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BUSINESS MODELS AND FRAMEWORKS FOR THE MANAGEMENT OF DYNAMIC SUPPLY CHAIN NETWORKS

DOCTORAL DISSERTATION

Ljubljana, 2018

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SUMMARY

Organizations in supply chains (SC) encounter a turbulent environment influenced by plurality of BMs, fluctuating preferences of end-users, changes in core processes within and across companies, and redefinition of their roles (Christopher & Holweg, 2011; Pereira et al., 2014; Tanco et al., 2015; Trkman & McCormack, 2009; Casadesus-Masanell & Tarzijan, 2012; Ritala & Sainio, 2014). As a response, all organizations in an SC have to continuously improve and/or add new BM(s). A BM depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities (Zott et al., 2011). The essence of a BM is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.

As the SC cooperation moves beyond the dyads, the development of BMs on the inter-organisational level is enhanced. The focus is no longer on focal company's BM, rather the successful BMs have become "shared" to some extent by various competitors-partners (Teece, 2010). In fact, successful organizations include competitors, partners, suppliers, end-users, customers or even third-parties in the development and alignment of BMs. To establish the ability for future redesign of organizations and, subsequently, SCs, organizations have to navigate between cooperation and completion with competitors-partners despite some challenges associated with coordination of such an approach (Palma-Mendoza et al., 2014). Also, to frame the future scenarios and implement the BM approach to the SC management, organizations devise or use different frameworks.

A management framework is a broad overview, outline, or skeleton of interlinked items which supports a particular approach to a specific objective ("Framework", Business Dictionary). It is asserted that a management framework is non-falsifiable and that it can be comprised of either one meme or a set of multiple memes. Further, the demonstration how two management frameworks support and enhance a BM approach to SC management is made. Finally, a framework of coopetition-based scenarios is devised with a two-fold purpose: first, its essence is in identifying different scenarios where a coopetition-based BM approach is required for the SC management. Second, the framework identifies the features of different coopetition-based scenarios, confirms the existence of different forms of coopetition and concludes that coopetition requires further examination at the interception of game-theoretic reasoning and BMs. In the continuation of the summary, a more specific description of the individual chapters is offered.

In Chapter 1, the focus is on the origins, adoption, and value of management frameworks. A framework is a management novelty, designed to support analyses or different approaches, and to provide a rationale (e.g. a scorecard) for decision making or benchmarking. We introduce the theories of memetics, intersubjectivity, and network effect to better explain the nature of management frameworks. We use memetics to decipher where the well-known management frameworks stem from. Specifically,

management framework is considered as a final step in the evolution of prominent management ideas. Next, the rigor, (non)-falsifiability, and, subsequently, the value of successful management frameworks is discussed. The claim is made that management frameworks are valuable for a particular realm when they become an intersubjective phenomenon. Finally, it is explained how the network effect enhances the value of a framework with a critical mass of users in a particular realm.

Frameworks importantly contribute to the existence and clarity of a BM approach to SC management. In order to enhance the understanding of a BM research and improve the development of our arbitrary frameworks, an analysis of BMs is necessary. Thus, in Chapter 2, we examine publications on BMs published in two periods: until 2011 and between 2012 and 2016. An excerpt of bibliographical data from the Web of Science database was obtained. Chapter 2 presents six and five clusters of BM research in the first and second period, respectively. Two heat/term maps visualize the thematic landscape of a BM research.

In Chapter 3, strategic challenges for the long-term success of BMs, organizations, and SCs is discussed. New BM elements are discussed and a BM approach to SC management is suggested. Two frameworks showing the elements of a SC BM and the interconnection of those elements and dynamic capabilities were developed. The use of these frameworks is demonstrated in a case study of Post of Slovenia. Key findings suggest the way organizations (and SCs) should develop the elements of the BMs to be able to continuously improve the existing or add new BMs as a response to currently unknown changes in dynamic SC networks.

In Chapter 4 we discuss some of these changes and inherent presence of coopetition in dynamic SC networks. We assert that the roles of organizations in dynamic SC networks have been re-defined and that ‘coopetitors’ (competitors-partners) can find themselves in different coopetition-based scenarios. Chapter 4 proposes a framework for classifying the scenarios in dynamic SC networks based on the coopetition degree and level of complementariness between competitors-partners. Game-theoretic reasoning is used to explain the features of coopetition-based scenarios. Finally, the framework is applied and the features in case analyses are discussed. The dissertation altogether intertwines phenomena related to, supporting or fundamentally changing BM elements, BM approach, and the management of dynamic SC networks. The dissertation thus elucidates and holistically advances the understanding of frameworks, BMs, and approaches that aim to improve the effectiveness and efficiency of SC management.

Key words: supply chain management, business models, frameworks, coopetition, game theory

POVZETEK

Organizacije v oskrbovalnih verigah (OV) poslujejo v turbulentnem okolju, v katerem se preference končnih uporabnikov, vloge deležnikov, temeljni poslovni procesi, in poslovni modeli (PM) na ravni organizacij in OV hitro spreminjajo (Christopher & Holweg, 2011; Pereira et al., 2014; Tanco et al., 2015; Trkman & McCormack, 2009; Casadesus-Masanell & Tarzijan, 2012; Ritala & Sainio, 2014). Organizacije zato stalno izboljšujejo in/ali dodajajo nove PM. PM opisuje strukturo, vsebino in koordinacijo aktivnosti, ki ustvarjajo vrednost za uporabnike z zajemanjem poslovnih priložnosti (Zott et al., 2011). PM v svojem bistvu namreč opredeljuje način, kako organizacija prenaša ustvarjeno vrednost do končnih uporabnikov, jih privablja k plačilu za ustvarjeno vrednost in tako ustvarja dobiček.

Razvoj PM se ne osredotoča zgolj na vodilno organizacijo, ampak upošteva vse deležnike, tudi partnerje in konkurente (Teece, 2010). Z vključevanjem partnerjev, dobaviteljev, končnih uporabnikov in zunanjih izvajalcev se spreminjajo elementi PM. Spreminja se način, kako organizacije ustvarjajo vrednost in jo prenašajo do končnih uporabnikov. Za nastajanje in prenos vrednosti do končnih uporabnikov so pomembne dopolnitve PM ali razvoj novih, s katerimi organizacije vzpostavljajo ravnotežje med sodelovanjem in konkuriranjem (Palma-Mendoza et al., 2014). Da organizacije uspejo fleksibilno dopolnjevati ali uvajati nove PM, potrebujejo ustrezne dinamične sposobnosti. Z njimi organizacije v OV »prepoznavajo, zajemajo in spreminjajo« poslovne priložnosti (Teece, 2012). Katere dinamične sposobnosti organizacije potrebujejo in kako z njimi dopolnjujejo obstoječe ali uvajajo nove PM, opišejo okvirji v managementu.

Okvirji v managementu so orodja, ki z opisom elementov, strukture, aktivnosti in drugih pojavov podpirajo določen pristop in pripomorejo k doseganju organizacijskih ciljev (»Framework«, Business Dictionary). V svoji disertaciji trdim, da so okvirji v managementu nezavrnljivi (ang. *non-falsifiable*) in sestavljeni iz enega ali več elementov memetike (memov). Natančneje, z razvojem in prikazom uporabnosti dveh okvirjev opišem in izboljšam vlogo PM v managementu storitveno-orientirane OV. Z oblikovanjem okvirja scenarijev na osnovi sotekmovalnosti (ang. *coopetition*) pa identificiram in opišem scenarije na osnovi sotekmovalnosti ter opredelim njihove temeljne značilnosti. Trije okvirji kot zaokrožena celota opisujejo elemente PM na ravni OV in vlogo dinamičnih sposobnosti ter sotekmovalnosti pri spreminjanju PM. Z okvirji razširim idejo o obstoju enega PM OV in pripomorem k razumevanju, kaj je ‘ena oskrbovalna veriga’. Nato uvedem širša omrežja OV, v katerih je prisotna sotekmovalnost. Sotekmovalnost namreč vpliva na razvoj PM v dinamičnih omrežjih OV. V nadaljevanju natančneje opisujem vsebine posameznih poglavij v zgoščeni obliki.

V 1. poglavju se osredotočam na izvor, privzemanje in vrednost okvirjev v managementu. Okvirje v managementu opredelim kot novosti v managementu, ki opisujejo, podpirajo ali izboljšujejo pristope in analize v organizacijah. Ugotavljam, da izvor okvirjev v

managementu ni ustrezno pojasnjen, okvirji pa se v managementu privzemajo navkljub njihovi dvomljivi vrednosti. Za razjasnitev privzemanja in širjenja ‘uspešnih’ okvirjev v managementu uporabim druge teoretične perspektive. Izvor okvirjev v managementu bolje pojasnim z uporabo memetike, tako da okvirje predstavim kot končno novost razvoja perspektivnih idej v managementu. Za uspeh okvirjev je potrebna kritična masa uporabnikov. Le-ta se doseže z mrežnim učinkom, nakar okvirji v managementu postanejo intersubjektivna realnost. Teorija intersubjektivnosti pojasni, kako uporaba uspešnih okvirjev postane poenostavljena in zakaj se določeni okvirji uporabljajo pretežno v določenih realnostih (skupnostih).

Okvirji so pomembni za oris vloge PM in dinamičnih sposobnosti pri učinkovitem managementu OV. Da bolje razumemo področje PM, v 2. poglavju izvedem bibliometrično analizo. Predstavim razvoj področja in zajamem publikacije, ki so nastale v obdobju do leta 2011 in v obdobju 2012–2016. Izvleček bibliografskih podatkov je bil pridobljen iz zbira podatkovnih baz Web of Science. V 2. poglavju predstavljam šest raziskovalnih podpodročij v obdobju pred 2011 in pet podpodročij za obdobje 2012–2016. Sledi analiza ključnih pojmov, ki razkriva interesna področja neodvisno od povezanih referenc.

S 3. poglavjem preučujem vlogo PM na ravni organizacij in OV. Pojasnim elemente PM OV in identificiram dinamične sposobnosti, ki so pomembne za fleksibilno prilagajanje OV. Razvijem dva okvirja, ki izboljšata razumevanje elementov PM in vloge dinamičnih sposobnosti. Uporaba okvirjev je demonstrirana na študiji primera na Pošti Slovenije, d. o. o. Z okvirjema in ugotovitvami s študije primerov lahko organizacije (in OV) bolje načrtujejo elemente PM, dopolnjevanje in/ali uvajanje novih PM in izboljšajo fleksibilnost pri prilagajanju spremembam.

V 4. poglavju razširim idejo o obstoju PM v dinamičnih OV, v katerih je latentno prisotna sotekmovalnost. Prikažem, kako so se vloge organizacij spremenile in da so organizacije udeležene v različnih scenarijih na osnovi sotekmovalnosti. Z okvirjem za razdelitev scenarijev glede na stopnjo sotekmovalnosti in raven komplementarnosti med partnerji-tekmeci razširim pojmovanje sotekmovalnosti. Uporabim analogno razmišljanje na osnovi teorije iger za predstavitev značilnosti scenarijev. Konceptualni okvir uporabim za razlago scenarijev in njihovih značilnosti na primerih in študijah primerov.

Disertacija predstavlja zaključeno celoto, ki opisuje medsebojne povezane pojave, strukture, orodja in scenarije, ki podpirajo ali fundamentalno spreminjajo PM in odnose med deležniki v dinamičnih omrežjih OV. Disertacija izboljšuje razumevanje okvirjev v managementu, PM in pristopov, katerih namen je izboljšati učinkovitost in uspešnost sodobnega managementa OV.

Ključne besede: management oskrbovalnih verig, poslovni modeli, okvirji, sotekmovalnost, teorija iger

TABLE OF CONTENTS

LIST OF FIGURES

LIST OB TABLES

INTRODUCTION

Overview of the research area

As the name suggests, Supply Chain Management (SCM) is a research area that dwells upon the management science, logistics, operations research and game theory, strategic management, and marketing. The SCM received immense attention from the researchers and practitioners ever since organizations have started to enter the competition in a fundamentally different way – not as individual entities but rather linked to each other in, mostly global, supply chains (SCs). SCs encounter a competitive environment influenced by macroeconomic issues, market conditions, fluctuating demand of end-users and changing needs in core processes within and across companies (Christopher & Holweg, 2011; Pereira et al., 2014; Tanco et al., 2015; Trkman & McCormack, 2009). Accordingly, organizations and SCs analyze the current 'AS-IS' state (Trkman et al., 2007) with respect to processes, employees, products, partners, customers, environment, and other components to develop appropriate frameworks that could enhance seizing opportunities (Teece, 2012) and decision-making.

Frameworks (e.g. the analysis of political, economic, socio-cultural, and technological change – PEST-analysis), reference models (e.g. supply-chain operations reference or SCOR-model), business model (BM) innovations, such as Efficient Customer Response – ECR, and decision-making tools (e.g. Prisoner's-dilemma matrices) are necessary for the continuous development of various research and practitioner-oriented domains. The SCM is no exception to that – with a vast number of discretionary frameworks having been developed. What is more, novel perspectives, such as BM approach to the SCM (Trkman, Budler, and Groznik, 2015), have fundamentally changed the way processes in SCs are being designed, aligned, and executed. A BM depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities (Zott et al., 2011). BMs attracted some attention in the past; however, the focus in the SCM was on a focal-company perspective owing to the essence of a BM in defining how the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.

BMs answer to what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit (Teece, 2010). What is more, a BM approach addresses the ability for 'future re-design', since it requires an established way to improve, replace or add new BMs (Storbacka, 2011). The latter is often the case in efficient SCM as organizations in dynamic SC networks as organizations started to align their BMs and moved beyond the focal-company perspective. To establish and examine these profoundly different ways of organizations doing business in SCs,

management frameworks are being developed. A framework, in general, is a 'practical tool for comparing concepts, principles, methods, standards, and models in a particular realm' (Rezaei et al., 2014).

A management framework encompasses the interplay of various structures, elements, processes and strategic goals that enable execution of certain tasks, benchmarking or following companies' objectives. In organizations, frameworks are a set of premises, values, and practices that promote handling with contemporary issues (Andrew & Evans, 2011), enable comparison of principles, techniques and BMs (Heylighen, 1998), and hold or support a theory (Swanson, 2007). There are frameworks that are widely used in SCM, including the analysis of strengths, weaknesses, opportunities, and threats – SWOT-analysis (Pickton & Wright, 1998), Carter and Roger's framework of Sustainable SCM (Carter & Rogers, 2008), balanced scorecard (Kaplan & Norton, 1995), Porter's five forces (Porter, 1979) and Kraljic's purchasing portfolio (Kraljic, 1983).

The role and value of employed frameworks are not always clear and therefore require further examination. Combining the insights from 'memetics' (Whitty, 2005) and the SCM could be fruitful for a more comprehensive understanding of the development and adoption of the management frameworks. Andrew (2011) emphasized the importance of the successful frameworks to be in compliance with the organizations' BMs. What is more, frameworks, such as Business Model Canvas, are convenient for the depiction of a BM and its elements. Elaborating on that, Trkman, Budler, and Groznik (2015) developed two new frameworks for a BM approach to SCM. As a response to turbulence in external environment and the quest for achieving 'strategic flexibility' (Christopher & Holweg, 2011), every company in an SC has to continually change its BM(s) (Trkman, Budler, & Groznik, 2015).

Unpredictable dynamics of an SC can arise from a variety of internal and external sources, including suppliers, partners, customers and competitors (Yi et al., 2011). The inherent presence of simultaneous cooperation and competition between partners in SC networks established the need for SCs to be prepared whenever a possibility of a competition with the partners exists (Farahani et al., 2014; Ritala et al., 2014). Needless to say, this possibility should be acknowledged *per se* owing to overlapping roles of competitors, suppliers, manufacturers, partners or customers who would rather be called SC network competitors-partners in "coopetition". The coopetition is hereby defined as the occurrence of simultaneous competition and cooperation in operations between competitors-partners in dynamic SC networks (adapted by Zhang & Frazier, 2011).

The occurrence of simultaneous cooperation and competition can entail different forms of coopetition (Ritala et al., 2014). The rationale behind coopetition is in the relationships

between organizations in SCs that are not 'eternally immutable' but rather seen as game scenarios (Ji et al., 2015). These scenarios resonate features that can be appropriately described with the use of a game-theoretic reasoning. First, game-theoretic reasoning can help reducing the levels of ambiguity between competitors-partners whose roles overlap (Wolters & Schuller, 1997). And second, game-theoretic concepts and various game forms offer a viable vantage point for delineating emergent and deliberate forms of coopetition.

Research agenda and goals

As mentioned above, the development of frameworks in SCM is imminent. Not only can a framework be the cornerstone of the research sub-fields (e.g. Roger and Carter's framework of SSCM), the frameworks guide the enactment of organization's BMs and can be imposed as decision-making tools (e.g. SWOT-analysis) when enough partners in an SC network adopt a certain framework. Elucidating the adoption of management frameworks brings forth the importance of a critical mass of people being familiarized with a certain framework. We aim to research the role of the critical mass in the adoption of a framework. Subsequently we borrow the concepts of intersubjective reality and network effect in order to explain the adoption and value of well-known management frameworks.

We assert that the success of a well-known management framework is partially attributed to its origins. A framework's origins are found among the relevant, prominent, and "survived" ideas, i.e. memes, in a specific place at a certain time period. Thus, we utilize memetics to answer what the origins of a management framework are. Next, our goal is to explain the adoption of the management frameworks based on the theory of intersubjectivity and account the network effect for the critical mass of users. Finally, we aim to show how valuable a framework is throughout the understanding of the critical mass and the network externalities.

To undertake the research on a BM approach to the SC management we need to better understand the origins, adoption, and development of management frameworks. In addition to that, the BM topic is examined using co-citation analysis. The analysis of the BM topic is a prerequisite for identifying the future research areas and the 'bundles' that deserve more attention. Next, the dissertation aims to develop two discretionary frameworks for a BM approach to the SCM. The two frameworks build on the theory of the management frameworks and are among the few (and necessary) interpretations of organizations' BMs. The frameworks show the elements of an SC BM and the interconnection of those elements and dynamic capabilities. We argue that the business process approach is a necessary, yet insufficient approach to SCM, and a closer look to dynamic capabilities is needed to enhance SCs ability for moving from an AS-IS to a TO-BE state. Considering this, we complement the existing body of knowledge by extending the BM approach with

two frameworks. The frameworks aim to illustrate the elements of a BM in such a way that the organization will be able to continually change its existing or add a new BM from the AS-IS state to a currently unpredictable TO-BE state as a response to currently unknown changes in its BM.

Organizations in SC networks, however, experience difficulties when appropriating the TO-BE state as a result of surrounding dynamics. Among these dynamics, the inherent presence of concomitant cooperation and competition among the organizations in SC networks seems to contribute the most. As organizations from various SCs cooperate (and compete), their roles start to overlap. Sooner or later the cooperation is interwoven with competition.

It is of key importance for organizations to acknowledge the redefined roles, decide on which tactics to implement, and design the coopetition-based scenarios with other competitors-partners accordingly. Hereby we are going to use game-theoretic reasoning in SCM to show how decision-making in SCs could be better explained. While previous studies have focused on implementation of game theory in either cooperative or non-cooperative SCs (Fudenberg & Tirole, 1989; Zamarripa et al., 2013; Zhang & Liu, 2013), we intend to confirm the applicability of game-theoretic reasoning in situations with the latent presence of simultaneous cooperation and competition. We use the analogy of repeated games to explain the often-neglected long-term scenarios between competitors-partners and to frame different forms of scenarios. We borrow the concepts from game theory to present the features of different coopetition-based scenarios and to analyze the real-life scenarios of coopetition where game-theoretic reasoning could improve decision-making of competitors-partners.

Description of the research methodology

The dissertation qualitatively and quantitatively examines BMs and frameworks for the management of dynamic SC networks. Having acknowledged the dynamics of today's turbulent environments, we first suggest organizations in SCs shift the focus to their BMs. To do so, we needed to identify the BM elements of a service-oriented SC (Post of Slovenia) and use dynamic-capabilities theory to clarify the ability of organizations and SCs for a future redesign. We proposed a BM approach to SCM. Using the insights from the management frameworks theories we developed two elementary frameworks to summarize the elements needed to enable dynamic capabilities to change or add BMs in the unknown future. Case-study approach was used to suggest the way organizations should develop their internal business processes, products, employees and relationships with important partners and customers in an SC in terms of aforementioned coopetition.

Following Yin's (2002) recommendations, we designed the case-study analysis rigorously. The case thus used both primary and secondary data gathered from interviews, publicly-accessible articles and internal reports (Trkman et al., 2015). We conducted 10semi-structured interviews with employees at different levels and functions, as well as scoured the publicly-accessible articles and internal reports in the period from 2001 to 2015.

To design the frameworks of BM approach to SCM properly, we provided an extensive literature review on the origins, adoption and value of management frameworks (see Chapter 1). We wreathed the in-depth review around challenging the 'real' value of abundant management frameworks. Next, we pursued three interwoven theories, namely intersubjectivity, memetics, and the network effect, to an extent that fulfils the missing link on explaining the nature of management frameworks. Specifically, we analyzed the theoretical underpinnings of the intersubjective theory and applied it to show that the management frameworks can be an intersubjective reality (phenomenon). Finally, we utilized memetics to explain where management frameworks' origins lie.

We focus on a meme and its core features to explain that management ideas evolved from the floating memes in management realms. We represent the well-known management frameworks as a meme or organized sets of memes. Next, we borrow the concept of critical mass to explain why the growing number of users of well-known frameworks facilitates the adoption and utilize the network effect to show how framework adoption can be accelerated to the point where the framework becomes an intersubjective reality. We chose some of the well-known frameworks in SCM (e.g. SWOT-analysis, PEST-analysis, as well as Carter and Roger's framework of SSCM) to question the value of a framework and to affirm that the value of a framework is difficult to assess in advance although it may seem obvious in hindsight.

Next, to enhance the understanding of both BMs and BM frameworks, we analyzed the BM research field with the use of bibliometric methods (preliminary results are presented in Zupič et al. (2016)). Bibliometric methods were used to elicit useful information from the citation information in bibliographical databases (Zupic & Čater, 2015). Specifically, we used citation analysis, co-word analysis, and bibliographic coupling (Kessler, 1963). The bibliometric analysis was then executed separately for two separate periods (until 2011 and 2012–2016). The analysis follows the procedures suggested by Zupic & Čater (2015). Finally, the publishing of the first comprehensive review of BM literature (Zott et al., 2011) suggested the selection of the divide between those periods.

Methodologically, the Chapter 4 uses case-study analyses and vignettes to depict the scenarios in dynamic SC networks. Prior to that, a game-theoretic framework was

developed to observe the coopetition-based scenarios between competitors-partners in dynamic SC networks. For the development of the framework we applied the findings from the nature of management frameworks and BM approach to SCM. Game theory allows examination of the scenarios where competitors-partners reconcile the differences and commitments to complement each other. We borrow core constructs and concepts from game theory, such as its focal principle – avoidance of losses, self-stabilizing strategies of defection, dubbed extortion, (un)fairness and perceived (un)fairness in 'pay-offs' distribution. Drawing on the game-theoretic reasoning, we explain the distinct features that define different scenarios. Cooperative game theory is applicable for coopetition-based scenarios for two reasons: First, it observes and discusses only competitors-partners that are included in the scenarios; second, cooperative game theory advocates the utility to be either equally distributed and/or its distribution to be agreed upon all competitors-partners.

We use the game-theoretic framework as a research framework for case analyses. We elaborated on the idea from Ritala (2014) and delineated between emergent and deliberate forms of coopetition. Further, we carried out case-study analyses and vignettes to apply the framework to real-life examples to show how the game-theoretic postulates, constructs, and concepts improve the understanding of coopetition-based scenarios and performance of competitors-partners. Again, we carefully followed Yin's (2002) recommendations for case-study research design. In case-study analyses we conducted semi-structured interviews with employees at different levels and functions, scoured publicly-accessible articles, and evaluated the internal reports. For vignettes, secondary data was used to demonstrate a coopetition-based scenario in practice. Finally, we combined the findings from case analyses with the game-theoretic features and demonstrated the existence of various coopetition-based scenarios through the lens of our framework.

Limitations

To qualify the contribution of this dissertation, limitations must be discussed. Different approaches to explaining the origins, adoption, and value of management frameworks are acknowledged; however, to avoid being too broad in scope and to address the mentioned issues thoroughly, we focus on explaining the nature of management frameworks with memetics, intersubjectivity, and the network effect. We deliberately omitted the traditional explanations of diffusion and adoption to complement the existing body of knowledge with, from our perspective, eligible complementary explanations. Subsequently, no rigorous research methods were applied for the empirical examination of our findings and, finally, we are aware of the possibility for the nature of management frameworks not being fully explained by our theory development. We did, though, find the insights from Chapter 1 to be useful in explaining the high incidence of well-known frameworks that are in use without their rigor being considered. The insights enhanced our understanding of the BM

and coopetition-based approach to SCM, as well as considerably improved the development of our three discretionary frameworks.

Therefore, the development of the BM approach to SCM is to some extent arbitrary and so is the selection of the elements in the frameworks. Among an ample amount of theories in business research we decided to use dynamic capabilities to explain the BM approach to SCM in the era of hyper-turbulent dynamic environment. A qualitative-research approach was used, and a single case study was conducted. Thus, limited generalizations are possible. The future research could benefit from *ex-ante* analyses of the abilities and dynamic capabilities organizations and SCs will need to design a 'winning BM'. Furthermore, the study at hand uses a qualitative approach to provide a longitudinal analysis of the BM dynamics of Post of Slovenia. To complement the methodological variety, the future research could empirically evaluate companies (and SC) ability for future redesign with the use of quantitative methods. We did, however, carry out a bibliometric analysis to examine the development of BM topic in two different time frames. We acknowledged the limited interpretation ability of bibliometric methods. Also, both the choice of time frames and the inclusion of journals were partly arbitrary decisions.

In the final chapter of the dissertation we developed the game-theoretic framework which also builds on some of the findings concerning the nature of management frameworks and BM approach to SCM. Previously mentioned limitations, such as arbitrary choice of framework elements, the need for critical mass of users, and application non-universality, apply. Limited access to primary and secondary data in multiple cases (vignettes) may also affect the interpretations from the vantage point of game theory. The choice of dimensions and the elements of the conceptual framework was partly arbitrary. Finally, game theory is in general very broad in scope. Thus, to pursue our train of thoughts, we will draw on cooperative game theory and use various applicable methods and techniques. Longitudinal studies and additional case analyses are necessary to validate our framework. We propose experiments and mathematical modelling as two salient approaches to prove the game-theoretic framework and complement/advance our findings empirically.

Organization of the dissertation

The core of this doctoral dissertation consists of four chapters. In Chapter 1 we conducted an in-depth literature review on the intersubjectivity, memetics, and the network effect. The Chapter 1 focuses on the nature of management framework and complements the existing perspectives on the 'diffusion and adoption' of the management frameworks. Chapter 1 emphasized the importance of a critical mass of users for a framework to become successful and thus valuable. In addition to that, the management frameworks are presented as intersubjective phenomena where intersubjectivity partly accounts for the

'success' of the frameworks. If management frameworks are intersubjective phenomena, they can be widely discussed and used in practice. Chapter 1 concludes by challenging the value of well-known frameworks and by recommending 'precautions' before using and hailing some of the well-known management frameworks as silver bullets.

We carried out a bibliographic analysis in Chapter 2 to examine approaches, frameworks, and prominent topics in BM research. Chapter 2 starts with descriptive statistics on publications and journals on BM research. Then, we identified the areas of interests (clusters) in periods until 2011 and between 2012 and 2016. Finally, Chapter 2 discusses current limitations that apply to BM research and discusses the opportunities to advance the BM research.

Chapter 3 aims to extend the topics from a 2007 research piece and Chapter 2 to stimulate debate on strategic issues vital for the long-term success of SCs. In the thesis we upgraded from SC process modelling towards SC BM management; from information to knowledge transfer and from the maturity of SC to dynamic capabilities. Chapter 3 attempts to identify and connect the elements of SC BM and the key issues for development of dynamic capabilities to enable future redesign of BMs. Chapter 3 elaborates on the findings from Chapter 1 for the development of two frameworks showing the elements of an SC BM and the interconnection of those elements and dynamic capabilities. The use of these frameworks is demonstrated in a case study of Post of Slovenia. The case uses both primary and secondary data gathered from interviews, publicly-accessible articles and internal reports. An SC should develop the elements of its BM in such a way that it will be able to continually change its existing or add a new BM from the AS-IS state to a currently unpredictable TO-BE state as a response to currently unknown changes in its BM. Chapter 3 summarizes and extends the recent literature through the dynamic capabilities approach and BM management, proposes two frameworks and identifies topics relevant for future development of the SCM field.

The last core chapter, Chapter 4, describes SC cooperation in a narrative style. Then, emphasis is put on the evolution of dynamic SC networks and the inherent presence of coopetition between competitors-partners. Thus, Chapter 4 discusses the evolutionary pathway from the dyadic view towards the coopetition-based scenarios between various competitors-partners in the networks. Next, Chapter 4 clarifies coopetition and identifies the game-theoretic features that define different coopetition-based scenarios. Chapter 4 then presents a game-theoretic framework with the use of theoretical underpinnings from Chapter 1. A game-theoretic framework is used to analyze the real-life coopetition-based scenarios throughout case-study analyses and short cases (vignettes). Finally, Chapter 4 combines its findings with those of Chapters 2 and 3, respectively, to discuss the implications of coopetition-based scenarios for coopetition-based BMs.

1 THE NATURE OF MANAGEMENT FRAMEWORKS

Management frameworks are widely used as practical tools which support analysis, decision making, benchmarking, or guidance of companies towards certain objectives. SWOT-matrix is a typical management framework. Although several research papers tackle management innovation and its adoption, management research and practice remain flooded with frameworks of questionable value. Rather than solely focusing on the adoption, this chapter undertakes the research on the origins of management frameworks. We revolved around memetics and advanced the theory of intersubjectivity and network effect to better explain the origins, adoption, and value of management frameworks. By utilizing memetics we deciphered the rationale for the development of well-known frameworks. We show why the value of a framework is increased when a framework becomes an intersubjective phenomenon. Finally, we complement the existing perspectives on the nature of management frameworks by explaining the role of the network effect within a particular realm.

2.1 Introduction

Many researchers and practitioners have had difficulty advocating the usefulness of frameworks and similar 'fashions' (Hill & Westbrook, 1997; Miller et al., 2004; Spell, 1999) and only few theorists or practitioners ask themselves why a certain management framework (e.g., SWOT or the Business Model Canvas) has become a *de facto* standard in their realm. The unique value of well-known frameworks employed in organizations seems to be only one of the reasons why numerous frameworks have spread swiftly (Sturdy, 2004). Other reasons for the existence and use of management frameworks are: First, they decrease the level of uncertainties when a new phenomenon is tackled. Second, frameworks can support achievement of organizational strategies and prompt 'intra-company connectedness"' (Lambert et al., 2005). Third, the use of management frameworks adds to managers' reputations by showing a manager is credible and capable of dealing with uncertainties in the future (Mamman, 2002). Finally, frameworks can depict features of various phenomena (Priem & Butler, 2001), compare and guide numerous organizational practices (Heylighen, 1998), support execution of tasks (Andrew & Evans, 2011), and refute or confirm a particular management approach (Schwartz & Carroll, 2007).

As well-known frameworks gain enough popularity within particular realms, frameworks become widely used by managers, researchers, and consultants to provide additional rationale for decisions. We try to decipher this conundrum by presenting management frameworks as a phenomenon, emerging and being adopted through specific pathways.

In light of this, we argue that "memetics" offers a comprehensive explanation of the way in which frameworks are developed (Whitty, 2005). Memetics is the study of transmission of so-called memes between people in particular realms. We draw on understanding a meme as of a cultural element, with an ability, to replicate, similar to the biological replication of a gene, and being able to pass from one human being to another (Dawkins, 1976; Lord, 2012). Management ideas and, consequently, management frameworks, express similar characteristics. However, the nature of well-known management frameworks is not solely the result of memetics. It is rather an outcome of users' acceptance that is later transmitted throughout the entire realm. When a renowned management framework achieves critical mass, the rate of adoption becomes self-sustaining, and further adoption of the framework requires less consideration. Management frameworks engage people, e.g., researchers, managers, and stakeholders, who, by sharing a belief in its usefulness, allow a particular framework to become an intersubjective phenomenon in an entire realm.

Acknowledging the existing literature on diffusion which aims to decipher the introduction and adoption of innovations throughout communication channels (Strang & Soule, 1998), we make an attempt to explain why several management frameworks have swiftly spread in business discourse without a clear understanding of the value of a particular framework (Birkinshaw et al., 2008).

Our goal is to explain where frameworks originate, how memetics influences framework development, the neglected domains relevant for the adoption of management frameworks, and to discuss the value – merits, outcomes, and potential advantages – of well-known frameworks. Management ideas on which a framework is built "do not spring forth full blown but are made somewhere by somebody" (Peterson, 1979), and, analogously, the dissemination of these ideas is an outcome of active transmission among people (Bazin & Naccache, 2016; Braganza et al., 2009). Thus, we claim that the origins of management frameworks can usually be traced back to the creator and to the period in which it was conceived.

The expected value of a management framework is dependent upon the number of adopters and the rate of adoption that is facilitated with the network effect. Network effect means a potential user is likely to elicit more value from an adopted framework the greater the number of people who have already adopted it. We argue that insufficient time has been devoted to the analysis of how that value is derived. Understanding their origins ("memes") can enhance the ability to elicit value from management frameworks and improve the decisions about the use of these frameworks.

To understand “how people interpret, act, and ascribe meaning” (McCabe, 2002) to the management frameworks, we integrate intersubjective reality and network effect. Within the adoption of management frameworks, intersubjectivity resonates as "mutual engagement and participation between independent subjects, which directly conditions their respective experience" (de Quincey, 2000). When a framework becomes an intersubjective reality for two or more independent subjects, their engagement is changed. One can reasonably assume that the other subject is familiar with the framework. Owing to the network effect, a framework further becomes an intersubjective reality for the entire realm. Once the framework reaches that status, it is nearly impossible to stop using it.

The structure of this chapter is as follows: First, we review the existing body of knowledge on management frameworks. Then we move to the theory of memetics to undertake an explanation for the existence of well-known management frameworks. We introduce the concepts of intersubjectivity and network effect to encompass the determinants of a management framework’s success. Building on all three concepts, we offer a novel view of adoption and value of management frameworks. Finally, we discuss theoretical contributions and avenues open for future research regarding observations of management frameworks. We summarize the main aspects of the chapter in a brief conclusion.

2.2 Methodology

I approached investigating the nature of management frameworks as follows. First, a thorough literature review was carried out for the comprehensive view of the subject. Next, based on theories and concepts I utilized the conceptual model was constructed, explaining the origins, adoption, and value of management frameworks. Finally, I carried out the interpretation of findings throughout the remainder of the chapter. The literature review thoroughly examined memetics, and the existing body of literature on management novelties, especially management frameworks. Theory of memetics was utilized to explain the origins of frameworks and their characteristics. The network effect was reviewed and used to explain how a critical mass of frameworks’ users can be reached, while the theory of intersubjectivity provided a theoretical perspective on why and how management frameworks remain being used in particular realms – management. After reviewing the neglected theories on adoption of management frameworks, the model was drafted. Next, the model was fine-tuned in a way to capture the nature of management frameworks (Figure 1). The remainder of the Chapter 1 continues with the interpretation of findings in relation to the origins, adoption, and value of management frameworks. Ultimately, the discussion provides a synthesis of the in-depth literature review, our experience, and common sense (Eisenhardt, 1989; Nenonen & Storbacka, 2010)

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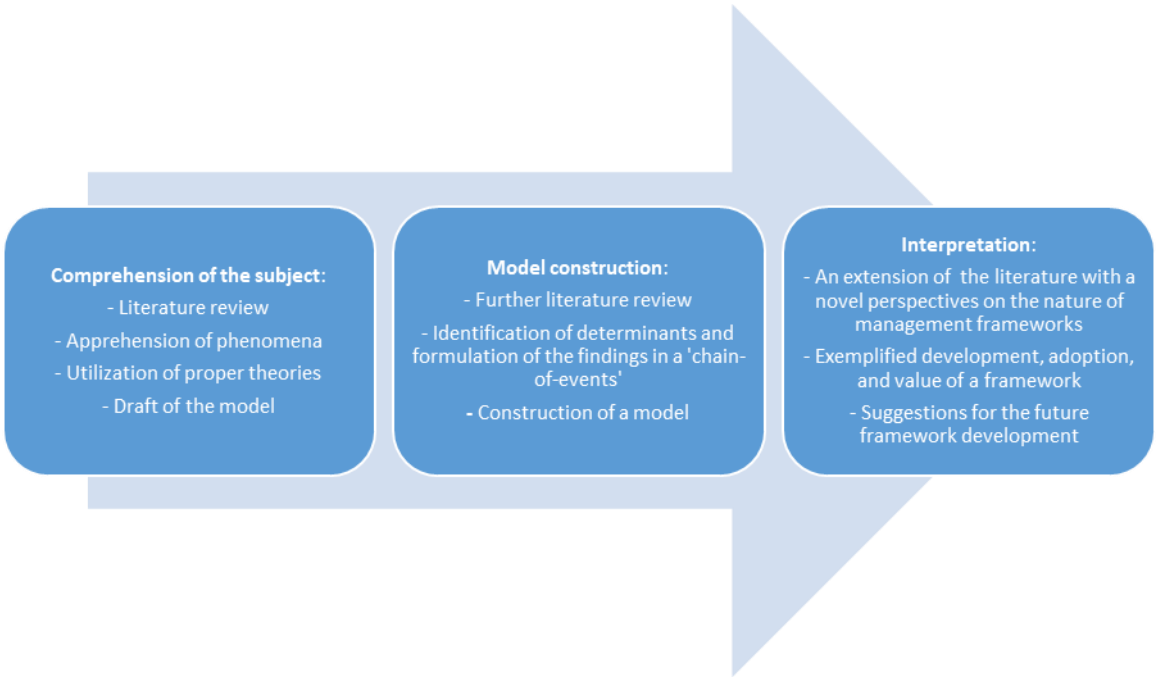
Figure 1: Research methodology



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The future research could validate the model (Figure 2) by using it in various interventions, for instance in development of new management frameworks, evaluation of existing frameworks or in predicting the success of the established frameworks.

2.3 Management frameworks

In organizations, frameworks enable a comparison of principles, techniques (Rezaei et al., 2014), hold or support a theory (Swanson, 2007) and are seen as sets of premises, values, and practices that promote dealing with contemporary issues (Andrew & Evans, 2011). Management frameworks "emerge from people's minds and enter into a form that can be perceived by others" (Heylighen, 1998). This chapter combines several terms from various fields, many of them with different definitions and also used colloquially. Table 1 introduces the main terms that are used in this chapter.

Table 1: Key terminology

TERM	DEFINITION
Management Framework	A management framework is a broad overview, outline, or skeleton of interlinked items which supports a particular approach to a specific objective ("Framework", Business Dictionary). As such, a management framework is non-

	falsifiable. It can be comprised of either one meme or a set of multiple memes.
Meme	A meme can be thought of as a specific idea: one with the capacity for copying itself from mind to mind and from person to person, thereby multiplying its presence within a particular realm (Lord, 2012).
Management Fashion	A management fashion is a relatively transitory collective belief, disseminated by management fashion-setters, e.g., a management technique that drives rational management decision-making (Abrahamson, 1996). For the purpose of this dissertation, management fashion can represent a management framework that has reached a critical mass and has become an intersubjective phenomenon. Unless otherwise noted, we use the terms fad and fashion interchangeably.
Fashion-Setters	Fashion-setters are organizations and individuals who dedicate themselves to producing and disseminating management fashions (Abrahamson, 1991).
Management Novelty	A management novelty is a newly invented framework, process, technique, structure, construct, or concept.
Origin	The origin of a management framework stems from floating memes and represents the time period and the author of a management framework if applicable. The origin of a management framework, unlike other management novelties, can usually be traced back to its author and/or date when it was conceived.
Critical Mass	Critical mass is a sufficient number of people in a particular realm who initiate ("collective") adoption of a management framework, leading further to a rate of adoption enabling the framework to be self-sustaining (adapted from Markus, 1987; Marwell et al., 1988; Rogers, 1976; Schoder, 2000).
Adoption	Adoption is the initial use of a framework in practice initiated by researchers, practitioners, managers, and consultants (adapted from Boyne et al. (2005)). Adoption is comprised actions required or implied by the management novelty and

	commitment to it by users of that novelty (Kostova & Roth, 2002)
Network Effect	Network effect is the circumstance in which the net value of an action (consuming a good, subscribing to a telephone service, or adopting a management framework) is positively affected by the number of users taking equivalent actions (Liebowitz & Margolis, 1994).
Intersubjective Reality	Intersubjective reality or intersubjective phenomenon is a mutual engagement and participation among independent subjects, which directly conditions their respective experiences (de Quincey, 2000). A management framework becomes an intersubjective phenomenon when it is known well enough in a particular realm to assume that an explanation of a framework is not needed.
Realm	A realm is a group of people to which certain specific characteristics pertain that distinguishes one realm from another. For example, researchers, practitioners, and consultants in the realm of business management usually possess in-depth knowledge about management novelties, while they may only be acquainted with and, consequently, less susceptible to phenomena in engineering or medicine.

Source: Personal archive

Not long ago a question about the eligibility of frameworks emerged: whether the frameworks are conceptual frameworks or sets of ideas shared among writers who have similar attitudes (Schwartz & Carroll, 2007). The framework development remains an ambiguous field (Andrew & Evans, 2011). Even though many studies discuss the development of novelties and their diffusion, management frameworks require – to some extent – 'discipline-specific' reasoning (Cornelissen & Durand, 2014). Thus, we draw on distant domains, namely memetics, network effect, and intersubjectivity, to provide revelatory insights from analogical reasoning. The analogical reasoning can be used at different levels and can transmit apt and fitting insights from distant – often mature, nature or 'hard' – domains that can enhance the understanding of management novelties (Cornelissen & Durand, 2014).

We claim that every framework is inherently fictional; it does not exist in the real world. Frameworks cannot be attached to specific observations, but are seen as an abstract statement of the elements of these observations (Priem & Butler, 2001). Thus, the 'scientific correctness' of management frameworks cannot be tested, and they are—by definition—non-falsifiable.

Namely, almost anything can be divided based on two dimensions and shown in a matrix. For example, SWOT divides factors based on internal/external origin and favorable/unfavorable traits; the Kraljic portfolio purchasing model divides items based on financial impacts and supply risks (Kraljic, 1983). As falsification has been neglected by the management society (Armstrong, 1983), theories are sometimes declared ambiguously, not allowing other theorists to refute the theory or its framework. The management society could benefit from Popper's essential principles of testing theories, where "testing" meant deliberate efforts to falsify the theory until this falsification fails (Faran, 2009; Popper, 1961).

While SWOT as a framework is *per se* non-falsifiable, its results in practice are questionable. Typical procedural guidelines consist largely of catch-all questions devoid of explicit theoretical underpinnings and often produce shallow misleading results (Valentin, 2001). For example, the usefulness of the SWOT-analysis is highly questionable since organizations failed to reap any benefits from "meaningless descriptions" resulting from conducted SWOT-analyses (Hill & Westbrook, 1997). The example of a SWOT-analysis demonstrates that managers prefer frameworks to generate descriptions in a simplistic manner to process the information more effectively. Also, managers favor "understandable, feasible, and internally consistent" outcomes (Postma & Liebl, 2005). On the other hand, a framework's ease-of-use accounts for oversimplified division of various factors based on two dimensions (Beck, 1982). By doing that, cumbersome environments perplexed with uncertainties, namely dynamic SC networks, are represented too simplistic. This is why "the more careful and systematic managers analyse the complex and uncertain environment, the more successful the strategies they formulate will be" premise of the SWOT-analysis results in meaningless descriptions (Postma & Liebl, 2005) and only adds to generalities and ambiguity (Eisenberg, 1984; Ford & Ford, 1995). Useful outcomes, if any, can result from using SWOT-analysis or SCOR (Supply-chain operations reference) model; however, the empirical research has shown that »no-one (in organizations, particularly) used the outcomes later« (Hill & Westbrook, 1997). Needless to say, the continued use of well-known frameworks and other management novelties should be questioned.

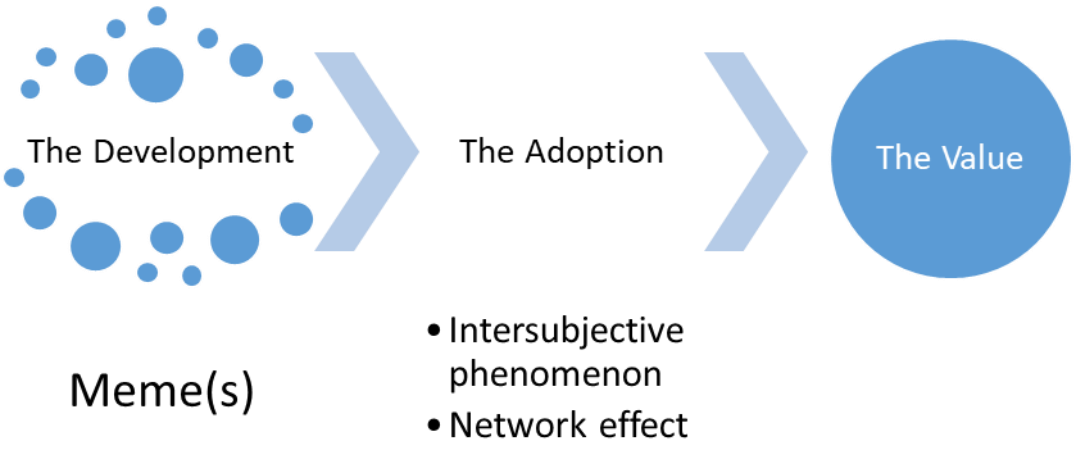
In line with Birkinshaw et al. (2008), we argue that a management framework is a management innovation in a certain moment. That innovation is an organized expression

of memes. Most frameworks can be attributed to a few individuals who organized the expression of memes—for instance, Marsden and Littler (1998) developed a framework presenting facets of consumer behavior based on nine basic assumptions of human nature that were largely discussed at that time.

Well-known frameworks have some merits (Goldkuhl, 1996), which enabled a surge of a certain framework among its alternatives in competition for preeminence (Schwartz & Carroll, 2007). An important merit behind each management framework is its *logic*. A framework is *logical* because it is a shared belief and because it structures the cognition of a reality (adapted from Marquis & Lounsbury (2007)). The logic behind each framework advocates its importance in decision-making in organizations (Thornton, 2004). Moreover, the simplistic logic behind a framework underlies its ease-of-use and facilitates a framework to become an intersubjective phenomenon in a particular realm. It remains, however, unknown which framework will *a priori* turn out to be successful. Only after a framework had been adopted for a while can a community determine whether it is novel and has turned out to be 'fertile' (Arjen, 2015). Typical examples of successful arbitrary frameworks include SWOT (Pickton & Wright, 1998), Carter and Roger's (Carter & Rogers, 2008) sustainable SC management framework, the balanced scorecard (Kaplan & Norton, 1995), Porter's five forces (Porter, 1979), and Kraljic's purchasing portfolio (Kraljic, 1983).

Frameworks can be seen as a pool of socially constructed ideas (memes) that have been floating around, and these ideas can reconcile all organizational perspectives, approaches, and directions (Kajan, 2011). This is the allure of memetics—identifying memes that influence our lives (Blackmore, 1999) and, consequently, the development of successful frameworks. In the development of management frameworks, meme(s) get seized and are articulated as 'management ideas'. Memes are small carriers of on-going beliefs in particular realms that 'lend' a replicating ability to a framework. A framework is adopted swiftly because its constitutional elements – memes – resonate contemporary ideas whilst the survival of memes implies relevance to the framework's users. When a critical mass of users starts using frameworks comprised of seized meme(s), a framework can be called an intersubjective reality. The network effect fosters framework adoption and contributes to a framework becoming an intersubjective reality within a particular realm. Finally, owing to non-falsifiability of a framework various users commence deriving – questionable – value a framework.

Figure 2: The origins, adoption, and value of management frameworks



Source: Personal Archive

This line of thinking explains why frameworks such as Porter's five forces, the balanced scorecard, or the SWOT matrix are, despite several of their shortcomings, continuously used. We focus on the network effect and intersubjectivity to argue that the benefit of a management framework becoming an intersubjective phenomenon can be seen in the result that it is easier for participants in decision-making to understand. As such, management frameworks establish an intersubjective reality, creating a common ground for the future interactions with various stakeholders. Network effect, however, does not necessarily require interactions but facilitates the adoption of a framework and enhances the value of a framework throughout the network externalities.

2.4 Utilizing memetics

Memetics is "the theoretical and empirical science that studies the replication, spread, and evolution of memes" (Heylighen, 1998). The definition of a meme is akin to the biological concept of replication (Dawkins, 1976). Memes do not only have characteristics similar to genes, but also have established aptitudes, mainly fidelity, fecundity, and longevity, that enable replication of ideas, thoughts, and culture to be more effective (Dawkins, 1976). (Lord, 2012) identifies memes as specific ideas with abilities for replicating themselves among people's psyches to affect particular realms. Additionally, during the replication process, fresh management ideas (memes) become sedimented with their predecessors, which tend to become obsolete (Morris & Lancaster, 2006). Based on the sedimentation process, we can claim that management frameworks do not change substantially despite being spread widely since the frameworks are already explicitly expressed memes.

Memes remain alive and become contagious due to "psychological appeal" (Dawkins, 1976). Memes are not contagious *per se*; they spread because of certain pathways for transmission that enable an interplay between memes and the environment. These environments are biological, physiological, and social (Whitty, 2005).

Memes will not reproduce just by themselves; reproducing is dependent upon how the replicating process of memes interacts with externalities, such as employees, stakeholders, communities, and other articulated ideas (O'Mahoney, 2007). Second, not all memes are initially contagious; some become successful after a certain amount of time (Knobel & Lankshear, 2007). The reason why some memes do not thrive in the beginning might lie in the fact that not all memes spread because they are true or beneficial. However, impactful memes find their ways to spread in the future as they did in the case of the Oobeya construct, which remains Toyota's lean manufacturing tool. The construct was developed in the 1980's, become widely used several years later and is still in use twenty years later. That shows that memes can settle on hosts only by offering advantages for their hosts with the possibility to evolve in the future (Lord, 2012).

As memetics holistically redeems "a human construct as a collection of feelings, expectations, and sensations, cleverly conjured up, fashioned, and conveniently labelled by the human brain" (Whitty, 2005), its rhetorical viral and mimetic properties have found their way into managerial discourse (Green, 2004). The development of ideas, concepts, conceptual models, methodologies, and practices may all be driven by memes. Successful memes have a longevity that is long enough to enable the emergence of so-called "environmental niches" (Lisack, 2003). Second, memes work as a 'catalyst' for development of the most appropriate topic among contemporary management ideas.

The survival rate of memes in management is, however, low since managers are 'attacked' by all sorts of evolving management ideas. The survival of a meme in management is dependent upon a meme's value—a new meme has to bring something that is at least the same or at a higher level than its predecessors (Gibson & Tesone, 2001). Memes also work *vice versa*: management novelties spread not just because people and organizations adopt them, but also because the novelties adapt people and organizations (O'Mahoney, 2007). As for frameworks, memes are not likely to survive or thrive if their influence is denied by the host (Pech & Slade, 2004).

2.5 The origins and development of management frameworks

An intriguing question comes to mind—how memes get seized and how they fall into (the theory of) management (Whitney et al., 2003). O'Mahoney (2007) states that management novelties inhabit organizations or their documents and are later transmitted, in a manner similar to memes, through consultants, education, and the network effect. (Baldridge &

Okimi, 1982) argued that management novelty at first strikes the business community, then government, and finally education. On the contrary, several authors agree that new frameworks emerge mainly through academic publications.

Contingent management frameworks often 'linger' since their longevity is dependent upon how well the memes are refined and organized (Røvik, 2011). If the frameworks have been refined in collaboration with other participants, their relevance to business is thought to have been improved. Second, for the development of a successful framework it is important how management ideas (memes) have been framed in a framework and contextualized to organizational needs (Mamman, 2002; Benders & Van Veen, 2001). Fashion-setters—those who present management frameworks as a "universally applicable solution" in a particular realm (Abrahamson, 1996)—are eager to identify the needs of organizations and managers. Moreover, fashion-setters need to successfully present novel frameworks as the solution to organizational issues and transmit this opinion across the board as soon as possible (Abrahamson, 1996). Another objective of fashion-setters is to assist managers in detecting and evaluating new management frameworks (Clark, 2004).

Management novelties have been recognized as possible examples of memes spreading through business discourse (O'Mahoney, 2007; Price, 2012). The expected yield of memetics in management is a better understanding of mindsets, new structures of leadership and other processes. Second, memes have a role in facilitating the message transmission or opinion sharing within particular realms (Knobel & Lankshear, 2007). Memetics sheds new light on our perception of thoughts, ideas, theories, frameworks, paradigms, and methodologies (Lord, 2012). Whitty (2005) claimed that memetics could facilitate an execution of managerial activities and successfully applied memetics to project management, whereas Vos and Kelleher (2001) applied memetics to operations between companies in the same market. Authors identified the ongoing issues and provided a more appropriate explanation of organizational behavior from the memetic perspective.

Røvik (2011) analyzed how organizations handled management ideas and concluded that the determinants for enhancing replication of a meme are currently unknown. One of the deterrents might be a level of ambiguity associated with a novelty due to limited knowledge about its value (Birkinshaw et al., 2008). Various management frameworks originating in memes prosper due to their replicating ability and result in a surge of a new management fashion (e.g., SWOT). Management novelties will continue entering business as fashions since it is almost impossible to evaluate an idea's outcome in advance without perfect foresight about its value (Scarbrough & Swan, 2001). Moreover, each management novelty may preclude other good ideas (Carson et al., 1999; Ettorre, 1997).

2.6 Adoption of management frameworks

Adopting frameworks for managing business has become a craze since it allows organizations to signal that they are progressive (Nohria & Berkley, 1994). A framework comes with benefits and drawbacks (Lambert et al., 2005). As considering the alternatives, outcomes, and the value of a framework is often not the case, the adoption of a framework that has reached a critical mass is easily facilitated (Secchi & Gullekson, 2015). That is why a critical approach to gauging pros and cons of a framework should be employed (Pech & Slade, 2004). The adoption of a management framework is not mainly determined by the rigor in developing frameworks (Iivari, 2007) but by other determinants, such as inter-organizational memetic pressures that frighten managers, who respond by putting a novel management framework into practice (Lawton & Wholey, 1993).

Research has shown that the adoption of a management novelty is usually decoupled from the potential adjustments that might have to be made by the organization that adopts a framework (Scarbrough & Swan, 2001). Also, when a framework reaches critical mass, efficiency concerns are replaced by social pressures from outside stakeholders, forcing organizations to employ frameworks without considering the adequateness of a framework in a different environment (Ansari et al., 2010).

Abrahamson (1996) established the term “management fashion” and developed a stepping stone towards understanding the success of management novelties. He used Meyer and Rowan’s (1977) explanation of why managers seek for appropriate management framework: to represent themselves as rational in front of stakeholders. Managers strive for the adoption of successful management frameworks and more or less efficiently utilize ideas, frameworks, or other novelties from the field of management to present themselves as rational. From the perspective of other stakeholders, they seem to be progressive in pursuing the most recent management novelties (Spell, 1999).

When a vast majority of organizations adopt a management novelty, other organizations are prompted to join the bandwagon. Abrahamson and Rosenkopf (1993) argue that such pressures occur when non-adopters would like to follow early-adopters. This can mean that organizations employ a framework because other organizations have adopted it, rather than due to a careful evaluation of framework’s benefits. Analysis of this phenomenon enables identifying the conditions under which organizations can limit the rise of potential management fashions (Secchi, 2015).

Several frameworks are applied without consideration of their appropriateness in certain settings and because new frameworks are either complex for the sake of complexity or deceptively simple (Allen, 1981). Sometimes, these potentially successful frameworks are taken from dissimilar settings, applied without their limitations being carefully examined,

and presented as the most appropriate tool for improving decision-making (Birnbaum, 2000). Management fashions, in a manner analogous to memes, compete for replication and obtainable resources in the broader managerial discourse (Price, 2012). Frameworks are often adopted irrespectively of other determinants, potentially causing damage to an organization (Mamman, 2002) or impeding adoption of more suitable frameworks (Benders & Van Veen, 2001). Clark (2004) claimed that management novelties are adopted and spread in two stages—first, the preferences of a novelty's potential consumers are identified, and second, a successful novelty reinforces these preferences, resulting in the consumers' belief that the novelty is at the "forefront of managerial progress" (Abrahamson, 1996; Benders & Van Veen, 2001). The future adoption continues due to the number of users that deem a management framework a *de facto* standard within their realm.

That being said, we introduce the concept of intersubjectivity to management frameworks. When a management framework becomes an intersubjective reality, it is well-known in a certain realm and it is not necessary to explain the framework to others before its use. Since the use of a framework which has become an intersubjective phenomenon is simplified, its expected value increases.

2.7 Value of management frameworks

Some well-known frameworks remain characterized by usefulness and ease of use. Ease of use is a result of frameworks being devised as simple matrixes. These matrixes can be then easily imposed as tools for decision-making and explained to other participants. In addition to that we find a framework to be determined by at least three other factors: time, place, and person—a framework might be appropriate only for a certain time period and later declared preposterous and impossible to be credible (Mill, 1909), in specific environment and palatable for people in particular realm. For instance, the evolution of The proliferation of the SC management (see Chapter 3 for more) established the need for a proper performance-measurement framework (Gunasekaran et al., 2004). The broader impact of the SC performance metrics framework might have arisen from managers' willingness to spread it within the industry, thereby making it well known and consequently increasing its value and applicability.

The value of a certain framework can be magnified when it is an outcome of interactions among people, organizations, and technology, and when the framework's adequateness for overcoming barriers in decision-making or contributing to theory can be recognized (Klein & Myers, 1999). Further, the value of a framework might lie in its ability to facilitate stakeholder relations (Schwartz & Carroll, 2007). This benefit occurs when stakeholders have a common knowledge of the framework. The framework then becomes a common

ground for the interactions and elaborations. For instance, the discussions about digital transformation have organized around digital transformation framework (Westerman et al., 2011). Its ease of use due to a matrix layout and simplicity in 'dividing the digital transformation' in a few pillars, support a framework in becoming an intersubjective reality in several realms such as strategic management and information systems community. The value of the digital transformation framework has increased since its introduction to new users can now be seamless, and thus its users are required to use less cognitive resources.

A framework can be deemed a 'communication tool'. That is, a novelty that, by revealing the assumptions of other researchers, managers, and consultants, enhances connectedness of different (scientific) realms (Heemskerk et al., 2003). As a communication tool, a framework becomes a common ground for its users and establishes what is known as an intersubjective reality (Berger, 1966). Also, users from a particular realm can be geographically distributed. Frameworks allow managers and researchers from the realm to abstract information or procedures notwithstanding the physical distance between them (Martín et al., 2003). By abstracting the information and communicating via a framework managers and researchers match one mind with another (Duranti, 2010) and contribute to establishing an intersubjective reality for a particular realm (adapted from Tenaglia & Noonan, 1992; Postma & Liebl, 2005).

With the implementation of a new approach (e.g. Total quality management), a framework can support its implementation by improving collaboration, disseminating information, and develop and maintain initiatives, such as training programs (Rodrigues, 1995). Also, a framework can be deemed valuable if it is associated with a successful management or improved management performance. The latter remains an important indicator of how valuable frameworks and other management novelties are in, for instance, project management (Raz & Michael, 2001). However, managers are encouraged to adopt management novelties notwithstanding their value. Managers who adopt the novelties are deemed "innovative, progressive, and better" notwithstanding the value that was excerpted from a framework (Gibson & Tesone, 2001). In line with Gibson (2001) we assert that management frameworks should be adopted when they fit the existing organizational practices. For instance, Business Model Canvas can only be a useful framework for a firm with a BM approach to SCM. For companies where a BM is not a unit of analysis, BM frameworks are not universally-applicable solutions. Second, prior to widespread use of a framework, managers, team leaders, researchers, and managers should provide specific, measurable, and attainable outcomes and answer to how a framework can facilitate accomplishing a specific approach. Finally, organizations need time, money, and people to adopt and use a framework within or by changing the existing practices.

The existence of many frameworks established a need for "testing, enhancing, and embellishing" the value of these frameworks (Banville & Landry, 1989). However, models for predicting the success of a viral management novelty in its early stages or for forecasting the "longevity of a meme" have not yet been developed (Bauckhage, 2011). As it is difficult to ex-ante evaluate the usefulness of the framework (Sturdy, 2004), they tend to become adopted due to their predictive ability and offer inadequate answer to the question of the value of the management ideas (Heusinkveld et al., 2011). Interestingly, the research on whether the outcomes of management frameworks are decoupled from or translated into practice has so far been inconclusive (Røvik, 2011). Dirk (1999) claims the purpose of research is to draw management novelties from "confused, vague, inchoate" experience and practices. Ultimately, researchers develop a management framework with all the details cleverly conjured up in a simplistic way to persuade the potential users. However, the user should determine whether a framework is vaguely conceptualized, how its elements are linked and based (or not) on empirical groundings, and if the framework overlaps with other (related) management novelties (adapted from Dembek et al., 2016).

It is difficult to assess how outcomes from different analysis using adopted frameworks shape (and improve or not) businesses. Despite that, some measures could be employed to identify whether a framework is useful or not before it is adopted (Holsapple & Joshi, 1999). For instance, frameworks should simplify predictions within business organizations (Dean & Bowen, 1994).

In line with Pech and Slade (2004), we argue that the propensity of managers to utilize management frameworks can facilitate adoption and this propensity is a prerequisite for deriving as much value as possible from the framework. Managers' decisions for the adoption of a framework are partly evidence-based; however, the choice is inevitably arbitrary to a certain extent. Abrahamson (1996) discovered that this inclination could be encouraged by fashion-setters, who promote a certain management novelty. Even though fashion-setters play only supportive roles in the success of a management framework, they can raise the likelihood for a framework to achieve its critical mass (Clark, 2004). Fashion-setters persuade managers to believe that some of these novelties are of greater value than the existing tools even though the metrics for defining the 'newness' of a management framework had not been developed so far (Volberda et al., 2013).

Memetics teaches us about the 'time-dependency' of the floating ideas and explains why certain frameworks emerged in particular periods, whereas the number of the people that advocate the value of the framework contributes to a framework's success in particular realms. The value of management frameworks can be easily elicited if they are well-known, simple, and explainable (adapted from Andrew & Evans (2011)). However, criteria for evaluating simplicity and the explanatory nature of a framework is subjective and

neither absolute nor universal (Granovetter, 1979). Besides, it has been so far nearly impossible to predict which framework will reach critical mass in the academic or business communities (Schwartz & Carroll, 2007).

Managers should bear in mind that new ideas in management are usually presented as "universally applicable quick-fix solutions" (Birnbaum, 2000), whereas an appropriate adoption and value exploitation of a management framework requires a stronger commitment and devotion to understanding its operationalization. Moreover, it is useful for a framework to become an intersubjective phenomenon—then eliciting a framework's value is simplified due to people's awareness of the framework's existence and, subsequently, due to an emergence of a mutual understanding of the framework among adopters.

2.8 Management frameworks as intersubjective phenomena

Intersubjectivity can be interpreted "as the matching of one person's mental state with another's mental state" (Duranti, 2010). Intersubjectivity activates whenever people's thoughts and feelings are mutually influenced (Liebowitz & Margolis, 1994). Moreover, intersubjectivity is not only the convergence of these thoughts among multiple participants but, more importantly, convergence among the doers of an action—users of the frameworks who depict "interactional and social reality" (Schegloff, 1992). Intersubjectivity plays an important role within human experience, and it can open new frontiers for understanding how people perceive and transmit various facets of management (Duranti, 2010).

A framework becomes an intersubjective phenomenon when it is known well enough in a particular realm to assume that an explanation of the framework is not needed. It can be expected that the other person in any business-related conversation is familiar with the framework (e.g., a manager can ask for a SWOT analysis with a reasonable assumption that his or her subordinates will know what the SWOT is). However, as users are coming from different backgrounds, certain frameworks are well known in one realm, while they might not have reached another (Birnbaum, 2000). Second, researchers tend to construct their research on established domains of fundamental disciplines (Cornelissen & Durand, 2014). Thus, the researchers collaterally restrain an intersubjective-reality (a framework) from reaching different fields and thus from possible evaluation of a framework beyond its realm.

Intersubjectivity is a state in which people maintain the premise that their perception of a proper management novelty, namely a framework, is the same as other people's perception (adapted from Duranti (2010)). Husserl (1970) argues that this is not due to an individual's ability to read another person's mind but rather because the individuals believe that other

people have the same perspective. Since spreading of well-known management frameworks requires shared systems of meaning among participants (Trompenaars, 1995), intersubjectivity is an existential prerequisite that can lead to mutual understanding.

Intersubjectivity is not an experience limited within an organization's boundaries since it can influence various interactive participants (Karayiannis & Fullbrook, 2002). This is especially important for frameworks used as a medium for inter-company communication. Intersubjectivity is what guides a framework as a set of memes to inhabit people within interactions. This process is swift since memes are considered to be very proactive during social interaction (Shepherd & McKelvey, 2009). The users perceive management frameworks and put them in order on the basis of intersubjectivity (Lord, 2012), meaning that the management frameworks become palatable from the users in particular realms as the sharing of similar beliefs increases the value of the frameworks.

2.9 The network effect

Network effect happens when "the value of an action is affected by the number of agents taking equivalent actions" (Liebowitz & Margolis, 1994). In management, the network effect occurs when a utility a given user derives from a novelty depends upon the number of other users who are in that particular realm (Minniti, 2005). The network effect has already been recognized in marketing, where some markets are characterized by strong positive network effects (Weitzel et al., 2000). With the number of existing users increasing, the more new users are enticed into the user network (Leibenstein, 1950).

Most decisions resonate network effect, which is widely recognized for its corollary called "network externality" (Liebowitz & Margolis, 1994). People are thought to be "docile" (Simon, 1993)—having an affinity for information received from other users—which is why network effect and its externalities provide affirmation to the participants of a particular realm by clearing the alternative available resources out of one's mind (Bardone, 2011). Furthermore, some users start using a framework not because of the comparison of actual and desired utility but due to their expectations of future utility (Thun et al., 2000). Network effect is, however, facilitated with the bandwagon pressure (Thun et al., 2000; Braun, 1995) which enables information sharing among potential users and promotes additional adoptions (Minniti, 2005).

Both negative and positive reflections of end users of management frameworks have corollaries on the adoption of management frameworks. Maier (1995) emphasizes the importance of communication when network effect occurs, enabling users to exchange opinions. The positive outcome of this mutual process, which infects our thoughts, ideas, and development or adoption of management frameworks (Liebowitz & Margolis, 1994), is that a framework becomes an intersubjective reality in a certain realm. Network effect is

not a linear information transfer but a process of interrelating and sense making between two or more entities (Jacky et al., 1999).

We distinguish between indirect and direct network externalities (Liebowitz & Margolis, 1994) to elucidate the transmission of a framework's value within a particular realm. For the network externalities to occur, a certain amount of time is necessary, whereas network effect will be most significant within a particular realm (place) where individuals share similar beliefs. Network externality is exhibited whenever the value of a management framework is influenced by the fluctuating number of participants in a particular realm (Liebowitz & Margolis, 1994). An important example of direct network externalities is a conventional telephone (Brynjolfsson & Kemerer, 1996). The value of a telephone or its system can only be elicited when the number of possible connections is increasing. Direct network externalities, therefore, directly affect the trustworthiness of a framework through the number of framework users (adapted from Katz & Shapiro (1985)).

Management ideas and, subsequently, management frameworks are influenced by indirect network externalities as well. Indirect network externalities are characterized by not having a direct physical effect (Liebowitz & Margolis, 1994). For instance, when managers and consultants decide to use more management novelties, management frameworks become well-known generically which makes it easier for a particular framework to gain critical mass. As such, management frameworks are used in practice notwithstanding the number of users (due to indirect network externalities). By encouraging more people to use the same management framework, its external competence rises, thereby making the framework more viable, more valuable, and less vague in its adoption (direct network externalities).

2.10 Discussion

The development and adoption of management frameworks have been fostered substantially due to managers' great efforts to represent themselves as progressive and rational in front of stakeholders (Meyer & Rowan, 1977). Managers are believed to have been adopting "bold theory", "breaking new ground", and "innovative research" (Arjen, 2015) as the management frameworks are sometimes ostensibly at the forefront of the alternative novelties. More probably its usefulness stems from a framework being an intersubjective reality within a particular realm. In addition to that, a management framework can be useful for decreasing the level of ambiguity in business discourse, and to enhance intra- and inter-organizational cooperation (Lambert et al., 2005), whereas its outcomes are often beside the point for the users of a framework. In line with Patel (2007) we assert that in particular realms users promote different management novelties. By

emphasizing their standpoints, the users preclude other frameworks, enhance the network effect and, consequently, facilitate adoption.

Two additional features of management frameworks are worth noting: a management framework's origin can usually be determined, and management frameworks are inherently non-falsifiable. Building on prior research (Hill & Westbrook, 1997; Valentin, 2001), this chapter highlights the lack of falsifiability that allowed frameworks to have been used in practice in various situations. Taken from different settings and populated by the users in particular realms, well-known frameworks are often deemed universally-applicable solutions and applied to decision-making. Second, scholars frame ideas – memes – from their observations in ways to ensure replicating ability of well-known frameworks. Some scholars try to decipher the value of management frameworks by engaging in a continuous inter-related process of ascribing meaning. Therefore, the value of management frameworks is contingent upon the notion of shared beliefs.

We complement the existing perspectives on the nature of management frameworks by utilizing memetics, the theory that asserts time-dependency of management ideas or memes (Pech, 2003). After a thorough review of available literature we encountered multiple possibilities for interpreting or materializing memes (Arumugam, 2012; Bauckhage, 2011; Finkelstein et al., 2008; Knobel & Lankshear, 2007; Lisack, 2003; O'Mahoney, 2007; Speel, 1997; Vos & Kelleher, 2001; Weeks & Galunic, 2003; Williams, 2000). In line with Weeks and Galunic (2003) we argue that memes can be expressed as, but not necessarily limited to, "ideas, beliefs, assumptions, values, interpretative schema, and know-how."

Memes do not possess the ability to 'know' or 'plan' the future (Pech, 2003; Hill & Westbrook, 1997; Valentin, 2001); however, memes tend to be an integral part of management frameworks due to their ability to transmit 'practices and rules' (Volberda et al., 2013) into forms of management novelties. Memes reproduce when they are palatable from their hosts. In that case, they act as a psychological agent conveyed from one individual to another. If the development of management frameworks revolves around refined memes, the value of a management framework might be greater.

We contribute to explaining the nature of management frameworks that brings about the transmission of memes. We consider memes as stand-alone carriers of pieces of information (Shepherd & McKelvey, 2009) and thus claim that management frameworks can be single memes or sets of multiple memes. A management framework can be comprised of either one meme or a set of meme, depending upon its nature and the nature of memes (Blackmore, 2000). Some memes can be expressed in one or a few words (Dawkins, 2000), whereas others can store an immense amount of information (Pech &

Slade, 2004). Management frameworks act as tools for materializing memes and allowing memes to prosper in practice, collaterally fueling the adoption of management frameworks and enhancing network effect.

We demonstrate that the adoption of management frameworks is facilitated when frameworks become a shared belief among individuals in a particular realm. Management frameworks remain shared beliefs within particular realms. Since particular realms are "incomplete shared systems" (Martin, 2002), frameworks remain an intersubjective reality in the realms and are thus advocated by the users, whereas any external source of evaluation is nearly impossible. Our findings suggest that the methodologies for predicting which management novelty will become a shared belief have not been devised so far. Although the expected value of a management framework is not the main concern when a framework is developed, an assessment of the soundness of framework outcomes would serve well to avoid valueless results from the analyses. Management frameworks would be valuable, for instance, if they contributed to organizational approaches, such as rational decision-making (Karataş-Özkan & Murphy, 2010). Finally, if a framework improved an approach and facilitated organizational goals, such as "functional effectiveness" (Patel, 2017), the framework is – by definition – valuable.

To illustrate the nature of the management frameworks, we discuss the development, adoption, and value of the "business model framework" developed by Nenonen and Storbacka (2010) that is becoming an intersubjective phenomenon. Prominent memes that have been floating around at the time BM framework was conceived are "managerial opportunities" and "value co-creation" (Nenonen & Storbacka, 2010). Largely discussed at that time, memes got articulated and refined in the BM framework as "design principles, resources, and capabilities" of the BM framework. Since BM design and dynamic-capabilities approach were part of academic and managerial discussions around 2010 (Barreto, 2010; Teece, 2010), replicating ability was 'lend' to a new framework. Second, the discussion on "operations capabilities" stimulated the on-going debate on BM approach to SCM, making the framework more relevant to its potential users. Finally, because the BM framework draws on up-and-coming theory of dynamic capabilities, managers who use the framework can be deemed progressive and/or rational.

Even though the research revealed no superiority of one framework of BM approach over the alternatives (Nenonen & Storbacka, 2010), the BM framework was cited in 300 publications and hence reached a critical mass of (potential) users. First, we account memes for reinforcing each other and improving the fit between them – constituting elements – of the BM framework (Siggelkow, 2002; Nenonen & Storbacka, 2010). Set of memes in 'three pillars', namely design principles, resources, and capabilities, represents a non-falsifiable BM framework as viable option to become an intersubjective phenomenon.

Again, the BM framework shows how myriad observations can be divided based on two (or more) dimensions and presented in a simplistic manner. The further success of the BM framework is contingent upon the network effect; the more people from the management realm will read about, use, or recommend the BM framework, the more users there will be. Ultimately the BM framework can become an intersubjective reality when it is familiar enough in a particular realm.

We reviewed the previous research and revealed different opinions on whether frameworks generally emerge in academia or practice (Baldridge & Okimi, 1982; Birnbaum, 2000; Ghoshal, 2005; Spell, 1999). Management frameworks do not always prosper due to providing advantages (Lord, 2012). It is the "psychological appeal" (Dawkins, 1976)—framework's ease of use, provisional explanatory power, and memetic forces—that enables mutual understanding among users in a particular realm, with the result that a framework becomes an intersubjective phenomenon. Also, frameworks provide a "common ground" (Schwartz & Carroll, 2007) on which stakeholders can facilitate the development of inter-organizational relations.

We presented two central, but neglected, domains: network effect and intersubjective reality—the first, enhancing frameworks' expected utility, and the second, supporting management frameworks to become well-known in particular realms. Individuals implement management frameworks as explicitly articulated (set of) memes. Intersubjectivity explains the success of frameworks by introducing the concept of a realm in which individuals ascribe meaning to objects that can be humanly understood, such as the frameworks (adapted by Husserl (1970)). Frameworks thus become an intersubjective reality and provide a common ground for the users in particular realms. As the realm is affected by the nature of a management framework, users accept the intersubjective reality and do not make an effort to question its existence and value. A different reality (e.g. an alternative framework) seems to be a less desirable choice as the use of the common ground is preferred.

Intersubjectivity supports interpretation of management frameworks and should be considered as part of an overall theoretical frame for explaining the reproduction of management novelties that are socially constructed (Duranti, 2010; Zanotti, 2007). Intersubjectivity allows to understand how memes leave "footprints" and teach us why well-known management frameworks will be more palatable if accompanied with a mind-compatible meme. Finally, following the idea of people being "docile" (Simon, 1993) we emphasize the importance of the network effect and its externalities in promoting the successful-to-be management frameworks, and prevailing over the alternatives.

2.11 Conclusion

The central concern of this chapter was to enhance understanding of the origins of management frameworks through memetics and to show that the adoption of frameworks is not solely determined by the level of rigor. We provided an alternative perspective on the nature of management frameworks by theorizing about memetics, intersubjectivity, and network effect. This chapter argued that management frameworks are inherently fictional, whereas they spread due to the interplay of aforementioned domains.

While prior research focused on the fashion-setting process of management novelties, a central domain was neglected—why and how people in a particular realm perceive these novelties or frameworks and how the number of users, due to the network effect and shared beliefs, influences the value of a framework. The insights from memetics could be useful for 'predicting' the success of a new management framework. The purpose of memetics is twofold: to provide the rationale for a replication process and to 'filter' the ideas that are »vacuous, nonsensical or plain wrong« (Blackmore, 2000). Thus, memes moderate management frameworks and affect the entire realm in a way to increase the probability – including replicative ability – of a framework to be adopted and spread in a business discourse.

My findings suggest that the well-known frameworks might stem from floating memes and further articulated why there is a certain time-, person-, and place-dependency of the success of well-known management frameworks. For instance, we have shown how successful memes (e.g. in the BM framework) evolved in prominent management ideas and 'lend' replicating ability to the BM framework. In line with Thun and colleagues (2010) I asserted that the expectations about the value of a framework are a result of the critical mass of framework's users. The continuous (and increasing) use of a framework is a result of a network effect and reaches another threshold when a framework becomes an intersubjective phenomenon. Ultimately this results in eliciting value of a framework in facilitating an approach, use of useful outcomes, and/or initiating a change with a strategic analysis, to name a few. In facilitating an approach, frameworks "*communicate the necessary modifications, outcomes, and measures*« (Mårtensson, 2000), entail possible alterations (Rodrigues, 1995), and reduce the ambiguity associated with employing a new approach.

When a change is being initiated, managers prefer the ease-of-use of a framework to assure the critical mass of users. Having been recognized as framework developers' 'ultimate goal', the ease-of-use increases the likelihood of a framework becoming an intersubjective phenomenon requires. Framework becoming an intersubjective phenomenon requires less effort when imposed in practice. In order to further our line of argument, work at the

intersection of memetics and management frameworks would profit from identifying the challenges and opportunities of utilizing memetics during the development of a management framework, along with finding the way to enhance and measure the value of such frameworks. Needless to say, users perceive the value of a framework throughout its outcomes (Hill & Westbrook, 1997). From the standpoint of the author of this thesis, management frameworks not only "stretch managers' mental models" (Wack, 1985) but are useful in matching one manager's mind with the others. Finally, frameworks become an intersubjective phenomenon and are therefore a collective belief in a particular realm, resonating the matched minds of the entire realm (adapted from Postma & Liebl, 2005). This dissertation continues with a bibliometric analysis and then develops two arbitrary frameworks of BM approach to SCM and a game-theoretic framework of coopetition-based scenarios in dynamic SC networks. We developed the two frameworks of BM approach to the SCM elaborating on prominent management ideas, such as dynamic capabilities. Second, with the emerging network-based approach to BM development and with re-defined roles of organizations in SCs, we identified and framed novel BM elements in the environment of Post of Slovenia. The key findings from the Chapter 1 help us understand why critical mass of users is needed for the frameworks of BM approach to the SCM to succeed, how the users of a framework support its adoption throughout network effect, and why well-known frameworks are deemed intersubjective realities in particular realms.

2 THE CONVERSATIONS OF BUSINESS MODEL RESEARCH

BM research has become both increasingly popular and fragmented as its popularity means that the term is often used loosely. The research lacks coherent research framework, unified understanding of the BM concept, and more diverse methodology. Most of the studies on BM generated *ex-post* analyses of more or less successful businesses and suggested partly-arbitrary frameworks that are believed to capture the essence of observed businesses. To improve the development of the frameworks of BM approach to SCM, a profound understanding of BM research in the past is necessary. Second, with the use of bibliometric methods we can identify the prominent topics, missing links, and last but not least generate implications for practitioners dealing with the continuous modifications of their BMs. Finally, bibliometric methods can help us identify boundary-spanning research papers and frameworks, which altogether allow the BM research to advance.

We used bibliometric methods of citation analysis, bibliographic coupling and co-word analysis to examine publications on BMs published in two periods: until 2011 and between 2012 and 2016. Bibliometric methods build maps of science fields based on citation information and are able to quantitatively complement literature reviews. We extracted bibliographical data from the Web of Science database. Our algorithm found 6 and 5 clusters of BM research in first and second period, respectively. We also visualized the top keywords in two heat maps which present clear thematic picture of BM conceptual domain.

2.12 Introduction

Every business has a BM (DaSilva & Trkman, 2014). This has been true since the dawn of commerce. Similarly to management frameworks, BMs are depictions, specifically those of "the content, structure, and stewardship of transactions that enable value creation in future business opportunities" (Zott and Amit 2008). BM can be seen as a source of competitive advantage, being also considered as "the method by which a firm builds and uses its resources to offer its customer better value and to make money in doing so" (Afuah & Tucci, 2000). More recently, however, digital technology and internet enabled an explosion in design options companies have when designing and changing their BM (DaSilva & Trkman, 2014)

BM research has become increasingly popular in the last decade. Assessing, using and predicting the future of BMs, provides the insights about the main topics in business and its associated theoretical traditions (Zott, Amit, & Massa 2011). Recent academic attention paid to BMs is substantial (Spieth, Schneckenberg, & Ricart, 2014) as we need to understand how the topic develops, which frontiers may emerge, and how the recognition

of these applies for practitioners. For instance, several seminal papers and recent reviews (Foss & Saebi, 2017; Massa, Tucci, & Afuah, 2016; Spieth et al., 2014; Christoph Zott, Amit, & Massa, 2011) relied on literature reviews to establish the state of the art in the field.

The term "business model" is often used loosely, though. Seven years ago Zott, Amit, and Massa (2011) identified some of the most visible clusters in BM research and later DaSilva and Trkman (2014) claimed that there is lack of consensus on what a BM is or what it is not. In line with Lyytinen and King (2004) we discuss whether BM research should have a live core of "fixed ideas or relationships" or a "market of ideas", where the thoughts and ideas are free to be traded with, deliberately causing the unboundedness of the field. However, for any emergent field like BM has been in the last decade we need to continually question what the core is, do the topics remain stable and does the field have a clear identity (see Sidorova et al., 2008). We need to establish the "cumulative tradition" and "reference disciplines" and the extent to which the BM research draws from or contributes to other disciplines (Grover et al., 2006).

Thus, we can derive two research questions: how the more recent areas of interest in BM research differ from those before the seminal paper from Zott et al. (before 2011) and what is the current state of BM research conversations with other research domains. This chapter offers a fresh perspective on the structure and development of BM research. In an attempt to provide a coherent map of contemporary BM research our work complements the existing reviews with bibliometric methods that use quantitative bibliographical data (Zupic & Čater, 2015). In this way we can tap into the knowledge created by scholars in the field who expressed their opinion by citing (or not!) specific articles and books.

The structure of the chapter is as follow. First, we review recent literature and discuss the areas of interest in BM research. Then, we offer the reader descriptive statistics for the papers and journals that published the BM research. We use the software to derive citation analysis, bibliographic coupling, and co-word analysis. Next, we analyze the clusters in the period until 2011 and between 2012 and 2016. In discussion we identify key areas of interest, shifts from and evolutions of BM research substreams, and future research directions. Finally, we acknowledge limitations of the study at hand and enumerate conclusions.

2.13 Business models - theoretical background

An important merit of a BM is ability to explain, run and modify the businesses (Spieth, Schneckenberg, & Ricart 2014). BM is deemed a "unit of analysis" (Zott & Amit, 2013; Demil et al., 2015) and is believed to provide a more comprehensive view of running a business than product- or firm-centric perspectives. Even though the use of term "business model" in academic papers was first noted in 1957 (Li et al., 2017), the interest in BMs soared owing to the evolution of the Internet (Ghaziani & Ventresca, 2005). After that, a lot of studies have already focused on BM topic, whereas the understanding of utilization, development and structure of a BM remained vague (Zott, Amit, & Massa 2011).

The period of initial interest (before 2011) in BM topic was largely characterized by the co-evolution of e-businesses (Afuah & Tucci, 2003), inconsistency of definitions (DaSilva & Trkman, 2014), and perspectives drawing on theories (e.g. resource-based view and transaction-cost economics) from various domains (McPhillips & Merlo, 2008; Stubbs & Cocklin, 2008). BM research was thus initially overflooded with concepts borrowed from strategic management and marketing (Casadesus-Masanell & Ricart, 2010). The research on BMs aimed at reconceptualizing of, or at a contextualization of a BM next to, value creation, value capture, and strategy (Li et al., 2017). Altogether that makes the research on BMs broader in scope and heterogeneous, the development of the BM research generated the discrete research subfields or so-called 'silos' (Zott et al., 2011). The latter led to inconclusive findings about the position of a BM next to established concepts, and to lack of exchange of ideas between various domains.

In a more recent study, Wirtz et al. (2016) conducted a review to show that BM remains sovereign to some extent and is delineated from strategy, organization theory or business planning. They identified 4 different research substreams, namely innovation, change & evolution, performance & controlling, and design. In a similar vein, Arend (2013) identified strategic, organizational, entrepreneurial, and practitioner-oriented perspectives on BMs and asserted these are essential for organizations to have a BM they want and/or need (Arend, 2013). In a pursuit of a 'winning BM' newcomers are usually interested in examinations of incumbents' BMs. Thus, the prevailing research methods *ex-post* analyses of qualitative nature. For instance, a more recent study resorted to the analyses of the publicly-available information on the companies to fuel various identifications and clarifications (Brea-Solís et al., 2015), whilst the interview data was acquired to study various phenomena related to BM (Amit & Zott, 2015).

Since the BM concept interferes with both entrepreneurship and strategy, scholars from both disciplines are interested in observing it (Demil et al., 2015). What is more, the research conducted so far often lacks rigor, empirical findings and rarely stretches beyond

single-case studies. It is problematic that BM research did not yet develop a clear footprint in the strategic management field (Ritter, 2018). According to Ritter (2018) this is due to the application of several different perspectives on the term 'business model', which creates ambiguity about the conceptual boundaries of BMs, and the applied terminology (Ritter, 2018). We argue that the literature faces problems with respect to construct clarity and has gaps with respect to the identification of antecedent conditions, contingencies, and outcomes (Foss & Saebi, 2015).

In an initial attempt to quantitatively examine the BM research, Li et al. (2017) identified 4 research substreams, namely knowledge network, value chain, business modeling, and flexible BM with the use of descriptive statistics and citation analysis. Particularly, Li et al. (2017) were interested in BM innovation, value creation, and boundary-spanners within their clusters. Our study, on the other hand, discusses the boundary-spanning of BM research substreams with various domains and digs deeper in identifying initial areas of interest and their evolution after 2011. Even though the choice of time frames in bibliometric studies remain unclear and to some extent arbitrary (Zupic & Čater, 2015), our study chooses two different time-span thresholds and deems a seminal paper from Zott et al. (2011) an important milestone in BM research.

Similarly to Donaldson and Dunfee (1994) who studied business ethics research field at a similar level of development as BM research is now we assert that the BM partly suffers from a lack of direction and has become entangled in its logic. A research field can win legitimacy if it is differentiated from neighboring fields. It can only impose its presence in the long term if it can establish its boundaries with other fields, even if those boundaries are somewhat fuzzy (Bruyat & Julien, 2001). BM research must thus develop a conceptual framework that explains and predicts a set of empirical phenomena not explained or predicted by other fields (Shane & Venkataraman, 2000). To paraphrase Gartner report (1990) which studied entrepreneurship research: we need to establish whether a BM is only a buzzword, or does it have particular characteristics that can be identified and studied.

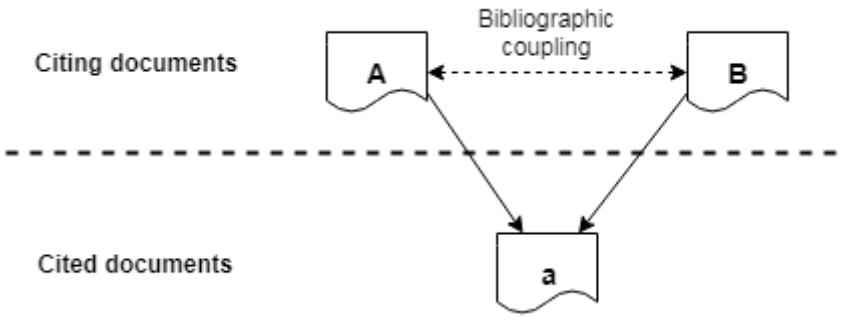
We consider BM as a "market of ideas" which means that the field is not an *ex-ante* defined area the researchers would explore but rather a self-defining field. Bibliographic analyses are thus even more important as they bring the only way to identify what BM is. However, "unrealized value in the BM idea lies in what it can capture outside" (Baden-Fuller & Mangematin 2013). What is more, our study at hand shows BM research should move beyond the traditional perspectives centered on a focal firm's BM (Zott et al., 2011) as BMs add to openness of organizational boundaries and consider interferences of network members (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin 2013).

2.14 Data and methods

We mapped the BM literature with bibliometric methods (Zupic & Čater, 2015). Bibliometrics is statistical analysis of scholarly communication through publications (Price, 1965). These methods use citation information in bibliographical databases to extract meaningful information about the structure of scientific fields.

Specifically, we used citation analysis and bibliographic coupling (Kessler, 1963). Citation analysis measures the influence of specific documents or journals by measuring their citation frequencies. If certain article or journal is more cited it is assumed, it had greater influence on the literature. Bibliographic coupling (Figure 3) uses the similarity of reference lists to establish connections among scholarly publications. For example, if ten publications appear in both reference lists of two scientific papers, this means that these two papers are connected with coupling strength of ten. When this information is gathered for all relevant publications in the scientific field of interest, clustering methods can be applied to delineate the structure of the field and identify sub-streams of research. For example, bibliographic coupling has been used to examine the use of culture in the international business field (Devinney & Hohberger, 2017), the scope of open innovation research (Kovács, Van Looy, & Cassiman, 2015) and organizational ambidexterity (Nosella, Cantarello, & Filippini, 2012).

Figure 3. Bibliographic coupling



Source: Personal archive

2.14.1 Search and selection

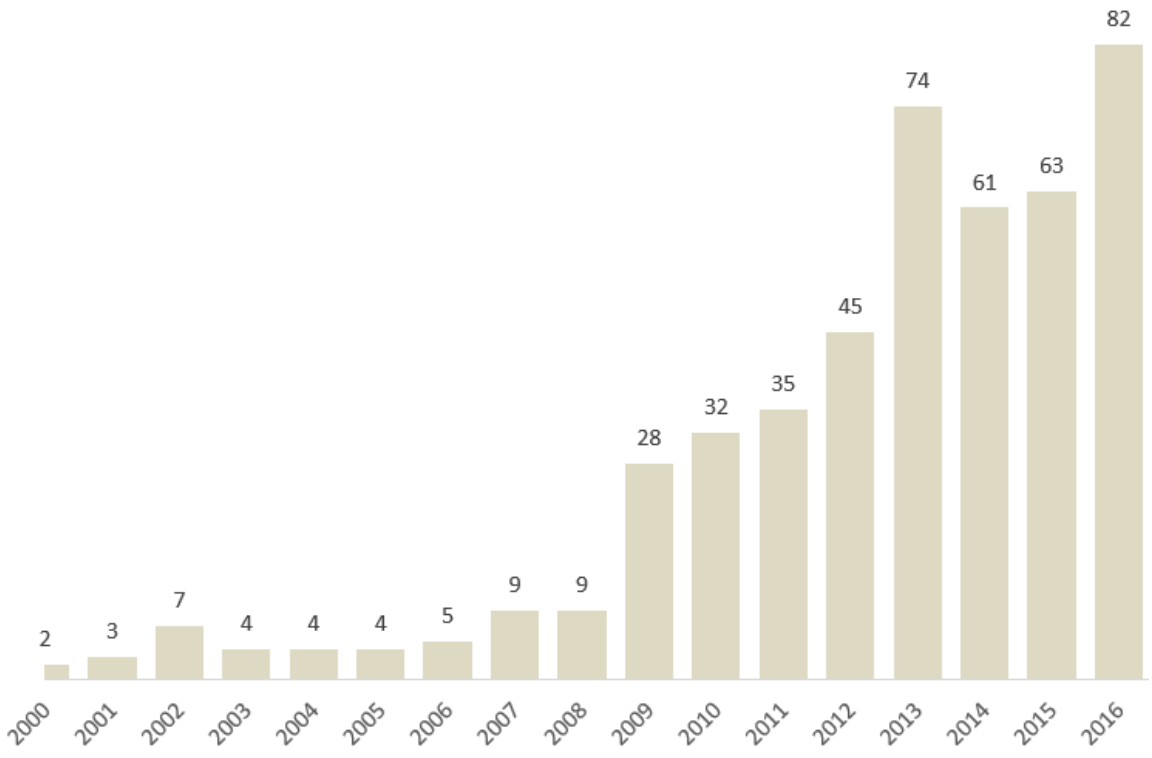
We searched Clarivate Analytics Web of Science (WoS) Core Collection for "business model" in the topic (i.e. title, abstract or keywords) of published articles before 2017. The search returned 6730 entries, which were further filtered for Business, Management and Economics categories. Of the remaining 2131 documents, we selected only document types of 'article', 'editorial material' and 'review' which left us with 1221 entries. The abstracts of all remaining documents were read and rated (Yes-include/Not-include) by the

author of dissertation at hand and by co-authors of the research project. The criterion for inclusion was that a BM was one of central themes of investigation in the research study. We decided to include publications where BM was a unit of observation or where BM elements were discussed. Also, we included the publications that studied interferences of BMs and related concepts with various domains. Publications that only passingly mentioned BM concept were excluded from the sample. For instance, a publication that discussed the key aspects of a certain strategy and unnoticeably mentions the need for subsequent BM change was excluded. After rating articles independently, the interrater agreement was 86.4%. The differences on the remaining articles were reconciled by re-reading the abstracts together and reaching decision whether to include the contentious article. After this process, 467 articles remained.

2.14.2 Publication volume

The number of published BM articles over time is shown in Figure 4. We compared our publication volume chart with those of Wirtz et al. (2016) and Massa et al. (2017). Our chart shows later take-off of academic research in BMs and lower total numbers of published research. We believe the difference is because our criteria for inclusion was that BM is a central construct in research while charts in Massa et al. (2017) and Wirtz et al. (2016) simply searched for appearance of the term "business model" in titles and abstracts.

Figure 4: The number of publications on BMs published per year



Source: Personal archive

2.14.3 Journals that publish business model research

Table 2 lists journals that published at least five articles in the examined period. First, there are strategy journals (*Long Range Planning, Strategic Entrepreneurship Journal, Technology Analysis & Strategic Management* and *Strategic Organization*) meaning that BM construct is of main interest to strategy scholars. Second, there are two premier journals oriented to practitioners (*Harvard Business Review* and *California Management Review*). This reflects that BMs have value for practicing managers. Third and most numerous group are innovation and technology management journals (*Research-Technology Management, R&D Management, International Journal of Technology Management, Technological Forecasting and Social Change*). These reflect that innovative BMs are considered as a primary vehicle for commercializing technological innovations. Fourth group of journals is focused on marketing (*Industrial Marketing Management and Electronic Markets*), reflecting that BM construct analyses not only firm's strategy and competitive position, but stretches to customers and value proposition. Finally, several general business and management journals are on the list (*European Management Journal, Journal of Business Research, Management Decision, Universia Business Review and Chinese Management Studies*).

Table 2. Journals with at least five business models research papers.

No.	Journal
28	LONG RANGE PLANNING
20	INDUSTRIAL MARKETING MANAGEMENT
16	R & D MANAGEMENT
16	HARVARD BUSINESS REVIEW
14	RESEARCH-TECHNOLOGY MANAGEMENT
13	TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE
11	JOURNAL OF BUSINESS RESEARCH
9	CALIFORNIA MANAGEMENT REVIEW
9	ORGANIZATION & ENVIRONMENT
9	UNIVERSIA BUSINESS REVIEW
8	TECHNOLOGY ANALYSIS & STRATEGIC MANAGEMENT
8	STRATEGIC ENTREPRENEURSHIP JOURNAL
7	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT
7	RESEARCH POLICY
7	MANAGEMENT DECISION
7	TECHNOVATION
6	STRATEGIC ORGANIZATION
6	CHINESE MANAGEMENT STUDIES
6	CREATIVITY AND INNOVATION MANAGEMENT
6	MIT SLOAN MANAGEMENT REVIEW
6	EUROPEAN MANAGEMENT JOURNAL
5	ELECTRONIC MARKETS

Source: Personal archive

2.14.4 The process of bibliometric analysis

We divided the data into two periods as the aim was to see the development of the literature over time. We selected the year 2011 as the divide between two periods as this was the year when the first comprehensive review of BM literature was published (Zott et al., 2011). The bibliometric analysis was then executed separately for each period (until 2011 and 2012–2016). Our analysis follows the procedures outlined in Zupic and Čater (2015). Hence, we have selected documents for inclusion in analysis and visualization based on two criteria: number of citations and coupling strength.

The number of citations is a measure of influence and documents needed to meet a minimum threshold for inclusion. Coupling strength measures how connected the document is with the rest of included documents. If coupling strength is too low, the document is disconnected from the rest of the field and not part of a major research stream. We used Bibexcel software (Persson, Danell, & Wiborg Schneider, 2009) for citation analysis and VOS viewer (Šubelj et al., 2016) for bibliographic coupling and co-word analysis.

2.15 Results

The citation analysis shows the most important documents and most cited publication outlets for contemporary BM research. Second, the bibliographic coupling followed by the application of network community finding algorithm provides the structure of contemporary BM research that is based on the quantitative citation data. Finally, the co-word analysis of the most important keywords in abstracts and titles shows the topical domain of BM research.

2.15.1 Citation analysis

The list of most cited documents is in Table 3. For the period until 2011 we included documents with at least 10 citations. Most of the articles on the list are from BM literature: either early academic examinations of BMs (e.g. Amit & Zott, 2001; Morris, Schindehutte, & Allen, 2005) or practitioner-oriented papers (e.g. Magretta, 2002). Three documents on the list represent some of the most influential concepts in strategic management: competitive advantage (Porter, 1985), resource-based view (Barney, 1991) and dynamic capabilities (Teece, Pisano, & Shuen, 1997).

There are several authors that have multiple entries on the top 25 list in the period 2012–2016: Christoph Zott and Raphael Amit have five co-authored papers on the list while Henry Chesbrough has two articles or books. Further, there are five articles from the 2010 special issue of Long Range Planning on BMs.

However, there are no outside influences on the list of most cited documents for the period 2012–2016. The list is comprised exclusively of BM papers. This shows that the field has become increasingly self-referential and is in danger of developing in silos.

Table 3: The list of most cited documents until 2011 and between 2012 and 2016

until 2011		2012–2016	
No. Cit	**Document**	**No. Cit**	**Document**
35	Chesbrough H, 2002, V11, P529, Ind Corp Change	130	Teece D, 2010, V43, P172, Long Range Planning
30	Amit R, 2001, V22, P493, SMJ	114	Amit R, 2001, V22, P493, SMJ
29	Magretta J, 2002, V80, P86, Harvard Bus Rev	105	Zott C, 2011, V37, P1019, J Manage
16	Zott C, 2008, V29, P1, SMJ	104	Chesbrough H, 2002, V11, P529, Ind Corp Change
15	Morris M, 2005, V58, P726, J Bus Res	98	Chesbrough H, 2010, V43, P354, Long Range Planning
14	Porter M, 1985, Competitive Advantage	88	Zott C, 2010, V43, P216, Long Range Planning
13	Shafer S, 2005, V48, P199, Bus Horizons	85	Casadesus-Masanell R, 2010, V43, P195, Long Range Plann
12	Teece D, 2010, V43, P172, Long Range Planning	84	Morris M, 2005, V58, P726, J Bus Res
12	Eisenhardt K, 1989, V14, P532, Acad Manage Rev	76	Zott C, 2008, V29, P1, SMJ
11	Zott C, 2007, V18, P181, Organ Science	74	Osterwalder A, 2010, Business Model Gener
11	Barney J, 1991, V17, P99, J Manage	66	Demil B, 2010, V43, P227, Long Range Planning
10	Chesbrough H, 2003, Open Innovation New	64	Zott C, 2007, V18, P181, Organ Science
10	Teece D, 1997, V18, P509, Strategic Manage J	63	Magretta J, 2002, V80, P86, Harvard Bus Rev
10	Chesbrough H, 2006, Open Business Models	59	Johnson M, 2008, V86, P50, Harvard Bus Rev

Source: Personal archive

Table 4 shows the list of most cited journals for both examined periods. Strategic Management Journal (SMJ) was the most cited journal within BM literature in the period until 2011. This is slightly surprising, because SMJ did not publish enough BM papers (4) to make it into the list of top publishing outlets in Table 2. Less surprising are the two journals in the second and third place: Harvard Business Review and Long Range Planning. These two journals are also among the top 3 in the list of publication outlets. The rest of the most cited journal list consists of general management journals, marketing journals and innovation & technology management journals. Top tier management journals, which were absent from the top 15 publication outlets still form an important part of the knowledge base of BM research.

Long Range Planning was the most cited journal in the period 2012–2016, reflecting the enormous influence of its 2010 special issue on BMs and the highest volume of published BM articles. The rest of the list of most cited journals for the period 2012–2016 shows similar picture as for the previous period.

Table 4: The list of most cited journals until 2011 and between 2012 and 2016

until 2011		2012–2016	
No. Cit	**Journal**	**No. Cit**	**Journal**
228	Strategic Manage J	927	Long Range Plann
155	Harvard Bus Rev	829	Strategic Manage J
98	Long Range Plann	480	Harvard Bus Rev
84	Acad Manage Rev	365	Acad Manage Rev
78	Res Policy	343	Res Policy
74	Organ Sci	316	Organ Sci
73	Manage Sci	282	Acad Manage J
73	J Marketing	250	Manage Sci
72	Admin Sci Quart	241	J Manage
66	Acad Manage J	235	Ind Market Manag
66	Ind Market Manag	207	Admin Sci Quart
64	Ind Corp Change	186	J Marketing
40	Calif Manage Rev	178	Ind Corp Change
37	Mit Sloan Manage Rev	174	J Bus Res
37	J Manage	169	Technovation
33	J Bus Res	160	J Prod Innovat Manag
31	Technovation	155	Entrep Theory Pract
30	J Marketing Res	148	J Manage Stud
29	J Acad Market Sci	138	J Bus Venturing
22	J Bus Venturing	125	Mit Sloan Manage Rev

Source: Personal archive

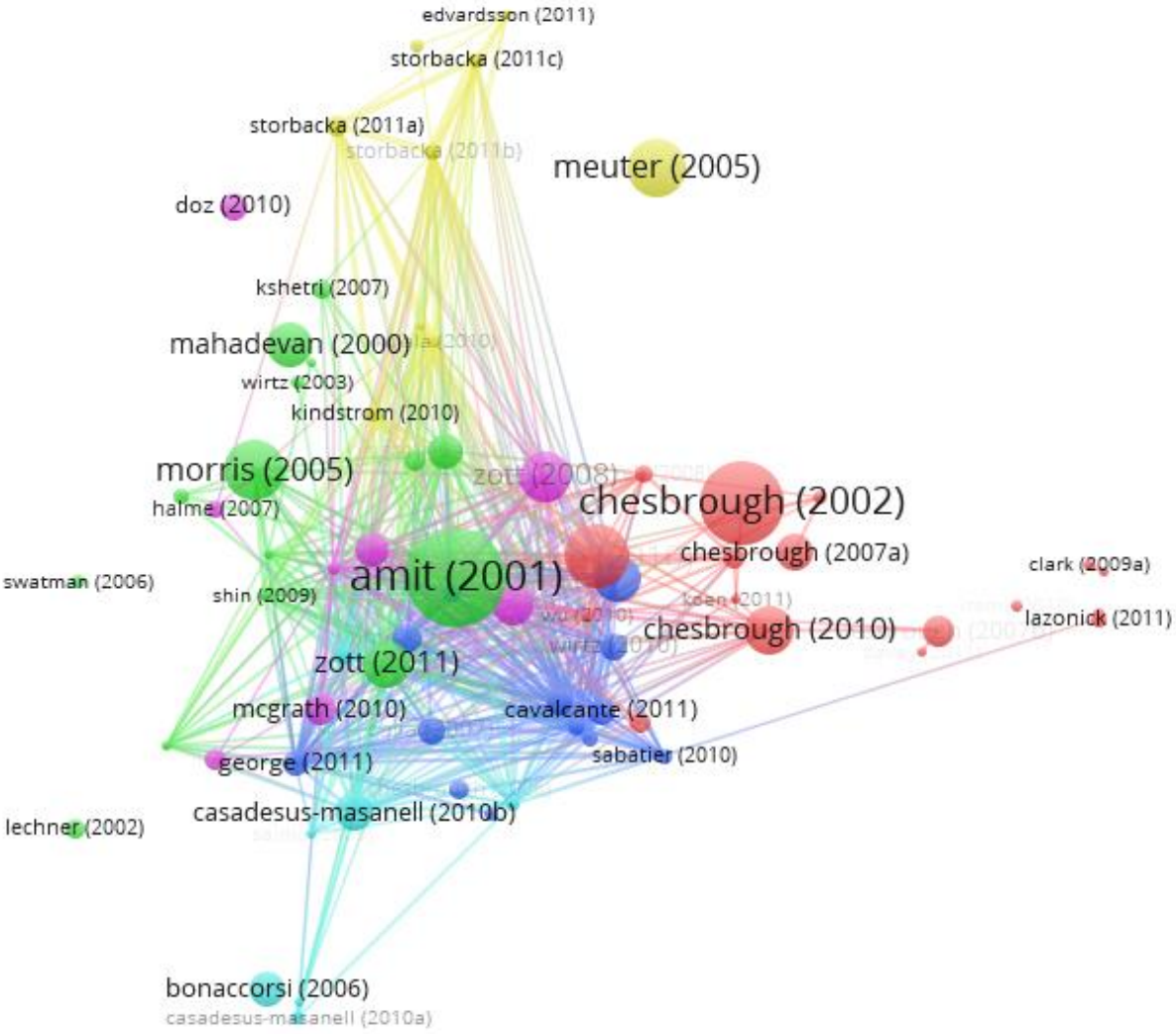
2.15.2 Identifying clusters of business model research

We used bibliographical coupling to identify clusters of BM research for two periods: until 2011 and 2012–2016. Our clusters differ in size but not considerably (e.g. not with differences of several orders-of-magnitude) as in several more recent bibliometric analyses (van Eck & Waltman, 2017). The identification of clusters followed the usual procedure that favors avoiding a large number of small clusters (Šubelj et al., 2016); however, due to its importance and influence of the future development of the thesis, the cluster entitled network-based approach was not aggregated with others. The reason behind the smaller number of publications lies in the fact that the publications in the cluster 5 (from period 2012–2016) investigate a new frontier in BM research and the number of published papers is hence expected to be smaller (van Eck & Waltman, 2017).

- Period until 2011

All clusters for the period until 2011 are visualized in Figure 5 and summarized in Table 5.

Figure 5: Period until 2011 – clusters based on bibliographic coupling data. Only 500 strongest links are shown to improve clarity.



Source: Personal archive

Table 5: Summary of clusters in the period until 2011.

No.	Label	No. of documents	Color in Figure 5	Sample references
1	Technological innovation	17	Red	(H. Chesbrough & Rosenbloom, 2002; Henry Chesbrough, 2010; Pries & Guild, 2011; Teece, 2010; Wu et al., 2010)
2	E-business	11	Green	(Amit & Zott, 2001; Mahadevan, 2000; Swatman, Krueger, & Beek,

				2006; Wirtz & Lihotzky, 2003; Christoph Zott et al., 2011)
3	Business model change	12	Blue	(Björkdahl, 2009; Calia, Guerrini, & Moura, 2007; Sabatier, Mangematin, & Rousselle, 2010; Wirtz, Schilke, & Ullrich, 2010)
4	Marketing	9	Yellow	(Kindström, 2010; Kujala et al., 2011; Meuter, Bitner, Ostrom, & Brown, 2005; Storbacka, 2011; Storbacka & Nenonen, 2011)
5	Value creation & firm performance	7	Violet	(Doz & Kosonen, 2010; McGrath, 2010; Sánchez & Ricart, 2010; Christoph Zott & Amit, 2008, 2010)
6	Market competition	6	Light blue	(Bonaccorsi, Giannangeli, & Rossi, 2006; Casadesus-Masanell & Ricart, 2010; Casadesus-Masanell & Zhu, 2010)

Source: Personal archive

We labelled the first group of publications *Technological innovation*. Research in this group is examining the role of BMs as vehicles for commercializing technological innovation. It is trying to relate BM concept to some of the technology innovation traditional topics like open innovation (Chesbrough, 2010) and disruptive innovation. Innovative companies need to capture value of technological innovation through innovative BMs (Chesbrough & Rosenbloom, 2002; Gambardella & McGahan, 2010) or react to challengers with disruptive BMs (Lucas & Goh, 2009; Wu, Ma, & Shi, 2010).

The second cluster's publications share a common denominator, *E-business*. The rise of Internet enabled an explosion in design options firms have when designing their BM. Publications in this cluster discuss technology-based novel forms of entrepreneurship with a specific focus on the roles of BMs. They focus on frameworks, elements, typologies, and architectures for e-business companies Researchers re-examined the value creation process due to the soaring number of e-businesses companies. Several publications in the cluster started to develop conceptualizations and typologies of BMs and examine ways companies can develop their BM. The median publication year of documents in this group is by far the oldest (average year of publication is 2005 whereas for other clusters is 2009–2010), which supports the notion that BM concept proliferated from e-business to other domains.

We labelled Cluster 3 (in blue) *Business model change*. Publications in this cluster focus on the challenges established firms encounter when they try to change their BM. The majority of research is based on case studies of companies that went through BM change, either as a self-initiated process or as a forced reaction to external threats. For the publications in the Cluster 3 BM is mainly considered as a trial-and-error surface that, if it is sustainable and provides surplus value, enables organizations differentiation from the

others. The aim of the vast majority is to identify ‘idiosyncratic’ features of successful BMs and provide suggestions for future development (changes).

Papers in Cluster 4 stem mainly from *Marketing*. The focus is on market practices, recommendations for achieving service excellence, and value creation, delivery, and appropriation with respect to the emerging structures. More specifically, BM publications encompass the continuing importance of service-oriented industries and service innovation thereafter whilst providing an answer to “customer-centered” way of doing business by suggesting the solution-specific BMs.

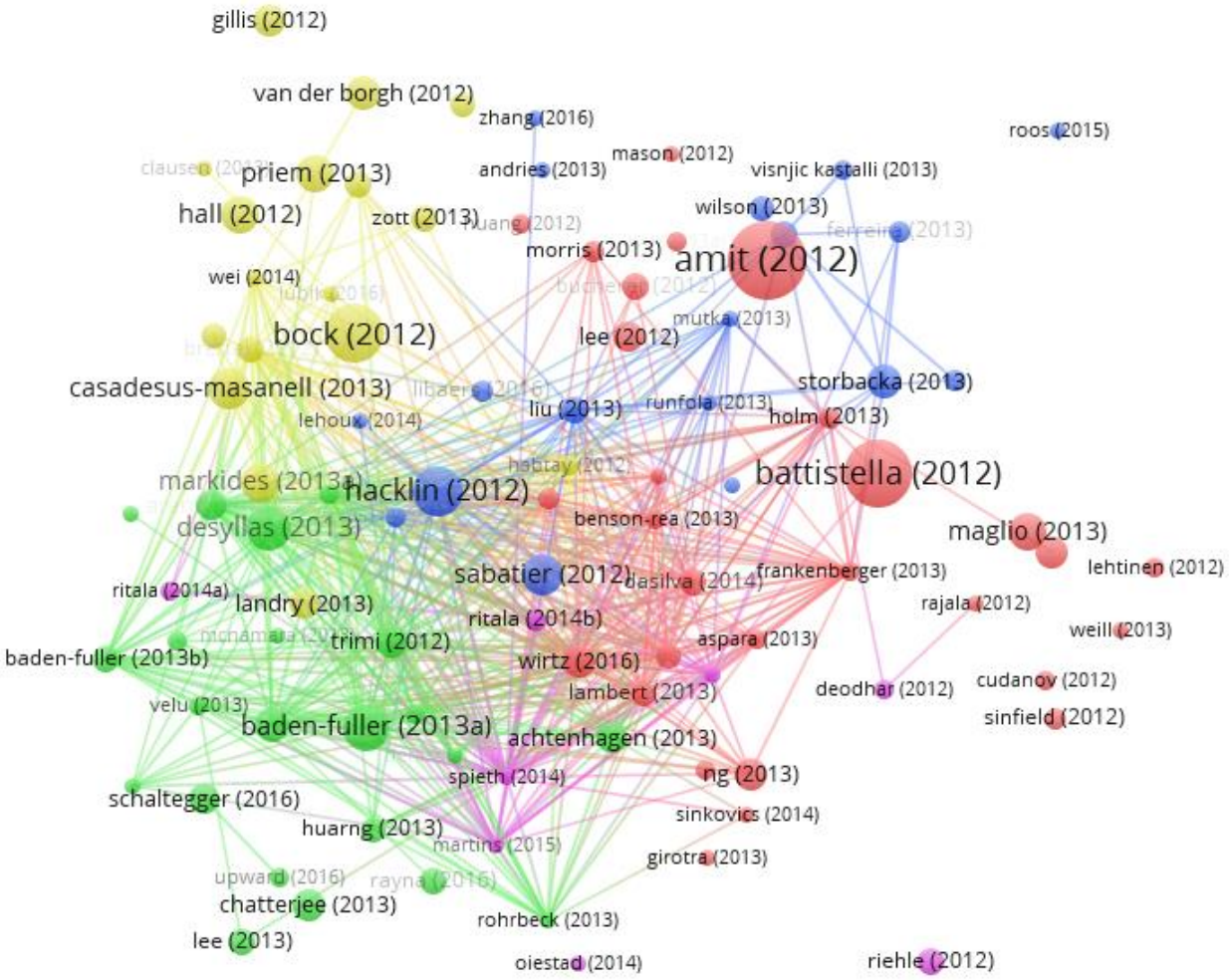
The last two clusters have their roots in strategic management. Cluster 5 members contribute to understanding *value creation and firm performance* aspects of BMs. The field of strategy has been traditionally focused on value capture aspects of firm’s activities. BM concept brought a new perspective that also focuses on value creation. Publications in this cluster try to relate various aspects of BMs (including value creation) to firm performance.

The key idea of Cluster 6 is to discuss the *Market competition*. Publications in this cluster are trying to establish how BMs could help firms compete, especially in unpredictable and fast-moving environments (McGrath, 2010). The members of Cluster 5 show how BMs complement concepts on strategic level, whereas the publications of clusters 6 focus on how tactics and BMs align or interfere. Presumably, the design of tactics is heavily affected by the co-existence of multiple BMs. Some publications elaborate on the differences between different ‘types’ of BMs and positional strategy and tactics close to the conundrum on choosing “the winning BM”.

- Period 2012–2016

All clusters for the period between 2012 and 2016 are visualized in Figure 6 and summarized in Table 6.

Figure 6: Period 2012 to 2016 – clusters based on bibliographic coupling data. Only 500 strongest links are shown to improve clarity.



Source: Personal archive

Table 6. Summary of clusters in the period 2012–2016.

No.	Label	No. of documents	Color in Figure 6	Sample references
1	Value creation	22	Red	(Amit & Zott, 2012; Benson-Rea, Brodie, & Sima, 2013; Lee, Shin, & Park, 2012)
2	Value capture	22	Green	(Bouncken & Fredrich, 2016; Desyllas & Sako, 2013; McNamara, Peck, & Sasson, 2013)
3	Business models in practice	18	Blue	(Lehoux, Daudelin, Williams-Jones, Denis, & Longo, 2014; Valerie Sabatier, Craig-Kennard, & Mangematin, 2012; Witell & Löfgren, 2013)

4	Technology entrepreneurship	18	Yellow	(Lubik & Garnsey, 2016; Patton, 2014; Wei, Yang, Sun, & Gu, 2014)
5	Network-based approach	8	Violet	(Øiestad & Bugge, 2014; Palo & Tähtinen, 2013; Ritala, Golnam, & Wegmann, 2014)

We labelled the first cluster *Value creation*. A common theme in this group of publications is how businesses create value and develop corresponding BMs. Within this cluster, there are two broad approaches to creating value: (1) through innovation or (2) through marketing activities. Next, the cluster 1 elaborates on 'generic' terms such as 'innovation, modelling, and understanding of BMs' to develop a coherent BM research framework and to provide unified definition(s) of BM logic, features and associated concepts. The publications offer a domain-based retrospective on 'what BM is and what is not'. Thus, some of the cluster members act as 'boundary spanners'. Papers that act as boundary spanners clarified the main domain and central role of BM and suggested directions that were followed by authors in other clusters. Moreover, the publications examine the activities that facilitate BM transformation and how BMs started to 'interfere' with established concepts in strategic and innovation management, entrepreneurship, and marketing. Subsequently, conceptualization of BM as an integral and yet distinctive from established concepts within different research areas was developed.

The majority of members in second cluster – *value creation* – question the value of the use of BM approach for running the business, whilst improving and providing a newer perspective on value capture. Publications in this cluster suggest moving away from ex-post discussions of the successful BMs and focus on finding the 'predictable (if any) power' of the concept and the examination of cause-effect relationship, meaning that managers and employees are prompted to think about the 'change'. To put in different words, a novelty entails improvements as a result of the BM innovation.

Members of Cluster 3 investigate the use of *BMs in practice*. Publications consider BMs either as 'structures' that depict the necessary elements and business processes or go even further and advance the understanding of BMs as "strategizing devices" (Hacklin and Wallnöfer, 2012). An interplay of BMs and strategy is also the golden thread of some publications in other clusters as Hacklin and Wallnöfer's seminal paper acts as a boundary spanner. Publications in this cluster show how relevant BMs are to strategic management and strategic decision-making next to implementation of policies, change management, and other approaches. BM development and BMI are considered recurring processes, enabling and facilitating business transformation in different industries. Members of the Cluster 3 discuss the 'explanatory power' of BMs further and highlight "the dynamic nature of

BMs" that enhances organizational performance and re-enforces relationships between stakeholders.

The Clusters 4 and 5 have members that pursue BMs to an extent that goes beyond intra-organizational level analysis. Rather, the publications present a BM as a structure encompassing the relations and "boundary-spanning" games between external stakeholders. The BM has become a unit of analysis in comparisons of disruptors to incumbents and provides the basis for analysis of first-mover (dis)advantages and late-mover responses. Also, the publications discuss the interplay between BM development and prominent theories such as dynamic capabilities. Implications of the inclusion of the external stakeholders' BM management are further elaborated and longitudinal analysis of interactions among the external stakeholders and changes in BMs are conducted. Publications focus on interactions of BM in its ecosystem and emphasize the 'external fit' of BM elements with the ecosystem. The latter tend to heavily affect the flexibility of a BM. Moreover, some members of this cluster noted the need for different types of BMs with respect to different stages in value chains. Knowledge sharing and convergence of technologies are used as two important processes that affect BM elements.

Publications from the Cluster 5 have proposed several perspectives for the inclusion of 'external influences' and/or larger networks. Among the advancements in the Cluster 5, hybrid BMs, coopetition-based BMs, new BM structures/typologies, open-source BMs, and alternative BMs can be found. The emerging plurality of BMs and the inclusion of external stakeholders in BM elements established the need for a network perspective and coopetition-based BMs. The "era of digitization" (see e.g. Oiestad, 2014) is the primary reason for omni-presence of e-business and technology-related topics using network perspective in the Cluster 5. Publications can be seen as continuation of the Cluster 2 from Period 1 to an extent where they show e-business and technology are today an integral part of various industries and academic disciplines.

2.15.3 Co-word analysis

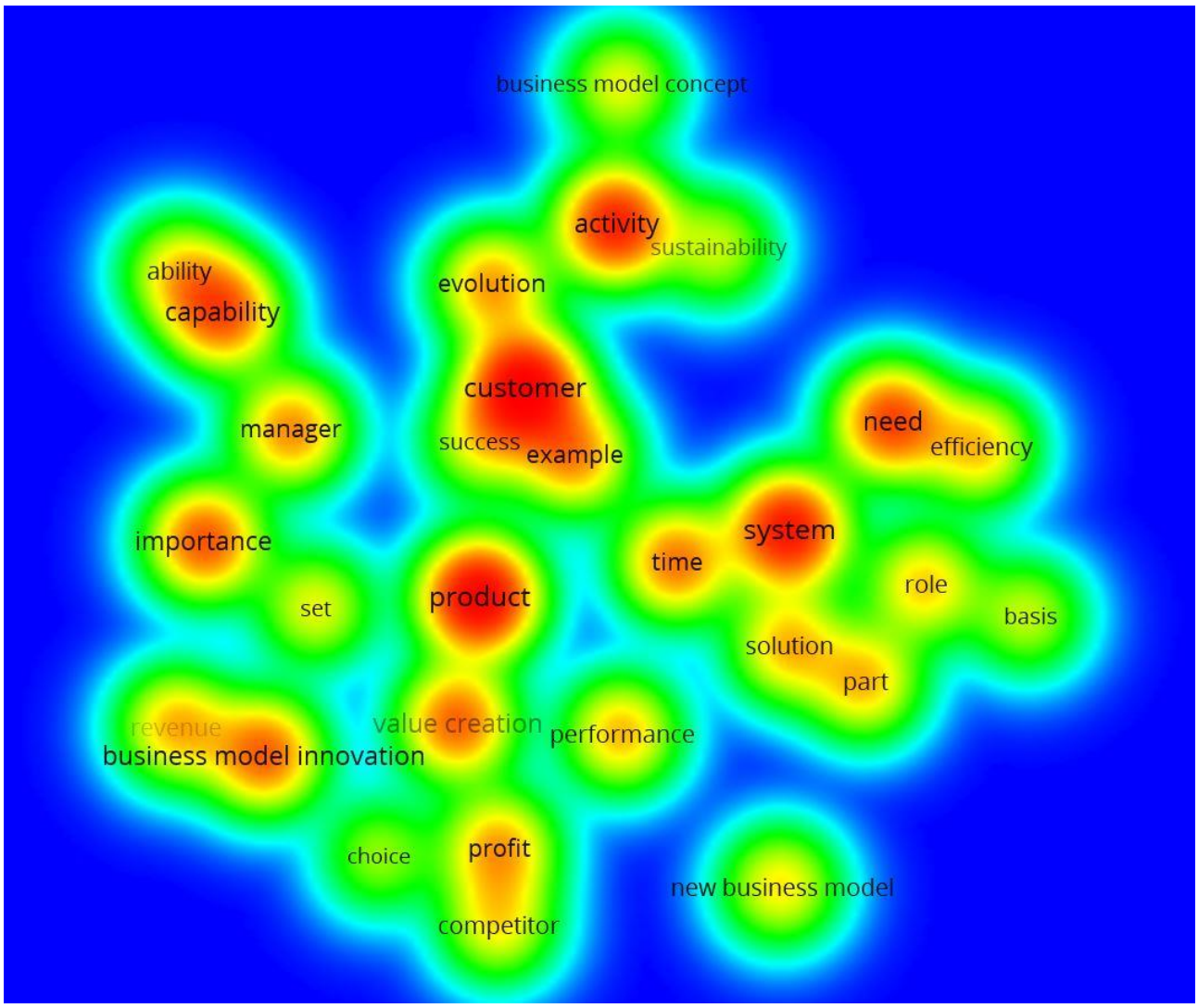
Co-word analysis connects keywords by their appearance in the same title or abstract. If two terms appear together multiple times this means that the connection link between them is stronger. Again, putting together this information for the whole scientific field gives us a clear thematic picture of the field's conversations. Recent applications of co-word analysis include the analysis of creativity in the field of business economics (Castillo-Vergara, Alvarez-Marin, & Placencio-Hidalgo, 2018) and business-to-business branding literature (Seyedghorban, Matanda, & LaPlaca, 2016).

Co-citation analysis reveals coherence of a certain research substream among a cluster of publications, whereas co-word analysis pictures differences and similarities between

various arrays of publications (Braam et al., 1991). Co-word analysis thus identifies thematic landscapes that differ from or complement the areas of interest revealed by co-citation analysis. Moreover, co-word analysis shifts the focus from following the researchers to »following the texts« that complement mapping the dynamics of a research area (Bredillet, 2006). Finally, co-word analyses provide a rationale for decision-making and the basis for the future-research agendas, and are often applied to measure the correlation between the (key)words and references of the observed publications (Najmeh Salemi & Keyvan Koosha, 2014).

- Term map for period until 2011

Figure 7: Term map for BM research until 2011



Source: Personal archive

The two arrays (lower and upper left) of prominent terms in BM research includes *BM innovation, importance, capability, ability, manager, and revenue*. Clearly, these terms show two interrelated research flows: the established need for (re-)conceptualization of BMs as the concomitant evolution of new BMs resulted out of omni-present and influential process of BM innovation. The research within this flow attempts to distinguish BMs from different concepts (e.g. revenue models) and evaluating its importance as of 'up-and-coming business unit of analysis'. Similarly to the Cluster 1 (from until 2011), those terms show attention was devoted to clarifying the BM research next to different types of innovation (e.g. open innovation, technological innovation, and BM innovation) and how these concepts are intertwined. With the increasing maturity of BMs and new entrants fundamentally changing their BMs, BM innovation gained more importance. Specifically, key words show the need for an 'ability' and 'capability' that emerged for incumbents to retaliate by innovating their BMs.

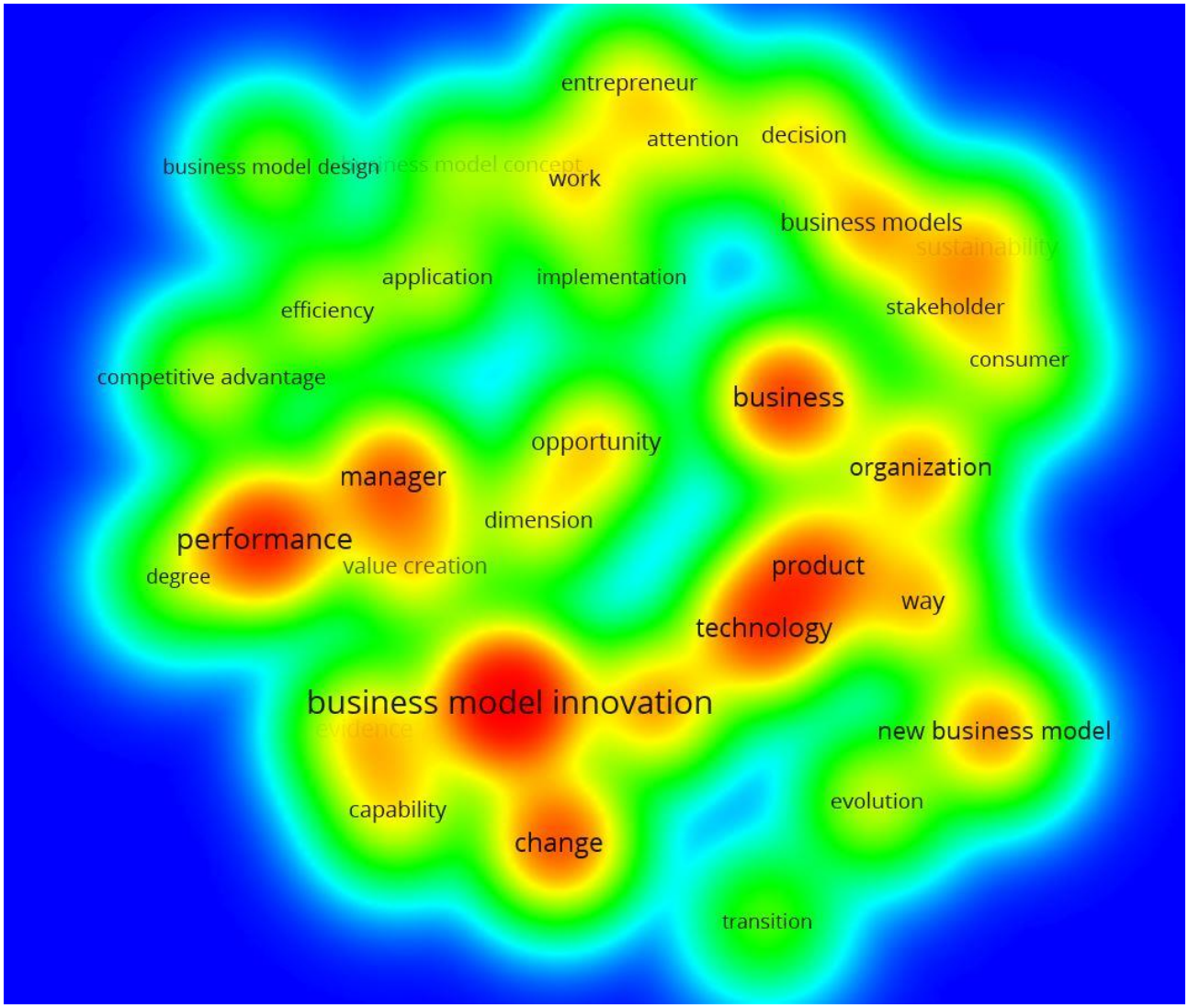
Other prominent and interwoven single-word terms in the middle (and below) of the term map 1 (Figure 7) are *customer, value, product, success, value creation, competitor, evolution etc*. These terms indicate the emerging co-dependence of marketing concepts and BM research and complement the discussion on the need for exchange of ideas between BM research and marketing from the Cluster 4 (2011). New BMs affect value creation, require the inclusion of various stakeholders (e.g. end-users, partners, and competitors), and should take the emerging disciplines such as 'servitization' into account. Moreover, the key words resonate the shift towards 'customer-centered' BM innovation, market practices, and specific BMs that could enhance the likelihood of success.

New-business-model is in relation to Cluster 3 (BM change). The 'island' in term map metaphorically represents a surface for trial-and-error and shows the distinguishable nature of research sub-stream about the BM change. The adjustments that followed BM change have been in majority observed *ex-post* with case-study analyses, whereas in addition to term map members of the Cluster 3 suggest *ex-ante* analyses that would anticipate externally- or self-initiated BM change.

The array of prominent terms on the right side of the term map (*system, part, role, solution, efficiency etc.)* partially complement Cluster 5 and 6 on strategy and tactics and to some extent advocate our assertion on the need for continuous flow of ideas between different research streams. The terms clearly indicate the awareness of a BM being a part of a larger system and the need for understanding concepts from strategic management and entrepreneurship in relation to the BM. Second, BMs are of key importance for designing tactics and can, if combined with principles of dynamic capabilities, elicit value out of the system (e.g. an organization) whilst efficiently enhancing organizational performance.

- Term map for period between 2012 and 2016

Figure 8: Term map for BM research for the period 2012–2016



Source: Personal archive

After 2011 BM research reached a certain level of maturity some of the key concerns, concepts, and antecedents have been addressed. The upper right array of terms (*decision, BMs, stakeholder, and consumer*) indicates the emergence of so-called *market-network perspective*, showing the need for inclusion of external partners in development and management of multiple BMs (Figure 8). The key words in this array and the members of the 4th cluster put an emphasis on customer-centered notion of new BMs.

The lower middle array of prominent terms (*BM innovation, capability, and change*), similarly to the findings from various clusters shows the increased scholarly interest in BM innovation throughout the vast majority of identified research sub-streams. BM innovation

is tightly linked to other types of innovation, such as technological innovation (and the recurring technological convergence resulting in new product development), and acts as a boundary spanner. Interwoven with BM innovation is "technovation" (see e.g. *technology and product* in the term map) that influences the BM development throughout its elements, mainly products and processes. In addition to that, new entrants (e.g. e-banks operating without physical locations) in existing industries, bring about a need to re-think the opportunities for a successful BM transition.

The middle and upper left array of prominent terms (*dimension, opportunity, value creation, and BM design*) resembles advancements in BM design. First, BMs have become 'strategizing devices' for managers and a source of *ex-post* arguments that organizational success is heavily dependent upon the certain type of a BM. Second, advancements in BM design enabled the existence of new structures such as coopetition-based and open-source BMs with an opportunity for joint-value-creating territories. Finally, opportunities for BM research stem from the era of digitization which spread the foundations of e-business across the whole BM research and has provided BMs with solutions for digital supply networks.

2.16 Discussion with future research directions

This research study aims at clarifying the progress of BM research by quantitatively analyzing co-cited papers and providing co-word analysis. The co-citation analysis is an important contribution as it helps in establishing the characteristics and the boundaries of the field and aids (with the help of heat maps and clusters) in developing and maintaining a conceptual framework for BM research. An ample amount of research papers on BMs stem from the subfields of BM research and are thus heavily related to each other while remaining seemingly distinct to other disciplines. To advance the BM (conversations) we carried out the study with a two-fold purpose. First, we rigorously reviewed the publications on BMs to clarify the core of BM research and to pinpoint to topics that have given the identity to the field. Second, the study aimed at identifying the prominent referential disciplines such as strategic and innovation management, and revealed the neglected areas, such as marketing, from which BM research did not draw on to a sufficient extent.

Our study observed the BM research in two time frames. In the first period (until 2011) 6 major clusters represent the key BM research areas. Different aspects of BMs started to accumulate. The plurality of perspectives and lack of coherence resulted in seemingly unrelated frontiers that further developed within the existing boundaries. From a retrospective we can argue that BMs improved the management of then-emerging structures and helped managers to confront the increasing complexities in organizational

environments (Arend, 2013). In addition to that, the BM has become a new 'unit' for explaining value creation, delivery, and capture. Afterwards the literature on the latter in strategic management took off and integration of value capture and value creation mechanisms has commenced (Demil et al., 2015).

The 'demand' for understanding the BM research within the strategic management and other research areas started to grow. Zott and Amit (2001) accounted the emergence of e-business for the need for integration of theoretical perspectives from strategic management, entrepreneurship and BM research (2001). In addition, they predicted the BM – with a relatively high complementariness (not the opposite) between BM and strategic management constructs (Zott & Amit, 2008) – will become a construct that provides a novel unit of analysis for the research on value creation. Considering this, some members in our analyses were 'borrowing' concepts from strategic management (see e.g. Doz and Kosone, 2009) to explain the value of BMs and how BMs complement strategy and tactics. Our findings suggest this train of thought is even more prominent with the evolution of network-based perspectives on BM (development). In coopetition-based BMs, for instance, value creation and value appropriation are of key concern for competitors and partners.

Despite remaining low in general, some flow of ideas escalated from interactions with strategic management (see Cluster 5 and 6 from the 2nd period). Escalation occurred also due to the discovery-driven approach enabled by BMs. The discovery-driven approach complemented the predominant explanatory approach in strategic management. Thus, BM provided a surface for trial-and-error process at a different level and a missing link between theories such as dynamic capabilities and strategy (see e.g. DaSilva and Trkman, 2014). Second, the basic idea of integration could advance the BM research and lead to free-flowing exchange of ideas between BM research and other research areas such as marketing.

In a similar vein to Lyytinen and King (2004) we asserted that BM research suffers from the absence of free-flowing "market of ideas" beyond the currently established boundaries. Without the substantial increase of exchange of ideas within different research areas, the future development of the BM research will be spawned. Scholars and practitioners needed a bibliometric study that can only sufficiently and unbiasedly explain what has been developed over time and which implications BM research has had so far. The bibliometric study does not advance research substreams itself but rather objectively reveals the incremental (or disruptive) improvements, external influences – if any – and 'additions' to the substreams. Next, the results of term maps present influential topics and 'buzz-words' that emerged to complement the topics and drive self-defining further. Until now, the vast majority of most-cited research papers on BMs are solely from BM research. After the identification of "bundles" within the BM research (Zott et al., 2011), the situation only

worsened. The most-cited papers elaborate on papers from the bundles (research substreams), extend the findings, and follow their recommendations for further research while neglecting the ideas that stem from other research areas.

Our findings show that bridging the boundaries of the research area allows determining the limitations and context-dependency with broader areas of scholarly interests. For instance, BM innovation remains an important area of interest throughout the entire time span of the study at hand. Interestingly, BM innovation has not only generated (Foss & Saebi 2017) but has also become an integral part of various BM research substreams. That is partly due to BM innovation being broad in scope: it can relate to development and modifications of BM itself or it can represent a type of innovation next to product, process, technological, and organizational types of innovations (Massa et al., 2016). The BM innovation did not only expand the boundaries of innovation-related phenomena (Massa et al., 2016) but also embedded "dynamics of business model innovation" (Li et al., 2017) in the development of other research substreams.

Finally, the methodological focus on ex-post analyses and lack of clear future directions at least partially accounted for scholars and practitioners to remain within the existing bundles. From the standpoint of the author of this dissertation, the 'nature' of a BM remains unclear and disputable whereas the value of a novel idea or the novelty itself has the power to bring about the improvements for business transformation and organizational performance. Bibliometric methods are thus even more important as they reveal what BM is and what it is not. With the use of bibliometric methods, we can advance the subfields that need more attention, reveal the neglected domains and reference disciplines, and suggest new directions where BM research reached an impasse.

Our results specify some unexplored research areas that provide directions for future development. For instance, in light of the absence of free-flowing market of ideas, not sufficient is known about the consequences of a BM change for different types of innovation (Baden-Fuller & Haefliger, 2013). Both the BM innovation and the interplay of different types of innovation and BM were largely discussed by members of clusters in both periods. From our viewpoint, (BM) innovation has been enabled e-business to spread over different research substreams and thus become a predecessor of the era of digitization. The co-evolution of innovation and the era of digitization remain the golden thread of various domains and established the need for the BM research to communicate with other research areas. Therefore, (BM) innovation offers a promising area of interest for spanning the BM research over boundaries of existing research substreams.

Interferences between marketing and BM research could provide newer and better perspectives on the logic behind value creation and value capture, and corresponding

performance of organizations (Martins et al. 2015; Massa et al., 2016). More importantly, acknowledging network-based perspective on BMs, a shift from focusing on value creation to value appropriation will be needed. Hereby, coopetition-based BMs offer a promising unit of analysis. We also 'criticize' the predominant retrospective approach to examining BMs. It is important to learn from the best practices; however, researchers and managers should embrace the prospection. The design approach would enable such perspective. The use of such approach could fulfil the missing link between *ex-post* analysis and *ex-ante* anticipations and turn tomorrow's forecasts into today's competitive advantage for organizations with an ability for future re-design.

Whereas the design approach has a potential to provide researchers and managers with suggestions on how to proceed to designing a 'winning BM', bibliometric analysis of a BM research complements these suggestions by revealing the areas of interests that may guide the researcher and practitioners in continuous development of their BMs. Key findings from the bibliometric analysis allowed us to undertake the research on contemporary issues in BM research and to unleash the value from the neglected perspectives on BM development. Thus, in the Chapter 3 we extend from business process management to BM approach to SCM. Next, we follow the idea of network-based approach and discuss the inclusion of various entities in the BM management of Post of Slovenia. Third, we advance the theory of dynamic capabilities to represent its role next to continuous development of winning BMs. Altogether our bibliometric analysis and proposed BM approach to the SCM not only advance the SCM but also contribute to the exchange of ideas between the SCM and BM research.

3 A BUSINESS MODEL APPROACH TO SUPPLY CHAIN MANAGEMENT[1]

In establishing and developing the SCM an ample number of frameworks and approaches have been used continuously (Lambert & Cooper, 2000; Lambert et al., 1998; Lambert et al., 2005). Well-known frameworks in SCM reached critical mass and become an intersubjective reality in domains that range from, for instance, SC decision-making (see e.g. (Appelqvist et al., 2004) to the end-to-end SC visibility (Burton & Willis, 2014), and project governance (see e.g. Murray (2011)). Also, the interdependence between various organizations from different SCs entailed the development and adoption of management novelties that evaluate suppliers and third-parties (Choy et al., 2002). Instead of relying on managers' experience and biased perspectives, the novelty represents a more "effective and systematic" way for benchmarking suppliers and monitoring crucial activities in SCM.

In principle, the aforementioned management frameworks offer a support to what was identified in the Chapter 2 as a network-based approach (see cluster analysis in the Chapter 2 for more) to BM development. The frameworks are deliberately developed to support visibility between all organizations, to include various organizations in SC decision-making, and to evaluate the performance of organizations within and outside SCs. Also, organizations use different BM frameworks (see e.g. Nenonen & Storbacka, 2010) to improve the management of BM elements and to align their BMs. Improved management and alignment of BMs and BM elements enhance value co-creation among stakeholders of an SC (Nenonen & Storbacka, 2010). Since BMs are "externally oriented" and provide conceptualization of value co-creation (Zott & Amit, 2008), depict inter-firm dynamics and address capabilities vaue co-creation requires (Nenonen & Storbacka, 2010), organizations could benefit from employing a BM approach to SCM. The BM approach to SCM is collaborative in nature and has multidimensional characteristics, SC perspective, and considers the role of various organizations (Stubbs & Cocklin, 2008).

Thus, the aim of this chapter is to present a BM approach to the SCM by identifying and connecting the elements of an SC BM and the key issues for development of dynamic capabilities to enable future redesign of BMs. For the development of two frameworks showing the elements of an SC BM and the interconnection of those elements and dynamic capabilities we drew on findings from the Chapter 1. These findings suggested that a

[1]Trkman, P., Budler, M., & Groznik, A. (2015). A business model approach to supply chain management. *Supply Chain Management: An International Journal*, *20*(6), 587-602.

framework is valuable if it facilitates a particular approach, and consequently enhances a firm's performance.

For instance, the BM framework is especially valuable detailed representation when organizations' roles in value networks can be altered (Nenonen & Storbacka, 2010). Second, in the development of the frameworks we considered ease-of-use to increase the likelihood for frameworks' success. Finally, the time, person, and place components – a management framework's origins can be traced back – of a BM framework will enable to "find the evolutionary patterns" in ever-changing BMs, BM elements, and organizations in SCs (Kindström & Kowalkowski, 2014).

Our first framework represents the elements of a one 'supply chain business model', and the second framework was devised to suggest organizations and SCs how to continually improve the existing or add new BMs. The use of these management frameworks is demonstrated in a case study of Post of Slovenia. Altogether this chapter summarizes and extends the more recent literature through the dynamic capabilities approach and BM approach, proposes two frameworks and identifies topics relevant for future development of the SCM field.

3.1 Introduction

SCs encounter a competitive environment influenced by macroeconomic issues, market conditions, fluctuating demand of end-users and changing needs in core processes within and across companies (Christopher & Holweg, 2011; Pereira et al., 2014; Tanco et al., 2015; Trkman & McCormack, 2009). As a response, every company in an SC has to continually change its BM(s). Unpredictable dynamics of an SC can arise from a variety of internal and external sources, including suppliers/partners, customers and competitors (Yi et al., 2011). SCs should be prepared for a possible future competitive situation even if there is no competitor at the moment (Farahani et al., 2014).

One of the previous seminal papers on process approach outlined what was at that time a novel methodology for improving processes and for enabling information sharing across various tiers in the SC (Trkman et al., 2007). However, this is now 'old news' since methodologies for process management have improved (Palma-Mendoza & Kevin Neailey, 2015; Winter & Knemeyer, 2013) along with hands-on models like SCOR. All these can be used for identifying and analyzing relevant processes in an SC (Persson et al., 2012).

In all, in the last 10 years an appropriate approach whereby information sharing and process improvement should be carried out has become well known and its critical success factors are now well understood (Trkman, 2010; vom Brocke et al., 2014). Most SCs have identified and rationalized their processes to a certain level of maturity (Bharadwaj et al.,

2013). Of course, further possibilities for process improvement exist; but a simple model-simulate-redesign-monitor approach as previously proposed (Trkman et al., 2007) would bring limited additional advantages. Further, digitalization (as the process of enabling new BMs and restructuring social life around media, digital communications, and new technologies) electronic business reduce transaction costs, increases the amount of available information and enables completely new BMs (DaSilva & Trkman, 2014). BMs have thus emerged as a new unit of analysis and emphasize a system-level, holistic approach to explaining how firms do business (Zott et al., 2011). Finally, the turbulent environment requires new BMs and dynamic capabilities are needed to respond to these changes

Further, the process approach line of thinking usually assumes that an SC is moving up and down along certain maturity levels in an attempt to improve their processes and consequently performance (Lockamy & McCormack, 2004). However, SCs need to be able to continually change their BM (defined as a combination of resources which through transactions generate value for the company and its customers (DaSilva & Trkman, 2014) since the BMs used by various tiers in SCs are critical for delivering value to end-users. BM approach requires an established way to improve, replace or add new BMs (Storbacka, 2011). Further, companies often need to use several BMs at the same time (Martínez-Olvera, 2009).

In order to do so various tiers in an SC need to start collaborating more deeply, which include knowledge sharing in order to develop both the ability and willingness to dynamically change their BM (Casadesus-Masanell & Ricart, 2011) while keeping the balance between the need to adapt to their customers and the need for standardization across the whole SC (Meier et al., 2010). This calls into question whether the current SC models that feature some dynamic flexibility, yet are built on the general premise of control, are suitable for meeting the challenge of increased turbulence (Christopher & Holweg, 2011; Hult et al., 2010). SCs need to be able to recognize the need for a change in a BM, adjusting or inventing a new BM, orchestrating the necessary assets, and for (re)structuring the organization (Leih et al., 2015).

The main question of this chapter is how the elements of a BM could be linked, namely products, processes, customers, partners/suppliers and employees to be able to manage existing and introduce new BMs, not yet known at that time. Presently there is a lack of these dynamic capabilities by which we mean the ability to move from an AS-IS to a TO-BE model. SCs should be able to strategically prepare themselves not only by changing their current BM but by developing the dynamic capabilities required to take advantage of a certain opportunity should it arise. Those dynamic capabilities then enable but also constrain possible BMs to face either upcoming or existing contingencies (DaSilva

& Trkman, 2014). Flexibility and dynamic capabilities should enable future strategic plans as emphasized by Christopher et al. (2011) who found that most SCs lack the ability to quickly adapt to changed market and environmental conditions. This is primarily because they have been designed with efficiency rather than flexibility in mind. The development of options to capitalize on future opportunities is vital (Coltman et al., 2015).

In line with the above thinking, the purpose of this chapter is twofold. First, while Trkman et al. (2007) proposed a "process approach to supply chain integration", we have extended the topics from 2007 to an extent to be able to identify the vital issues for SCs to develop a "business model approach to supply chain management". We extend from SC process modelling and operations management towards SC BM management; from information to knowledge transfer; from the maturity of an SC to dynamic capabilities and from measuring the effects of redesigning processes to improving the dynamic capabilities to redesign BMs in the future.

Second, we propose two simple frameworks to summarize the elements needed to enable dynamic capabilities to change and add BMs in the unknown future. The proposed frameworks are deliberately simple; the first one partly builds on the well-known "business model canvas" by Osterwalder (2005) and the Leavitt Diamond model (Leavitt, 1964) while the second partly adapts the previous work by Beske et al. (2014).

Our chapter then uses a case study to show how a company should develop both its internal business processes, products, employees and relationships with important partners and customers in an SC in such a way that the company will be able to continually change its BMs from the AS-IS state to an unpredictable TO-BE state as a response to currently unknown changes in an unknown future.

The structure of the chapter is as follows. First, the theoretical background for the BM approach is presented; its elements and relations within them are summarized. The roles of knowledge sharing and dynamic capabilities are emphasized, followed by the framework that attempts to connect BM elements, dynamic capabilities and the future BMs. A case study of Post of Slovenia is used to illustrate the main concepts. The main findings from the case are presented. Finally, the implications of the proposed BM approach are discussed.

3.2 Business models in supply chains – theoretical background

Companies have acknowledged the advantages of effective SCM; the ability to design, execute and monitor SC activities is today taken for granted. The benefits of cooperation between different tiers in an SC are obvious despite some challenges associated with the integration (Palma-Mendoza et al., 2014). Among these challenges, sharing of information,

coordination of physical good flows and integration of business processes are the most critical (Oke et al., 2013). The increase of complexity in business processes has resulted in the need for new methodologies to handle this complexity, in particular on how to integrate processes in SCs for improving flexibility of the entire SC (Palma-Mendoza et al., 2014).

Flexibility usually presents company's ability to effectively adapt or respond to change in product, volume, access or response rate to environment (Debelle & Vickery, 1999). Even though some authors (Blome et al., 2014; Yi et al., 2011) see flexibility as a facilitator when providing innovative products and responding to market change, there is a lack of examining flexibility in a more holistic approach. Companies should consider flexibility in relation to managing BMs. To address these challenges, research on SCM has grown considerably in the last few years – while only 20 papers with the topic="supply chain management" were published in 1997, almost 400 were published in 2007, over 600 in 2014, and more than 1500 in 2017 (Web of Science, 2015, 2017).

Companies and researchers have thus realized the complexity and ways in which to manage SCs. However, understanding of the way in which they need to continually manage their BMs is insufficient. This calls for future improvements in current SC model, which have been questioned before (Christopher & Holweg, 2011). Nowadays, volatility should be taken for granted and organizations should try to build hedges against it.

3.2.1 Business models in companies and supply chains

The essence of a BM is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit. It thus reflects management's hypothesis about what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit (Teece, 2010). A BM depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities (Zott et al., 2011).

An interesting question in this regard is whether a company can have multiple BMs. Most authors agree that multiple BMs can co-exist in a company (Benson-Rea et al., 2013). For several reasons, a company may wish or need to use distinct BMs that operate simultaneously (Casadesus-Masanell & Tarziján, 2012). BMs complement each other the more they share major physical assets, capabilities and resources although it is rare for two BMs to have most of them in common (Benson-Rea et al., 2013). Having multiple models enable a company to migrate products between the different BMs (Doz & Kosonen, 2010). According to Doz (2010) developing new BMs and related elements takes on average six years.

Companies should develop BMs as interactive relations of the elements of BMs (see Figure 8). In a typical example, Amazon used its computing processing power needed for its online sales BM to also offer "Amazon Web Services" to other companies. It transformed the unavoidable cost of running processes into a new product and a revenue stream. If Amazon had not taken the risk and added a BM foreign to its core activity it would have missed one of the biggest business opportunities of the 21st century (DaSilva et al., 2013).

On the other hand, when the unit of analysis changes from a company to an SC, the answer is different. We argue that by definition one SC uses one BM. Obviously, different companies in an SC use different BMs (Huemer, 2012); a company that has multiple BMs thus participates is part of several different SCs (for example, the SCs of Amazon Fresh and Amazon Web Services are totally different). SC integration can then be viewed as the linkage of BMs from various companies into one high-performing BM of an SC as a whole (Tsanos et al., 2014). A firm can thus search for an innovative BM to turn its dispersed business operations into a seamless SC (Shih et al., 2012). Vice versa: building strategic partnerships with customers or partners in an SC can be used to create new BMs for a certain company (Oke et al., 2013). In all, innovations in the SC are seen as one of the most promising ways to create new BM (Zott et al., 2011).

3.2.2 Dynamic capabilities

In line with Teece et al. (1997) and Eisenhardt and Martin (2000) we define dynamic capabilities as the 'ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments and achieve to achieve new and innovative forms of competitive advantage'. Dynamic capabilities enable aligning company's resources with the environment and they extend decision options to a broader scope (Wilden et al., 2013). Expanded portfolio of strategic decisions allows companies to reconfigure resource within a new BM (Vanpoucke et al., 2014). Vanpoucke et al. (2014) continue that dynamic capabilities have given the companies an opportunity to enter new business or develop new processes or products.

The synergy between the elements of a BM is a crucial microfoundation of dynamic capabilities since they provide competences for companies to sense, seize and shape opportunities, and reconfigure their BM elements (Teece, 2012), so that they match with environmental changes (Teece et al., 1997) or even initiate market change (Eisenhardt & Martin, 2000). Bareto (2010) agrees that dynamic capabilities approach facilitates searching for future solutions, improves time-consuming decision process and initiates improvements of BM elements. Furthermore, Winter and Knemeyer (2013) claim that dynamic capabilities require a long-term commitment to intentionally chosen BM elements.

Companies operate in business ecosystems that are intricately intertwined in a way that strategy cannot be conceived independently of the environment, partnerships and customers (Bharadwaj et al., 2013). Dynamic capabilities and SCM are linked through similar environmental and organizational conditions, making the application of dynamic concepts in the field of SCM a logical choice (Beske, 2012). Our proposal on how to connect BMs, dynamic capabilities and future changes in BMs is explained in the Figure 10 in the continuation of the Chapter 3.

3.2.3 Assuring continuous success in supply chains

A previous study by Hall et al. (2012) already confirmed that the development of sustainable BMs includes additional constraints which have arisen from society and the environment. Several constraints limit the development of BMs such as in-depth partnerships, increased length of SCs and a lack of inter-organizational alignment of processes (Dahan et al., 2010). In addition, successful BMs require improved intra-organizational capabilities and stronger interconnections between the key elements (Stubbs & Cocklin, 2008).

Strategic collaboration between various tiers in an SC enhances the development of BMs on the inter-organizational level beyond the dyad. In practice, to some degree successful BMs very often become ”shared” by multiple competitors (Teece, 2010). In the past few decades, enterprises followed the conventional approach, with one BM and a definite scope of services and products. Such an orthodox approach was possible due to the stable demand for and predictable life-cycles of products and services. Therefore, organizations were continually improving their processes towards known goals. Building on this, previous work outlined the need and suggested an approach to continually improve processes (Trkman et al., 2007). Nowadays SCs should embrace volatility, understand the nature and impact of turbulence and challenge the economies of scale mindset (Christopher & Holweg, 2011), and realize that while SCs in a non-turbulent market can operate with a flawed strategy or structure and still achieve an average performance this is not possible in a turbulent environment (Trkman & McCormack, 2009).

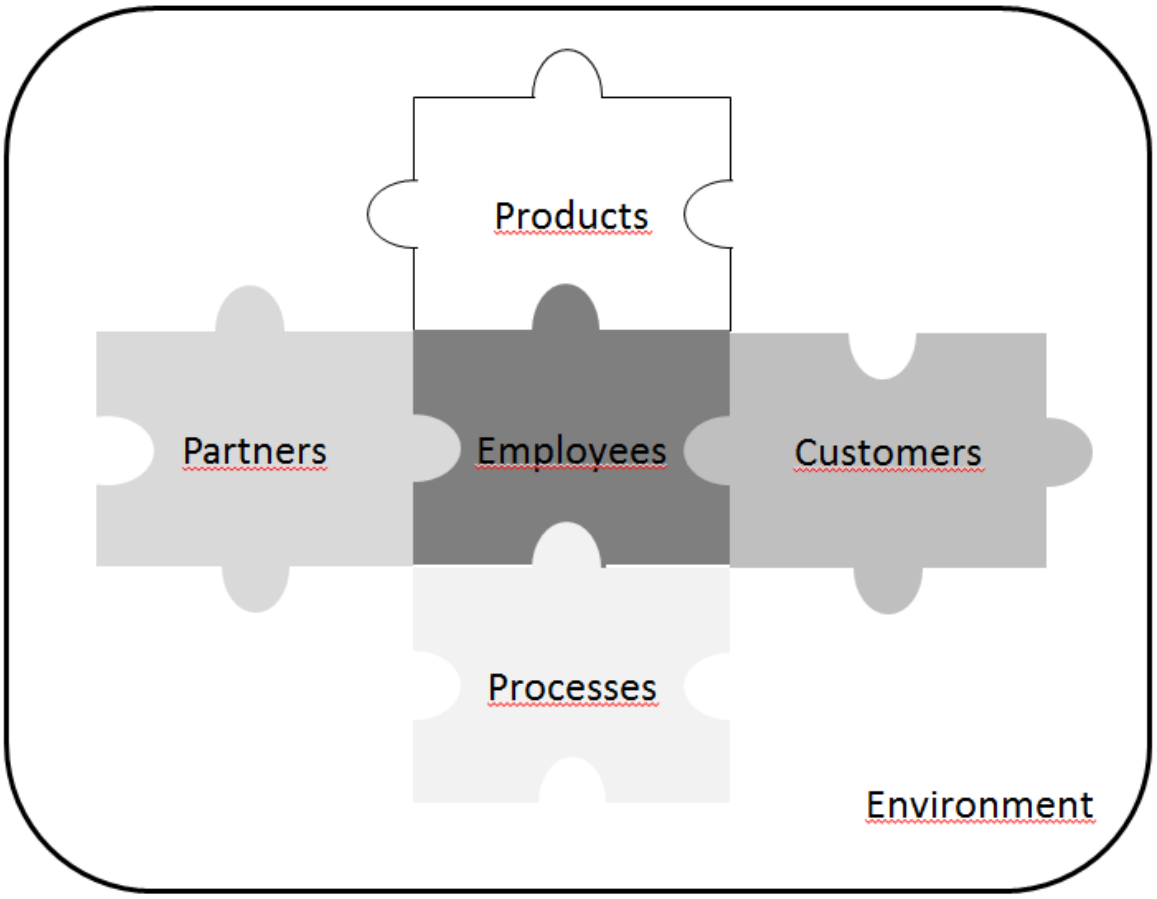
Unfortunately, companies are incapable of reliably predicting future changes in their core businesses with respect to recent fluctuations in the market, the hyper-turbulent environment and the increasing rate of discrete events that have exposed the lack of dynamic capabilities in SCs (Ahi & Searcy, 2013). SCs have established flexibility in terms of shifting in demand and technology, but only within the network of existing SC (Christopher & Holweg, 2011). However, due to today’s hyper turbulent environment, SCs need to design options for various future scenarios. Li & Liu (2014) argue that change nowadays refers to strategic decisions, which include variety of processes and implementing dynamic capabilities approach. Since resources are difficult to be obtained in

turbulent markets, focusing on dynamic capabilities provides benefits (D'Aveni et al., 2010). Namely, an SC can be considered a level-two chaos which reacts to a prediction about itself and can therefore never be predicted accurately (see Harari, 2015).

3.2.4 Supply chain business model management

The continuing success of an SC requires reconsidering linking, processes and inter-organizational alliances among various tiers in the SC (Govindan et al., 2014). The only possible approach is in BM management, which requires the management of interrelated elements (see Figure 9). Our proposed model partly builds on previous work (Leavitt, 1964; Osterwalder et al., 2010) and attempts to emphasize the key building blocks of SC BM management. The interplay of BM elements within an SC enables companies to enhance their flexibility by aligning their internal processes, offered products and the skills of employees and appropriately connecting them with the external activities of partners and customers. The suggested elements provide benefits when they are sufficiently aligned. (Kamal & Irani, 2014; Wiengarten & Longoni, 2015).

Figure 9: Components of SC BM management



Obviously, an interesting question is who manages the SC BM. The BMs of a single company are usually managed by its management board. The BM management of a certain SC is usually done by the focal company although this very much depends on the answer of the related question of SC governance that has been explored in depth (Adams et al., 2014; Wathne & Heide, 2004). Obviously the answer also depends on the perspectives of SCM in the literature: as a process, a discipline, a philosophy, a governance structure or a function (Ellram & Cooper, 2014).

- Processes

A business process is a complete, dynamically coordinated set of activities or logically related tasks that must be performed by an SC in order to deliver value to customers (Trkman, 2010). Overall inter-organizational alignment of processes has long been recognized as a trigger for improving performance (Jeffers, 2010). The execution of a process is related to the sufficient transfer of information and knowledge. With regard to this, companies need to develop strategically aligned capabilities not only intra-organizationally, but also in the SC. Processes are now being considered as assets requiring investment and development as their maturity level is increasing (Cuenca et al., 2013).

The cross-organizational alignment of processes, activities and objectives is considered as a rationale for successful SC integration (Yu et al., 2010). SCs develop the processes required to organize (i.e., identify, integrate and exploit) elements that reside across organizational boundaries to create unique customer value (Fawcett et al., 2012). The increase in the complexity and scope of processes has established the need for new methodologies, in particular for how to integrate information about processes between stakeholders in an SC (Palma-Mendoza et al., 2014). Better knowledge about processes improves understanding of how dynamic capabilities operate. In addition, a proper understanding of processes can generate knowledge of the mechanisms through which dynamic capabilities operate (Eriksson, 2014).

- Customers

We define customers as those who buy or use products and services and tend to be at the end of the SC. Obviously, this definition can sometimes be blurry, e.g. whether a customer of a logistics SC that delivers washing machines is a producer of those machines or the individual using it. We argue that the biggest difference between customers and partners is that partners form closer relationships which are not limited to just buying and supplying, but also encompass at least a partial integration of processes in satisfying the final customer (which can be either an individual or a company) of that particular SC which mainly uses the products or services in its processes.

The SC processes need to be integrated with the external operations of customers and other channel members (Yu et al., 2013). Knowledge about a customer allows companies to better understand the needs of customers to serve them with customized products or services. Customer pressure is considered an initiator that enables firms to start developing processes (Gualandris & Kalchschmidt, 2014).

Customers can be actively involved in the development of new services or products. Further, in many cases an SC needs to not only understand the customers' processes but even to change them (Trkman et al., 2015). Moreover, knowledge sharing with customers enhances better designed and personalized products/services (Wu et al., 2013).

- Partners

Companies are engaged in alliances and partnerships with other organizations (Palma-Mendoza & Kevin Neailey, 2015). Partners play an important role in BM management. Dynamic partnerships enable the reconfiguration of assets and other capabilities to cope with turbulent environments (Pavlou & El Sawy, 2011). In addition, inter-organizational cooperation is considered as a source of capability development whereby organizations can gain competitive advantage (Wagner, 2003).

Obviously, such close collaboration can mean that the distinction between customers and partners is hazy. For example, Opel might find Chevrolet to be a customer in one SC, a partner in another (General Motors) and a competitor (part of the environment according to Figure 9 above) in a third SC (adapted from Mentzer et al. (2001)). The term partners encompasses not only first-tier suppliers, but also various tiers beyond the traditional buyer-supplier relations that are integrated in providing new products. Additionally, the term stakeholder is used in the remainder of the chapter to encompass partners, customers and employees.

The effect of SC partner innovativeness on innovation strategy is enhanced when firms have stronger strategic relationships with their key SC partners. Developing stronger partnerships in an SC should be a prerequisite since partners who share resources can operate more flexibly (Cheung et al., 2010) and the effect of SC partner innovativeness on innovation in the whole chain is stronger (Oke et al., 2013). All in all, collaboration enables joint development of new technologies, processes and products. Accordingly, long-term relationships enhance trust and commitment between the most important partners, which gradually continues along the SC. Second, the joint engagement of various tiers that have developed trustworthy relationships in the SC facilitates benefits being acquired from stakeholder knowledge (Beske et al., 2014).

- Employees

SC leadership should consider employees in the decision-making process (Jabbour et al., 2013). Employees play an important role in enhancing organizational performance, contemporary operations management practices and in reinforcing collaboration between stakeholders (Jabbour et al., 2013). In addition, conventional SC jobs, roles, responsibilities, and skill requirements among all units or functions should be studied. Employees' commitment allows removing the barriers to implementing SCM (Alfalla-Luque et al., 2015). Employees execute 'knowledge-centered' activities that allow them becoming more innovative in order to provide companies with competitive advantage in the future (Wang & Noe, 2010). However, competences are not just built on individual skills but also on the collective learning derived from how employees have worked together (Teece, 2012). Organizations should pay attention to the dynamic nature of leadership (Trifilova et al., 2013). Any enterprise will be vulnerable if the sensing, creative, interpretive and learning functions are left to the cognitive capacities of a few individuals (Teece, 2012). Obviously, employees can be seen as either an opportunity or a barrier in terms of e.g. a lack of loyalty in partnerships among companies in an SC (Klassen & Vereecke, 2012). The study of managerial dynamic capabilities is challenging because they are often tied to complex corporate histories (Teece, 2012); prior knowledge and skills at the individual and collective level form the basis for developing dynamic capabilities (Nieves & Haller, 2014).

- Products

The development and introduction of new products is crucial for guaranteeing the long-term success of an SC. The proactivity already in the development stage and throughout the whole product life cycle is important (Beske, 2012). Nowadays, most industries are characterized by frequent new product introductions, as well as changes in processes and organizational structure. This leads to relatively short product life cycles (Wiengarten et al., 2012). Unfortunately, modification of the SC process to suit product characteristics results in a trade-off between efficiency and responsiveness (Morita et al., 2015), even more so since even if end products are changing at very rapid rates, there are likely produced by SCs that are functioning in stable environments (Wiengarten et al., 2012).

Companies have started to offer a wide array of products and services to fulfil customers' needs. Complex products have established the need to coordinate various business activities ranging from the procurement of various inputs to joint decision-making with multiple parties. Product complexity results in difficulties in identifying product specifications within an SC (Wong et al., 2015). It is therefore important to integrate product architecture decisions with manufacturing and SC decisions during an early stage of product development (Nepal et al., 2012).

SCs should be tracking and tracing products in order to design, locate and pursue its development towards the needs of end-users (Musa et al., 2014). The product variety has to be matched with the SC structure (Randall & Ulrich, 2001).

- Environment

Environment is spanned upon very broad environmental factors that constrain and significantly influence the overall nature of an SC. The overall environment includes several factors, e.g. political, economic, technology, industry etc. (Melnyk et al., 2013). The environment of the whole SC matters, not just that of the focal company. SCs must realize that the assessment and classification of suppliers is importantly modified by factors in the suppliers' specific environment (Trkman & McCormack, 2009).

Some SCs are unable to adapt to changes in environment. This is an outcome of designing with efficiency rather than flexibility in mind. SCs with established structural flexibility will typically adapt more easily by increasing their collateral activities (Christopher & Holweg, 2011). Various environmental uncertainties matter and the adopted strategies should match an SC business environment (Yi et al., 2011). For example, companies should evaluate both their micro and macro environments before deciding to what extent to integrate with other companies (Chen, 2011). Environmental factors that are outside the control of the organization might also be important contextual factors that impact on the success of the outsourcing process (Wiengarten et al., 2013).

3.2.5 From information transfer to knowledge sharing

The previous work (Trkman et al., 2007) emphasized the importance of information sharing and appropriately changing BMs to facilitate the better use of shared information. Nowadays, stakeholders in SCs are aware that information sharing is an inevitable part of cooperation. Information transfer has been established on the internal and external level and ever since cross-organizational connections have been yielding aligned objectives among the partners (Yu et al., 2010). McFadyen et al. (2009) stated that closer cooperation which includes sharing information enables the reconstruction of individual sub-optimal approaches into one that integrates perspectives from all stakeholders. Still, organizations or their managers are often not prone to share crucial information with other tiers in the SC since this could affect their rationales for competitive advantage (Montoya-Torres & Ortiz-Vargas, 2014).

However, while information transfer within SCs was enough in the previous decade, recent changes in BMs have brought up the question of the appropriate approach to the exchange of knowledge (Flynn et al., 2010). Compared to information sharing, knowledge sharing contributes more to making the decision-making process more efficient, although it also

demands establishing a stronger partnership between the tiers included in an SC (Du et al., 2012). Organizational knowledge also enables building skills to adapt to changes while it can also function as a core rigidity (Nieves & Haller, 2014). Observation of alliances has shown that knowledge capabilities were essential in order to attain competitive capabilities (Wagner, 2003). However, the biggest challenge is establishing a trusting relationship among the sharing parties (Shih et al., 2012).

The integrative function of knowledge management enables solving complex problems and establishing efficient inter-organizational business processes (Krenz et al., 2014). Knowledge is difficult to transfer; nevertheless, collaboration enables its use to develop joint processes, procedures and techniques (Wagner, 2003). In addition to explicit knowledge sharing, the sharing of tacit knowledge needs to be increased via improved face-to-face interaction (Wang & Wang, 2012). This can create a synergistic effect when combined with existing knowledge from another partner (Cao & Zhang, 2011). Further, if knowledge sharing is sufficient organizational boundaries are removed and internal processes and activities are aligned, in turn enhancing the flexibility and forecasting the future environment of the SC (Hsu et al., 2007).

Inter-organizational alignment can only be developed by trustworthy and cooperative business relationships (Morgan & Hunt, 1994) where inter-organizational trust is a rationale for the further development of strong alliances (Yang et al., 2005). Sharing strategic knowledge also includes shared and aligned goals, which can facilitate relations between stakeholders in SCs and improve the organization's capability to forecast and evaluate the other tiers' intentions regarding collaboration.

However, knowledge sharing results in increased complexity which is often a crucial barrier for suppliers (Wilkinson et al., 2009). Further, established knowledge transfer and strong alliances can lead to knowledge leaking and therefore a loss of competitive advantage (Trkman & Desouza, 2012). In fact, the less explicit the knowledge is, the more difficult it is for competitors to absorb and imitate it (Wagner, 2003).

Overall, the positive outcomes of internal and external knowledge sharing have been confirmed. Intra and inter-organizational knowledge transfer enhances SC flexibility and enables changes in existing or additional new BMs. Moreover, by increasing product complexity the effect of internal knowledge transfer on SC flexibility is enhanced (Blome et al., 2014).

3.2.6 From maturity to dynamic capabilities

Any improvement in SCs is connected with the SC process maturity concept (Harmon, 2003) that was designed as a reference model of the stages that SCs go through as they

move from being immature to mature in their process orientation. The SCM maturity model (Lockamy & McCormack, 2004) was based on concepts developed by researchers over the previous two decades and implied that a process has a life-cycle that is assessed by the extent to which the processes are explicitly defined, managed, measured and controlled. Various maturity models have been developed in recent years as a way to assess at which stage an organization and/or SC is and to assist in developing a road map to help them reach where they want to go (see Röglinger et al., 2012; Van Looy et al., 2013 for a complete overview). Various decision tools were developed to help organizations properly select one maturity model over another and apply it in different contexts (Estampe et al., 2013; Van Looy et al., 2013). The effect of maturity on SC performance is well understood (Oliveira et al., 2012).

However, most of such SCM models along with our previous approach to increasing maturity (Trkman et al., 2007) emanate from a period of relative stability. This calls into question whether maturity models that feature some dynamic flexibility, yet are built on the general premise of control, are suitable for meeting the challenge of increased turbulence. SCs need structural flexibility which builds flexible options into the design of SCs. This marks a major departure from current thinking and will require revisiting the management approaches to maturity measurement (Christopher & Holweg, 2011).

While process management activities are beneficial for organizations in stable contexts, they are fundamentally inconsistent with all but incremental innovation and change (Pereira et al., 2014). It is thus insufficient to understand the development of maturity; we need to understand how the complex, dynamic interplay of various BMs along with dynamic capabilities to respond develops. The question of whether and how dynamic capabilities affect performance is still not fully addressed (Drnevich & Kriauciunas, 2011). Effective SCs tend to design BM carefully because they are aware that BMs are essential for constructing dynamic capabilities (Teece, 2010). The outcomes of dynamic capabilities are context dependent; examining from the lenses of our framework they could relate to any of the elements (processes, employees, partners, customers and products) and even more so to their interplay. In addition, the effects of dynamic capabilities are enhanced when a certain level of competitive intensity is established, and thus the environment is also vital. Especially in environments with limited resources, dynamic capabilities serve as a rationale for adapting to competitive pressures (Wilden et al., 2013).

Organizations with employees who possess knowledge and experience can be more capable of identifying the need to introduce changes to existing resources and determining the actions required to implement them (Nieves & Haller, 2014). These dynamic capabilities have a more holistic perspective since the accessing and understanding of the capabilities possessed by some SC members will benefit the others (Beske et al., 2014).

The importance of so-called infrastructure support, a system of dynamic capabilities which enables the execution of BMs, has also been emphasized (Storbacka, 2011).

Each of the elements of the proposed model (Figure 9) is crucial for increasing dynamic capabilities. For example, the participation of partners in the product design process has already been recognized as a key factor in augmenting flexibility and increased collaboration has led towards flexible BMs (Stevenson & Spring, 2007). Agndal and Nilson (2009) found that former experience with a partner or customer enables quicker adaptations of the BM. Further, successful knowledge sharing enables employees to respond to environmental change at a greater pace with less cost (Sher & Lee, 2004).

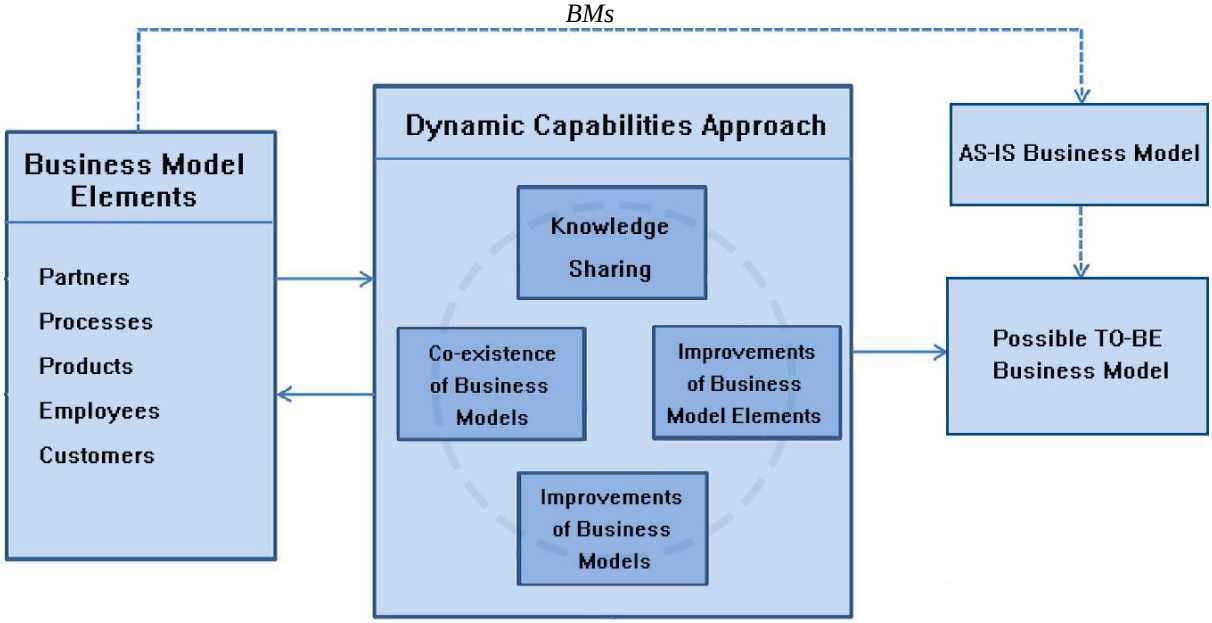
3.2.7 Ability for a future redesign

As outlined in the previous section SCs should focus on developing the ability to change their BMs in the future, not mainly on the current maturity level. SCs need to incorporate dynamic capabilities to reconfigure internal and external competences in order to be prepared for future challenges. Few managers comprehend the nuanced complexities involved in assessing heterogeneously dispersed resources and bringing complementary competencies together up and down the SC (Fawcett et al., 2012). Therefore, additional actions in terms of dynamic capabilities approach have to be performed in order to ‘fill the gap’ between AS-IS and possible TO-BE BM.

A company needs to incorporate dynamic capabilities to reconfigure its internal and external competencies in order to be prepared for future challenges. (Wilden et al., 2013) suggest that, while dynamic capabilities may influence certain types of organizational performance, their potential to achieve superior performance outcomes is ultimately contingent on their fit with the internal organizational structure and the external environment. The identification of dynamic capabilities is important for planning future SC models and companies' strategies.

In the Figure 10 we propose a simple framework to provide an overview of issues that an SC should consider in improving their ability to change. The general approach towards the organization of the components in the framework was adapted from Beske et al. (2014) who analyses the sustainable SCM practices and dynamic capabilities in the food industry.

Figure 10: Key elements for the ability of future redesign of BMs



Source: Trkman, P., Budler, M., & Groznik, A. (2015). A business model approach to supply chain management. Supply Chain Management: An International Journal, 20(6), 587-602.

The framework in the Figure 10 firstly argues that the BM elements are in the first place the determinants of the AS-IS BM. The improvements of key BM elements will obviously govern the improvements of BMs resulting in possible TO-BE models. On the other hand, though, the BM elements also influence future BMs indirectly through the development of dynamic capabilities. SCs should thus balance the development of dynamic capabilities and the "instant" improvements of BM elements.

The first element of the "dynamic capabilities approach" components is knowledge sharing since according to Wagner (2003) organizations need to deal with greater uncertainty therefore their ability to assimilate and process information in order to make well-informed decisions and solve problems accurately is essential. This shared knowledge can be used for improvement of BM elements in such a way to make them more prone for future changes. As Wilden et al. (2013) suggests: while dynamic capabilities may influence certain types of organizational performance, ultimately, their potential to achieve superior performance outcomes is contingent upon their fit to the BM elements and the external environment.

Each BM is "more than a sum of its elements" though. SCs should make sure that the BM as a whole is flexible enough to enable improvement. Finally, often several BMs co-exist in the same company. The number of concurrent BMs is obviously limited as they compete for similar resources. Thus, an SC should carefully consider the co-existence of BMs in

companies that are the part of an SC. The interaction of these BMs could be a barrier or facilitator for the SC's BM. The outcome of dynamic capabilities approach are possible TO-BE models - the way the company will operate in order to stay in synch with changing markets, and which enable it not just to stay alive, but to adapt to and itself shape the (changing) business environment (Teece, 2010).

3.3 Case study

A case study was chosen as a research method to illustrate our theoretical findings. Our case study examines the interplay between various elements of a BM and underlines the theoretical assumption about the importance of dynamic capabilities to manage the five elements of existing BM in an SC. We chose the case study approach since it is suitable for practice-oriented fields such as management and is able to solve the 'how' research question (Yin, 2002).

We followed the usual roadmap for case studies (as suggested by Beske et al. (2014)), namely: 1. determine the object of study; 2. select the case; 3. build initial theory through a literature review; 4. collect and organize the data gathering; and 5. analyze the data and reach conclusions. We started with the question of how a company should develop its business processes, employees, products and SC relationships with its partners and customers in a chain in such a way that it will be able to continually change BMs from an AS-IS state to a currently unpredictable 'TO-BE' state. We used the two frameworks (Figure 9Figure 10) as a loose guiding lens through which we examined the case. The case study provided us with insights into new projects and technology that were established, seeing them from the authors' viewpoint (Bansler & Havn, 2004).

Several data collection methods were used. We followed the usual way in SC case studies and employed interviews, on-site observations and the study of relevant business documents, reports and notes (Shih et al., 2012). Interviews are the most widely used data-gathering techniques in interpretive case study research (Seuring & Müller, 2008) since researchers can sufficiently collaborate with case participants. The main purpose of the interviews was to acquire an in-depth understanding of how PS structures its BM with respect to future needs.

The interviews were administered by a set of broad, open-ended questions and were conducted by the author of the dissertation at hand and his research colleagues on the interviewees' company premises. Between March and May 2015, we carried out interviews with 10 employees at different levels and functions. We first interviewed the Chief Executive Officer and the Commissioner for Economic Affairs from top management in order to receive the most holistic perspective possible and acquire insights

into the long-term strategic plan. In addition, we contacted the Adviser to the Management who provided us with a further in-depth understanding of recent developments. Using a top-down approach, we continued our interviews with representatives of middle management: Head of the Logistics Centre, Head of the Business Process Management Department, the Chief Information Officer, the Deputy Director and the Director of Product Development. Finally, we wanted to see how processes were executed in real life, so we interviewed representative employees from operations management, a postman and a caretaker from the Postal unit.

Open-ended questions were used to encourage the interviewees to take on an active role in open and unrestrained dialogue with the interviewers (see Spence et al. (2012)). The questions were structured around BM elements (Figure 9) and around the connections that enable future redesign (Figure 10). Interviewees from top management including CEO enabled us to see the insights into strategic planning of future BMs and structuring dynamic capabilities within the company. Representatives from middle management were questioned about integrating and linking BM elements within newly-developed BMs. Furthermore, the interviewees from middle and operations management described the knowledge sharing between various tiers and the dynamic capabilities in the company. The interviews lasted 45 minutes to 1.5 hours. The most important interviews were conducted by two interviewers. All questions and answers were transcribed.

Identification of relevant text and browsing for repeated ideas and themes provided the fabric of the narrative presented below. All authors went through the process of analyzing the data independently, with the assessment by one author being reviewed, revised and supplemented by the observations of the other two authors through a collaborative dialogue.

In addition, analyzing documents, websites and publications is considered as the second most appropriate procedure and so we used both. We examined annual reports and the company's internal documentation, journalistic articles from daily newspapers and publicly accessible information on its web page.

We have considered reliability, which refers to the accuracy, precision of what is observed (Vilares & Coelho, 2013). Following Cozby and Bates (2012) we gave each question to experts at PS to receive their feedback whether the question is appropriate, useful or irrelevant to measuring the construct under study. We have followed the idea that the case study helps illustrating contemporary events when these events cannot be manipulated (Yin, 2002). Furthermore, we have been focusing on past and (possible) future decision in PS, since the case study enables illustration of a set of decisions: why decisions were needed, how they were implemented, and what outcome followed (Schramm & Gerbner,

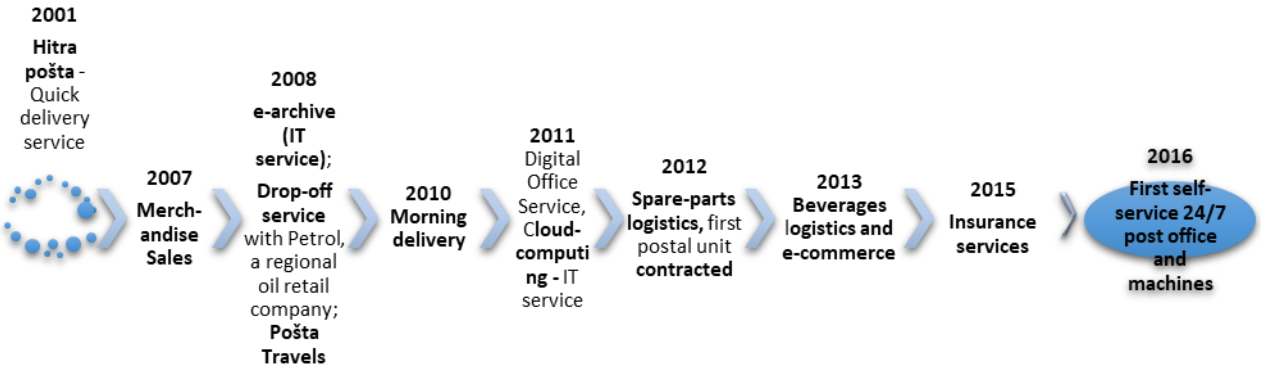
1965). In fact, case study of PS allowed us illustration of certain topics within an evaluation of their essential elements. Following this approach, interviews represent an attempt to integrate the findings and to converge on the facts of the matter or their tentative illustration (Yin, 2002). Both the selection of the case and the analysis of the gathered data were very importantly assisted by the previous involvement of author's research colleague with the case-study company.

3.3.1 Case description and analysis

Post of Slovenia can trace its history back to 1526. Up until 1995, postal and telecommunication services in Slovenia were joined in one company. In 1995, the company was split into PS and Telekom Slovenia. PS is a state-owned company that provides traditional postal services (delivering mail, publications, inserts) as well as financial, insurance and logistic services, package deliveries and merchandise sales. Over the last few years, PS has experienced a decline in total net sales, net operating profit and sales revenues of traditional postal services. Generally, it shares the decline in traditional postal services with many other postal operators around the world, see e.g. (Crew & Kleindorfer, 2013; el Ata & Perks, 2014). Revenues from its traditional postal services have been declining for years at an approximate annual rate of 5–7%. This indicates that PS has to rethink its traditional postal services BM as well as constantly seek opportunities to implement new BMs with new services.

The more-recently added services are shown on a timeline in Figure 11. In 2001, in response to increasing demand for a reliable and agile parcel transporter the quick delivery service (*Hitra Pošta*) was introduced, offering quick deliveries within the last mile. In 2008, petrol stations of Petrol, a regional fuel retail company, were organized as drop-off points of PS. In 2009, PS realized that the traditional service of delivering packages could be modified for other services. This happened in 2012 with spare-parts logistics offering next-day deliveries from a warehouse in Austria to any of the 59 partnering car repair shops. In 2013 beverages logistics were introduced – supporting just-in-time delivery to and continuous replenishment of restaurants and retail chains. Since beverages are vulnerable merchandise, employees' trust and commitment were important. PS had to establish safety control and additional procedures to avoid possible thefts. A morning delivery service was introduced in 2010, offering publishers early deliveries of newspapers directly to their customers. In 2012, PS began changing its less profitable post offices into contracted postal units.

Figure 11: Year of launching new services



Source: Trkman, P., Budler, M., & Groznik, A. (2015). A business model approach to supply chain management. Supply Chain Management: An International Journal, 20(6), 587-602.

Apart from postal and logistic services, PS introduced IT, retail, insurance and travel services. The first IT services (e-archive) were launched in 2008. In 2011, IT services were expanded with a Digital Office Service offering cloud-based software as a service. In 2007, the merchandise sales at post offices started providing customers with different products (e.g., magazines, chocolate bars, toys and card) which has later (in 2016) become a domain of new e-commerce service called MojPaket. PS became a travel agent in 2008. In 2015, PS started providing insurance services, acting as an agent for several insurance companies in Slovenia, covering a wide range of insurance solutions. The vision of PS is to become the market leader in gross insurance premiums collected. However, in the first quarter of 2015 PS only collected EUR 26,000 in premiums in a total market of EUR 1.9 billion. In fact, PS has been experiencing the decline in revenues from monetary services (insurance services included) also in 2016 owing to fierce competition, new modes of (paperless) payment, and switch in customers' preferences. Also, PS is experiencing a downward trend in morning delivery. On the other hand, in 2016 PS has substantially increased the revenues from both the logistics and IT services. Overall, the net sales revenues of PS in 2016 were in total 231.9 million euros, representing an increase from 2015 for 3%.

The attempt to replace the lost revenues resulted in the addition of new products and services which fundamentally differ from traditional postal services. Postal organizations need to change in the face of deregulation and competition (Chan & Cooper, 2006). In an increasingly competitive environment, postal operators must identify the determinants of success and reshape their BMs accordingly (Crew & Kleindorfer, 2013). PS has to manage more than one BM with fewer resources and employees than 5 years ago facing the usual challenges of managing multiple BMs.

PS is now aware of how cross-linked processes, partners, products, employees and customers can be. While doing business with one partner, this partner can become a customer. For example, large companies with beverages once used PS services. Nowadays they have become partners and developed a totally new BM of beverages logistics. PS has started to not only deliver beverages in B2B segment however, they offer a whole set of additional activities (warehousing, commissioning etc.). The most delicate part of this BM is done in logistics center, where beverages are exposed to theft from employees. In addition, the model encompasses several new processes, distinctive job specifications for employees and expands the set of customers. Accordingly, PS is striving to expand and develop its existing network of processes, partners and customers; unfortunately, its core and non-core activities are diverse and that makes them difficult to merge. IT services and insurance services are typical examples of diversity as they need different customers, employees, partners and processes, which make BM management even more demanding.

- Partners

Partners play an important role in PS. In line with Halldorsson et al. (2009), this is due to the never-ending switching of partners, processes and other elements within the BM. In fact, stronger alliances have enabled the development of new products or services (logistics and IT services) in an attempt to counterbalance the decrease in net revenues from traditional postal services.

PS has established a three-level transport network in collaboration with its partners. The first level represents transport organized from other countries or between larger cities in Slovenia. The second level is cargo transport between larger warehouses and logistic centers. First-level and second-level transportation is often outsourced, whereas last-mile transport is executed in-house to prevent hostile acquisitions of end-users by their outsourcers or partners. This clearly shows a lack of trust which influences knowledge sharing and future cooperation. The same issue was exposed by organizations which were possible candidates for alliances. These organizations believed that ‘partners sooner or later become competitors’. This uncertainty affects knowledge sharing on the inter-organizational level, which is important for building stronger partnerships. It was emphasized that the establishment of spare-parts logistics required an endless number of meetings and discussions between the partners since the car repair shops needed an extremely high level of trust in PS in both its ability to deliver the parts in less than 16 hours and the PS employees’ honesty. PS employees are namely given unlimited access to car repair shops in the early morning without any of the partners’ employees being present.

- Employees

Employees have been strongly influenced by recent changes in PS at both the operative and managerial level. The reduction of employees has affected processes within PS and made the introduction of multiple BMs more difficult; therefore, PS needs to change processes in order to sufficiently train its employees. An important advantage is that its employees can be gathered in one place, mainly in the logistics center. Some prefer to work within habitual tasks, while others are willing to accept the opportunity to gain new knowledge or switch workplace. Moreover, PS has to take the employees' commitment and loyalty into consideration when it comes to freight transport in the night shift. PS agrees that its BM management inevitably affected its human resource management and established the need for continuous cooperation with employees.

The important point here is that currently PS mainly has top-down communication, whereas employees lower down the hierarchy are unable to contribute their knowledge in developing or improving BMs. Insufficient collaboration between employees and managers has affected both, the execution of newly-established services and the flow of knowledge sharing about the new processes and services.

- Customers

Nowadays, PS has a more diverse customer base than ever before. This is chiefly the result of its expanded portfolio of services and products. The expansion of the portfolio is leading towards demanding customers who expect value-added services.

On the other hand, the wide range of products and services posed also attracted negative views from customers since very diverse types of customers use the same resources. A typical customer comment was 'waiting in a queue just to send a letter has become agonizing since you might have to wait until someone in front of you buys different merchandise, a lottery ticket etc.'. This is an outcome of introducing multiple BMs with one component of the BM (in this case employees) being used simultaneously in many processes. The risk of expanding and diversifying the customer base may be reflected in customers believing that PS is losing focus; a common problem of SCs that are unable to properly diversify their customer base.

- Products

PS has focused on expanding its portfolio of services and products. However, a broader set of products and services has several disadvantages. The supply of postal units with different merchandise (e.g., magazines, chocolate bars, toys and cards) has pleased some customers and annoyed others. Such products have been offered for more than 5 years but revenues from that segment had been declining in previous years. In response, a wide array of additional products was added to the post offices.

Some processes have become products and partners have turned into customers or now form the external environment. For example, several internal IT service processes have now also been offered in the market to business users. Partners that had previously provided PS with IT solutions have thus become its potential customers or competitors (part of the external environment according to Figure 9).

Further, insurance services are an interesting example of a new product. Implementing insurance services in the portfolio of its services enhanced the products' complexity, demanded the introduction of totally new processes and required considerable changes including in new partners (insurance agencies), employees' skills (including a license to sell such services) and a new customer base.

- Processes

PS has long been aware of the importance of the management of its business processes; as mentioned in the methodology section it has (with the help of external consultants) conducted several process modelling and redesign projects in the last 10 years. It has also established a Business Process Office as a stand-alone business unit.

The availability of business process maps (the general approach to modelling was extensively described in our previous chapter) makes it slightly easier to redesign processes, thus increasing the dynamic capabilities of PS. However, PS has not yet sufficiently utilized this opportunity since the time has never seemed to be appropriate for introducing changes. Our interviewees emphasized their awareness of possible problems within the structure of their system that would arise if too many changes were integrated, whereas their main business remains the provision of a universal postal service.

Parts of the activities within the process are often outsourced since partners can be more efficient than conducting some activities in-house. Further, PS has also had to switch employees between different tasks on an intra-organizational basis. Although PS has standardized the execution of new processes, it had to do specific alterations demanded by a few customers.

- Environment

The environment spans over all consistent elements of our framework (Fig. 9). In case of PS, the environment has changed significantly during the last 10 years. The environment of traditional postal services has altered due to fierce competition, forcing PS to rethink and redesign its BMs. On the other hand, the expansion of products and services has increased the complexity of the environment.

3.3.2 Post of Slovenia ability of future redesign of business models

The decline in revenues from traditional postal services triggered the need to introduce new BMs. Although PS was successful in improving existing and adding new processes before, business process approach where only the existing processes would be improved was not a sufficient response to the dynamic situation in the last few years. A shift towards BM approach has enabled PS to manage the BM elements more successfully. In addition, a dynamic-capabilities approach from Figure 10 can serve PS for aligning BM elements with respect to the possible TO-BE models. PS has learned that the complexity and variety of new products and services can be managed by incorporating knowledge sharing on both, intra- and inter-organizational levels.

The ability to customize processes, switch between various BMs and establish new services or products in advance can all together be recognized as a feature that has enabled dynamic capabilities. Further, knowledge transfer throughout the process is crucial for increasing the capability to change to a TO-BE state in the future. PS has established knowledge transfer within the whole process and among its partners. In addition, adequate knowledge transfer has enabled PS to consequently seek new partners that could help it manage more than one BM at the same time.

Knowledge sharing in PS enables higher level of trust and transfer of knowledge between employees and various tiers in an SC. In a typical example: the introduction of the new spare-parts logistics BM required an exchange of delicate data (and also keys for access to the premises) between employees from operational and middle management of different companies. All elements of the previously established models have to be improved (e.g. employees' skills, partners relationship) or redesigned (processes for managing spare-parts logistics). Then, special attention has to be paid so that the new activities in that BM did not endanger the existing BMs.

Continuous improvements of BM elements enabled the development of stronger partnerships and consequently outsourcing; something that was not possible in the past due to lack of trust among transport services provider. Shift to stronger alliances enabled PS to focus on expanding BM with providing last-mile traditional postal services (freight transport), launching new products, i.e. a quick delivery service, a drop-off service and morning delivery.

The introduction of new products and services, i.e. IT, financial and insurance services, and the launch of an e-commerce platform represents a much more disruptive change in terms of dynamic capability. The new products and services require a new definition of all BM elements, a knowledge sharing agreement, and an in-depth analysis of co-existence with existing BMs. An example of the latter is the selling of insurance service where PS

acts as an agent for insurance companies – which where its customers in the past. Today, insurance companies are partners. Even more problematic is that these services are foreign to the existing product portfolio. Further, the processes for the insurance selling BM had to be developed from scratch. Finally, limited resources resulted in difficulties regarding customers as they are being annoyed due to waiting in a queue for more time. Also, while the customer base for insurance services may in general be the same as for other PS services, the way in which insurance services are perceived by the customers is totally different (e.g. much more in-depth consultations are needed which is usually not possible at the counter).

We named a few external influences that accounted for the continuous decline of revenues from financial (and insurance) services; however, the decline can be partly a result of low level of complementariness between the existing and new BMs (see e.g. Casadesus-Masanell & Tarziján (2012)). Even though the PS has become a customer-centered company that offers insurance services to provide a full offerings' repertoire to its customers, small discrepancies between the existing and new practices contributed to the inefficient introduction of insurance services. On the other hand, a shift in focus on the prominent services, such as IT, e-commerce, and logistics services, resonates the dynamic capabilities of PS needed for a future redesign. The e-commerce service MojPaket has soared in the 2016 and according to the internal reports of Post of Slovenia contributed significantly to the increased net sales revenues and net income. Second, the e-commerce service accounted for the enhanced utilization rate of PS's logistics resources, showing a high level of complementariness between the existing and modern services. Altogether, PS logistics and e-commerce services already accounted for approximately 9 % of total revenues.

3.4 Conclusion

This chapter extended the past line of thinking from the process approach (Trkman et al., 2007) to a complete investigation of BM in a SC where processes are just one of the elements (see Figure 9). The chapter intertwines BM elements with activities that could enable dynamic capabilities to change from the AS-IS to the TO-BE state (see Figure 10). Accordingly, a company needs to be able to achieve the TO-BE state without knowing which changes to its BM will be needed in the future as it is impossible to make accurate predictions at a certain time point.

In order to do so, the company needs to establish a proper approach towards the management of its BM(s), enable appropriate knowledge sharing and collaboration beyond the dyad and focus on developing dynamic capabilities instead of mainly increasing the maturity of its processes as suggested beforehand (Trkman et al., 2007). Dynamic

capabilities should influence certain types of organizational performance, yet they are contingent upon their fit with the internal organizational structure and the external environment (Wilden et al., 2013).

The case study conducted in PS provided the insights into the development of multiple BMs. The case was an ideal selection as it deals with a company that is facing a steady decrease in revenues from its traditional BM and is struggling to replace it with a variety of new BMs which are sometimes conflicting and also require the company to manage different SCs. PS needs to continually develop all of the elements of its BMs to enable future changes/additions. The chapter contributes to the theory by firstly providing a synthesis of topics relevant for SC BM management. Further it extended the theory of BMs to the SC level (previously it was mainly used for a single organization) along with a proposed elements of BMs at the SC level. The chapter provided a more precise elaboration of the interconnection between BMs, dynamic capabilities and future required changes. Further, it suggested a novel way of identification of what "one supply chain" actually is by arguing that by definition each SC has only one BM.

The chapter has important implications for practice. Companies and SCs should carefully design their current BM(s) and develop dynamic capabilities for future changes. An SC should take the BMs of involved companies into account when optimizing a BM of an SC. The companies should decide how many BMs they can have at the same time and in how many SCs can they participate. Managers should carefully balance between instant improvements in certain elements and building dynamic capabilities for future change.

The chapter 3 has several limitations. Firstly, this chapter is intentionally quite broad in scope which means that in some parts the connections between concepts are not fully elaborated and this thus calls for further research. Further research and practical applications should also establish whether and to what extent BM concept can be associated with SCM. Further, the elements included in both proposed frameworks are partly arbitrary. This is a specific case study, which deals with Post of Slovenia – a service/logistics provider in a traditional industry. Therefore, it should not be generalized without care to e.g. production SCs. An important limitation and a topic for further research is a more in-depth exploration of the way in which SCs should measure their abilities for future redesigns of BM elements and BMs. A very important topic is also how to measure dynamic capabilities both in a single company but even more important on the SC level. An interesting question is also how and who actually manages the BM of an SC and how the BMs of involved companies and the SC as a whole actually interact. In all, such studies should contribute to companies and SCs to be able to not just either optimizing its current business or increasing the flexibility to respond to the unpredicted events but to increase the likelihood of successful continuous adaptions to yet unknown requirements in the future.

4 THE EVOLUTION OF DYNAMIC SUPPLY-CHAIN NETWORKS: COOPETITION-BASED SCENARIOS

In the Chapter 3 we showed how dynamic environments influence SCM and BM management, respectively. Also, dynamics in SC networks stem from nearly inherently-embedded cooperation and competition. Re-defined roles of organizations in SCs, the emergence of SC networks, and – network-based – approaches (see the Chapter 2 for more) to the development of BMs have established the need for different understanding of organizations in SCs that experience the inherent presence of co-opetition. For instance, a shift from focus on a focal company's BM to a network-based approach to BM development entailed new possible scenarios between organizations (competitors-partners or "coopetitors") that compete and cooperate simultaneously. Some of these scenarios impact the BM development of competitors-partners. Thus, the aim of the Chapter 4 is to frame the coopetition-based scenarios and discuss the implications of scenarios for business processes and BMs of competitors-partners.

Competitors-partners can be entangled in reciprocated relationships or coopetition-based scenarios of strategic importance. Coopetition-based scenarios also emerge *ad hoc* as a response to dynamics in SC networks or *quid-pro-quo* coopetition form on the basis of mutually beneficial exchange between the competitors-partners. We propose a framework for classifying the scenarios in dynamic SC networks with respect to the coopetition degree and level of complementariness between competitors-partners. The framework dwells on intersubjective reality in dynamic SC networks – coopetition – and represents an initial attempt to frame the phenomenon of coopetition. We use game theory to depict strategies and games in deliberate and emergent coopetition-based scenarios. Further, we use real-life examples to present the features of coopetition-based scenarios and examine the outcomes of variable-sum games with the use of our framework. We complement the existing perspectives on dynamics in SC networks by clarifying different scenarios, competitors-partners' strategies, and discuss the manifestation of scenarios' game-theoretic features.

4.1 Introduction

Inter-firm dynamics create new challenges for organizations in SC networks. To overcome these challenges, organizations engage in operations with competitors-partners over different, partner and competitive, SCs. The focus of the SCM had usually been on cooperation among two entities (e.g. buyer-supplier »dyadic« relationships), often neglecting the importance of relationships that go 'beyond the dyads' (Choi & Wu, 2009; Friedl & Wagner, 2016; Shipilov & Li, 2012; Wu et al., 2010). To advance this line of thinking, Trkman, Budler & Groznik (2015) proposed a BM approach to SCM and developed two frameworks. The frameworks show the need to move beyond the traditional

dyadic relationships and include competitors-partners in new approaches to SCM. Also, we noted the importance of aligned processes between competitors-partners to strengthen their relationships and improve their ability for future redesign in dynamic networks with currently unpredictable changes.

Frameworks (as defined in the first chapter a framework is a non-falsifiable outline comprised of a meme or set of memes which supports a particular approach) such as those of BM approach to SCM assist organizations in management of multiple BMs, suggest inclusion of different and novel BM elements, and help improve decision-making. Frameworks encapsulate existing ideas and different theoretical underpinnings to provide solutions to challenges associated with the inter-firm dynamics. Managing dynamics in, for instance, alliances has been difficult as organizations strive to find the viable interplay of cooperation and competition in possible scenarios between partners and competitors (Hamel & Prahalad, 2013). However, cooperation among organizations that cooperate and compete at the same time (competitors-partners) in dynamic SC networks remains salient owing to the resultant power of cooperation that is greater than the power of the dominant player, let alone the weaker one (Bastl, 2013).

Competitors-partners in dynamic SC networks are enticed in coopetition (cooperation between competitors) because of anticipated positive outcomes of coopetition (Zhang and Frazier, 2011; Ritala & Sainio, 2014). Coopetition manifests throughout different coopetition-based scenarios that can be defined with respect to the level of complementariness between competitors-partners and coopetition degree. Level of complementariness delineates between scenarios with low and high level of unique contributions, whereas coopetition degree further distinguishes between emergent and deliberate scenarios. Organizations acknowledging both dimensions can transform their BMs accordingly to coopetition-based scenarios (Trkman, Budler, & Groznik, 2015; Ritala, 2014). Organizations neglecting inter-firm dynamics between competitors-partners from, for instance "capability building competition" (Wilhelm, 2011), are at risk of losing ability to adapt their BMs to coopetition-based scenarios (Casadesus-Masanell & Zhu, 2013; Christian & Thomas, 2005).

In contrast to scenarios where coopetition is desirable and to some extent latent (e.g. between suppliers sharing resources), we frame coopetition as an emergent phenomenon or a deliberate scenario where historical repeated interactions between competitors-partners enabled them to recognize the benefits of joint activities and move away from the actions of defection (Wolters & Schuller, 1997).

Previous research revealed that *"managers have little guidance on how to manage inter-firm relationships beyond the traditional dyadic approach"* (Li & Choi, 2009). One way of

evolving and extending the relationships with competitors-partners is by devising the BMs based on coopetition-based scenarios. Also, even though coopetition-based scenarios and BM appear inherently in dynamic SC networks, managers lack of "a coherent framework" since previous research devoted little attention to the management of coopetition-based scenarios (Gnyawali et al., 2016). Consequently, the literature focusing on the implications of coopetition-based scenarios for BMs is scarce. With an exception of few Amazon studies (see e.g. Ritala and Sainio (2014)), literature does not discuss an interplay of simultaneous cooperation and competition and the long-term ramifications for competitors-partners and their BMs.

Thus, the aim of this chapter is to describe the evolution of cooperation from traditional dyadic relationships to coopetition-based scenarios between competitors-partners in dynamic SC networks. We use the constructs from game theory to discuss the features under which coopetition-based scenarios are plausible. The scenarios are understood as variable-sum positive games that differ in coopetition degree and level of complementariness between competitors-partners. The scenarios are framed in such a way that competitors-partners with similar intentions can join. We complement the existing body of knowledge by framing coopetition-based scenarios and utilize game theory to provide a novel approach to coopetition-based scenarios with different game-theoretic features. Finally, we acknowledge organizations respond to the dynamics in SC networks by developing new BM(s) while the presence of coopetition brings about the need for forming and transforming the existing ones and relations between competitors-partners (Heilig et al., 2017; Ritala et al., 2014). Implications for coopetition-based BMs are discussed and real-life examples are used to demonstrate the usefulness of game-theoretic framework.

The structure of the chapter is as follows. First, we build on the existing body of literature on SC cooperation to identify dynamic SC network as an ecosystem for coopetition between competitors-partners. Then, we draw on interwoven cooperation and competition to devise a new game-theoretic framework with four different coopetition-based scenarios. We use the constructs of game theory to discuss the key features of the four scenarios. Several vignettes and cases are used to illustrate the scenarios and the usefulness of game-theoretic framework. Finally, the implications of the proposed framework are discussed.

4.2 From supply-chain cooperation to the evolution of dynamic SC networks

Even though SC cooperation remains rather broad in meaning, it is most commonly represented with a dyadic relationship between a buyer and a supplier or two suppliers. Buyer-supplier relationships escalated owing to straightforward advantages of cooperation

(e.g. improved joint product development and better utilized resources), whereas horizontal relationships between two suppliers or buyers remain less conventional and can entail some tension or the need for the inclusion of a third party, i.e. a mediator (Wu et al., 2010). Traditionally, dyadic relationships formed between the 'dominant' focal company (e.g. a manufacturer) and a supplier (SeyedEsfahani et al., 2011). In addition to aforementioned advantages for the buyer, further opportunities for suppliers lie in sharing knowledge and in making relationship-specific investments that improve performance for a common buyer (Shih et al., 2012).

Cooperation is, however, substantially different today, as the way in which to identify 'focal players', has become blurry. The abundant literature presumes and challenges the dominant role of a manufacturer (Geylani et al., 2007; Kadiyali et al., 2000) and this is often the case in conventional buyer-supplier relationships (e.g. between a powerful food company, such as Nestle, and its coffee suppliers from Thailand). On the other hand, the power between Nestle and powerful retailers, such as Spar or Walmart, is distributed more equally (SeyedEsfahani et al., 2011). For example, in case of IKEA (retailing), manufacturer is no longer the focal player. Traditional dyadic relationships are thus becoming less appropriate as the distribution of power between buyers and suppliers has been changing and as dynamics of SCM entail cooperation beyond the dyads. Advancing SC cooperation beyond the dyad is necessary to cope with the dynamics of today's SC networks and at the same time intricate because of re-defined roles of organizations in different SCs. For instance, what was once true for AT&T that could "on any given day, find Motorola to be a supplier, a buyer, a competitor, and a partner." (Hamel & Prahalad, 2013), has now become business as usual for various organizations in different SCs.

In light of inter-firm dynamics brought about by inherent presence of simultaneous cooperation and competition we see organizations entangled with different SCs as competitors-partners. Cooperation between competitors-partners is dependent upon the "competing similarity" of both organizations (Kim & Parkhe, 2009). If the competing similarity is high, the cooperation between competitors-partners is difficult to achieve and usually requires the inclusion of a third party, e.g. a common buyer (Wu et al., 2010). On the other hand, "cooperating similarity" paves the way to interdependencies between competitors-partners. Competitors-partners cooperate to reap the benefits of cooperation (e.g. improved utilization of the resources, knowledge sharing, and improved organizational performance) whilst remaining competitors. To illustrate, imagine two suppliers from buyer-supplier-supplier triad (Choi & Kim, 2008) who are competitors-partners that cooperate to perform well. If one supplier becomes aware of possible vertical integration between the other supplier and a common buyer, the first supplier can increase competition by hiding some pieces of information and making defensive moves (Pathak et

al., 2014). Thus, instead of relying on dyadic perspective, competitors-partners should observe cooperation and competition at network level.

The evolution of dynamic SC networks

Dynamic SC networks are large ecosystems of competitors-partners from various SCs. In dynamic SC networks, cooperation occurs outside one organization's immediate value network (Nyström, 2009). Second, an organization from a dynamic SC network will usually be part of multiple SCs. The dynamics in SC networks stem from the eruption of re-defined roles that are nowadays nearly inevitable (Bouncken et al., 2015). Drawing on the aforementioned loss of power of a focal organization over similar networks (Akdoğan & Cingšz, 2012), re-defined roles of competitors-partners, and inherent presence of cooperation and competition, this chapter has a twofold purpose. First, it aims to present the coopetition-based scenarios that exist in dynamic SC networks and second, we develop a game-theoretic framework to identify the possible scenarios between competitors-partners in dynamic SC networks and the feature of the scenarios.

The rationale for cooperation between competitors-partners in dynamic SC networks is different or complementary contribution (Das and Teng, 2000). The organizations with similar contribution and high competing similarity might not be adept at strengthening and sustaining the long-term cooperation (Kim & Parkhe, 2009). In pursuit of complementariness, competitors-partners engage in relationships in dynamic SC networks and create a »cornerstone« for strategies of cooperation and competition (Bouncken et al., 2015). In SC networks, competitors-partners overcome common limitations associated with the governance of dyadic relationships (de Resende et al., 2018) while on the other hand add to dynamics that stem from the inherent tension of cooperation and competition.

Competitors-partners will sooner or later try to evaluate the contribution of each other (Du et al., 2006), and act accordingly. Complementary contributions under different conditions in SC networks thus entail different scenarios for competitors-partners. For instance, the evaluation of competitors-partners is often the case when two unevenly worth competitors-partners start to cooperate for mutually-beneficial exchange (Osarenkhoe, 2010). If the cooperation further weakens because of resource dependence of the weaker competitor-partner, the stronger one starts controlling the relationship. In the worst-case scenario the dominating player acquires (in)tangible resources, gains access to its weaker counterpart's core competences, and moves towards replacing the weaker partner (Osarenkhoe, 2010). Next, we pursue the concepts from game theory to game-theoretic features distinct to each scenario to define emergent or deliberate forms of coopetition-based scenarios. Second, by ascribing the game-theoretic features to the coopetition-based scenarios we can examine and envision competitors-partners' intentions, tactics, and outcomes of their interferences.

4.3 Coopetition in dynamic supply-chain networks: game –theoretic lessons

Dynamics in SC networks are managed efficiently if differences and contributions of competitors-partners are reconciled to some extent. Also, competing and cooperating similarity have to be managed sufficiently (de Resende et al., 2018; Kim & Parkhe, 2009). To assist managers in doing that, we utilize game theory and want to extend from the scenarios where dominant, focal, players collaborate with weaker organizations (Wolters & Schuller, 1997), and demonstrate its applicability in the coopetition-based scenarios where partners-competitors want to remain 'equally fortunate' and end up better off than if they adopted go-it-alone policy. An important lesson from game theory is that not only inequality in distribution of benefit matters but also perception of being unequally fortunate matters (Wolters & Schuller, 1997). With game theory we can examine feasibility of the scenarios and identify features under which coopetition-based scenarios emerge or are deliberately planned (Ergun et al., 2014).

From the perspective of game theory, competition can be described as “zero-sum game”, cooperation as “positive-sum game” and coopetition was referred to as a “variable-positive-sum game” (Okura, 2007). Players are competitors-partners who usually possess an array of potential tactics (Brandenburger & Nalebuff, 1995; Camerer, 2003; Hennet & Arda, 2008; Kelly, 2003; Li et al., 2002; Lozano et al., 2013; Okura, 2007; Wolters & Schuller, 1997) and play games in different coopetition-based scenarios. The scenarios involve organizations whose fates are interlocked because competitors-partners’ objectives are different and yet similar (Shubik, 1955). The allure of game theory is the possibility of nearly a real-time analysis of reciprocity-based nature of interactions between competitors-partners with different and similar objectives. We dwell on cooperative game theory that sets the limits up to which a player is willing to ‘pay’ in order to participate in the scenario (Balza-Franco et al., 2017). Furthermore, game-theoretic reasoning can solve the dilemma on whether the players’ coopetitive behavior is a result of a “desire” to cooperate or of “expectations” of future interactions (Heide & John, 1990). In a similar vein to desirable and expected interactions we devised the framework for dynamic SC networks where coopetition degree and level of complementariness define different coopetition-based scenarios (Luo et al., 2007).

Game theory offers a plethora of concepts, models, and mechanism that allow an examination of interwoven cooperation and competition in dynamic SC networks. We use two dimensions to develop the scenarios and observe interactions throughout the focal principles of cooperative game theory (Camerer, 2003). Also, we acknowledge the importance of time horizon (see e.g. infinite and finite games) and distinguish between emergent and deliberate forms of coopetition-based scenarios. One of the assertions from

game theory is that prolonged time horizon in the scenarios can attenuate potential vulnerability owing to erratic role performance by the competitors-partners (Heide & John, 1990). We thus develop a more holistic, and accurate framework of the coopetition-based scenarios that show the pros and cons of emergent and deliberate forms of the scenarios. The framework helps avoid vicious circles stemming from ostensibly paradoxical merging of cooperation and competition (Smith & Lewis, 2011; Gnyawali et al., 2016).

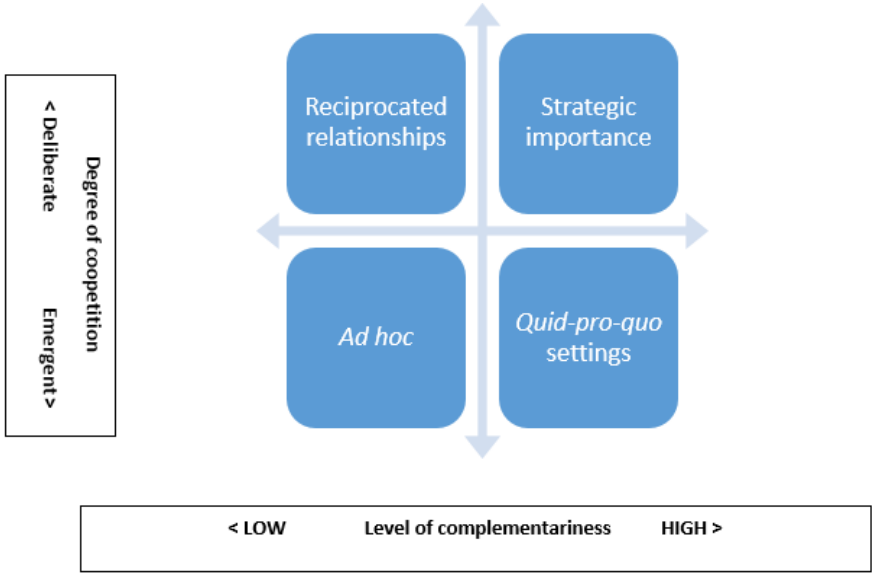
When there is an opportunity to combine complementarities, cooperative activities among competitors-partners occur (Basole et al., 2015). We elaborate on the level of complementariness and coopetition degree and devise 4 different coopetition-based scenarios. Another lesson from game theory is that competitors-partners could enact self-stabilizing strategies of defection and reinforce the vicious circles. If, for instance, a competitor-partner want to increase their pay-offs notwithstanding the other competitor, self-stabilizing strategy is pursued. For competitors-partners that pursue self-stabilizing strategies only and are prone to short-term coopetition, emergent forms of coopetition-based scenarios would be preferred. Pursuing self-stabilizing strategies beyond cooperation between competitors-partners entails games in coopetition-based scenarios where competitors-partners *»defect by shielding information and hiding actions«* (Wolters & Schuller, 1997). Thus, the game-theoretic scenarios should be established in such a way that competitors-partners with similar strategies can coopete.

Games in coopetition-based scenarios lead to higher engagement and commitment of each competitor-partner and are designed to support and promote cooperation (Morschheuser et al., 2017). Moreover, the greater coopetition degree is of key importance for the long-run scenarios as it implies infinite interactions and increases the likelihood of the scenarios being sustained long-termly (Colin et al., 2003; Kay, 1993). On the other hand, scenarios based on emergent coopetition degree cannot be predicted and – in line with basic postulates of Prisoner's dilemma – *ex-ante* arrangements are thus difficult to achieve. However, if emergent coopetition-based scenarios continue and games repeat, the "learning effect" occurs (Wolters & Schuller, 1997). The learning effect facilitates deliberate coopetition and leads to the alternatives to self-stabilizing strategies of defection (Hofstadter, 1983). Even though cooperative games have already been largely discussed, little attention was devoted to the conditions under which the cooperative games emerge (Morschheuser et al., 2017). Cooperative games focus on engaged competitors-partners whose strategies stem from the sharing of benefits being acceptable to all competitors-partners (Bond et al., 2016) In line with Liu et al. (2013) we assert that cooperative games invoke cooperation and enable the existence of "cooperative goal structures" (Morschheuser et al., 2017), namely coopetition-based scenarios.

4.4 Game-theoretic framework of coopetition-based scenarios

Strategies of competitors-partners can differ considerably: while some competitors-partners are short-term oriented and favor emergent forms of coopetition, others 'invest' in coopetitive relationships, adopt a long-term perspective, and favor well-managed pursuit of a common goal and deliberate forms of coopetition (adapted by Gnyawali et al., 2016). To avoid conflicting misalignments between competitors-partners' intentions (Gnyawali et al., 2016), organizations need to acknowledge the existence of multiple coopetition-based scenarios (see Figure 12) and plan the scenarios accordingly dependent on the level of complementariness and coopetition degree which can vary with time (adapted from de Resende et al., 2018). Coopetition can form in order to reap the benefits of organizations complementing each other. Thus, the outcome is dependent upon organizations' capabilities to absorb the knowledge and technology skills from the other competitors-partners (Hamel et al., 1989). Hereby relational efforts are necessary to attenuate the tensions due to differences in competitors-partners characteristics and to combine capabilities efficiently (Kim & Parkhe, 2009). The relational efforts should aim at reconciling the differences and aligning commitments. After all, cooperation is determined by the mutually beneficial actions whereas defection results from different expectations or desires. Moreover, in coopetition-based scenarios the continuous 'give-or-take' between competitors-partners prevents the competitors-partners from being enticed in defection. Also, efficient exchange of knowledge and technology skills remains a key success factor in 'give-or-take' situations (Tortoriello et al., 2011).

Figure 12: Framework of coopetition-based scenarios



Source: Personal archive

Reciprocated relationships

If competitors-partners' "offerings repertoire" are very similar and their roles overlap, the increased similarity can lead to improved joint performance in relation to common buyers and/or end-users (Shipilov & Li, 2012). On the other hand, competitors-partners are more likely to become substitutable for the customers as "*the dyadic-level mechanisms in horizontal networks become intertwined with transitive pressures coming from networks composed of organizations playing different roles and interconnected by more than one kind of relationships"* (Shipilov & Li, 2012). Overlapping roles in *reciprocated relationships* can therefore entail a paradox: while allowing competitor-partners to, for instance, use the same facilities, services, and reduce the costs, interferences among the providers can at the same time strengthen their similarities. When similarities between competitors-partners increase, they can be deemed as substitutable by their customers, possibly entailing fierce competition in dynamic SC networks (Shipilov & Li, 2012). We note two issues pertaining to overlapping roles: possibility of occupying different roles in *reciprocated relationships* and feasibility of linking across considerably similar roles. Additionally, blurring of within-industry borders has established the need for considering multiple types of relationships between two competitors-partners and thus the need for re-defining their roles (Nyström, 2009).

Scenarios of strategic importance

Organizations' affinities and previously-established relationships affect ties among competitors-partners in SC networks. We can illustrate that with two suppliers that had been challenged to perform well for the buyer in the past. Owing to the interactions between them, they could have shared industry-specific knowledge and technology-related capabilities to complement each other. As the pursuit of complementariness between the suppliers continues, suppliers can start working towards the common goals. Coopetition degree becomes deliberate. In the *scenarios of strategic importance* competitors-partners therefore jointly pursue the common goal (Nyström, 2009), and shift focus from profit distribution to aligning tactics (Qi et al., 2015) and consorting (Nyström, 2009). In our vignette later, we demonstrate how Shipt established and mediated competitors-partners who accepted a deliberate decision about pursuing cooperative ties and reduced the number of their partners in broader SC networks. If competitors-partners want to remain together in these scenarios, they should end up equally fortunate (Salancik & Pfeffer, 1978).

Quid-pro-quo settings

Competitors-partners can seek complementarities and lean on "mutual dependence for success or survival" (Mena et al., 2013). When high level of complementariness is of great importance, they can establish deliberate scenario in form of *quid-pro-quo* settings which

is based on exchange that mutually-beneficial complements both competitors-partners (Bengtsson & Kock, 2000). Moreover, when roles and contribution in the *quid-pro-quo* scenario are well-defined, competitors-partners are able to base the exchange on complementing each other's offerings repertoire. The exchange requires high level of complementariness as the scenario occurs if competitors-partners combine distinctive resources and capabilities (Gnyawali & Park, 2011; Luo et al., 2007; Peng et al., 2012). The *quid-pro-quo* settings can become instable if erratic role performance in terms of self-stabilizing strategies arises (Ehrenmann & Reiß, 2012). Competitive forces further facilitate self-stabilizing strategies and encourage weaker organizations to make 'defensive investments' (Wolters & Schuller, 1997). Distinct roles and contributions are in this context of key importance as organizations will try *"to determine the worth of each company's contribution"* (Du et al., 2006). Erratic role performance in terms of self-stabilizing 'mean' strategies (Axelrod & Hamilton, 1981) can be eliminated if the competitors-partners fashion long-term exchange (Howard, 1988).

However, *quid-pro-quo* settings have so far been acknowledged as restrained, appearing only in manufacturing, logistics, and functions not directly visible to end-users (Ritala et al., 2014; Walley, 2007). Competitors-partners play games *incognito* because of organizations excluded of coopetition-based scenarios and, second, inherent tensions can lead to the disruption especially that of the BMs (Bonel & Rocco, 2007). Where the level of complementariness is low and coopetition degree emergent it is not required to modify competitors-partners' BMs. These competitors-partners tend to be dynamic to redesign for the sake of coopetition, and sustain "strategic interdependence" effortlessly (Bouncken et al., 2015).

Conversely, deliberate forms of coopetition-based scenarios usually entail implications for BMs (Ritala et al., 2014). In SCs, the focus had been on focal company's BM. We discuss the evolution of dynamic SC networks to represent the shift from focal-company perspective to the BMs of competitors-partners. To do so, value appropriation, i.e. extracting equally-beneficial gains in the market for both competitors-partners, also becomes a concern when coopetition-based scenarios are designed. Competitors-partners should place an emphasis on limiting competing similarity and align BMs to sustain a trade-off between a value creation and value appropriation within the coopetition-based scenarios (adapted from Di Gregorio, 2013 and Mizik & Jacobson, 2003).

Ad-hoc scenarios

Competitors-partners dynamic enough to redesign accordingly establish loosely-coupled (*ad-hoc*) scenarios to flexibly reconfigure their activities, resources and capabilities to face contemporary challenges (Williamson & De Meyer, 2012). Also, to make self-stabilizing

strategies of defection less likely to occur, differences in preferences and commitments of *ad hoc* competitors-partners cannot be significant (Gnyawali et al., 2016). Competitors-partners such as Intel and AMD can find and change competitors-partners easily and sustain *ad hoc* coopetition-based scenarios seamlessly. Competitors-partners, such as AMD and Intel, possess capabilities to "evolve, shape, and compose" dynamic SC networks to their choice (Bengtsson & Raza-Ullah, 2016).

4.5 Research methodology

Based on the identification of a research problem consisting of the need to clarify and frame different coopetition-based scenarios in a framework that would guide competitors-partners we postulated the following research questions: which coopetition-based scenarios are evident in the dynamic SC networks; what are the features of the coopetition-based scenarios; how lessons from game theory enhance the understanding of the coopetition-based scenarios. Give the qualitative nature of the research problem and research questions, case-study analyses and vignettes were carried out. We used qualitative research method in an attempt to build theory and complement the existing body of knowledge on predominantly mathematically-analyzed research domain.

In the analyses of real-life cases we followed Yin's (2002) recommendations on conducting the case-study research. Therefore, for the analyses of some cases we included publicly-accessible data, findings from the interviews, and archived documents of competitors-partners. Archived documents were distributed to author of this dissertation during meetings and interviews and were carefully investigated by the author of this thesis. Semi-structured interviews were carried out by the author of the thesis and later revised and discussed with the thesis supervisor. Each interview took approximately 100 minutes. Questions and answers were related to the arrangements with competitors-partners in the networks of each organization. Guidelines for the interviews were typed and distributed via e-mails to the interviewees prior to the meetings.

The empirical data collection is comprised of 2 cases that follow Yin's recommendations, and 3 vignettes that draw on real-life examples. First case was conducted with one of the largest Slovenian service-logistics providers, BTC Logistika. The second one observes an international manufacturer-vendor of kitchenware and appliances, Gorenje. The other 3 real-life examples are depicted in vignettes with the use of the secondary data. We have chosen Intel and AMD, the U.S. Food-court restaurant providers, and the Shipt example because of availability of unobtrusive data about the dynamics in coopetition-based scenarios. Two cases and three vignettes resonate the features of the scenarios and highlight the importance of distinguishing between different coopetition-based scenarios. Altogether the empirical data collection advocates the complementary-based rationale for

coopetition-based scenarios and impact of coopetition degree on collective approach in different scenarios. Despite not being competitor-partner itself, the Shipt business association was chosen for having established, sustained, and facilitated coopetition-based scenarios between the competitors-partners Shipt gathered.

Both the interview guidelines and interviews were written in the Slovenian language. Interviewees in case of BTC Logistika and Gorenje were Head officers or middle managers from Strategic procurement departments and Logistics or SCM departments. If interviewees were not certain about the specific matter, they checked with their chief officers or subordinates, and recommended interviewers the appropriate representatives for future correspondence. If any concerns were raised from the analyses of the interviews, the discrepancies were reconciled with follow-up inquiries via e-mail, by phone or in person.

For the two case-study analyses we used secondary data to complement the interviews and gain the profound understanding of each real-life scenario, whereas the vignettes draw exclusively on the secondary data. Publicly-accessible data were gathered from the competitors-partners' official web-sites and from the web-sited of renowned international and domestic journals. We used publicly-available secondary data from ample sources. With the use of available data, we observe and 'assess' the past accomplishments of competitors-partners. We followed the standard procedure for the data analysis. First, we omitted irrelevant information and extracted data relevant to game-theoretic framework of coopetition-based scenarios. Next, we applied the framework to validate the features of the scenarios and categorize the findings. The findings enable the comparisons between different coopetition-based scenarios and their features.

Game theory was used to observe the performance of different configurations, to study the presence of game-theoretic features in the scenarios, and to provide a rationale for the future modelling and experimentation. Vignettes and cases are thus used to illustrate the use of our framework and to provide a rationale for further discussions and research. The case analyses resulted in confirmation of applicability of our framework and put an emphasis on the features we identified.

4.6 Case analyses

Quid-pro-quo settings

To illustrate the settings, we selected two Slovenian logistics-service providers, competitors-partners. Both are large companies offering a full array of logistics services. However, when the first logistics provider decided to expand its services to another country (Croatia), it was unable to do so due to lack of resources related to means of transportation, licenses, work force, and flexibility. The logistics provider wanted to avoid

potential loss of customers due to inability to fulfil their needs, whilst flexibility was of key importance for high performance. The second logistics provider had the know-how and resources to serve the customers of the first provider. The *quid-pro*-quo setting was established without informing the public since it did not affect the customers who did not have to switch the service providers. The coopetition-based scenario was based on capability-building competition and reconciling the differences. The coopetition-based scenario draws on high level of complementariness: the second provider was capable of bridging the gap and enabled the first provider to offer customers full-service.

In the classic example of cooperative games both competitors-partners gained more with cooperation and agreed upon utility distribution. From the viewpoint of variable-sum games the logistics providers remained equally fortunate: the first logistics provider fulfilled the gap in its repertoire, while the second increased its sales on the account of mutually beneficial cooperation. With no disparity or perceived inequality no signs of self-stabilizing strategies of defection appeared at first. It is difficult, however, for a mutually beneficial give-or-take situation to remain perceived equally attractive to both competitors-partners on the long-term. For instance, as their roles started to overlap to some extent, the two logistics providers have become substitutable for their customers. Overlapping roles can present a source of tension; however, the logistics providers turned that into advantage and allowed joint customers seamless transactions with either of them. Because of high level of complementariness, the scenario was sustained even though the degree of coopetition remains low – emergent, and restrained coopetition accounts only for smaller part of daily business for both logistics providers.

In the second case study we examine one of the largest Slovenian-international manufacturer-vendors of household appliances and kitchenware to discuss the *quid-pro-quo* settings. The vendor was looking for a strategic partner but rather found the synergies with a Japanese competitor, mainly because of distinct contribution and ability to improve the utilization rate of the production line – to complement each other. The unique contribution of the Slovenian vendor was the possession of leading-edge know-how in testing and control of a specific product segment while the Japanese competitor made some process improvements and enabled Slovenian manufacturer to use the under-utilized production line of the Japanese. In the case of two manufacturers-vendors of household appliances and kitchenware, competing similarity was relatively high. In light of this, the Slovenian competitor-partner based the coopetition-based scenarios on several possible contingency plans (risk management) whilst the Japanese competitor-partner was concerned about the anti-trust issues. Second, the Slovenian manufacturer-vendor was afraid of being ‘too small’ in terms of company size and revenues, thus it had to be prepared for the erratic role performance from the Japanese competitor-partner.

The Slovenian manufacturer-vendor was preparing some defensive moves and initiated self-stabilizing strategies, aiming at avoiding potential loss. The Slovenian vendor-manufacturer found itself in a "dubbed extortion" (Press & Dyson, 2012) that accounted for relatively low performance of competitors-partners in this scenario. In the conditions of dubbed extortion, the stronger player (e.g. the Japanese competitor-partner) could always win the game by defecting. The stronger player (the extortionist) entices the weaker player in cooperation because this choice provides the best pay-off for both even though the weaker player will always gain less. The 'essence' of games based on dubbed extortion is that the stronger player should carefully decide on how often it can choose the self-stabilizing strategies of defection without demotivating the weaker player to participate in the coopetition-based scenario.

The joint use of production lines to increase the utilization rate was more expensive for the Slovenian manufacturer-vendor. At this stage, the variable-sum-positive game considerably worsened for the Slovenian competitor-partner. Also, most of the collaboration was occurring between the companies alone and did not require the inclusion of customers or other stakeholders, keeping the low, emergent, coopetition degree in spite of 'joint-development agreement' between the competitors-partners. In case of the Japanese manufacturer-vendor, the Slovenian manufacturer-vendor was not satisfied with the options and complementariness they were provided with. The dissatisfaction made the Slovenian manufacturer-vendor less prone to long-term coopetition. Rather than focusing on long-term coopetition, they lowered inter-firm dynamics and started to share some basic ideas between R&D departments or jointly purchase the materials with competitors-partners under better conditions. The Slovenian manufacturer-vendor discussed the difficulties regarding the management of dynamics in SC networks. Today, the Slovenian manufacturer-vendor is considering a Chinese giant to form a scenario of strategic importance with. The Slovenian manufacturer-vendor requires a different setting and deliberate relational efforts on both sides. What is more, the Chinese candidate for a strategic partner is believed to improve the conditions for all organizations with the Slovenian manufacturer-vendor's SC network, especially the conditions for the suppliers and third parties.

Ad-hoc scenarios

From the game-theoretic standpoint competitors-partners intuitively aim at maximizing their utility even though they are not familiar with the preferences and wins or losses from previously-established relationships of their counterparts. What is more, competitors-partners' decisions create a 'feedback loop' and thus affect the outcomes of the others playing games (Bond et al., 2016). Competitors-partners dynamically redesign in *ad-hoc* scenarios whenever mutually beneficial cooperation as a response to certain

'circumstances' (e.g. a common competitor) is needed. That was the case in vignette of Intel and AMD who joined forces to retaliate to the surge of nVidia, the competitor who has become increasingly competitive and threatening them both. Intel seized the opportunity and started to coopete with AMD because Intel saw scenario feasible. Feasibility stemmed from cooperating similarity between Intel and AMD, and from their high performance (Moorhead, 2017). The correspondent mentioned the ability of Intel and AMD to cooperate to some degree while knowing how to remain competitors. The latter advocated the idea of sustaining an *ad hoc* scenario even though the coopetition degree remains emergent. Second, Intel and AMD remained competitors to some extent and were not concerned about possible rewards. Rather, Intel and AMD focus on loss avoidance pertaining to the common threat – nVidia.

As Intel and AMD had been performing well working together, and high cooperative similarity and distinct contribution of each competitor-partner were not essential whilst the level of complementariness could remain relatively low. The cooperative similarity clearly facilitated the development of an *ad-hoc* scenario whilst a focus on avoidance of losses because of a common threat (nVidia) prevented Intel or AMD from choosing self-stabilizing strategies. Thus, the competitors-partners did not primarily focus on utility distribution and the disparity or perceived unfairness remained beside the point. In the scenario we can see a shift from evaluating the benefits of the positive-sum game to joint actions taken immediately to confront the common threat – nVidia. Differences and commitments, if any, between Intel and AMD were reconciled as both can end up better off if engaged in the coopetition-based scenario. Intel and AMD are supposed to turn their competing similarity to an advantage, implement the cutting-edge technology to their end-products and gain the competitive advantage back.

Reciprocated relationships

(A)symmetry of the motives considerably affect the partners-competitors' tactics, generates different outcomes and can entail self-stabilizing strategies (Nasr et al., 2015). The latter can be the case in reciprocated relationships where competitors-partners aim to maximize the utility. In reciprocated relationships discrepancies in motives should be reconciled and utility distributed equally to sustain the long-term interactions. In case of reciprocated relationships between food-court restaurant providers, the relationship elements have a long-term notion. Thus, in reciprocated relationships competitors-partners place an emphasis on joint activities, strengthening the relationships, and complementary resources (Osarenkhoe, 2010). Competitive dynamics in reciprocated relationships entail decisions on what roles to occupy (Nyström, 2009), how to manage interwoven goals and differences, and how to connect competitors-partners. Due to inevitably overlapping roles, the focus in reciprocated relationships such as food-court restaurant providers should be on

linking across the roles and making 'investments' to avoid erratic role performance. Food-court restaurant providers usually service common end-users and if either their preferences change or some provider entices them to buy more, the positive-sum game between the restaurant providers can vary considerably.

On the other hand, food-court SCs in reciprocated relationships are encouraged to either share information and resources inter-organizationally or to approach to suppliers/buyers jointly. The latter enhances the performance to a common supplier or buyer. Food-court restaurant providers often contract out their processes to common suppliers. Competitors-partners in reciprocated relationships are entangled with each other which entails a long-term notion of the scenario and show why the coopetition degree is deliberate. Competitors-partners fashion long-term arrangements that will improve customer service and help avoiding the dangers of high competing similarity. Since food-court restaurant providers are firmly tied to reciprocated relationships in coopetition-based scenario, competitors-partners thus fashion continuity in coopetition whilst distinct contributions in terms of high level of complementariness are not necessary.

Scenarios of strategic importance

In scenarios of strategic importance competitors-partners primarily coopete to maximize utility and aim towards achieving a common goal. To do so, self-stabilizing strategies of defection cannot emerge. For this to occur, prolonged time horizon – long-term coopetition – is necessary. Altogether these pre-requisites imply high level of complementariness and deliberate coopetition degree, under which scenarios of strategic importance are feasible. Interestingly, game-theoretic reasoning teaches us that low-performing configurations with less-contributing partners in such scenarios are also possible. Lower-performing counterpart in the scenarios sustains a 'comfort zone', fashions relatively fierce competition, and thus ameliorate the free-riding effect of competitors-partners excluded from the game.

In scenarios of strategic importance distinct contributions enable value creation trajectories coming together and thus entail "tangible value creation outcomes" (Shipilov & Li, 2012). In the vignette of Shipt, the same-day delivery company acts as an intermediary for gathering together competitors-partners whose common goal – improved same-day delivery service – is of strategic importance on a long run. Even though an intermediary, Shipt reap the benefits of establishing external coopetition-based scenario. For instance, without a large number of customers, collected from all retailers, Shipt would not have been able to grow and generate leading-edge services for its B2B partners and B2C customers. Among the difficulties associated with sustaining this coopetition-based scenario is high competing similarity among the competitors-partners gathered around by

Shipt. Any type of erratic role performance due to overlapping roles should be avoided in order to achieve the common goal. In the vignette of the delivery company and its partners, Shipt, the delivery company was an intermediary linking the competitors-partners. Competitors-partners' satisfaction with Shipt has had implications for the coopetition-based scenario. First, a reduction in the number of organizations Shipt's competitor-partners were doing business with was evident. In fact, when competitors-partners focus on organizational fit to achieve a common goal, they usually reduce the number of competitors-partners (Russo & Cesarani, 2017). Second, Shipt has firm relations with the competitors-partners it joined together, therefore it has had a power to reconcile the differences among its competitors-partners (B2B customers). A challenge for Shipt (and its competitors-partners) pertains in how to establish coopetition where multiple competitors-partners benefit equally or at least do not perceive unfairness.

4.7 On the development of coopetition-based business models

The logic behind value capture and creation underlies the BM concept (Teece, 2010). In coopetition-based scenarios, difficulties are related to the trade-off between value creation and exchange of value in the market (or value appropriation) between competitors-partners (Miguel et al., 2014). Similarly, resources that are being used for a value creation of an individual competitor-partner and at the same time for eliciting equal value, account partially for the paradoxical notion of coopetition-based scenarios (Ritala et al., 2014). The issues regarding the trade-off between individual value creation and network-based value appropriation can be overcome with a properly designed BM that encapsulates modifications brought about by coopetition-based scenarios (Bonel & Rocco, 2007).

A BM provides a structure for combining complementariness between competitors-partners and improves their competing position against the other organizations in the dynamic SC network (Ritala et al., 2014). The BM has long been seen as a 'structure' depicting activities and transactions of a focal organization with its value-net members (Zott & Amit, 2008). Today, blurred boundaries and overlapping roles of competitors-partners caused a switch from a focal-organization perspective to a broader, network-based approach. Therefore, in line with Trkman, Budler, & Groznik (2015) and Mason & Spring (2011) we see a BM as a structure allowing coopetition-based scenarios to manifest in dynamic SC networks. To reap coopetition-related advantages, a structure that facilitates the joint activities is necessary (Hacklin & Wallin, 2013). That structure is a coopetition-based BM that enables exploitation of complementarities between competitors-partners.

Coopetition-based BMs allow the discrepancies among competitors-partners to reconcile and therefore their "different trajectories" to come together (Hacklin et al., 2009). The performance of partners-competitors in coopetition-based scenarios is believed to be

improved. Properly designed coopetition-based BMs fashion a sustainable trade-off between value creation and value appropriation (de Resende et al., 2018), and allow competitors-partners to achieve the adequate level of compliance between them (Lind, 2004). The adequate level of compliance allows two competitors-partners to reap the coopetitive-related advantages while at the same time 'competing' in terms of value appropriation. Mariani (2016) emphasizes the importance of finding "common reasons", i.e. sufficient levels of cooperation similarity and complementariness, among competitors-partners to balance the trade-off between value creation and appropriation.

Common reasons are embedded in activities and bonds between competitors-partners in dynamic SC networks (Mason & Spring, 2011). By bonding competitors-partners and explaining their activities, BMs ascribe the meaning to the way businesses operate. Moreover, successful BMs enable sharing of beliefs in particular realms – dynamic SC networks – and incorporate the collaborative nature of the networks, thus establishing and maintaining a shift from a focal-company perspective to a network-based approach. The coopetition-based BMs started involving competitors-partners to improve resource utilization and value capture potential, which was followed by the emergence of the networks and competition having been fought between dynamic SC networks (Gueguen, 2009). An important enabler of coopetition-based ecosystems are dynamic capabilities (Li & Liu, 2014; Nieves & Haller, 2014). Coopetition-based BMs are a result of BM innovation, which requires dynamic capabilities such as knowledge sharing and a management of BM elements (Trkman, Budler, & Groznik, 2015). Knowledge sharing helps reducing paradoxical notion of the competitors-partners' resources that can be used for both cooperation and competition (Bengtsson & Kock, 2000). Also, knowledge sharing facilitates interactions between competitors-partners and entices other organizations from dynamic SC networks into development a coopetition-based BM (Mason & Spring, 2011). Ultimately, knowledge sharing and management of coopetition-based BM elements are believed to generate innovations (Trkman & Desouza, 2012), which, in turn, would lead to completely new markets (Ritala & Sainio, 2014). In the new markets, no single BM is capable of capturing all the potential value; rather, competitors-partners should share industry-specific knowledge and use their capabilities to enlarge and properly differentiate their offerings' repertoire with a coopetition-enabling structures.

Aforementioned reasons provide a rationale for the existence of coopetition-based structures, such as BMs. Coopetition-based scenarios disrupt the existing BMs by adding a missing element – competitors-partners (Ritala et al., 2014). Thus, competitors-partners should also examine the level of complementariness between BM elements and validate the feasibility of the coopetition-based scenarios (Bonel & Rocco, 2007). While Ritala (2014) described how value can be created and captured by involving competitors-partners in an organization's BM, our work deems BMs as structures of joint-value-creating

territories when the roles of competitors-partners inevitably overlap in dynamic SC networks. If role conflicts are properly managed, competitors-partners provide unique value proposition to coopetition-based BMs and establish joint-value-creating territories (Choi & Valikangas, 2001). By providing their distinct contributions to "value-creating territories" (Hacklin et al., 2009), competitors-partners allow the "*collision of business models and gradual blurring or redefinition of boundaries"* (Basole et al., 2015). If competitors-partners have properly aligned or adjusted BMs, their performance is improved (Casadesus-Masanell & Zhu, 2013).

Using game-theoretic reasoning we derived a framework based on two dimensions and the game-theoretic features that altogether delineate between different forms of coopetition-based scenarios. In a similar vein to Mariani (2007) we assert that emergent forms of coopetition-based scenarios can exist without considerable modifications of a BM, while benefits from a deliberate coopetition-based scenarios are fully reaped if a suitable BM exists. In a similar vein to Wand and Xie (2011) we thus assert that a BM is a structure that allows competitors-partners to work together inter-dependently. Consequently, competitors-partners who fashion the long-term coopetition-based scenarios should consider modifications the scenarios entail for the BMs.

4.8 Conclusion

We revolved our research around the inter-firm dynamics that stem from organizations being embedded in various SC networks. We show how different coopetition degrees and the pursuit of complementary contributions entail various coopetition-based scenarios in the SC networks. The scenarios are prominent because competitors-partners became aware of the opportunities not only within their SC but also across the SC networks (Basole et al., 2015). We commence with an evolutionary perspective on SC cooperation from dyadic relationships to the emergence of dynamic SC networks. The Chapter 4 corroborated that the evolution of SC cooperation led to coopetition-based scenarios in which the inherent presence of coopetition can be found. Even though coopetition had received considerable attention in the past, managers had dealt with coopetition on daily basis without a coherent framework of coopetition-based scenarios. What is more, coopetition requires proper framing and identification of distinctive features that define different coopetition-based scenarios.

We followed the idea from Ritala (2014) and drew on the possibility of deliberate and emergent forms of coopetition. We developed a game-theoretic framework that depicts viable coopetition-based scenarios among competitors-partners. We discuss the main features of the scenarios and dwell on real-life vignettes and cases to apply our framework. The features are derived from the game-theoretic concepts, such as the avoidance of losses,

dubbed extortion, perceived unfairness, self-stabilizing strategies of defection, and the perception of equally-distributed utility and continuity of the scenarios. For instance, in ad-hoc scenario of Intel and AMD we showed how competitors-partners retaliate to a common threat not to primarily maximize the utility but to avoid the future losses. Second, we placed an emphasis on the power different competitors-partners have on one another. We discussed how the unequally-distributed power between two competitors-partners can lead to extortion. The latter reflects the situation when a stronger competitor-partner will always gain more than its counterpart while the counterpart will remain in coopetition because of gradually greater utility than in pursuing go-it-alone policy where a weaker counterpart would experience a fierce competition. Altogether the features define scenarios and provide a rationale for the future research to choose the appropriate game model for the examination of the coopetition-based scenarios.

We showed that emergent forms of coopetition-based scenarios are less 'demanding' in terms of modifications needed. The emergent forms are appropriate for competitors-partners where coopetition accounts for small proportion of daily business and where competitors-partners seamlessly manage concomitant competition and cooperation. Contrary to the emerging forms of coopetition-based scenarios, the features of deliberate scenarios require more considerations from competitors-partners. Specifically, deliberate coopetition degree entails decisions on which roles to occupy, how to manage competing similarities, and thus suggests the notion of continuity in the scenarios.

Second, coopetition-based scenarios with deliberate coopetition degree affect BMs of competitors-partners. The inclusion of competitors-partners impact value creation which represents the core of a BM concept. Moreover, the trade-off between value capture and value appropriation is of key importance in coopetition-based scenarios. Due to rigid establishments in the past, companies' BMs did not consider possible interceptions with competitors but rather encouraged cut-throat competition (Sabel et al., 1998; Wolters & Schuller, 1997), whereas in deliberate scenarios competitors-partners become BM elements. BMs are hereby seen as structures that enable (and improve) the manifestation of the scenarios. We elaborated on game-theoretic features, such as self-stabilizing strategies, avoidance of losses, and dubbed extortion among the others to confront the challenge of disparity or perceived unfairness between competitors-partners (Baumard, 2009).

4.9 Future research directions

The study at hand used the extant literature and game-theoretic reasoning to reveal the coopetition-based scenarios in dynamic SC networks and to investigate their features. The future research could focus on choosing game-theoretic concepts and prescribe games that can be applied to specific scenarios. Researchers can take the identified features into

account in demonstration of appropriate games, thus providing additional managerial implications to companies in dynamic SC networks. Also, a modelling approach can be used to compute the expected-optimal outcomes of the scenarios with respect to the features and prescribed games. Finally, the game-theoretic framework of coopetition-based scenarios is presented in rather simplistic manner. The scenarios could be divided further, whilst two-dimensional classification of the scenarios may lack of incorporating industry- and market-specific characteristics.

First, decisions regarding the coopetition should consider market size and the number of existing competitors-partners (Chen, 2014). With the fewer number of major competitors-partners, coopetition will be more effective (Gnyawali & Park, 2011). Additionally, in scenarios with fewer competitors-partners a combination of a capability-building competition with cooperation for technological and product innovation is expected to occur (Gnyawali & Park, 2011). Also, coopetition-based scenarios could be advanced to the conditions of higher market uncertainty Ritala (2012). Under conditions of high ambiguity, coopetition could be superior for improving market and innovation performance. Second, the future research could identify the industry-specific characteristics that shape the coopetition-based scenarios and *vice versa*. The "constraints and incentives" (de Resende et al., 2018) for engaging in a coopetition-based scenarios dependent on the industries. What is more, coopetition would be particularly effective for overcoming the challenges in industries with blurred boundaries and structures (Daidj & Jung, 2011).

Another avenue for further study is to investigate whether the coopetition is an intra-industry phenomenon or it stretches over the boundaries of the existing industries. So far, it has been acknowledged that coopetition appears within the existing industry networks purposely to congregate competitors-partners in generating competitive advantage outside the existing boundaries and generating (Chennamaneni & Desiraju, 2011). Industry characteristics are important drivers of coopetition (Bengtsson & Kock, 2000); »concentrated, regulated, and less munificent industries« encourage competitors-partners to engage in coopetition-based scenarios (Bengtsson & Raza-Ullah, 2016). Ultimately, the future research could investigate the external drivers of coopetition within various industries, the choice of coopetition-based scenarios in response to uncertainties in those industries, and how capabilities such as an ability for a future redesign push or stop organizations from engaging in coopetition.

5 CONCLUSION

In the ever-changing environments, organizations and SCs seek for solutions to improve performance. This thesis aims to explain the development of the solutions such as management frameworks and BMs as well as develops a framework of coopetition-based scenarios to assist organizations in improving the performance. In what follows, we summarize the main findings, present practical and theoretical contributions, and discuss the research work with its limitations.

5.1 Summary of the main findings

In Chapter 1, we addressed the nature of management frameworks. Throughout the chapter we provided a new perspective on the origins of well-known management frameworks, questioned the value of 'successful' management frameworks, and explained why some frameworks prospered and others did not. With the use of memetics we explain how management ideas evolve into management frameworks. We then asserted that it is not solely the rigor and undisputable value that contributed to the development and adoption of the frameworks, rather the frameworks are fueled by the initial interest of (potential) users. More specifically, the frameworks spread due to the network effect. The latter occurs when a critical mass of framework users exists and when the users raise the awareness and consequently increase the use of a framework. Frameworks then become an intersubjective reality and represent a common ground for discussions, benchmarking, inter-organizational relationships formations, and the measurement of performance. In fact, frameworks are (too) often deemed universally applicable solutions to problem-solving-oriented decision-making in particular realms. Well-known management frameworks are not necessarily rigorous and valuable. Finally, further work at the intersection of memetics, the network effect, and the theory of intersubjectivity can enhance our understanding of the nature of management frameworks.

To proceed with elucidating the nature of frameworks in a BM approach to SCM, we needed the profound understanding of the BM research field. Thus, in Chapter 2 we carried out a bibliometric analysis. We used bibliometric methods, namely co-word analysis and bibliographical coupling, to reveal the past development of the BM research field and its conceptual frameworks. The key findings of Chapter 2 also suggest a BM research 'where to' in the future and with co-citation analysis we pinpoint the lack of holistic framework(s) that would help overcoming unboundedness of the BM research and advance the field. More specifically, we extracted the meaningful information about the BM research until 2011 and between 2012 and 2016 for scholars and practitioners in the fields of business and economics. The results of bibliometric methods presented the most influential keywords and identified future areas of interest in BM research. We identified the

conversations within BM literature and, more importantly, elaborating on our findings recommended researchers and practitioners to enhance the free-flowing exchange of ideas between different research topics. We quantified BM research: divided the publications, authors, and journals into clusters and visualized its topical structure with the use of descriptive statistics and bibliometric methods.

Chapter 3 then elaborates on the key findings from Chapters 1 and 2 to discuss the BM approach to SCM. We asserted that the BM approach to SCM is necessary to deal with the plurality of BMs and to stretch the idea of a 'supply chain business model'. Key findings from Chapter 1 are used to develop two frameworks of the BM approach to SCM. The first framework encompasses the Post of Slovenia BM's main elements and discusses each. The second framework advances the first one and provides the recommendations for organizations determined to dynamically redesign their processes, BMs, and SCs. With the findings from the first framework we better understand the structure and core elements of a BM. With the second framework, scholars and practitioners can focus on key concepts and consider dynamic capabilities in the future redesign of organizations and SCs. Findings suggest a SC should develop the BM elements in such a way that it will be able to continually change its existing or add a new BM from the AS-IS state to a currently unpredictable TO-BE state as a response to currently unknown changes in its BM.

In Chapter 4 we elaborated on the findings from Chapters 1, 2, and 3 to pursue the BM and game theory research streams to an extent that links both and advances the existing perspective on efficient SCM. Our brief review of the past accomplishments in SC cooperation revealed the historical focus on dyadic relationships and negligence of incorporating the dynamics from interactions between competitors-partners in BM and SC management. Therefore, we asserted that due to inherent presence of competition and cooperation in dynamic SC networks and with respect to the features of the coopetition-based scenarios, game-theoretic reasoning can improve the decision-making next to the use of frameworks of a BM approach to the SCM. Key findings of the Chapter include the development of a revolutionary game-theoretic framework that frames simultaneous cooperation and competition in four coopetition-based scenarios based on the coopetition degree and the level of complementariness. Subsequently, Chapter 4 enlists the features of these scenarios and uses the insights from game theory to better explain coopetition-based scenarios and help organizations in forming the 'right type of coopetition'. Our findings extend cooperative game theory to the scenarios where equally-distributed 'power' between competitors-partners is to be expected as a result of a desire to coopete in a mutually-beneficial ('fair') exchange. Surprisingly, nowadays this is always the case. Finally, we conducted multiple-case study analyses and applied the scenarios to demonstrate that game theory should be the preferred lens when observing dynamic SC networks and the development of coopetition-based BMs.

5.2 Contributions and implications

Our dissertation takes a step forward to enhance the understanding of the frameworks, approaches, and corresponding scenarios in the SCM. The main contributions of Chapter 1 are the introductions of neglected aspects and prominent theories that should be acknowledged in the future development of the management frameworks. We commenced the Chapter by revealing the lack of rigor and value in well-known management frameworks. Also, we asserted that the frameworks' origins had not been discussed thoroughly and it is difficult yet to say whether theory or practice drives the need for the development of management frameworks. Thus, we contributed to the existing body of knowledge by utilizing memetics as the preferred lens to observe the origins of management frameworks. We showed that the frameworks are a set of ideas (memes) that had been lingering in specific places (realms), at a specific time, and were palatable by particular realms. Next, we contributed to the existing research practices on the adoption of management novelties. We moved from the traditional explanations that focus on diffusion and put an emphasis on neglected intersubjectivity in the adoption of management frameworks. We pursued the theory of intersubjectivity to an extent that advances our understanding of the perception of management frameworks in particular realms and complements the explanations on why frameworks become a 'common ground' for particular realms. We contributed to practice by explaining why frameworks are not necessarily 'universally applicable solutions' to problem-solving situations in organizations. We emphasized the importance of critical mass of users of a framework if practitioners tend to elicit the value of strategic tools such as management frameworks. Finally, practitioners will be better-suited to recognize the widely accepted frameworks and to gauge the value of a certain framework.

The co-citation analysis conducted in this dissertation is an important contribution in this regard as it helps in establishing the characteristics and the boundaries of the BM field, and aids (with the help of heat maps and clusters) in developing and maintaining a conceptual framework for a BM research. With the use of bibliometric methods, we revealed the past areas of interest and discuss the prominent topics in the future development of the BM research. Further, we suggested future scholarly papers should aim for the free-flowing exchange of ideas between the BM field and other academic disciplines. First, Chapter 2 asserts that the unboundedness of the BM field should be of key concern for the future research and, to overcome this limitation, we recommend 'conversations' to occur beyond the identified clusters. We explained how this resulted in the BM field becoming a self-referential or self-defining research field. Practitioners will better understand the concomitant development of BMs with the features of today's environments. Second, with the insights of the quantitative analyses used in our study practitioners will get closer to designing a 'winning BM' when prompted and consider BMs as unit of analysis in their

strategic management. We see e-business and innovation (management) research substreams as two important boundary-spanning research substreams that are broader in scope and could facilitate the exchange of ideas between BM research and various domains in the near future. Similarly to more recent research that identified the on-going process of value co-creation between competitors-partners in dynamic SC networks (Coombes & Nicholson, 2013; Fisher & Smith, 2011), this chapter identified the network-based approach to BM development. More prevalent in industrial marketing BM debates (Ehret et al., 2013) a network-based approach entails a fundamental shift from a focal-company perspective to the development of BMs that considers different stakeholders. Hence, the conversations between (industrial) marketing literature and BM research would complement the emerging body of knowledge on value co-creation and network-based approach, and subsequently create a common ground for both disciplines.

A slightly different trajectory has been taken in industrial marketing business model discourse (e.g. Ehret & Wirtz, 2010; Mason & Spring, 2011; Shin & Park, 2009; Storbacka, 2011; Wirtz & Ehret, 2013).Within this literature, the development of value between partners in a SC is emphasized and this appears to mirror concerns in the more recent articles in our sample that fall outside marketing journals (Zott & Amit, 2010).

The primary contributions of Chapter 3 are in extending the dynamic capabilities approach and BM management, proposition of two frameworks and identification of topics relevant for future development of the SCM field. The Chapter contributes to the theory by firstly providing a synthesis of topics relevant for SC-BM management. Then, we applied the theory of BMs to the SC level (previously it was solely used for a single organization) and discussed the plurality of BM on organizational and SC level. We contributed to the existing studies on BMs and BM elements by depicting the BM elements at the SC level. We demonstrated the salience of the BM elements at the SC level with a case-study of a service-oriented SC, namely Post of Slovenia. Thus, the chapter also contributes to the existing body of knowledge by providing a more precise elaboration of the interconnection between BMs, dynamic capabilities and future required changes. Most importantly, Chapter 3 suggests a novel way of identification of what "one supply chain" is by arguing that each SC by definition only has one BM.

We contributed to practice by revealing that solely focusing on improving the maturity/efficiency of AS-IS processes in SCs is inadequate, the organizations in SCs should rather use our findings to carefully design their current BM and develop dynamic capabilities for future changes. We put an emphasis on the plurality of BMs in SCs and the difficulties associated with taking the BMs of different organizations into account. This implies practitioners should decide how many BMs they can manage at the same time in one SC and in how many SCs they can participate. Managers should focus on balancing

the short-term improvements of BM elements and building dynamic capabilities for future change.

The main contributions of Chapter 4 are as follows: We contributed to the existing body of knowledge on SC collaboration and provided beyond-the-dyad perspective on the co-evolution of dynamic SC networks and simultaneous cooperation and competition. We devised a revolutionary framework of coopetition-based scenarios to provide a novel and long-term view of interactions among partners-competitors. Chapter 4 therefore contributes to the coopetition topic by dividing the coopetition-based scenarios in emergent and deliberate, and based on the level of complementariness among the competitors-partners. We then contextualized BMs next to coopetition-based scenarios and discuss the role of BMs in coopetition-based scenarios.

The implications for practice are the following: Firstly, we suggest practitioners to distance themselves from dyadic perspectives and consider their larger environments, i.e. dynamic SC networks. Secondly, we framed and later exemplified the possible coopetition-based scenarios that can be managed by competitors-partners and provide the practitioners with the features of each scenario. Finally, we discussed the implications coopetition-based scenarios have on BMs and asserted that managers should consider BMs as structures that enable and enact the coopetition-based scenarios.

5.3 Outlook to further research

Chapters 2 and 3 show that the BM research has received immense attention in the past. While most studies focus on definitions of the concepts, the case-study analyses more or less successful BMs, their implementation in practice, and discusses the BM innovation as an important mechanism linked to organization performance, which opens several opportunities for future research. First, more empirical research and quantitative analyses are needed. Second, the exchange of ideas between BM research and various domains is necessary to stimulate the debate on the role, value, and contextualization of a BM as a new unit in an analysis. Third, our findings from Chapter 4 pinpoint several challenges related to the development and management of network-based BMs. The emergence of coopetition-based scenarios and the inclusion of competitors-partners in dynamic SC networks entail modifications for competitors-partners' BMs. For instance, future research could focus on identifying key determinants of coopetition-based BMs in such a way that the BMs would fashion a sustainable trade-off between value capture and value appropriation and thus provide sustainable structures for coopetition-based scenarios.

Finally, the future research should observe BM research with a two-fold purpose. The BM research currently lacks a coherent research framework and numerous frameworks have already been proposed without a clear understanding of their value. The frameworks were

developed to represent different BM elements, suggest new approaches to BM management, and to improve the continuous process of redesigning the BMs in successful organizations. However, a topic that remains poorly understood is the measurement (or prediction) of the value of various frameworks and other management novelties. One interesting option would be to develop metrics for measuring (or predicting) the value of arbitrary frameworks that overflood BM research and management in general.

Next, the dissertation at hand opens future research avenues on the origins, adoption, and value of the management frameworks. First, one possible extension of our work is to discover how memes get seized and how they evolve in management frameworks. Second, a clear opportunity for the future research is to study the emergence of management frameworks and other novelties from academia or practice to answer how both realms account for the presence of well-known management frameworks of questionable value. Third, the future research could elaborate on our findings and seek complementariness with predominant theories on innovation and adoption to stimulate the debate on the nature of management frameworks. Finally, a closer look at the value determinants of management frameworks is needed. How to predict a framework will reach its critical mass, become an intersubjective reality, and how to measure the value a framework has for practice remain intriguing open questions.

To affirm the value of a framework of coopetition-based scenarios, the future research could further empirically confirm the applicability of our framework in different settings, with the use of various game models and cross-industry comparisons. We dwelled on game theory to discuss the game-theoretic features of the scenarios, whereas the future research could use a more nuanced view and further classify and divide the scenarios. For instance, it would be interesting to see which game models fall into different scenarios. Also, a different research direction could entail additional coopetition-based scenarios or the novel features of our scenarios. The future research could thus examine real-life conditions of coopetition-based scenarios longitudinally and mathematically model the interactions between competitors-partners. Finally, an open avenue is the management of coopetition-based scenarios and the coopetition-based BMs where to competitors-partners' shit to focus on cooperation entail modifications. Thus, the researchers should discuss the modifications coopetition entail for BMs and whether competitors-partners manage coopetition-based scenarios and BMs sufficiently or the phenomenon calls for the inclusion of intermediaries.

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APPENDIX

Summary in Slovenian language/Daljši povzetek disertacije v slovenskem jeziku

UVOD

Disertacija predstavlja zaokroženo celoto treh vsebinsko povezanih področij, ki spreminjajo in nadgrajujejo pristope k managementu oskrbovalnih verig (MOV). MOV je pomemben za povezovanje organizacij, učinkovito oskrbo in komunikacijo med njimi in za usklajevanje procesov in poslovnih modelov (PM), v katerih je vključenih več organizacij oz. deležnikov. PM uspešnih organizacij se namreč prilagajajo spremembam v okolju in se ne osredotočajo več zgolj na vodilno organizacijo, ampak upoštevajo interese in značilnosti vseh deležnikov. PM pomagajo razumeti ustvarjanje in prenos vrednosti do končnih uporabnikov, delovanje organizacij in celotnih OV. Dober PM lahko predstavlja konkurenčno prednost, izboljša povezovanje in delovanje organizacij v OV ter povezuje partnerje in tekmece iz različnih OV v širša omrežja. Ključno vprašanje je, kako zasnovati 'zmagovalni poslovni model' in kako naj se PM prilagajajo spremembam v okolju (Trkman, Budler, & Groznik, 2015).

Med spremembami, ki pomembno vplivajo na PM, je širša pojavnost hkratnega sodelovanja in konkuriranja med partnerji-tekmeci. Strategijo sotekmovalnosti običajno uporabljata dve konkurenčni organizaciji, ki iščeta sinergije, npr. v boju proti skupnemu tekmecu. Sotekmovalnost ni črno-bel pojav, ampak lahko nastane pod različnimi pogoji, njeni scenariji pa se razlikujejo po določenih značilnostih. Poglobljeno razumevanje scenarijev in njihovih značilnosti lahko fundamentalno izboljša sodelovanje tekmecev in soustvarjanje vrednosti za vse deležnike OV. Zatorej disertacija razvije dvodimenzionalni okvir na osnovi teorije iger za štiri scenarije sotekmovalnosti in predstavi značilnosti posameznih scenarijev. Z okvirjem scenarijev in identifikacijo njihovih značilnosti disertacija predstavlja enega prvih poskusov klasificiranja različnih tipov sotekmovalnosti, s čimer lahko pomembno izboljšamo delovanje OV v različnih situacijah in panogah. Uporabim študije primerov, da z njimi ilustriram različne tipe scenarijev in njihove značilnosti. Raziskovalci in managerji bolje vedo, katere implikacije scenarijev je moč pričakovati.

V disertaciji sledim spremembam v OV in se oddaljim od tradicionalnega razumevanja osrednje organizacije in njenih deležnikov. Izpostavim kompleksnost omrežij OV, ki spreminjajo vloge vseh deležnikov OV, zmanjšujejo 'moč' vodilne organizacije in vzpostavljajo potrebo po skupnem sprejemanju odločitev in prilagajanju PM. Spremenjene vloge deležnikov OV vplivajo na nastajanje in prenos vrednosti, s tem pa se spreminja inoviranje PM (na osnovi sotekmovalnosti). Pojasnjujem, kaj je potrebno upoštevati pri

usklajevanju in inoviranju PM na ravni organizacij in OV. Nenazadnje pa v razvoj PM in učinkovitega MOV vključimo sotekmovalnost, na temeljih katere nastajajo novi PM.

Ker postaja usklajevanje in odločanje s povezovanjem deležnikov OV in njihovih PM vse bolj kompleksno, deležniki OV uporabljajo managerska orodja in okvirje. Z managerskimi okvirji običajno razumemo matrike, sheme, tabele in druge razvrstitve, ki na osnovi dveh ali več dimenzij razdelijo strateška, taktična ali operativna področja, pomembna za sprejemanje odločitev. Zaradi pogoste uporabe različnih okvirjev, katerih vrednost v praksi ostaja vprašljiva, začenjam disertacijo z raziskovanjem nastanka, privzemanja in vrednosti okvirjev v managementu. Uporabim tri teoretične perspektive, s katerimi predstavim nove vidike okvirjev v managementu. Ugotovitve uporabim za razvoj lastnih okvirjev, ki bodo managerjem izboljšali inoviranje PM in ravnanje v razmerah sotekmovalnosti, raziskovalcem pa ponudili možnost za nadaljnje klasifikacije, (kvantitativne) študije in povezovanje teorije s prakso. S prvim okvirjem opisujemo elemente PM na ravni OV, Pošte Slovenije, d. o. o., ki je storitveno-orientirana OV. Z drugim okvirjem razširim teorijo dinamičnih sposobnosti in predstavim njihov pomen pri prilagajanju nenehnim spremembam, medtem ko s tretjim okvirjem izboljšam razumevanje sotekmovalnosti in njene vloge pri razvoju PM.

PREGLED OBSTOJEČEGA STANJA

Dandanes konkuriranje na trgu običajno ne poteka na ravni organizacij, ampak med OV, s katerimi razumemo omrežja več povezanih organizacij. Razmere na trgu, makroekenomski izzivi, konkurenčnost, nenehno spreminjajoče se povpraševanje s strani končnih uporabnikov in zahteve po spreminjanju procesov znotraj organizacije in med organizacijami vplivajo na delovanje OV (Christopher & Holweg, 2011; Pereira et al., 2014; Tanco et al., 2015; Trkman & McCormack, 2009). Posledično organizacije v OV analizirajo njihovo trenutno (ang. *as-is*) stanje (Trkman et al., 2007) z vidika procesov, zaposlenih, portfelja izdelkov in storitev, partnerjev, strank, zunanjega okolja in drugih elementov. Analize izvajajo z namenom oblikovanja ustreznih konceptualnih okvirjev, s katerimi bi organizacije opisale delovanje in bile bolje pripravljene na priložnosti v prihodnosti (Teece, 2012).

Zaradi negotovosti, ki prepreda sodobne organizacije in se bo v prihodnosti še povečevala, so bile OV prisiljene iskati drugačne rešitve za dvig fleksibilnosti (Christopher & Holweg, 2011). Organizacije v OV fleksibilnost dosegajo tudi s spremenjeno paradigmo; različnih udeležencev na trgu ne smejo videti zgolj kot konkurente, dobavitelje, proizvajalce, partnerje in stranke, ampak kot udeležence v odločitvenih procesih v razmerah sotekmovalnosti (Zhang & Frazier, 2011). Povezovanje v sotekmovalnost temelji na združevanju načel konkuriranja in sodelovanja in zahteva usklajevanje poslovnih procesov

in PM vseh organizacij (deležnikov) v OV (Adams et al., 2014; Cheng & Fu, 2013; Osterwalder et al., 2010) in premislek o ustreznosti razvitih in prihodnjih PM (Benson-Rea et al., 2013; Casadesus-Masanell & Tarziján, 2012; Constantinos & Constantinos, 2004; Martínez-Olvera, 2009).

PM odseva predpostavko managementa o tem, kaj stranke želijo, kako jim to dovesti in kaj mora organizacija narediti, da na najboljši možni način zadosti potrebam končnih uporabnikov, nenazadnje pa je za to plačan in ustvarja dobiček (Teece, 2010). PM upodablja vsebino, strukturo in management transakcij, s katerimi organizacija izkorišča priložnosti in ustvarja vrednost (Zott et al., 2011). PM je tako celovita upodobitev, kakšna vrednost se ustvari za stranke in kako, kateri elementi so za to potrebni in kako se ti elementi medsebojno povezujejo in opisujejo proces ustvarjanja vrednosti za končnega uporabnika – stranko.

Ustvarjanje in prenos vrednosti od organizacij v OV h končnim uporabnikom se spreminja s pojavom sotekmovalnosti. Spremenjene vloge organizacij v OV, latentno prisotna konkurenčnost in sodelovanje ter vse večji pomen PM na ravni organizacij in OV zahteva poglobljene analize. K slednjim pripomore uporaba teorije iger, ki lahko izboljša razumevanje velikega števila PM, ki si medsebojno konkurirajo, in PM, ki povezujejo partnerje-tekmece. Sklepanja na osnovi teorije iger so pridobivala na pomenu vse odkar je leta 1950 izšlo delo Johna Nasha z naslovom *The bargaining problem*. Teorija iger je pogosto uporabljena in priznana ekonomska teorija, ki je bila razširjena do te mere, da jo je možno uporabiti v drugih družbenih in behavioristični vedah (Osborne, 2000). Teorija iger lahko izboljša procese odločanja (Li et al., 2002; Yue & You, 2014; Zamarripa et al., 2012) in zmanjša napetosti, ki so posledice kompleksnih, dinamičnih in nepredvidljivih sprememb. Nepredvidljive spremembe lahko nastanejo kot posledica spremenjenih navez z dobavitelji, partnerji, strankami in konkurenti (Yi et al., 2011) in od OV zahtevajo pripravljenost na potencialne spremembe še preden se le-te pojavijo (Farahani et al., 2014).

Ker želijo OV izboljšati sposobnosti izvajanja poslovnih in odločitvenih procesov ter postati pripravljene na v danem trenutku nepoznane spremembe v prihodnosti, je potrebno razumevanje kompleksnega, dinamičnega in vzajemnega delovanja PM in okvirjev. Okvir je orodje, ki nam omogoča primerjavo konceptov, principov, metod, standardov in modelov na določenem področju (Rezaei et al., 2014). Okvirji v managementu pa zaobjemajo vzajemno delovanje različnih struktur, elementov, procesov in strateških ciljev, ki omogočajo izvedbo določenih aktivnosti, primerjave med različnimi entitetami ali sledenje ciljem podjetja. Med drugim so v organizacijah okvirji množice predpostavk, vrednot in praks, s katerimi se podjetja spoprijemajo s sodobnimi izzivi (Andrew & Evans, 2011), orodja za primerjavo principov, tehnik, politik podjetij in PM (Heylighen, 1998), lahko pa tudi podpirajo teoretična dognanja v managementu (Swanson, 2007). Kot pravi

Heylighen (1998), konceptualni okvirji iz managementa nastajajo v mislih ljudi in se spreminjajo v fizično obliko, ki jo lahko razumejo drugi. Med bolj znane konceptualne okvirje, ki so pogosto uporabljeni v managementu OV, so SWOT-analiza (Pickton & Wright, 1998), Carterjev in Rogerjev okvir trajnostnega managementa OV (Carter & Rogers, 2008), uravnotežen sistem kazalnikov (ang. *balanced scorecard*) (Kaplan & Norton, 1995), Porterjevih 5 silnic (Porter, 1979) in Kraljićeva matrika nabave (Kraljic, 1983).

K zgoraj naštetim okvirjem disertacija dodaja še tri, s katerimi izboljšuje inoviranje PM in delovanje v razmerah sotekmovalnosti. S pregledom obstoječega stanja disertacija pojasnjuje, kako so managerski okvirji nastali, od kod izvirajo, kakšna je njihova vrednost in kaj je pripomoglo k doseganju uspeha v managementu. Deležniki OV vidijo uporabo okvirjev v managementu kot doprinos k racionalnim odločitvam managerjev. Uporabo okvirjev v managementu (OV) upravičujejo tudi številni drugi razlogi (Lambert et al., 2005); kot prvo, zmanjšajo nejasnosti, ko poteka koncipiranje novega področja, kakršen je management OV. Drugič, okvirji podpirajo izpolnjevanje organizacijskih strategij in spodbujajo intra-organizacijsko povezovanje, torej nivo izmenjave informacij in sodelovanja znotraj organizacije. Nenazadnje pa privzemanje okvirja v managementu (OV) vpliva na učinkovito generiranje ponudbe vrednosti (Lambert et al., 2005).

Za celostno preučevanje načina, kako okvirji nastanejo in kako se širijo, moramo upoštevati načela teorije memetike (ang. *memetics*; (Whitty, 2005). Memetika se ukvarja z memi (ang. *memes*), ki kot ideje ali v drugih pojavnih oblikah nastajajo znotraj organizacij in med njimi. Memetika izboljša razumevanje in nastajanje okvirjev v managementu; le okvirji, usklajeni z izvajanjem PM organizacije in procesi odločanja, zagotavljajo ustrezne rezultate (Andrew & Evans, 2011). MOV pa ne zahteva samo privzemanja okvirjev in spreminjanja obstoječega PM, ampak tudi razvoj dinamičnih sposobnosti, s katerimi lahko OV izkoristijo prednosti ponujenih priložnosti. Kot meni Teece (2012), dinamične sposobnosti razširijo pomen baze organizacijskih virov, tako da omogočijo prepoznavanje, zajemanje in oblikovanje priložnosti. Dinamične sposobnosti opredelijo PM organizacije na način, da je PM mogoče prilagoditi na trenutne in prihodnje spremembe (DaSilva & Trkman, 2014). Strateška fleksibilnost (Christopher & Holweg, 2011) pa je stanje, h kateremu naj bi podjetja v OV stremela in temu primerno spreminjala PM (Trkman, Budler, Groznik, 2015).

Za organizacije v OV je pomembna ugotovitev, kateri PM so zanje medsebojno kompatibilni (Casadesus-Masanell & Tarziján, 2012; Trkman et al., 2015). Številne organizacije (in OV) izvajajo management več PM, na razvoj le-teh pa vpliva tudi sotekmovalnost. Organizacije se morajo odločiti o vzpostavljanju dveh ali več PM in o stopnji vključevanja ostalih deležnikov glede na scenarij sotekmovalnosti, ki se

vzpostavlja. Sotekmovalnost vnaša negotovosti med konkurenčnimi organizacijami, sklepanje na osnovi teorije iger pa negotovosti zmanjša (Wolters & Schuller, 1997). Obstoječe in prihodnje izzive v MOV raziskovalci naslavljajo tudi z oblikovanjem in nadgradnjo pristopov k MOV. Drugačne vloge deležnikov OV in narava njihovih odnosov zahteva analizo vlog vseh deležnikov – tudi s pomočjo teorije iger – in razmislek, v kolikšni meri naj vodilna organizacija usklajuje svoje PM z ostalimi deležniki. Z upoštevanjem PM vseh deležnikov, načel sotekmovalnosti in uporabo ustreznih okvirjev lahko organizacije izboljšajo management njihovih OV.

RAZISKOVALNA VPRAŠANJA IN DOPRINOS DISERTACIJE

Med temeljna raziskovalna vprašanja doktorske disertacije sodijo:

- *Kaj* je vplivalo na nastanek okvirjev v managementu, kako poteka njihovo privzemanje in kakšna je njihova vrednost? Natančneje, kako so se okvirji v managementu razvili iz memov, postali intersubjektivna realnost in se širili s pomočjo mrežnega učinka.

- *Kako* oblikovati elemente PM, da bodo organizacije sposobne kontinuirano spreminjati obstoječe PM (ang. *as-is*) ali dodajati nove glede na nepredvidljiva prihodnja (ang. *to-be*) stanja in glede na pomanjkljive informacije o spremembah, ki bodo v prihodnje potrebne?

- *Kakšne* oblike sotekmovalnosti poznamo ob sklepanju in identificiranju karakteristik na osnovi teorije iger v MOV in *kako* lahko teorija iger pripomore pri procesih odločanja in oblikovanjih PM v razmerah sotekmovalnosti?

Disertacija ponuja doprinos k razvoju teorije z raziskovanjem nastajanja, privzemanja in ovrednotenja okvirjev v managementu. Medtem ko študije naslavljajo operacionalizacijo različnih managerskih novosti (npr. okvirjev), disertacija revolucionarno uvaja načela memetike in koncept intersubjektivne realnosti ter mrežnega učinka za pojasnjevanje razvoja in privzemanja uveljavljenih okvirjev v managementu.

Upoštevajoč komponente časa, prostora in posameznika pri uvajanju memetike, disertacija pripomore k razumevanju korenin okvirjev in k nastajanju bolj relevantnih okvirjev z višjo vrednostjo. Zakaj so okvirji uporabno orodje pri povezovanju, komuniciranju in primerjavah med deležniki OV, pojasnim z načeli intersubjektivne realnosti. Nenazadnje pa opozorim na pomen mrežnega učinka pri širjenju okvirjev v managementu. Ugotovitve disertacija pomembno doprinesejo k prihodnjemu razvoju okvirjev na različnih področjih managementa in organizacij, obenem pa izboljšajo razumevanje (in vrednotenje) uspeha obstoječih okvirjev.

Disertacija izboljšuje MOV z uvajanjem pristopa na osnovi PM. Disertacija za učinkovit MOV pojasni dinamične sposobnosti. Le-te organizacijam v OV omogočajo odgovarjati na potrebe po inoviranju PM in preoblikovanju OV iz obstoječega v prihodnje stanje. Z uporabo spoznanj o okvirjih v managementu disertacija predlaga dva konceptualna okvirja, ki prikazujeta elemente PM OV in povezave teh elementov z dinamičnimi sposobnostmi. Prvi okvir pripomore k razumevanju elementov PM na ravni OV. Z okvirjem razširim idejo o obstoju PM organizacije na PM OV. Drugi okvir prikazuje proces prilagajanja in spreminjanja PM na osnovi dinamičnih sposobnosti. Managerjem omogoča uvide v področja, ki so za dopolnjevanja in spreminjanja PM ključnega pomena.

Tretji konceptualni okvir pa povezuje PM s sotekmovalnostjo in spoznanji iz teorije iger, ki bolje pojasnijo procese odločanja v OV in izboljšajo njihovo izvedbo. Pionirsko predstavim različne scenarije sotekmovalnosti na osnovi dveh dimenzij, značilnosti teh scenarijev in diskutiram poteze, možne rezultate in učinke scenarijev sotekmovalnosti, tudi za PM. Raziskovanje disertacije na področju sotekmovalnosti in PM je pomembno iz treh vidikov. Organizacije v OV bolje razumejo prepletanje svojih vlog in večplastnost sotekmovalnosti. Sposobne bodo izbrati in ustvariti ustrezen scenarij sotekmovalnosti glede na dano situacijo. Drugič, organizacije v OV bolje razumejo značilnosti scenarijev sočasnega sodelovanja in konkuriranja ter igre partnerjev-tekmecev. Nenazadnje pa sotekmovalnost prinaša spremembe za PM. Slednji posledično vključujejo tekmece in ostale deležnike v njihov razvoj, prilagajanje in inoviranje.

Doktorska disertacija kot zaokrožena celota doprinese k izboljšanemu razumevanju nravi konceptualnih okvirjev v managementu. Pojasnim, zakaj okvirji niso univerzalni pripomoček z dodano vrednostjo pri odločanju in zakaj je potreben premislek pred privzemanjem in uporabo številnih novonastalih okvirjev. Disertacija razvije tri okvirje, ki upoštevajo spoznanja memetike in izhajajo iz sodobnih idej in konceptov v managementu. S tem disertacija prispeva k boljšemu razumevanju in razvoju okvirjev, managerjem pa pomaga pri ovrednotenju širše poznanih okvirjev. Okvirji pripomorejo k razumevanju vloge PM v MOV in spremembah, ki jih za PM prinaša sotekmovalnost. Z dvema okvirjema disertacija predlaga nov pristop k MOV, s tretjim pa revolucionarno opredeli možne scenarije sotekmovalnosti, značilnosti le-teh in nekatere spremembe za PM, ki jih prinašajo scenariji sotekmovalnosti.

KLJUČNA SPOZNANJA

Prvo poglavje disertacije obravnava nrav okvirjev v managementu, natančneje njihov nastanek, privzemanje in vrednost. Ker je o njihovem nastajanju znanega bore malo, vrednost privzetih okvirjev nepoznana ali nejasna, privzemanje pa pomanjkljivo pojasnjeno, uporabim ustrezne perspektive za preučevanje okvirjev v managementu. Z

uporabo memetike s soavtorjem ugotavljamo, kako se ideje razvijajo v konceptualne okvirje v managementu. Okvirji v managementu so zbir perspektivnih idej, ki so se razširili v določenem času na določenem področju med določenimi ljudmi. Z uporabo načel nezavrnljivosti pokažemo, da okvirjev ni možno nesporno ovreči ali potrditi, kar postavlja pod vprašaj vrednost 'uspešnih' okvirjev. Zakaj nekateri okvirji niso uspeli, drugi pa, je odvisno od kritične mase uporabnikov. Okvirji dosežejo kritično maso uporabnikov s pomočjo mrežnega učinka.

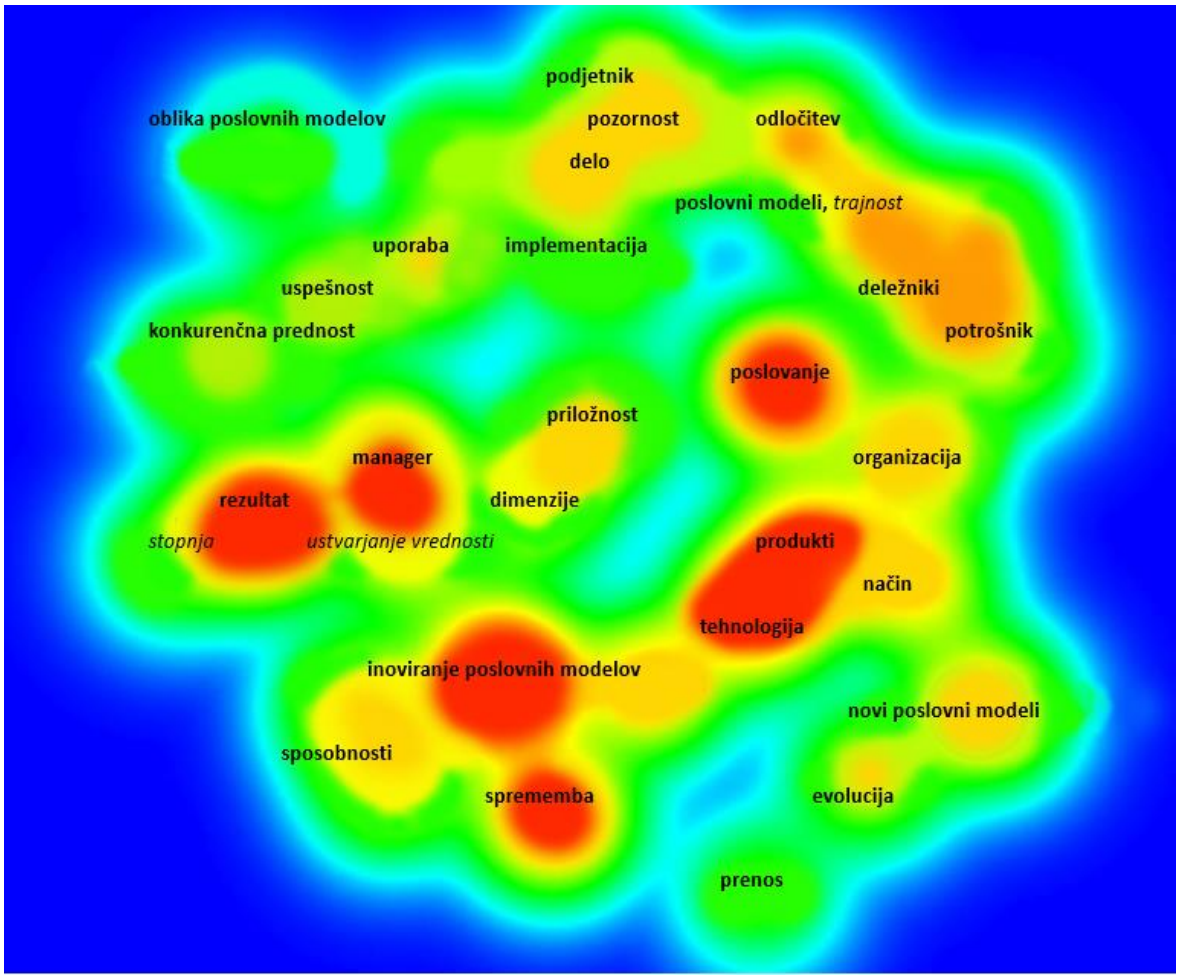
Z mrežnim učinkom obstoječi uporabniki na potencialne širijo managerske novosti v skupnostih. Mrežni učinek je viden, ko obstaja kritična masa uporabnikov in ko uporabniki širijo informacije o obstoju in uporabi okvirjev ter posledično povečajo uporabo dotičnega okvirja. Okvirji nato postanejo intersubjektivna resničnost in dajejo podlago za skupne razprave, primerjalne analize, vzpostavljanje medorganizacijskih odnosov in merjenje uspešnosti (slika 1). Okvirji se prepogosto štejejo za univerzalno uporabne rešitve v odločitvenih procesih. Nadaljnje delo na presečišču memetike, mrežnega učinka in teorije intersubjektivnosti lahko okrepi naše razumevanje nravi konceptualnih okvirjev v managementu.

Slika 1. Razvoj, privzemanje in vrednost okvirjev v managementu

Da bi bolje razumeli okvirje in vlogo PM v MOV, smo potrebovali kvantitativno bibliometrično analizo PM. Avtor je s sodelavci uporabil bibliometrične metode, in sicer analizo so-citiranja, bibliografsko parčenje in analizo ključnih pojmov. Ključna spoznanja 2. poglavja pripomorejo k napovedim, 'kje' se bo nahajalo področje PM prihodnosti, kakšen bo njegov razvoj in na katera raziskovalna področja bodo PM vplivali. Z uporabo bibliometričnih metod sem s soavtorji pridobil pomembne informacije o publikacijah na področju PM do leta 2011 ter med leti 2012 in 2016. Rezultati analize ključnih pojmov predstavljajo najbolj vplivne ključne besede (glej sliko 2 za obdobje 2012–2016) in

opredeljujejo prihodnja interesna področja PM. Spoznanja uporabimo za oblikovanje smernic za prihodnje raziskovanje na področju PM. Iz rezultatov je razvidna diverzifikacija področja inoviranja PM in e-poslovanja, oblikovanje silosov znanja na področju PM in deficit pri izmenjavi idej s področja PM z drugimi domenami.

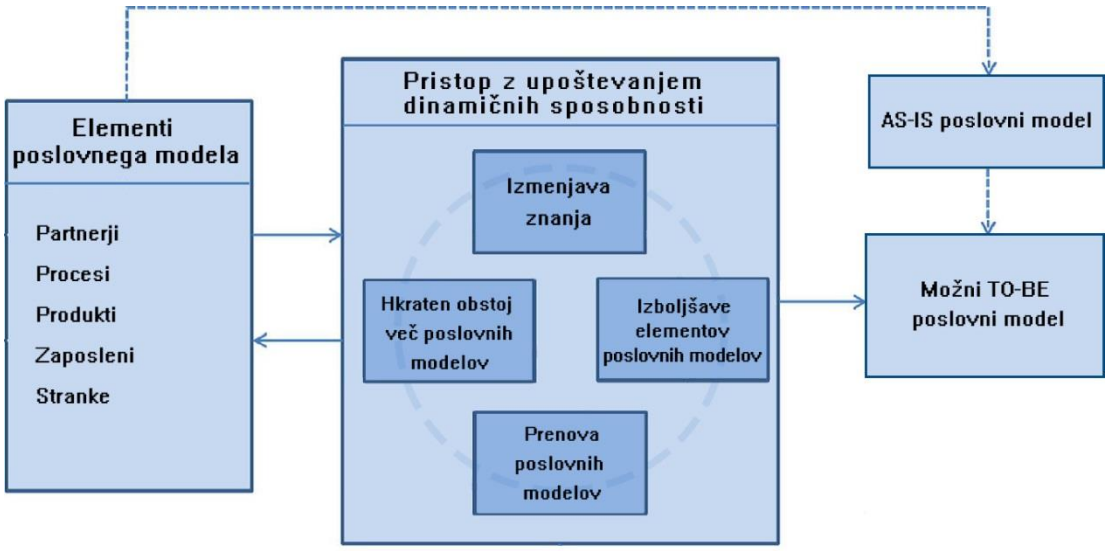
Slika 2. Intenzivnost in so-pojavnost ključnih pojmov pri poslovnih modelih (2012–2016)



Disertacija s 3. poglavjem nadgrajuje ključna spoznanja poglavij 1 in 2, in sicer z razširjanjem vloge PM v MOV in z razvojem dveh okvirjev. Okvirja povezujeta elemente PM, dinamične sposobnosti in razširjata idejo o enem PM OV. Prvi okvir upodablja PM storitveno-orientirane OV Pošte Slovenije in ga lahko managerji OV uporabijo za analizo elementov njihovih PM, medtem ko z drugim okvirjem disertacija opozarja na dinamične sposobnosti, ki so potrebne pri dopolnjevanju ali razvoju novih PM. Prvi okvir predstavlja elemente PM na ravni OV in njegove značilnosti. Drugi okvir pripomore k razumevanju managementa (več) PM, vlogi dinamičnih sposobnosti za preoblikovanje njihovih procesov, PM in OV, in organizacijam nakazuje sposobnosti, ključne pri doseganju strateške fleksibilnosti. Temeljna spoznanja 3. poglavja namreč nakazujejo na potrebo po

nenehnem spreminjanju obstoječih ali dodajanju novih PM kot odzivu na trenutno neznane spremembe v prihodnosti organizacij v OV (slika 3).

Slika 3. Pristop k MOV z upoštevanjem dinamičnih sposobnosti



Četrto poglavje disertacije smiselno nadgrajuje pomen PM s predstavitvijo MOV v nastajajočih dinamičnih omrežij OV. V dinamičnih omrežjih OV je prisotna sotekmovalnost in prepletanje vlog organizacij iz različnih OV. Za učinkovit MOV je potrebno upoštevati spremenjene vloge deležnikov in PM vseh organizacij. S teorijo iger še natančneje opišemo razmere v dinamičnih omrežjih OV in razvijemo konceptualni okvir, s katerim predstavimo možne scenarije sotekmovalnosti med organizacijami OV. Med ključna spoznanja 4. poglavja sodijo identifikacija scenarijev sotekmovalnosti, opis njihovih značilnosti in razvoj konceptualnega okvirja za scenarije sotekmovalnosti na podlagi stopnje sotekmovalnosti in komplementarnosti med partnerji-tekmeci. Za opisane značilnosti scenarijev sotekmovalnosti disertacija uporablja spoznanja iz teorije iger. Z okvirjem bolje razložimo možne scenarije sotekmovalnosti, njihov nastanek in posledice ter partnerjem-tekmecem pomagamo pri načrtovanju in oblikovanju ustreznih scenarijev.

Z ugotovitvami pripomorem k boljšemu razumevanju sotekmovalnosti: slednja ni enoznačna, ampak odvisna od vsaj dveh dimenzij in značilnosti posameznih scenarijev. S spoznanji disertacije se razširja obstoječe telo znanja na področju kooperativne teorije iger v scenarijih sotekmovalnosti. Slednje oblikujejo t. i. partnerji-tekmeci, ki hkrati sodelujejo in tekmujejo, želijo enakopravno razdeljeno vplivnost (moč) med njimi, pridobiti obojestransko korist in imajo skupni interes glede na kratko- ali dolgotrajnost scenarijev. Z več študijami primerov in kratkimi primeri predstavim predlagane scenarije in pokažem, da

je teorija iger koristna perspektiva za opazovanje dinamičnih omrežij OV in pripomore k razumevanju spreminjanja PM na osnovi sotekmovalnosti.

ZAKLJUČKI IN SMERNICE

Disertacija kot zaključena celota izboljšuje razumevanje okvirjev v MOV in vloge PM na ravni organizacij in OV. Predlagam upoštevanje PM, dinamičnih sposobnosti in značilnosti sotekmovalnosti v učinkovitem MOV. Ker oblikovanje novih pristopov in opredeljevanje vloge PM v scenarijih sotekmovalnosti zahteva konceptualne modele, disertacija ponuja nove teoretične perspektive za preučevanje nastajanja, privzemanja in vrednosti okvirjev v managementu (OV) potrebujemo nove perspektive. Z združevanjem memetike, intersubjektivne realnosti in mrežnega učinka disertacija bolje razloži pomen kritične mase uporabnikov pri privzemanju okvirjev v managementu in pojasni, kaj prispeva k širjenju uporabe obstoječih (uspešnih) okvirjev v managementu (OV). Okvirji so del pristopov, ki jih uporabljajo managerji v organizacijah. Managerji z uporabo okvirjev delujejo racionalnejši in okvirje uporabljajo kot pripomočke v problemsko-orientiranem odločanju. Z razlogi za njihovo vsesplošno privzemanje disertacija pojasni, zakaj okvirji niso nujno koristni. Prihodnje študije se lahko usmerijo v iskanje metrik za ugotavljanje vrednosti konceptualnih okvirjev v managementu. Vprašanje, ki ostaja odprto, je, ali teorija narekuje prakso ali obratno: so vsesplošno pojavnost okvirjev v managementu zakrivili akademiki ali predstavniki iz prakse?

Na področju PM prevladujejo kvalitativne raziskave, ki s študijami primerov analizirajo (ne)uspešne podjetniške prakse. Disertacija zato z uporabo bibliometričnih metod v 2. poglavju pomembno prispeva k metodološki pestrosti in obstoječe študije dopolnjuje s kvantitativno analizo razvoja področja PM pred letom 2011 in v obdobju od 2012 do 2016. Z analizo so-citiranja sem s soavtorji določil meje in značilnosti raziskovalnih podpodročjih. Z grafično upodobitvijo so-pojavnosti ključnih pojmov in bibliografskim parčenjem še dodatno pripomoremo k razvijanju in vzdrževanju koherentnega raziskovalnega okvirja na področju PM. Z bibliometrično analizo je disertacija bogatejša za identificirana interesna področja PM in evolucijski pogled na razvoj raziskovalnih podpodročij. Ugotavljam, da so raziskovalna podpodročja medsebojno premalo povezana, in predlagamo, da se prihodnje študije na področju PM bolje povezujejo s koncepti, spoznanji in metodami drugih raziskovalnih domen (npr. s trženjem). Pojasnili smo, kako je nepovezanost povzročila, da je področje PM postalo samorazvijajoče raziskovalno področje, v katerem nove publikacije gradijo na obstoječi literaturi. Z obsežnejšo in celovito bibliometrično analizo bodo raziskovalci in predstavniki iz prakse bolje razumeli sočasen razvoj PM v dinamičnih omrežjih OV.

Disertacija vseskozi razvija idejo o PM na ravni (storitveno-orientirane) OV in povezovanju PM na osnovi sotekmovalnosti v dinamičnih omrežjih OV. Predstavljeni so izzivi pri managementu (več) PM bodisi organizacije ali celotne OV. Ker je management (več) PM kompleksen, predlagam konceptualni okvir, s katerim predstavimo elemente PM na ravni OV. Prvi konceptualni okvir prikažem na študiji primera Pošte Slovenije. Za prihodnje raziskovalce in strokovnjake iz prakse razlagam, kaj je 'ena oskrbovalna veriga' in ali ima lahko ena OV več PM. Managerji se morajo odločiti, koliko PM lahko imajo istočasno v eni OV in katere organizacije bodo upoštevali pri razvoju PM. Prav tako se morajo managerji osredotočiti na uravnoteženje med kratkoročnimi izboljšavami elementov PM in izgradnjo dinamičnih sposobnosti za soočanje s prihodnjimi, v danem trenutku neznanimi, spremembami.

Nenazadnje disertacija predstavi vlogo PM v dinamičnih omrežjih OV, kjer se vloge organizacij (deležnikov) prepletajo in v katerih je sotekmovalnost latentno prisotna. Ob prepletanju vlog organizacij in prisotnosti sočasnega sodelovanja in konkuriranja med partnerji-tekmeci postajajo sodelovanja v obliki konvencionalnih bilateralnih oblik neustrezna. Partnerji-tekmeci so v dinamičnih omrežjih OV vse pogosteje vpleteni v scenarije sotekmovalnosti. Naš konceptualni okvir predpostavlja sočasno konkuriranje in sodelovanje med partnerji-tekmeci in na podlagi dveh dimenzij razvije štiri možne scenarije sotekmovalnosti. Konceptualni okvir scenarijev sotekmovalnosti razdeli scenarije na *ad hoc* in načrtne (stopnja sotekmovalnosti) ter glede na stopnjo komplementarnosti med partnerji-tekmeci. Okvir je pomemben za razumevanje večplastnosti sotekmovalnosti. Teorijo iger uporabimo za identificiranje in razlago značilnosti posameznih scenarijev sotekmovalnosti. Prav tako teorija iger nudi perspektivo avtorju disertacije in drugim raziskovalcem za nadaljnje načrtovanje interakcij (možnih iger) v scenarijih sotekmovalnosti. Poleg empiričnih potrditev našega konceptualnega okvirja dinamičnih omrežij OV in scenarijev sotekmovalnosti se moramo s prihodnjimi študijami osredotočati na implikacije, ki jih ima sotekmovalnost za PM vseh organizacij v OV. Zaključujemo z razpravo o posledicah scenarijev sotekmovalnosti za PM in obravnavamo PM kot strukture, ki omogočajo in uresničujejo scenarije sotekmovalnosti.