

JOURNAL OF SECURITY AND SUSTAINABILITY ISSUES

ISSN 2029-7017 print/ISSN 2029-7025 online

2016 December Volume 6 Number 2

[http://dx.doi.org/10.9770/jssi.2016.6.2\(2\)](http://dx.doi.org/10.9770/jssi.2016.6.2(2))

SUSTAINABILITY IN INFORMATION AND COMMUNICATION TECHNOLOGIES' INDUSTRY: INNOVATIVE AMBIDEXTERITY AND DYNAMIC CAPABILITIES PERSPECTIVES

Andrejs Čirjevskis^{1,2}

¹, University RISEBA of Business, Arts and Technology, Riga, Latvia

² SIA Sinerģija, Management Consultants, Riga, Latvia

E-mails:^{1,2}andrejs.cirjevskis@riseba.lv

Received 15 February 2016; accepted 20 June 2016

Abstract. This paper is based on case studies research focusing on innovative ambidexterity as well as on the concept of dynamic capabilities. The aim of the paper is to identify a similarities and connect these two approaches. The analysis is centered on the exploration and exploitation activities which then are compiled into dynamic capabilities leading to innovations. The findings in the paper demonstrate that the somewhat elusive concept of dynamic capabilities can be untangled through the use of exploration and exploitation activities. The dynamic capabilities and the associated innovative ambidexterity create flows of innovative products and services that in turn lead toward the creation of sustained competitive advantages. The paper demonstrates that the existing research on innovative ambidexterity activities can be a key contributor to increasing our understanding of dynamic capabilities. This finding is valuable for both researchers and practitioners.

Keywords: Ambidexterity, dynamic capabilities, innovation, sustainability, competitive advantages, information and communication technologies.

Reference to this paper should be made as follows: Čirjevskis A. 2016. Sustainability in information and communication technologies' industry: innovative ambidexterity and dynamic capabilities perspectives, *Journal of Security and Sustainability Issues* 6(2): 211–226. [http://dx.doi.org/10.9770/jssi.2016.6.2\(2\)](http://dx.doi.org/10.9770/jssi.2016.6.2(2))

JEL Classifications: M15, D8, L19, L 25.

1.0 Introduction

Innovation is known to be one of the keys to an enterprise success. Knowledge creation and dissemination, as well as innovation, are keys to promotion of competitiveness (Aleksejeva, 2016; Tvaronavičienė et al. 2016; Allabouche et al. 2016; Pauceanu 2016; Rezk et al. 2016; Prause 2016). It is especially relevant to an Information and Communication Technologies industry, where technologies are developing at the astonishing speed. Joseph Schumpeter (1942) was the first who marked an innovation as the main source of a competitive advantage in his seminal “Capitalism, Socialism, Democracy”. He sought to prove that innovation-originated market power could provide better results than the invisible hand and price competition (Pol & Carroll, 2006).

Today, innovation is increasingly complex, fast, interactive, and requires the access to external and internal knowledge in order to develop new or significantly improved good and service (Prause, 2015). However, many innovative ideas failed to become real products due to many reasons (Bruce & Birchall, 2009; Kanter et al., 1997). As noted by Pavitt (2002), “one challenge in evolutionary economics is to give greater operational content to the notion of ‘innovating routines’ inside the firm” (p. 117). A greater understanding of what specific

function routines must perform in order to foster innovation and what routing would resist the implementation of innovations in practice is necessary. In response to such challenges, two perspectives have emerged in the strategic management literature in the last two decades: the organizational ambidexterity and dynamic capabilities perspectives. However, with few exceptions, these viewpoints have been kept separate. “With dynamic capabilities perspective, sustained competitive advantage comes from the firm’s ability to leverage and reconfigure its existing competences and assets in ways that are valuable to the customer but difficult for competitor to imitate” (O’Reilly & Tushman, 2011, p.6). With organizational ambidexterity perspective, sustained competitive advantage comes from the ability of an organization to both explore and exploit, to compete in new technologies and markets where flexibility, autonomy, and experimentation are needed and simultaneously to compete in mature technologies and markets where efficiency, control, and incremental improvement are needed also (O’Reilly & Tushman, 2013). However, O’Reilly and Tushman (2011) argue that the ability of a firm to be ambidextrous is at the core of dynamic capabilities. “Although theoretically compelling, research on dynamic capabilities and ambidexterity is still at early stage” (p.7).

Thus, in this paper, we explore the interrelations between these two perspectives and suggest that organizational ambidexterity, when viewed through a process lens, are in fact dynamic capabilities. To develop a more comprehensive sense for the managerial opportunities presented by dynamic capabilities and organizational ambidexterity perspective we empirically explored Samsung and Google Inc. case studies. Our contribution is to elaborate on conceptual model of process of sustaining competitive advantage of ambidextrous organization by means of dynamic capabilities. The paper construct is as follows. Firstly, we considered concepts definitions of dynamic capabilities and ambidextrous organization and their roles in contemporary entrepreneurship. Then we described research design and methodology, arguing that individual corporate histories and illuminative case studies yield powerful insights in dynamic capabilities research (Teece, 2012). Then we analyzed case studies data and interpreted research results and answered two research questions. Finally, we discussed research results on innovative ambidexterity process of Samsung and latest transformation Google Inc. in holding company Alphabet, and, then, presented conceptual research model for present and future works.

2. Concepts and definitions

2.1. *Dynamic capabilities*

The dynamic capabilities view (DCV) has arguably become the theoretical centerpiece of efforts to understand how firms can successfully compete in changing environment. Helfat and Peteraf (2009) define dynamic capabilities as “the capacity of an organization to purposefully create, extend, or modify its resource base” and as such to reach a higher economic value than their competitors. In addition, dynamic capabilities are regarded as a transformer for converting resources into improved performance (Lee and Wu, 2014). Dynamic capabilities can usefully be thought of as belonging to three clusters of activities and adjustments: identification and assessment of an opportunity (*sensing*); mobilization of resources to address an opportunity and to capture value from doing so (*seizing*); and continued renewal of core competences (*transforming*) (Teece 2007). One key implication of the dynamic capabilities concept is that firms are not only competing on their ability to exploit their existing resources and organizational capabilities, firms are also competing on their ability to explore, renew and develop their organizational capabilities. Thus, dynamic capabilities allow a firm to sense opportunities and then to seize them by successfully allocation resources, by adjusting existing competencies or developing new ones. This is especially true for ITC companies competing in global changing markets. During the last two decades, research in dynamic capabilities has promised to unlock understanding of how competitive advantage arises in dynamic markets. It’s imperative Teece’s (2007) paper here as this is the seminal piece on micro foundations of sustained competitive advantages. There has also been a Special Issue of SMJ on the ‘psychology of strategic management’. Excellent contribution was added by Hodgkinson & Healey’s (2011) paper that rethinks Teece’s (2007) piece and focuses in more depth on the micro foundations of dynamic capabilities.

However, to date, empirical work has by and large focused on *what* dynamic capabilities are. There has been little work demonstrating *how* they actually operate and contribute to micro foundations of competitive ad-

vantage other than at the conceptual level (Amstrong, Macintosh & Maclean 2012). “Dynamic capabilities theory cannot directly explain the triggers of dynamic capabilities. There is no sufficient explanation to the starting point of the introduction of new ideas, know-ledge, or technology, as a dynamic activity performed by a firm” (Yun et al, 2016, p.3). Stefano et. al. argue „Despite the exceptional rise in interest in and influence of dynamic capabilities, criticisms of the dynamic capabilities perspective continue to mount. Common concerns are related to lack of consensus on basic theoretical elements and limited empirical progress” (Stefano et al., 2014). What’ more, Arend and Bromiley (2009) state, a dynamic capabilities perspective offers an incomplete theory, oversimplifying a complex phenomenon and not clearly defining its domain of relevance. “The poor understanding of dynamic capabilities and the lack of a measurable model makes it difficult to study how dynamic capabilities can be used in actionable managerial decision making” (Pavlou and Sawy, p.273). Specific capabilities that have been identified and studied involve ambidextrous organizational structures (O’Reilly and Tushman, 2013). Therefore, to help managers make decisions in turbulent environments with the aid of dynamic capabilities, we are trying to demonstrate how dynamic capabilities actually operate and contribute to competitive advantage with a help of innovative ambidexterity perspective.

2.2 *Innovative ambidexterity*

“Ambidexterity is of central importance to the competitive advantage of the firm, yet to date there is limited understanding of how it is managed” (Turner et al., p. 371). As organizations are tending to be successful, the variety of managerial and organizational literature refers them to strategic management and introducing the term of ambidextrous organization as the possible way for successful solution (Duncan 1976; Gibson & Birkinshaw 2007; Tushman & O’Reilly 1996). *Strategic ambidexterity*: a company’s ability of exploring new practices, products and business models while exploiting existing ones at the same time - a capability which is both remarkably valuable for customer and equally hard to imitate in practice by competitors (Reeve, 2015). Turner et al. wrote “how we manage the simultaneity of renewal (innovation) and refinement (efficiency)? It is this simultaneity that we understand as ambidexterity” (Turner et al., 2012, p.317). “Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution” (March, 1991, p.71). Short term benefit may be obtained by exploitation, yet this may sacrifice long term performance if organization fails to adapt to the requirements of the market (Turner et al, 2013). “The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, to devote enough energy to exploration to ensure its future” (Levinthal and March 1993, p.105). “Maintaining a balance between exploitation and exploration is complicated not only by the difficulty of determining what the appropriate balance should be, but also by several ways in which learning itself contributes to imbalances” (Levinthal and March, 1993, p.105). In attempt to explore how organizations build capacities to master conflicting strategic orientations, researches have examined various sources of ambidexterity (Haveli et al, 2015). Structural ambidexterity is concentrated on decentralized decision making (Tushman & O’Reilly 1996). Scholars have pointed to the importance of creating separate structure for those activities involving exploration and those involving exploitation (i.e., structural ambidexterity) (Haveli et al., 2015). Another form of contextual ambidexterity was introduced to extend structural ambidexterity (Gibson & Birkinshaw, 2007). Researchers have also noted that creating a context that encourages members to make their own judgment (Haveli et al, 2015) how to best to divide their time between the conflicting demands of exploration and exploitation (i.e. contextual ambidexterity) is crucial for building an ambidextrous organization (Haveli et al, 2015). This idea of new form of contextual ambidexterity was to balance exploration and exploitation at a firm unit-level. For that purpose, it was assumed to presume organizational capabilities which facilitate superior performance and thus sustain competitive advantage (Gibson & Birkinshaw, 2007). Jansen (2005) defined ambidexterity as the ability to simultaneously pursue both incremental and discontinuous innovation and change.

“Recent innovation management and strategy literatures emphasize the relevance of combining exploratory and exploitative innovations for sustainable superior performance” (Kortmann, 2015, p.666). These capabilities is defined as innovative ambidexterity and captures the simultaneous pursuit of discontinuous innovations, which

aim at entering new product-market domains, as well as incremental innovations, which aim at improving existing product-market positions (He and Wong, 2004, p.483). “Because the development of tangible product innovations refers to a value creating process, innovative ambidexterity concerns an organizations actual exploration and exploitation performance” (Kortmann, 2015, p.666). *Exploratory innovations* require new knowledge or departure from existing knowledge and are designed for emerging customers or markets (Benner & Tushman, 2003). *Exploratory innovations* are radical innovations and are designed to meet the needs of emerging customers and markets (Benner & Tushman 2003; Danneels 2002). The main risk here is “a failure trap” (Güttel et al.,2011) or the innovator’s ‘dilemma’ (Christensen, 2011) that comes from the idea that organizations will reject innovations based on the fact that customers cannot currently use them, thus allowing these ideas with great potential to go to waste. In contrast, *exploitative innovations* build upon existing knowledge and meet the needs of existing customers. *Exploitative innovations* are incremental innovations and are designed to meet the needs of existing customers or markets (Benner & Tushman 2003; Danneels 2002).

In the Innovator’s Solution book, Christensen and Raynor (2013) address the next strategic risk as “a success trap” (Güttel et al.,2011): how to generate growth and sustain it over long periods and that is quite similar to idea of exploitative innovation. Christensen and Raynor (2013) identify what actions and practices are essential for companies to embrace new disruptive innovations and avoid being disrupted themselves. There are some valuable advises were given on how sustain advantages of innovation in third book of Christensen. Based on proven theories outlined in Christensen’s landmark books *The Innovator’s Dilemma* and *The Innovator’s Solution*, *Seeing What’s Next* offers a practical, three-part model that helps decision-makers spot the signals of industry change, determine the outcome of competitive battles, and assess whether a firm’s actions will ensure or threaten future success and sustainability. In current paper, we address the innovator’s dilemma to explorative innovations, the innovator’s solution to exploitative innovations and recommendation to seeing what next to results that innovators achieved as shown in table 1 and table 3. There is few empirical research and examples how ambidextrous organizations are able to simultaneously pursue exploratory and exploitative innovations (Gibson & Birkinsahw 2007; Tushman & O’Reilly, 1996; Beenr & Tushman, 2003). The nature of ambidexterity is also implicitly recognized in the dynamic capabilities literature which urges the need to blend the different strategic logic - exploitation and exploration- within one organization (Acona et al. 2001; Teece 2011). Although a number of theoretical frames have been used to explain organizational ambidexterity, from structural and contextual perspectives, the appropriate lens through which to view ambidexterity remains that of dynamic capabilities (O’Reilly & Tushman, 2013).

This paper seeks to advance previous research by linking dynamic capabilities perspective to organizational ambidexterity, and highlights the importance of organizational dynamism as a set of sensing, seizing and transforming capabilities on the effectiveness of ICT groups in promoting balance between exploratory and exploitative activity. In this paper, we present an analysis of case studies of Samsung and Google Inc. organizations that successfully adapted to major changes in its complex setting of global ITC competitive environment. In analyzing those case, we shed light on the nature of dynamic capabilities and their link to organizational ambidexterity and performance outcomes as well as demonstrate that dynamic capabilities is a necessary condition for successfully adapting to environment changes and sustain competitive advantages. What’s more, these capabilities underpin the organization ambidexterity in sequential fashion or in the face of rapid technological and economic changes in simultaneous fashion. (O’ Reilly & Tushman, 2013).

3. Description of investigation

This proposed research seeks to explore critical aspects pertaining micro foundations of DC and innovative ambidexterity. In this research, two stages of research work will be involved. The first stage is deductive case studies research. *Deductive* case studies use existing theory to investigate a focused *phenomenon*. In the course of the case study the existing theory of DC is tested and may be either be confirmed or falsified (Barratt et al. 2011). The purpose of deductive case studies is to explore distinctive roles of ambidexterity and dynamic capabilities in creating and sustain competitive advantages. Even though a strategy-as-practice or process-based approaches in empirical qualitative research usually have an element of ethnographic or discursive analysis using

primary data (sometimes in addition to secondary data, sometimes alone), “the study of managerial dynamic capabilities is challenging because they are often tied to complex corporate histories. Although managerial dynamic capabilities can to some extent be traced by using large datasets (e.g. Adner and Helfat, 2003), they can best be analyzed through in-depth qualitative research (e.g. Danneels, 2011). This empirical literature is still at an early stage and opportunities abound to dig deeper into the linkages between individual or small-group managerial actions, dynamic capabilities, and long run firm performance. The research paradigm of dynamic capabilities is still relatively new. Accordingly, illuminating case studies are likely to yield powerful insights” (Teece, 2012, p.1400).

We relied on an extensive archival search that included financial statements, annual reports, internal documents, industry publications, and CEO statements to get at a micro-level understanding, that really boosts our data and better understanding of micro foundations of ambidextrous organizations and dynamic capabilities. We didn’t interview executives of thee company due to availability of actual interviews as a secondary data sources as TMT interviews on youtube.com.

Using these data, as well as theories and literature sources, the main strategic thinking pattern and the micro foundations of ambidexterity, dynamic capabilities and sustained competitive advantages of successful world ITC giants to innovate the industry are identified. As objects of research we selected companies that are especially active and successful in Information and Communication Technology Industry: Samsung Group and Google. The aim of the deductive case studies of Samsung and Google research is explicating the relationship between ambidexterity, dynamic capability and sustained competitive advantage. The second stage involves a demonstration of development process of new conceptual model of research by using integrating deductive case studies’ findings and literature research outcomes, thus *a micro foundation of ambidexterity, dynamic capabilities and sustained competitive advantages* will be constructed and discussed. The ICT industry is selected for the reason of global nature and major changes in its complex setting of competitive environment.

This empirical research helps to fill a gap in the literature which is primarily 75% theoretical and only 25% empirical – focusing on proving existence of dynamic capability (Barreto, 2010). Yin differentiates three different purposes for which case studies can be employed and in our research it is a *descriptive* case studies which are intended to purely *describe a phenomenon* of DC to answer “*how*” questions (2009).

Having analyzed case studies, we defined first research question as follows: *How are ambidextrous strategic thinking developed by successful ICT companies in pursuing product diversification strategy?* Second research question has been defined as follows: *how dynamic capabilities and their micro foundations actually operate in ICT companies and contribute to its competitive advantage?* The research questions are *phenomenon-driven* and according to Eisenhardt and Graebner it is appropriate *using even a single case* if a phenomenon-driven research question is subject to investigation (2007). Ultimately, each case can be viewed as a *discrete experiment* that could be repeated (Yin, 2009). Regarding research investigating one single case, Siggelkow notes that it “can be a very powerful example” (2007). It is a major advantage of case studies research that the few chosen samples (two case studies in our research) can be investigated in depth which would not be possible with a large cases sample (Yin, 2009). “Empirical studies are appearing that provide support for the framework. These often take an in-depth case study approach” (Teece, 2012, p.1400).

We will answer on the research questions by analyzing deductive (descriptive) case studies research that help an outsider understand a roots of sustained competitive advantages of companies working in changing complex setting. Regarding presentation of evidence, due to the rich amount of data that is piled up during a case studies research, Eisenhardt and Graebner state that there is no strict norm as in deductive (large-scale) studies when presenting results (2007). To illustrate dynamic capabilities as concrete examples of them, we have adopted a conceptual frame developed by Teece (2011) demonstrating how each of Apple’s major product introductions reflected aspects of the major categories of dynamic capabilities. The conceptual framework helps us to unravel data that we have collected in search of the micro foundations of ambidexterity and dynamic capabilities.

4. Data analysis and interpretation

4.1. Overview

The environmental dynamism is related to the rapid change and instability of environment (Simerly & Li, 2000). According to the case study research data, ICT is an activity which is subject to the influence of many internal and external factors in areas such as economy, open innovation, financing, law, safety, security and even geopolitics landscape of ICT. They generate dynamics that will continue to shape and reshape the landscape of the ICT industry. Developing an understanding of the dynamics affecting the ICT industry is crucial in enabling ICT companies to make the necessary strategic moves by sensing the challenges and seizing the opportunities presented by the changes. Moreover, the transformation and re-orchestration of idiosyncratic resources and core competences are important micro foundations of dynamic capability of ICT companies. ICT companies are competing in a global marketplace, with relatively low entrance barriers, requiring huge investments in intangible assets and extremely capacity of specific knowledge and experience. In such complex external settings there is a strong call for ambidexterity and dynamic capabilities of the ICT industry players. According to the case study research data, ITC organizations are confronted with the tension between exploiting what they know and exploring what they do not know since both exploitation and exploration are essential capabilities to their long and short term survival. The success story of the case company is closely linked to entrepreneurial innovation (Olaniyi and Reidolf, 2015). To demonstrate, at a fine-grained, strategic decision making on innovations, we examine illustrative empirical examples, which we refer to Samsung Group.

4.2. Case example 1: Samsung Group – the rise of a world leader.

Founded in 1938, the Samsung Group is the largest corporate entity in South Korea, with 227.3 billion in revenue in 2010 and 315,000 employees worldwide (Khanna et al., 2011). Looking at Japanese companies' success in the world market, Samsung management was strongly convinced that a resource-poor country like Korea should focused on brain sensitive, high-tech sectors and catch up Japan (Lee, 2011). However, given the lack of sufficient knowledge and skills in Korea, Samsung decided to go to Silicon Valley to develop a more detailed business plan. There were establishing an overseas R&D center in Silicon Valley to develop new products and run pilot production. Despite the high risk and intense competition in the DRAM (Dynamic random access memory) market, management thought that Samsung had a better chance of success in this market where it could leverage its traditional strength in low-cost, mass production skills and catch-up with the Japanese (Lee, 2011).

4.2.1 Example of innovative ambidexterity of Samsung Group.

Research and development for Samsung R&D is crucial and in the center for all activities, it plays a critical role in their ability to innovate products. Samsung is striving for continuous innovation and design development. Samsung products include apparel, chemicals, consumer electronics (including home theatre systems, laptops, cell phones, cameras, LED lighting, printers, refrigerators, dishwashers), electronic components, medical equipment, precision instruments, semiconductors, ships, telecommunications equipment. Table 1 demonstrates how various micro foundations of ambidexterity (exploratory and exploitative innovation) actually operate in Samsung group that contribute to their competitive advantage.

Table 1. Innovative ambidexterity of Samsung Group

Products	Exploratory innovations Knowledge creation (innovation through research process)	Exploitative innovations Knowledge application (broadening the existing knowledge and skills; improve and expand existing products)	Result: Create competitive advantages
Smartphone (Galaxy)	Samsung realized, that existing Smartphone's were too expensive and not always provided phone functionality (specific features) for affordable price or did not provide them at all Samsung offered portable device, which combined features of tablets and Smartphone and at the same time could compete by the low retail price with iPhone. The screen of the Galaxy is even larger than in iPhone, it has intuitive interface and provided new Smartphone features. For example, it is possible to switch pages by eye, use your Smartphone to switch the TV channels etc.	Continuously following to the innovations the competitors have made and adapting them as fast as possible. Investing large amount of money in technology development and personals' education. Launching huge promotion campaign.	Samsung became world's Nr.1 Smartphone producer and the main rival of the iPhone Smartphone. People appraised Samsung Smartphone's functionality, design and the price level of the production.
LCD displays, TV	Samsung realized that there is opportunity to enter new market – 3D and Smart TV segment. Samsung became one of the first manufacturers that offered Smart TV and offered high quality 3D TV. It could be used not only for watching TV, but also games and other entertainments	Continuously improving quality and production costs. New TVs are constantly being developed, new functions are being added. Now Samsung is one of the few mass market manufacturers to offer a 105-inch curved Ultra HD television	Is one of the leading companies in the TV production segment
Performance implication	Distant in time	Short term benefit	Sustainability
Nature of problems	Innovator's dilemma	Innovator's solution	Seeing what's next

Source: developed by author.

Innovative ambidexterity is a foundation of Samsung low prices for good quality products and services that are very attractive for customers and increase the competitiveness of Samsung. Exploratory and exploitative innovations of Samsung deliver innovative, cutting edge technology products, improved product performance, convenience and ease to use, great design, as well as well-known brand creates value for money for the customer.

4.2.2. Example of dynamic capabilities of Samsung Group.

Samsung is highly diversified company therefore company has cost advantage due to a large scope of operations (economies of scope). Samsung products include apparel, chemicals, consumer electronics (including home theatre systems, laptops, cell phones, cameras, LED lighting, printers, refrigerators, dishwashers), electronic components, medical equipment, precision instruments, semiconductors, ships, telecommunications equipment. Samsung C&T Engineering & Construction Group has proven its expertise for construction, engineering, and procurement. Samsung, as a vertically integrated specialized supplier, is able to achieve economies of scale as well, which allows it to hold on to its position as a consumer electronics giant by leveraging on its ability to produce component parts and assemble its products on a large scale and cost efficient process. We have summarized dynamic capabilities of Samsung Group for their consumer electronic products.

Table 2. Dynamic capabilities of Samsung Group.

Strategic decision making on product diversification	Sensing What radical technological changes it needs to create value for customer	Seizing How to satisfy customers and capture value for the company?	Transforming How reconfigure capabilities most obviously need to address new opportunities	Result: Create competitive advantage
Tabs	Samsung noticed customer need for big screens, and need two write notes by the hand (for Asian market it is important to be able to write symbols by the hand)	Samsung Galaxy Note Phablet is a classic example of value innovation where it eliminates the need for two devices Smartphone and tablets raises the product utility through big screen that enhances the browsing and multimedia experience and Stylus that facilitates sketching, note-taking and annotation.	In its latest Galaxy Note 3 Samsung added a smart watch Galaxy Gear that adds even more functionality. Stylus reduces the need for carrying the notebooks or papers for note taking during meetings and conferences	Samsung tabs are very popular around the customer
Samsung other appliances	Samsung realized they could provide the same quality products with lower costs. Samsung started to manufacture more qualitative products than many other manufacturers, their devices usually have better design and wider functional range	Samsung offered devices, which could compete by the price and quality. Samsung has introduced several models of digital cameras and camcorders, several models of home appliances (refrigerators, washing machines, dishwashers, ovens, microwaves, cookers, cooker hoods and vacuum cleaners), as well as several models of audio technology	All the devices are constantly updated, upgraded and improved, new functions and potentials are being added. In 2010, the company launched the NX10, the next-generation interchangeable lens camera. In 2010, the company started marketing the 320Gb-per-disk HDD, the largest in the industry. In the MP3 player segment, Samsung has launched the world's-smallest DivX MP3 player R1.	Leading company in producing this kind of products. In 2009, the company took the third place in the compact camera segment. Since then, the company has focused more on higher-priced items. In the area of storage media, in 2009 Samsung achieved a ten percent world market share, driven by the introduction of a new hard disk drive capable of storing 250Gb per 2.5-inch disk.

Source: developed by author.

Therefore, dynamic capabilities encompass the Samsung Group activities and processes, by which the need for innovations is recognized, and the necessary resources and competences are identified and orchestrated in the pursuit of sustained competitive advantages. Having compared table 1 and table 2, we can observe that while sensing and seizing aim at exploration of what radical technological changes it needs to create value for customers and how to satisfy customers and capture value for the company, the third class of dynamic capabilities – transforming – addresses to exploitation: how to reconfigure core competences most need to address new opportunities. Therefore, we have identified many similarities in ambidexterity and dynamic capabilities perspectives in attempt to explain the process of competitive advantages creation.

4.4 Case example 2. Google Inc. – managing innovations.

According to the Google case study research (Edelman & Eisemann 2010), there are basis to believe that Google is able to perform two things at the same time – generate and apply the knowledge through knowledge management system. Google is engaged in both exploitation (refinement, choice, production, efficiency, selection, implementation and execution) and exploration (search, variation, risk taking, experimentation, play, flexibility, discovery, innovation) and successfully implies ambidextrous strategic thinking in the organization to ensure the company's competitive advantages.

4.4.1. Example of innovative ambidexterity of Google Inc.

Innovation potential of an enterprise of any size is determined by the ability to integrate knowledge into business, literally, to commercialize it (Ciemleja and Lace, 2016). The knowledge processes within Google organization

can be illustrated as follows. First stage is knowledge generation stage (exploration of new opportunities). Algorithmic search became the successful exploratory innovation and it has been licensed by Google. This action helped Google to enter the market, to surpass all rivals and ensure Google’s revenues in 1999. In the end of the same year, reacting to the pioneered by Overture monetize search, the company had also introduced its first paid listings, but with different approach on a cost-per-impression basis. Simultaneously, Google developed a range of new services in advertising and introduced Froogle, thus generating and exploiting the knowledge simultaneously. The same situation with Google maps, which has been generated and launched in year 2005. In addition to that the ambidextrous strategic thinking of Google took the company into other directions, namely: hosting of video and books, communications applications such as Gmail and Gchat messaging as well as voice communications and some others, all these actions helped Google to diversify and grow by generating and implementing knowledge simultaneously and constantly. Second stage is knowledge application stage (exploitation of existing capabilities). Due to the reasons that the search systems often failed to deliver useful results, Google used double loop model of learning and company’s engineers constantly fine-tuned search algorithms. Thus, the company proved to be in constant learning process and exploitation of its existing capabilities. Simultaneously, to the advertising scope actions mentioned before in the knowledge generation stage, Google expanded the efforts on attracting more advertisers by offering them free software to optimize campaigns. Furthermore, Google improved on policy of paid listings by considering listings relevance and these improvements made the product more sufficient and more competitive. All these *simultaneous* actions on knowledge generation and its application, as well as constant learning process describes the ambidextrous features of Google strategy aiming to achieve a balance between exploration and exploitation activities. Taking into the consideration the unconventional management practices of Google, it would be possible to underline that Google is inclined to *contextual* ambidexterity features (Edelman & Eisemann 2010). *How* did they do it? Table 3 summarizes the differences between Exploratory and Exploitative intangible assets along selected dimensions

Table 3. Innovative ambidexterity of Google Inc.

	Exploratory innovations Knowledge creation (innovation through research process)	Exploitative innovations Knowledge application (broadening the existing knowledge and skills; improve and expand existing products)	Result: Create competitive advantages
Search algorithms technology	For Google radical innovation was new algorithm for search engines. It allowed finding right information more precisely and faster than other search engines could. PageRank algorithm as the new search technology (in 1999). As a result – license of new technology, market entrance and revenues in 1999	Algorithm was further improved and developed. In process of market emergence of the search engines Google found the solution how to use search engine more efficiently in providing paid listings. Fee was set on cost-per click bases (weighted bids by ratio by ratio of an ad’s actual click-through rate to its expected CTR. This helped to choose the most prominent position to the most relevant ads. It was innovative approach. Google started to provide other advertising and search services too.	Dominating global search engine
Advertising	Introducing paid listings sold on cost-per-impression basis in 1999. In 2002 using Overture’s cost-per-click model. DoubleClick with placing display (“banner”) advertisements Radical innovations Google AdSense, Froogle and Google Analytics are designed to meet the needs of emerging customers and markets	Expanding beyond search advertising by launching “contextual” paid listings – AdSense in 2003. Developing new service – Froogle Free service – Google Analytics to identify which keywords yield the most sales Location-based paid listings at Google Maps in 2005. Acquisition with DoubleClick – expanding AdSense to show display ads	One of the leading online advertising providers. One of the main revenue generating streams among product portfolio
Google Maps	Competitors Internet maps before 2005. Radical innovations Google Maps are designed to meet the needs of emerging customers and markets	In 2005 launching Google Maps – faster scrolling and browsing than competitors.	One of the leading online map browsing sites
Performance implication	Distant in time	Short term benefit	Sustainability
Nature of problems	Innovator’s dilemma	Innovator’s solution	Seeing what’s next

Source: developed by author.

Thus first research question has been answered. Building on empirical case studies data of *contextually* ambidextrous organizations like Google and Samsung, author described Google and Samsung idiosyncratic characteristics and explained how their mode of knowledge transmission between exploratory and exploitative domains, serves to generate a micro foundation of competitive advantage.

How dynamic capabilities actually operate in successful ICT organizations and contribute to its competitive advantage? To answer on the second research question we are already taking into consideration the dynamic capabilities based view on diversification strategy of Samsung Group. For dynamic strategy the capabilities are to be dynamic in order to be able to react on industry changes and market dynamism. Changes in technologies, customer preferences, and demand or supply of products and services make current products and services obsolete and therefore require dynamic capabilities. Next, we have explored dynamic capabilities of Google.

4.4.2. Example of dynamic capabilities of Google Inc.

To minimize the threat of obsolescence, Google needs both incremental and radical innovations to satisfy the existing markets and prepare for the emerging markets, therefore by exploitative and explorative activities, organizations may search information extensively to lessen pressures of uncertainty. Dynamic capabilities enable the Google to react to changing market conditions by developing and renewing its organizational capabilities thereby achieving and sustaining a competitive advantage. Dynamic capabilities are seen as integrated sets of knowledge management activities that changes, renews and exploits the knowledge-based resources of the firm. Google has proved to be a paradigmatic practitioner of ambidextrous strategic thinking and dynamic capabilities as it has created and transformed a series of markets. Table 4 shows how each of its major product introductions reflected aspects of the major categories of dynamic capabilities and how Google, Inc has pursuit product diversification strategy creating a micro foundation of sustained competitive advantages. Then we have compare research results of operationalization in Table 3 and in Table 4. In fact, having explored dynamic capabilities of Google we have identified the same micro foundations as for organizational ambidexterity.

Table 4. Dynamic capabilities of Google Inc.

Strategic decision making on product diversification	Sensing What radical technological changes it needs to create value for customer	Seizing How to satisfy customers and capture value for the company?	Transforming How reconfigure capabilities most obviously need to address new opportunities	Result: Create competitive advantage
Web search	Algorithms for indexing Webpages displaying search results were not effective	Created efficient and meaningful search algorithm for web search	Created API for incorporating search in separate websites and mobile platforms. Expanded search algorithm to consider location and historical search strings when bringing new search results	Dominating global search engine
AdWords	Online advertising model did not bring value to businesses for the investment required	Created online advertising structure that is based on per-click payment, thus dramatically increasing value advertisers get for using the service	Introduced Ad Words Web tools for advertisers to be able to analyze the effectiveness and results of their advertising efforts with Google services	One of the leading online advertising providers. One of the main revenue generating streams among product portfolio
Maps	Scanned static maps were becoming available online, however the service lacked functionality of easy browsing	Created web mapping service that provides web based map browsing, route calculations and many other services	Added public transport route planning, street view and API for porting maps on 3rd party websites or applications allowing them to use mapping and location based features	One of the leading online map browsing sites
Android OS	Smartphone market boomed, with only few market players. Only iOS could support the functionality	Create open-source mobile OS that supports advanced interface and extensive functionality and which Smartphone manufactures could use on their devices	Developed OS for tablet devices	Leading OS on which the currently marketed smart phones operate

Source: developed by author.

Having compared research results on operationalization of innovative ambidexterity in Table 1 and in Table 3 as well as micro foundations of dynamic capabilities in Table 2 and 4 it became spectacularly obvious how similar those activities are leading toward competitive advantages. In other words, having explored dynamic capabilities of Samsung and Google we have identified the same “innovating routines” inside the organizations that can be found in innovative ambidexterity. Table 1 and Table 3 as well as Table 2 and 4 summarized and simplified our research results and provided more details by demonstrating how the various micro foundations of dynamic capabilities and innovative ambidexterity produces a series of innovative products and create sustainability in terms of competitive advantages. It is confirmed the hypothesis formulated by O’Reilly and Tushman (2011) that the ability of a firm to be ambidextrous is at the core of dynamic capabilities. In terms of generalization of our research result, we argue that practicing managers who struggling with the operationalization of dynamic capabilities should instead focus on the contributing ambidextrous strategic thinking in order to utilize the concept of dynamic capabilities.

5. Discussion, conclusion and future work.

Innovation and entrepreneurship are becoming key concepts for economic sustainable development in today’s complex and dynamic business world (Rosha and Lace, 2015). This paper sets out to integrate research on organizational ambidexterity with the dynamic capabilities approach. Thus, paper add to the understanding of dynamic capabilities by demonstrating that dynamic capabilities can be seen as composed of concrete and well-known exploration and exploitation management activities. The findings from two case studies indicate that exploratory innovations as a knowledge creation process (innovation through research process) and exploitative innovations as a knowledge application (broadening the existing knowledge and skills; improve and expand existing products) integration helps build ambidexterity. These findings contribute to a better understanding of the nature of dynamic capabilities of sensing, seizing and transforming that are able to pursue an ambidextrous orientation in successful ICT organizations. The proposed research has not only contributed to the theoretical development of the ambidextrous strategic thinking and dynamic capabilities perspective but also provide strategic thinking pattern for practitioners striving for retaining competitive advantages in dynamic global ICT battles. The research questions are answered empirically by using data from research-intensive firms as Samsung and Google. A case study was conducted by analyzing Samsung and Google a large research-intensive organizations and demonstrated *how* dynamic capabilities shaped *in ambidextrous organizations*. Ambidextrous strategic thinking of Samsung and Google is the key dynamic capability to become something more than a search engine and web storage. Developing these dynamic capabilities is a central task of contemporary innovation management in general and products’ diversification in particular. Thus, Samsung and Google contextual ambidexterity is reflected in a complex set of decisions that enable them to sense and seize new opportunities through the reallocation of organizational assets and re-orchestration of their core competences. As such, dynamic capabilities, manifested in the decisions of senior managers, help an organization reallocate and reconfigure organizational skills and assets to permit the firm to both exploit existing competencies and to develop new ones (Tushman O’Reilly & Tushman, 2013; O’Reilly & Tushman, 2008; Taylor & Helfat, 2009).

Developing these dynamic capabilities is a critical managerial tasks. First, they must be able to accurately *sense* changes in their competitive environment, including potential shift in *technology*, competition, customers, and regulation. Second, they must be able to act on these opportunities and threats, to be able to *seize* them by *reconfiguring* both tangible and intangible assets to meet new challenges and create competitive advantages (O’Reilly & Tushman, 2011). Specific relationships among these constructs are depicted and presented our research conceptual framework in Figure 1 which underpins those arguments. The framework shows that dynamic capabilities lead organizations into dynamics of accelerating exploitation or exploration and make contributions to competitive position

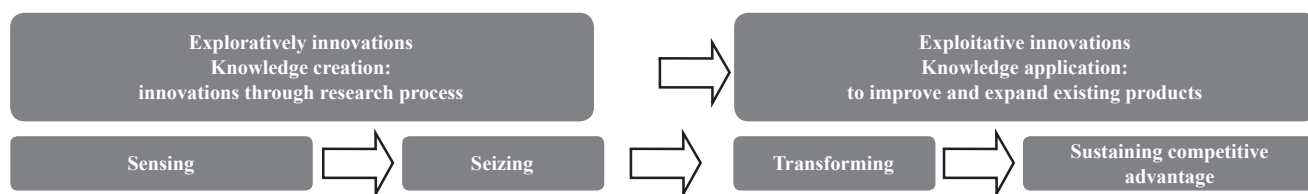


Fig. 1. Conceptual model of research: innovative ambidexterity and dynamic capabilities.

Source: Dynamic capabilities adapted from Teece (2007: 1342, Figure 4)

Dynamic capability of sensing is an inherently entrepreneurial set of capabilities that involves exploring technological opportunities, probing markets, and listening to customers. Having explored an innovative ambidexterity and dynamic capabilities of Samsung we discovered that mutual development of key micro foundations as a key element that elevated Samsung into a top-global corporation. Therefore, ambidexterity and dynamic capabilities encompass the Samsung Group activities and processes, by which the needs for innovating products are recognized, and the necessary resources and competences are identified and orchestrated in the pursuit of new customer value proposition creation. Having understood how value created we have unpacked the nuances of mutual interdependencies of ambidexterity and dynamic capabilities of Samsung Group.

When it comes to second case study on Google Inc., the most significant news 2015 year has been announcement that the company that yesterday was known as Google is now a collection of separate companies, owned by a new holding company called Alphabet. The restructuring was also clearly a response to Google’s stagnant share price and investor unease (Zenger, 2015) The “Google” brand is the largest of those companies, and it includes search, advertising, maps, apps, YouTube, and Android. The company’s less related endeavors – the biotech research project Calico, the Nest thermostat, the fiber internet service, the “moon shot” X lab, Google Ventures, and Google Capital are all now separate companies housed under Alphabet. Does it mean that Google has moved from contextual ambidexterity to structural ambidexterity?

The new research question is formulated as follows: should Google to move from contextual ambidexterity towards structural ambidexterity and concentrates on decentralized decision making? Ambidexterity is the ability to explore new practices, products and business models and exploit existing ones at the same time. New structure of Alphabet and structural ambidexterity will facilitate to develop new unrelated innovative products without risks at primary activity of Google (search, Ads, Maps, YouTube and Android). Reeves (2015) argue that a new organizational structure like Alphabet provides three benefits from an ambidexterity perspective: first, a new structural ambidexterity makes it to explore of new water and exploit and protect brands; second, the umbrella structure lowers the hurdles to acquiring and growing companies and thus increases a company’s „M&A ambidexterity”, its exploration of new opportunities (agility) and exploitation of new capabilities (flexibility) in M&A process and developing new acquisition based dynamic capabilities; and third, structural ambidexterity allows subsidiaries to explore and exploit the technologically specific capabilities they need and thus to realize an ambidextrous approach to its business, potentially benefitting both its moonshot projects, its nascent businesses and its mature core business.

The authors are going to make a longitudinal study on current topic because it would be meaningful form a managerial and an academic outlook. It would be great to see more empirical work on *how* dynamic capabilities operate in innovative ambidextrous organization and contribute to micro foundations of competitive advantage within those organizations – it is clearly an area that needs further attention in the strategic and innovation management areas. This will allow for a more fine-grained understanding of how ambidexterity is achieved and enables dynamic capabilities for further research to be identified. Regarding managerial implications, practicing managers struggling with the operationalization of dynamic capabilities should instead focus on the contributing innovative ambidexterity thinking in order to operationalize and utilize the concept of dynamic capabilities. Because of the essence of organizational ambidexterity is to be found in dynamic capabilities of organizations, in the ability of the organizations to leverage existing assets and core competences from the mature markets of the company to gain and sustain competitive advantage in new emerging markets.

Acknowledgement

The paper was supported by the National Research Program 5.2. "Economic Transformation, Smart Growth, Governance and Legal Framework for the State and Society for Sustainable Development - a New Approach to the Creation of a Sustainable Learning Community (EKOSOC-LV)".

References

- Adner, R., Helfat, E. (2003). Corporate Effects and Dynamic Managerial Capabilities. *Strategic Management Journal*, Vol. 24, 1011-1025.
- Akona, D.; Goodman, P.; Lawrence, B.; Tushman, M. L. 2001. Time: A New Research Lens. *Academy of Management Review* 26 (4): 64-663.
- Aleksejeva, L. (2016). Country's competitiveness and sustainability: higher education impact, *Journal of Security and Sustainability Issues* 5(3): 355-363
- Allabouche, K.; Diouri, O.; Gaga, A.; El Amrani El Idrissi, N. (2016). Mobile phones' social impacts on sustainable human development: case studies, Morocco and Italy, *Entrepreneurship and Sustainability Issues* 4(1): 64-73. [http://dx.doi.org/10.9770/jesi.2016.4.1\(6\)](http://dx.doi.org/10.9770/jesi.2016.4.1(6))
- Arend, A.R., Bromiley, P. (2009). Assessing the dynamic capabilities view: spare change, everyone? *Strategic Organization*, 7(1): 75-90.
- Armstrong, K.; Macintosh, R.; Maclean, D. (2012). Unblocking the Conceptual Log Jam: Using a Rules Perspective to Make Sense of Dynamic Capabilities. *Strategic Management Society 32 Annual Conference: Abstracts of SMS 32 Annual Conference*, 68.
- Barr, P.; Stimpert, J.L.; Huff, A.S. 1992. Cognitive change, strategic action, and organizational renewal, *Strategic Management Journal*, John Wiley & Sons Ltd 13(S1): 15-36.
- Barratt, M., Choi, T. Y., & Li, M. (2011). Qualitative case studies in operations management: Trends, research outcomes, and future research implications. *Journal of Operations Management* 29(4): 329-342.
- Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future, *Journal of Management*, No 36(1): 256-280.
- Benner, M.J.; Tushman, M.L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review* 28:238-256.
- Bruce, A., & Birchall, D. (2012). *Fast Track to Success Innovation*. Pearson Education Limited, 1-213.
- Capron, L., Anand, J. (2007). Acquisition-based dynamic capability. In: C.E. Helfat, S. Finkelstein, W. Mitchell, M. Peteraf, H. Singh, D. Teece and S. Winter, *Dynamic Capabilities: Understanding Strategic Change in Organizations*, London: Blackwell, pp. 80 – 99.
- Christensen, C. (2011). *The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business*. Harper Business Essential. p.1- 336.
- Christensen, C., Raynor, M., E. (2013). *The Innovator's Solution: Creating and Sustaining Successful Growth*, Harvard Business Review Press. 1 -320
- Christensen, C., Scott, D. A., Roth, E. A. (2004). *Seeing what's next: using the theories of innovation to predict industry change*, Harvard Business School Press, Boston, Massachusetts, USA
- Ciemleja, G.; Lace, N. (2016). Opportunities for sustainable development and challenges in nanotech industry in Latvia, *Journal of Security and Sustainability Issues* 5(3): 423-436.
- Danneels, E. (2002). The Dynamic of the Product Innovation and Firm Competence, *Strategic Management Journal*, John Wiley & Sons Ltd, 23: 1095-1121.
- Duncan, R. (1976). *The Ambidextrous Organization: Designing Dual Structures for Innovation*. The Management of Organization. New York: North Holland, 167-188.
- Edelman, B.; Eisemann T.R. (2010). *Google Inc*. Harvard Business School Publication, 1-10.
- Eisenhardt, K.M.; Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal* 50 (1): 25-32.

Eisenhardt, K.M.; Martin, J.A. (2000). Dynamic capabilities: What are they? *The Strategic Management Journal*, John Wiley & Sons Ltd, 21(10-11): 1105-1121.

Environments. *Organization Science*, 7 (3), Special Issue Part 1 of 2: Hyper competition, 211-220.

Gibson, C.; Birkinshaw, J. (2004). Building Ambidexterity into Organization. *MIT Sloan Review Management*, 47-55.

Girod, S.; Whittington, R. (2012). Dynamic capabilities and reconfigurations: how much is too much? *Strategic Management Society 32 Annual Conference: Abstracts of SMS 32 Annual Conference*, 143.

Güttel, W.H., Garaus, C. Konlechner, S., Lackner, H. and Müller, B. (2011): "Heads in the Clouds ... Feet on the Ground: A Process Perspective in Organizational Ambidexterity". Working Paper 2011. Johannes Kepler University Linz, Austria.

Haveli, M. Y., Carmeli, A., Brueller, N. (2015). Ambidexterity in Human Resource Management. *Human Resource Management*, Wiley Periodical Vol. 54 (1): 223–238.

He, Z-L., Wong, P-K. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis, *Organization Science* 15 (4): 481–494

Helfat, C. E., and Peteraf, M. A. (2009). Understanding dynamic capabilities: Progress along a developmental path. *Strategic Organization* No. 7, 91–102.

Hodgkinson, G. P.; Healey, M.P. (2011). Psychological foundations of dynamic capabilities: Reflexion and reflection in strategic management. *Strategic Management Journal*, John Wiley & Sons Ltd, 32: 1500-1516.

Ilinitch, A.Y.; D'Aveni, R.A.; Lewin, A.Y. (1996). New Organizational Forms and Strategies for Managing in Hypercompetitive

Jansen, J. (2005). Ambidextrous organization: A Multiple-level study of absorptive capacity, exploratory and exploitative innovation.

Kanter, R. M., Kao, J., & Wiersema, F. (1997). Innovation. Breakthrough Thinking at 3M, DuPont, GE, Pfizer, and Rubbermaid. *Harvard Business School*, 1-183.

Khanna, T., Song, J., Lee, K. (2011). The Paradox of Samsung's Rise. *Harvard Business Review*, July – August, pp.1-7.

Kortmann, S. (2014). The Mediating Role of Strategic Orientations on the Relationship between Ambidexterity-Oriented Decisions and Innovative Ambidexterity. *The Journal of Product Innovation Management* Vol. 32(5): 666-684.

Lee S-J. (2011). Dynamic Capabilities at Samsung Electronics: Analysis of its Growth Strategy in Semiconductors Available at: (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1914116), assess 19.09.2016.

Lee, Y., Wu, L. (2014). Exploring the role of dynamic capabilities in firm performance under the resource-based view framework, *Journal of Business Research* 67: 407–413.

Levinthal, D.A., March, J. (1993). The Myopia of Learning. *Strategic Management Journal*, Vol. 14, Special Issue: Organizations, Decision Making and Strategy, pp. 95-112.

March, J. (1991). Exploration and Exploitation in Organizational Learning Author(s): James G. March Source: *Organization Science*, 21, pp. 71-87.

O'Reilly III C., Tushman, M. (2013). Organization Ambidexterity: Past, Present and Future. *The Academy of Management Perspectives* 27 (4): 324–338.

O'Reilly III C., Tushman M. (2011). Organizational Ambidexterity in Action, *California Management Review* 53 (4): 5-22.

O'Reilly, C. & Tushman, M. (2013). Organizational ambidexterity: Past, Present, Future. *The Academy of Management Perspectives* 27(4): 324–33.

Olaniyi E. O; Reidolf, M. (2015). Organisational innovation strategies in the context of smart specialization, *Journal of Security and Sustainability Issues* 5(2): 213–227

Pauceanu, A. M. (2016). Innovation and entrepreneurship in Sultanate of Oman – an empirical study, *Entrepreneurship and Sustainability Issues* 4(1): 83-99. [http://dx.doi.org/10.9770/jesi.2016.4.1\(8\)](http://dx.doi.org/10.9770/jesi.2016.4.1(8))

Pavitt, K. (2002). Innovating routines in the business firm: what corporate tasks should they be accomplishing? *Industrial and Corporate Change* 11(1): 117-133

- Pavlou, A. Sawy O. (2011). Understanding the Elusive Black Box of Dynamic Capabilities. *Decision Science*. February Vol. 42 (1): 239-273.
- PhD thesis, Erasmus Research Institute of Management (ERIM), Erasmus University Rotterdam, 1-184.
- Pol, E., Carroll, P. (2006). *An Introduction to Economics with Emphasis on Innovation*, South Melbourne, Thomson, 1-351.
- Prause, G. (2015). Sustainable business models and structures for Industry 4.0, *Journal of Security and Sustainability Issues* 5(2): 159–169
- Prause, G. (2016). E-Residency: a business platform for Industry 4.0?, *Entrepreneurship and Sustainability Issues* 3(3): 216-227. [http://dx.doi.org/10.9770/jesi.2016.3.3\(1\)](http://dx.doi.org/10.9770/jesi.2016.3.3(1))
- Reeves, M. (2015). Google couldn't survive with one strategy, *Harvard Business Review*, August 18, 1-5.
- Rezk , M. R. A.; Ibrahim , H., H.; Tvaronavičienė, M.; Sakr, M. M. , Piccinetti, L. (2015). Measuring innovations in Egypt: case of industry, *Entrepreneurship and Sustainability Issues* 3(1): 47-55. [http://dx.doi.org/10.9770/jesi.2015.3.1\(4\)](http://dx.doi.org/10.9770/jesi.2015.3.1(4))
- Rosha, A.; Lace, N. (2015). Sustainable development of organizations: coaching for innovation accelerating, *Journal of Security and Sustainability Issues* 5(2): 171–180
- Schumpeter, J. (1942). *Capitalism, Socialism, and Democracy*. Harper & Row, New York, 1-381.
- Siggelkow, N. (2007). Persuasion with case studies, *Academy of Management Journal* 50 (1): 20-24.
- Simerly, R.L. and Li, M. (2000). Environmental Dynamism, Capital Structure and Performance: A Theoretical Integration and an Empirical Test, *Strategic Management Journal* 21(1): 31-49.
- Stefano, G.D., Peteraf, M., Verona, G. (2014). The organizational Drive train: A road to Integration of Dynamic Capabilities Researches, *The Academy of Management Perspectives* 28(4): 307–327.
- Taylor, A. Helfat, C. (2009). Organizational Linkages for Surviving Technological Change. *Organization Science*, 20/4 (July/August),718-739.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and micro foundations of (sustainable) enterprise performance. *Strategic Management Journal*, John Wiley & Sons Ltd 28(13): 1319-1350.
- Teece, D.J. (2011). *Dynamic Capabilities: Guide for Managers*. Ivey Business Journal, Available on the Internet: < <http://iveybusinessjournal.com/publication/dynamic-capabilities-a-guide-for-managers>>.
- Teece, D.J. (2012). Dynamic Capabilities: Routines versus Entrepreneurial Action. *Journal of Management Studies* No. 49(8) December pp.1396 – 1401.
- Tellis, G., & Golder, P. (2002). *Will and Vision*. New York: McGraw Hill.
- Turner N., Swart J., Maylor H. (2013). Mechanisms for managing ambidexterity: A review and research agenda. *International Journal of Management Reviews* 15: 317-332.
- Tushman, M.L.; O'Reilly III, C.A. (1996). Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review*, 38(4): 8 - 29.
- Tvaronavičienė, A.; Žemaitaitienė, G.; Bilevičienė, T. (2016). Ecosystem for sustainable entrepreneurship: towards smart public procurement review procedures, *Entrepreneurship and Sustainability Issues* 4(1): 39-52. [http://dx.doi.org/10.9770/jesi.2016.4.1\(4\)](http://dx.doi.org/10.9770/jesi.2016.4.1(4))
- Wahl, M.; Prause, G. (2013). Toward understanding resources, competencies, and capabilities: business model generation approach, *Entrepreneurship and Sustainability Issues* 1(2): 67– 80.
- Yin, R. K. (2009), *Case study research: Design and Methods*, 4th Edition, Applied Social Research Series, Sage Publications, Vol. 5.
- Yun J, Won D & Park K. (2016). Dynamics from open innovation to evolutionary change. *Journal of Open Innovation: Technology Market, and Complexity* 2 (7) doi: 10.1186/s40852-016-0033-0.
- Zenger T. (2015). Why Google became Alphabet? *Harvard Business Review*, *Harvard Business Review*, August 15, 1-4.

Andrejs ČIRJEVSKIS is a professor of University RISEBA of Business, Arts and Technology in Riga (Latvia). He is authors of number of publications in corresponding scientific fields and has many participations with reports on SMS (USA) conference in Levi, Finland (2010), Prague, Czech Republic (2012), Glasgow, Scotland (2013), Atlanta, USA (2013), Chandigarh, India (2013); Sydney Australia (2014); on AIB (USA) conference Istanbul, Turkey (2013) as well as on international scientific conferences within last six years in USA, Singapore, Hong Kong, Malaysia, China, Russia and Japan. Andrejs holds Doctor of Economic Science (Dr.oec.) degree of Riga Technical University (1997). He is now Board Member of SIA Sinergija, Management Consultants (Latvia). He has consulted public and private sector of organizations and he led more than 10 years' executive functions within Latvian and International companies. Andrej's interests lie in strategy as practice; knowledge and innovations and financial economics (real option applications). He is a member of Strategic Management Society (USA), Academy of Management (USA) and Academy of International Business (USA).