the separate SQ's are provided.

2.2.1. General Approach

In general, the research consisted of three parts: creating an understanding of the context and current practices of digital business strategy formulation (a. literature review), designing and standardising a commonly accepted reference method and -model for the OMC Approach (b. reference method creation), and adapting the standardised model to multiple situations (c. situational model creation). Figure 2-1 shows a visualisation of the general approach for this research, including the outcomes that each part yielded. Each part is described in more detail below.

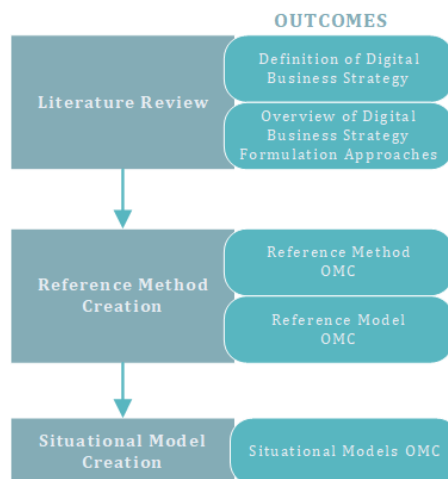


Figure 2-1: General approach with yielded outcomes

2.2.1.1. Literature review

To generate a thorough understanding of the definitions and perspectives that yet existed regarding digital business strategy, a literature review was conducted during the first part of the research. This approach provided the opportunity to show what had been researched so far in the field, to place it in the right context, and to point at the existing gap in the current state of knowledge (Oates, 2006).

To create the collection of papers, journals, and books that was used for the literature review, four search engines were used. The main source was Google Scholar, since it offered papers and articles from several outlets at the same time. To prevent missing out on relevant work and conduct a comprehensive study, three additional search engines were

used: (1) DBLP, (2) IEEE, and (3) ACM. DBLP is a comparable search engine to Google Scholar that solely focuses on published research in computer science. The Institute of Electrical and Electronics Engineers (IEEE) was consulted due to its large number of Information Science related publications. Lastly, the Association for Computing Machinery (ACM) was used, for the same reasons as IEEE. By using these four databases, it was assumed that ample perspectives on digital business strategy and approaches for its formulation were gathered. To guarantee the quality of the used material as much as possible, only materials from books, ranked journals and renowned conferences were added to the literature review collection. The scope of the searches was guarded using a pre-defined set of concepts and their synonyms that were entered in the search engines. An exploratory search for literature showed that the concepts presented in Table 2-1 were often used regarding the subject of digital strategy (formulation). These concepts were transformed into keywords and queries that were entered in each of the four outlets described above.

Table 2-1: Concepts used during the literature review searches

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6
	Digital strategy	Digital transformation	Digital (business) strategy formulation	Business planning	Information strategy planning	Business / IT alignment
Synonym(s)	Digital business strategy	Business transformation management	Digital (business) strategy design	Enterprise planning		Business / IT integration
			Digital (business) strategy development			Business / IT fusion

In addition to the search engines, material was gathered using the snowballing approach, as described by (Wohlin, 2014). This entails consulting the references of the material found using the search engines for additional relevant work. Lastly, papers provided by third parties, such as fellow researchers or thesis-supervisors, were included as well.

Based on title exclusion, removal of duplicates, and removal of meta-analyses, these approaches yielded 124 papers. These were assessed for their purpose, research design, theoretical contribution, overall research quality, and relevance for this research. This resulted in a total of 29 papers, which were reviewed thoroughly and served as the basis for the definition of the concept digital business strategy and the overview of strategy formulation approaches.

2.2.1.2. Reference method creation

The artefact that was the focal point of this research is a standardised method and -model for the OMC Approach. In this thesis a method was defined as “[.] an approach to perform a systems development project, based on a specific way of thinking, consisting of directions and rules, structured in a systematic way in development activities with corresponding development products” as formulated by (Brinkkemper, 1996). In order to create the method, multiple cases in which an OMC had been developed were analysed, documenting the activities and deliverables of each case and assessing the OMCs. The selected cases all existed in their own context, and had been executed independently from each other over the past three years. Although the context in which the cases were executed differed, some form of replication occurred regarding the construction and usage of the OMC. The replication made the cases suitable for inclusion in one study. This type of case study design has been classified as “holistic multiple cases design” by Yin (2013). The advantage of this type of design was that it offered a higher external validity than would a study consisting of one single case, since it led to an artefact that was applicable in multiple situations.

The cases were analysed following part of the (adapted) approach described by Van de Weerd, De Weerd, and Brinkkemper (2008). They explained the creation of a so-called “super method” from multiple methods in order to make them suitable for comparison. To create the super method, Van de Weerd et al. (2008) first selected multiple methods for inclusion (1). Then, they meta-modelled these methods using the process-deliverable diagram (PDD) notation (2), as formulated by Van de Weerd and Brinkkemper (2009). Next, the super method was formed from elements that appeared in each meta-model that had been created (3). This super method was used as the target to which the other

methods were compared (4). In this study, steps 1 to 4 were carried out in a way comparable to the approach of Van de Weerd et al. (2008). The selected ‘methods’ in this study were the cases that had been selected for inclusion in the study (1). These cases were meta-modelled using the PDD notation (2) and from those meta-models a super method was created by taking the elements of the models that appear in every case (3). Then, the cases were compared to the super method, in order to clarify the differences and similarities that exist between each single case and the super method (4). The differences that became apparent during the comparison were then discussed during validation sessions with experts from Anderson MacGyver. Based on the outcomes of those interviews, the super method was modified by changing, adding, and removing activities and deliverables. This led to the reference method, which, after expert-validation, described the standard approach for developing an OMC.

In addition to creating the reference method, which describes the steps in the process and the elements that each step will deliver, a reference model for the OMC visualisation was created. This model can be used for the creation of OMCs in the future. Figure 2-2 visualises the process of reference method creation.

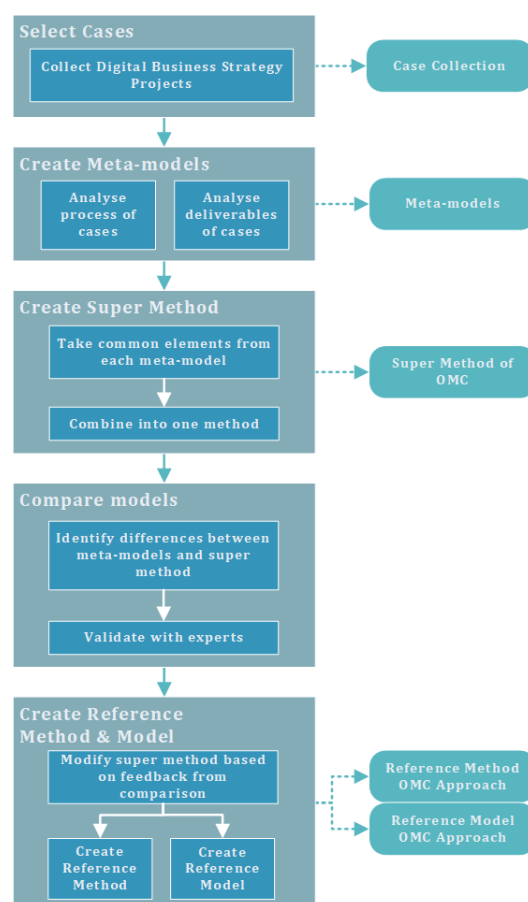


Figure 2-2: Approach of the reference method creation

2.2.1.3. Situational method creation

To increase the applicability of the OMC in practice, it was intended to adapt the reference method of the OMC to suit different contexts. In order to facilitate this, an adapted version of the approach described by (Van de Weerd, Brinkkemper, & Versendaal, 2007), was planned to be applied. Van de Weerd et al. described an approach to the creation of a “*situational method*”, which was structured as follows. First, Van de Weerd et al. (2007) identified and analysed implementation situations (1). Then, methods that could be used in those situations were identified (2). The parts of those methods that were suitable for inclusion in a situational method were then stored in a method base (3). Lastly, a situational method was assembled from the parts stored in the method base (4). This study planned to follow parts of the approach of Van de Weerd et al. (2007). The contexts in which the OMC was often applied would be

identified and analysed (1). Then the cases as described above would be consulted (2), rather than identifying new methods. In those cases, elements specific for that situation would be identified, based on the comparison that has been carried out for creating the reference method (3). Lastly, situational methods would be created combining the situational elements with the reference method (4). The situational methods would then be validated using interviews with experts from Anderson MacGyver. However, during the research it became apparent that developing situational method would not be possible, since the reference method was sufficiently adaptive for both specific situation. Therefore, it was decided to discard the development of situational methods.

Regardless of the lack of situational methods, the situational models, models of the OMC that suit the specific situation, were created as planned. This supported the construction of OMCs in the future in comparable situations. The difference with the model that was created for the reference method is that situational models can be used for future projects in comparable situations, while the reference model can be used for further research and practice of unknown areas. The process of situational model creation is depicted in Figure 2-3.

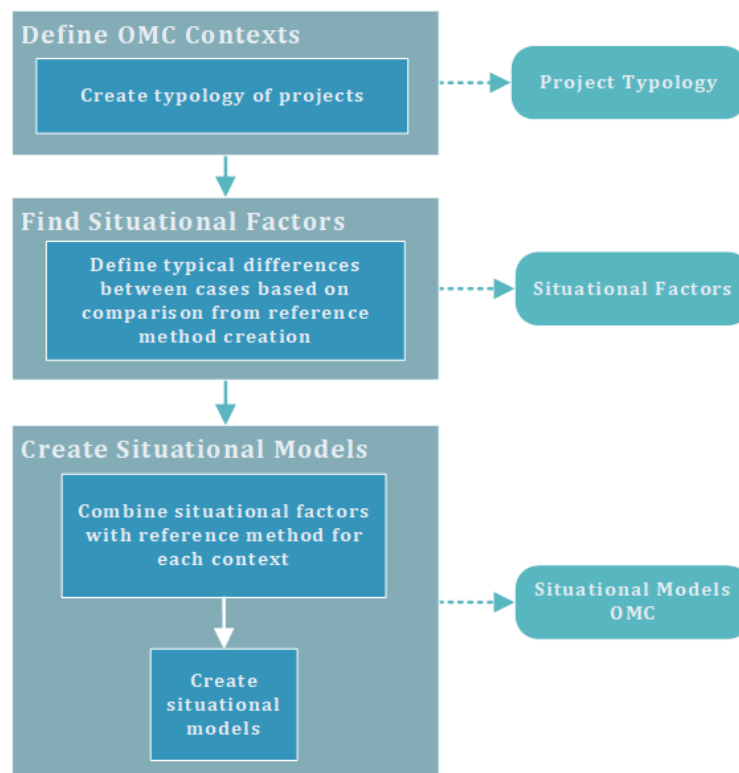


Figure 2-3: Approach of the situational model creation

2.2.2. Approach per Sub-question

This sub-section describes the methods and techniques that were used to answer each SQ. An overview of the yielded outcomes of each sub-question and the chapter in which they are described, is provided in Table 2-2.

Table 2-2: Yielded outcomes per sub-question

Sub-question	Outcomes	Described in	
SQ1	A	Definition and context description of digital business strategy	Chapter 3
	B	Overview of strategy formulation approaches	Chapter 3
SQ2	A	Description of purpose of the OMC	Chapter 4
	B	Description of scientific fundamentals of the OMC	Chapter 4
	C	Description of content and principles of the OMC	Chapter 4

SQ3	A	Reference method and model of the OMC	Chapter 6
	B	Overview of best practices for the OMC	Chapter 6
	C	Description of client experiences regarding the OMC and additions to the best practices	Chapter 8
SQ4	A	Typology of OMC projects	Chapter 7
	B	Situational models of the OMC	Chapter 7
SQ5	A	Description of role OMC in key digital business strategy themes	Chapter 9
	B	Description of role OMC in business- and IT strategy fusion	Chapter 9

2.2.2.1. SQ1: Digital business strategy formulation

SQ1, i.e. SQ1A and SQ1B, was answered using the findings from the literature review as previously described. The answer to this SQ contained the chosen definition for digital business strategy, a description of its context, and an elucidation of approaches that exist both in practice and in the scientific field to formulate a business strategy. An assessment of the applicability of the approaches for digital business strategy was performed as well.

2.2.2.2. SQ2: Operating Model Canvas description

SQ2A placed the OMC in a context and described its purpose. Since Anderson MacGyver has developed the OMC, this description was performed using available Anderson MacGyver publications, rather than scientific ones. The OMC is inspired by two scientifically described frameworks: (1) the Business Model Canvas (Osterwalder & Pigneur, 2010) and (2) the Value Chain Model (Porter, 1985). SQ2B therefore described those two models, and compared them with the OMC to create a thorough understanding of the scientific principles supporting the OMC. Lastly, SQ2C described the content and principles of the OMC. The combination of the context and purpose of the OMC, its scientific foundations, and content and principles of the model resulted in a solid description of the OMC, which answered SQ2.

2.2.2.3. SQ3: Operating Model Canvas construction

SQ3A analysed both the process and the deliverables of the cases in which an OMC was developed. The approach to achieve this was described earlier. Additionally, the several versions of the OMC of each case were assessed. SQ3B conducted an interview with an expert from Anderson MacGyver in order to identify best practices, both regarding the process and the deliverables, as well as the visualisation techniques for the OMC. This resulted in a list of best practices, which were the answer to SQ3B. SQ3C validated those best practices from the perspective of client acceptance, with clients that were involved in the development of an OMC. This resulted in the list from SQ3B being complemented with factors that increase client acceptance of what is modelled on an OMC, and the description of the client experience.

2.2.2.4. SQ4: Situational factors

In order to answer SQ4A, a typology of OMC projects was created, which classified OMC projects and subsequently OMCs to the type of industry the clients operated in. Experience of Anderson MacGyver advisors showed that the content and visualisation of OMCs varied among industries and had similarities within industries. Therefore, it was chosen that a typology based on industry would be the fundament for the analysis of situational factors. Thus, based on this typology, situational methods for the OMC were developed, as has been described previously. Both the typology and the defined situational factors were validated with experts from Anderson MacGyver. SQ4B tried to define how the reference method changed in the identified situations. It was, however, concluded that the method would not change at all. The situational OMCs did change, regardless of the method staying the same, and were thus developed in the context of SQ4B.

2.2.2.5. SQ5: Decision-making

SQ5A combined the themes regarding digital business strategy that were found in SQ1 with the purpose and possibilities of the OMC. The answer to SQ5A was thus an overview of how the OMC could tackle the challenges that are faced in each of the themes, supported by the literature review and demonstrated by the case studies. SQ5B was answered using the results from the literature review, which resulted in an explanation of how the OMC can support the fusion of business and IT strategies.

3. Theoretical Framework: Digital Business Strategy

This chapter describes the context of digital business strategy and serves as the theoretical foundation for this thesis. First, an overview of the evolution of digital business strategies is provided, which describes how digital business strategies have come forth from separate business- and IT- strategies. Next, the concept digital business strategy is defined based on an extensive analysis of existing literature on the topic, which is complemented by an explanation of its complexities. This is followed by an overview of challenges that occur when formulating a digital business strategy. Lastly, an outline of approaches for formulating traditional business strategies is provided, accompanied by an assessment of their applicability for digital business strategies.

3.1. The Evolution of Business-, IS-, and IT-Strategies

Enterprises and organisations formulate business strategies to clarify future ambitions and specify the path that will lead them to reaching their goals. Michael Porter (1985) defined a business strategy as “*an integrated set of actions aimed at increasing the long-term well-being and strength of the enterprise relative to its competitors*” (as cited in Ward & Peppard, 2002, p. 69). A strategy is not identical to operational effectiveness. Operational effectiveness means outperforming competitors in similar business activities and is essential for an enterprise. Strategy, on the other hand, implies that the enterprise should do something to differentiate from what competitors are doing in order to gain advantage (Porter, 1996). Three elements are key for formulating such a strategy: (1) the ability to see how the enterprise should develop (2) the ability to create a plan for enabling those developments, and (3) the ability to respond to both threats and opportunities in a timely fashion (Ward & Peppard, 2002, p. 69). From these elements of a business strategy, it becomes clear that business strategies are subject to external developments, such as innovation and technology.

In the 1950's the use of computers (information technology (IT)) was first introduced in businesses. However, due to developments in hardware capacity and software functionality, IT became more important on the work floor in the 1960's and 1970's. This increasing importance caught the interest of the scientific community. Nolan (1973), for example, distinguished three levels on which IT could be deployed: operational, control, and planning, and categorised possible IT activities, such as order entry (operational), market research (control), and sales forecasting (planning) (Nolan, 1973). During those first 20 years, IT was managed in the department or level in which it was deployed, without the existence of an organisation-wide strategy for IT or any long-term IT planning for that matter. During the beginning of the 1980's, rapid technological developments provided innovative ways of working. 'Office automation' systems, such as e-mailing and word-processing techniques, started simplifying basic business processes. Around that time, it became apparent to strategists and business directors that IT could systematically support businesses. As a result, perspective regarding the management of IT significantly changed. Rather than managing resources at the operational level, business-management started to see their different IT resources as a whole, known as an information system (IS). Since systems existed organisation-wide (across departments), rather than solely within departments, the insight arose that IT and IS should be managed as one entity and top-down. In addition, it was noted that the use of IT and IS could change the way businesses conducted business and subsequently could result in competitive advantage (Ward & Peppard, 2002, pp. 3-51).

This new attitude of businesses towards the management of IT and IS provoked scientific researchers to look at IT and IS with different glasses as well. As a result, research on the position and management of IT and IS within an organisation, and subsequent strategies, was conducted during the late 1980's and 1990's. In 1987, Michael John Earl stated that in order to gain competitive advantage from and with technology, the entire business should be evaluated. IT could then be part of the solution, rather than the solution itself. To gain such success with IT, Earl (1987) proposed a distinction between an IT strategy and an IS strategy. IT strategy concerns the technology, infrastructure and supporting business skills that are needed in order to accomplish the business goals. IS strategy, however, entails functionality and applications needed for accomplishing the business goals of the enterprise (as explained in Ward &

Peppard, 2002, pp. 40-41). Both strategies are thus aligned with the business strategy to use IT and IS to their full competitive potential. This relationship has been depicted by Ward & Peppard (2002) and is shown in Figure 3-1.

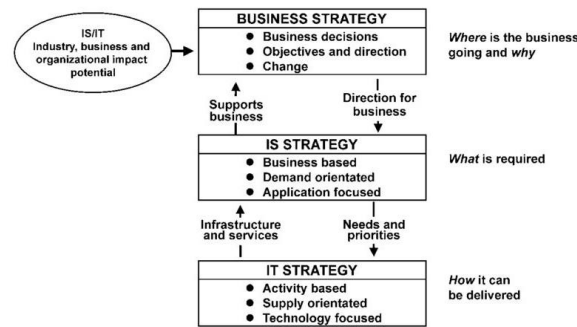


Figure 3-1: The synergy among IT, IS, and Business Strategies. Adopted from Ward & Peppard (2002; p.41)

Another well-known perspective on the position of IT and IS in business strategies is courtesy of Henderson & Venkatraman, who developed the Strategic Alignment Model (1993). Henderson and Venkatraman saw that enterprises kept failing to generate concrete value from their IT and IS investments, even though enterprises had started to formulate IT- and IS-strategies. According to them, the lack of value generation was caused by continuous misalignment between the IT- and IS- strategies on one hand and the business strategy on the other hand. With the objective to visualise the alignment between strategies that should be present and to support the business in the strategic choices that needed to be made, the Strategic Alignment Model was developed (Figure 3-2).

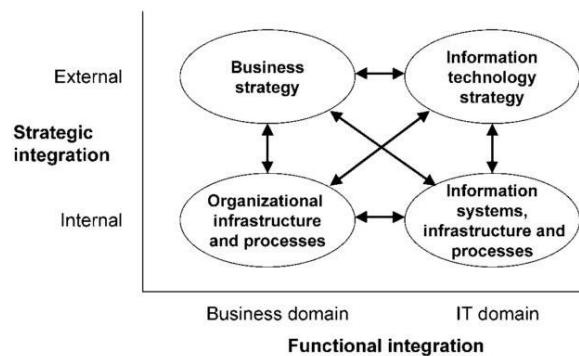


Figure 3-2: The Strategic Alignment Model. Adopted from Ward & Peppard (2002; p.45)

The model is based on two concepts: (1) strategic fit and (2) functional integration. Strategic fit addresses the alignment that should exist between the external domain, in which the enterprise operates, and the internal organisation of the enterprise. This type of alignment already existed in the business domain, and Henderson & Venkatraman argued it should also be introduced in IT. Functional integration concerns the alignment between business and its IT, especially focusing on how decisions in both domains influence each other. Two types of integration need to take place: (1) strategic integration to align business strategy and IT functionalities and (2) operational integration to align the business processes with the IT infrastructure. The model shows that two main approaches for achieving strategic alignment exist. On one hand, the business strategy can be a driver for the IT strategy, by changing the business processes and subsequently the IT infrastructure to fit the new organisation. Or it can be a driver by influencing the IT strategy which as a result influences the IT infrastructure as well. On the other hand, the IT strategy can serve as an enabler for the business strategy by influencing it and subsequently the business processes, or by demanding change in the IT infrastructure and subsequently in the organisational infrastructure. In order to achieve strategic alignment, choices regarding business and IT for both concepts (i.e. strategic fit and functional integration) need to be well-balanced (Henderson & Venkatraman, 1993).

The main difference between Earl's relationships between strategies and the Strategic Alignment Model is that Henderson & Venkatraman added multiple perspectives to the relationships. This increased the flexibility of strategy formulation, making it better applicable for organisations. Even though multiple visions on alignment exist, both models show that over the past two decades people have considered and accepted the need to align business-, IT-, and IS-strategies.

The past 5 to 10 years, however, the paradigm on the position of IT- and IS-strategies relative to business strategies has been shifting again. Traditional business strategies are again being reshaped due to new technological developments and insights. Innovations such as the Internet of Things, business intelligence, the growth of cloud computing, and the possibilities of big data have resulted in the vision that ICT can deliver core value to businesses, rather than solely supporting and optimising business processes (Bharadwaj et al., 2013). Currently, both practitioners and researchers are finding that IT-, IS- and business strategies should be integrated and fused into one, rather than supporting each other, for businesses to stay competitively strong.

3.2. The Notion of Digital Business Strategy

Over the past 10 years, exploratory research has been conducted by numerous scholars on the role of IT and IS in business strategies and subsequently the fusion of IT-, IS- and business strategies (Bharadwaj et al., 2013; Chi, Zhao, & Li, 2016; Holotiuk & Beimborn, 2017; Kahre, Hoffmann, & Ahlemann, 2017; Leischnig, Woelfl, & Ivens, Bjoern, 2016; Mithas, Agarwal, & Courtney, 2012; Mithas, Tafti, & Mitchell, 2013; Oestreicher-Singer & Zalmanson, 2013; Pagani, 2013; Piccoli & Ives, 2005; Woodard, Ramasubbu, Tschang, & Sambamurthy, 2013). Among these and other researchers, different opinions exist on what such a fusion should entail and what the name of the concept could be. Terms such as digital strategy, digital transformation strategy and digitalisation strategy are often used to address the same concept. However, overall, most researchers refer to digital business strategy. The latter prevents the possible confusion with Earl's distinction between IT- IS-, and business-strategies and clearly states the digital aspect as a key of the overall business strategy. Since various terms and explanations are being used, an outline of several explanations of the concept is provided below, followed by the definition of digital business strategy that will be used in this research.

In 2012, Mithas et al. stated that IT has the potential to fundamentally influence the business strategy of an enterprise based on five forms IT can take. However, each form both has an up- and a downside, leading to challenging choices for strategists. First, IT can shape the business strategy because it enables innovation. Innovation, however, can be sustainable, disruptive, or both. Second, IT is able to completely reshape the market, while enabling adaptation to said market as well. Third, IT offers both competitive advantage as well as transparency to how those advantages have been achieved. The dilemma in this case, is whether to be a leader or a follower in the market, both of which can have advantages and disadvantages. Fourth, IT supports cost-efficient transactions between businesses which can lead to vertical disaggregation of the chain, while at the same time it supports leveraging IT systems across the chain, causing aggregation. Lastly, the flexibility and agility of IT offers ample opportunity, but also brings along uncertainty for the business. Based on these IT-related dilemmas for strategists, Mithas et al. (2012) argue that a *"digital business strategy should help determine how to manage these five elements of duality by outlining plans for exploiting the strengths of IT, mitigating its threats, and using digital uncertainty as a competitive advantage"*.

Bharadwaj et al. (2013) argued that the era of aligning IT- and IS-strategies with the business strategy has passed. They state that, even though business strategy was aligned with IT- and IS-strategies at times, in general the IT- and IS-strategies stayed inferior to the business strategy. Current rapid technological advancements, however, have led them to the realisation that all strategies are equally important. They therefore propose the use of the term digital business strategy, which they simply define as an *"organizational strategy formulated and executed by leveraging digital resources to create differential value"*.

Also in 2013, Mithas et al. acknowledged that investments in IT outsourcing and information systems are important elements of the business strategy. This opposed the vision that these elements exist independently within their own

strategies, which are being aligned with the business strategy. They state that the IT elements of the business strategy are in some cases key to gaining competitive success. Therefore, they argue that enterprises should make IT essential in the business strategy, by fusing the IT- and business strategy. They thus define digital business strategy as “*the extent to which a firm engages in any category of IT activity.*” The extent depends on two important strategic decisions: (1) the quantity of financial resources the enterprise invests in IT and (2) the percentage of those investments that is spent on IT outsourcing.

Woodard et al. (2013) adhere to the vision of El Sawy (2003) that the age of IT and business alignment is over and that the time has come for the perspective in which IT and IS are fused with the business. In this era, IT and IS are embedded within the products and services of an enterprise. Woodard et al. (2013) define in that context a digital business strategy as a “*pattern of deliberate competitive actions undertaken by a firm as it competes by offering digitally enabled products or services.*”

Chi et al. (2016) saw that new technologies have been reshaping traditional business strategies and that the role of IT in the business has changed. IT and IS have been key to enterprises in creating business value and gaining competitive advantage. They have therefore defined digital business strategy as “*a fusion between IT strategy and business strategy. [It is a] kind of organizational strategy which [is] formulated and executed by leveraging digital resources to create differential value. [It] focuses on deploying and leveraging organizational resources to support interorganizational e-business activities.*”

Holotiuk and Beimborn (2017) state that the emerging concept of digital business strategy will impact the strategy formulation process of enterprises. Adhering to the definition of Bharadwaj et al. (2013), they expand the concept by noting that “*DBS describes the fusion of business and IT strategy and the incorporation of digital technologies in business strategy.*” They emphasise the value of IT in achieving competitive advantage. Kahre et al. (2017), lastly, call the merger of IT and business strategies “*a prerequisite for driving innovations and remaining competitive.*” They build upon the definition by Bharadwaj et al. (2013) by expanding it with the notice that such a strategy is “*triggered by the emergence of innovative and disruptive technologies.*”

Above definitions and concept explanations might appear very different at first sight, but upon closer look it becomes clear that all acknowledge two important elements. Mithas et al. (2012) emphasise the fusion of business- and IT-strategies, and acknowledge that competitive advantage can be gained by exploiting lack of digitality of competitors. Mithas et al. (2013) stress the importance of the investment of financial in IS and IT. Woodard et al. (2013), Chi et al. (2016), and Holotiuk and Beimborn (2017) also state that the fusion of both strategies is of high importance, and acknowledge the competitive advantages that can be gained by digital resources as well. Kahre et al. (2017) stress the need for a merger of IT- and business strategies and mention the importance of competitive advantage. In conclusion, the definition of digital business strategy should at least contain the following two elements: (1) the fusion of IT- and business strategy and (2) the competitive advantage IT can generate. Since several (recent) articles (Chi et al., 2016; Holotiuk & Beimborn, 2017; Kahre et al., 2017; Leischnig et al., 2016; Oestreicher-Singer & Zalmanson, 2013; Pagani, 2013) literally adopt and/or build upon the definition proposed by Bharadwaj et al. (2013), and their definition contains the two essential elements of digital business strategy that came forth from the definitions above, it will be leading in this thesis:

“An organisational strategy formulated and executed by leveraging digital resources to create differential value”

The definition emphasises the important characteristic that a digital business strategy should exist organisation-wide, by calling it an organisational strategy. In addition, it calls upon the importance of the digital aspect for gaining competitive advantage and generating business value in the second part. Moreover, it shows the importance of the fusion between IT-, IS-, and business strategies rather than their alignment and symbolises a new era in which digital resources are no longer solely supporting businesses but generating competitive advantage and business value.

The purpose of both traditional business strategy and digital business strategy is identical: to create value for the organisation in order to generate a revenue stream and stay competitive. Despite sharing an objective, differences exist between traditional business strategies and digital business strategies. Mithas et al. (2012) state that digital business strategies “*Thrive on digital uncertainty*” and use it as an opportunity, rather than accepting that uncertainty exists, which is usually done by traditional business strategies. Additionally, digital business strategies aim to find new sources of competitive advantage by using data analytics and other information sources, rather than walking the known path. Lastly, digital business strategies are less rigid than traditional ones, for they need to adapt quickly to new technological developments and stay ahead in a fast-evolving market. Hence, digital business strategies cover a smaller number of years in the future.

3.2.1. The Context and Effects of Digital Business Strategy

The relatively young concept of digital business strategy is still in need of further development. To that end, Bharadwaj et al. (2013) have proposed the ‘Four Key Themes’ framework that explains the complex context of digital business strategies relative to the existing knowledge on traditional business- and IT strategies. The four themes encompass the scope of digital business strategies, the scale of digital business strategies, the speed of decision-making concerning digital business strategies, and the sources of business value creation and capture in terms of digital business strategies. The framework is explained below and will provide context for the challenges that the formulation of digital business strategy faces, which are explained in Chapter 3.3.

Scope of digital business strategies

The scope in traditional strategic management encompasses the reach and boundaries of the portfolio and activities of an organisation. For digital business strategies, this scope can be affected by digital technologies and can therefore differ from the traditional strategic scope. Since digital business strategies are the fusion of business and IT strategy, they are more transfunctional than IT strategies and rely more heavily on digital platforms and information sharing. In terms of the product and service portfolio, digital business strategies seek to complement existing products with digital means and aim to design new, innovative products. This extends the range of the portfolio compared to traditional range. Digital business strategies should exist in the context of the entire ecosystem of an organisation, and thus connectivity will play a more important role in the digital era. This causes the scope of the digital business strategy to extend beyond the organisation and take into account the possibilities in the ecosystem rather than just the organisation (Bharadwaj et al., 2013, pp. 473-474).

Scale of digital business strategies

The scale in strategic management entails the financial benefits that can be yielded by accurate strategic planning. Digital business strategies need to take into account the economies of scale for both physical and digital resources. Organisations need to be able to handle requirements of the digital and physical markets by agile scaling of resources, such as cloud availability and network capability. Additionally, benefits and competitive advantage can be gained from effective data management and governance by applying them for cost efficiency initiatives or product development. Lastly, the burden of digital resources can be shared with other organisations, for example by using SaaS technology and sourcing possibilities (Bharadwaj et al. 2013, pp. 474-475).

Speed of digital business strategies

Timing has been acknowledged to be a crucial factor in traditional strategic management, and it increases in importance in a digital era. The launch of new products and services is accelerated by digital business strategies for organisations that deliver digital-only products and services, such as Amazon, but also for organisations that will incorporate digital elements in their physical products to stay competitive. The increasing number of possibilities for staying in touch with customers and gathering data regarding their demands implies that the decision-making in digital business strategies is accelerated as well. Connectivity enables the ecosystem of an organisation to be organised more efficiently, which means speed of delivery of supplies and end-products can be increased (Bharadwaj et al. 2013, pp. 476-477).

Value sources of digital business strategies

Creating value is an important aspect of traditional business strategies. Digital business strategies add to the traditional means of value creation by incorporating digital elements. Technology enables organisations to gain value from gathered information, especially by offering products and services tailored to the customer's personal demands. Digital business strategies consider multiple ways of offering products and services for dynamic prices, leading to new multi-sided business models. Additionally, technology can influence the value creation of the entire industry and ecosystem, rather than just one organisation, which indicates digital business strategies should take the value creation possibilities of both into account (Bharadwaj et al. 2013, pp. 477-478).

3.3. Challenges for Digital Business Strategy Formulation

Chapter 3.2.1 described that, since a digital business strategy is a fusion of business- and IT strategies, the digital business strategy extends the business strategy with digital elements. Formulating a digital business strategy can thus bring along some additional challenges to the already complicating task of traditional strategy formulation. Such challenges are described here and mapped to the framework of Bharadwaj et al. (2013). This section solely provides an exploration of possible challenges for digital business strategies and should not be considered exhaustive.

Scope of digital business strategies

A characteristic of digital business strategies is transfunctionality; the strategy can encompass multiple business domains or even cover the entire organisation. Therefore, traditional organisational structures might not be suited to support the implementation and execution of the digital business strategy. A transformation of the organisation thus is likely to be required. To that end, Bharadwaj et al. (2013) stated that a key requirement and challenge of a digital business strategy is the competence to redesign the organisation and its structure and reinvent existing hierarchies. To complement their statement, Holotiuk and Beiborn (2017) found that a critical success factor for digital business strategy is the existence of a digital mindset, meaning that digital possibilities should be seen as a means to create value. Additionally, they stated that, at the strategic level, roles of executives might need to be reshaped and, at the operational level, a blend of human and digital resources should be considered. Another challenge is the fusion of business and IT departments, which is key to formulation and subsequently implementing a digital business strategy (Jentsch & Beiborn, 2014; Preston & Karahanna, 2009). Traditionally, business and IT departments have a different outlook on what the organisation requires in terms of technology and how this can be applied. A prerequisite for a digital business strategy is organisational alignment of the digital perspective (Holotiuk & Beiborn, 2017) and therefore business and IT departments should agree on the strategy and its objectives. Besides the challenges of redesigning the organisation and integrating business and IT needs and activities, organisation-wide commitment for the transformation needs to be generated (Holotiuk & Beiborn, 2017) to gain the benefits from a digital business strategy.

Scale of digital business strategies

Digital business strategies can support new ways of exploiting economies of scale. Regarding the scale opportunities for organisations, Mithas et al. (2012) have stated that technology can aid organisations in a simultaneous increase of revenue, decrease of costs, and improvement of quality. The challenge here is to view digital business strategies from a different perspective than traditional business strategies and to try to find new and more efficient ways to make a profit and gain competitive advantage. In terms of scale possibilities for the ecosystem, Bharadwaj et al. (2013) stated that a digital business strategy exists in the entire ecosystem of an organisation, and therefore the contracts with partners and behaviour of competitors are part of the digital business strategy. The challenge in this case is first of all to predict the actions of the other players in the ecosystem, and second of all to maintain effective relationships to benefit the digital business strategy.

Speed of digital business strategies

The required speed of the formulation of a digital business strategy and its decision-making is a challenge on its own. Forecasting and decision-making should be conducted faster than for traditional business strategies and products, and services need to be developed and released at a higher pace. Holotiuk and Beimborn (2017) have formulated several critical success factors related to the speed of digital business strategies that should be met by organisations to be successful. They state that the organisation structure should support a fast-reactive culture by being multi-levelled and multi-speeded. In the same line of thought, the role of IT should be altered and become more flexible. The concrete challenge in this field is, again, designing an agile organisation structure that enables rapid decision-making. In addition to fast decision-making, fast product and service development is required for a digital business strategy. Therefore, faster innovation should be enabled in the organisation, which requires more available resources and competences. The challenge is to find and effectively exploit those resources and competences.

Value sources of digital business strategies

Digital business strategies provide additional value sources for the organisation. Opportunities lie in developing new, innovative products that will generate new types of value, or in optimising the existing products and services. Benefits can be gained by intensifying the interaction with the customer using digital means. This can strengthen the relation between customer and organisation, which has the potential of generating new value by exploiting customer loyalty. According to Holotiuk and Beimborn (2017), this evokes changes in the value chain and can lead to new business models. The challenge is to correctly estimate what the future holds and to effectively anticipate accordingly (Mithas et al, 2012).

Approaches and frameworks aiming to tackle the challenges stipulated above and formulate a digital business strategy, are explored and described in Chapter 3.4

3.4. Approaches for Strategy Formulation

Ample research has been conducted and multiple theories and approaches exist for the formulation of a business strategy. However, for digital business strategies in specific, little research has been done so far. Ross, Sebastian, and Beath (2017) mention a clear digital strategic direction should be chosen and describe their two digital strategy directions. However, no framework or further guidance is provided by them. Holotiuk and Beimborn (2017) propose a framework for the design of new digital business models by providing 40 critical success factors for a digital business strategy, but note that further research on how to formulate such a strategy is required.

Since a digital business strategy is essentially a business strategy, albeit with digital elements creating business value, existing traditional strategy formulation approaches could possibly be applied for the formulation of digital business strategies as well. To that end, ten renowned strategy formulation approaches and supporting frameworks are described below. The approaches were selected for their versatility or general perspective in terms of strategy formulation, their possible application for digital business strategies, or their popularity among practitioners. They have different objectives and perspectives and can be divided into three categories: (1) analysis of the strategic positioning of the organisation, (2) analysis of the environment and industry, and (3) analysis of the organisation itself. Below, these categories are further explained and examples of approaches are provided. Figure 3-3 shows all ten approaches on a timeline to provide an overview of the order in which they were developed. The objective of this non-exhaustive enumeration is to explore the applicability of existing business strategy approaches for digital business strategy formulation. Additionally, it serves to position the Operating Model Canvas (OMC), which is the focal point of this thesis and proposed to be a technique for digital business strategy formulation, in the landscape of formulation approaches.

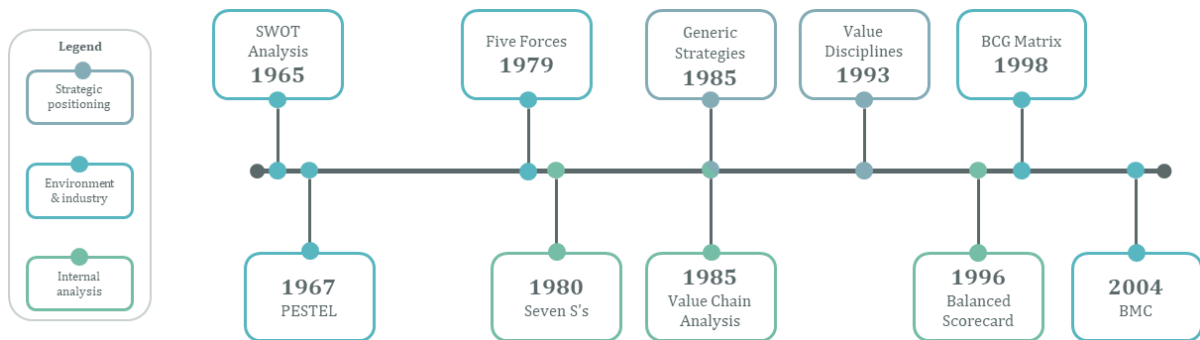


Figure 3-3: Timeline of the initiation of strategy formulation approaches

3.4.1. Strategic positioning of the organisation

Frameworks that show the positioning of an organisation in its industry relative to the other players in the market can provide a first sense of direction when it comes to strategy formulation. Two such frameworks are described below.

Porter's Generic Strategies

One of the most famous frameworks that supports the formulation of a business strategy is Michael Porter's Generics strategy model (Porter, 1985). He designed a framework that distinguishes two strategies indicating the relative position and profitability of an organisation in its industry (see Figure 3-4).

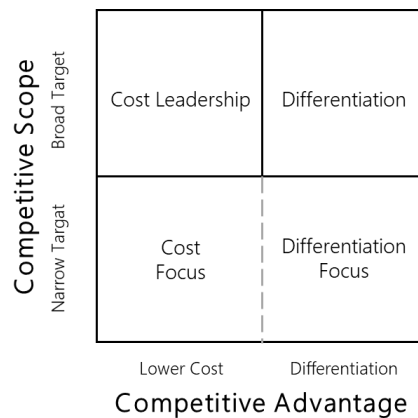


Figure 3-4: The Generic Strategies by Porter (1985)

The first strategy is Cost Leadership, which aims to offer the same products or services as the other organisations in the industry do, striving for the lowest costs possible. The second strategy is Differentiation, which aims to offer the best products in the industry, within the margins of that same industry, resulting in the possibility to maintain a higher sales price. The model also contains the option for a Focus strategy, which indicates an organisation targeting a specific segment of customers or products. Focus strategies can either be Cost Leadership or Differentiation oriented. All strategies, i.e. Cost Leadership, Differentiation and the Focus orientation, determine the organisation's opportunities for competitive advantage relative to the other players in the industry and therefore provide its strategic positioning.

Value Disciplines Model

Building upon Porter's framework, Treacy and Wiersema (1992) developed their Value Disciplines Model, which distinguishes three strategies for generating value for the organisation (see Figure 3-5). The first is Operational Excellence, which focuses on delivering products and services for the lowest price possible. Advantage is gained through for example process optimisation, business efficiency and utilising low-cost raw materials. This strategy shares the direction of Porter's Cost Leadership. The second strategy by Treacy and Wiersema is Customer Intimacy, which aims to deliver products and services tailored exactly to the targeted customer(-segments) and to invest in specific customer care activities with the objective to build and maintain customer loyalty. The last strategy is Product Leadership, which focuses on delivering innovative and creative products and services. Product Leadership shares

characteristics with Porter's Differentiation strategy. Treacy and Wiersema (1992) state that focus on one of these strategies, rather than semi-focusing on multiple of them, is key to competitive success.

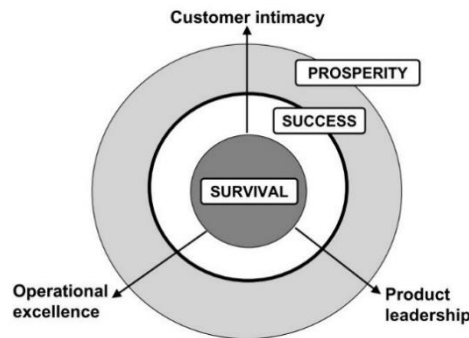


Figure 3-5: The Value Disciplines by Treacy & Wiersema. Adopted from Ward & Peppard (2002; p.115)

3.4.2. Environmental and industry analyses

Besides choosing a strategic direction, understanding the wide and the close environment of the organisation is essential for gaining competitive advantage. Five approaches that can support gaining an understanding of the environment of an organisation are mentioned below, three of which are explained briefly.

PESTEL

PESTEL, also known as PESTLE, is a framework that provides an overview of macro-environmental factors of an organisation, which can be helpful in order to formulate the strategy of an organisation. Originally developed as ETPS (Aguilar, 1967), over the years the framework has evolved to its current state PESTEL by the usage in different fields (Yüksel, 2012). Although different explanations for the acronym exist in literature (Yüksel, 2012) it is generally accepted that PESTEL stands for Political, Economic, Social, Technological, Environmental, and Legal. It provides a framework for assessing the external factors and influences of an organisation and gathers information that can be the input for strategy formulation.

Porter's Five Forces

Besides creating a framework for generic organisational strategies, Porter (1979) developed a framework that maps the interplay among competitive forces within an industry: The Five Forces (see Figure 3-6).



Figure 3-6: Porter's Five Forces (1979)

Through this framework, Porter emphasised the importance of dealing with competition when formulating a strategy. The framework consists of five elements: the threat of (1) new entrants and (2) substitutes, the bargaining power of (3) buyers and (4) suppliers, and (5) the rivalry among existing competitors. The threat of new entrants constitutes the risks of changes in relative market share in the industry and shifts its dynamics due to new organisations offering

similar products or services. The threat of substitutes, on the other hand, entails the chances of new products or services offering the same benefits as those of the players in the industry, and hence making them superfluous. The bargaining power of buyers indicates the possibility of customers switching to competitors or demanding different prices or qualities. Similarly, the bargaining power of suppliers entails the influence that suppliers have on the process and products or services by fluctuating their prices and portfolio. Lastly, the rivalry among existing competitors, symbolises the strategic games played by organisations concerning prices and products. In terms of strategy formulation, this framework helps understanding the industry of an organisation: *“Awareness of these force scan help a company stake out a position in its industry that is less vulnerable to attack”* (Porter, 1979).

SWOT Analysis

Closely related to the PESTEL framework is the SWOT Analysis. SWOT originates from research conducted by the Stanford Research Institute between the 60’and 70’s of the past century (Briciu, Căpuşneanu, & Topor, 2012). SWOT stands for Strengths, Weaknesses, Opportunities, and Threats and assesses the industry of an organisation as well as the internal organisation. Strengths and Weaknesses assess what capabilities the organisation possesses and what pitfalls might exist. Opportunities and Threats, on the other hand, assess what possibilities and risks the organisation might encounter. The difference with the PESTEL framework, is that SWOT assesses internal factors as well. PESTEL, however, analyses external factors more thoroughly.

Boston Consulting Group Matrix

The Boston Consulting Group (BCG) Matrix assesses the product and service portfolio of an organisation relative to other players in the industry based on market share and growth (Stern & Stalk, 1998). The matrix consists of four categories; Cash Cows, Dogs, Stars, and Question Marks (see Figure 3-7). Cash Cows are products and services with a large market share and a slow growing market, making them steady revenue generators. Stars have a large market share in markets with growth potential, which requires investments from the organisation. Dogs, on the other hand, are products and services with a small market share in a market without growth potential, which implies dogs are more likely to cost money than deliver revenue. Question Marks, lastly, are products with a small market share in a growing market and have the potential to, with some investment, become profitable. Each type of product or service thus demands different strategic actions. Based on the categorisation of the products and services of an organisation, strategic decisions can be made regarding existing and new products and services.

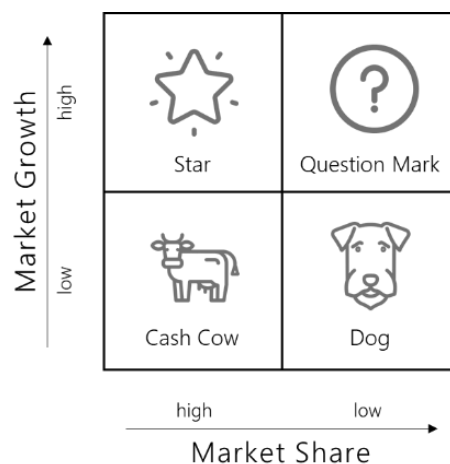


Figure 3-7: The Boston Consulting Group Matrix for Strategic Portfolio Management (1998)

Business Model Canvas

A framework combining both an organisation’s external actors and influences and internal aspects is the Business Model Canvas by Osterwalder & Pigneur (2010). Since this framework is one of the foundations of the OMC, this will be thoroughly explained in Chapter 4.

3.4.3. Internal analysis of the organisation

Competitive advantage can also be gained by assessing the internal capabilities of an organisation. Numerous approaches to do so exist, below three well-known approaches are mentioned, of which two are explained.

Balanced Scorecard

The Balanced Scorecard was first proposed by Kaplan and Norton in 1996. It focuses on formulating a business strategy by assessing the organisation from four perspectives; the financial situation of the organisation, the customers of the organisation and their demands, the internal business processes of the organisation, and the learning and growth practices of the organisation. All four perspectives are analysed by determining the respective objectives, measures, targets, and initiatives of the perspective (Kaplan & Norton, 2000). Based on this analyses, vision and strategy of the organisation can be formulated (see Figure 3-8).

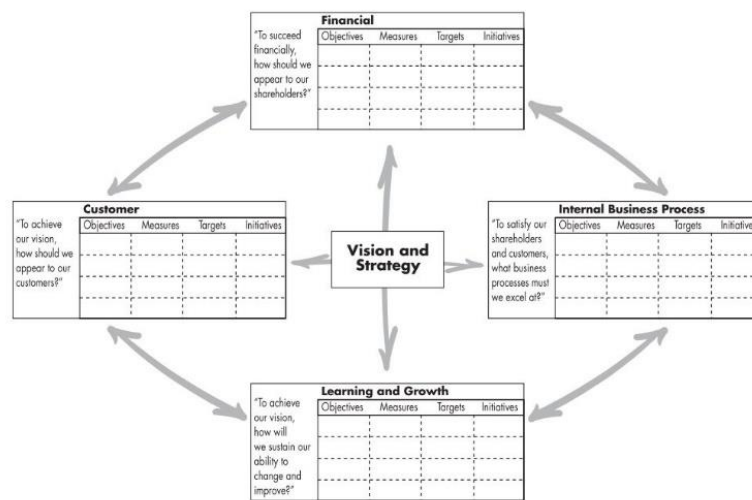


Figure 3-8: The Balanced Scorecard. Adopted from Kaplan & Norton (2000).

McKinsey's 7 S's

McKinsey's 7 S's Framework has first been published in 1980 by Waterman, Peters, and Phillips. The essential idea of the framework is that an organisation consists of seven elements, which should be assessed and aligned in order to determine where the organisation can and should go, i.e. in order to formulate a strategy and achieve competitive advantage (Waterman et al., 1980). The original framework consists of seven elements divided in two groups; (1) Structure, Strategy, and Systems, which are the elements upon which strategies used to be built, and (2) Style, Staff, Skills, and Superordinate Goals, which encompass the additional factors that should be taken into account as well (see Figure 3-9).

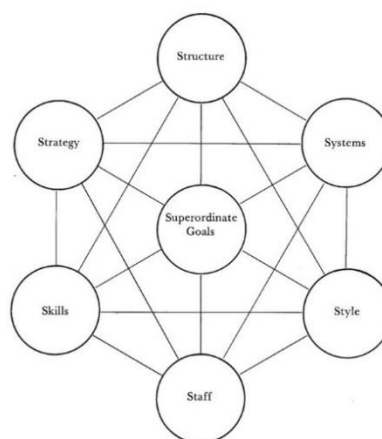


Figure 3-9: The 7 S's by McKinsey. Adopted from Waterman et al. (1980)

Structure is the organisational structure in terms of hierarchies and division, strategy concerns the plans that the organisation has, and systems are any existing procedures and rules that the organisation employs. Style is the type of leadership in the organisation, staff encompasses anything related to employees, skills indicate the organisational capabilities, and superordinate goals show the culture, e.g. ideas and values, upon which the organisation exists (Waterman et al., 1980). Mapping these seven elements and aligning the plans and expectations of all of them provides a framework for strategy development.

Porter's Value Chain analysis

Value chain analysis is an extension of Porter's Generic Strategies and entails an assessment for cost leadership or differentiation opportunities in the organisation's value chain. Since this analysis is one of the foundations of the OMC, this will be thoroughly explained in Chapter 4.

3.4.4. Applicability for Digital Business Strategy

The frameworks and strategy formulation approaches described above originate from times in which little or no digital focus existed in terms of strategy formulation. Nevertheless, the traditional business strategy formulation approaches could be applicable for a digital business strategy as well. Below, an enumeration of the approaches that were described in Chapter 3.3.3 is provided accompanied by an explanation of how they could be used for a digital business strategy;

- **Porter's Generic Strategies:** both Cost Leadership and Differentiation remain applicable strategies in the digital era by including in the business strategy how cost efficiency (Cost Leadership) and product development (Differentiation) will be enabled and enforced with digital means. However, instead of choosing either one of the strategies, it might be useful to consider how IT can help achieving both strategies at once (Mithas et al., 2012).
- **Value Disciplines Model:** each of the value disciplines can be enriched with digital elements. Operational Excellence can be achieved by utilising data analytics to find opportunities for process optimisation, Customer Intimacy is enforced by communication technology, enabling to stay in touch with the customer at all times, and Product Leadership can be gained by enhancing product with innovative technologies.
- **PESTEL:** analysing the environment of the organisation can be done by taking into account digital elements of the environment for each of the six categories.
- **The Five Forces:** although developed over 30 years ago, Porter's five forces can be applied in the digital era as well. The dynamics and competition within an industry remain to this day, although the intensity of the powers might have changed. Technological developments provide ample potential for substitute products, thus increasing the threat of substitutes. Similarly, the threat of new entrants increases since less recourses are required to enter a market, as shown by the number of successful start-ups. The bargaining power of buyers has increased by means of intensified customer interaction and subsequent possibilities for the buyer to communicate demands. Bargaining power of suppliers has shifted as well, due to the increased importance of ecosystem collaboration (Sprokholt et al., 2017). To conclude, this framework could support the formulation of a digital business strategy.
- **SWOT:** assessing the SWOTs of an organisation can include defining digital strengths, weaknesses, opportunities, and threats as well. Considering behaviour of competitors and possible technological advancements would probably become key in performing a SWOT analysis.
- **BCG Matrix:** the principles of market share and growth remain applicable in the digital era. Technology can enhance the decision-making regarding the product portfolio by applying data analytics and forecasting to predict market behaviour. The speed of this behaviour, however, could change due to the more rapid product and service development that accompanies digital business strategies.

- **Balanced Scorecard:** assessing the organisation can be done by including digitality in the objectives of each of the four perspectives. For example, a learning objective could be to increase the digital capabilities of the staff.
- **McKinsey 7 S's:** for each of the seven S's, digital elements can be included, for example digital systems should be reported as well as digital and IT capabilities. Additionally, rather than solely assessing the current organisation, for formulating a digital business strategy it could be useful to assess the redesign possibilities in terms of organisation structure (Holotiuk & Beimborn, 2017), style, and skills as well, to determine the organisation's readiness for a digital business strategy.

In theory, all of the above business strategy formulation approaches could be applied for digital business strategy formulation. However, as explained in Chapter 3.2, digital business strategies are transfunctional and more complex than traditional business strategies. Digital business strategies go beyond simply including digital elements into the traditional business strategy and try to find new ways of generating value for the organisation, empowered by digital means. Additionally, the formulation of a digital business strategy requires a vision of the future, not solely an assessment of the current position in the industry and as-is organisation (Mithas et al, 2012). Therefore, it could be an option to find or develop an approach that is specifically tailored to the needs of a digital business strategy. The OMC aims to tackle the difficulties of digital business strategy formulation, for it analyses the environment of the organisation, as well as the internal business activities. Moreover, it tries to generate a shared vision among all organisational departments. This will be further elaborated upon in Chapter 4.

4. The Operating Model Canvas

This chapter describes the foundation and principles of the Operating Model Canvas (OMC). In the first section, the purpose of the OMC is described. The second section describes the two scientific models that served as the foundation for the OMC. In the third section, the OMC is described by explaining its structure, content, and the positioning of elements. Since Chapters 5 to 9 will provide in-depth descriptions and analyses of the approach for developing an OMC and its content and structuring, descriptions in this chapter are therefore kept concise.

4.1. The Purpose of the OMC

The OMC is a model that can provide an overview of the organisation as a whole. Its main purpose is to provide a means of interaction between the business- and IT activities of an organisation, which has been visualised in Figure 4-1. **Activity is defined as “everything that needs to be done (execution of actions and tasks) to make the business model work. Activities can be grouped by their nature or function, like procurement, marketing, or production”** by Sprokholt et al. (2015). The OMC aims to provide a simple and understandable visualisation of the business. To that end, the OMC is created from a business perspective, rather than an IT(-architecture) perspective, which tends to be perceived as complex (Sprokholt et al., 2015).

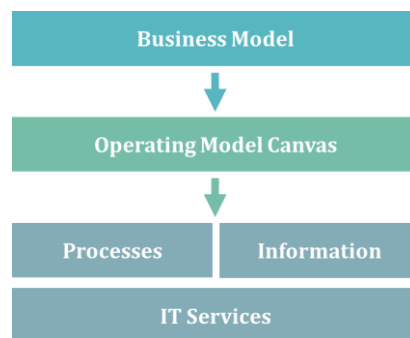


Figure 4-1: Positioning of the Operating Model Canvas. Adopted from Sprokholt et al. (2015)

By providing a common language for business and IT departments and supporting the development of a shared vision between business- and IT activities, the OMC can facilitate the fusion of business and IT of an organisation and hence contribute to the development of a digital business strategy. This is further explored in Chapter 9.

4.2. The Scientific Foundation of the OMC

Two scientific frameworks are the foundation of the OMC: (1) the Business Model Canvas by Osterwalder (2010) and (2) the Value Chain by Porter (1985). This section describes both frameworks and discusses which part of their content is used in the OMC. In addition, the Operating Model Canvas by Campbell, Gutierrez, and Lancelott (2017) is assessed, providing a brief outline of the similarities and differences between the OMC by Sprokholt et al. (2015) and the model by Campbell et al. (2017).

4.2.1. The Business Model Canvas

The Business Model Canvas (BMC) is an approach for strategy formulation that was developed by practitioners and published by Osterwalder and Pigneur in 2010. They define a business model as “(..) *the rationale of how an organisation creates, delivers, and captures value*” (Osterwalder & Pigneur, 2010). The objective of the BMC is to generate a shared understanding among stakeholders that can be the start of a strategy discussion. The BMC consists of nine building blocks that, when combined, show the system of how an organisation plans to generate a profit (see Figure 4-2).

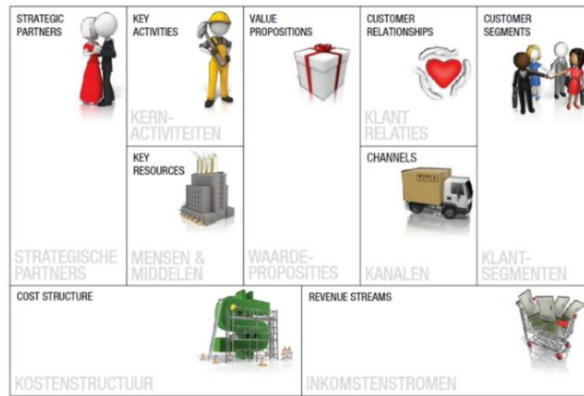


Figure 4-2: Structure of the Business Model Canvas. Adopted from Osterwalder and Pigneur (2010)

The first block of the BMC depicts the customer segments of the organisation and thus shows the end-user of the products and services that the organisation delivers. The second block contains value propositions, which are those products and services that aim to meet the demands of the customers. The third block shows the channels through which contact with the customers takes place; this can for example be a means of communication but also the physical delivery of a product. Next, in the fourth block, the customer relationships are visualised, which express the types of relationships that exist with customers. The fifth block shows an overview of the revenue streams of the organisation. The sixth block provides the key resources that are required to create and deliver the value propositions to the customers. The resources are followed by the key activities in the seventh block, which show how the resources are processed into the value propositions. The eighth block depicts key partnerships showing external relations to whom some of the key activities are contracted. The last block provides the cost structure of the organisation, showing costs related to the realisation of the value propositions and their delivery to the customer (Osterwalder & Pigneur, 2010).

The customer segments, channels, and strategic partners of the BMC are adopted in the OMC. The difference between the BMC and the OMC, however, is the presence and level of detail of business activities. The BMC focuses on the most important business activities, where the OMC shows all business activities. Visualisation and structuring of those business activities is done by including the principles of the Value Chain by Porter (1985).

4.2.2. The Value Chain

The Value Chain (VC) has been developed by Michael Porter in 1985. It depicts the series of business activities required by an organisation to deliver value to the customer. Porter distinguishes two types of activities: (1) primary business activities and (2) supporting business activities (see Figure 4-3). Primary business activities are those activities directly contributing to the value delivery of the organisation. Porter has established five standard primary business activities. Inbound logistics regard the collection and storage of materials that are needed to create the final product or service delivery. Operations concern the processing of those materials into final products or services. Outbound logistics are all activities needed to deliver the product or service to the customer. Marketing and sales activities concern acquiring customers and selling them the products and services of the organisation. Lastly, service activities entail the after-care and maintenance of product and service delivery. Supporting activities are any business activities that enable the primary business activities. Human resource management concerns every activity regarding the employees of the organisation. Technology development supports the primary business activities by using technology and facilitating innovation. Procurement activities concern the purchase of products and services offered by external parties. The supporting activities human resource management, technology development, and procurement all undertake specific actions for the different primary activities. Human resource management can, for example, facilitate training for the employees of operations and organise the recruitment of employees for the marketing and sales activities. Lastly, firm infrastructure describes supporting activities, such as strategy planning and finance, that generically support the entire organisation (Porter, 1985).

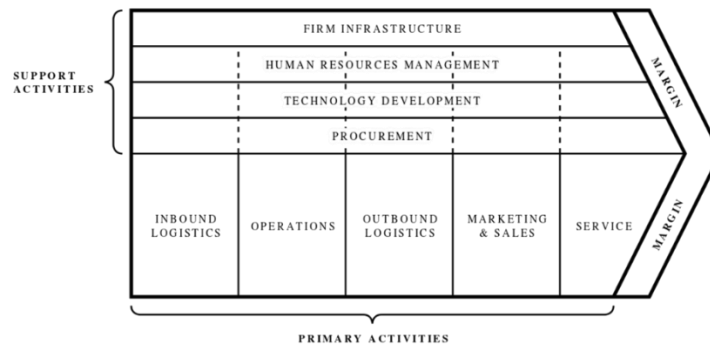


Figure 4-3: The Value Chain by Porter (1985). Adopted from Wikimedia (2014)

By applying the structure of building blocks of the BMC and the principles of the Value Chain, the OMC is a shared language between business and IT departments and provides means to fuse business and IT activities. The OMC is thus an approach for strategy formulation.

4.2.3. Campbell et al.'s Operating Model Canvas

In 2017, Campbell, Gutierrez, and Lancelott published their Operating Model Canvas (see Figure 4-4). They present the model as a tool for strategy development among other purposes such as identifying performance issues and managing a project portfolio. The model consists of six building blocks; (1) the suppliers of the organisation, (2) the locations of the organisation, (3) the organisation structure, (4) the information of the organisation, (5) the overarching management system, and (6) the value chain for propositions. The aim of the creators of the Operating Model Canvas is to improve the BMC by substituting three building blocks, i.e. key activities, key resources, and key partners, with their model, to provide a more complete image of the operations of an organisation (Campbell et al., 2017).

Although at their core both the Operating Model Canvas of Sprokholt et al. and the Operating Model Canvas of Campbell et al. aspire to create an overview of the organisation, the latter risks creating a needlessly complex interplay of incoherent aspects by consistently modelling the same five aspects for every organisation. The OMC of Sprokholt et al. aims for simplicity and clarity by using a base model that is constructed around the activities of the business, its channels, its value propositions, and its customers, on top of which specific aspects can be placed using aspect layers.

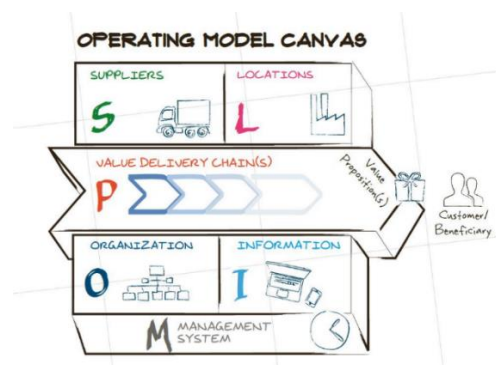


Figure 4-4: Campbell et al.'s Operating Model Canvas. Adopted from Campbell et al. (2017)

4.3. The Content of the OMC

The OMC depicts the vision of the organisation in terms of how value propositions are provided to customers. It shows what should be done to create value for the customer and how this can be achieved, rather than its architecture or structure, and can thus be used as an approach to formulate a business strategy.

The OMC consists of a base layer that can be complemented by several aspect layers. The base layer shows the actors, channels, and business activities of the organisation. The aspect layer provides additional information on top of the

base layer, such as the applications of the organisation, its project portfolio, or relevant customer journeys. An aspect layer can thus show which activities or stakeholders of the organisations are involved in or affected by certain additional business aspects (Sprokholt et al., 2015). Aspect layers are of such diversity that the topic has the potential to be a research project on its own. Hence, aspect layers are not investigated in this research and are not elaborated upon in this chapter. The generic structure of the base layer of the OMC is shown in Figure 4-5.



Figure 4-5: Structure of the OMC. Adopted from Sprokholt et al. (2015)

The OMC consists of OMC Areas which are the building blocks of the model, depicted by the light-blue rectangles. An OMC Area concerns a business domain such as ‘Sales’, or a specific part of the context of the organisation such as ‘Channels’, and shows the content of the domain or context part. It can thus contain concrete business activities or organisational aspects. Additionally, an OMC Area can consist of other OMC Areas for grouping purposes. An OMC should at least consist of the seven basic OMC Areas: Governance, Control, Customers, End-Users, Primary business activities, and Supporting business activities. The meta-model of the OMC visualises these relations and is depicted in Figure 4-6.

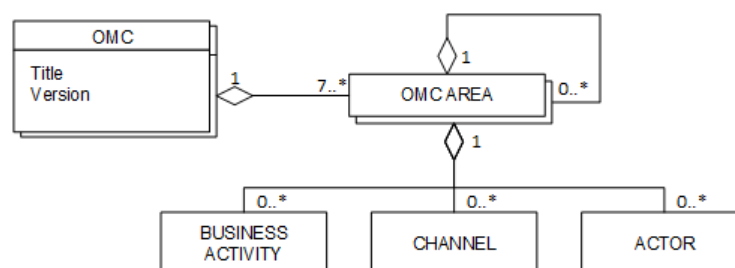


Figure 4-6: Meta-model of the Operating Model Canvas

The core of the OMC shows the primary and supporting business activities of the organisation. The standard value chain as defined by Porter (1975) is depicted chronologically from left to right, consisting of the OMC Areas Sales, Inbound logistics, Production, Outbound logistics, and Services. The business activities that include interaction with stakeholders, i.e. Sales and Services, have respectively been placed on the left and right sides of the value chain to indicate the interaction they have with the stakeholders. It is possible for organisations to maintain multiple value chains if they offer a variety of value propositions. Therefore, multiple value chains can be modelled in the core of the OMC, for which an empty OMC Area has been placed on the generic structure in Figure 4-5. The portfolio of products and services is depicted left of the value chain, since this determines the business activities the value chain contains.

On top of the value chain and the portfolio, the business activities concerning marketing and customer relations are shown. This position signifies the interaction they have with customers and end users of the organisation and shows that the activities can influence the entire value chain as well as the portfolio. Similar to Porter (1975), the supporting business activities are defined as activities that facilitate primary activities and are generic to the organisation. They are positioned underneath the primary business activities. This emphasises the difference between primary and supporting business activities and signifies the subservient role of the supporting activities as opposed to the primary business activities. Supporting activities are specified to consist of Procurement & Partner Management, Human Resources, Facility Management, In/External Communication, Financial Administration, and Information Services. This is a more detailed specification of Porter's support activities, which has been made to satisfy the characteristic of the OMC to visualise all business activities (Sprokholt et al. 2015).

On the left side of the OMC, the current and potential customers of the organisation are shown in segments, as is done on the BMC. Between the customers and the primary- and supporting business activities, the channels are visualised which show any means of communication an interaction between the organisation and the customers. This can entail a communication channel such as social media, but can also show the face-to-face interaction between the customer and employee in a local store. On the right side of the OMC, the end users of the organisation are shown in segments as well, accompanied by the channels through which interaction with the business activities takes place. The OMC thus differentiates the role of mandator (i.e. customer) and the role of recipient (i.e. end user). Overarching all elements of the OMC are the business activities Governance and Control, which are a specification of Porter's 'Firm Infrastructure'. Governance and Control entail all activities concerned with long-term planning and high-level management of the organisation and include activities such as strategic planning and forecasting. They are positioned at the top of the OMC to show the influence they have on the entire organisation and the interaction with the context in which the organisation operates (Sprokholt et al. 2015).

As explained in Chapter 4.2, the OMC is a combination of elements of the BMC and the Value Chain, with some additional factors that were not based on either of the frameworks. Table 4-1 summarises which of those elements are used in the base layer of the OMC and table 4-2 provides a reversed mapping of the origin of OMC Areas, showing which OMC Areas are also used in the BMC, Value Chain, or both.

Table 4-1: Mapping of elements of the BMC and the Value Chain in the OMC

Source Framework	Element	In OMC?	Name in base layer OMC
Business Model Canvas	Customer Segments	Yes	Customer Segments
	Value Propositions	Yes	Portfolio
	Channels	Yes	Channels
	Customer Relationships	Yes	Primary business activities: Marketing & Customer Relationships
	Revenue Streams	No	<i>Possible to model in aspect layers</i>
	Key Resources	No	<i>Possible to model in aspect layers</i>
	Key Activities	No	<i>Not applicable: adapted from value chain</i>
	Key Partnerships	No	<i>Not applicable</i>
	Cost Structure	No	<i>Possible to model in aspect layers</i>
Value Chain	Primary Activity: Inbound Logistics	Yes	Primary business activities: Inbound Logistics
	Primary Activity: Operations	Yes	Primary business activities: Production
	Primary Activity: Outbound Logistics	Yes	Primary business activities: Outbound Logistics
	Primary Activity: Marketing & Sales	Yes	Primary business activities: Sales
	Primary Activity: Service	Yes	Primary business activities: Services

	Support Activity: Firm Infrastructure	Yes	Governance [&] Control
	Support Activity: Human Resources	Yes	Supporting business activities: Human Resources
	Support Activity: Technology Development	No	<i>Not applicable</i>
	Support Activity: Procurement	Yes	Supporting business activities: Procurement & Partner Mgt
OMC Areas not based on framework	-	-	Supporting business activities: Facility Management
	-	-	Supporting business activities: In/External Communication
	-	-	Supporting business activities: Financial Administration
	-	-	Supporting business activities: Information Services
	-	-	End Users

Table 4-2: Reversed mapping of source OMC Areas

OMC Area		BMC	Value Chain
Governance		No	Yes
Control		No	Yes
Customers		Yes	No
Channels		Yes	No
End Users		No	No
Primary business activities	Marketing & Customer Relations	Yes	Yes
	Portfolio	Yes	Yes
	Sales	No	Yes
	Inbound Logistics	No	Yes
	Production	No	Yes
	Outbound Logistics	No	Yes
	Services	No	Yes
Supporting business activities	Procurement & Partner Mgt	No	Yes
	Human Resources	No	Yes
	Facility Management	No	No
	In/External Communication	No	No
	Financial Administration	No	No
	Information Services	No	No

The OMC is the artefact upon which this research is focused. In the following chapters, five cases in which an OMC has been developed will be analysed and discussed (Chapter 5), a reference method and model for the OMC approach to will be provided (Chapter 6), situational models will be provided and explained (Chapter 7), client experiences with the OMC will be discussed (Chapter 8), and the role of the OMC Approach in the context of digital business strategy will be further explored (Chapter 9).

5. Case Analyses of the OMC

This chapter provides the analyses of the case studies that were conducted during this thesis. A total of 5 cases has been analysed, which are listed in Table 5-1. For each case, first the client and the project assignment is described. Then the meta-model of the project is given, which shows the (order of) activities and subsequent deliverables of the project. After the meta-model, a general explanation of the course of the project is provided and an overview of the construction and development of the OMC is shown. Lastly, elements of the meta-model that were key to its succeeding are highlighted. The cases are presented chronologically based on their date of initiation, starting with the oldest.

Table 5-1: Cases included in the case analysis

Case	Name	HQ	Industry	Employees	Sector	Case Goal	Year	Advisors
1	PostNL	The Hague	Transport & Logistics	46.000	Private	IT Strategy	2013-2014	2-5
2	Univé	Zwolle	Insurance & Pension Funding	2.650	Private	Business Information Plan	2014	2-5
3	Allinq	Harderwijk	Construction & Infrastructure	2.000	Private	Business Professionalisation	2015	2-5
4	ManuComp	Eerbeek	Manufacturing	150	Private	IT Strategy	2016	2-5
5	EducOrg	Utrecht	Education	3.200	Public	Digital Strategy	2016-2017	2-5

5.1. Research Approach and Validation

For each case, historic data of the case has been gathered using the database of Anderson MacGyver. This data included, but was not limited to, deliverables that were sent to the client, such as strategy reports, workshop material, project proposals, and as much versions of the OMC that was made for the case as possible. Based on these documents the activities that were conducted during the project could be deduced and linked to their deliverables. This led to the meta-model of the case. Meta-models were made using the Process Deliverable Diagram notation as described by Van de Weerd and Brinkkemper (2009) and arHe accompanied by two tables: the first table describes the activities in the model and the second its concepts. Based on the meta-model, a textual description was made for each case, explaining decisions that had been made during the case and motivating why activities were conducted.

Since the meta-models were made based on deduction and assumption, validating the case analyses was a crucial step in this research, to be able to ensure the correctness of the cases. All cases were validated with the advisors who were closely involved in the respective cases, since they were the experts on the case. For cases 1, 2, 4, and 5 the meta-model, tables, and textual description were validated by presenting the Process Deliverable Diagram and discussing each activity and concept it contained, including the motivation and argumentation for their existence in the case. The experts were also asked if in their opinion anything was missing the meta-model. Additionally, the tables were discussed if the descriptions of activities or concepts lacked certainty. For the third case, however, these processes differed, since barely any historic data of this case existed. Instead, the meta-model was created together with the experts, by discussing the project and simultaneously modelling the events that had occurred. Since both experts had been involved in other validation sessions as well, the process of discussing and modelling of activities and deliverables of the case went smoothly, for both knew what information was required. The meta-models, tables, and descriptions that are presented in this chapter represent the post-validation versions of the cases.

5.2. Case 1: PostNL

For over 200 years, PostNL has specialised in delivering postal, and later parcels as well, to businesses and consumers. It operates both consumer-to-consumer, as well as business-to-consumer and vice versa, and business-to-business.

Besides processing over nine million postal in the Netherlands every day, PostNL is active in twelve other countries spread over three continents. It aims to stimulate the growth and development of e-commerce and wants to be a major player on the international logistic market.²

In 2013, new developments in the postal and logistic services market occurred, to which PostNL responded by strategic changes in her services. Due to these strategic changes, PostNL wanted to construct a new IT strategy to stay aligned with the new business strategy. This IT strategy would serve as a guideline for IT projects in the coming years. Anderson MacGyver was asked to develop such a strategy. For this purpose, Anderson MacGyver would analyse key business drivers of PostNL to combine the business strategy with new IT strategy and thus formulate a digital business strategy for the coming years.

5.2.1. Case Approach

Figure 5-1 shows the meta-model of the case of PostNL. The activities and deliverables that the model contains, are explained in the tables in Appendix A. In general, formulating the digital business strategy of PostNL consisted of three phases:

1. Project preparation
2. Artefact development
3. Advice formulation

The main purpose of the first phase was collecting the available data that would serve as a starting point for analysing the business. This data was extracted from existing strategy- and IT documentation. In addition to the documentation, interviews with stakeholders were held to collect different visions that existed regarding the digital business strategy.

In the second phase, the data collected during preparation was analysed and contents for the digital business strategy were created. To structure the collected data, first PostNL documents were scanned for phrases containing information on what the business should achieve and do, and subsequently look like, in the future. These key statements were then presented to and discussed with the stakeholders during the first interactive workshop. Based on these statements, a first version of the Operating Model Canvas (OMC) was constructed, which represented what the PostNL business and its context would look like. This first version of the OMC was the focus point of the second workshop. During this workshop, an A0-size, paper-version of the OMC was shown, on which participants were asked to locate the key statements that were discussed in the workshop before. The objective of this activity was first of all to generate feedback on the OMC, and second of all to evoke recognition by the PostNL's stakeholders of the business in the model. Feedback gained during the second workshop, together with additional information from interviews with operational staff, was then used to revise the OMC.

In addition, the key statements that were projected on the OMC by workshop participants were digitalised as a key statements aspect layer on the latest version of the OMC. This aspect layer was the basis for the third workshop, during which strategy key domains were determined together with the participants. This was of high importance, since the strategy key domains would serve as grounds for the digital business strategy report later on in the project. Feedback on the most recent version of the OMC was collected as well, during the third workshop. This feedback was input for the finalisation of the OMC. Prior to the fourth, and final, workshop, the strategy key domains were projected on the final version of the OMC by including them in the key statements aspect layer. This aspect layer, together with the OMC itself, served as the foundation of the final workshop. This workshop was used to determine the implications of the strategy key domains for the business, which would be included in the digital business strategy report.

² For more information on PostNL, refer to <https://www.postnl.nl/en/about-postnl/about-us/>

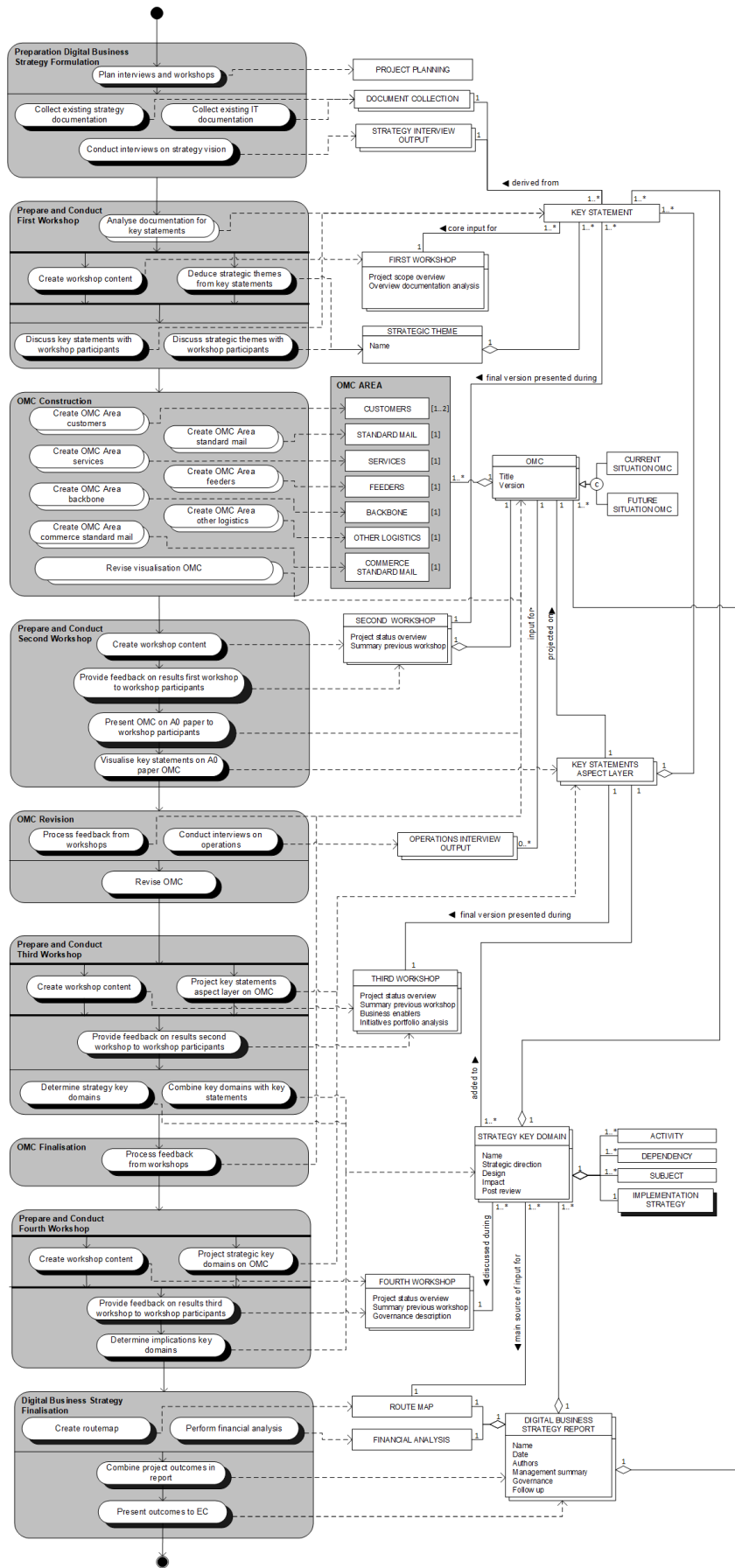


Figure 5-1: Process Deliverable Diagram of PostNL

During the third, and final, phase of the digital business strategy formulation project, the collected insights and generated artefacts, such as the OMC and strategy key domains, were combined into one digital business strategy report. In addition, a financial analysis calculating the impact of the suggested changes and a route map for implementing the changes were composed and included in the report. The digital business strategy formulation project was finalised by a presentation to the executive board of PostNL.

5.2.2. Development of the OMC

The OMC of PostNL has gone through many iterations of development and has had several versions before it was finalised. Since the OMC of PostNL was one of the first OMCs to be developed, it makes sense that several iterations were required to create a satisfying product. The detailed changelog, the version of the OMC that was discussed during the first workshop, and the last version of the OMC are provided in respectively Table 5-2 and Figure 5-2.

Table 5-2: Development of the OMC of PostNL

A	B	Focus	Type	Description
0.2	0.5	Structure	Addition	Addition of 'Customers pull'.
			Removal	Removal of 'Line haul' and 'Brand management'.
			Change	Move of 'Feeders', 'Services', 'Other logistics', 'Backbone', and 'Standard Parcel'.
		Aesthetics	Change	Colours made pastel, more unification of colours, arrows different colours.
		Content	Change	Name of some items changed in value flow.
			Removal	Some items deleted from value flow.
0.5	0.6	Structure	Addition	Addition of title element, addition of logos in 'Account management'.
		Content	Addition	'Customers' added, 1 element added to 'Other logistics' and 'Service'.
0.6	0.64	Structure	Addition	Element 'One PostNL' added.
			Change	Move of logos under 'Account management' to 'Other Logistics', move of 1 element from 'Other Logistics' to 'Feeders'.
		Aesthetics	Change	Colours of 'Backbone' changed.
		Content	Addition	Elements added to the value flow.
			Change	Title of 'Performance Management' changed.
		0.64	0.7	Content
Change	Logo of 'Retail' changed, filename changed.			
Removal	Removal of elements from value flow.			
0.7	0.71	Content	Addition	Addition of elements to value flow.
			Change	Move of elements within value flow.
			Removal	Removal of elements from value flow.
0.71	0.73	Structure	Addition	Addition of 'Planning' element to 'Commerce Standard Mail'
			Change	'Plan2Control' moved from 'Backbone' to title.
		Content	Addition	Explanation added to logos 'Standard Parcel Benelux', elements added to value flow.
			Change	Elements moved within value flow, Logo of 'Retail' changed.
0.73	0.74	Content	Addition	Icons and arrows added to value flow.
0.74	0.75	Structure	Addition	Distinction between 'Services Mail' and 'Services Parcel' added.
			Change	Topak moved from 'Standard Parcel Benelux' to 'Feeders Parcel', 'One PostNL' moved.
		Content	Change	Elements added to the value flow.
0.75	0.8	Aesthetics	Change	Name 'Customers' changed to 'Customer', change in spacing between elements.
		Content	Addition	Elements added to the value flow.

0.8	0.81	Aesthetics	Change	Lines given shadows.
		Content	Change	'Feeders Parcels' and 'Feeders Mail' changed to 'Feeders Mail' and 'Services Parcel'.
0.81	0.1	Content	Change	Language changed from English to Dutch.
0.1	0.12	Aesthetics	Change	Type corrected.

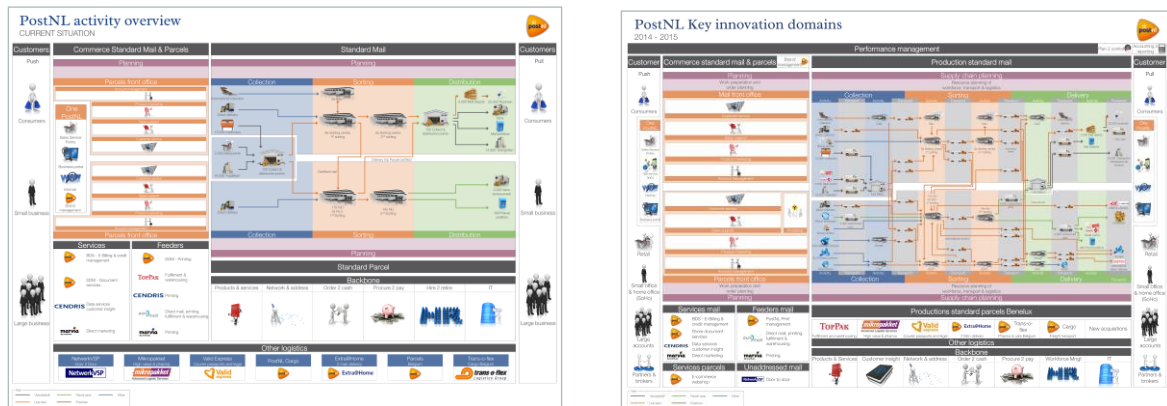


Figure 5-2: Version of the OMC as shown in the first workshop (left) & Final version of the OMC of PostNL (right)

5.2.3. Case Highlights

Some elements of the case are in need of some extra attention, for they were distinctive for this specific case, contributed to the success of the case, or were a lessons-learned for Anderson MacGyver. Those particular elements are highlighted and explained more in-depth below.

5.2.3.1. Analysis of key statements

The analysis of key statements was of vital importance for creating the digital business strategy. By analysing business strategy and IT strategy documents, and highlighting sentences that state future ambitions, both the 'business' aspect and the 'IT' aspect of the concept of digital business strategy were included in the case. An example of a key statement has been provided in Figure 5-3.

Industrialisation of sorting

- Full redesign and automation of sorting (SMX/SMC) leading to end-to-end track and trace
- Less locations

Figure 5-3: Example of two key statements of PostNL in the domain of industrialisation of sorting

Since the key statements were extracted from the client's own documentation, they increased the stakeholder's recognition of the content of the project and subsequently, based on research in the marketing industry by Scott and Craig-Lees (2010), could have caused an increase of engagement in the strategy that would be formulated. Lastly, the aspect layer of key statements on the OMC made sure that the stakeholders understood how the model represented the new business, by visualising parts of the business that were connected to said statements.

5.2.3.2. The OMC

PostNL was one of the first clients of Anderson MacGyver for whom an OMC was made. The specific value of this artefact for digital business strategy projects can be found in Chapter 9.

5.2.3.3. Interactive workshops

The interactive workshops were of high importance for this case, since next to PostNL's documentation and interviews with operational staff, they were the main source of information and stakeholder feedback. Having the client's stakeholders participate in a process that might evoke organisational changes can increase their acceptance of the suggested changes and final result of the case (Long & Spurlock, 2008). Key to keeping the workshops interactive, was

presenting the OMC on paper rather than on a screen. This allowed workshop participants to physically draw their feedback on said paper and encouraged them to carefully inspect and review every aspect of the model up-close. In addition, it prevented participants from sitting down and passively listening during the sessions. It also served as a natural time-control mechanism, helping the workshop not to last beyond agreed-upon times, while most likely generating the same results as would have a longer session (Bluedorn, Turban, & Love, 1999). Lastly, it was noted by the advisors involved, that standing next to the model together stimulated discussion among workshop participants.

5.2.3.4. Interviews with operational staff

Interviews with operational staff were key to delivering bottom-up input on the logistic processes of the models. In addition, it helped the client prepare for the implementation phase of the strategy. The participation of staff members of various levels within the organisation in the formulation process, can increase understandability of the need of a digital business strategy and hence increase employee's acceptance of the strategy (Long & Spurlock, 2008). Additionally, the interviews with the operational staff caused the executive board to gain a full understanding of the operations of PostNL for the first time. The OMC thus provided an overview to them and enables people to look at the organisation beyond their own business domain.

5.3. Case 2: Univé

Univé is a Dutch insurance organisation, which two headquarters are located in Assen and Zwolle. It operates for consumers, as well for businesses. To individuals, Univé offers financial services such as home insurances, car insurances, travel insurances, and liability insurances. To businesses, on the other hand, Univé offers business car insurances, occupational health insurances, liability insurances, and legal aid insurances. Univé employs over 2650 people and has over 1.5 million customers.³

In 2014, Univé aimed to compose an integral Business Information Plan (BIP). The BIP would include a long-term perspective, in order to incorporate several planned projects and the transformation of the IT landscape. This demanded the BIP to be tuned to all business units, in an understandable manner. Anderson MacGyver was asked to support the creation of one shared vision for the entire organisation.

5.3.1. Case Approach

Figure 5-4 shows the meta-model of the case of Univé. The activities and deliverables that the model contains, are explained in the tables in Appendix A.

For Univé, not an entire digital business strategy has been formulated. Instead, only an OMC has been developed, which Univé could later use independently to formulate a Business Information Plan. The goal of the OMC, however, remained similar to the goal of an OMC created in a digital business strategy project. Its purpose was to create a shared vision of the business and its activities which could serve as a basis to create an integral business plan or strategy. The Univé project consisted of three phases:

1. The preparation phase
2. The OMC development phase
3. The OMC finalisation phase

During the first phase, the project was prepared and a first version of the OMC was created. First of all, workshops with client participants were planned. Since the objective of the OMC is to create an integral vision of the business, employees from several disciplines were invited. Ultimately, workshops were planned with people from the marketing department, people from the strategy department, internal business consultants, and people from the IT department, leading to a total of 10 attendees. Next, existing client documentation on strategies, IT, and the organisation were collected in order to create a document collection that would serve as input for the first OMC. In addition, the client's

³ For more information on Univé, refer to <https://www.unive.nl/overunive>

corporate design acquired and adopted, in order to be able to create the OMC in a style that would be recognisable for the client's employees. The document collection was then analysed for key statements. This meant that the documentation was read by the Anderson MacGyver advisors and scanned for phrases stating anything meaningful regarding the client's business- and or IT-strategy or any future plans. This led to a total of 25 key statements that formed the basis for the first version of the OMC.

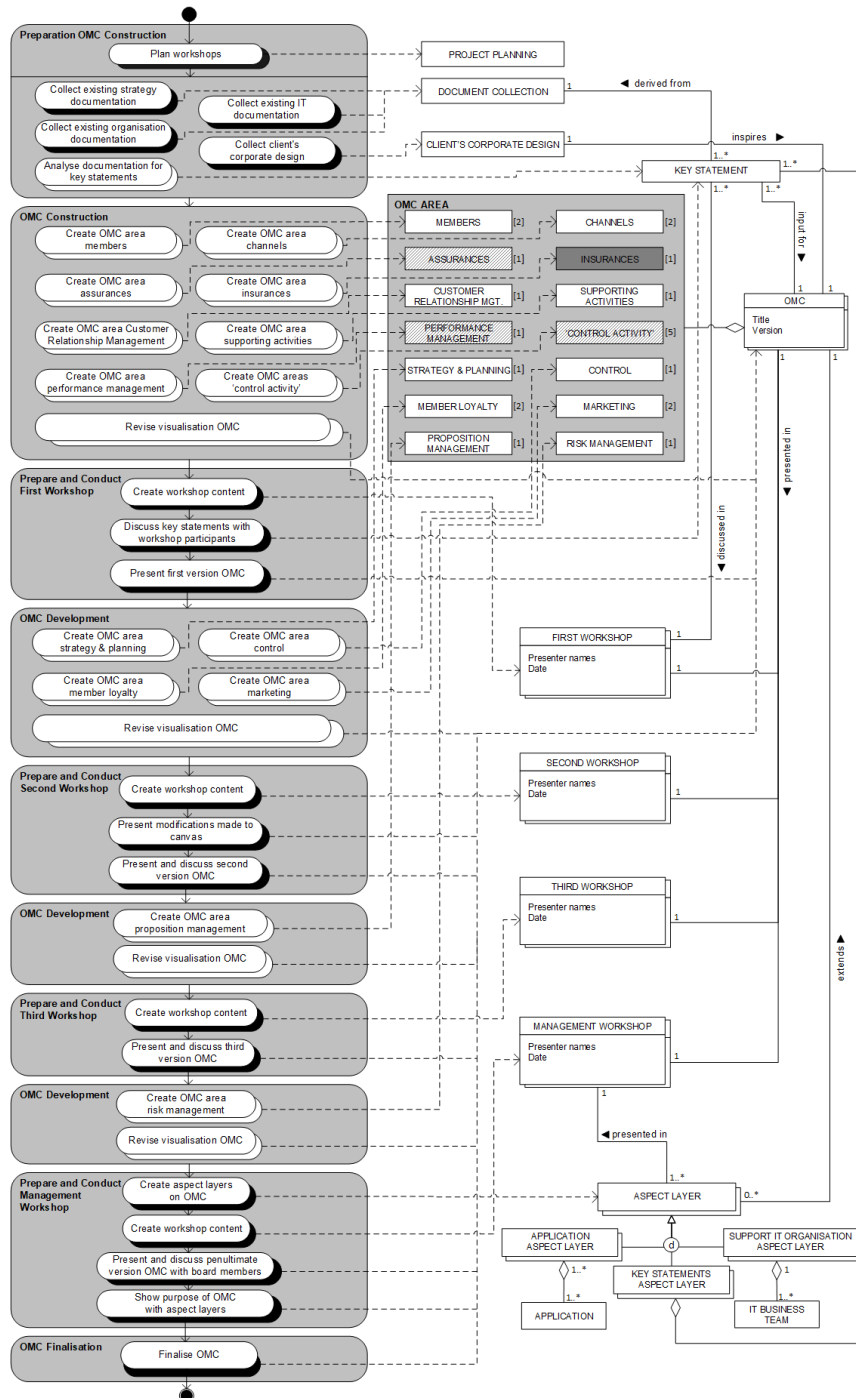


Figure 5-4: Process Deliverable Diagram of Univé

The second phase started with the first workshop at the client. First of all, the PowerPoint presentation for this workshop was created, by including the project planning, the 25 key statements extracted from the documentation, and the first version of the OMC. During the first workshop, the statements and OMC were discussed interactively with the participants. Key statements were presented using the PowerPoint presentation and were accompanied by a

reference to the document in which the key statement had been found, in order to increase the recognisability of the statement. The discussion of the key statement led to some statements being discarded or merged with each other, leading to a final set of 16 key statements. The OMC was explained to the workshop participants by first discussing the overview of OMC Areas as a whole, and later focusing on each OMC Area separately and discussing its details. The OMC was shown on A0-format paper, allowing the workshop participants to provide their feedback and suggestions both verbally and by applying marks and notes on the paper. This feedback led to several adjustments being made to the OMC after the workshop:

- Marketing elements were added
- Existing OMC Areas were merged into two new Areas: Governance and Control
- Several OMC Areas were repositioned and given different names in accordance with the client's jargon
- The background colour was removed and several colours were changed in order to benefit the visualisation of the OMC

These modifications, together with the latest version of the OMC, were then presented during the second workshop. The OMC was shown on A0-format paper again in order to provide workshop participants the opportunity to draw their suggestions directly on the OMC. The discussion and interaction during the workshop led to direct feedback from the client as well as to comments via email, which were processed to create the third version of the OMC:

- OMC Area Relationship Management was added
- Sub-elements of the OMC Area Insurance were repositioned
- Colour usage was adjusted, meaning the light-green background colour was discarded and replaced with a solid white background, to keep the OMC more easy on the eyes
- Some standard business terms were changed into the client's own jargon.

During the third workshop, these modifications were discussed with the participants and the latest version of the OMC was interactively presented and discussed. The discussion led to the addition of the OMC Area Risk Management to the OMC. After the third workshop, it was decided to include upper management in the final stages of the OMC development. Therefore, an additional workshop was planned, the so-called Management Workshop. The workshop was attended by the manager of Finance, directors of the Claims Department, the manager of Business Development, the manager of Marketing, the manager of Sales, Support & E-Business, the Manager IT, and two spokesmen of the regional branches. The Management Workshop had two objectives. The first one was to provide a final fact-check of the content and visualisation of the OMC. The second one was to show upper management the usage and possibilities of the OMC in terms of strategy- and business development. Both objectives were aimed to generate support and acceptance from upper management for future usage of the OMC within the organisation. To that end, several examples of aspect layers were created on the OMC. An application aspect layer was made in order to show which application affected which business activities and -units, a support IT organisation aspect layer was created in order to show the activities of business and IT teams within the organisation, and an aspect layer of key statements was made in order to show where the business objectives were represented on the OMC. During the workshop, first the penultimate version of the OMC was discussed with the participants on A0-format paper. Second, the aspect layers were shown and briefly discussed, in order to demonstrate the future application possibilities of the OMC.

The third and final phase focused on finalising the OMC. The feedback generated during the Management Workshop was processed to create the final version of the OMC. This entailed that business slogans were added to groups of OMC Areas and that the OMC Area sales was adjusted. Finally, the visualisation of the OMC was refined, by adding simple lines to the OMC in order to make visual separations between OMC Areas. In addition, icons situated in the OMC Area Supporting Activities were replaced by text, in order to draw less attention to the area. The OMC was then delivered to the client, who would use it to develop their integral Business Information Plan.

5.3.2. Development of the OMC

The Univé OMC has been developed by first creating a high-level framework and second filling out the details in the framework. The OMC has gone through several iterations in order to create a satisfying end-product. Especially the OMC Area containing the primary business activities has gone through several cycles to evolve to its final state. The detailed changelog, the version of the OMC that was discussed during the first workshop, and the last version of the OMC are provided in Table 5-3 and Figure 5-5.

Table 5-3: Development of the OMC of Univé

A	B	Focus	Type	Description	
20140919A	20140920B	Structure	Addition	Addition of OMC Areas 'Audit', 'Members' (on the right), and 'Financial administration'. Addition of sub-Areas 'Regional advisors' and 'Call centres' under channels.	
			Change	Repositioning of 'Risk management', 'Compliance', 'Security affairs', and 'Legal affairs'. Restructuring of elements under OMC Area 'Insurances'.	
		Aesthetic	Addition	Use of colours under assurances, addition of icons.	
		Content	Addition	More details under 'Channel' and 'Members'.	
			Change	Renaming from 'Back-office' to 'Insurances'.	
20140920B	20140929A	Structure	Addition	Introduction of grouping by 'Governance and control', addition of 'Marketing' elements, addition of process elements under 'Insurances'. Addition of 'Advice' to the insurance activities as a process.	
			Change	Left 'Customers' OMC Area changed to 'Marketing', 'Channels' made smaller, 'Product development' moved up and made larger. 'Assurances' moved under 'Product development'.	
		Aesthetic	Change	Change of colours, removal of background colour.	
		Content	Change	Change of names and details.	
20140929A	20141001B	Content	Addition	Details added under 'Administration'.	
			Change	Change of name 'Polis administration' and 'Prolongation' to 'Administration'.	
20141001B	20141010A	Structure	Addition	Addition of OMC Area 'Relationship management.'	
			Change	Change of position of elements under 'Insurance'-activities and 'Relationship management'.	
		Aesthetic	Change	Change of colour usage, change of background colour process.	
		Content	Change	Change of used terms and details.	
20141010A	20141027A	Structure	Change	Simplification of 'Insurance'-activities, 'Risk' as sub Area instead of part of 'Insurance'-activities.	
			Aesthetic	Change	More lighter colours and addition of icons.
			Content	Addition	More details.
20141027A	20141031A	Content	Addition	More details.	
			Change	Change from 'Administration' to 'Management' (Dutch: 'beheer').	
20141031A	final	Structure	Addition	Titles to the left and right side of the OMC.	
			Change	OMC Area 'Sales' reorganised.	
		Aesthetic	Addition	Extra lines to make visual divisions.	
			Change	Some icons replaced by text, smaller font size.	

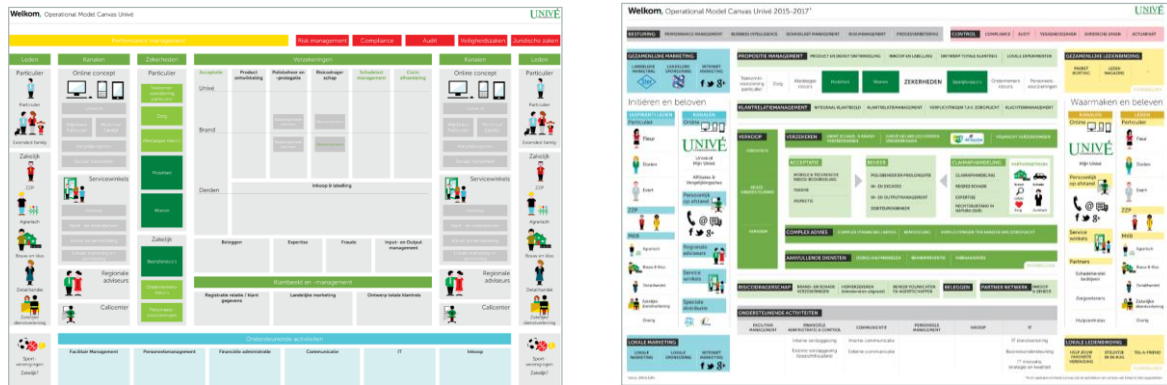


Figure 5-5: Version of the OMC as shown in the first workshop (left) & Final version of the OMC of Univé (right)

5.3.3. Case Highlights

Some elements of the case are in need of some extra attention, for they were distinctive for this specific case, contributed to the success of the case, or were a lessons-learned for Anderson MacGyver. Those particular elements are highlighted and explained more in-depth below.

5.3.3.1. Client participation

Over the course of the entire project, the client has been actively involved in the development of the OMC. During the first three workshops, employees from operational and tactical levels with different organisational roles provided their opinion and feedback on the OMC. In addition, intermediate contact took place between the client and Anderson MacGyver in-between workshops, during which the client delivered additional feedback and input on the OMC. This enabled the client to have internal discussions regarding the OMC outside the workshops and gave employees who were unable to attend the opportunity to provide feedback regardless of their absence. The close relation with the client increased the acceptance of the final product and in addition ensured correctness of the OMC, due to the ample rounds of review. Towards the end of the project, stakeholders from strategic level were included in the development process as well, in order to secure their acceptance of the OMC.

5.3.3.2. Analysis of key statements

The analysis of key statements was of vital importance for developing the OMC. By analysing business strategy and IT strategy documents, and highlighting sentences that state future ambitions, both the future business and IT aspects of the organisation were included in the OMC. Examples of key statements are provided in Figure 5-6.

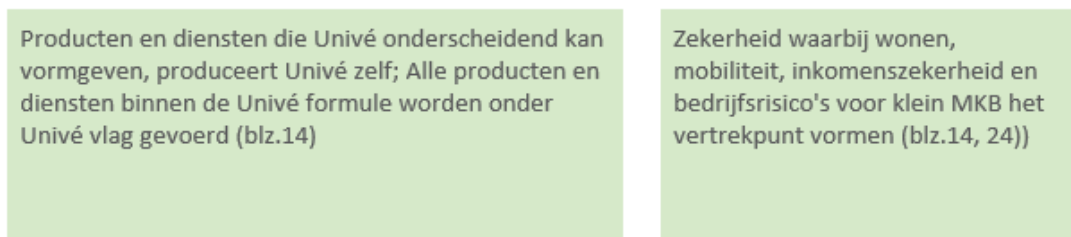


Figure 5-6: Example of two key statements of Univé

Documents that were most useful for creating the OMC were integral strategic plans that covered a large number of years and architecture documents that provided detailed information on the application landscape and organisational structure. By combining the business' and IT's ambitions and visualising those ambitions in the OMC, the OMC resulted to be the product of what Univé would look like in several years. The OMC therefore provided a shared vision for the business, upon which the client could build their business information plan.

5.4. Case 3: Allinq

Allinq is an umbrella of organisations that specialises in connectivity technology for the infrastructures in the telecommunication market. It operates in the Netherlands, Germany, and Belgium and its headquarters are located in Harderwijk. Allinq, previously known as Schuurinq, has been active since 1962. With 2000 specialists, either employed or contracted via freelance constructions, Allinq provides services 24 hours a day, seven days a week.⁴

In 2015, Allinq's largest customer announced to be downsizing her number of suppliers, of which Allinq was one, from more than 25 suppliers to two. The potential loss of this customer would lead to a loss of 85% of Allinq's revenue over the next five years. It was thus crucial for Allinq to be selected as one of the remaining two suppliers. In order to get selected, Allinq needed to professionalise her operations and business processes. Anderson MacGyver was asked to support this process.

5.4.1. Case Approach

Figure 5-7 shows the meta-model of the case of Allinq. The activities and deliverables that the model contains, are explained in the tables in Appendix A.

For Allinq, the process of developing an OMC differed strongly from the usual pattern, which could have been caused by the project objective differing from the usual project assignments. In order to find opportunities for business professionalisation or -improvement and to understand the organisation, first a 200-page document containing all operational processes of the organisation was retrieved. In addition, interviews were conducted with the most important stakeholders in order to gather more information about the organisation, its products, and its activities.

Once sufficient information was gathered, the documentation of Allinq and the contracts were analysed and visualised. Contract in this case meaning simply an official agreement that Allinq has with her customer, indicating a goal and a certain amount of work. Since the process documentation contained inconsistent information on different but similar processes, making analysis almost impossible, the source for the analysis and visualisation of the contracts was the interview output that was generated during the conducted interviews.

Analysing and visualising all contracts led to the discovery that, although ample processes were described in the documentation, a need for standardisation existed to achieve necessary cost reductions. Therefore, based on the nine processes, the most prominent business activities of the contracts were defined and visualised in one image: the value chain. Since the value chain provided new information for the organisation and would be at the core of the professionalisation of Allinq, the value chain was discussed in-depth with the most important stakeholders. These discussions led to some minor revisions of the value chain.

Once the value chain was established, the processes needed to be optimised. To that end, the business activities and their processes were analysed for possibilities of cost reduction. The found opportunities were then plotted on the value chain by a cost reductions aspect layer. This aspect layer demonstrated where in the value chain the opportunities for cost reduction existed.

In order to provide the customer of Allinq with a picture of the entire organisation, it was then decided to additionally create an OMC. To do so, several OMC Areas, such as strategy & planning and users, were created to complement the value chain and its business activities. This led to the OMC, which visualisation was iteratively revised until it was deemed satisfactory by the client.

The project was finalised by creating an A0-format poster, displaying all findings of the project in one image. To that end, digital opportunities for information services were defined and an innovation vision was formulated. In addition, the transition approach for the digital initiatives was defined. This combined with the value chain and the cost reductions aspect layer, led to the results poster, which reflected the cost saving initiatives including the necessary

⁴ For more information on Allinq, refer to <http://allinq.nl/over-ons>

innovations. This poster was delivered and presented to the executive board of Allinq, and formed the first step of their professionalisation improvement.

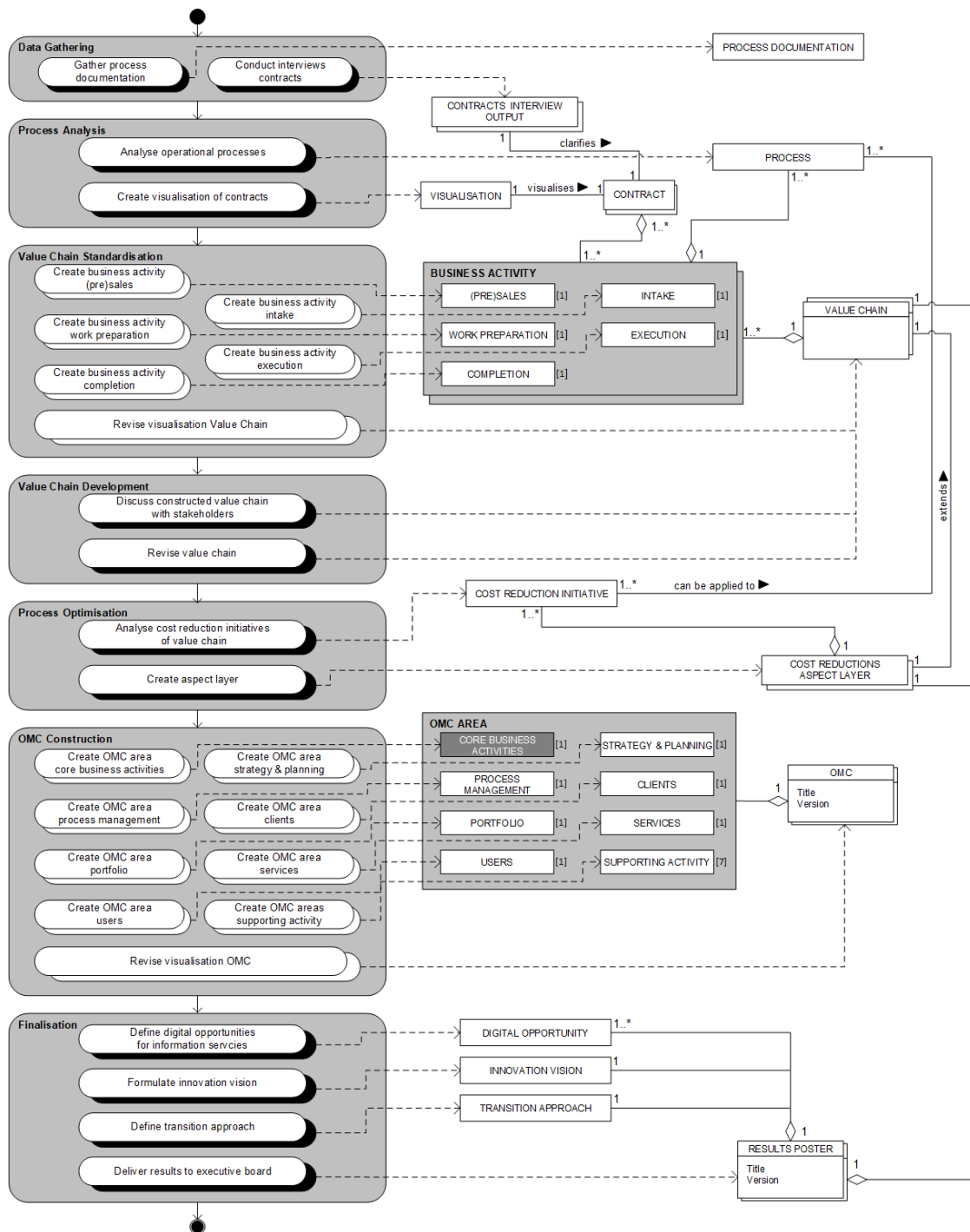


Figure 5-7: Process Deliverable Diagram of Allinq

5.4.2. Development of the OMC

The development of the OMC differed from the usual approach. Instead of starting by considering the entire organisation, first the primary business activities were defined to visualise the organisation's value chain. Later in the process of the case, the remainder of business activities and organisation aspects were defined and visualised, leading to the OMC. The final version of the OMC was the only available version, therefore an overview of its development could not be made for this case. However, Figure 5-8 shows the final version of the final value chain and the final OMC.

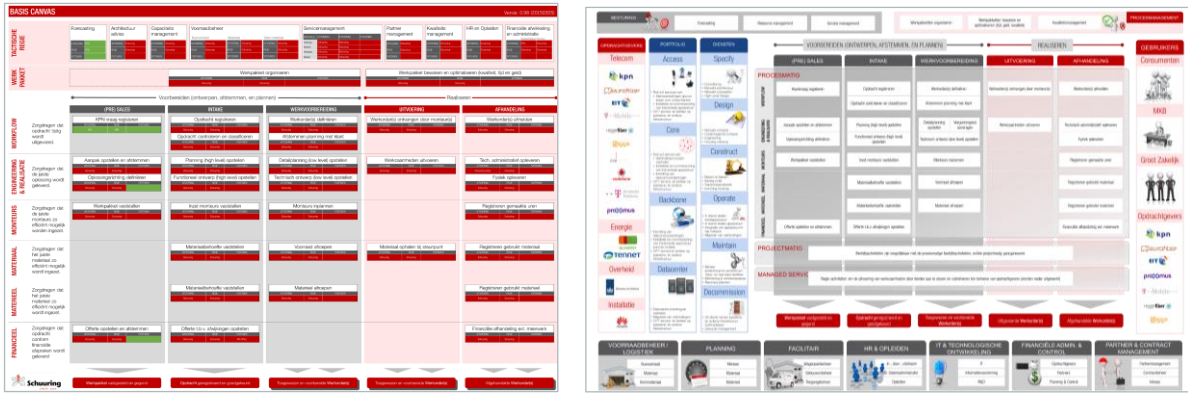


Figure 5-8: Standardised value chain of Allinq (left) & the final version of the OMC (right)

5.4.3. Case Highlight

Some elements of the case are in need of some extra attention, for they were distinctive for this specific case, contributed to the success of the case, or were a lessons-learned for Anderson MacGyver. Those particular elements are highlighted and explained more in-depth below.

5.4.3.1. Value chain analysis

The most distinctive element of this case was the intensity with which the business activities and processes of the value chain of Allinq were analysed. The thorough assessment of all operational processes of the organisation, led to a standardisation of the work approach of Allinq. Due to the objective of the case, namely to professionalise the business and reduce the operational costs, the focus on the core business processes was understandable and did not harm but rather benefited the project's results. Additionally, the client was extremely satisfied with the results. Although in this case the focus on the core business processes was appropriate and the end result was highly satisfactory to the client, in general it is advisable to analyse and model the entire organisation from the start of the OMC construction. This is further explained in Chapter 6.4.

Cases 4 and 5 (pages 44-54) were redacted.

[redacted]

6. Results: The OMC Approach

This chapter describes the outcomes of the case analyses and the final reference method and model of the OMC Approach. First, the direct results of the case analyses are provided, explaining in-depth how those results were achieved. Second, the validation of those results is described, covering its approach and the specific outcomes of the session. Third, the final OMC Approach, a result of the case analyses and validation, is given and comprehensively described. Lastly, best practices for performing the OMC Approach are described.

6.1. Results of the Analyses

As described in Chapter 2, results of the case analyses were combined to create one reference method for the OMC Approach. This was one by taking activities and concepts from the Process Deliverable Diagrams (PDD) that were represented in all or multiple cases, or were found of vital importance during the case validation sessions. Combining those PDD elements led to a new PDD: the reference method, which describes the process that should be followed while creating an OMC. In addition to the creation of the reference method, the reference model based on which OMCs are created was adapted to fit the reference method. Both the method and the model are highlighted and explained below. Note that both are pre-validation and were altered based on the outcomes of the validation session. The method and model shown in this section thus show the objective results from the case study and differ from the final method and model presented in Chapter 6.3.

6.1.1. The Reference Method

The reference method for the OMC Approach, containing the activities that should be conducted to properly execute the OMC Approach and their corresponding deliverables, has been given in Figure 6-1. This meta-model represents the combination of the common denominators of the five case studies that were described in Chapter 5. Since the five projects were executed by different advisors in different languages (i.e. Dutch or English) over a time span of four years, finding the common denominators entailed more than simply comparing the names of activities and deliverables. To ensure similarly named PDD elements encompassed the same actions or items and to discover which non-similarly named elements actually entailed the same, the content of activities and deliverables was discussed during the case validations. Since all projects had their own goals, the PDD's were cluttered with additional activities that did not directly contribute to the OMC, but rather to other project objectives. For the sake of consistency, these activities and corresponding deliverables have not been taken into consideration while creating the reference method for the OMC.

In order to create a basis for the reference method, the cases were generalised to a higher abstraction level of activities. This resulted in finding that essentially all cases had the same project structure:

- The project was prepared
- A first version of the OMC was created based on gathered data
- A kick-off workshop with the organisation was conducted
- The OMC was iteratively developed alternating modifying the OMC and conducting a workshop
- The project was finalised

This structure is represented in the meta-model by the phases, depicted using large, grey squares with rounded corners. These phases were then filled in with activities by combining the best elements of each case, as determined during the case validation sessions. Their corresponding deliverables were then modelled as well, leading to the reference method. The one exception to this approach is the phase 'OMC Construction'. To find which activities should be conducted in this phase, first was determined which OMC Areas would be present on the reference model. The approach to finding that structure is described in Chapter 6.1.2. Once the structure of the reference model was determined, the corresponding activities were reverse engineered and placed in the OMC Construction phase.

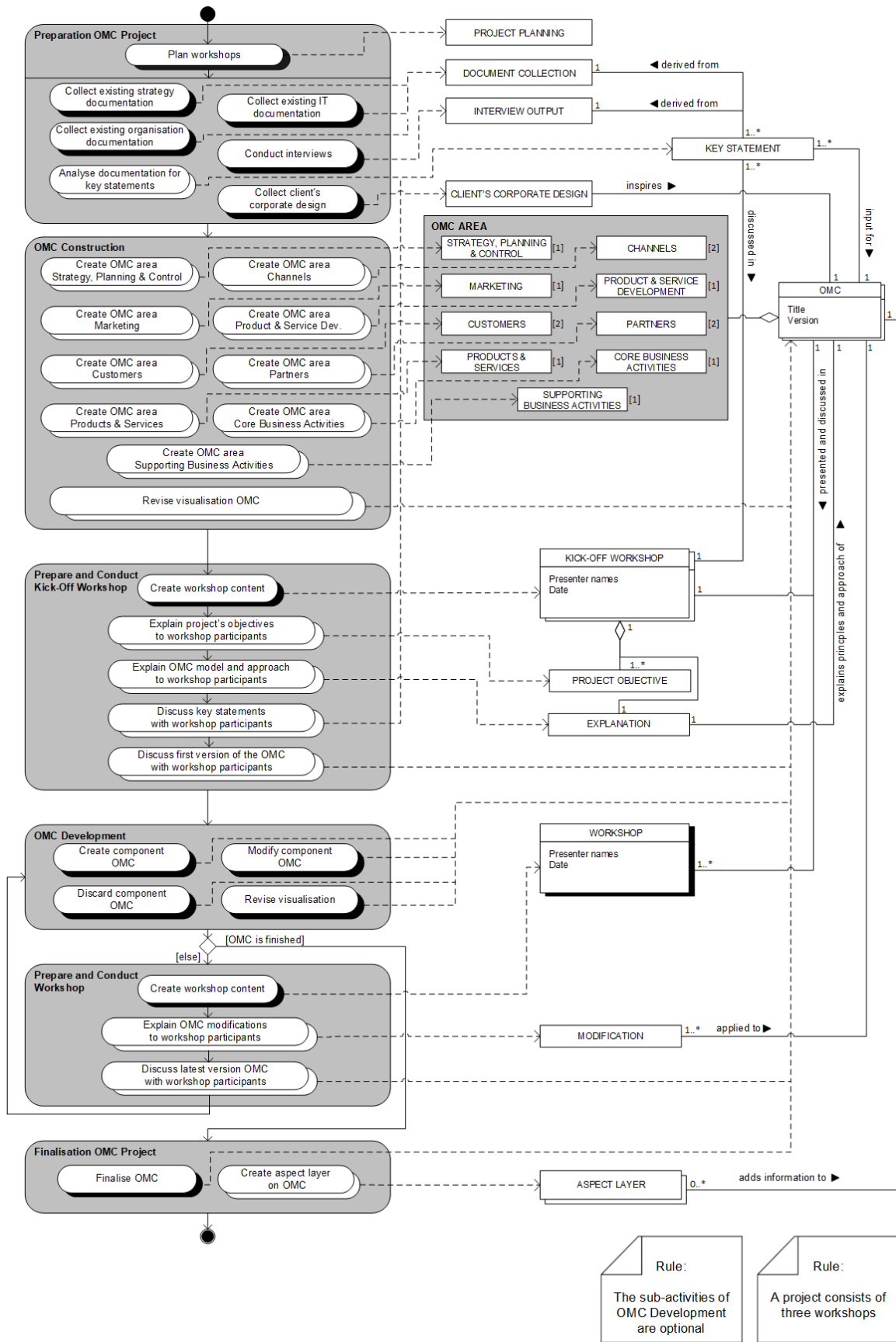


Figure 6-1: Pre-validation Process Deliverable Diagram of the reference method of the OMC approach

6.1.2. The Reference Model

Accompanying the OMC Approach reference method, a reference model was created that serves as the basis for a new OMC. The pre-validation model is provided in Figure 6-2.

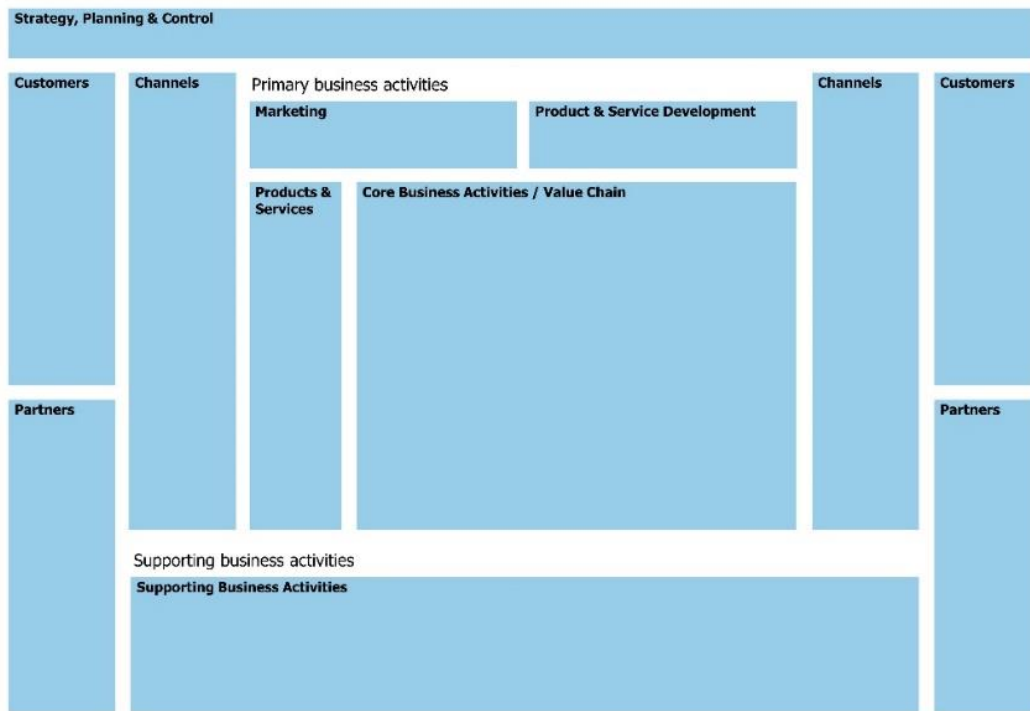


Figure 6-2: Pre-validation reference model for the OMC

For creating the model, the OMCs of the five cases were analysed for their common denominators. Evidently, the same restrictions as with the reference model applied, meaning cautiousness was demanded for determining which elements of the OMC were actually similar in meaning. The OMCs were analysed on the abstraction level of OMC Areas, which are the building blocks of the OMC. As explained in Chapter 4, **OMC Areas depict one aspect of the organisation, which can either be a business activity such as Marketing, a channel such as a Web portal, or an actor such as a Local Government.** In order to discover which OMC Areas were represented by which cases, a mapping of OMC Areas per sector as created, which is shown in Table 6-1. A **green Y** indicates that the Area was found on the OMC of the industry, a **green Y*** indicates it was found but under a different name, a **yellow N*** indicates it was not found but could have been used, and a **red N** indicates the Area was not found in the OMC of the industry nor will it ever be found.

Table 6-1: Mapping of which OMC Areas appeared in which industry

		Transport & Logistics	Insurance & Pension Funding	Construction & Infrastructure	Manu- facturing	Edu- cation
Generic OMC Areas	Core Business Activities	Y	Y	Y	Y	Y
	Channels	Y*	Y	N	Y*	Y
	Customers	Y	Y*	Y*	Y*	Y*
	Control	N*	Y	N	Y*	Y*
	Marketing	Y*	Y	N	Y	Y*
	Strategy & Planning	N*	Y	Y	Y*	Y*
	Supporting Activities	Y*	Y	Y	Y	Y

	CRM	N*	Y	N	N	Y*
	Partners	Y*	Y	Y*	Y*	Y
	R&D or Product/Service Improvement	N*	Y*	N*	Y*	Y
	Product / Services	Y*	Y*	Y*	Y	Y*
	Process Management	N	N	Y	Y*	N
	Proposition Management	N	Y	N	N	N
OMC Areas name in Case	Core Business Activities	"	"	"	"	"
	Channels	1postnl	"	n/a	Sales Channels	"
	Customers	"	Leden	Gebruikers	Customer Segments	(Potent.) Stud., Org's, Profs
	Control	n/a	"	n/a	Strategic Control	<i>in</i> Besturing & Control
	Marketing	Product Marketing	Gezamenlijke / Lokale Markt	n/a	"	Marketing & Verkoop
	Strategy & Planning	n/a	"	Besturing	Strategic Control	<i>in</i> Besturing & Control
	Supporting Activities	Backbone	"	"	"	"
	CRM	n/a	[.] & Member Loyalty	n/a	n/a	Contact Mgt, Klantcentrum
	Partners	<i>in</i> Klant	Partner Network	Opdracht-gevers	Partners <i>in</i> Channels	Ow/Oz Partners
	R&D or Product/Service Improvement	n/a	Pr/Se Develop (<i>in</i> Proposition Mgt)	X	Innovation Technology	<i>in</i> Value Chain Ow/Oz Ontw.
	Product / Services	Post/Pakket Diensten	Verzekeren <i>in</i> Cor. Bus. Act.	Portfolio	Product Groups / Supply Services	Onderwijs - assortiment
	Process Management	n/a	n/a	"	<i>in</i> Innovation Technology	n/a
Proposition Management	n/a	"	n/a	n/a	n/a	

OMC Areas that were present on at least four of the five OMCs were immediately included in the reference model. The Areas that were found in three of the five models were first further analysed. If, despite its absence in two models, an Area was plausibly applicable to exist in at least one of those models, the area was included in the reference Model as well. Areas that only existed in one or two models were not included in the reference model.



Figure 6-3: Reference model as published by Sprokholt et al. (2015)

To determine the structure and placement of the chosen OMC Areas in the reference model, the original model for the OMC (see Figure 6-3), which was published by Sprokholt et al. (2015), has been consulted. The OMC Areas that were also represented in the original model were placed in a similar position, since that was based on renowned scientific frameworks; the Business Model Canvas (Osterwalder & Pigneur, 2010) and the Value Chain (Porter, 1985). The case analysis of the OMCs led to the addition of two OMC Areas to the model: (1) Partners and (2) Product & Service Development. The OMC Area ‘Partners’ was added for its presence in each case OMC. Its inclusion in the OMC can additionally be supported by the relational view of the firm (Dyer & Singh, 1998), which advocates the competitive advantage that can be gained by strategic collaboration with business partners. ‘Product & Service Development’ was represented in only three of the five cases, but was still found to be plausible to exist in any of the cases, since an organisation’s product or service can be an important source for strategic advantage (Porter, 1985). Lastly, two OMC Areas of the original model, i.e. ‘Governance’ and ‘Control’, were merged into a broader OMC Area ‘Strategy, Planning, & Control’ in order to make the reference model more generally applicable to all sorts of organisations and industries.

6.2. Validation

The OMC reference method and -model were validated with experts from Anderson MacGyver. The selection of experts consisted of four advisors, all of whom were involved in at least two of the cases and had been involved with the initiation of the OMC-concept in the past. The validation started by explaining the research approach that was followed to create the reference method and -model. Next, the PDD was discussed by first providing an overview of the method and explaining its phases. This was followed by a step-by-step walkthrough of the method, during which all activities and sub-activities were explained to the experts. The walkthrough allowed them to deliver feedback on the naming, meaning, and position in the meta-model of the activities. This led to several modifications to the model, which are provided in Table 6-2. After discussing the PDD in-depth, the reference model was explained by making a comparison between the original model and the new reference model, and by motivating the changes that had been applied. The experts were then asked to provide their feedback on the new OMC Areas and their relative position in the model, and the model as a whole. The outcomes of the discussion are provided in Table 6-2 as well. The results of these outcomes were the finalised reference method and -model that are described in Chapter 6.3.

Table 6-2: Outcomes of the validation

reference method (feedback sorted top-down)	
Addition of:	<p>Concepts: 'Conceptual aspect layer', 'Control', 'Stakeholders', 'Next step', and 'Workshop objective'</p> <p>Activities: 'Consider necessary aspect layers', 'Validate with most important stakeholders', 'Discuss next steps with workshop participants' (x2), 'Process additionally acquired feedback', and 'Explain workshop objectives to workshop participants'</p>
Discarding of:	<p>Activity: 'Create aspect layer on OMC'</p> <p>Concepts: 'Product & Service development', 'Marketing', and 'Aspect Layer'</p>
Modification of:	<p>Activity: 'Plan workshops' to 'Plan workshops & interviews'</p> <p>Activities: 'Create OMC Area X' to 'Define X', where X stands for a business domain in which activities or elements were defined.</p> <p>Concept: 'Core business activities' to 'Primary business activities' and 'Strategy, Planning & Control' to 'Strategy Planning & Execution'</p> <p>Activity: 'Discuss key statements with workshop participants' to 'Validate key statements with workshop participants'</p>
reference model (feedback sorted top-down)	
Addition of:	OMC Areas: 'Control' and 'Stakeholders'
Discarding of:	OMC Areas: 'Channels' (1x), 'Customers' (1x), and 'Partners' (1x)
Modification of:	<p>OMC Area: 'Strategy, Planning & Control' to 'Strategy Planning & Execution'</p> <p>OMC Areas: 'Marketing', 'Product & Service Development', and 'Core Business Activities' into 'Primary Business Activities'</p> <p>OMC Area: 'Products & Services' to 'Value Propositions'</p> <p>Relative positioning of OMC Areas</p>

6.3. The OMC Approach

The validation of the reference method and model led to the final version of the OMC Approach, which is the result of the case studies combined with the expertise and experience of involved advisors gathered during the validation. Both the proposed method and the proposed model are described below.

6.3.1. The Reference Method

The reference method, containing the activities that should be conducted to properly execute the OMC Approach and their corresponding deliverables, is given in Figure 6-4. The activities and concepts are provided in Appendix B.

Executing the OMC Approach starts with a preparation phase. First of all, the workshops and interviews that will be conducted need to be planned to prevent unnecessary delays of the project and make participants of the project feel included from the start. This leads to the creation of the project planning. Second, a total of six activities is executed in random order. In terms of data gathering, documentation of the client organisation is collected. Relevant documentation includes financial- and strategy documentation, (strategic) IS documentation, and documentation describing the organisation and its structure. This documentation combined leads to the document collection, which is one source of input for the OMC. The other source is the interview output, which is a result of the outcomes of all interviews that are conducted. Interviews mainly serve to determine the organisation's strategic direction and future plans, and are conducted with the most important stakeholders of the OMC, often managerial executives. Both the interview output and the document collection are analysed for key statements; declarative wordings expressing the corporate- and IT strategy, direction, and plans. Key statements are used as input for the OMC, since both the key statements and the OMC (aim to) express the client's future organisation and strategy. In addition to gathering and analysing client information, the client's corporate design is collected and studied to enable the OMC being created in a style as close to the corporate design as possible. The objective of using the client's corporate design is to increase the recognisability the stakeholders will have with the OMC.

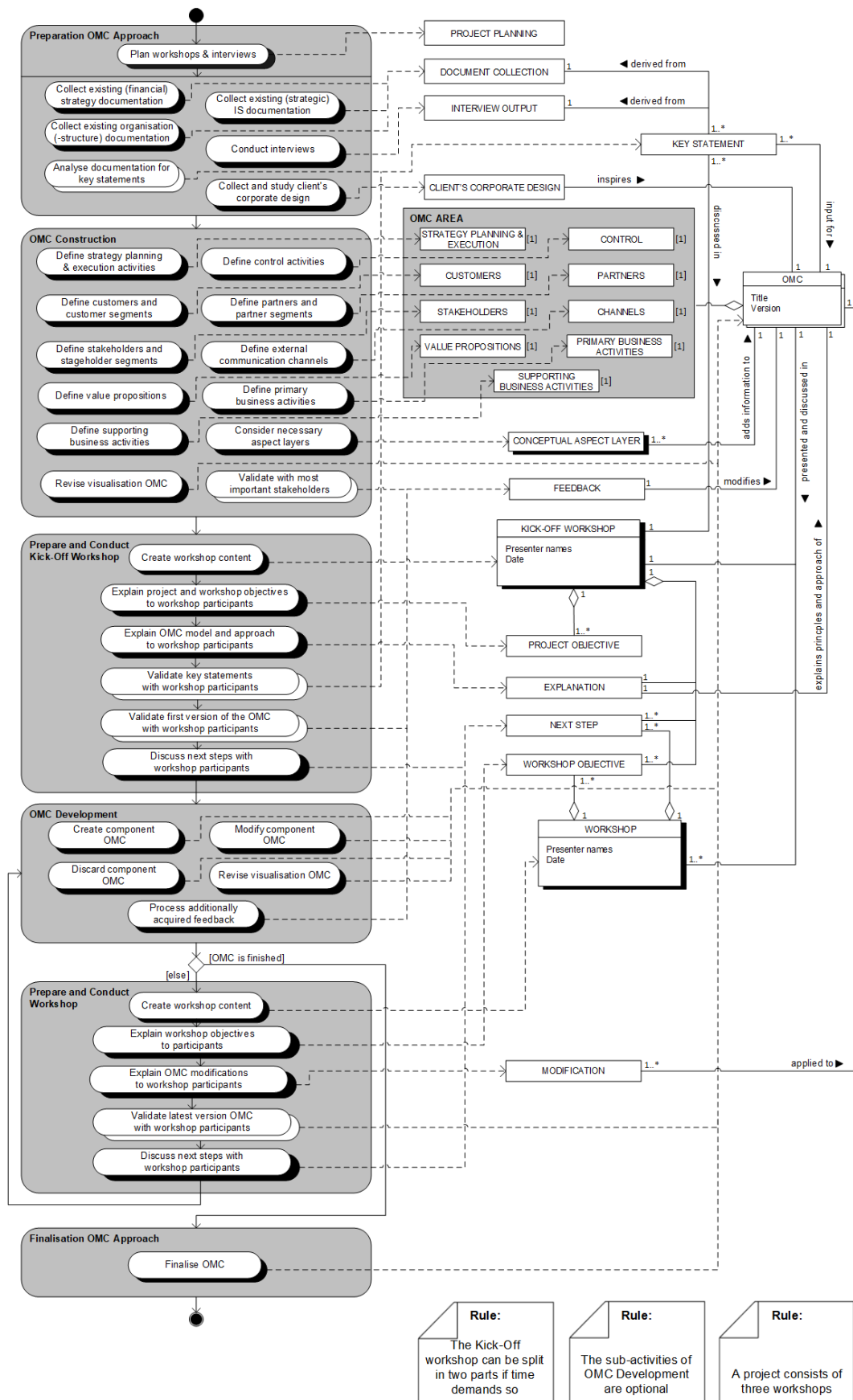


Figure 6-4: Post-validation Process Deliverable Diagram of the reference method of the OMC Approach

Once the client documentation has been analysed, the first version of the OMC can be constructed. In order to do so, a number of activities needs to be conducted, in no predefined order. To determine which activities, channels, and actors will be present on the OMC, the activities of several business domains, the interaction with actors, and the way that interaction takes place need to be defined. To that end, the strategy planning and execution activities and control activities are defined, as well as the primary- and supporting business activities. Additionally, the organisation's customer (-segments), partner (-segments), stakeholder (-segments), communication channels and value propositions are defined. This leads to the nine OMC Areas of which the canvas consists and subsequently to a first version of the OMC. While developing the first version of the OMC, the necessary aspect layers that might be created later must be considered. An aspect layer is an additional layer that can be placed on the OMC expressing additional, often fluid or dynamic, information. Examples of information expressed in aspect layers are the physical location in which certain business activities take place, data ownership throughout the organisation, or a marking of where the possibilities for cost-reduction might exist. Considering which information will be projected in an aspect layer on the OMC later prevents this information from being incorporated in the OMC and hence prevents data replication. It also provides the possibility to structure the OMC Areas in such a fashion that aspect layers can be optimally visualised. This consideration of aspect layers leads to one or more conceptual aspect layers, which are the notion and recognition of aspect layers that will be created later. During the OMC Construction phase, the visualisation of the OMC can be revised as many times as deemed necessary. During this phase, the first version of the OMC will also be validated with the most important stakeholders. This can either be done in person or via other means of communication. The objective is to generate some support for the first version of the OMC and validate its contents, prior to starting the workshops with the miscellaneous participants of the project. The validation hence leads to feedback, which modifies the OMC. The activities that take place during the OMC Construction phase are conducted in random order and can be repeated multiple times. For example, validation with the most important stakeholder can occur in-between the other activities, and conceptual aspect layers can be considered and reconsidered.

When the first version of the OMC has been validated with the most important stakeholders, the kick-off workshop can take place. In general, the kick-off workshop is similar to the other workshops by starting with the creation of workshop content, which can consist of slides or poster material. The next step, however, differs as the kick-off starts by explaining the OMC project in general and the OMC as a concept. Additionally, interactive activities can take place with the workshop participants in order to make them aware of the context in which the OMC project takes place and to make them think about their organisation in that context.

After the explanation and the optional activities, the workshop continues by validating the key statements that were extracted from the client's documentation. This is an important step, since the key statements are the main representation of the organisation's strategy and the main source of input for the OMC. They also help to understand the strategic interest of activities and stakeholders. Generating support for the key statements is thus a prerequisite for generating OMC acceptance. Once the key statements are discussed, the first version of the OMC is validated with the workshop participants. This again leads to feedback, which influences the OMC and determines which steps will be undertaken in the OMC Development phase. The workshop is finished by discussing the next steps of the project with the workshop participants to keep them informed and make them feel incorporated as much as possible in the project. Depending on the size and audience of the project, it can be decided to separate the first and second part of the kick-off workshop into two sessions. The kick-off workshop then solely consists of the explanation of the project and the OMC, and the interactive activities generating context awareness. The decision to do so is up to the advisor in charge, and factors that influence this option include time-constraints, the number of participants, their knowledge of strategy formulation, and their experience with similar projects.

As mentioned above, the validation of the key statements and first version of the OMC will generate some sort of feedback. This is the start of the OMC Development cycle. In order to process the feedback, the OMC can be adjusted in four ways: new OMC components can be created, such as the addition of business activities or details; existing OMC components can be modified, by for example adjusting the used terminology or repositioning activities; OMC

components can be discarded, or the visualisation of the OMC can be revised. In addition, feedback that might have been acquired outside from the workshop, e.g. via e-mail or in person, can be processed as well in the same fashion as done with the workshop feedback. These activities can be conducted in random order and might be conducted more than once per phase.

The modifications that are applied during the OMC Development phase will lead to a new version of the OMC. This latest version is to be discussed with the client during a new workshop. As for the kick-off workshop, the workshop content is created consisting of a set of slides and one or multiple paper posters. The workshop commences by explaining the workshop objectives to participants to make sure all attendees are on the same page regarding expectations. Next, the modifications that were made are explained to the workshop participants, showing which changes the OMC has undergone, accompanied by their respective motivations. The latest version of the OMC is shown next with the objective to validate it with the workshop participants, leading to feedback for a new version of the OMC. The last step during the workshop is to discuss the next steps with the workshop participants.

The cycle of conducting a workshop and further developing the OMC is repeated at least two times. It is commonly encountered that the first few iterations will contain large modifications, influencing the structure, visualisation, and content of the entire OMC. Over the course of the project, however, modifications will become less significant, often solely addressing small textual adjustments. Once it is decided, in consultation with the client, that the OMC suffices the client's wishes and a shared vision has been developed, or the project has reached his limit in terms of resources, the finalisation of the OMC takes place. This means the final touches, mostly layout-related, are applied to the OMC and it is sent both digitally as well as in paper-form to the client.

6.3.2. Method Highlights

Although every element of the approach is important for the success of an OMC project, two elements are of such importance that they are described in more detail below.

6.3.2.1. Analysis of key statements

Analysing key statements of the client on corporate and IT strategy is vital to ensure support for the OMC within the client organisation. By analysing business and IT documents, both future business and IT aspects of the organisation can be included in the OMC and it will visualise what an organisation will look like at a certain point in time in the future, based on the organisation's strategy. Analysis for key statements is done by highlighting phrases stating anything meaningful regarding the business- and/or IT-strategy, or any other future plans of the client. This leads to a total number of key statements, which will be discussed during the kick-off or first workshop. Key statements are best presented accompanied by a reference to their source document for traceability purposes, which is important for showing all statements indeed originate from the clients strategy. During the validation of the key statements, statements can be accepted, rephrased, discarded, or merged, leading to the final set of key statements. Since key statements are declarative wordings of the client's corporate and IT strategy, and key statements can determine the relative importance of activities and actors, the OMC represents how the future business supports the strategy. In addition, key statements can clarify necessary strategic changes to the business, which is shown via future business activities and actors. This entails all activities of the organisation, including IT activities. The OMC therefore provides a shared language between business and IT departments, and subsequently a shared vision for them and the organisation.

6.3.2.2. Validation with stakeholders and workshop participants

Participative building of a shared vision and generating organisation-wide support for the OMC can be done by actively involving business, IT, and management representatives during OMC development. During the workshops, staff from operational and tactical levels with different organisational roles should attend. The OMC is presented to them by first discussing the overview of OMC Areas as a whole, followed by a detailed discussion of each separate area. The OMC is best shown on A0-format paper (33.11" x 46.81" / 841 mm x 1189 mm), allowing the participants to provide their feedback both verbally and by applying marks and notes to the paper. In addition, intermediate contact with the client

can take place outside of the workshops, during which the additional feedback on the OMC can be acquired. This enables the client to have internal discussions on the OMC beyond the workshops and gives possibly indisposed staff the opportunity to provide feedback regardless of their absence. Both the validation cycles and the workshop approach will contribute to enabling the client to build a shared vision. The involvement of the client in the process of developing the OMC also generates an overview of the entire organisation and its context, which can lead to new perspectives and insight for the client. Additionally, the frequent moments of contact build a trusting relationship between the client and the involved advisors, which can benefit the overall client experience of the project and subsequently the client's evaluation and acceptance of the final product (O'Mahoney, 2010, pp. 158–159).

6.3.3. The Reference Model

The reference model can be the basis of any new OMC and is a collection of nine OMC Areas. Since the number of standard OMC Areas on the OMC has increased in comparison to the original model, the meta-model of the OMC has changed as well; the principles have stayed the same, but the cardinality of the areas has changed (see Figure 6-5).

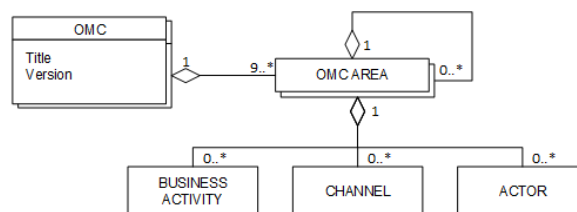


Figure 6-5: Updated meta-model of the OMC

The reference model with its nine OMC Areas is shown in Figure 6-6. Each OMC Area covers a certain business domain of the organisation, displaying either its important elements or the business activities conducted in the domain. First, the OMC Areas will each be described and exemplified individually, after which the structure of the model and the relative positioning of the areas will be discussed.

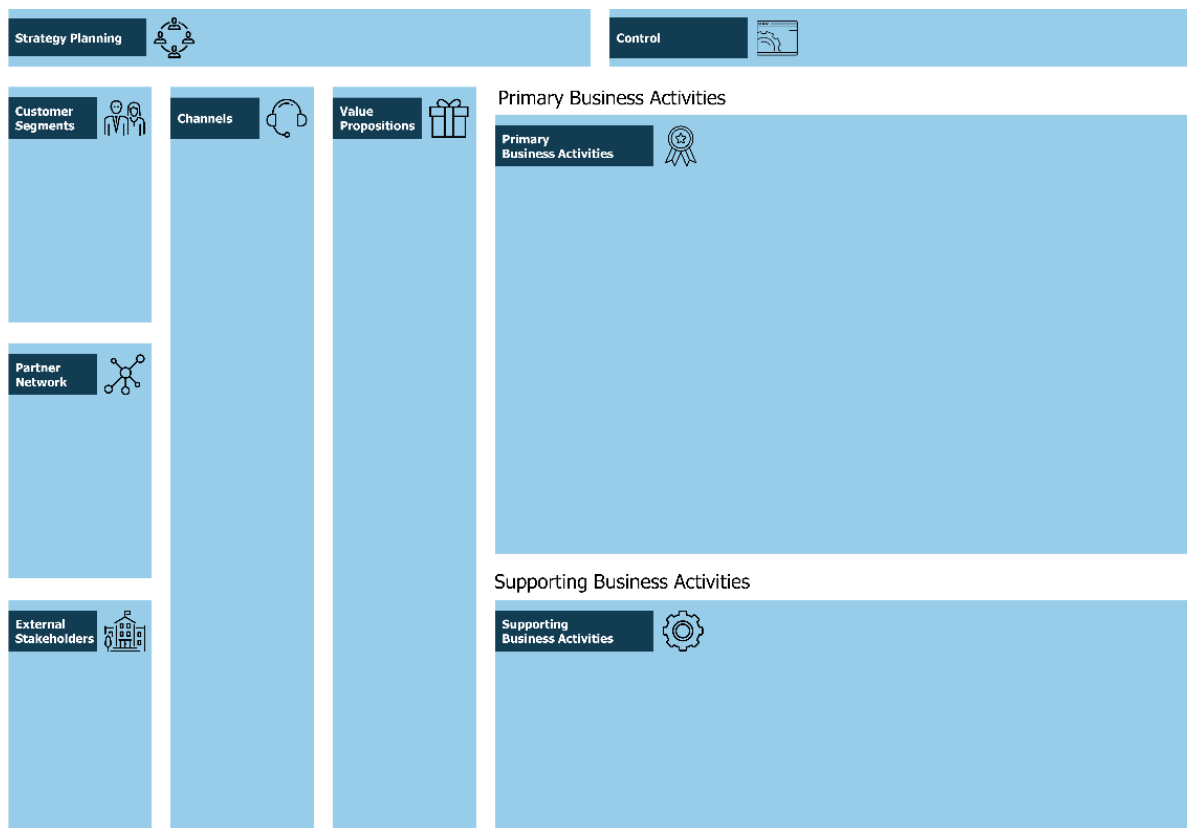


Figure 6-6: Post-validation version of the OMC reference model

Strategy Planning & Execution

Strategy planning and execution concerns the business domain in which the corporate strategy is formulated and related decision-making takes place. This domain is employed by executive managerial staff and concerns activities that affect the entire organisation. **Examples of strategy planning and execution activities include:** risk management, business development, forecasting, portfolio management, and business intelligence.

Control

Control relates to the strategy planning and execution domain. Control activities provide the executive management with information on the status of the organisation by assessing what goes well and what should be improved. Executive management can use this information in their decision-making and strategy planning. In addition, control activities monitor if the organisation meets legislation or stakeholder demands. **Examples of control include:** activities: governance, reporting, procedure management, compliance, and quality management.

Customer Segments

Customers are the purchasers of the products and services the organisation offers. Customers can either be consumers (B2C commerce) or other organisations (B2B commerce) and are displayed in segments. Prospective customers can be included in the OMC as well. **Examples of customers include:** business segments (SME, Large, Private, Public), individual segments (age, gender), and personas.

Partner Network

Partners are external organisations that aid or support the value chain of the organisation. Partners often participate in the same supply chain as the organisation and, as for customers, can be displayed in segments. Prospective partners can also be included in the OMC. **Examples of partners include:** suppliers, collaborators, advisors, supply chain partners, and research partners

External Stakeholders

A stakeholder is anyone who has some kind of interest in the business activities conducted by an organisation. Stakeholders can be internal or external. External stakeholders are depicted in this OMC Area. Their influence on the organisation and/or its value chain should be taken into account by the organisation. Prospective external stakeholders can be included in the OMC as well. **Examples of stakeholders include:** governmental organisations, sponsors, non-profit organisations, and unions

Channels

Channels are means of interaction with externals, i.e. customers, partners and external stakeholders. Channels can include elements that are digital, physical, or both, and can be visualised segmented as well. **Examples of channels include:** social media, call centre, physical store, corporate website, and portals.

Value Propositions

Value propositions represent the solution that an organisation offers to the problem of its customers. A value proposition is often a combination of a product and a service, where the service supports the product, in order to provide a complete solution to the customer. They can, however, exist independently. Products and services can be displayed in groups if deemed necessary. Value propositions are situational. These will be discussed more in-depth in Chapter 7.

Primary Business Activities

Primary business activities concern the business activities that directly contribute to the realisation of the products and services of the organisation, as formulated by Porter (1985). Primary business activities are situational. These will be discussed more in-depth in Chapter 7.

Supporting Business Activities

Supporting business activities concern the business activities that support the primary business activities of the organisation, as formulated by Porter (1985). Supporting business activities are. These will be discussed more in-depth in Chapter 7.

6.3.3.1. Structure of the model

Overall, the reference model should be assessed from left to right. The OMC Areas 'Strategy Planning & Execution' and 'Control' are placed at the top of the OMC to symbolise their organisation-wide nature. 'Strategy Planning & Execution' has been placed on the left and 'Control' on the right to show the chronological interaction between the two, since 'Control'-activities are a result of 'Strategy Planning & Execution'-activities. Moreover, 'Strategy Planning & Execution' reaches over all other OMC Areas, symbolising the influence it has on each organisational aspect. Beneath 'Strategy Planning & Execution', the three types of external actors are listed; 'Customer Segments', 'Partner Network', and 'External Stakeholders'. Their placement on the left symbolises their importance, since without customers, partners, and stakeholders, the remainder of the OMC would cease to exist. Placed next to the external actors is 'Channels', which indicates the communication and interaction that takes place between the organisation and its external context. The Value Propositions are placed at the core of the OMC, for this OMC Area lists the products and services around which the organisation operates. The value propositions are followed by the OMC Area primary business activities, symbolising the logical flow of output being realised by primary business activities, leading to the fulfilment of the value proposition. The OMC Area Supporting Business Activities reside at the bottom of the OMC, showing their supportive function to the primary business activities. The primary and supporting business activities together form the organisation's value chain, which is the situational aspect of the OMC and thus dependent on the type of organisation the OMC visualises. These OMC Areas are explained and exemplified more in-depth in Chapter 7.

The reference method and the reference model together constitute the proposed OMC Approach.

6.4. Best Practices for the OMC Approach

This section describes the best practices that should be applied when executing the OMC Approach. Best practices were defined for both the method and the OMC. The practices were distilled from the cases described in Chapter 5. In addition, they were gathered during the validation of those cases and via an extra session with an expert on the design of OMCs.

6.4.1. Best Practices for the Project Process

In this sub-section, the best practices the OMC Approach as a process are discussed. The best practices are divided into two themes, project preparation and workshop conduction, and concern advices for the advisory profession in general and specifically for the OMC Approach. Practices are listed and explained below.

6.4.1.1. Preparation

Advisor project roles should be internally defined.

Prior to starting the OMC project, the advisors that will be involved in the development of the OMC must internally define their roles in the project team. This facilitates a smooth internal cooperation and manages the expectations advisors have towards one another.

Advisors should be actively involved during the project start.

Each advisor should at least read the most important client documentation and be involved in the construction of the OMC. Based on the documentation a lot of preparation can take place, which facilitates an optimal start of the project. Reading the documentation also ensures the advisors are well-informed and up-to-date regarding the client's organisation, strategy and actuality. Additionally, it creates flexibility in the project, for each advisor can communicate with the client about the OMC. This informal contact should take place frequently, for it will benefit the acceptance of the OMC within the client organisation.

Participators and stakeholders should be aware of the project and the OMC.

The participants of the workshops and other project stakeholders should be aware of the project's goals and objectives prior to discussing the contents of the project. Additionally, participants should be well-informed on what an OMC is and with what purpose the OMC is being developed. Acquiring knowledge on what the OMC is can be achieved by letting

the client read Anderson MacGyver's White Paper 05, or explaining the theory during a kick-off meeting. This prevents miscommunication, manages expectations, and contributes to effective and efficient discussions during the workshops.

6.4.1.2. Workshops

At least three advisors should be present at any workshop.

At least three advisors should be present at a workshop. The first one should be responsible for its content and guide the participants by asking in-depth questions. The second one should manage the process of the workshop. The final one should be taking notes and summarising results. This increases the quality and efficiency of the workshop and its results. For the kick-off workshop it is recommended that all involved advisors are present in order to introduce them to the client.

The right participants should attend all workshops.

To gain the desired results from the workshop, it is crucial that the right internal stakeholders attend the workshops. This means that the group of participants should represent the necessary business domains to gain an integral image of the organisation. In order to let workshops run efficiently, it is of highly recommended that the same participants are present in the kick-off workshop and any of the following workshops. This prevents misalignment and miscommunication between the participant and ensures the continuity of the project. Inviting different participants to each workshop raises the risk that the same issues will be discussed multiple times and creates the possibility of conflicts rising that cannot be discussed easily.

Clarify workshop objectives and project process at the beginning of every workshop.

By clarifying the objectives of the workshop, the expectations of attendees are managed, and everyone is working towards the same concrete goal. Showing the project process increases the trust stakeholders have in the project and subsequently stimulates an open, sharing atmosphere. As such, the objectives of the project should be repeated each workshop.

The advisors should be aware of comparable organisations.

Possessing knowledge of competitors in the same industry allows to more easily find specificity of business activities, indicating what activities generate competitive advantage. Finding specificity can additionally be done by asking participants during the workshop how they think competitors approach certain challenges and how the organisation differentiates itself from competition. This also contributes to determine the importance of a certain business activity.

6.4.2. Best Practices for Development of the OMC

In this sub-section the best practices for the OMC are discussed, including the approach to developing the model, as well as design techniques.

At least three advisors should develop the OMC.

At least three advisors should actively develop the OMC and be present for implicit and explicit collection of data, while the others should at the very least support the development. This relates to the active involvement practice mentioned in 6.4.1.1.

Start constructing the OMC by creating a framework.

Prior to making the entire OMC, a framework of applicable OMC Areas, their rough content, and their positioning should be made based on the client documentation. A solid foundation is key to a successful OMC and prevents having to start from scratch halfway through the process. In addition, this approach preloads the advisors with information with which they will be able to critically assess and question the information that is brought forward by the participants during the workshop.

Construct all elements of the OMC from the start.

Each aspect of the OMC is important, and therefore when developing an OMC, one should focus on the entire model. It is recommended to assess the content of each OMC Area from the beginning, rather than focusing on for example the primary activities of the value chain and making the other areas subservient.

Each detail on the OMC should be relevant and can be explained.

All that is modelled on an OMC should matter, otherwise the item should not appear on the OMC. This keeps the OMC as clean and simple as possible and prevents cluttered information.

The OMC should only contain the real basis of the organisation.

The OMC should only contain the static aspects of the organisation, i.e. the OMC Areas that were described in 6.3. More dynamic aspects, such as data ownership, active projects, or applications, should be modelled in separate aspect layer, each layer addressing only one aspect.

The OMC should be made using an accessible modelling tool

The purpose of the OMC is for it to last for a few years within the organisation. In principle, the base layer will not change too drastically during this time, since it represents the business activities, channels and actors of the organisation. It is unlikely that an organisation will disperse a business activity overnight or stop catering an entire segment of customers. However, if this were to be decided, it is convenient for the client to be able to modify the OMC without the help of external advisors. To that end, the OMC should be created using an accessible, commercial modelling tool, such as Microsoft PowerPoint. Most people will have access to such tools and will therefore be sufficiently skilled to work with them without any training.

In addition to the listed practices above, the following visualisation techniques should generally be adhered:

- White spacing should be used to group aspects and distinguish OMC Areas. This implies that between OMC Areas should exist more white spacing than within the OMC Area.
- The client's corporate design should be the main source of inspiration for the OMC. Specific design elements such as logos, colours, and icons should appear on the OMC in order to increase the recognisability and acceptance of the model within the client organisation.
- Connected activities or actors should be grouped together to distinguish OMC Areas, rather than solid lines.
- The available space should be used optimally, and useless white areas should hence be avoided.
- Black text boxes can be used to draw some extra attention to certain details.
- The OMC should be kept as simplistic as possible.
- The minimum font size should be 18 in order to keep the A0-poster legible.

7. Results: The OMC Situational Models

This chapter describes the situational models of the OMC. First, the classification of situational factors is provided and explained. Next, the influence of those factors on the cases will be described and the situational OMC models are provided. Lastly, the validation approach and results of the models are described.

7.1. Situational Factors

Chapter 5 established that variations exist among the five OMCs that were analysed. In order to determine the cause of these variations and to find the situational factor(s) that might have influenced the OMCs of the cases described in Chapter 5, the metadata of the cases has been compared. The focus of the comparison was to find unique characteristics among all cases. See Table 7-1 (identical to Table 5-1) for the overview.

Table 7-1: Cases included in the case analysis

Case	Name	HQ	Industry	Employees	Sector	Case Goal	Year	Advisors
1	PostNL	The Hague	Transport & Logistics	46.000	Private	IT Strategy	2013-2014	2-5
2	Univé	Zwolle	Insurance & Pension Funding	2.650	Private	Business Information Plan	2014	2-5
3	Allinq	Harderwijk	Construction & Infrastructure	2.000	Private	Business Professionalisation	2015	2-5
4	ManuComp	Eerbeek	Manufacturing	150	Private	IT Strategy	2016	2-5
5	EducOrg	Utrecht	Education	3.200	Public	Digital Strategy	2016-2017	2-5

The OMC visualises what an organisation will look like at a certain point in time in the future based on the organisation's strategy. Although technological trends can influence a (digital) business strategy, and a strategy can therefore be affected by the moment in time of its development, it is considered unlikely that the year in which the case was executed has influenced the OMC. All five cases took place within a timeframe of four years, which should not have such a strong effect that OMCs look completely different. Since the base layer of the OMC shows the activities and context of an organisation, the goal of the case will not have influenced the visualisation and content of the OMC either. Other project outcomes, however, could have been affected by the goal of the case, which will be discussed further in this chapter. The number of advisors was consistent throughout all cases, and can therefore be discarded as a situational influence as well. All cases' headquarters are located in different cities and areas within the Netherlands. Although this could classify as a unique characteristic of a case, locations were not incorporated in the OMCs in any of the cases, and are therefore unlikely to have influenced the OMC. Since almost all organisations are private, the sector in which the organisation operates can also be discarded. Three of the five cases maintain employee totals between 2.000 and 3.500 employees, making number of employees a similarity among the cases, rather than a differentiation factor. The remaining entity of case meta data, the industry in which the organisation operates, could be the situational factor that explains the differences in appearance and content of the OMC. The OMC depicts, among other business areas, the primary and supporting business activities of the value chain. Since organisations from different industries are likely to execute different primary business activities, it is plausible that the industry in which an organisation operates has some sort of influence on its OMC; this will be further elaborated upon in the remainder of this chapter.

Anderson MacGyver has formulated a list of industries to classify the projects they perform. This list is an adaptation of the classification made by the Dutch Central Bureau for Statistics (CBS) (Dutch: Centraal Bureau voor de Statistiek), which applies European standard classifications to businesses and their activities, and was adapted by Anderson MacGyver to fit her pool of customers. In order to do so, some of the CBS classifications were combined into one with a

higher level of abstraction. Table 7-2 provides the cross reference between the Anderson MacGyver Industries that will be adhered to in this thesis, and the classification of the CBS. Explanation of the industries is provided underneath Table 7-2.

Table 7-2: Mapping of the industry classifications of Anderson MacGyver and CBS

Case	Name	Anderson MacGyver Industry	CBS Generic Classification	CBS Detailed Classification
1	PostNL	Transport & Logistics	H. Vervoer en Opslag	H53. Post en koeriers
2	Univé	Insurance & Pension Funding	K. Financiële instellingen	K65. Verzekeringen en pensioenfondsen
3	Allinq	Construction & Infrastructure	F. Bouwnijverheid	F42. Grond-, water- en wegenbouw
4	ManuComp	Manufacturing	C. Industrie	C25. Vervaardiging van producten van metaal
5	EducOrg	Education	P. Onderwijs	P85. Onderwijs

Transport and Logistics

The transport and logistics industry provides services in the recreational and professional environment. Transport services can range from small organisations that offer package transportation to the national posting service with service obligation imposed by the national government. Any related transportation activities are included as well, such as performed by the local postal offices (Van Hooff, 2018).

Insurance and Pension Funding

The insurance and pension funding industry is a subtype of the financial services industry. Insurance and pension funding activities entail the execution of any type of insurance-agreements, including those concerning the collection of costs and the payment of cash benefits (Van Hooff, 2018).

Construction and Infrastructure

The construction and infrastructure industry conducts activities that concern the development of soil, water, and road facilities. Examples of typical activities in the industry are the construction of roads, the pavement of sidewalks, and the maintenance of bridges and tunnels. The construction and maintenance of infrastructure in and above the earth is performed in the industry as well, by for example creating sewers and pipelines, and placing electricity- and communication cables (Van Hooff, 2018).

Manufacturing

Manufacturing organisations process materials and/or create a final product. Many types of organisations exist within the manufacturing industry. An example of such an organisation is one that processes metal and metal-products by painting it, platening it, or coating it with other materials such as plastic (Van Hooff, 2018).

Education

Organisations in the education industry provide educational services and possibly conduct research. This includes any form of public and private education for every available level and target group. Education can be provided via various channels, e.g. face-to-face, one-on-one, via web portals, or via television programs (Van Hooff, 2018).

7.2. Impact of Situational Factors on the OMC Approach

Chapter 7.1 explained that the situational factor on which this research focuses is the type of industry in which the client organisation operates. In order to determine how the OMC Approach is affected by the type of industry, both the PDD of the reference method and the reference model (see Chapter 6) were analysed for possibilities for situational factors to influence their elements.

During the case analysis was established that the structure of each case, i.e. the activities and the order they are conducted in, is very similar (see Table 7-3).

Table 7-3: Mapping of the in-case inclusion of phases from the reference method, represented by the industry.

	Transport & Logistics	Insurance & Pension Funding	Construction & Infrastructure	Manu- facturing	Edu- cation
Preparation [OMC Approach]	Y	Y	-	Y	Y
OMC Construction	Y	Y	Y	Y	Y
Prepare and Conduct [Kick-Off Workshop]	Y	Y	-	Y	Y
OMC Development	Y	Y	-	Y	Y
Prepare and Conduct Workshop	Y	Y	-	Y	Y
Finalisation [OMC Approach]	Y	Y	Y	Y	Y

Since each of the cases concerned organisations in different types of industries, it can be concluded that the choice and order of activities of the OMC reference method are independent of the industry the client operates in. Moreover, activities are likely to be dependent on the deliverables of the case, for the expected deliverables of a case demand which activities should be undertaken in order to achieve those deliverables. Much like the activities of the reference method, the deliverables that a case will result in neither depend on the type of industry of the client. During the case analysis, each case having been conducted in a different type of industry, several similar deliverables were found. Table 7-4 shows the mapping of these deliverables. Deliverables added during the creation and validation of the reference method, such as FEEDBACK and MODIFICATION, were omitted from this overview since they were not represented in any of the cases. Additionally, deliverables that were specific to a single case were found to be created due to the demands of either the client or the project. This led to the conclusion that the process and the deliverables of a case, and thus the reference model of the OMC Approach, are not influenced by the situational factor 'Industry of the client'.

Table 7-4: Mapping of the in-case inclusion of concepts from the reference method, represented by the industry.

	Transport & Logistics	Insurance & Pension Funding	Construction & Infrastructure	Manu- facturing	Edu- cation
CLIENT'S CORPORATE DESIGN	-	Y	-	-	-
[CONCEPTUAL] ASPECT LAYER	Y	Y	Y	Y	Y
[KICK-OFF] WORKSHOP	Y	Y	-	Y	Y
DIGITAL BUSINESS STRATEGY REPORT	Y	-	-	-	Y
DOCUMENT COLLECTION	Y	Y	-	Y	Y
INTERVIEW OUTPUT	Y	Y	Y	Y	Y
IT STRATEGY REPORT	-	-	-	Y	-
KEY STATEMENT	Y	Y	-	Y	Y
OMC	Y	Y	Y	Y	Y
OMC AREA	Y	Y	Y	Y	Y
PROJECT PLANNING	Y	Y	-	Y	Y
RESULTS POSTER	-	-	Y	-	-
WORKSHOP	Y	Y	-	Y	Y

The content and structure of the OMCs, however, do seem to vary among industry types. The reference model of the OMC Approach shows that an OMC consists of nine standard OMC Areas. Six of those OMC Areas contain elements that

are applicable to every industry, such as customers or communication channels. Although the detailed content of the OMC Areas will vary per client, the usage and sub-Areas of the OMC Areas will remain similar for every industry. The specific Areas are therefore considered to be unaffected by situationality (see Table 7-5). Three of the areas, however, can be divided into sub-Areas that are considered to be specific for the type of industry; (1) Value Propositions, (2) Primary Business Activities, and (3) Supporting Business Activities (see Table 7-5). Not coincidentally, these three business aspects combined form an organisation's Value Chain as established by Porter (1985). Since the value chain represents the core of an organisation, i.e. what kind of products or services are delivered and how, this supports the statement that the Areas of the OMC representing the value chain are situational.

Table 7-5: Overview of generic and situational OMC Areas

		Generic	Situational
OMC Area	Strategy Planning & Execution	Y	
	Control	Y	
	Customers	Y	
	Partners	Y	
	Stakeholders	Y	
	Channels	Y	
	Value Propositions		Y
	Primary Business Activities		Y
	Supporting Business Activities		Y

In order to demonstrate the situationality and its implications for each of the five industries, a situational OMC model has been developed for each industry. To do so, the business activities of each case (see Chapter 5) were generalised to fit every organisation operating in the same industry as much as possible. For every case, the business activities were assessed for their specificity, by determining whether an activity was specific for the organisation, or generic for the industry. Doing so led to the development of a standardised value chain per industry. The situational models are provided in Figures 7-1 to 7-5. Grey OMC Areas in the models signify that these are identical in every industry.

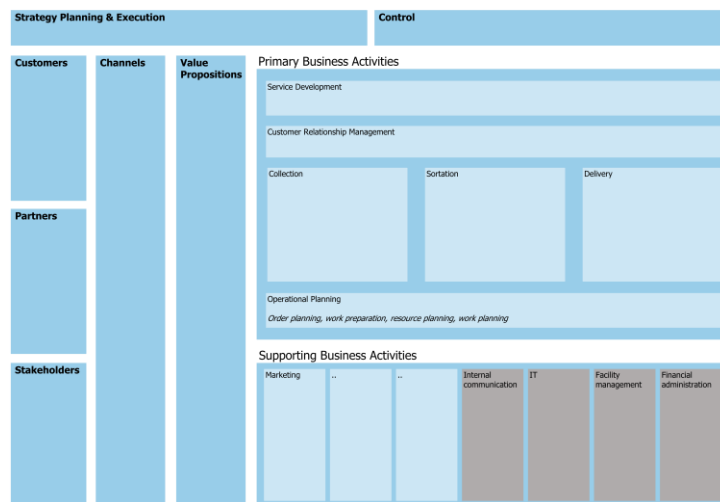


Figure 7-1: Pre-validation situational model Transport & Logistics

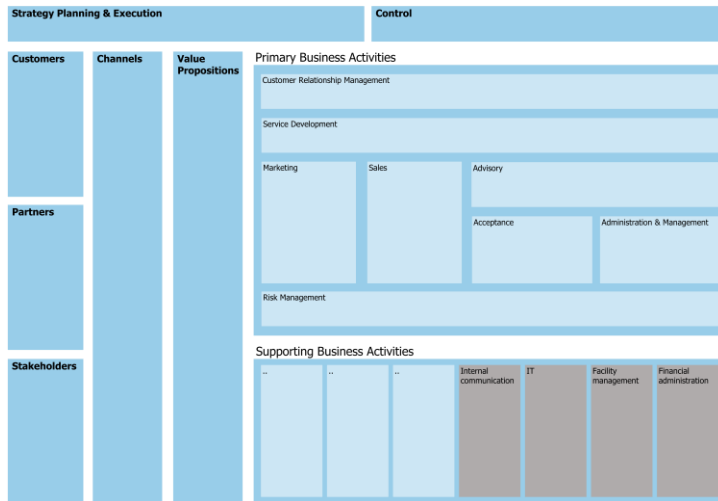


Figure 7-2: Pre-validation situational model Insurance & Pension Funding

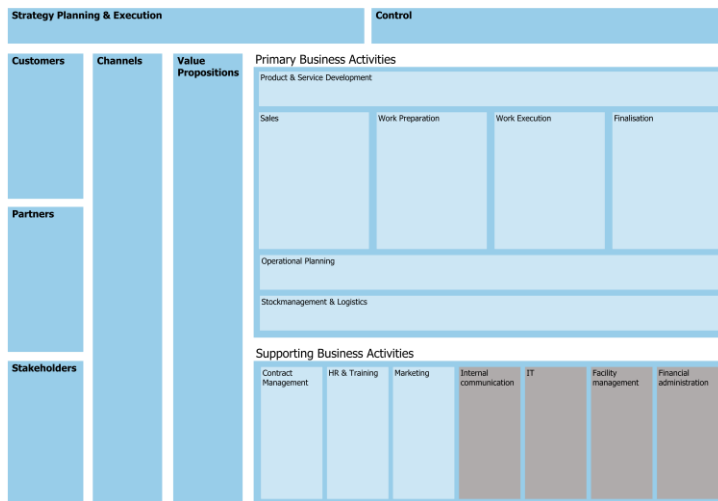


Figure 7-3: Pre-validation situational model Construction & Infrastructure

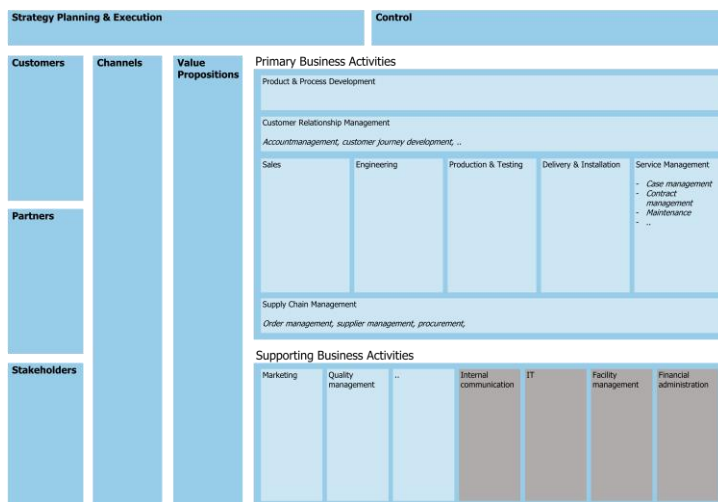


Figure 7-4: Pre-validation situational model Manufacturing

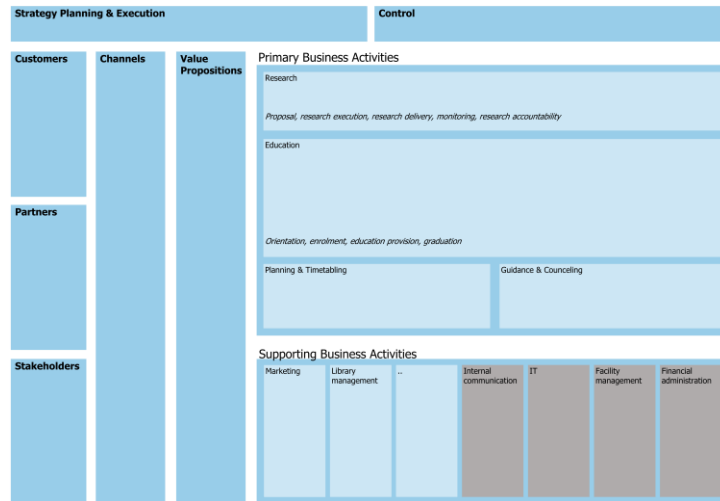


Figure 7-5: Pre-validation situational model Education

This part of the research contains five holistic single case studies. To validate the results of each, an expert validation session was conducted, focusing on both verifying existing content of the models and complementing the models where necessary. The validation is described in Chapter 7.3.

7.3. Validation

The situational models of the OMC were validated with the same experts from Anderson MacGyver that were involved in the reference validation. The validation started by providing the results of the previous validation, which were described in Chapter 6.2 . Since an outcome of the case analyses was that the reference model for the OMC Approach (i.e. the PDD) was not influenced by the type of industry of the client, no additional PDD’s were created. Therefore, this validation focused on discussing the situational models that were described in Chapter 7.2. The experts were asked to provide their feedback on the newly created situational OMC models. Since the basis for each situational model was the already validated reference model, the focus did not lie on the nine OMC Areas, but rather on the sub areas of Value Propositions, Primary Business Activities and Supporting Business Activities. Emphasis lied on the content of the sub-Areas and their relative placement towards each other and in the OMC Areas. The format of the validation was an open discussion, preceded by a brief explanation of each model by the researcher. The outcomes of the discussion are provided in Table 7-6. The results of the processed outcomes are the finalised situational models that are described in Chapter 7.4.

Table 7-6: Outcomes of the validation per industry

Model	Outcomes	Details
Transport & Logistics	Addition of:	Value propositions ‘Postal services’, ‘Parcel services’, ‘Transport services’, and ‘Supporting goods’
		Primary Business Activities ‘Marketing’, ‘Sales’, ‘Warehousing’, and ‘Logistics’
		Supporting Business Activities ‘Human Resources’, ‘Procurement’, and ‘Equipment Management’
	Discarding of:	Supporting Business Activities ‘Internal Communication’ and ‘Marketing’
Insurance & Pension Funding	Modification of:	Primary Business Activities ‘Service Development’ to ‘Products & Service Development’, ‘Delivery’ to ‘Distribution & Delivery’,
		Supporting Business Activity ‘Financial Administration’ to ‘Finance’
Insurance & Pension Funding	Addition of:	Value propositions ‘Insurances’, ‘Loans’, and ‘Pensions’
		Primary Business Activities ‘Prolongation’ and ‘Asset (information) Management’

		Supporting Business Activities 'Human Resources' and 'Procurement'
	Discarding of:	Supporting Business Activity 'Internal Communication'
	Modification of:	Primary Business Activity 'Administration & Management' to 'Claims Handling'
		Supporting Business Activity 'Financial Administration' to 'Finance'
		Positioning of 'Service Development' and 'Customer Relationship Management'
Construction & Infrastructure	Addition of:	Value propositions 'Construction' and 'Maintenance & Service'
		Primary Business Activities 'Sales & Account Management' and 'Asset (information) management'
		Supporting Business Activities 'Human Resources', 'Procurement', and 'Equipment Management'
	Discarding of:	Supporting Business Activities 'Internal Communication', 'Marketing', and 'Contract Management'
	Modification of:	Primary Business Activities 'Work Preparation' to 'Work Preparation & Engineering', 'Operational Planning' to 'Tactical & Operational Planning & Sourcing', and 'Stock Management & Logistics' to 'Material Management & Logistics'
		Supporting Business Activities 'Financial Administration' to 'Finance' and 'HR & Training' to 'Human Resources'
Manufacturing	Addition of:	Value propositions 'Build to Order' and 'Build to Stock'
		Primary Business Activities 'Marketing', 'Build to Order', 'Build to Stock', 'Quality Management'
		Supporting Business Activities 'Human Resources' and 'Procurement'
	Discarding of:	Supporting Business Activities 'Internal Communication' and 'Quality Management'
	Modification of:	Positioning of Primary Business Activities
		Supporting Business Activities 'Financial Administration' to 'Finance'
Education	Addition of:	Value propositions 'Education' and 'Research'
		Primary Business Activity 'Education & Research Development'
		Supporting Business Activities 'Human Resources', 'Procurement', and 'Partner Management'
	Discarding of:	Supporting Business Activities 'Internal Communication', 'Library Management', and 'Marketing'
	Modification of:	Positioning of sub Primary Business activities
		Supporting Business Activities 'Financial Administration' to 'Finance'

7.4. Situational Models

The validation of the situational models of the OMC have led to their final versions. These models are thus the result of the case studies combined with the expertise and experience of involved advisors gathered during the validation session. The models presented in this section are the proposed models for their respective industries.

Since situationality only exists in the OMC Areas Value Propositions, Primary Business Activities, and Supporting Business Activities (see Chapter 7.3), the situational models only contain detailing in those Areas. It should be noted that each model contains the Supporting Business Activities Human Resources, Procurement, IT, Facility Management, and Finance. Although this might lead to the conclusion that Supporting Business Activities are thus not situational, it was found that in some industries additional specific Supporting Business Activities exist. Moreover, the specificity and subsequently the importance and impact of the supporting business activity can differ among industries. Therefore, all supporting activities are considered situational. Some Primary Business Activities, such as Marketing or Product Development, occur in each industry. Although these could therefore be considered generic rather than situational,

their importance and role in the value chain, and subsequently their location in the OMC Area, differs per industry. Hence, they are consideration situational. The specific content and structuring of activities for each model is described in the sub-sections below. Names of the OMC Areas were capitalised to show they are OMC Areas on the model.

7.4.1. Transport & Logistics

The situational model for the Transport & Logistics industry is provided in Figure 7-6. Typically occurring types of Value Propositions in the Transport & Logistics industry are Transportation Services, Warehousing Services, Data Services and any remaining goods that support those services, such as packaging material. Transport Services concern any retrieval and delivery activities of products and people, with the objective to relocate them from one location to another. Warehousing Services can be an additional value proposition that provides consumers and or business to store their possessions at the premises of the Transport & Logistics organisation. Data Services entail the gathering and sales of data, which can be done while providing transport services. The data is often location related, and can be sold to organisations to whom demographics and geographical data might be relevant, such as governments or webstores. Lastly, the Propositions Supporting Goods consists of products related to the services described above and can entail products such as stamps or bubble-wrap. It depends on the organisation which Value Propositions, all of them or a selection of a few, are applicable.

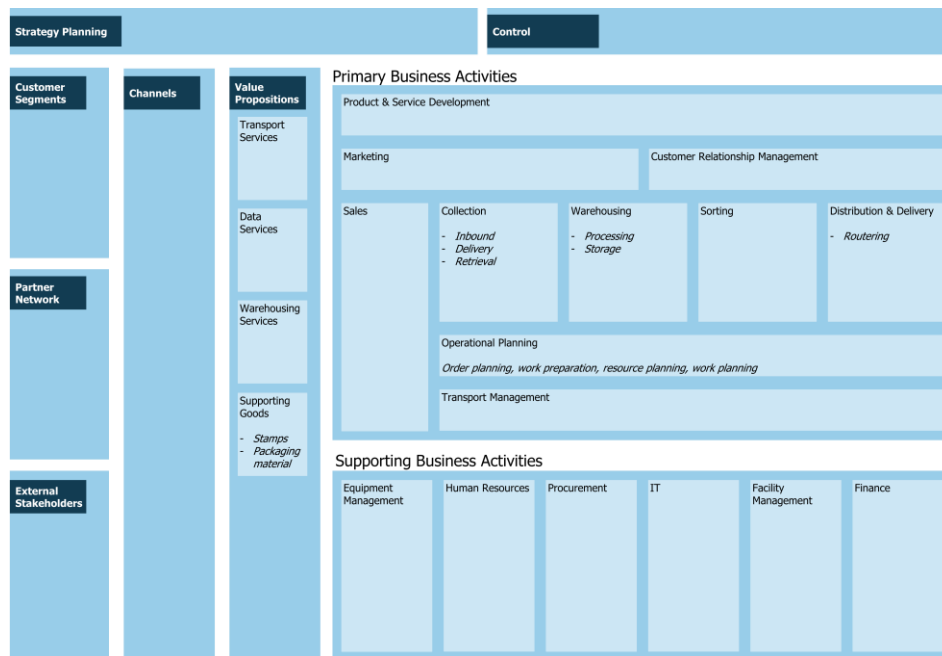


Figure 7-6: Post-validation situational model of Transport & Logistics

The standard chain of this industry consists of Sales activities, Collection activities, Warehousing activities, Sorting activities, and Distribution & Delivery activities. It is supported by overarching Operational Planning activities and Transport Management activities, which concerns management of all movements in the chain and is considered a primary activity since it influences the flow of goods in the chain and is considered a primary activity since it influences the flow of goods in the chain. Collection activities can concern inbound, delivery, retrieval or a combination of those activities. Warehousing entails both the possible processing of products and their storage. Sorting, then, regards the sortation of collected material. Lastly, Distribution & Delivery entails the preparation of and actual delivery of the products. Whether or not all of these activities are carried out depends on the Value Propositions of the organisation. Aside from the activities that make sure the Value Propositions are realised, Primary Business Activities consist of activities that strongly influence those activities. Product & Service Development overarches all activities, as its results influence all activities of the chain of the industry. Marketing and Customer Relationship Management exist alongside each other and are closely related to Product & Service Development, hence their placement directly underneath Product & Service Development. Marketing is placed on the left to show its close

relation with sales and the chronological order of first promoting among potential customers and then sustaining the relationship. The latter is done by activities of Customer Relationship Management.

Besides the five standard Supporting Business Activities, the Transport & Logistics industry performs Equipment Management activities, which concern the management and maintenance of all equipment used in the chain, such as vehicles, remote communication devices, conveyor systems, warehouses, and sorting machines.

7.4.2. Insurance & Pension Funding

The situational model for the Insurance & Pension Funding industry is been provided in Figure 7-7. Two types of Value Propositions can be distinguished for this industry; Insurances and Pensions, both of which are services.

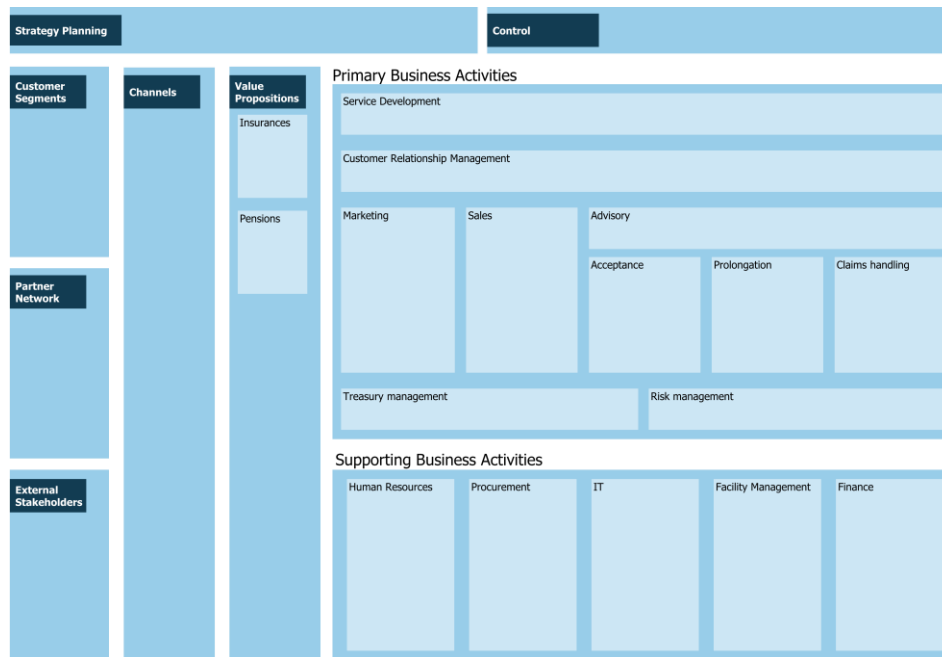


Figure 7-7: Post-validation situational model of Insurance & Pension Funding

The standard chain of activities for this industry consists of Marketing activities and Sales activities, after which two streams of activities can take place. First, any type of Advisory activities can take place for both Value Propositions. Second, also for both Value Propositions, a chain of acceptance activities, prolongation activities, and claims handling activities can occur. Service Development activities exist at the top of all Primary Business Activities. Service development and Customer Relationship Management activities are closely related due to their strong customer-focused nature. Therefore, they are placed close to each other. Due to the emphasis on B2C Marketing and the industry being highly competitive with numerous players, Marketing activities are considered part of the standard chain. Therefore, Customer Relationship Management overarches the entire chain, rather than it existing alongside Marketing. Underneath the chain, Treasury Management and Risk Management activities are placed. These are of high importance for the continuity of the organisation, and therefore primary activities, but are not part of the standard chain. For this industry, Treasury Management concerns activities focusing on generating value with investments, an important source of income. Risk Management entails any activity that concerns the accepted risk related to the insurances.

Supporting activities in this industry concern the standard activities human resources, procurement, IT, facility management and finance.

7.4.3. Construction & Infrastructure

The situational model for the Construction & Infrastructure industry is provided in Figure 7-8. In this industry, two types of Value Propositions exist; (1) Construction, entailing the service of constructing and installing goods such as infrastructures, and (2) Maintenance & Service, entailing the services of the (long-term) aftercare of the constructed and installed goods.

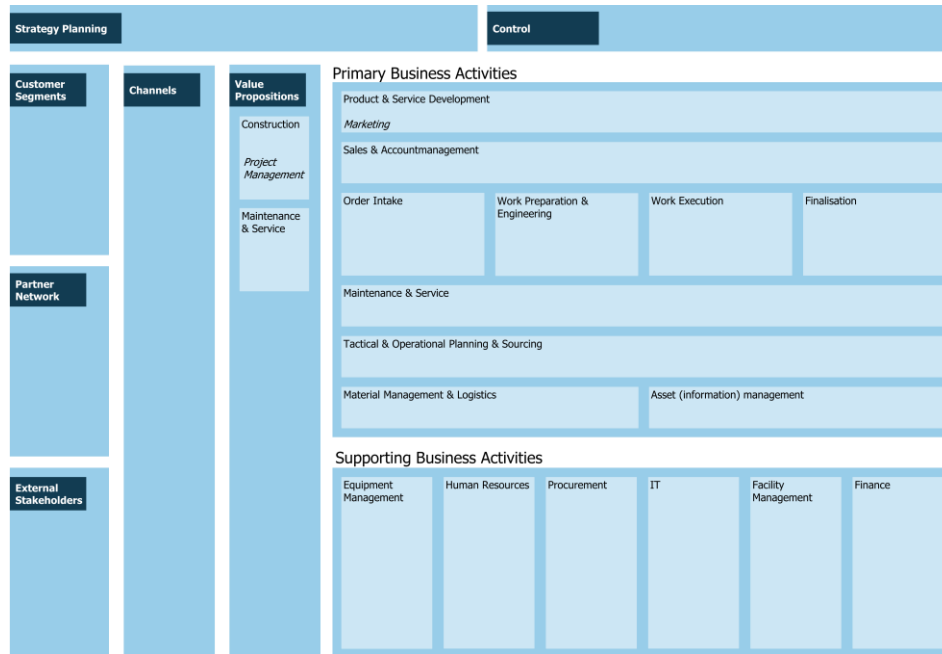


Figure 7-8: Post-validation situational model of Construction & Infrastructure

The standard chain of activities for the Construction value proposition entails order Intake activities, Work Preparation & Engineering activities, Work Execution activities, and Finalisation activities. This is overarched by Product & Service Development activities. Since organisations in this industry operate B2B and their Value Propositions are often specialistic, marketing activities are considered part of the Product & Service Development. For the same reason, Sales and Account Management are combined into one business activity. The Service & Maintenance Activity is placed underneath the Construction Value Chain, realising the Service & Maintenance Value Proposition. Activities of these chains are intertwined, since the result of service and maintenance can be construction. Planning activities, both Tactical and Operational, and Sourcing activities are placed beneath these activities, since they support the chain. Contrary to what their supportive nature implies, they are considered primary activities because they directly influence the activities in the chain. Additionally, Sourcing activities determine what resource, e.g. which partner or tool, is used to fulfil the activity in the chain. Material Management Logistics activities are considered Primary Business Activities since ensuring that the right material is available at the right location at the right time is crucial for the standard chain to function. In this industry, Asset Management concerns the management of large assets for customers, such as their infrastructure. It also includes the analysis of the information of assets as input for asset management strategies. Results of these activities heavily influence the chain, and are therefore considered Primary Business Activities.

Besides the five standard Supporting Business Activities, the Construction & Infrastructure industry performs Equipment Management activities, which concern the management and maintenance of all equipment used in the chain, such as specialistic tools, monitoring devices, and vehicles.

7.4.4. Manufacturing

The situational model for the Manufacturing industry is provided in Figure 7-9. In this industry, two types of Value Propositions exist; (1) Build To Order and (2) Build To Stock. Build To Order means that the manufacturing process is initiated by a client ordering a specific product. This allows the client to request specific products or features. Build To

Stock, on the other hand, is initiated by the manufacturer who stores the products until they are sold. Organisations can choose to employ one of the propositions or offer both.

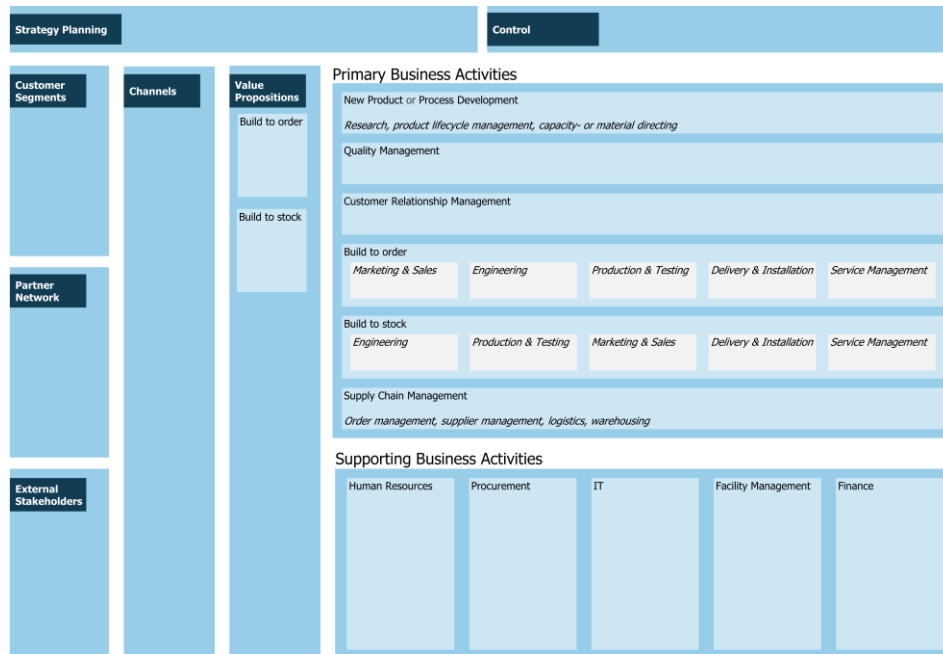


Figure 7-9: Post-validation situational model of Manufacturing

The two types of Value Propositions lead to two standard chains in the industry, both of which contain the same activities. However, these are conducted in a different order. For the Build To Order proposition, Marketing & Sales activities are conducted first, followed by Engineering activities, Production & Testing activities, Delivery & Installation activities, and Service Management activities. The Build To Stock chain starts with engineering activities, followed by Production & Testing activities. Next, Marketing & Sales activities take place, followed by Delivery & Installation activities and Service Management activities. Due to the focus on the product in the Build To Order proposition and the focus on the process in the Build To Stock proposition, both Product & Process Development activities take place at the top of the Primary Business Activities. This is followed by Quality Management activities, which focus on the quality of the product and the manufacturing process. As for the Transport & Logistics industry, Customer Relationship Management activities are closely related to product development activities, hence their placement directly underneath New Product Development. Customer Relationship Management activities concern building and sustaining the relationship with the customer and are therefore intertwined with service management activities, which is why they are positioned close to each other. Supply Chain Management is the management of all elements in the supply chain, such as suppliers, material, and warehousing. Activities in the supply chain influence the standard chain of the organisation and are therefore considered primary.

Supporting activities in this industry concern the standard activities human resources, procurement, IT, facility management and finance.

7.4.5. Education

The situational model for the Education industry is provided in Figure 7-10. Two types of Value Propositions exist in the industry, namely Education and Research. Some educational organisations solely deliver Education, other also conduct Research. The division between the two, i.e. focus on Education, focus on Research, or an equal focus, differs between organisations.

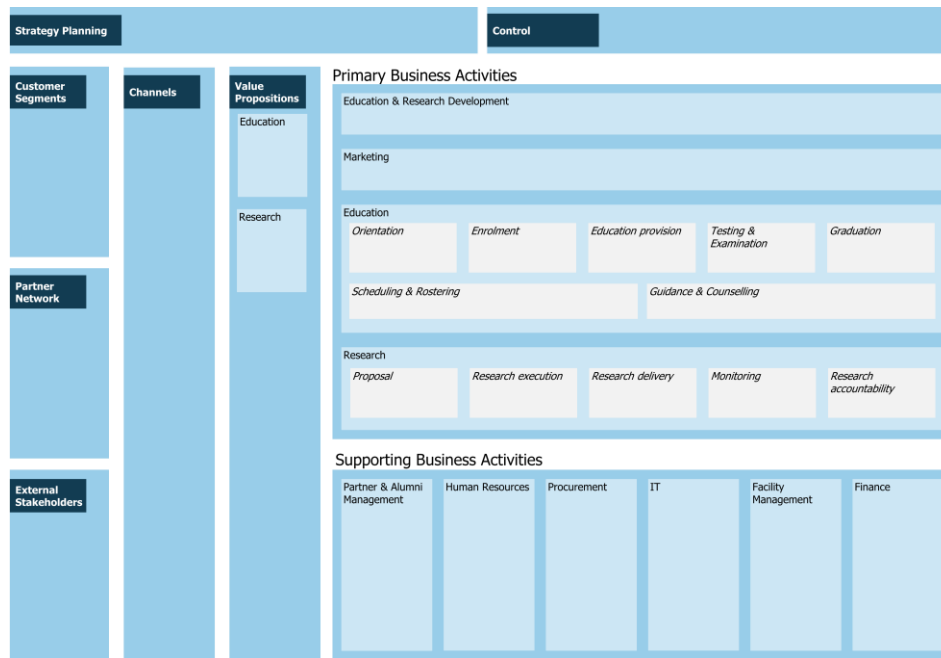


Figure 7-10: Post-validation situational model of Education

As in the manufacturing industry, the two Value Propositions lead to two standard chains of activities. The Education chain consists of Orientation activities, Enrolment activities, activities that concern the Provision of Education, Testing & Examination activities, and Graduation activities. Within the same chain, Scheduling & Rostering activities and Guidance & Counselling activities take place. These activities are part of the standard Education chain, since they help in delivering the value, education, to the customers, in this case the students. The Research chain concerns Proposal activities, Research Execution activities, Research Delivery activities, Monitoring activities and Research Accountability activities. At the top of the Primary Business Activities, Education & Research Development activities take place. Due to their close connection with Marketing activities, Marketing is placed directly underneath. Marketing activities are intertwined with the Orientation activities in the Education chain, for which they are placed close to each other.

Aside from the five standard Supporting Business Activities, the Education industry performs Partner & Alumni Management activities, which concern maintaining the relations and contracts with both educational partners and research partners, as well as graduated students. The latter is targeted to offer them education again in the future. This activity is considered supportive since it does not influence the Primary Business Activities, but enables them.

The situational models that were described in Chapters 7.4.1 – 7.4.5 are the proposed models for their respective industries. When applying the OMC Approach to an organisation that operates in either of the five industries, these models should be used as a source of knowledge in the field and inspiration for the OMC that will be developed during the project.

8. Results: OMC Evaluation & Acceptance

This chapter provides the perspective of two clients, Allinq and Univé, whose cases were described in Chapter 5. Since the OMC Approach is applied for and with clients, it is relevant to provide at least a brief overview of the clients' perspectives regarding the OMC in this thesis. It should be noted that the purpose of this chapter is not to conduct a complete client satisfaction analysis, but rather to show how clients have experienced the OMC Approach and deduce the implications and possibilities those experiences can have in the future. First, the details regarding the interview approach and the interviewees are provided. Second, the results of the interviews are described, divided into three parts: the OMC approach, the OMC as a deliverable, and of the role of the OMC in the organisation.

8.1. Interview Approach

This section explains the approach that was followed during the interviews and provides the interviewee's details. The objective of the interviews was to gather the client's perspective on and experience with the OMC Approach and the OMC, which could then be used to informally validate and complement the reference- and situational methods and best practices of the OMC Approach. Since the topic of conversation concerned historic events, it was essential that interviewees could freely remember and discuss any memory regarding the OMC Approach that came to their minds. In order to discover as much information as possible and uncover personal experiences with to OMC, the chosen interview type was informal and semi-structured (Oates, 2006). To that end, a protocol was written in preparation of the interviews that merely served as a guideline. It contained a checklist of topics that should at least be discussed, namely the process and deliverables of the OMC approach, the OMC itself, and the role that the OMC had or had not played in the organisation (see Appendix C).

In total, two client interviews were conducted in December 2017; one with the case-organisation operating in the construction and infrastructure industry for whom the OMC had been created in 2015 (see Chapter 5.3), and one with the case-organisation that provides insurance and pension funding services for whom the OMC had been created in 2014 (see Chapter 5.2). As depicted and described in Chapter 5, the projects were conducted within different contexts and by using slightly different approaches. As such, combined they provided a broad and diverse image of the client perspectives. One employee was interviewed for each organisation. Details of both are provided in Table 8-1.

Table 8-1: Interviewee data

	Interviewee 1	Interviewee 2
Case-organisation	Allinq	Univé
Industry	Construction & Infrastructure	Insurances & Pension Funding
Current organisational role	Manager Innovation Lab	Business Consultant IT Strategy
Former organisational role(s)	Process / Operations Manager	Account Manager, Demand Manager, Information Manager
Years active at organisation	19 years	15 years
Involvement OMC Approach	Active	Active

8.2. Evaluation of the Project Approach

In this section, the interview outcomes regarding the process and deliverables of the OMC Approach as conducted in the respective case-organisations are described. For case-organisation Allinq, the activities that were conducted during the project differed from the other cases, as explained in Chapter 5.3. Despite this deviation, Interviewee 1 stated he was pleased with the approach taken by the advisors. The active involvement of Allinq's employees during the project was especially appreciated, since it provided a sense of commitment within the organisation towards the delivered product. In addition, it caused the final deliverables to be recognised as products of Allinq, rather than products of an external company. It also provided a basis upon which new projects and processes could be initiated. Regarding deliverables of the project, the value chains and the cost reduction aspect layer were received particularly well. This

could be explained by the fact that the **value chains shone a new light on formerly chaotic territory**. Additionally, Interviewee 1 noted that the **usage of visualisations contributed to the organisation's appreciation**.

Case-organisation Univé also had a positive attitude towards the cooperation with the advisors and the active involvement of its employees in the project. **Frequent informal contact between advisors and Univé took place by email, phone, and face-to-face communication, which was appreciated by Univé**. Interviewee 2 noted that, in his opinion, the active participation of him and his colleagues “[...] led to an accepted result”. As opposed to case-organisation Allinq, workshops were conducted as a primary source of feedback during the development of the OMC for Univé. These workshops were perceived to be a means for rethinking and restructuring Univé’s business (-aspects) and provided a place for discussion. The stakeholder workshop that was conducted with higher management and representatives from the regional offices had generated support for the OMC, regarding Interviewee 2. Due to the case approach, the end-product of the project was “[...] definitely a product from both Univé and Anderson MacGyver.”

8.2.1. Implications for the OMC Approach

Both organisations agreed that the frequent interaction between the advisors and the case-organisations and the subsequent involvement of the employees resulted in an organisation-wide supported end-product of the project. Since the OMC is an end-product of the project, it can be inferred that the level of acceptance of the OMC is influenced by the involvement the client has had in during the project. Therefore, **contact with the client through workshops** and additional **informal moments of communication** are recommended best practices for the OMC Approach.

8.3. Evaluation of the OMC

This section provides the outcomes of the interview regarding the OMC itself. The content as well as the visualisation and modelling techniques will be discussed. For Allinq, as opposed to the other cases, the value chain of the organisation was modelled first, after which additional elements were added to those models to form an OMC. Interviewee 1 called the OMC a “**great overview of the entire organisation**” and appreciated the structuring of elements into OMC Areas. The design of the OMC attributed to its nice appearance, according to Interviewee 1.

The OMC of Univé was developed in accordance with the more-often used approach, meaning that from the start all business elements were modelled and iteratively developed from. Interviewee 2 called the model “[...] a powerful visualisation”. According to him, the model was **recognisable for Univé due to the use of corporate style elements**, such as corporate colours and internally often used icons. In terms of the structure of the OMC, in retrospect, Interviewee 2 would have liked to see the customer more centralised in the model, surrounded by channels that facilitate contact between Univé and its customers. In his opinion, the customer should be more present in a financial services organisation, since the customer should be the focus point of all operations. In addition, a little while after final delivery of the OMC, the need to re-prioritise activities in the value chain had arisen and some of the business activities were changed and replaced on the OMC. Interviewee 2 noted that this was easily done since the **OMC was developed and delivered using PowerPoint**. Regardless of the retrospective realisation and the by Univé applied modifications, Univé was pleased with the final result and said that the model was “[...] a common language” within the organisation.

8.3.1. Implications for the OMC

Allinq and Univé both appreciated the design and colour-usage of their respective OMCs and said the structuring of OMC Areas and their content using colours and whitespace was pleasing to the eye. **The use of the client's corporate design styles and white spacing for element division** are thus supported by both interviews, and are therefore a best practice for the creation of an OMC. Additionally, **the usage of an accessible modelling tool** such as PowerPoint, is a best practice for the OMC Approach, since it empowers the client to adjust the OMC as they please. The centralisation of the customer, however, will not be a standard best practice for all industries, since the customer is not the focal point of the value chain in every industry. For example, research and development activities can be more important and centralised than customer segmentation and communication channels for manufacturing organisations, since their strategic advantage will lie more prominently in their specialised products rather than in their customer

interaction. For a (financial) services organisation, however, the customer is indeed the aspect around which the value chain evolves. Therefore, the suggestion to centralise the OMC Area 'clients' among the other OMC Areas is integrated in the OMC model for service organisations.

8.4. Evaluation of the Role of the OMC in the Organisation

This section concerns the role of the OMC in the organisation after the final delivery of the OMC. The main question was whether or not the OMC has been used for other purposes, besides formulating a business or IT strategy. In case-organisation Allinq, the OMC has been used for multiple purposes after its final delivery. First, it was used during the negotiations for a new contract with Allinq's largest customer. The OMC showed the professionalisation of Allinq, having standardised several coexisting similar business processes into one, which led to the renewal of the contract with said customer. Second, the OMC has been shown to other customers as well, aiding the explanation of the business activities and organisation of Allinq. Lastly, the OMC has been used internally, serving as a blueprint of the future organisation upon which strategic plans were developed. It has been used for information sharing and to simplify business complexities. To this day, the OMC is exhibited on one of the walls of Allinq. Additionally, for he was satisfied with the results the OMC had brought, Interviewee 1 has developed an OMC himself for a different department of the organisation. In terms of business and IT strategy fusion, **the OMC has been used to plot the IT landscape on the business activities**. In addition, the OMC has been a **main source of input for the organisational blueprint and the IT infrastructure development**.

As opposed to Allinq, within Univé the OMC has solely been used for the purpose it was originally developed. Several aspects layers were created by Univé in order to show the intertwined nature of business activities and IT with the purpose to **support the organisation's business information plan**. As done by Allinq, the OMC has hung at one of the walls of the organisation for a while, albeit slightly modified by Univé, as described above. In terms of business and IT strategy fusion, Interviewee 2 noted that the OMC did not contribute to the business strategy at all, solely to the BIP. He mentioned that IT Architects of the organisation were not extremely pleased with the OMC, as in their opinion the OMC contained too little concrete IT aspects. This could have been caused by the fact that Univé normally uses TOGAF for their architectural models. Although the OMC is not an architectural model, the familiarity with TOGAF could have led to false expectations regarding what the OMC would visualise.

8.4.1. Implications for the role of the OMC in Organisations

The OMC has been used for different purposes by Allinq and Univé. In Allinq, the OMC has mainly served as a common language among Allinq employees and their customers by providing an understandable overview and visualisation of the organisation. For Univé, the role of the OMC was to support the development and finalisation of the organisation's Business Information Plan. Both of these organisations thus used the OMC mainly for business-focused matters, rather than for IT-related ones. Regarding the fusion of business and IT, the role of the OMC differed between the organisations. For Allinq the OMC clearly provided means for the fusion of business and IT aspects, however for Univé, this was not the case. Although the OMC has been used for the business information plan of Univé, the IT Architects found that too little IT aspects were touched upon by the OMC.

In terms of best practices for the OMC Approach when aiming for the fusion of business and IT -activities and -departments, this could imply two things. Perhaps IT activities could be more prominently represented on the base layer of the OMC or IT aspect layers should be developed as an integral part of the OMC Approach in order to create an equally divided representation of both business and IT on the OMC. However, according to Sprokholt, Haijenga & Broersen (2015) the model is not a tool for the direct fusion of business and IT and neither an architecture model, but rather **the starting point for fusion and conversation by providing a commonly shared language**. Aspect layers can be added to the base layer of the OMC during a later stage to analyse business aspects such as IT, customer journeys, or specific strategic issues like cost and headcount in different OMC Areas. This principle is supported by the interview outcomes.

9. Results: The OMC & Digital Business Strategy

This chapter covers the relation between the OMC Approach and digital business strategy formulation, and aims to determine how the OMC Approach supports the formulation of a digital business strategy. First, an exploration of how the OMC Approach can support tackling the challenges of digital business strategy formulation is provided. Next, the role of the OMC Approach in the fusion of business and IT, which is a key characteristic of digital business strategies, is described. Lastly, it is described how the OMC Approach can serve as a method for digital business strategy formulation.

9.1. The OMC Approach & The Key Themes

The Four Key Themes that distinguish digital business strategies from IT- and business strategies, formulated by Bharadwaj et al. (2013), were provided in Chapter 3.3 to show the challenges of digital business strategies. This section explores how the OMC Approach can contribute to tackling those challenges, supported by examples from the conducted case studies where possible.

Scope of digital business strategies

The main challenges in terms of the scope of digital business strategies is digital business strategies encompassing the entire organisation, indicating that the organisational structure should be able to support the strategy (Bharadwaj et al., 2013) and an integral digital perspective should exist (Holotiuk & Beimborn, 2017). The base layer of the OMC does not provide direct support for organisation structure development, since it shows business activities rather than processes and organisational hierarchies. However, **the OMC will be able to aid in developing an integral digital perspective for the organisation**. Additionally, the base layer can be complemented with aspect layers that do support the mapping of business processes on activities and hence provide a basis for organisation structure development. In the workshops that are conducted during the OMC Approach, representatives from a wide spread of business domains are present and discussions among all parties regarding the digital objectives of the organisation are facilitated. In the end, these discussions result the final version of the OMC, which is therefore a representation of the conjoint perspectives of the representatives and serves as an integral perspective for the organisation.

The ability of the OMC Approach to support developing an integral digital perspective has explicitly been demonstrated in three of the five cases that were described in Chapter 5. In the case of Univé, representatives of the marketing department, strategy department, IT department, and internal business consultants attended the workshops. This diverse representation of the business domains of the organisation enabled the development of an integral digital perspective that could be supported by the entire organisation. In the EducOrg case, the representatives were divided into three domains; education, research, and business. Workshops were conducted separately in order to generate in-depth insight into the vision of each domain. To make sure the OMC did provide an integral perspective, an additional integral session was conducted towards the end of the project with representatives of each domain. This approach ensured that each business domain was thoroughly analysed and represented on the OMC, while maintaining alignment among the needs of all the domains and thus developing an integral image of the organisation. For Allinq, lastly, the discussion on business activities and service optimisation in the context of business professionalism during the OMC development led to the realisation that technology elements should be included in the strategy of the business, for they could provide serious competitive advantage. Therefore, the advisors of Anderson MacGyver formulated a digital business strategy in collaboration with Allinq's executive board. As such, the OMC contributed to the development of an integral digital perspective.

Scale of digital business strategies

Regarding the scale of digital business strategies, three challenges were defined in Chapter 3.3. First, the organisation needs to be viewed through digital glasses and new and more efficient ways of generating a profit and gaining competitive advantage need to be discovered (Mithas et al., 2012), for digital business strategies can support new ways of exploiting economies of scale. Second, to facilitate those economies of scale, actions of other players in the ecosystem need to be predicted. Lastly, effective relationships need to be maintained with partners and competitors (Bharadwaj

et al., 2013). **The OMC Approach facilitates open discussions on the strategy and vision of the organisation, which could result in the discovery of new initiatives to gain competitive advantage by defining new value propositions and centralising the customer in the approach.** This, however, is not a guaranteed result of the OMC Approach, but rather a positive side effect. The OMC shows all business activities of an organisation, its channels, and its actors. Its focus is to provide a comprehensive image of the organisation, and therefore the relationships and value streams within the entire ecosystems are not visualised on the OMC. This makes analysis of the ecosystem in order to determine opportunities for gaining economies of scale difficult. However, since the OMC does show all activities of the organisation, it is possible to assess for each activity whether it is specific to the organisation or a commonality in the industry. Subsequently can be determined if an activity might be better sourced to other organisations. Thus, although the OMC does not facilitate predictions of other players or ideas on how to maintain relationships, it has the potential to provide information on which business activities could be sourced to partners and to find opportunities for gaining competitive advantage.

The reasoning on how the OMC Approach supports tackling the challenges regarding the scale of digital business strategies is merely conceptual and has not specifically been demonstrated in any of the cases from Chapter 5.

Speed of digital business strategies

In terms of the speed of digital business strategies, the main challenge is to facilitate the speed of decision-making and enable fast product and service development by effectively exploiting available resources and competences (Holotiuk & Beimborn, 2017). It has been suggested by Holotiuk and Beimborn that accelerated decision-making can be realised by restructuring the organisation and implementing agile organisation structures. The OMC Approach does not directly support the entire design of new organisational structures, since the OMC does not show the architecture of an organisation. However, **the OMC visualises what the organisation should look like in terms of business activities, based on activity analysis, and can therefore be the basis from which new organisational structures are designed.** In addition, since during the workshops of the OMC Approach an agreement among all business domains of an organisation is accomplished in terms of the future of the organisation, this agreement alone might be able to facilitate faster decision-making at executive level. It can also prevent lengthy strategic discussions in the near future. Regarding faster product and service development, the OMC Approach provides a direction for product and service design by defining what the organisation aims to achieve in the future and which activities could support those new propositions. The development itself, however, is not directly accelerated by the OMC Approach.

The ability of the OMC Approach to aid the development of products and services has best been demonstrated in the case of Allinq. As explained in Chapter 5, before creating the OMC, Allinq suffered from inefficient work processes that were all very similar but coordinated and executed in different ways. By analysing those processes, the OMC eventually visualised the essence of the work processes and showed the business activities of the organisation. By showing such an overview of the organisation, it was possible for Allinq to redesign their work processes to be more efficient. In the case of Allinq, the OMC has thus been applied to enable service development.

Value Sources of digital business strategies

In the context of value sources of digital business strategies, the development of new products, services, and business models creates several challenges, especially since an estimation needs to be made on what the future holds in order to gain competitive advantage (Mithas et al., 2012). In the OMC Approach, the workshop participants and advisors develop a digital business strategy. During that process, they discuss which new products and services should be part of that strategy. **The OMC Approach thus supports the development of conceptual ideas on new products and services,** but the actual development of those value sources takes place while implementing and executing said digital business strategy. **The OMC does, however, visualise the business activities that should be executed to realise the new value propositions, and therefore provides the first step towards the realisation of those products and services.** In terms of the development of new business models, i.e. the recognition of new ways of value capturing and delivering, the OMC Approach has a more direct impact. By envisioning the future context and business activities of the organisation and thus providing an overview of the future organisation, the OMC paints a picture of new opportunities

to generate revenue. This can for example indicate the emergence of new partnerships and thus the exploitation of new economies of scale, a more efficient stream of business activities, or the development of new value propositions. Although the OMC base layer does not show the business model(s) and revenue stream of the organisation, this can be visualised using the aspect layers.

The best example of the five cases that shows how the OMC Approach can support the development of new value sources, is the case of EducOrg. EducOrg wanted their business activities in the education-domain to be able to support their new proposition of providing modular education, meaning that students would have to be able to develop their own personal package and combination of courses. This vision had a strong impact on the educational planning and scheduling activities and systems of the organisations, and influenced the flow of activities in the educational value stream. The resulting business activities were shown on the OMC, which thus provided a first step to the further development and implementation of the new value proposition.

9.2. The OMC Approach & Business and IT Strategy Fusion

This section aims to explore how the OMC Approach supports the fusion of business and IT of organisations. To that end, an overview of business and IT alignment is provided first to show the perspective on business and IT strategies that has been applied by researchers and practitioners over the past decades. This is followed by an explanation of how the perspective of fusing business and IT differs from business and IT alignment. Next, the exploration of how the OMC Approach aids the fusion of business and IT is described.

Chapter 3 described that, over the past decades, the rule of thumb was to align business- and IT strategies with each other, a concept originating from Henderson & Venkatraman (1993). Numerous researchers have built upon their research by further investigating the theory of the subject (Aversano, Grasso, & Tortorella, 2012; Chan, Huff, Barclay, & Copeland, 1997; El Mekawy, Rusu, & Ahmed, 2009; Lederer & Salemla, 1996; Sabherwal & Chan, 2001; Silva, Plazaola, & Ekstedt, 2006; Teo & Ang, 1999; Ullah & Lai, 2013) or discovering the practical implications and challenges of business and IT strategy alignment (Avison, Jones, Powell, & Wilson, 2004; Bartenschlager & Goeken, 2009; Motjolo-pane & Brown, 2004; Zarvić, Wieringa, & van Eck, 2008). Lederer and Salmela (1996), for example, developed a theory on strategic information systems planning, based on the alignment principles, which aimed to support researchers and practitioners understand how information systems could support the business goals of an organisation. Chan, Huff, Barclay, and Copeland (1997) found by means of a survey that the strategic alignment can have a positive effect on business performance. Teo and Ang (1999) developed critical success factors for business and IT strategy alignment and found that, among other factors, the alignment of IS and business strategies can only succeed with the commitment of executives of an organisation. By means of an empirical study, Sabherwal and Chan (2001) discovered that alignment can influence the business success of organisations. This is supported by Bartenschlager and Goeken (2009), who state that *"firms cannot be competitive if their business and information technology strategies are not aligned"*. Regardless of the amount of research in favour of business and IT strategy alignment that has been conducted over the past 20 years, the perspective on the interplay and relation between business and IT is changing due to advances in technology. The time has come to see and utilise the business value that IT can deliver and observe the established principles of business and IT strategy alignment through new glasses. The fusion of business and IT strategies into one digital business strategy, rather than the two strategies co-existing, should fit this new perspective (Bharadwaj et al. 2013; Kahre, et al. 2017).

The OMC Approach can support the fusion of business and IT strategies in two ways; (1) by including both business and IT representatives in the process of formulating the digital business strategy and (2) by supporting the development of a shared vision between business and IT. **One of the principles of the OMC Approach is to make sure the entire organisation, especially business and IT domains, are represented during the workshops.** This facilitates discussions between business and IT representatives from the start of the formulation of the digital business strategy. It thus enables the visions and strategies of both departments being represented by the digital business

strategy and prevents either one of the departments being ignored or formulating a strategy individually. While developing the digital business strategy, the two strategies are fused by incorporating the technological possibilities in the business strategy. During the workshops of the OMC Approach, business and IT representatives jointly define the value propositions of the organisation and the role that IT will play to realise those propositions, and thus develop a shared vision which is an important characteristic of a digital business strategy (Jentsch, Schlosser, & Beimborn, 2014; Leonard, 2007; Preston & Karahanna, 2009).

The OMC is developed from a business point of view, rather than from an IT point of view. It is not an architectural model of the organisation, but a representation of business activities and the context of the organisation, visualised in the simplest way to prevent needless complexity. Hence, it ensures the understandability of the OMC for the entire organisation. Finding a common language for business and IT can be a challenge due to differing focus and objectives (Cash et al., 2017). Nevertheless, **the OMC aims to offer a solution to that challenge by meeting the needs of both business and IT departments**. A shared language such as the OMC mediates a shared vision between business and IT as it provides a means to communicate and understand each other (Jentsch et al., 2014), and therefore the OMC supports the fusion of the visions and strategies business and IT departments.

9.3. The OMC Approach & Strategy Formulation

Chapter 9.2 explained how the OMC Approach supports the fusion of business and IT strategies, a key characteristic of digital business strategies. As explained in Chapter 3, a digital business strategy is fundamentally a business strategy with incorporated digital elements. Therefore, the principles of 'normal' business strategy formulation can apply for digital business strategy formulation, in addition to the objective of fusing business and IT strategies. The OMC is based on the Business Model Canvas (Osterwalder & Pigneur, 2010) and the Value Chain (Porter, 1985), which are renowned scientific frameworks for strategy formulation (see Chapter 4.2). Hence, the OMC is a starting point for strategy formulation as well. Additionally, the OMC Approach uses existing strategy and vision documents made by the client-organisation. The key statements are deduced from these, and from the basis of the OMC. This method ensures the OMC displays the future context and business activities of an organisation. This is enabled by resources, information, and processes, based on which the strategy can be further specified.

To conclude, the OMC Approach aids the formulation of a strategy by applying a combination of scientifically and practically renowned frameworks for strategy formulation and tailoring them to enable the fusion of business and IT strategies. The OMC Approach thus supports the formulation of a digital business strategy.

10. Research Reflection

This chapter aims to discuss the quality and accuracy of this research by determining its validity and reliability. Although the research was conducted by means of established research methods, it is necessary to assess its quality in order to enable transparent interpretation of the results. In this chapter, the construct validity, content validity, external validity, and reliability are discussed. Internal validity is not elaborated upon, since descriptive case studies do not allow for its assessment (Yin, 2013). The chapter is concluded by some general considerations regarding the overall quality of the research.

10.1. Construct Validity

Construct validity relates to the correct definition of constructs in research, ensuring agreement between the theoretical concept and the measuring instruments. It assesses if the instrument measures what was intended to be measured (Oates, 2006; Recker, 2013). This research 'measured' the OMC Approach. It concerned the analysis and standardisation of the OMC Approach, which is a method for digital business strategy formulation. The concept 'method' was defined as a *"An approach to perform a systems development project, based on a specific way of thinking, consisting of directions and rules, structured in a systematic way in development activities with corresponding development products"* (Brinkkemper, 1996, p. 275). Essential concepts in the definition for this thesis were 'rules', 'activities', and 'corresponding products', which according to the definition together form the foundation for a method. To that end, in the process of standardising the OMC Approach, the analysis focused on defining and visualising the rules, activities, and products of the OMC Approach, ensuring that a method would indeed be the end-product of the research. The above leads to the conclusion that the construct validity of this research suffices, since the proposed OMC Approach indeed consisted of rules, activities, and corresponding products.

10.2. Content Validity

Content validity concerns the quality of the measurement instrument of the research, focusing on whether the instrument generates the right and representative data and covers all aspects of a construct (Recker, 2013). The research aspect best suited for an assessment of content validity are the interviews that were conducted with client participants in the cases. Since this research was of a descriptive nature, which aims to provide a comprehensive overview of the content and context of a method, the objective of the interviews was to gather additional perspectives on the OMC Approach. To do so, the format of the interview was semi-structured in order to uncover as much information and details as possible (Oates, 2006). Structure was provided by using an informal interview protocol, in which several topics of conversations were listed as a guideline. These topics included the essential concepts of the construct, ensuring that the perspective of the clients on these elements were discussed. In terms of content validity, two statements can be made. First, the interviews have yielded representative data because the format of the interview allowed the interviewees to speak freely and to provide as much of their perspective as possible. Second, the interviews covered all aspects of the construct since the essential concepts 'rules', 'activities', and 'corresponding products' were discussed with the participants. The content validity of this research has thus been secured.

10.3. External Validity

External validity regards the generalisability of the research, meaning whether the same results will be yielded in different cases (Oates, 2006; Recker, 2013). This generalisability can be tested by replicating the research in different cases or situations. The OMC Approach was developed based on five case studies, which were conducted at different organisations, in different domains, at different times by different teams of advisors. Additionally, all case analyses and resulting products (i.e. the OMC Approach; the reference method, reference model, and the situational models) were validated with experts on the OMC Approach to assess their presumed correctness and applicability in new cases. The variety of the cases that were input for the method and the number of expert validation sessions led to the cautious

assumption that the external validity of the research has been warranted, i.e. the same reference method will be created with different cases. Although the in-between variety of the cases was high, it should be noted that the possibility exists that the choice of cases has influenced the resulting reference model. To illustrate, the approach for designing the model was to assess the OMCs of the cases and to determine which OMC Areas occurred most often on them. These OMC Areas were then included in the reference model. A different set of cases could have influenced the number of occurrences of OMC Areas and could thus have yielded a different reference model. However, the number of expert validation sessions should have ensured that the models would be applicable to multiple projects and should thus have preserved the generalisability of the models. The external validity of the research results is therefore acceptable, which translates to the OMC Approach being suited for digital business strategy formulation projects in general. However, this should be tested by applying the research method with other cases and applying the OMC Approach in practice at different clients performed by different advisory companies.

10.4. Reliability

Reliability concerns the repeatability of the research, describing the consistency of the variables of the research (Recker, 2013). This implies that the research, when conducted again under the same conditions, would yield the same results. In order to facilitate reliability of a research, it is a prerequisite that methods and procedures are documented carefully. The research approach of this thesis was described in-depth in Chapter 2 and was based on two established methods for method engineering by Van de Weerd et al. (2008) and Van de Weerd et al. (2007). As such, it could be assumed that the reliability of this research was guaranteed. However, part of this research consisted of gathering the perspectives of clients who had worked with the OMC Approach. Since the interviews were semi-structured (as described in Chapters 8 and 10.2), it is not reasonable to assume that the exact results would be yielded if the research were to be conducted again. If repeated, the interviews might flow in a different direction and hence provide different or extra outcomes. Additionally, it is possible that interviewees have changed their opinion over time due to new experiences, which would result in different outcomes as well.

10.5. Critical Reflection on Research Quality

In addition to the assessment of the validity and reliability of this research, some general statements regarding its quality need to be made in order to provide the complete picture.

Regarding the case analyses and standardisation of the OMC Approach, it must be noted that not all cases were conducted in the context of a digital business strategy formulation project. This should, however, not have influenced the outcomes of the case analyses and the final method, for the OMC Approach focuses on the development of an OMC, not the development of strategy. The future purpose of the OMC does not influence the base layer of the OMC, but is reflected in the aspect layers. These layers were omitted from this research and should be investigated in the future. Taking this into consideration, it can be concluded that the variable objectives of the cases have not been a compromising issue in this research. It should also be acknowledged that this research suffered from lack of empirically testing the OMC Approach. The method was created based on historic practical cases and expert validations, its effectiveness, however, has not been examined in this research due to time constraints.

Since the OMC Approach is executed for and with client organisations, the perspective of the client was gathered in an attempt to create a more holistic image of the method. Although two clients from different organisations were interviewed, the risk of a slight bias in favour of the OMC Approach exists for both. Both interviewees were actively involved in the development of the OMC to make sure they would be able to discuss all important elements of the construct. Their involvement, however, implies they have had influence on the final results of their case, making it more plausible they were satisfied with those results. This might have skewed the interview outcomes in favour of the OMC Approach, and in retrospect it would have been wise to interview a client who was less satisfied with the final result of the project as well. Additionally, some of the content of the interviews might have been misinterpreted due to language

translation constraints. The interviews were conducted in the native language of the interviewer and interviewees (i.e. Dutch) in order to ensure them being able to freely convey all information they deemed important and prevented misunderstandings. The interview results were translated to English afterwards, which creates room for error during translation. Lastly, it should be taken into account that the interviews were based upon the memories of historic events of the interviewees, which may have caused details to be misremembered or forgotten completely. These issues were countered as much as possible by letting both interviewees review the finished textual outcomes of their interviews. However, it remains a weakness in this research.

In terms of validation of the results, two points are worth mentioning. First, concerning the case analyses, it must be noted that the expert validation of the models took place retrospectively based on the memory of the experts. . Although a direct concern for the value of the validation sessions does not exist, it should be taken into account that minor details might have been misremembered, causing small differences between the case analysis and the reality of events. Second, the lack of user validation should be addressed. Due to time constraints and practicalities, the case models have not been validated with the respective clients. Although this would have provided a more holistic image of the cases, it is no direct threat to the validity of the research since the main input for the cases was the material that the cases delivered and the validation sessions solely aimed to verify assumptions.

11. Conclusion

This thesis described a study that was conducted in the field of digital business strategy. The focus of the study was the formulation of digital business strategy and the exploration and standardisation of the Operating Model Canvas Approach (OMC Approach), which is a method for digital business strategy formulation. As such, the main research question of this research was:

“How does the Operating Model Canvas support the formulation of digital business strategy and what are the determinants that contribute to that formulation?”

In order to structure the research and thoroughly answer the main research question, five sub-questions (SQ) were formulated, each with their own sub-questions (sub-SQ). The answers to the SQ's were given throughout this thesis document and are summarised below. First, the answers to the SQ's will be provided, after which the main research question will be answered. Lastly, suggestions for future research are been provided.

11.1. Answers to the Sub Research Questions

This section summarises the answers to the sub-questions (SQ) of this research. Each SQ has been marked by a chapter number, indicating the chapter in which the full description of the answer can be found.

SQ1: What is digital business strategy formulation? (CH3)

In order to answer SQ1, two sub-SQ's were designed. The first sub-SQ concerned the concept of digital business strategy and its definition. The conducted systematic literature review revealed that multiple definitions exist for the notion of digital business strategy. In addition, the term digital business strategy is at times intertwined or confused with the term digital strategy. In this thesis, the definition for digital business strategy by Bharadwaj et al. (2013) was chosen as the ruling definition, for it emphasises the importance of the digital components of a digital business strategy and the fact that digital business strategies exist organisation-wide. Additionally, this definition was used by many scholars in the past 4 years. As such, digital business strategy is defined as: **“An organisational strategy formulated and executed by leveraging digital resources to create differential value”** (Bharadwaj et al., 2013).

The second sub-SQ concerned an enumeration of approaches that exist to formulate digital business strategy. The literature review, however, showed that little research had been done on digital business strategy formulation approaches. The two works that were found did not provide a clear approach, but merely defined applicable strategic directions (Ross et al., 2017) or proposed a framework for digital business strategy formulation, acknowledging more future research was still required (Holotiuk & Beimborn, 2017). **Due to the lack of existing approaches for digital business strategies, approaches for traditional business strategy formulation were explored (see Figure 3-3), since digital business strategies share common ground with traditional business strategies.** To that end, approaches such as Porter's Generic Strategies and PESTEL were investigated and assessed for their applicability to digital business strategies. It was concluded that, although at first sight the approaches seemed to fit digital business strategy formulation as well, they did not suffice. **The lack of technical components and support of the complexity of digital business strategies led to the conclusion that an approach specifically tailored to digital business strategy should be developed.**

Taking the above into account, the answer to SQ1 is that digital business strategy formulation is the development of *“An organisational strategy formulated and executed by leveraging digital resources to create differential value”* (Bharadwaj et al., 2013), for which no specific approaches have been described in scientific literature yet.

SQ2: What is the Operating Model Canvas? (CH4 & CH6)

SQ2 aimed to define what the OMC entails and consisted of three sub-SQ's. The first sub-SQ regarded the context and purpose of the OMC, which was described by Sprokholt et al. (2015). It was shown that the OMC can serve as a means of communication between the business and the operations of the organisation. **Especially between business- and**

IT departments, the OMC can support the development of a shared vision between the two regarding the strategy of the organisation. In addition, since the OMC is based on strategy documentation created by the client organisation, the OMC visualises future business activities and the context of the organisation. Its purpose is thus to project where the organisation will go and what the organisation will do in the near future.

The second sub-SQ aimed to generate more insight into the scientific fundamentals on which the OMC has been initially built. **The two frameworks that were the basis for the OMC are the Business Model Canvas (BMC) by Osterwalder and Pigneur (2010) and the Value Chain by Porter (1985).** The base layer of the OMC is a combination of elements from both frameworks. From the BMC, the building blocks 'Key Partners', 'Customer Segments', 'Channels', and 'Value Propositions' were adapted, albeit with different terminology. The Value Chain was used to substitute the BMC building block key activities. Therefore, the OMC does not only project the key activities of the organisation, but shows all business activities. These are visualised in a value chain which making the distinction between primary and supporting business activities, as does the Value Chain by Porter. The BMC building blocks 'Cost Structure' and 'Revenue Streams' were left out of the base layer of the OMC and can be projected in an additional aspect layer, if required. Projecting this information in an aspect layer enables the information being linked to the business activities.

The third sub-SQ focused on the concepts and mechanisms that are applied on the OMC, aiming to define the used modelling techniques and basic principles of the OMC. Through the case analyses, it was found that **the modelling techniques applied in the BMC and Value Chain are adhered to as much as possible during the modelling of an OMC.** A key difference with the BMC, however, is the use of the corporate design style of the client organisation in order to generate recognition among participants. The OMC consists of a base layer that can be complemented by several aspect layers. **The base layer shows the stakeholders, i.e. customers, consumers, and suppliers, and all business activities of the organisation. The aspect layer provides additional, more fluid information on top of the base layer, such as the applications of the organisation or the project portfolio.** An aspect layer can thus show which activities or stakeholders of the organisations are involved in or affected by certain additional business aspects (Sprokholt et al., 2015).

Based on the above, the answer to SQ2 is that the OMC is an approach to develop one overview of an organisation on one side and a shared vision between business and IT departments on the other side, based on the two scientifically renowned frameworks Business Model Canvas and Value Chain.

SQ3: How is the Operating Model Canvas constructed? (CH5, CH6 & CH8)

SQ3 revolved around defining the OMC Approach, which was done by conducting five case studies and analysing the activities and deliverables of each of them (see Figures 5-1, 5-4, 5-7, 5-9, and 5-12). SQ3 consisted of three sub-SQ's, of which the first aimed to find out what the process for OMC construction is. Based on the case studies, a reference method for the construction of the OMC was defined (see Figure 6-4). **It was found that the construction of the OMC can be divided into 6 phases: (1) Preparation, (2) OMC Construction, (3) Conduction of Kick-Off Workshop, (4) OMC Development, (5) Conduction of Workshops, and (6) Finalisation.** During the preparation phase, necessary data and input is gathered to serve as the basis for the first version of the OMC. Additionally, the planning of the remainder of the project takes place. The second phase concerns the construction of the first version of the OMC based on the collected materials. This version is validated during the third phase, in which the objectives and content of the project are explained to the participants and the OMC is discussed. An iteration is initiated after this phase, during which the OMC is further developed based on the gathered feedback, and new versions are discussed during a workshop. In general, three iterations will suffice to develop a satisfying OMC. Once it has been determined that the OMC is finished, the final phase starts, during which the OMC is finalised and sent to the client.

The second sub-SQ aimed to discover best practices for the development of the OMC. Best practices were found during the case studies and an interview was conducted to gather additional practices in order to ensure the completeness of the list. **Best practices were defined for both the process of developing an OMC as an advisor as well as for the model itself.** The complete list with explanations can be consulted in Chapter 6.5.

The third sub-SQ regarded client acceptance and opted to find out how this acceptance was influenced by the process and deliverables of the OMC Approach. To that end, two interviews were conducted with two of the case organisations. It seemed that **the process of the development of the OMC, during which the client is actively involved, mainly caused the engagement of the client.** The OMC was perceived to be the result of joint efforts between advisors and the client, which, together with the use of the corporate colours and style of the organisations, led to the client recognising and accepting the model.

The answer to SQ3 is thus that the OMC is constructed using a six-phase process in which the client is actively involved, which to the acceptance of the final result of the project.

SQ4: What are the situational factors that influence the Operating Model Canvas? (CH7)

SQ4 focused on finding out how situational factors influence the OMC Approach and why. Prior to starting this research, it was suggested by Anderson MacGyver that the type of industry of the client could cause the immense differences that were observed among developed OMCs. It was confirmed in this research that **the type of industry could indeed have an impact on the OMC Approach.** To that end, the first sub-SQ of SQ4 aimed to discover how the process, i.e. the activities and deliverables, of the OMC Approach was influenced by the type of industry in which the client organisation operates. It was found that the type of industry does not have an impact on the activities and subsequent deliverables of the OMC Approach. The steps defined in Chapter 6.3 seem to be applicable for any type of industry.

The second sub-SQ focused on finding out if and how the reference model of the OMC was influenced by the type of industry the client organisation operates in. This research has shown that there indeed exists an influence of the industry of the client on the OMC model. **The part of the OMC that visualises elements from the Value Chain, i.e. the primary and supporting business activities and the value propositions, appears to differ strongly among industries.** Especially the flow and content of activities in the value chain and the positioning of sales and marketing activities seemed to vary in different situations. To that end, situational models were created for five industries, portraying the business activities typical to each of those industries (see Figures 7-6 to 7-10).

Taking the above into account, the answer to SQ4 is that the situational factor that influences the OMC is the industry in which the client organisation operates. Influence will not be seen in the process and deliverables of the OMC Approach. However, the OMC does show situationality through variations in the primary and supporting activities and the value propositions.

SQ5: How does the Operating Model Canvas support digital business strategy related decision-making? (CH9)

The final SQ aimed to discover the relationship between the OMC Approach and the formulation of a digital business strategy and consisted of two sub-SQ's. The first sub-SQ of SQ5 aimed to provide clarity on which themes related to digital business strategy the OMC could contribute. Via the literature review, four themes were found, defined by Bharadwaj et al. 2013. The four themes encompass (1) the scope of digital business strategies, (2) the scale of digital business strategies, (3) the speed of decision-making concerning digital business strategies, and (4) the sources of business value creation and capture in terms of digital business strategies. The conducted case studies showed that the OMC can contribute to three out of the four themes. Challenges regarding the scope of digital business strategies can be tackled by the OMC by **supporting the development of a digital perspective** for the entire organisation. The speed of digital business strategies can be countered by the OMC providing a basis for future organisation development and generating a shared vision within the organisation, possibly leading to **faster decision-making.** Lastly, the value sources of digital business strategies are supported by the OMC portraying the concepts of new products and services and **depicting the business activities that will be necessary to realise those new value sources.** The case studies did not show concrete evidence that the OMC could contribute to the scale of digital business strategies. In theory, however, it can be argued that the OMC can be the first step into developing a sourcing model for business activities and IT for the organisation.

The second sub-SQ of SQ5 focused on the role of the OMC in terms of fusing business and IT strategies, which is a characteristic of digital business strategies. It was found that the **main contribution of the OMC to this fusion is the**

delivery of a model that serves as a means for communication that is understandable for all parties. The OMC thus provides a shared language and subsequently develops a shared vision for the organisation, which reflects both business and IT strategies. The OMC can visualise the contribution of IT for business activities.

Based on the answers to these two sub-SQ's, the answer to SQ5 is that the OMC supports digital business strategy related decision-making by providing support for three out of the four themes that relate to digital business strategies. In addition, it provides a starting point for further strategy development that is understandable for all parties involved, focusing on business and IT departments.

11.2. Answer to the Main Research Question

The answers to the sub questions, which are described in Chapter 11.1, result in the answering of the main research question; “*How does the Operating Model Canvas support the formulation of digital business strategy and what are the determinants that contribute to that formulation?*”. **The OMC supports the formulation of digital business strategies by providing an overview of the context and business activities of an organisation, which is a starting point for strategy discussion.** The interactive discussions that are conducted while executing the OMC Approach generate a shared vision among business and IT departments, supporting the fusion of business and IT strategies.

The determinants contributing to the digital business strategy formulation are found in proper execution of three specific aspects of the OMC Approach, which are essential for achieving the objective of formulating a digital business strategy. The first aspect is the use of internal documents of the client as a basis for the OMC, for this ensures the OMC reflects the strategic direction of the client and generates recognition of the content of the OMC among the participants of the workshops and recipients of the strategy. The second aspect is the interaction during the workshops, which is important for ensuring the OMC fits the organisation and for facilitating discussion among participants, which generates the shared vision as a basis for the fusion of business and IT strategies. The third and final aspect is the layout of the OMC, using the corporate design style of the client to stimulate recognition and acceptance within the client organisation and modelling techniques, such as white spacing and simple squares, to maintain the simplicity of the OMC. Lack of proper execution of these aspects might result in failure to formulate a digital business strategy. Incorporating the determinants and properly executing the OMC Approach, however, should result in the formulation of a digital business strategy.

11.3. Future Research

During this research, new opportunities for future work were identified. This section describes a number of these future research possibilities, divided into two categories. First, the theoretical options are provided, followed by suggestions for empirical research.

11.3.1. Theoretical Work in the Research Field

Since the field of digital business strategy is relatively young and has emerged from the field of business and IT strategy alignment, it is relevant to conduct more theoretical studies to deepen the scientific knowledge on the field. Although the notion of digital business strategy has been repeated in several studies over the past five years, there seems to be a lack of theoretical understanding of digital business strategies. Research should be conducted to create a theoretical framework for digital business strategy in order to structure the knowledge gained so far on the topic.

Digital business strategies have emerged from the concept ‘*business and IT strategy alignment*’. It could therefore be valuable to make a thorough theoretical comparison between the two paradigms *digital business strategy* and *alignment* to determine what the core differences and practical implications of those differences are. This thesis provided a starting point by stating that a digital business strategy is a fusion of business and IT strategies, rather than employing two co-existing strategies. This should, however, be researched more in-depth in the future.

In terms of digital business strategy formulation, so far almost no research has been conducted. This thesis has aimed to contribute to the field by describing and standardising a method for digital business strategy formulation. However, multiple approaches should be researched and developed. For traditional business strategy formulation numerous approaches exist, as has been demonstrated by the non-exhaustive listing in this thesis. Achieving such a body of work of approaches should be an objective in the field of digital business strategy as well. In addition to developing new frameworks and approaches for digital business strategy formulation, the existing approaches for traditional business strategy formulation could be explored to discover how the frameworks have influenced each other. The first step towards such research was made in this thesis by providing the timeline of approaches (see Figure 3-3). However, a thorough literature review is required to determine the relative influences.

11.3.2. Research on the OMC Approach

Besides developing the theoretical knowledge in the field of digital business strategy, the practical implications should be researched more in-depth. Potentially developed frameworks and approaches for digital business strategy formulation could be validated and verified in practice using case studies for different organisations and industries.

Regarding the development of the OMC Approach specifically, multiple research suggestions are listed here:

- It would be interesting to apply and test the effectiveness of the reference method for the OMC Approach that has been developed in the context of this thesis, incorporating user evaluations. Subsequently, the developed situational models for the OMC should be applied to multiple organisations within one industry in order to validate the models in practice, rather than just in theory. A holistic multiple case study per industry would be a good start for the development of the situational models.
- The effectiveness of the reference method for the OMC Approach can be compared with potentially developed other digital business strategy approaches.
- In addition to the effectiveness of the reference method for the OMC Approach, the longitudinal effect of the formulated digital business strategy should be researched in order to possibly discover sources of improvement in the OMC Approach.
- The concept of aspect layers should be researched more in-depth, since aspect layers are an essential part of the OMC. This research focused on the base layer of the OMC, and therefore aspect layers were omitted from most of the research, they are, however, in need of attention in further research.
- Other aspects of the OMC Approach deserve attention. During this research, factors influencing the client satisfaction of the OMC Approach were explored, this topic could, however, be investigated more in-depth, to discover how the client satisfaction can be improved or optimised. Additionally, the activities of the OMC Approach could be assessed with the objective to, for example, discover optimal workshop approaches and - participant numbers and defining sub-approaches for the key statement analysis.
- The OMC itself could be further researched by applying different visualisation techniques and uncovering which techniques yield the best results with the client.
- Other applications of the OMC beyond the formulation of a digital business strategy can be explored, such as its role in service design activities and its usage in business activity value analysis.
- Since ecosystem and supply chains of organisation are increasingly important in the digital era, it could be relevant to investigate how the OMC can be extended or complemented by a view displaying the position of the organisation in the ecosystem or value chain.

This study showed that the OMC Approach provides a solid foundation for digital business strategy formulation and paved the way for future research.

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Appendix A: Activities and Concepts Case Studies

Case 1 - Data PostNL

Table A - 1: Activities of PostNL

Phase	Activity	Description
Preparation Digital Business Strategy Formulation	Plan interviews and workshops	The interviews necessary for information gathering are planned in collaboration with the client, as well as the expected interactive sessions. This in total leads to the PROJECT PLANNING.
	Collect existing strategy documentation	Existing documents regarding strategy are gathered from various sources within the client. All documents are part of the overall DOCUMENT COLLECTION.
	Collect existing IT documentation	Existing documents regarding IT, such as application portfolio and landscape, are gathered from various sources within the client. All documents are part of the overall DOCUMENT COLLECTION.
	Conduct interviews on strategy vision	Interviews with various IT managers of the client are held to obtain additional information regarding the client's vision.
Prepare and Conduct First Workshop	Analyse documents for key statements	The material that has been obtained through documentation and interviews is analysed and specific statements that reveal underlying information about the client's vision and strategic objectives are marked and gathered in one place as KEY STATEMENTS.
	Deduce strategic themes from key statements	Bottom up, KEY STATEMENTS are grouped and optionally merged, leading to several VISION THEMES.
	Create workshop content	The KEY STATEMENTS and VISION THEMES are visualised in a PowerPoint presentation, together with the PROJECT PLANNING and any other relevant findings.
	Discuss key statements with workshop participants	During the first interactive session with the client, KEY STATEMENTS are discussed and revised in collaboration with the client.
	Discuss strategic themes with workshop participants	During the first interactive session with the client, VISION THEMES are discussed and revised in collaboration with the client.
OMC Construction	Create OMC Area customers	Visualisation of client's customer segments is composed and added to the OMC.
	Create OMC Area standard mail	Visualisation of client's core value generating business activities is composed and added to the OMC.
	Create OMC Area services	Visualisation of client's services is composed and added to the OMC.
	Create OMC Area feeders	Visualisation of client's feeders is composed and added to the OMC.
	Create OMC Area backbone	Visualisation of client's supporting business activities is composed and added to the OMC.
	Create OMC Area logistics	Visualisation of client's other logistics is composed and added to the OMC.
	Create OMC Area commerce standard mail	Visualisation of client's front-office activities is composed and added to the OMC.
	Revise visualisation OMC	The manner in which items of the OMC are connected and visualised is reviewed and possibly revised.
Prepare and Conduct Second Workshop	Create workshop content	A summary of the results of the FIRST WORKSHOP is created and provided in a slide deck. Furthermore, the OMC in its as-is state, is printed on A0 paper in order to serve as focus point during the workshop.
	Provide feedback on results first workshop to workshop participants	The outcomes of the first workshop are presented to the client.
	Present OMC on A0 paper to workshop participants	The first version of the OMC is presented to the client in paper-form.
	Visualise key statements on A0 paper OMC	In collaboration with the client, the KEY STATEMENTS are projected on the paper version of the OMC. This enables visualisation of which business activities are related to the realisation of which KEY STATEMENTS.

OMC Revision	Process feedback from workshops	The outcomes of the first and second workshop are processed in the OMC and KEY STATEMENTS.
	Conduct interviews on operations	Interviews with various operational employees are conducted to enhance and complement the business activities projected on the OMC.
	Revise OMC	The information gathered during the interviews and workshops is processed in the OMC.
Prepare and Conduct Third Workshop	Create workshop content	A presentation of summary of the results and activities of the previous workshops is created, as well as an overview of the KEY STATEMENTS. The newest version of the OMC is again printed on A0 paper.
	Project keys statements aspect layer on OMC	The KEY STATEMENTS ASPECT LAYER is projected on the digital version of the OMC.
	Provide feedback on results second workshop to workshop participants	The outcomes of the second workshop are presented to the client.
	Determine strategy key domains	In collaboration with the client, the areas of implementation of the digitalisation strategy are created, named STRATEGY KEY DOMAINS.
	Combine key domains with key statements	In collaboration with the client, the implementation of the KEY STATEMENTS is grouped into several STRATEGY KEY DOMAINS.
OMC Finalisation	Process feedback from workshops	The outcomes of the third workshop are processed in the OMC.
Prepare and Conduct Fourth Workshop	Create workshop content	A presentation containing the final version of the OMC, including an OMC with an information stores aspect layer and KEY STATEMENTS ASPECT LAYER
	Project strategic key domains on OMC	The STRATEGY KEY DOMAINS are projected on the OMC.
	Provide feedback on results third workshop to workshop participants	The outcomes of the third workshop are presented to the client.
	Determine implications key domains	The implications of the STRATEGY KEY DOMAINS, namely the STRATEGIC DIRECTION, DESIGN, POST REVIEW, ACTIVITY, DEPENDENCY, IMPACT, SUBJECT, AND IMPLEMENTATION STRATEGY, are constructed in collaboration with the client.
Digital Business Strategy Finalisation	Create route map for strategic plans	A brief overview of the planning of activities for implementing the strategy is created.
	Perform financial analysis	The financial requirements for achieving strategic goals are calculated.
	Combine project outcomes in report	The OMC, KEY STATEMENTS, STRATEGY KEY DOMAINS and all entities associated are combined to one strategic document.
	Present outcomes to EC	The DIGITAL BUSINESS STRATEGY REPORT is presented to the executive board of the client.

Table A - 2: Concepts of PostNL

Concept	Description
ACTIVITY	Part of the STRATEGY KEY DOMAIN that describes the activities that need to be dealt with in collaboration and cooperation.
CURRENT SITUATION OMC	A type of OMC that presents the current business situation of the client
DEPENDENCY	Part of the STRATEGY KEY DOMAIN that describes dependencies and interdependencies with other domains or projects
DIGITAL BUSINESS STRATEGY REPORT	The final deliverable of the project. It contains the constructed digitalisation strategy and the OMC of the client
DOCUMENT COLLECTION	The total of documents obtained at the client. Can contain documents regarding strategy objectives, the client's vision, IT-related subjects, and other topics relevant for the project
FINANCIAL ANALYSIS	Analysis determining the financial resources required to achieve the strategic goals of the digital business strategy.

FIRST WORKSHOP	An interactive session with the client during which the PROJECT PLANNING, KEY STATEMENTS, and STRATEGIC THEMES are presented, discussed, and revised.
FOURTH WORKSHOP	A final session with the client, using a slide deck. The deck contains a status overview of the project planning, a summary of the previous workshop's results, and a description of the strategy governance. Moreover, it contains the STRATEGY KEY DOMAINS to be presented and discussed again.
FUTURE SITUATION OMC	A type of OMC that presents the possible future business situation of the client
IMPLEMENTATION STRATEGY	Part of the STRATEGY KEY DOMAIN that describes how and when the KEY STATEMENTS of the STRATEGY KEY DOMAIN will be implemented
INTERVIEW OUTPUT OPERATIONS	The information regarding the client's operational practices and business processes obtained during interviews that are held with operational employees. The OUTPUT is used to enhance the visualisation of the business activities on the OMC.
INTERVIEW OUTPUT STRATEGY	The information regarding the client's strategy and vision obtained during interviews that are held with IT and business managers
KEY STATEMENT	A remark or phrase from the document collection or interviews that provides essential information regarding the business strategy of the client, also known as business objective
KEY STATEMENTS ASPECT LAYER	An aspect layer of KEY STATEMENTS on the OMC that shows which KEY STATEMENTS possibly influence which business activities
OMC AREA	Visual element containing information on the business regarding one specific business unit or activity. Multiple OMC AREAs combined together create the OMC. Various types of OMC AREAs exist, such as CUSTOMERS, STANDARD MAIL, SERVICES, and more.
OMC AREA BACKBONE	Visualises supporting business activities such as human resource management.
OMC AREA COMMERCE STANDARD MAIL	Visualises front-office business activities such as sales and accountancy.
OMC AREA CUSTOMERS	Visualises the customer-segments of the client.
OMC AREA FEEDERS	Visualises business feeders.
OMC AREA OTHER LOGISTICS	Stresses the existence of other logistic processes.
OMC AREA SERVICES	Visualises business services.
OMC AREA STANDARD MAIL	Visualises the core value delivering process of the client.
OPERATING MODEL CANVAS (OMC)	A poster projecting business operations, supporting activities, and the value chain of the client, based on the Business Model Canvas by Osterwalder and Pigneur (2010) and the Value Chain by Porter (1985). It provides an overview of the entire business of the client and serves as a means for designing the digitalisation
PROJECT PLANNING	A schedule containing the dates that interviews and workshops with the client will take place. Also provides a rough estimation of which activities will be conducted during the project
ROUTE MAP	Short indication of the long-term planning for the strategy implementation.
SECOND WORKSHOP	An interactive session with the client, during which the first version of the OMC is discussed. Complementing slides contain a status overview of the project planning and a summary of the previous workshop's results. Moreover, this workshop contains the final versions of the KEY STATEMENTS as discussed during FIRST WORKSHOP. Its goal is to start a discussion among the client's stakeholders to clarify business activities and the company's environment.
STRATEGIC THEME	A collection of KEY STATEMENTS that regard the same strategic theme
STRATEGY KEY DOMAIN	A collection of KEY STATEMENTS that are part of the strategic planning. Is attributed with the design that needs to be dealt with in collaboration and cooperation, with the impact the STRATEGY KEY DOMAIN will have on the existing projects and application portfolio, the critical success factors required to achieve the strategic objectives, and a description of how the implementation of the STRATEGY KEY DOMAIN will be evaluated.
SUBJECT	Part of the STRATEGY KEY DOMAIN that describes the subjects that need to be dealt with in collaboration and cooperation
THIRD WORKSHOP	Interactive session with the client, during which both A0 posters and a slide deck are used. The deck contains a status overview of the project planning, a summary of the previous workshop's results, the business enablers of

the strategy, and analysis of the portfolio of existing relevant initiatives. Moreover, it contains the final KEY STATEMENTS ASPECT LAYER, which is placed on the OMC.

Case 2 - Data Univé

Table A - 3: Activities of Univé

Phase	Activity	Description
Preparation OMC	Plan workshops	The interactive workshops are planned in collaboration with the client. This leads to the PROJECT PLANNING.
Construction OMC	Collect existing strategy documentation	Existing documents regarding strategy are gathered from various sources within the client. All documents are part of the overall DOCUMENT COLLECTION.
	Collect existing IT documentation	Existing documents regarding IT, such as application portfolio and landscape, are gathered from various sources within the client. All documents are part of the overall DOCUMENT COLLECTION.
	Collect existing organisation documentation	Existing documents regarding organisational structures, policies, and activities are gathered from various sources within the client. All documents are part of the overall DOCUMENT COLLECTION.
	Analyse documentation for key statements	The material that has been obtained through documentation and interviews is analysed and specific statements that reveal underlying information about the client's vision and strategic objectives are marked and gathered in one place as KEY STATEMENTS.
OMC Construction	Create OMC Area members	Visualisation of client's customer segments is composed and added to the OMC.
	Create OMC Area channels	Visualisation of client's communication channels, both physical and digital, is created and added to the OMC.
	Create OMC Area assurances	Visualisation of client's assurances, both for individuals as for businesses, is composed and added to the OMC.
	Create OMC Area insurances	Visualisation of client's insurance activities is composed and added to the OMC.
	Create OMC Area CRM	Visualisation of client's CRM activities is composed and added to the OMC.
	Create OMC Area supporting activities	Visualisation of client's supporting activities is composed and added to the OMC.
	Create OMC Area performance management	The notion of client's performance management is added to the OMC.
	Create OMC Areas 'control activities'	The notion of client's control activities, including risk management, compliance, auditing, security- and legal affairs, is added to the OMC.
	Revise visualisation OMC	The manner in which items of the OMC are connected and visualised is reviewed and possibly revised.
Prepare and Conduct First Workshop	Create workshop content	The KEY STATEMENTS are visualised in a PowerPoint presentation, together with a first version of the OMC.
	Discuss key statements with workshop participants	The KEY STATEMENTS are discussed with the participants.
	Present first version OMC	The first version of the OMC is presented and discussed with the participants.
OMC Development	Create OMC Area strategy and planning	Visualisation of client's strategy and planning activities is composed and added to the OMC.
	Create OMC Area control	Visualisation of client's control activities is composed and added to the OMC.
	Create OMC Area member relationships	Visualisation of client's member relationships is composed and added to the OMC.
	Create OMC Area marketing	Visualisation of client's marketing activities is composed and added to the OMC.

	Revise visualisation OMC	The manner in which items of the OMC are connected and visualised is reviewed and possibly revised. Input from the workshop is processed and the OMC is adjusted accordingly. This indicates that OMC Areas are repositioned, removed, or even merged, or new OMC Areas are added. In addition, more details and content can be added or adjusted.
Prepare and Conduct Second Workshop	Create workshop content	The latest version of the OMC is placed in a PowerPoint presentation, together with an overview of the modifications that have been made to the OMC based on the previous workshop.
	Present modifications made to OMC	A textual overview of the changes made to the OMC is presented to the workshop participants.
	Present and discuss second version OMC	The second version of the OMC is presented and discussed with the participants.
OMC Development	Create OMC Area proposition management	Visualisation of client's proposition management activities composed and added to the OMC.
	Revise visualisation OMC	The manner in which items of the OMC are connected and visualised is reviewed and possibly revised. Input from the workshop is processed and the OMC is adjusted accordingly. This indicates that OMC Areas are repositioned, removed, or even merged, or new OMC Areas are added. In addition, more details and content can be added or adjusted.
Prepare and Conduct Third Workshop	Create workshop content	The newest version of the OMC is placed in a PowerPoint presentation, together with an overview of the modifications that have been made to the OMC based on the previous workshop.
	Present and discuss third version OMC	The third version of the OMC is presented and discussed with the participants.
OMC Development	Create OMC Area risk management	Visualisation of client's risk management activities composed and added to the OMC.
	Revise visualisation OMC	The manner in which items of the OMC are connected and visualised is reviewed and possibly revised. Input from the workshop is processed and the OMC is adjusted accordingly. This indicates that OMC Areas are repositioned, removed, or even merged, or new OMC Areas are added. In addition, more details and content can be added or adjusted.
Prepare and Conduct Management Workshop	Create aspect layers on OMC	Additional information is projected on the OMC, displaying among other applications of the organisation and the activity per key statement.
	Create workshop content	The penultimate version of the OMC is placed in a PowerPoint presentation, together with the aspect layers, and an overview of the modifications that have been made to the OMC based on the previous workshop.
	Present and discuss penultimate version OMC with board members	The penultimate version of the OMC is presented and discussed with the participants.
	Show application of OMC with aspect layers	The purpose of the OMC is explained by projecting aspect layers and showing their function.
OMC Finalisation	Finalise OMC	Input from the workshops is processed and the OMC is adjusted accordingly. This indicates that OMC Areas are repositioned, removed, or even merged, or new OMC Areas are added. In addition, more details and content can be added or adjusted.

Table A - 4: Concepts of Univé

Concept	Description
APPLICATION	A functionality or set of functionalities used by one or multiple business units or activities.
APPLICATION ASPECT LAYER	Visualises which APPLICATIONs are used in which business activity or domain on the OMC.
ASPECT LAYER	A layer that is placed on the OMC to visualise additional information, such as relevant APPLICATIONs or IT BUSINESS TEAMS. Combining the ASPECT LAYER with the OMC shows which business domains or - activities are affected by or connected to the content of said layer.
CLIENT'S CORPORATE DESIGN	Set of rules and examples displaying the colours and fonts of the client organisation, which will be the basis for the visualisation of the OMC.

DOCUMENT COLLECTION	The total of documents obtained at the client. Can contain documents regarding strategy objectives, the client's vision, IT-related subjects, and other topics relevant for the project.
FIRST WORKSHOP	Workshop with participants during which KEY STATEMENTS from the DOCUMENT COLLECTION are discussed and the first version of the OMC is presented.
IT BUSINESS TEAM	Team within the organisation that has the objective to make sure business and IT goals are aligned.
IT BUSINESS TEAMS ASPECT LAYER	Visualises which IT Business team will be concerned with which activity mapped on the OMC
KEY STATEMENT	A remark or phrase from the document collection or interviews that provides essential information regarding the business strategy of the client, also known as business objective.
KEY STATEMENTS ASPECT LAYER	Visualises which KEY STATEMENTS influence of affect which business activities.
MANAGEMENT WORKSHOP	Workshop with participants during which the penultimate version of the OMC is discussed, accompanied by the ASPECT LAYERS, and a list of modifications that have been applied to the OMC since the THIRD WORKSHOP.
OMC	A poster projecting business operations, supporting activities, and the value chain of the client, based on the Business Model Canvas by Osterwalder and Pigneur (2010) and the Value Chain by Porter (1985). It provides an overview of the entire business of the client and serves as a means for designing the digital business strategy.
OMC AREA	Visual element containing information on the business regarding one specific business unit or activity. Multiple OMC AREAs combined together create the OMC. Various types of OMC AREAs exist, such as CRM, INSURANCE, RISK MANAGEMENT, and more.
OMC AREA ASSURANCES	Part of the OMC that describes the areas in which the members can be insured.
OMC AREA CHANNELS	Part of the OMC that contains online and on-site communication channels, such as the client portal, telephonic support, and the physical stores.
OMC AREA CONTROL	Part of the OMC that was added to the OMC in one of the final stages of the project. The OMC AREA lists control activities in one Area, including compliance, auditing, and more.
OMC AREA 'CONTROL ACTIVITY'	Part of the OMC that lists the control activities that are executed by the client, up to and including but not limited to, risk management, compliance, auditing, security- and legal affairs.
OMC AREA CRM	Part of the OMC that contains the client's CRM activities, such as member registration, national marketing, and customer journey design.
OMC AREA GOVERNANCE	Part of the OMC that was added to the OMC in one of the final stages of the project. The OMC AREA lists governance activities in one Area, including performance management, risk management, and more.
OMC AREA INSURANCE	Part of the OMC that contains the client's main business activities carried out, such as product development, policy management, and claim processing.
OMC AREA MARKETING	Part of the OMC that contains the types of marketing activities the client conducts, such as national sponsorships and local advertising.
OMC AREA MEMBER RELATIONSHIPS	Part of the OMC that contains the types of member relationships activities the client conducts, such as national price reductions and local support.
OMC AREA MEMBERS	Part of the OMC that visualises the client's customer segments, such as individuals and business, and the sub-segments, such as families and ZZP.
OMC AREA PERFORMANCE MANAGEMENT	Part of the OMC that notes the existence of performance management. This Area was later absorbed by the OMC AREA GOVERNANCE.
OMC AREA PROPOSITION MGT	Part of the OMC that was added to the OMC in one of the final stages of the project. The OMC AREA lists proposition management activities in one Area and one sub-Area, including product development, assurances, and customer journey design.
OMC AREA RISK MGT	Part of the OMC that was added to the OMC in one of the final stages of the project. The OMC AREA lists risk management activities in one Area, including agency management and damage insuring.
OMC AREA SUPPORTING ACTIVITIES	Part of the OMC that contains supporting business activities, such as communication, financial administration and HR.
PROJECT PLANNING	A schedule containing the dates workshops with the client will take place. Also provides a rough estimation of which activities will be conducted during the project and when the final delivery will take place.

SECOND WORKSHOP	Workshop with participants during which the latest version of the OMC is discussed, accompanied by a list of modifications that have been applied to the OMC since the FIRST WORKSHOP.
THIRD WORKSHOP	Workshop with participants during which the latest version of the OMC is discussed, accompanied by a list of modifications that have been applied to the OMC since the SECOND WORKSHOP.

Case 3 - Data Allinq

Table A - 5: Activities of Allinq

Phase	Activity	Description
Data Gathering	Analyse process documentation	The documentation of the operational processes of the client is analysed for opportunities to standardise, professionalise or save costs.
	Conduct interviews contracts	Interviews with most important stakeholders are held to uncover more information regarding the operational contracts of the client, leading to CONTRACTS INTERVIEW OUTPUT.
Process Analysis	Analyse operational processes	The operational processes of the client are analysed to find opportunities to standardise, professionalise or save costs.
	Create visualisation of contracts	The activities and processes are modelled to provide an overview and find common denominators, leading to VISUALISATION of CONTRACTS.
Value Chain Standardisation	Create business activity (pre)sales	The BUSINESS ACTIVITY (PRE)SALES is defined and modelled in the value chain.
	Create business activity intake	The BUSINESS ACTIVITY INTAKE is defined and modelled in the value chain.
	Create business activity work preparation	The BUSINESS ACTIVITY WORK PREPARATION is defined and modelled in the value chain.
	Create business activity execution	The BUSINESS ACTIVITY EXECUTION is defined and modelled in the value chain.
	Create business activity completion	The BUSINESS ACTIVITY COMPLETION is defined and modelled in the value chain.
Value Chain Development	Revise visualisation value chain	The visualisation of the elements of the VALUE CHAIN is modified wherever needed.
	Discuss constructed value chain with stakeholders	The value chain that has been established during the previous phase is discussed with executive management.
Process Optimisation	Revise value chain	Based on the discussion with the stakeholders, the value chain's content and/or layout is adapted.
	Analyse cost reduction initiatives of value chain	The value chain is analysed for COST REDUCTION INITIATIVES.
OMC Construction	Create aspect layer	The initiatives are plotted on the value chain, leading to the COST REDUCTIONS ASPECT LAYER.
	Create OMC Area core business activities	Visualisation of client's VALUE CHAIN is composed and added to the OMC.
	Create OMC Area strategy & planning	Visualisation of client's activities regarding strategy and planning is composed and added to the OMC.
	Create OMC Area process management	Visualisation of client's process management activities is composed and added to the OMC.
	Create OMC Area clients	Visualisation of client's VALUE CHAIN is composed and added to the OMC.
	Create OMC Area portfolio	Visualisation of client's customers is composed and added to the OMC.
	Create OMC Area services	Visualisation of client's service portfolio is composed and added to the OMC.
	Create OMC Area users	Visualisation of client's end-users is composed and added to the OMC.
Create OMC Area supporting business activities	Visualisation of client's supporting business activities is composed and added to the OMC.	

Finalisation	Define digital opportunities for information services	The possibilities for further improvement of the organisation in the field of technology are explored and described.
	Formulate innovation vision	The vision for the innovation of the client is described
	Define transition approach	The approach for transitioning to the envisioned organisation is defined.
	Deliver results to executive board	The final outcomes of the project, including the VALUE CHAIN, OMC, and RESULTS POSTER is presented to the executive board.

Table A - 6: Concepts of Allinq

Concept	Description
BUSINESS ACTIVITY	Collection of business processes that are executed during the operations of the client.
BUSINESS ACTIVITY (PRE)SALES	Part of the VALUE CHAIN that contains (pre) sales activities, such as registering customer demand or creating a proposal.
BUSINESS ACTIVITY COMPLETION	Part of the VALUE CHAIN that contains completion activities, such as registration of used material and physically delivering the results.
BUSINESS ACTIVITY EXECUTION	Part of the VALUE CHAIN that contains execution activities, such as receiving the order and actually performing the work.
BUSINESS ACTIVITY INTAKE	Part of the VALUE CHAIN that contains intake activities, such as planning the activities and determining the materials needed.
BUSINESS ACTIVITY WORK PREPARATION	Part of the VALUE CHAIN that contains work preparation activities, such as stock ordering and client expectation alignment.
CONTRACT	Formal agreement with the customer, consisting of business activities that will be undertaken.
CONTRACTS INTERVIEW OUTPUT	Overview of results from the interviews conducted with stakeholders regarding the content of existing CONTRACTS.
COST REDUCTION INITIATIVE	Opportunity to optimise the operational process and save costs.
COST REDUCTIONS ASPECT LAYER	Additional layer of information placed on top of the OMC or VALUE CHAIN, consisting of COST REDUCTION INITIATIVES.
DIGITAL OPPORTUNITY	Part of the RESULTS POSTER that shows the opportunities in the digital context.
INNOVATION VISION	Part of the RESULTS POSTER that shows the vision of the client regarding their innovation.
OMC	A poster projecting business operations, supporting activities, and the value chain of the client, based on the Business Model Canvas by Osterwalder and Pigneur (2010) and the Value Chain by Porter (1985). It provides an overview of the entire business of the client and serves as a means for designing the digital business strategy.
OMC AREA	Visual element containing information on the business regarding one specific business unit or activity. Multiple OMC AREAs combined together create the OMC. Various types of OMC AREAs exist, such as EDUCATION, RESEARCH, MARKETING & SALES, and more.
OMC AREA CLIENTS	Part of the OMC that depicts the customers of the client.
OMC AREA CORE BUSINESS ACTIVITIES	Part of the OMC that depicts the VALUE CHAIN of the client.
OMC AREA PORTFOLIO	Part of the OMC that depicts the capabilities of the client.
OMC AREA PROCESS MANAGEMENT	Part of the OMC that depicts the process management activities of the client.
OMC AREA SERVICES	Part of the OMC that depicts the services that the client offers.
OMC AREA STRATEGY & PLANNING	Part of the OMC that depicts the strategy and planning activities of the client.
OMC AREA SUPPORTING BUSINESS ACTIVITIES	Part of the OMC that depicts the supporting business activities of the client.
OMC AREA USERS	Part of the OMC that depicts the customers of the client.

PROCESS	A series of steps performed in the context of a CONTRACT.
PROCESS DOCUMENTATION	Large document explaining the operational processes of the client's organisation.
RESULTS POSTER	Final result of the project projecting all findings and ideas of the project.
TRANSITION APPROACH	Defined approach for the steps needed to bring the organisation in the state that is envisioned in the INNOVATION VISION.
VALUE CHAIN	Visualisation of the main business activities of the client's operations.
VISUALISATION	Visual representation of the work approaches of the client's operations.

Cases 4 and 5 were redacted

Appendix B: Activities and Concepts Reference Method

Table B - 1: Activities of the reference method

Phase	Activity	Description
Preparation OMC Approach	Plan workshops & Interviews	The workshops and interviews that will be conducted during the project are being planned. Leads to the PROJECT PLANNING.
	Collect existing (financial) strategy documentation	Documents regarding the (financial) strategy of the client are requested and collected. Leads to DOCUMENT COLLECTION.
	Collect existing (strategic) IS documentation	Documents regarding (strategic) IS of the client are requested and collected. Leads to DOCUMENT COLLECTION.
	Collect existing organisation (-structure) documentation	Documents regarding the organisation (-structure) of the client are requested and collected. Leads to DOCUMENT COLLECTION.
	Conduct interviews with internal stakeholders	Interviews regarding the client's strategy are conducted with executives and managers. Leads to INTERVIEW OUTPUT.
	Analyse documentation for key statements	DOCUMENT COLLECTION is assessed for phrases stating anything meaningful regarding the corporate or IT/IS strategy. Leads to KEY STATEMENTS.
	Collect and study client's corporate design	CLEINT'S CORPORATE DESIGN is requested and studied, to use as main inspiration for the OMC during its construction.
OMC Construction	Define strategy planning activities	The activities regarding strategy planning and its execution are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA STRATEGY PLANNING.
	Define control activities	The activities regarding business control are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA CONTROL.
	Define customers and customer segments	The client's customers and potential customer segments are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA CUSTOMERS.
	Define partners and partner segments	The client's partners and potential partner segments are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA PARTNERS
	Define external stakeholders and stakeholder segments	The client's stakeholders and potential stakeholder segments are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA EXTERNAL STAKEHOLDERS.
	Define external communication channels	The client's communication channels are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA CHANNELS.
	Define value propositions	The client's value propositions are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA VALUE PROPOSITIONS
	Define primary business activities	The client's primary business activities are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA PRIMARY BUSINESS ACTIVITIES.
	Define supporting business activities	The client's supporting business activities are defined using information from the DOCUMENT COLLECTION and INTERVIEW OUTPUT. Leads to the OMC AREA SUPPORTING BUSINESS ACTIVITIES.
	Consider necessary aspect layers	Possibly necessary aspect layers are considered during the construction of the OMC, by assessing the needs of the project and the organisation. Leads to one or more CONCEPTUAL ASPECT LAYERS.
	Revise visualisation OMC	The visualisation of the OMC and OMC AREAs is assessed and changed where necessary. Influences the OMC.
	Validate with internal stakeholders	The first version of the OMC is validated with the most important internal stakeholders to verify its content. Leads to FEEDBACK, which can modify the OMC.
	Create workshop content	A slide deck and potentially posters are created for the KICK-OFF WORKSHOP.

Prepare & Conduct Kick-Off Workshop	Explain project and workshop objectives to workshop participants	The PROJECT OBJECTIVES and WORKSHOP OBJECTIVES are explained to the workshop participants.
	Explain OMC model and approach to workshop participants	The concept of the OMC and its development is explained to the workshop participants.
	Validate key statements with workshop participants	The found KEY STATEMENTS are validated with the workshop participants. Influences the KEY STATEMENTS.
	Validate first version of the OMC with workshop participants	The first version of the OMC is presented to and validated with the workshop participants. Leads to FEEDBACK, which can modify the OMC.
	Discuss next steps with workshop participants	The follow-up actions during the project are discussed with the workshop participants. Leads to NEXT STEPS.
OMC Development	Create component OMC	Additional information is added to the OMC.
	Modify component OMC	Information already present on the OMC is modified.
	Discard component OMC	Some part of information on the OMC is discarded.
	Revise visualisation OMC	The visualisation of the OMC and OMC AREAs is assessed and changed where necessary. Influences the OMC.
	Process additionally acquired feedback	FEEDBACK received outside the workshop is processed and possibly applied to the OMC.
Prepare & Conduct Workshop	Create workshop content	A slidedeck and potentially posters are created for the KICK-OFF WORKSHOP.
	Explain workshop objectives to participants	The WORKSHOP OBJECTIVES are explained to the workshop participants.
	Explain OMC modifications to workshop participants	The MODIFICATIONS that have occurred since the last workshop are presented and motivated to the workshop participants.
	Validate latest version OMC with workshop participants	The latest version of the OMC is presented to and validated with the workshop participants. Leads to FEEDBACK, which can modify the OMC.
	Discuss next steps with workshop participants	The follow-up actions during the project are discussed with the workshop participants. Leads to NEXT STEPS.
Finalisation OMC Approach	Finalise OMC	The OMC is finalised by applying final touches to the model and sending it to the client.

Table B - 2: Concepts of the reference method

Concept	Description
CLIENT'S CORPORATE DESIGN	A collection of design elements, such as logos and colours, of the client that serve as the design basis of the OMC.
CONCEPTUAL ASPECT LAYER	The idea of an aspect layer that might be created in the future.
DOCUMENT COLLECTION	The total collection of documentation gathered from the client.
EXPLANATION	Piece of information that provides the principles and approach of the OMC.
FEEDBACK	Collection of notes and questions received from the client, either verbally or via e-mail, that modifies the OMC.
INTERVIEW OUTPUT	The total result of the conducted interviews.
KEY STATEMENT	A remark or phrase from the document collection or interviews that provides essential information regarding the business strategy of the client, also known as business objective.
KICK-OFF WORKSHOP	The first workshop of the project, during which not only the content of the project is discussed, but also the principles of the OMC and the PROJECT OBJECTIVES.
MODIFICATION	A change applied to the OMC and explained to the workshop participants.
NEXT STEP	An action point that will be done prior to the next workshop.

OMC	A poster visualising the client organisation based on the Business Model Canvas by Osterwalder and Pigneur (2010) and the Value Chain by Porter (1985). It consists out of OMC AREAs and serves as a means for formulating a digital business strategy.
OMC AREA	Building block of the OMC that describes a business domain or group of external factors.
OMC AREA CHANNELS	Type of OMC AREA providing a list of the communication channels of the client.
OMC AREA CONTROL	Type of OMC AREA providing the control activities of the client.
OMC AREA CUSTOMERS	Type of OMC AREA providing a list of the customers and their segmentation of the client.
OMC AREA EXTERNAL STAKEHOLDERS	Type of OMC AREA providing a list of the stakeholders and their segmentation of the client.
OMC AREA PARTNERS	Type of OMC AREA providing a list of the partners and their segmentation of the client.
OMC AREA PRIMARY BUSINESS ACTIVITIES	Type of OMC AREA providing the primary business activities of the client.
OMC AREA STRATEGY PLANNING	Type of OMC AREA providing the strategy planning and execution activities of the client.
OMC AREA SUPPORTING BUSINESS ACTIVITIES	Type of OMC AREA providing the supporting business activities of the client.
OMC AREA VALUE PROPOSITIONS	Type of OMC AREA providing a list of the value propositions of the client.
PROJECT OBJECTIVE	A goal of the project that aligns the expectations of the stakeholders and participants.
PROJECT PLANNING	Overview of dates and deadlines of the project.
WORKSHOP	Any workshop other than the KICK-OFF WORKSHOP during which the OMC is validated and discussed.
WORKSHOP OBJECTIVE	A goal of the workshop that aligns the expectations of the stakeholders and participants.

Appendix C: Interview Protocol

Take to interview:

- Printed PDD of project
- Printed OMC of client
- Printed interview protocol
- Charged phone for audio recording

Interview protocol is not shown to interviewees.

Introductory protocol

- **Brief introduction of interviewer:** Crystal Reijnen, Utrecht University thesis student, Anderson MacGyver.
- **Audio recorder:** This interview will be recorded by an audio recorder. This method helps to capture all information from the interviewee without having to interrupt the conversation and prevents the false interpretation of answers.
 - Ask permission on audio recorder as well.
- **Interview:** The interview will approximately take 60 to 75 minutes, the interviewee has the possibility to pause or end the interview at any time.

Explanation and purpose of research

- **Motivation and objective of research:** need to analyse the OMC, the approach for creating an OMC, and its appliance in organisations in order to possibly improve the model and approach. Additionally, find and analyse differences and similarities regarding the OMC's usage and model between organisations from different industries.
- **Objective of interview:** evaluate the process and deliverables of the method and the OMC in terms of customer/receiver satisfaction. Identify elements that (could) benefit the acceptance and usage of the OMC within the organisation, in order to further develop and exploit those elements.

Background of the interviewee

- [Name interviewee]
- What can you tell me about your professional career?
 - *Probe:* Which organisations have you worked for?
 - *Probe:* How long have you been working in this organisation/position?
 - *Probe:* Have you always worked in that position?

OMC Construction

Concerns the process and deliverables of the executed OMC project:

- [Show PDD and explain process]
 - What parts of the process were particularly relevant / interesting to you?
 - Which deliverables were particularly relevant / interesting to you?
 - Was there something that you would have liked to see go differently?
- [Show OMC]
 - What elements of this model do you like?
 - What elements of this model would you have preferred to see differently?
 - Is there something missing in your opinion?
- Is there anything else you would like to say regarding the OMC process and model?

Role of OMC in the organisation

Concerns the role that the OMC has played in the organisation after finishing the OMC project:

- How has the OMC been applied / used in the organisation, and by whom?
- In your opinion, what has the OMC achieved within the organisation?
 - (e.g. a shared vision, common understanding or language, new ideas, different strategy, etc.)
- Has the OMC affected the business strategy?
 - How / Why (not)?
- Has the OMC affected the IT strategy?
 - How / Why (not)?
- Has the OMC caused any integration or fusion between business and IT departments/strategy?
 - How / Why (not)?
- Is there anything else you would like to say regarding the role of the OMC in the organisation?

Additional comments of the interviewee

- ...

Closure

- [Thank interviewee for time]
- [Ask permission to contact after interview with any further questions]
- [Provide contact information]
 - Feel free to contact me

A SHARED VISION FOR DIGITAL TRANSFORMATION: CODIFICATION OF THE OPERATING MODEL CANVAS

Research in Progress

Name 1, institute, city, country, email

Name 2, institute, city, country, email

Name 3, institute, city, country, email

Name 4, institute, city, country, email

Name 5, institute, city, country, email

Name 6, institute, city, country, email

Abstract

Digital transformations are essential for organisations to stay competitive in the modern economy. A digital transformation demands the business and IT departments of an organisation to be aligned and have a shared vision on the future of the organisation. To support the generation of a shared vision as a basis for digital transformation, we propose the Operating Model Canvas (OMC) Approach. Its result is the OMC, a model that visualises the value propositions, primary business activities, environment, and supporting activities of an organisation. We have performed a case study applying the OMC Approach to codify its process and deliverables, define its scientific fundamentals, and demonstrate its results. It was found that the OMC provides a shared language for business and IT departments and subsequently generates them a shared vision. The key elements for generating a shared vision during the approach are the usage of existing client documentation and the active client participation throughout the entire process. The OMC can therefore be a solid starting point for a digital transformation project. The scientific contribution of this research is the codification of a method for digital transformation and theory building in digital transformation research.

Keywords: Business Model Canvas, Digital Transformation, Operating Model Canvas, Shared Vision, Value Chain

1. Introduction

In the economy of today, IS and IT can deliver or support the core value of an organisation when utilised correctly. Thus, employing digital transformation to move the business- and operating model of an organisation from a traditional- to a digital business-focused perspective could be essential to stay competitive (Berman, 2013; Jentsch & Beimborn, 2014; Lipitakis & Phillips, 2016; Parmar et al., 2014). Such digital transformations are best initiated top-down with an organisation-wide vision to generate sufficient executive and managerial support (Westerman, Bonnet, & McAfee, 2016). It is essential for digital transformations that executives, business managers and IT managers share a vision of how IT can be used to benefit the value proposition of an organisation (Preston & Karahanna, 2009; Weill & Ross, 2009). A shared vision requires business and IT strategies to be aligned (Leonard, 2007) and for both to recognise the value that IT delivers to the organisation. A lack of shared vision could result in misunderstanding among executives managers and subsequently a failing digital transformation (Jentsch et al., 2014), therefore the need for a shared vision is supported by many (Cash et al., 2017; Horlacher, 2016; Jentsch & Beimborn, 2014; Leonard, 2007; Preston & Karahanna, 2009).

However, most research merely focuses on strategic collaboration and the importance of a shared vision, rather than its practical implementation (Jentsch & Beimborn, 2014). To that end, this research-in-progress paper codifies a technique for generating a shared vision among business- and IT managers as a basis for digital transformation: the Operating Model Canvas Approach (OMC Approach). Its result is a model called the Operating Model Canvas (OMC) showing the value proposition, primary business activities, environment, and supporting activities of an organisation (Anonymised authors, 2015). The OMC is to be used as a basis for top-down development and implementation of the digital transformation and generates a shared vision among business and IT managers by visualizing all transformation aspects. The OMC Approach should not be confused with the Operating Model Canvas that was described by Campbell, Gutierrez, and Lancelott (2017). Although at its core both approaches aspire to create an overview of the organisation, the latter risks creating a needlessly complex interplay of incoherent aspects by always modelling the same five aspects. The OMC approach aims for simplicity and clarity by using a base model on top of which specifically relevant aspects can be placed using an overlay.

The scientific contribution of this paper is a method for generating a shared vision among executives, business managers and IT managers as a foundation for digital transformation. The theoretical premise will be validated by demonstrating the principles and added value of the method with a case study. The remainder of this paper is structured as follows: a theoretical background will be provided in section two; the research method and study design are described in section three; the main process steps and results of the OMC approach followed by a case study are discussed in section four; and lastly, the conclusions and future perspectives are provided in section five.

2. Theoretical Background

2.1. Digital transformation in organisations

Over the past decades, information systems and communication technologies have changed and improved the business processes, communication, and information sharing of organisations (Ferreira & Moreira, 2012). Although many scholars (Aho & Uden, 2013; Berman, 2013; Bounfour, 2015; Gimpel, Huber, & Sarikaya, 2016; Kahre et al., 2017; Matt et al., 2015; Piccinini, Gregory, & Kolbe, 2015; Riasanow, Galic, & Böhm, 2017; Westerman et al., 2016) have mentioned digital transformation, no consensus on its definition exists to the best of our knowledge. Berman (2013) notes that digital transformation means rethinking how an organisation delivers value to their customers, while Westerman, Bonnet and McAfee (2016) focus on the external impact digitality can have on the organisation. Digital transformation can be viewed from multiple perspectives, such as internal value creation, external threats, technological opportunities, and social implications. We adopt the definition by Bounfour (2015), who states that digital transformation is “*the use of technology to radically improve performance or reach of enterprises*”, for it addresses the need for innovative technology as well as the interplay of internal and external performance.

Since digitality influences the competitive environment and ecosystem of an organisation, transformation of the business model of an organisation is to be expected. Subsequently, the operating model of the organisation needs to be adapted to support the new value proposition. After all, business models and operating models are inherently intertwined (Bounfour, 2015). Digitality reshapes business activities and requires the inclusion of information systems, digital assets, and the usage of data throughout the operating model of the organisation (Berman, 2013). Achieving such inclusion means that business and IT ambitions need to be aligned (Jentsch et al., 2014).

2.2. Shared vision by business and IT

For digital transformation and aligning business and IT, two aspects are crucial: (1) a top-down vision for the digital transformation and (2) a shared vision of business and IT on what they can achieve together and what the future holds. Regarding the top-down vision, Weill and Ross (2009) state that defining an organisation-wide digital vision entails defining how an organisation will grow and stay profitable over the years, while imagining how IT can support those business goals. Westerman, Bonnet and McAfee (2016) support the top-down approach, stating only top-management has the ability to oversee where the organisation should head towards. Implementing the digital vision in practice should then be realised on tactical and operational levels. Regarding the shared vision, Jentsch and Beimborn (2014) state that ample research has shown its importance in terms of creating business value using IT. To develop the shared vision, business and IT strategies should be aligned by jointly defining the value proposition of (Preston & Karahanna, 2009) and the role of IS in the organisation (Jentsch et al., 2014; Leonard, 2007). The key challenge in creating a shared vision and aligning business and IT is to have sufficient information sharing among business and IT managers, and to find a shared language for business and IT (Jentsch & Beimborn, 2014; Preston & Karahanna, 2009).

2.3. Using modelling as a shared language for a shared vision

A shared language mediates a shared vision between business and IT as it provides a means to communicate and understand each other (Jentsch et al., 2014). However, finding a common language between business and IT is a challenge (Cash et al., 2017), since both have their own perspectives on the organisation and a disconnect might exist between the two (Jentsch et al., 2014). Due to the primary focus on business value and -model generation rather than on IT during a digital transformation, IT managers should aim to move towards understanding business language while generating a shared language (Preston & Karahanna, 2009).

Digital transformation and business IT alignment can encompass multiple organisational elements: business strategy, IT strategy, customers, suppliers, and technological developments (Bounfour, 2015). Visualisations can be a tool to create an overview of all those elements and to make it understandable for the entire organisation by simplifying complex organisational issues (Osterwalder & Pigneur, 2010). To that end, Osterwalder and Pigneur (2010) have developed the Business Model Canvas, which supports the generation of a shared language both in theory and in practice (Osterwalder, Pigneur, Oliveira, & Ferreira, 2011). As such, visualisations can subsequently generate a shared vision among stakeholders.

3. Research Method

The main purpose of this research is to develop the fundamentals of the Operating Model Canvas Approach (OMC Approach), a structural technique for digital transformation design, by codifying deliverables and process of the approach and presenting a case study. Therefore, this research is considered to be design science as described by Wieringa (2010) and Hevner (2007). Peffers et al. (2007) developed an IS-specific design science research method including a six-step iterative design process: (1) problem identification, (2) objectives definition, (3) design and development, (4) demonstration, (5) evaluation, and (6) communication (Peffers et al., 2007). We identified our research problem as the need to provide scientific fundamentals for an in practice existing approach for digital transformation (Anonymised authors, 2015). Thus, the objective of this study is to codify an operational method for the OMC. Our research design aims to develop the meta-model of the OMC Approach by investigating the process and deliverables of the approach and analysing several versions of the OMC.

The method will be demonstrated using a case study and evaluated by testing its appliance in practice. Lastly, communication of the method takes place via this research paper. In addition to codifying the OMC Approach, our research contributes to theory building in digital transformation research by using case study data (Eisenhardt & Graebner, 2007).

Although the OMC Approach has been applied in several digital transformation projects, this research paper focuses on an individual project to enable in-depth description of its process and deliverables. As such, this research is a retrospective holistic single-case case study (Yin, 2013). The chosen case focuses solely on the development of the OMC as the basis for digital transformation design, rather than the actual transformation. It was selected due to its comprehensive and focused image of shared vision development using the OMC. To analyse the historic case, we first gathered all material that was generated during its execution, consisting of: presentations and workshops to the client; subsequent versions of the OMC; the project planning; correspondence between stakeholders and advisors; and the project proposal. From those documents we deduced the activities that have been carried out during the project and corresponding deliverables. Both the process and the deliverables were then visualised using process-deliverable diagramming, as formulated by Van de Weerd and Brinkkemper (2009). This meta-modelling technique was selected because it provides a concise overview of all steps and deliverables in one model. In addition, the process and deliverables are respectively modelled using a flow-chart technique and an adaptation of UML class diagramming to facilitate easy understanding. We validated the model with the case experts, i.e. advisors, to confirm the OMC Approach. Lastly, we evaluated the application of the OMC in the client organisation with the client, focusing on its perceived merit in digital transformation projects and its success in creating one shared vision for business and IT.

4. Findings: The Operating Model Canvas Approach

The OMC Approach aims to generate a shared vision within an organisation by providing a shared language among all stakeholders of the organisation. The Operating Model Canvas (OMC) provides an integral image of the organisation covering both business and IT aspects. The approach can be viewed from a model- or process perspective, both of which are discussed below.

The OMC is inspired by two business reference models: the Business Model Canvas by Osterwalder and Pigneur (2010), and the Value Chain developed by Porter (1985). The Business Model Canvas visualises the value propositions and contextual aspects of an organisation in one image, while the Value Chain focuses on the primary business activities that generate the core value of the organisation. The OMC is an integration of both that visualises the value propositions and environment of the organisation in relation to its value chain and supporting business activities. Digital business aspects are included in components of the OMC. Thus, the OMC is a representation of the operating model, showing the intertwined nature of business and IT activities. An additional layer of information, called an *overlay*, can be placed on the OMC to visualise specific IT aspects, such as deployed applications or data ownership. Modelling the appropriate level of abstraction is essential for shared vision development; the level depends on the stakeholders of the OMC, its future applications, and the needs of the envisioned digital transformation.

The process of the OMC Approach consists of three main phases: (1) project planning & OMC initiation, (2) OMC development & vision generation, and (3) finalisation. The main goal of the first phase is to establish a firm understanding of the client organisation and its ambitions. To that end, documentation of the client on corporate strategy, business information plans, functional strategies, and enterprise architecture are assessed. This is done by collecting meaningful phrases regarding the vision, strategy, or future plans of the client, so called *key statements*. These *key statements* are the main input for the creation of the first version of the OMC. The second phase focuses on iteratively developing and refining the OMC in collaboration with the client. This is achieved by conducting three interactive workshops, during each of which the latest version of the OMC is shown. Participants then have the opportunity to deliver feedback on the model and discuss its contents and possible modifications. In the process of critically assessing the organisation and its future, workshop participants will create a common understanding and shared vision for their organisation while developing the its OMC. The third phase concerns the finalisation of the OMC and its future application in the organisation.

4.1. Case study: the OMC Approach applied in an insurance organisation

The OMC Approach has been applied at the Dutch insurance cooperation Univé (from here on: InsCoop) by an advisory organisation (from here on: AdvOrg) that helps clients to deliver business value through IT. InsCoop operates for a total of 1.5 million customers, consisting of both consumers and businesses. It is a cooperation with a central organisation and regional organisations with local offices, employing over 2650 people. In 2014, InsCoop aimed at composing an integral Business Information Plan (BIP), which would include a long-term perspective to incorporate planned projects and the transformation of the IT landscape. This demanded the BIP to be tuned to all business units in an understandable manner. AdvOrg was asked to support the creation of a shared vision for the entire organisation.

To that end, an OMC has been created for InsCoop. It consists of *OMC Areas*, which are building blocks containing the value propositions, primary business activities, environment, supporting activities, and other relevant organisational aspects (Figure 1). Generally, primary business activities are depicted in the centre of the OMC, in this case visualised in green. However, the activities Marketing and Member Loyalty are placed on the outside to meaningfully link activities and their environment, in this case the *OMC Areas* Members. The value propositions have been included in the primary business activity Proposition Management. Channels are positioned between the Members and the primary business activities, showing its communication function. Supporting Business Activities are symbolically depicted underneath the primary activities, while *OMC Areas* Strategy & Planning and Control are shown at the top of the OMC to visualise their top-down nature. The *OMC Areas* Channels and Members have been depicted on both sides to visualise the value chain of InsCoop. Marketing and Member Loyalty are shown twice to visualise the element of customer interaction of the activities within the *OMC Area*.

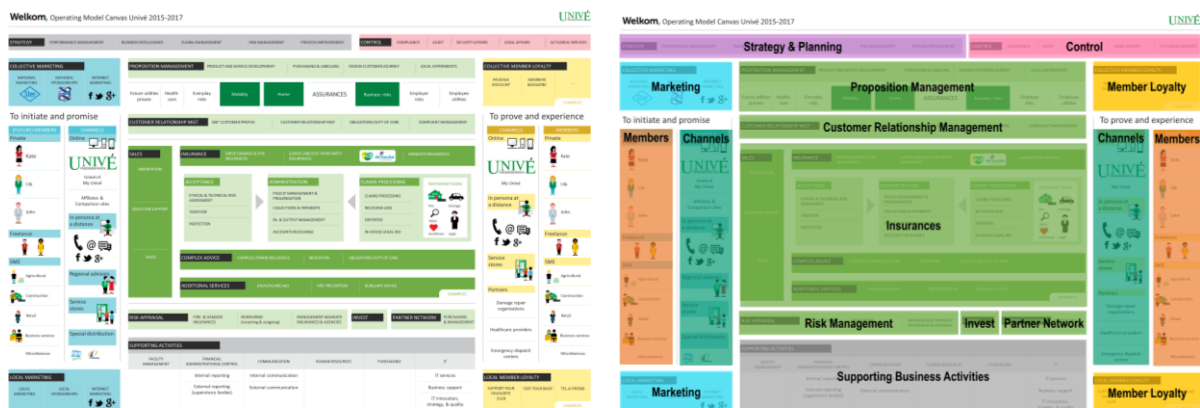


Figure 1. The final version of the OMC developed during the case study (left; large version in Anonymised authors, 2015) and an overview of OMC Areas (right)

Each *OMC Area* has its own content. The *OMC Areas* Customer Relationship Management, Risk Management, Invest, Partner Network, Proposition Management, Supporting Business Activities, Strategy & Planning, Control, Marketing, and Channels are left self-explanatory for the sake of brevity. However, those specific to InsCoop demand additional explanation. The *OMC Area* Insurances contains the main value chain of InsCoop and shows the order of business activities such as sales, administration, and claims processing. In addition, it visualises the insurances and services InsCoop delivers and the types of advice it provides. Members contains the (prospective) customers of InsCoop, sorted by segment and ordered to generated revenue. Member Loyalty depicts initiatives that generate organisational and local customer loyalty.

In order to create the OMC for InsCoop, several activities were conducted by the AdvOrg team and the participants of InsCoop. The complete process of the case has been depicted in the model in Figure 2 and the most important activities for the development of the OMC have been described here.

The first version of the OMC was constructed based on existing documentation of InsCoop. Documents containing information regarding integral strategies with a multiyear perspective, IT ambitions, enterprise architecture, and organisational structures were found to be particularly useful. *Key statements* were extracted from the documentation to develop *OMC Areas*, which combined formed the first version of the OMC. The visualisation of the OMC was iteratively revised during the construction, aiming to improve the model. To increase the recognisability for InsCoop staff, the corporate design style, i.e. logos, colours, and terminology, was acquired and used in the OMC design.

Conducting the workshops was an important step in the development of the OMC and the generation of a shared vision. Employees from several disciplines, i.e. marketing, strategy, internal business consultancy, and IT, were invited to increase organisation-wide support of the OMC and ensure the development of a shared vision. Ultimately, approximately ten participants contributed to the workshops. During the first workshop, the *key statements* were interactively discussed with the participants to ensure a common understanding of the objectives and content of the case. Next, the OMC was presented to and discussed with the participants, providing them the opportunity to give feedback. This led to the creation of new *OMC Areas* and the discarding or merging of existing ones. The process of retrieving feedback and adapting the OMC accordingly was repeated over the three workshops. InsCoop was therefore closely involved in OMC development, increasing its acceptance within the organisation. Also, it had the opportunity to discuss the content of its own strategy at length, generating a shared vision in the process.

Finalising the OMC with executives was a means to generate executive support to complement the existing managerial support. To do so, a Management Workshop with executives participating was organised. In preparation, several *overlays* were created to show the application of the OMC for developing the Business Information Plan. By using the same approach for the Management Workshop as for the others, executives were given opportunity to form and share their opinion on the OMC. This feedback was used to finalise the OMC to the satisfaction of the entire organisation. Upon finalisation of the case, the OMC was delivered to InsCoop, accompanied by their *key statements*. InsCoop could then start the process of developing the Business Information Plan, with the OMC and a generated shared vision as a basis, and the ability to create additional *overlays* for depicting the role of IT within the organisation.

4.2. Incorporated practices for shared vision generation

Although each activity and concept modelled above contributed to the development of the OMC, two practices contributed to the generation of a shared vision, and are therefore highlighted below.

Analysing key statements on corporate and IT visions was vital to ensure support for the OMC within the organisation. By analysing business and IT documents, both future business and IT aspects of the organisation were included in the OMC. Analysing for *key statements* was done by highlighting phrases stating anything meaningful regarding the business- and/or IT-strategy, or any other future plans of InsCoop. This led to a total of 25 *key statements*, which were discussed during the first workshop. *Key statements* were presented accompanied by a reference to their source document to increase recognisability. During the discussion of the *key statements*, some were rephrased, discarded, or merged, leading to a final set of 16 *key statements*. Since key statements were declarative wordings of the corporate and IT visions and strategy of InsCoop, and key statements were the foundation of the OMC, the OMC represented what the organisation would look like in several years. The OMC therefore provided a shared language between business and IT departments, and subsequently a shared vision for them and the organisation.

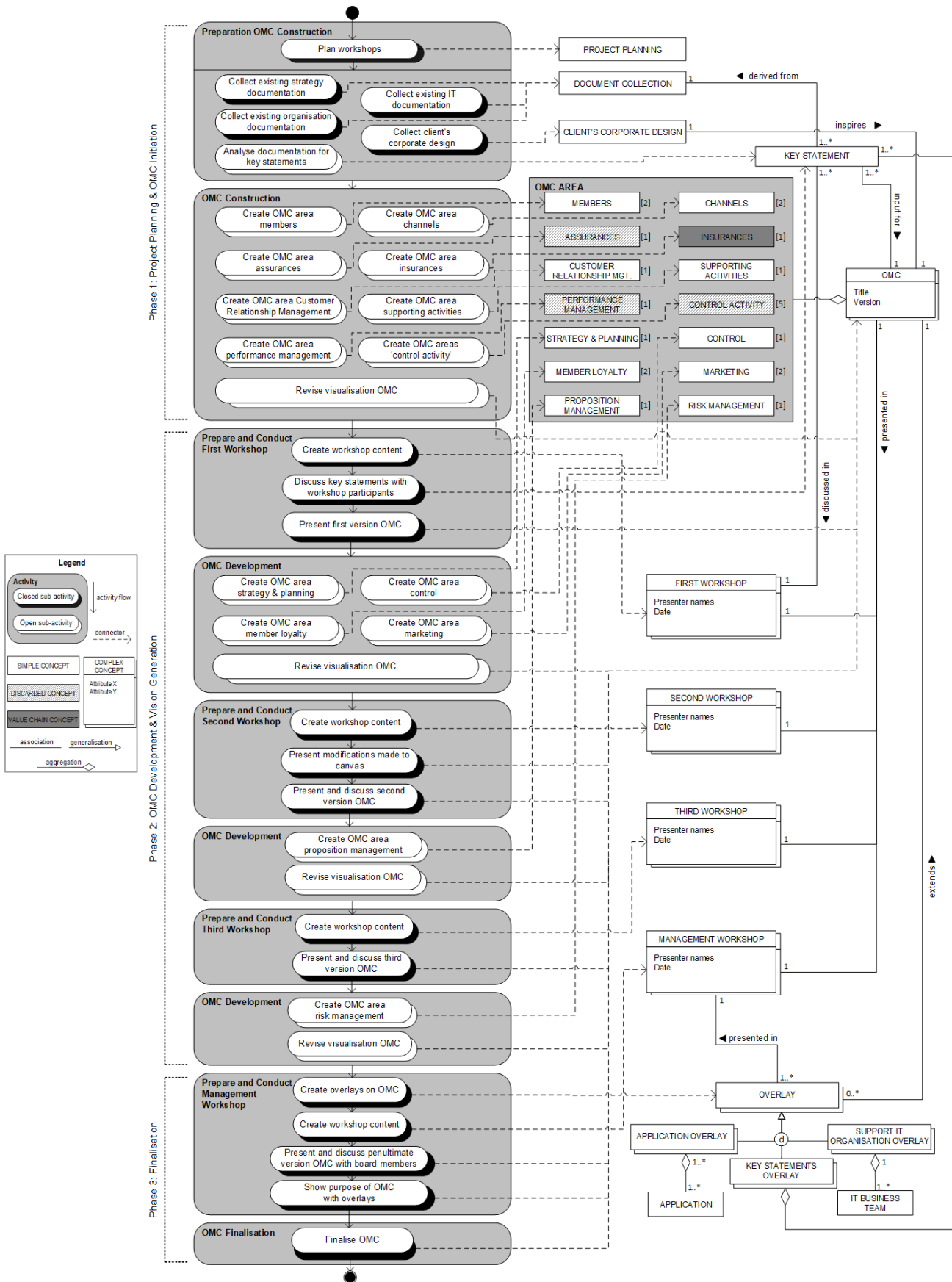


Figure 2. Operating Model Canvas Approach in the InsCoop case

Participative building of a shared vision was done by actively involving business, IT, and management representatives during OMC development. In the first three workshops, staff from operational and tactical levels with different organisational roles attended. The OMC was presented to them by first discussing the overview of *OMC Areas* as a whole, followed by a detailed discussion of each separate area. The OMC was shown on A0-format paper (33.11" x 46.81" / 841 mm x 1189 mm), allowing the participants to provide their feedback both verbally and by applying marks and notes on the paper. In addition, intermediate contact took place between the client and AdvOrg outside of the workshops, during which the client delivered additional feedback on the OMC. This enabled the client to have internal discussions on the OMC beyond the workshops and gave indisposed staff the opportunity to provide feedback regardless of their absence. Both aspects contributed to enabling the InsCoop staff to build a shared vision.

4.3. Evaluation and discussion

The results of the case study show a very positive attitude towards the OMC approach from InsCoop. Upon finalising the case, an InsCoop executive manager found the OMC to be "*strongly applicable (...) a beautiful document*" and an InsCoop internal business and IT consultant mentioned "*(...) the canvas will be used as a foundation for creating several additional (IT) aspect overlays, with high recognition and understandability*". Advisors found that the iterative development of the OMC and regular moments of collaboration between business and IT generated a shared vision for InsCoop, as was expected based on the findings by Preston and Karahanna (2009) and Jentsch, Schlosser and Beimborn (2014). During this case, executives were included in the process at the final stages of the OMC development. In retrospect, they should have been included from the start for developing a shared vision and securing their full support, in accordance with findings from Westerman, Bonnet and McAfee (2016). The OMC has been widely applied at InsCoop after the case had finished and additional *overlays* have been created by the organisation itself to develop the Business Information Plan in-depth.

5. Conclusions and Future Research

We have proposed the OMC Approach for generating a shared vision within an organisation with the objective to aid digital transformation. The core principle of the approach is to make business and IT plan jointly, rather than letting them operate in parallel without aligning activities and strategies. The OMC is a model that visualises the value propositions, primary business activities, environment, and supporting activities of an organisation. In addition, it provides the opportunity to show the interplay among additional aspects of the organisation and its key architecture by using *overlays*. We have described a case study at an insurance cooperation for which an OMC has been developed. Evaluation of the development and application of the OMC has shown that a very positive attitude exists towards the participative nature of the OMC Approach for generating a shared vision.

Future research will concern further development and optimisation of the OMC Approach. Additional cases will be analysed for both their process and deliverables, in the same way as has been done for the case study presented in this paper. Results of these analyses will be combined to create one reference model for the OMC. In addition, practical experience with the OMC has shown that the *OMC Areas* and their content tend to differ slightly among different types of organisations. Also, a relation between the industry of an organisation and the used *OMC Areas* has been discovered, indicating that similar specific *OMC Areas*, such as 'Insurances', are being used for organisations in the same industries. The nature of this relation and the impact that the industry has on the content and visualisation of the OMC should be further investigated, to increase the depth and situationality to which the OMC Approach can be codified.

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