DAWID SZUTOWSKI

Innovation and Market Value:

the Case of Tourism Enterprises

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Introduction

In contemporary economics only one thing is constant – constant change [Gunday et al., 2011]. The notion of change relates directly to innovation. The very nature of innovation constitutes combining existing factors in a new, changed way. Since the early stage of the scientific investigation of innovation research has focused mainly on the solutions actually implemented [Schumpeter 1939]. Yet it is only through implementation that the benefits of innovation may materialise. The task is not simple. The process of obtaining the gains is complex as innovation may pass through different stages. Thus for almost half-century the scientific community has considered innovation to be a complex process and not just a simple occurrence [Myers and Marquis 1969]. Innovation pushes progress forward. Thus previous scientific investigation limited the concept of innovation to implementations which generate positive effects [Nelson and Winter 1982]. The above scientific considerations still hold today [Moss Kanter 2006].

Innovation is of crucial importance for tourism companies, which cover accommodation for visitors, food and beverage serving activities, passenger transportation, travel agencies and other reservation activities, cultural activities, sports and recreational activities and retail trade of country-specific tourism characteristic goods [UNWTO 2010]. It provides them with competitive advantage and hence the firms with market power gain more from innovation [Tirole 1995]. A firm's innovation interacts with the environment. It delivers diverse benefits to the consumers in the form of new products and lower prices which in turn impact positively on the company [Shiller 2006]. In the context of tourism the ongoing scientific discussion on innovation seems not to have achieved any definite conclusions yet.

The implementation of innovation in tourism enterprises leads to the achievement of diverse ends. From this point of view the measurement of the effects of innovation is of vital importance. There are a number of financial measures covering substantially different fields. The most comprehensive amongst them is a company's value. It covers all the aspects of a company's activity [Bodie

and Merton 2000]. However due to its importance and complexity numerous approaches to company value were created.

The basic distinction covers book and market value based approaches. The proponents of book value assume that the balance sheet yields a reliable estimate of the value of assets and equities. However numerous shortcomings emerge: the static character, dealing with historical figures, failing to include intangibles and treating all classes of accounts as having equal importance [Nunes 2003]. The market value based approach stands for the price that assets would fetch in the marketplace [Fabrozi and Drake 2009]. It uses actual data (actual prices, not estimations), includes the value of all of a business's operating assets and does not rely on explicit forecasts [Hitchner 2006]. The comprehensiveness and the up-to-date character of the market value-based approach determine its strong support in extant literature [Milburn 2008; Fabrozi and Drake 2009].

Tourism company market value (MV) represents the sum of claims of equity holders and creditors and it is composed of the market value of equity and the market value of debt [Damodaran 2012a]. In the context of measuring the effects of innovation on the market value, the market value of debt may be problematic. Not many companies issue publicly traded bonds and they are traded infrequently in comparison to common stock. For public companies the market value of equity changes frequently and is publicly available. Its change constitutes the best approximation of change in a company's market value resulting from innovation [Berk et al. 2014]. The extant literature delivers support for such an approach [Frykman and Tolleryd 2003; Damodaran 2012a]. For public tourism companies it materialises in the share prices [Appolloni et al. 2011]. In the light of the above discussion the market value of equity may be defined as the product of the number of shares outstanding and their current price. In a situation in which the number of shares remains constant the changes in their price represent the changes in the market value of equity [Grossman and Livingstone 2009; Damodaran 2012a].

For publicly traded tourism companies the market value of equity fluctuates due to new information hitting the market [Fama and French 2007]. The process of communication is essential in shaping stock prices. The vast majority of investors rely on publicly available information which increases the ranking of a company's announcements. Furthermore companies actively manage their communication policies and voluntarily disclose positive news expecting affirmative market reaction. Thus the role of innovation announcements is critical for two reasons: their ability to shape stock prices and their voluntary disclosure and accessibility. In the extant literature the approach consisting of analysing

the impact of publicly available announcements on the market value of equity is strongly advocated and widely used in empirical research [Pauwels et al. 2004; Sharma and Lacey 2004; Sorescu, Shankar and Kushwaha 2007; Hanssens, Rust and Srivastava 2009].

The relationship between innovation and the market value of tourism enterprises may be explained based on the fundamental economic rule that higher returns involve higher risk [Hay and Morris 1979]. Most empirical findings advocate that innovation indeed stimulates growth in market value as investors seem to be optimistic about the news concerning innovation [Sorescu 2012]. However there are a few studies, also in the context of tourism, indicating the opposite [Zach, Krizaj and McTier 2015]. It suggests the existence of a number of unsuccessful innovation announcements for which the market judges the risk to outweigh the benefit which results in the decrease in the market value of equity. The previous research delivered the important conclusion that innovation is an important predictor of changes in market value of equity [Hall 1998]. However substantial research gaps remain.

The relationship between innovation and market value is not straightforward. Numerous variables determine the magnitude of market value fluctuations. In the context of tourism the previous research covered the type of innovation but failed to deliver consistent indications on the magnitude of the effects generated by particular types [Nicolau and Santa-Maria 2013a; Zach, Krizaj and McTier 2015]. In the context of services there were no definitive clues to the predictors of market value. According to the author's knowledge, only two pieces of research included more than three predictors [Meng, Zhang and Wei 2015; Dotzel, Shankar and Berry 2013]. In the light of the results of previous studies it seems that the sets of predictors were insufficient to precisely represent the relationship as the research delivered different conclusions. The definitive set of predictors of changes in market value is still to be developed.

Most of the previous research studying the impact of innovation announcements on the market value of equity focused on the manufacturing sector [Ehie and Olibe 2010]. The relatively small number of studies in the service sector resulted in little scientific coverage of its specificities. It concerns especially tourism as the main scientific teaching seemed to neglect it [Hjalager 2002]. The existing scientific evidence covering exactly the impact of innovation announcements on the market value of equity of tourism enterprises is small [Nicolau and Santa-Maria 2013a; Zach, Krizaj and McTier 2015]. Also the research devoted to innovation concentrated on the high-tech industries, which left the low-tech ones examined to a relatively small extent. The impact of innovation on low-tech

service companies such as tourism companies is largely uncharted. The scientific gap is especially important considering the importance of tourism in the economy of the European Union.

Europe is the most visited region in the world with international tourist arrivals reaching 582 million and receipts at euro 383 billion [UNWTO 2016a]. The receipts are estimated to maintain a constant growth of approximately 3% per year until 2025 [UNWTO 2016b; World Travel and Tourism Council 2016]. The direct contribution of travel and tourism to the GDP of European Union constituted 3,5% in 2015 and the total contribution was significantly higher and was 9,6%. Travel and tourism supported directly almost 14 million jobs which represented 3,6% of total employment. The total contribution was even greater and surpassed 36 million jobs, which constituted 9,1% of total employment. In terms of investment travel and tourism brought about 4,8% of the total investment in European Union [World Travel and Tourism Council 2016].

In the light of the ongoing scientific discussion important research gaps remain. First, the effects of innovation announcements on the market value of equity of tourism enterprises were not clearly proved. Second, there are no definitive clues as to the predictors of the changes in the market value of equity. A comprehensive study attempting to represent this complex relationship is still missing. Thus inclusive research building on a sound theoretical background and depicting the impact of innovation on the market value in tourism is of vital theoretical and practical importance.

Based on the above considerations the research problem is expressed in the following question: what is the relationship between innovation announcements and the market value of equity of tourism enterprises?

The main objective of the research is to measure the short- and long-term impact of innovation announcements on the market value of equity of tourism enterprises. To complement the main objective the following supplementary objectives were formulated:

1. Building a sound theoretical background by the identification of the position of innovation in economic theories.
2. Conceptualisation of innovation with special regard to innovation in tourism.
3. Critical assessment of the existing approaches to company value and indication of the most appropriate approach from the point of view of the impact of innovation.
4. Synthesis of the extant research on the impact of innovation on the market value of enterprises in the service sector with a particular focus on tourism.

5. Creation of a model representing the relationship between innovation announcements and the market value of equity of tourism enterprises.
6. Verification of the predictors of the changes in the market value of equity of tourism enterprises resulting from innovation announcements.

The analytical framework of the present research draws on the current scientific discussion of the efficiency of capital markets. It seems that nowadays the assumption that the stock prices always fully reflect all available information cannot be adopted without in-depth consideration. In this research the theoretical foundation included five modifications: lack of the absolute investor rationality, long-time adjustments of the initial reaction, existence of insider information, presence of the momentum effect and different efficiency levels of capital markets [Fama and French 2007; Kaestner 2006; Stockl 2014; Carhart 1997; Kristoufka and Vosvrda 2012].

In order to construct the sound theoretical representation of the relationship studied the systematic model-building procedure was adopted. It covered the synthesis of the existing scientific evidence on the subject and the addition of the theoretically related predictors of the market value of equity being the author's propositions. The comprehensive construction of the author's model connects innovation-level variables, firm-level innovation-related variables, interaction and second-order effects and control variables. The model covers such predictors of changes in market value of equity such as: patent, CSR, type, degree of novelty, source, stage and communication of innovation and R&D intensity and the innovativeness of the implementing company. It includes also the second-order effect of R&D intensity and the interaction effect between innovativeness and R&D intensity. The control variables include industry, size, volume, total cash dividend, operational experience, leverage, return on equity and growth.

Taking into account the research gaps in extant literature and the adopted theoretical background and in order to fulfil the above objectives the empirical study examined the changes in the market value of equity resulting from the innovation announcements of tourism enterprises. The examination was based on the author's model representing the relationship. Its first part concerned the general impact of innovation announcements while the second focused on the predictors of market value of equity. In respect of the model the following groups of hypotheses were formulated:

1. The impact of innovation announcements.
   H1. There is a positive relationship between innovation announcements and the market value of equity of tourism enterprises.

H2. The impact of innovation announcements on the market value of equity of tourism enterprises is immediately and fully incorporated in stock prices.
H3. No information leakage and dissemination occur in the period preceding the announcement.
H4. The positive change in the market value of equity resulting from the successful innovation announcement is bigger in absolute value than the negative change resulting from the unsuccessful one.

2. Prediction of the impact of innovation announcements.
H5. Innovation-related company-level variables predict the changes in the market value of equity above and beyond the effect of the control variables.
H6. Innovation-level variables predict the changes in the market value of equity above and beyond the effect of the control and innovation-related company-level variables.
H7. Interaction and second-order effects predict the changes in the market value of equity above and beyond the effect of the control, innovation-related company-level and innovation-level variables.

3. Innovation-level predictors.
H8-1. There is a positive effect of patents on the changes in the market value of equity resulting from innovation announcements.
H8-2. Innovation's CSR elements contribute positively to the changes in the market value of equity resulting from innovation announcements.
H8-3. The effect of product innovation on the changes in the market value of equity resulting from innovation announcements is greater than that of other innovation types.
H8-4. A positive relationship exists between the innovation's degree of novelty and the changes in the market value of equity resulting from innovation announcements.
H8-5. The effect of innovation developed in-house on the changes in the market value of equity resulting from innovation announcements is smaller than that of innovation from other sources.
H8-6. A positive relationship exists between the innovation stage and the changes in the market value of equity resulting from innovation announcements.
H8-7. The effect of the first innovation announcement on changes in the market value of equity is greater than that of the second and further announcements.

4. Firm-level innovation-related predictors.
   H9-1. The stronger the firm's R&D intensity the greater the change in the market value of equity resulting from innovation announcements.
   H9-2. A firm's innovativeness is positively related to the changes in the market value of equity resulting from innovation announcements.
5. Interaction and second-order effects.
   H10-1. There is an interaction effect between R&D intensity and innovativeness in the context of the changes in the market value of equity resulting from innovation announcements.
   H10-2. There is a negative effect of the squared R&D intensity on the changes in the market value of equity resulting from innovation announcements.

The empirical study examined the impact of innovation announcements on the market value of equity of tourism enterprises according to the author's own analytical framework. The subjects of the analysis were the changes in the market value of equity resulting from the innovation announcements of tourism enterprises. The time frame ranged between February 2011 and February 2016. The spatial scope covered the 28 European Union member states. The announcements released for the total of 111 tourism companies listed on the most important stock exchanges in Europe were analysed. The precise content analysis of the 9.000 innovation announcements allowed the assessment of their substantial value in the light of the present research. Sample size was calculated based on three approaches: the power of the chosen methods to detect abnormal changes in market value of equity, applicability of the model verification methods and the ability to generalize results. The representative sample included 398 observations.

The research is built on the literature on innovation driven and Neo-Schumpeterian economics. It includes classical and recent publications on the efficiency of capital markets and the approaches to company value. It employs the previous research on the relationship between innovation and market value in services with special regard to tourism. The empirical research exploits such diverse sources of information on innovation as: Factiva, Eikon, ProQuest and Amadeus databases. The data on the changes in market value of equity was obtained through stock exchange databases. Any missing data was filled in the direct contact with companies.

The empirical research covered the short- and long-term effects of innovation announcements which required the precise selection of the research methods. In

the short-term investigation the event-study method was employed. In the long term the research relied on the buy-and-hold abnormal returns method. The selected methods were widely used to determine the impact of announcements on the changes in market value. The short-term cumulative abnormal returns were used amongst others by Sood and Tellis [2009] and Rao, Chandy and Prabhu [2003]. The long-term buy-and-hold abnormal returns were employed by Sorescu, Chandy and Prabhu [2007]. In order to calculate the changes in the market value of equity the research employed the concept of abnormal returns. In the light of previous considerations if the number of shares is constant in the period, the changes in share price become the right proxy for the changes in market value of equity.

In the event-study the expected returns were calculated with the use of a Carhart four-factor model to account for the momentum effect [1997]. Furthermore the abnormal returns were standardised which led to more powerful tests [Dodd and Warner 1983]. The length of the event windows (the periods in which the changes in the market value of equity were analysed) was determined based on the significance of a single days' abnormal returns. The firms' BHARs were calculated against the main stock index. The length of the periods under investigation was adopted based on the previous research. The statistical significance of the changes in the market value of equity was verified with the use of the Z-test [MacKinlay 1997] and two groups difference of means test [Cowan and Sergeant 2001].

The empirical research resulted in the calculation of the equal number of changes in the market value of equity in the short and long term which called for the selection of the data analysis methods. In order to capture the patterns emerging from the data the changes in the market value of equity were described with use of such statistical measures as: central tendency, dispersion, skewness and peakedness. The author's model and the significance of single predictors of changes in the market value of equity were tested through the joint application of response surface regression and hierarchical regression.

This research builds on the theoretical background of innovation and market value. It introduces the author's model and tests it empirically. The book is divided into five chapters. Figure 1.

The first chapter discusses the evolution of the approaches to innovation in the world. The investigation constitutes the basis for introducing the definition of innovation for the purpose of the present book. It sets innovation in the framework of economic theories. It analyses innovation in the service sector and scrutinizes the research on innovation in tourism.

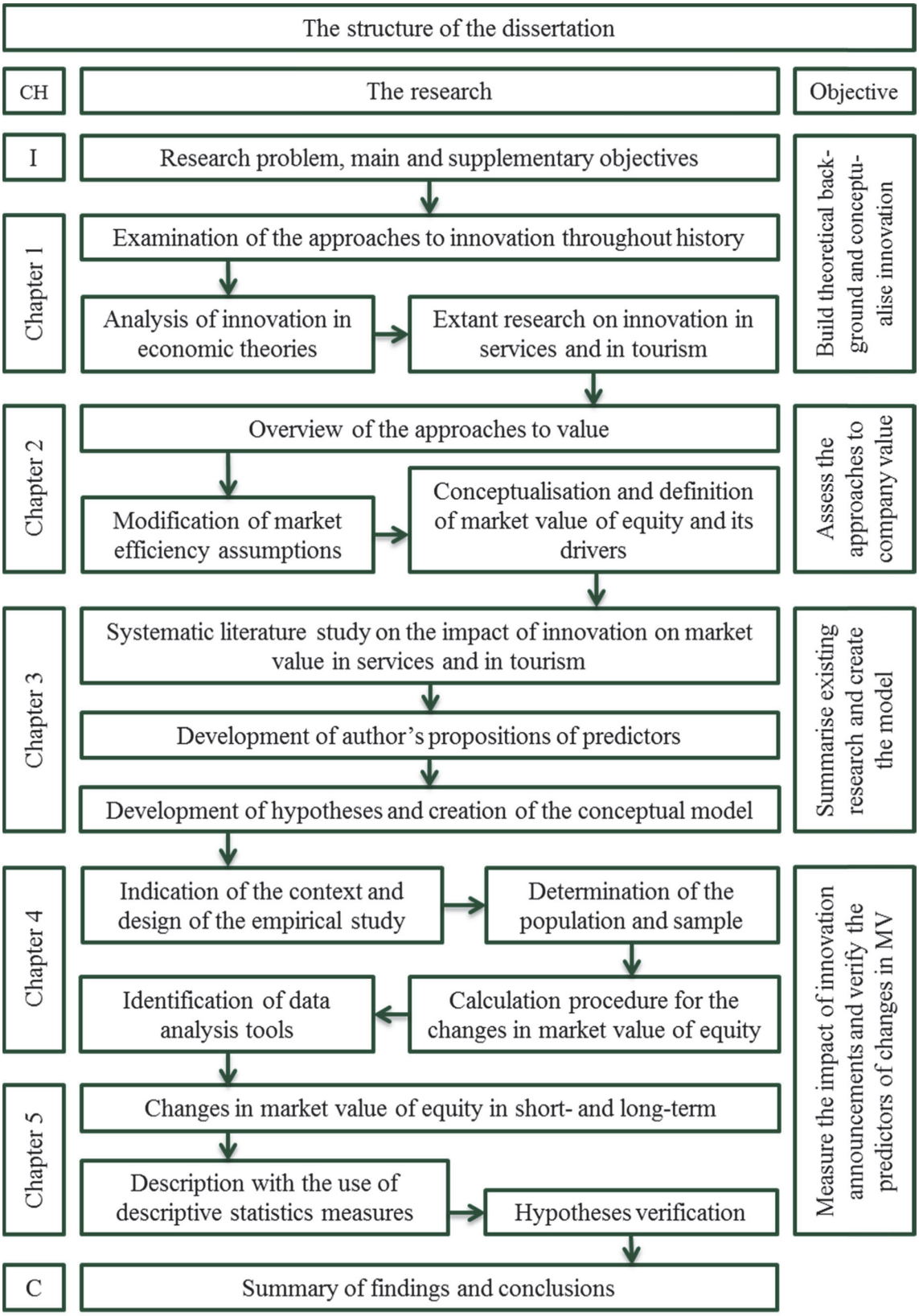

Figure 1. The structure of the book

Source: own development

The second chapter delivers an overview of the approaches to valuation which allows the selection of the most conceptually adequate from the point of view of the present research. It examines the modifications of the market efficiency assumptions. The chapter includes the definition of the market value of equity and terminates with an overview of the factors driving it.

The third chapter concentrates on linking innovation and the market value of tourism enterprises. It presents the systematic model-building procedure and brings details on the strategy of the literature study. It introduces and discusses the predictors of the market value of equity in the context of this research. It presents the author's model and the development of the research hypotheses.

Chapter four focuses on the methods used in the empirical research. It provides details on the data collection methods and the research techniques used to answer the research questions. The chapter considers the context and design of the empirical study, describes the population and the variables and delineates the data analysis methods.

Chapter five presents the results and a discussion of the empirical investigation. It demonstrates the changes in the market value of equity as well as their statistical significance. It summarises and describes the data with the use of descriptive statistical measures. The chapter provides the results of the hypotheses testing performed with the use of hierarchical regression.

The book terminates with conclusions. Supplementary information is to be found in the Appendix.

The benefits of the research reported here are diverse. It contributed to the current scientific discussion on innovation in services and in particular in tourism. It assessed the current research in the field and conceptualised innovation in the context of tourism. Furthermore the study added to the scientific dialogue on the efficiency of capital markets by providing theoretical considerations and unsupportive empirical evidence. The research introduced the author's model representing the relationship between innovation announcements and the market value of equity of tourism enterprises. Thus it attempted to fulfil the important research gap in respect of the predictors of changes in market value. The model was tested empirically using the analytical framework designed particularly for the present research. Finally it allowed verifying the impact of innovation announcements on the market value of equity of tourism enterprises. The research attempted to fulfil the existing research gap concerning the relationship between innovation announcements and the market value of equity of tourism enterprises and theoretically related variables.

Chapter 1

Theory of innovation

Introduction

Innovation has strategic importance in the capitalist economy [Kuznets 1954]. It is of the essence for all organisations operating in rapidly changing, contemporary economics. The importance of innovation was recognised by such Nobel Prize laureates as Simon Kuznets, who stated that innovation has the "strategic importance in the evolution of a capitalist economy" [1954, p. 259], Jean Tirole [1995], who tied together the company's competitive positioning and innovation and Robert Shiller who introduced the notion of innovation in the context of behavioural economics [2006]. Innovation is seen as an indispensable component of competitiveness rooted in organizational products/services, processes and structures. It is one of the essential instruments of providing the company with a competitive edge, entering new markets, increasing the market share and growing [Gunday et al. 2011].

The research on innovation has been conducted around the world since the early works of Joseph Schumpeter. The state of knowledge concerning innovation is constantly growing. However as Drucker states: "we cannot yet develop a theory of innovation. But we already know enough to know when, where and how one looks systematically for innovative opportunities and how one judges the chances for their success or the risks of their failure. We know enough to develop, though still only in outline form, the practice of innovation" [Drucker 1985, p. 30]. Furthermore, Kotler and Trias indicate the lack of a complex, unified and widely accepted theory of innovation [2013]. At the same time authors postulate the necessity of further research.

From the point of view of the present research it is crucial to determine precisely the concept of innovation and develop its definition. The purpose of the

present chapter is to summarise the knowledge on innovation, innovation in the service sector and innovation in tourism. The chapter builds on literature studies.

First, the evolution of the approaches to innovation in the world will be presented. It will constitute the basis for introducing the definition of innovation. Second, the most important economic theories referring to innovation will be analysed. It will allow the establishment of a sound theoretical background for the present research. Third, the emphasis will be put on the innovation in services. Fourth, the scientific aspects taught on innovation in tourism will be scrutinized. It will allow a deepening of the considerations on innovation in the context of the present research.

1.1. The evolution of the approaches to innovation

The notion of innovation originates from the Latin "innovatio" which means renewal, alteration [Latin Dictionary 2015]. The verb "innovare" stands for "alter, renew, make an innovation in" [Latin Dictionary 2015]. The definition of innovation delivered by the Oxford Dictionary covers "a new method, idea, product etc.", and "the action or process of innovating" [2015].

However, since its introduction into the theory of economics in 1930 by Joseph Schumpeter the notion of innovation has constantly evolved. From the point of view of the present research it is important to study its evolution throughout history to capture the historical regularities and understand the ambiguous nature of innovation. The holistic approach proposed in the present sub-chapter leads to the formulation of the definition of innovation. The worldwide international scientific dialogue on innovation is presented.

The very beginning

At the beginning of the scientific examination of innovation researchers emphasized their effects in the macro scale [Kuznets 1966]. The distinction between innovation and invention was set [Schumpeter 1939]. No consensus was achieved concerning imitations: they were perceived either as a force diminishing the competitive advantage of the innovator or as the driver of growth.

Joseph Schumpeter was one of the first economists to introduce a scientific approach to innovation. He explored the cyclical evolution of the capitalist world. The author assumed that the process of building the economy relies on business cycles and that each new phase of economic development surpasses its predecessor.

Schumpeter indicated that innovation is the element which contributes to the start of a new business cycle [Schumpeter 1939]. According to the author innovation stands for one of the following [Schumpeter 1932; Schumpeter 1939]:

1. The launch of a new or significantly changed product.
2. The application of a new method of production which was not yet used in the industry.
3. The opening of a new market.
4. The acquiring of a new source of supply of raw materials and semi -manufactured goods.
5. The introduction of a new structure of industry, e.g. the creation of a monopoly.

Moreover in the "Business cycles" the author defined innovation simply as "the setting up of a new production function" which "covers the case of a new commodity as well as those of a new form of organization such as a merger, of the opening up of new markets and so on" [Schumpeter 1939, p. 84]. Thus it was required for an innovation to be implemented in business practice. Furthermore, Schumpeter stated that "production in the economic sense is nothing but combining productive services. We may express the same thing by saying that innovation combines factors in a new way" [Schumpeter 1939, p. 84]. Therefore the author often referred to innovation with the use of the notion of "new combinations" [Schumpeter 1939, p. 84]. It occurs that innovation was perceived to originate from the internal structures of major companies.

Twenty years after the breakthrough works of Schumpeter another important scientist – Simon Kuznets, contributed to the knowledge of innovation [Nobelprize.org 2014l]. In his general approach to innovation Kuznets recalled Schumpeter but defined innovation as "material changes in the production function" [1954, p. 106]. The author claimed innovation to have "strategic importance in the evolution of a capitalist economy" [Kuznets 1954, p. 106]. Yet in later works Kuznets introduced the notion of epochal innovation and analysed the economic growth of nations through epochs. Kuznets stated that each epoch starts with a major, unique innovation [Kuznets 1966] which spreads to a substantial part of the world and constitutes a dominant source of sustained growth.

The 60s and 70s

The fruitful scientific investigation on innovation in the 60s and 70s introduced some new ideas. The authors generally admitted that not only breakthrough

advances but also small improvement may constitute innovation [Hollander 1965]. Such an approach contradicted the previous achievements. It still holds today especially in the low-tech industries. Moreover innovation started to be perceived as a continuous process instead of a time stamp [Myers and Marquis 1969], which is still valid at present. In this context innovation was defined as series of actions consisting of solving problems [Whitfield 1979] and contributing to the overall company success [Kotler 1967].

A comprehensive framework consisting of the characteristics of the company and its environment was introduced. The role of new relationships and the importance of the environment in which the company operates were emphasized [Hagen 1962]. In this light the stimulating effect of international relations was introduced [Harman 1971]. The diffusion process was analysed and it was ascertained that different firms differ in their imitation abilities [Johnston 1966]. The considerations are especially timely today in the European Union where the free trade policy applies.

The extensive character of innovation emerged. The field of innovation was extended and innovation began to cover different aspects of human existence [Freeman 1974]. In the similar vein the notion of uncertainty in relation to innovation projects occurred [Allen 1967]. It was noticed that the investment in innovation results in higher risk and higher potential returns.

The 80s and 90s

The productive scientific dialogue on innovation performed in the 60s and 70s was followed by even more dynamic discussion in the 80s and 90s. First the achievements of the previous period were recognized. It was presumed that most innovations are minority upgrades [Rothwell and Gardiner 1990; Porter 1990] and that they occur continuously [Freeman 1990]. The inseparability of uncertainty in relation to product innovation projects was re-examined and ascertained [Nelson and Winter 1982]. Second new ideas emerged. The idea of innovation as a response to market needs was established [Romer 1990] and the social aspects of innovation started to displace the technical [Drucker 1985]. Researchers required that the effects of innovation should affect positively both economic and social spheres [Nelson and Winter 1982]. It is especially timely nowadays in the context of today's trend that seems to favour socially responsible solutions.

On the one hand only the first implementation was treated as truly innovative [Porter 1985]. On the other hand the benefits of further implementations were examined [Mansfield, Schwartz and Wagner 1990]. The idea was especially

important for low-tech industries where patenting is rare and most innovation is relatively easy to imitate.

The new millennium

The new millennium abounded in new ideas concerning innovation. In line with the achievements of the previous periods, the perception of innovation as a process was widely accepted in the scientific community [Griffin and Moorhead 2011]. It was ascertained that a series of minor upgrades may be much more profitable than the occasional breakthrough innovation [Tidd, Bessant and Pavitt 2005; Kumar 2004]. The new millennium is also the period in which the ecological aspects complement the social and economical [Arundel and Kemp 2010; Kemp 2010].

Innovation was treated as a tool of differentiation in the highly competitive environment [Porter 2006; Porter 2008; Beregheh, Rowley and Sambrook 2009]. The emergence of an innovation driven economy grounded in Schumpeter's ideas, resulted in the acceptance of innovation as one of the most important factors of productivity growth [Tidd, Bessant and Pavitt 2005]. As a result different approaches to measuring innovation were developed [Harmancioglu, Droge and Calantone 2009; Boston Consulting Group 2010]. In this light the lifecycle of innovation was established [Griffin 2001] and a generic process of product development and commercialisation was introduced [Rafinejad 2007]. In order to recognize its comprehensive character the approaches to innovation were based on multidimensional frameworks.

The last concept developed in the period analysed was open innovation. It is based on interaction with different companies which possess the necessary competences to develop innovation. Open innovation relies on using inflows and outflows of knowledge (internal, and external ideas) to improve a firm's innovation activities [Cheng and Huizingh 2014]. It is opposed to closed innovation activities such as firm-specific R&D [Lee, Kim and Kim 2012]. This strategic tool offers companies a possibility to exploit new opportunities at low cost and risk levels [Chesbrough 2003]. In the context of open technology innovation Lee, Kim and Kim emphasize its crucial importance in shaping companies' market values [2012].

It occurs that the evolution of the approaches to innovation ranged from noticing the importance of change to the comprehensive description of its characteristics. Researchers concluded that innovation should affect positively both economic and social spheres. Treating innovation as a time stamp gave place to perceiving it as a continuous process. Innovation confined to new ideas implemented in business practice.

Summary – evolutionary patterns

The analysis of the historical evolution of the approaches to innovation was vital in the context of the present research. On the one hand, new concepts occurred and displaced the old. On the other hand, contemporary authors refer often to the classical approaches of the 30s. The definition of innovation proposed below is based on the conclusions about the similarities and differences between the evolution in the world.

To conclude the evolution of the approaches presented in the sub-chapter, a tabular form was created. In order to create the comparison between the evolution of approaches to innovation in the world the analysis was based on the method used by Powell and Renner [2003]. One category, e.g. "minor upgrades", may be important in more than one period. Also between-period differences may occur (e.g. "minor upgrades" category represents the recognition of the role of minor upgrades in the beginning of the investigation of innovation and their total acceptance in the 60s and 70s), and these are indicated in the comments. The precise data is delivered in Table 1.

Table 1. The evolution of the approach to innovation in the world. The key concepts

Period	The key concepts
The beginning	Change – noticing the importance of change Macro scale – concentration on the macro scale Invention – formalised approach covering distinction between innovation and invention, Implementation – obligation of implementation in business practice, Sources – sources of innovation (R&D)
60' and 70'	Environment – noticing the importance of the environment Diffusion and imitation – analysing the processes of diffusion and imitation Process – allowing the treatment of innovation as a process Minor upgrades – acceptance of minor upgrades Relationships – stressing the role of relationships and international context; Uncertainty – introduction of the concept of uncertainty, Field extension – focus on different aspects of human existence,
80' and 90'	Minor upgrades – acceptance of minor upgrades Process – allowing the treatment of innovation as a process Social – noticing the social aspects of innovation Market – treating innovation inter alia as the response to market needs Effects – focus on positive change caused by innovation Diffusion and imitation – bringing more focus to the concept of diffusion Uncertainty – exploring further the concept of uncertainty, Low-tech – distance from the high-tech aspects of innovation

New millennium	Process – allowing the treatment of innovation as a process Minor upgrades – acceptance of the role of minor upgrades Market – treating innovation inter alia as the response to market needs Social, economic, environmental – inclusion of economic, social and environmental aspects Uncertainty – developing further the concept of uncertainty Knowledge – allowing the treatment of innovation as new knowledge Stages – division into development and commercialisation stages Cooperation – stressing the importance of academia and business cooperation Competition – presenting innovation in the context of competitive struggle, Field extension – approaching different perspectives

Source: own development

Scientific teaching evolved through time and the focus was set on different categories in different periods. However there seems to be a scientific consensus that innovation consists of both breakthrough changes and minority upgrades. Also the implementation of innovation in the business practice is a widespread requirement. Additionally innovation is treated as a process. Besides the researchers accepted innovation as being the first implementation in the company instead of being the first implementation at all. The acceptance of imitation is due to the tremendous role of diffusion for economics. It is stated that the cooperation between academia and business may be fruitful, especially in the innovation's development stage. Furthermore it seems that the scientific community requires that innovation results in positive changes in social, economic and environmental aspects. However the effects of innovation are often uncertain due to the interplay between incurred costs and potential effects (especially in the case of innovation, the success of which depends on consumer reaction).

As a result of the above discussion the definition of innovation in the present research was established. For the purpose of the present research, the definition of innovation was formulated as follows:

"innovation is a process of implementing positive and new ideas into business practice".

In the present research the term covers breakthrough (radical) innovations, novelties at the company level and incremental (minority) upgrades. Furthermore it is assumed that the innovation process may be multi-staged. Even though the effects of innovation are presumed to be economically, socially and/or environmentally positive, their determination ex ante is problematic due to the interplay between investment incurred and uncertain outcomes.

The present sub-chapter aimed at establishing the definition of innovation based on the historical evolution of the approaches to innovation. However the reasoning needs to be developed further. The researchers built their approaches to innovation in the context of the different economic theories. In the next chapter the most important economic theories covering the field of innovation will be presented.

1.2. Innovation in economic theory

The present research focuses on innovation thus it is essential to place the phenomenon amongst existing economic theories. Understanding of innovation requires a firm conceptual background. The phenomenon may be fully understood only when the theoretical framework is well established. According to the Oxford Dictionary theory stands for "a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained" [Oxford Dictionary 2015]. Also in the context of the theory of innovation Nelson and Winter described theory as: "a reasonable coherent intellectual framework which integrates existing knowledge, and enables predictions to go beyond the particulars of what actually has been observed" [1977, p. 215]. In this chapter the most prominent economic theories covering innovation will be presented.

In the review two distinctive but interconnected perspectives were adopted. The first covers firms, strategic business units and programmes. The second focuses on sectors or whole economies. The distinction between micro and macro scale is based on the work of Li and Atuahene-Gima [2001]. In the context of the present research a complete approach is necessary in order to understand the internal and external forces driving the process of innovation and its effects.

1.2.1. Firm/strategic business unit/programme level

The most prominent economic theories covering the field of innovation at company level include: (1) the adoption and diffusion theory which states that firms may adopt innovation from other organisations; (2) diffusion of knowledge which emphasises the role of the knowledge, (3) resource based view which emphasises the role of resources in achieving competitive advantage through innovation. Furthermore the economic theories referring to innovation at company level cover: (4) sunk costs, which focuses on the incurred spending, (5) supply

and demand which indicates that innovation occurs as a response to market needs, (6) organisational structure, which depicts the importance of intra-firm cohesiveness, (7) agency theory, which states that agent/principal conflicts need to be well managed in order not to hinder innovation, and (8) game theory, which accounts for the interactions between the participants of the game.

Adoption and diffusion theory

According to the adoption and diffusion theory firms may not only innovate but also adopt innovative solutions developed in other companies. Johnston was one of the first researchers to examine the idea. From the author's point of view the term of innovation refers not only to the first implementation but also to when "the innovation or an alteration spreads into other firms, industries and countries" [Johnston 1966, p. 160].

The innovator develops the new solution using his/her own resources and capabilities. It is ascertained that the innovator bears most of the risk and in return he/she gains a competitive advantage. However the process of developing innovation is risky. The diffusion process may harm the profitability of innovation projects in the innovator's company. Due to the copying of the new solutions by other firms their profitability also increases and the competitive advantage based on the novelty dilutes [Bukowski, Szpor and Śniegocki 2012]. From the point of view of the imitator the adoption of new solutions is cost-effective as there are no costs of development. However the imitator risks losing the competitive position due to the delayed implementation. Nevertheless diffusion seems to depend on the potential profits stemming from innovation, and its ability to generate a monopoly [Ciborowski 2012].

The ubiquitous character of innovation makes it difficult to establish the distinction between invention, innovation and diffusion. It is due to the fact that innovation is a continuous process and imitation may occur at every phase of its development [Lundvall 2010]. Moreover, according to Madej [1972], diffusion may occur in two different perspectives horizontal (from one enterprise to another) and vertical (from the primary research into practice).

The process of diffusion is conditioned by a series of factors. The more discontinuous the innovation, the more difficult is its adoption. Also the more the innovation "fits" existing knowledge and consumer habits, design, manufacturing practices, etc., the easier it is to implement [Harmancioglu, Droge and Calantone 2009]. It appears that radical organisational change may not be easily implemented without the complex staff training and the operating conditions

adjustment. At the same time the determinants of the likelihood of the adoption of innovation are moderated by two variables – the type of organisation and the scope (strength of influence) of the innovation [Damanpour 1991].

Diffusion of knowledge

In the innovation process firms use both: resources and learning. The first covers tangible and intangible assets that underpin capabilities. The second includes the change in the knowledge foundation on which capabilities rest [Smith 2006].

The diffusion of new knowledge is the central part of innovation. It is due to the fact that organisational learning and knowledge creation underpin the innovation capabilities of organisations, but also that innovation stimulates the increase in knowledge [Lam 2006]. The theory focuses not only on the creation of knowledge but also on its diffusion across companies.

Firms adopting innovation learn from and build the new knowledge on it. The diffusion process causes the social and economic impact of innovation. It is a natural part of the innovation process besides learning, imitation and feedback effects. Moreover adapting innovation to different environments by different companies results in improvements in the original innovation [Hall 2006]. Therefore the process of diffusion is crucial not only for the macroeconomic effects of innovation, but also for its further development. Also the feedback and the experience of users may stimulate improvements to the original innovation in the diffusion process.

Resource-based-view

For the resource-based view (RBV) the internal factors are key to the firms' conduct. Therefore learning the right combination of resources is essential for innovativeness. In the investigations based on the resources based view innovation is treated mostly as a response to market changes. However in order to respond efficiently to a volatile market there is a need for the right combination of resources [Harmancioglu, Droge and Calantone 2009].

The intellectual foundation of the resource-based theory stems from the late 1950s and the work of Penrose [1959]. At the heart of the concept lie the resources which are valuable and difficult to imitate. Barney defines resources after Daft[1] as: "all assets, capabilities, organisational processes, company attributes,

[1] Daft, R., 1983, *Organisational theory and design*, Cengage Learning, New York.

information, knowledge, etc., which are controlled by a firm that enable it to conceive of and implement strategies that improve its efficiency and effectiveness" [Barney 1991, p. 99]. The advantages of first-mover companies cover access to distribution channels, development of a positive reputation and goodwill. In order to experience first-mover advantage a firm must differ in resources from the other firms in the sector [Barney 1991].

There is an interplay between resources and innovation. On the one hand adequate resources enable innovation. On the other innovation causes changes within a sector and defines which abilities and skills are crucial. Therefore firms must adapt to the changed environment by modifying their resource base [Barney 1986]. The commercial introduction of GSP at the turn of the millennium forced transport companies to adjust their business models and technical equipment.

Resources are important in the context of innovation. First, they allow the organisation to purchase innovations from other entities. Second, they allow the introduction of innovation by exploring the actual needs and responding to them with the new ideas. Third, significant resources allow companies to bear the potential costs of failure [Damanpour 1991]. The resources of technical knowledge also have a positive impact on innovation as they facilitate the understanding, development and implementation of the new technical ideas.

Sunk costs

The notion of "sunk costs" represents the resources spent on the creation of competitive advantage, entering new markets, repositioning production in the value chain, etc.. Exogenous and endogenous sunk costs may be distinguished. Exogenous sunk costs are determined by the industry equilibrium and represent the outlay required for the minimum efficient scale – the set-up costs [Sutton 1992; 1998]. The set-up costs must be incurred in order to operate a business. According to Sutton the most obvious cases of endogenous sunk costs are advertising and R&D. Both may be considered sunk costs "incurred with a view of enhancing consumers' willingness-to-pay for the firm's product" [1992, p. 8].

First, a firm individually determines the R&D initiatives and incurs some costs. Second, the level of profits generated from the implementation of innovation depends on the responsiveness of the firm's clients. Third, if profits outweigh the incurred costs the firm is more likely to invest further in R&D [Sutton 1992]. Nevertheless the level of exogenous and endogenous costs (and their relation to the benefits of implementing a new solution) determines the innovative behaviour of a firm.

Furthermore the incentive to invest in innovation is lessened unless a type of protection tool is introduced, e.g. patents [OECD and Eurostat 2005]. Otherwise the costs may be incurred for nothing. It is especially important in industries where the products are fairly readily imitable (e.g. tourism). In R&D intensive industries patent protection is of secondary importance as imitation is complicated and costly.

Supply and demand

Marketing theories also offer a reference to innovation. They indicate the relationship between innovation and customer reaction and the market exchange between sellers and buyers.

Firms struggle to match their products to the demand due to the heterogeneous nature of both the supply and demand sides. Product differentiation may be as important as the development of new products. The process of matching the demand and supply side often results in innovation [Hunt 1983]. The innovation may cover the image of the product, its social characteristics and its objective characteristics. In order to exploit fully market demand the firms should implement innovation in all fields covered by the marketing responsibility. A good example to schematise the innovation projects is to organise them around the precise framework, as e.g. 4 P [Perreault and McCarthy 2005].

Organisational structure

The organisational structure may affect the efficiency of the innovation activities. The analysis of the impact of the organisational structure on a company's innovation includes organisational forms, organisational processes, boundaries and relationships [Lam 2006].

Two main organisational forms may be distinguished: rigid and flexible. The first one is more suitable for stable conditions whilst the second adapts better to the conditions of vital change and innovation. The responsiveness of the flexible form is reflected through new ways of adapting to a volatile environment. Furthermore the internal cohesiveness of an organisation, which is reflected in the integration of the whole staff in innovation activities, is one of the factors affecting a firm's innovativeness. Their facility in assisting internal cooperation supports creativity. Also a firm's external networks influence the direction and rate of their innovative activities [Trott 2008]. Shared interpretative schemes, developed to filter the multitude of external stimuli, enable an organisation's ability to interpret and process information in a purposeful way, promote collective

problem solving and organisational learning and therefore enhance the potential for adaptation and innovation. However the interpretative schemes may hinder the decision-making process and block organisational change by creating "blind spots" [Lam 2006, p. 124]. Hence the result of organisational learning on innovation is still uncertain.

Agency theory

Agency theory focuses on the situation in which principals (e.g. shareholders) and agents (e.g. executives) interact. Potential conflicts arise when the goals of principals and agents are contradictory or when both parties have different attitudes towards risk. Furthermore, in the context of innovation, the agency framework is especially valuable when contracting problems are difficult i.e. when there is a substantial outcome doubt. It is visible in the case of new product developments [Eisenhardt 1989].

Diffusely-held firms are less innovative than firms with a high concentration of management in such fields related to innovation as: patent activity, decisions to grow by acquisition or internal development and the timing of long-term investment spending [Francis and Smith 1995]. Shareholders' monitoring and concentrated ownership are effective in preventing the high contracting and agency costs associated with innovation.

Furthermore the conflicts between agents and principals hinder innovation due to the high contracting costs associated with promoting innovative activity. In consequence firms avoid the design of incentive contracts which may be effective in stimulating innovation activity [Holmstrom 1989]. Moreover empirical research suggests a greater reliance on short-term bonus plans based on current earnings rather than on long-term investments. Such a situation discourages managers from investing in innovation in favour of projects offering an immediate return [Gaver and Gaver 1993].

Game theory

Game theory may be described as: "a mathematical modelling of strategic interaction amongst independent agents" [Baniak and Dubina 2012, p. 178]. The game theory delivers a framework which encompasses not only costs and benefits but also divers interactions between the participants. In the context of innovation three different games are important: the intra-organisational game which involves innovator, project manager and resources' administrator (it is played at the firm or strategic business unit level); the inter-organisational game which

involves competitors, partners and customers; the meta-organisational game which involves social planner and innovative entrepreneurs.

At the intra-organisational level innovativeness may be stimulated through fixed bonus fees and innovation profit share [Dubina 2010]. In the competitive environment a firm must adopt an adequate innovation strategy. It must take into consideration its own condition and its market status in the industry [Chen, Cheng and Shao 2007]. Furthermore the aggregate innovator (all the innovative firms) interacts with the government which in turn may destimulate innovative behaviour by negligence [Boldrint and Levine 2005].

1.2.2. Sector/economy level

The most important economic theories referring to innovation at the sector/economy level include: (1) competitive positioning which focuses on innovation as a response to competitors' actions; (2) uncertainty which emphasises the unpredictability of the results of innovation projects; (3) system theory which depicts the interplay between various institutions. Moreover economic theories covering innovation at the sector/economy level comprise (4) industrial organisation which concentrates on the structure of the market, (5) the evolutionary approach which treats innovation as a process in which many actors are involved and (6) behavioural economics which often indicates the irrationality of the actors'.

Competitive positioning

Companies may adopt two kinds of approaches – proactive and reactive. In the first firms innovate to attain a strategic market position and a competitive advantage in relation to their competitors. In the second companies react to other companies' actions [Tirole 1995]. Thus innovation is the way of maintaining market share and defending the competitive position.

The competitive advantage is at the heart of firm's performance. Introducing a successful technological innovation may allow a firm to enhance differentiation and lower costs at the same time. Only the first firm to introduce a new technology achieves the competitive advantage. Once competitors also introduce the imitations the advantage is lost [Porter 1985]. Much innovation is mundane and incremental rather than radical and depends more on a cumulation of minor insights than on a technological breakthrough [Porter 1990].

It seems that innovation and advanced technology are not enough to make an industry attractive. Low-tech, mundane industry with high entry barriers, high

switching costs and price-insensitive buyers is far more profitable than "sexy industries" (internet technologies, software, etc.) which attract competitors [Porter 2008, p. 22].

Uncertainty

The decision to innovate is impeded by the unpredictability of results. Uncertainty may prevent the implementation of significant changes despite the increasing pressure to seek new markets, introduce new products and technologies, etc. Also, it may hinder the obtaining of external funding [Rosenberg 1994]. Uncertainty is the inseparable element of every innovation project and it determines the innovative behaviour.

Innovation is marked by a significant uncertainty – inability to predict the effects of the research and development process [Drucker 1985]. In consequence decisions need to be made in a sequential way – vital information becomes available at some point of the process but is not available at the beginning [Rosenberg 1994].

Fast progress is characterised by a certain wastefulness of resources but may offer a first mover advantage. The sequential progress (which usually is slower) causes the resources to be less wasted (knowledge from one study is acquired before launching another) but the changes of gaining the first mover advantage are little [Rothwell 1985].

When an invention occurs it usually is very primitive. Its performance is usually relatively poor compared to existing technology and to its future performance. Furthermore the costs of the use of the invention are usually high [Rosenberg 1994]. The speed at which the invention transforms into innovation and diffuses depends on the actual and expected performance and cost reduction.

Innovation as system

The system approach relies on the interplay of institutions and their interaction in creating, diffusing and applying innovation. In this approach the diffusion of ideas, skills, information, knowledge and signals is of key importance. The system consists of relationships and elements that interact in the production, use and diffusion of new knowledge. A national innovation system "includes all parts and aspects of the economic structure and the institutional set up affecting learning as well as searching and exploring – the production system, the marketing system and the system of finance present themselves as sub-systems in which learning takes place" [Lundvall 2010, p. 13].

The role of universities varies between countries however their basic role in the innovation process consists of training staff and delivering research findings in the basic sciences. The financial institutions determine which projects are feasible and which not. The way companies are governed and controlled determines the efficiency of innovation projects. Government may fund not only the universities and research centres but also R&D in private firms as the business R&D entities supercede those of the university and government due to the practical knowledge they posed [Nelson and Rosenberg 1993]. Besides that the firms that operate internationally transmit new solutions between countries. The corporate social responsibility principles spread faster through foreign direct investment than through administrative decisions in particular countries.

Innovation requires the whole system in order to operate. The suppliers usually make the improvements in the components. The buyers may impact on the design of the final product. The process equipment suppliers impact on the firm's processes [Nelson and Rosenberg 1993].

Industrial organisation

Industrial organisation theory focuses on the structure of the firm and the structure of the market. As Treece states: "the formal and informal structures of firms and their external linkages have an important bearing on the rate and direction of innovation" [1996, p. 193]. On one hand the new conditions cause the need for new solutions. On the other the new solutions may affect the structure of the industry. Therefore there is an interplay between the industrial organisation and innovation [Porter 1980].

The organisation of the sector determines the nature of innovation developed by a company. Monopolies are in a fortunate situation. Therefore they focus on incremental innovation as breakthrough is unnecessary and carries additional risk. In order to attract consumers the un-favoured firms need to implement breakthrough innovation. Such firms cannot gain from incremental innovation and are subjected to strong pressure for a radical one [Farrell and Klemperer 2007]. The solutions that shifted the destination image from the tourism industry to the tourists such as social media were developed in small start-ups [Hjalager 2013].

Furthermore, the strategy of a firm should be formulated in relation to its environment [Porter 1980]. The relevant environment is broad, however what remains of key importance is the industry in which the company operates. In this context firms affect each other by implementing innovation.

Evolutionary approach

In the context of the evolutionary approach innovation occurs systematically with time as different organisations generate partial advancements [Nelson and Winter 1982]. Technical advance is a force behind a variety of economic phenomena: patterns of international trade, competition, growth in productivity, etc.

The general selection model of innovation activities may encompass four elements: (1) the nature of the benefits and costs weighted by an organisation deciding to adopt or not to adopt an innovation, (2) the influence of customers and regulatory preferences on what is profitable, (3) the relation between expansion or contraction of an organisation and its profits, (4) the mechanisms of learning about the successful innovation of other organisations and the factors facilitating or deterring imitations [Nelson and Winter 1982]. The interactions between the four elements and their evolution through time determine the innovation behaviour. Customer preference at one moment of time may determine the future paths of product/service development [Griffin and Moorhead 2011].

Most of the economic models assume a certain equilibrium. In this context innovation appears to be the destabilising force as it offers an advantage to the implementing company. Moreover Nelson and Winter evoke Williamson [1972][2] and state that past innovativeness may lead to firm's market domination and blockade entry. However in such a situation the firm's incentive to innovate decreases dramatically.

Behavioural economics

Contrary to traditional economic theories behaviourists allow the irrationality of individuals and institutions. One of the main principles of behavioural economics is that frames of reference heavily affect human actions [Shiller 2006]. The empirical evidence suggests that the levels of rationality vary amongst the actors. Generally the higher the individual is in the hierarchy, the higher his/her rationality. However it refers mostly to the value-rational type of hierarchy (where the specialisation and knowledge are important), and not the rational-legal authority – bureaucratic hierarchy [Miner 2006].

Rational agents maximize profits. At the same time innovation is essential to organisational effectiveness. However not all of the agents act rationally and

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[2] Williamson, O., 1972, *Dominant Firms and the Monopoly Problems: Market Failure Considerations*, Harvard Law Review, no. 85, pp. 1512–1531.

promote innovation. It is especially the case in bureaucratic organisations which stifle creativity and innovation [Miner 2006].

On one hand, individuals tend to overestimate or underestimate the opportunities. In the context of innovation especially the "wishful thinking bias" is important. Individuals tend to disregard the important risks [Shiller 2006]. On the other, the irrationality of behaviours is minimised when the "default option" (which is most frequently chosen) prepared by responsible institutions is the most rational, a precise plan is set and the system (e.g. tax system) is maximally simple [Shiller 2006].

Summary – economics of innovation

In the context of the present research it was necessary to establish the theoretical background concerning innovation. The overview of the economic theories referring to innovation was essential because it allowed the determination of the forces at firm and sector level which drive the process of innovation and its effects.

Based on the overview several conclusions may be drawn. The structure of the market (e.g. lack of monopoly) may stimulate innovativeness. The competitive position of a company (e.g. worth defending) and the actions of the competitors (e.g. innovating to increase market share) are of key importance for the decision to innovate and for the shape of the innovation process. Moreover the interactions between private and public institutions facilitate the process of innovation (e.g. business/academia cooperation). Thus the company's internal decisions on innovation may not be detached from the environment.

Furthermore changing market needs induce the within-firm development of new products and services. However a firm does not have to develop innovation on its own – it may adopt innovation from other companies. Also the necessary knowledge may be acquired (e.g. through staff employment). Therefore the process of innovation may become complex by involving various actors.

Furthermore firm level was fundamental to the present research. At the company level the right combination of resources (both tangible and intangible) needs to be assured in order to conduct innovation projects. Firm must be able to bear exogenous and endogenous costs. In order to organise the innovation process a cohesive internal structure is important in which inter-organisational participants of the game act in favour of the common purpose and agents and principals share the same level of risk aversion.

Nevertheless the results of innovation projects are always marked with uncertainty (e.g. market reaction to innovation), which results inter alia from the irrationality of the actors involved. Therefore it seems that successful innovation undergoes a systematic evolution through the partial advancements of different actors.

Based on the above discussion the group of sector-level and firm-level factors creates a comprehensive framework for the analysis of innovation. It seems that the traditional approaches based on increasing the inputs in order to increase the outputs are insufficient to explain the economic phenomena in contemporary economics. It seems that the approach accounting for both internal and external factors and for their new combinations fills the gap. The economic phenomena seem to be explained by the introduction of new resources, knowledge, relations, actors and the innovative connections between them, which is the adaptation of the classical Schumpeterian approach. Even though a comprehensive theory of innovation does not yet exist, it seems that the advance in academic research has already given a firm anchor point for conducting different empirical research.

1.3. Innovation in the service sector

Nowadays the scientific focus on innovation in services increases as traditional boundaries between sectors fall, some services fuel the innovation process throughout the economy (innovation support, transfer and transmission between sectors) and service innovation represent the central drivers of economic growth [Lyons, Chatman and Joyce 2007]. However the research on innovation traditionally concentrated on manufacturing due to the low innovation frequency in services [Carlborg, Kindstrom and Kowalkowski 2013].

The general discussion on innovation delivered in the above sub-chapters needs to be deepened. In connection with the objectives of the present research it was fundamental to consider innovation particularly in services and to concentrate on its effects. Therefore the subchapter discusses the uniqueness of innovation in the service sector.

Consumers buy products for the functions they deliver [Stahel 1994]. In this context the ownership itself is of secondary importance. Innovation in services may be considered as a research field separated from innovation in manufacturing [Toivonen and Tuominen 2007]. However the proponents of service-dominant (S-D) logic oppose such an approach. Lusch and Nambisan state that “the distinction between “service innovation” and “product (goods) innovation” is no longer relevant since from the S-D perspective all product innovations are

service innovations (products being only a mechanism, medium, or vehicle for delivering service)" [2015, p. 5].

Innovation in services leads often to "new knowledge or use of knowledge to devise new applications" [OECD 2002, p. 48]. Moreover innovation does not have to be advanced from the technical point of view it may also be from the point of view of functionality. Compared to other services such as administration, law and accountancy services, telecommunication, media, health, education, logistics, after-sales service, etc., HORECA (hotels, restaurants and catering) seems to be in the middle of the innovation potential [Miles 2006].

In the context of the present research the comprehensive overview of innovation in services was necessary. The framework used in this chapter is based on the historical evolution of innovation in services. It is inspired by the work of Carlborg, Kindstrom and Kowalkowski [2013] who summarised prior research by clustering it into three evolutional phases – formation phase (1986–2000), maturity phase (2001–2005) and multidimensional phase (2006–2016). Due to the time scale adopted by the authors in their framework the last phase terminates in 2010. However according to the present research in the period of 2011–2016 no different, consistent logic would have been observed and therefore the multidimensional phase will be extended up to 2016.

Due to the focus of the present research on the effects of innovation each phase was internally divided into: the dominant logic of the period and the recognised effects of innovation.

1.3.1. Formation phase (1986–2000)

The dominant logic of the phase

The period of formation was dominated by the demarcation of manufacturing and services. Authors concentrated on the distinctive features of the service sector and their impact on innovation.

The inseparability of production and consumption and the high involvement of human in the service process, result in the high degree of perishability. Services are intangible. They cannot be touched or viewed and the unused capacity cannot be stored for future use [Lievens, Moenaert and Jegers 1999]. In this light the protection of innovation is more difficult in services than in manufacturing [Chan, Go and Pine 1998].

The variation from one service to another, or variation in the same service from day-to-day is referred to as heterogeneity. It is impossible to eliminate the

differences in performance. Thus, it is difficult for clients to tell in advance what they will receive. In this context communication may be linked to service innovation success [Lievens, Moenaert and Jegers 1999].

In services frontline employees shape the quality of the company-consumer relationship. The contact personnel interact with clients to deliver services and receive feedback. Thus, the staff who work directly with consumers are a valuable source of innovation. Moreover the successful launch of a new service depends on the behaviour of the contact staff [Atuahene-Gima 1996].

In the early phase of the study of innovation in services researchers drew from the origins of innovation theory in which manufacturing was the primary driver of innovation. It was reflected in presenting technology as critical for innovation. The distinction between different types of innovation based on their requirement for the implementation of new technology was made [Chan, Go and Pine 1998]. In the similar vein the "reverse product cycle" was described. It builds on the spread of new technology from manufacturing to services and the following new product development caused by the generation of new services [Barras 1986].

Despite the demarcation logic and the technological bias the first attempts to construct a synthesis perspective occurred. Gallouj and Weinstein stated: "it did not seem to us appropriate to make an a priori distinction between innovation in service activities and innovation in manufacturing and to attempt to construct a specific "theory of innovation in services" [1997, p. 3]. The authors based their reasoning on Lancaster's work in which products are defined as sets of characteristics[3]. In this light analysis of technological aspects of innovation tends to omit the characteristics and actual content of innovation.

The effects of innovation

The researchers in the formation phase concentrated mainly on the (1) financial performance effects. However they also conducted studies covering the effects of innovation on the (2) business processes and (3) competitiveness of the firms.

In the context of financial performance a set of reasons for developing new services was delivered. It covered, amongst others, increasing market value [Chaney and Devinney 1992], diminishing seasonal effects, supporting sales, and reducing risk by balancing the existing sales portfolio and stimulating the

[3] Lancaster, K., 1966, *A New Approach to Consumer Theory*, Journal of Political Economy, no. 14, pp. 133–156.

use of spare capacity [Cowell 1988]. It was ascertained that the effects of innovation vary as service firms differ from one another. It was stated that service companies that innovate are more likely to experience growth in sales than the non-innovative [Hipp, Tether and Miles 2000].

In the context of business processes innovation in services led to the increase in service delivery capacity. The successful inter- and extra-project communication during innovation process increased the chances for the successful introduction of a new service and the general development of the company. Through innovation projects companies created knowledge about new innovation opportunities, customers, competitors, technologies and resources which helps to improve their operations [Lievens and Moenaert 2000].

In the context of competitiveness it was specified that a firm's ability to survive depends on innovation [Cowell 1988]. The development of new services that provide clients with improved experimental and functional quality was necessary to surpass the competitors [Bretani 1991]. Service companies may not rely on a stable range of services due to the fact, that with time, they become obsolete. New service development helps to minimise the effects of decline in the service lifecycle of existing services. "Change is a way of life for the innovative service organisation" [Cowell 1988, p. 297].

1.3.2. Maturity phase (2001–2005)

The dominant logic of the phase

The period of maturity was dominated by the focus on customers. Besides, from the point of view of a customer, the question of whether innovation derives from products or services, non-technological or technological elements, etc., is of secondary interest [Normann 2001]. Therefore the shift from demarcation to the synthesis approach was observed.

In the maturity phase two distinctive perspectives were proposed. The first one indicated that in order to develop new services a company must understand and rightly anticipate consumer needs. The proactive learning about consumers, observation of consumers in real life and involving consumers in new service development may permit its achievement [Matthing, Sanden and Edwardsson 2004]. The second perspective stated that the recognition of consumer needs might be problematic and expensive. It indicated that the most effective way is to transfer need-related aspects of service development to users by delivering a "toolkit for innovation" [Hippel 2001, p. 247]. In such a way customers handle

and share the development process freely. Further investigations on the role of customers in service innovation covered the validation of innovation by consumers at different stages [Abramovici, Bancel-Charensol 2004]; key elements of user involvement in innovation in services including objectives, stages, intensity and modes of involvement [Alam 2002]; the comparison between innovations developed by professional service developers and users themselves [Magnusson, Matthing and Kristensson 2003]. It appears that in the mature phase customers placed primary importance on research into innovation in service sector.

The maturity phase differed from the formation phase in the approach to technology. The researchers focused on non-technological innovation. As Hipp and Grupp state: "many innovations in the service sector use technological developments merely as a means of creating new and improving existing products and processes rather than just offering pure technological progress. Equally important are adequate methods in selling and marketing" [2005, p. 520].

The effects of innovation

In the context of the effects of innovation the maturity phase was a logical continuation of the formation phase. Researchers concentrated on the effects of innovation on (1) business processes. And they also studied further the effects on (2) relationships, and (3) financial performance.

For knowledge-intensive business services the improvement of business processes was the important priority [Wong and He 2005]. Innovation resulted in increased efficiency, productivity [Akamavi 2005] and flexibility [Wong and He 2005]. In this context two evolutionary stages: handling key actions in the new service development process and creating the environment favourable for continuous change were distinguished [De Jong and Vermeulen 2003]. It appeared that in the context of the business processes innovation lead to achieving good internal functional relations and exploiting economies of scale.

The effect of innovation on a firm's relationship with customers may be found in several empirical analyses. The development of a responsive public service, that operates around the clock, impacted positively on customer satisfaction in short and long terms [Royston et al. 2003; Perks and Riihela 2004]. The effects of innovation extend to customer loyalty [Van Riel, Lemmink and Ouwersloot 2004]. The central role of customers in the maturity phase was further supported.

In the context of the effects of innovation on the financial performance it was stated that a new service adds substantial value to other services and products

and therefore improves it [Van Riel, Lemmink and Ouwersloot 2004]. The interplay between old and new services contributed to the achievement of positional advantage and a consequent gradual improvement of financial performance.

1.3.3. Multidimensional phase (2006–present)

The dominant logic of the phase

The evolution of the approaches to innovation in services resulted in an all-encompassing view. Innovation in services was approached from the multidimensional perspective of dynamic capabilities required to manage innovation efficiently. A group of six service innovation capabilities was indicated. It included: "signalling user needs and technological options; conceptualising; (un-)bundling; co-producing and orchestrating; scaling and stretching; and learning and adapting" [Hertog, van der Aa and Jong 2010, p. 490]. The successful service innovators out-performed other companies in at least some of the above capabilities.

Researchers in the multidimensional phase tended to use synthesis perspective to study technological and non-technological innovation. The synthesis perspective was often built on the broad Neo-Schumpeterian approach which defined innovation in the context of services as a change in the components or a change in the combination of components. Basing on the Neo-Schumpeterian approach Amara, Landry and Doloreux stated that "by integrating the demarcation approach into a new synthesis it allows the integration of technological and non-technological dimensions of innovation into a single perspective that is likely to shed new light on the multidimensional facets of innovation" [2009, p. 408]. Information and communication technologies were not necessarily drivers but often facilitators of innovation in services [Gago and Rubalcaba 2007]. Different kinds of innovation and different organisational actions interacted and stimulated innovation activity.

The focus was placed on the two-dimensional approach including system and market failures in service innovation. The system failures covered mainly the non-adaptation of the existing regulatory framework to the needs of service innovation. The market power failures included the disappearance of competition which in turn leads to diminishing the incentive to innovate [Rubalcaba, Gallego and Hertog 2010].

The determinants of six different forms of innovation implemented in service companies were included in a single econometric model. Despite the novelties in process the authors included new products, changes in the delivery method,

business strategy innovation, modification of managerial technique and modification of marketing strategies and concepts [Amara, Landry and Doloreux 2009].

Traditionally some of the characteristics of innovation in services were shared by the low-tech industries. However the distinction between high-tech and low-tech industries is nowadays difficult. Companies in all sectors insist strongly on innovation to remain competitive. Besides even traditionally low-tech firms created specialised research departments producing highly advanced outcomes [Tunzelmann and Acha 2006]. Furthermore networks, close relations with both suppliers and customers and outsourcing make the traditional boundaries disappear. Innovation penetrates smoothly between sectors.

The effects of innovation

In the multidimensional phase authors presented strongly diversified studies covering the effects of innovation on (1) capabilities, (2) relationships, (3) competitiveness, and (4) business process. It seems however that researchers focused most on the effects of innovation on a company's capabilities and relationships.

The effects of innovation on a firm's capabilities covered alterations in company culture and the firm's growth. It was ascertained that an innovation orientation paradigm needed to be implemented in all the fields of the company's activity (not just R&D) in order to result in significant advancements [Simpson, Siguaw and Enz 2006]. The employee and enterprise cultures supported the positive effects of innovation [Kaner and Karni 2007].

In the context of the effects of innovation on the relationships the researchers focused on the client-provider service co-creation which represented the interaction framework in service innovation. Service innovation may have a positive impact on the value creation of both clients and providers [Möller, Rajala and Westerlund 2008]. Also it increases the clients' strategic degree of freedom. The development of new services with clients increased their involvement with and loyalty to the company [Lyons, Chatman and Joyce 2007]. Moreover, the service innovation has the potential to off-load work from customers by introducing such things as smart services. In such a way customers may concentrate on their core competences [Shum and Watanabe 2007].

In the context of competition researchers demonstrated that service innovation is desired in most operations [Panesar and Markeset 2008]. It appeared that service innovation has the ability to create new markets. However, most of the innovation in services is incremental and only the breakthrough innovation has a market-creating potential [Berry et al. 2006].

In the multidimensional phase authors studied further the effects of innovation on business processes. In this light six dimensions of innovation strategy were introduced: product/service innovation, process innovation, leadership orientation, internal innovation source, external innovation source and investment that lead to better performance [Ciptono 2006]. Alterations in a firms' financial performance due to innovation were embodied in changes in sales, return on assets and net profit margin. It appeared that the multidimensional phase built on the achievements of the previous phases and introduced a multidimensional perspective. It recognized fully the complexity of innovation in services.

Summary – innovation in services

In the light of the present research it was indispensable to deepen the discussion on innovation by concentrating on the service sector. The present sub-chapter employed a comprehensive approach based on the historical evolution of innovation in services. The dominant logic and the resultant effects of innovation were studied. Innovation in services does not result solely from adapting the solutions developed in manufacturing. However, despite the growing spending on R&D in service companies, the adoption and adaptation processes are still important [Miles 2006]. Nevertheless innovation in services may be considered nowadays a research field separate from innovation in manufacturing.

The evolution of the approaches to innovation in services has evolved significantly during the last thirty years (from 1986). In the formation phase the researchers analysed the inseparability of production and the consumption of services and the high involvement of front-line staff which distinguished services from manufacturing. Furthermore manufacturing was considered more innovative which often resulted in the transfer of innovation from this sector to services. In the context of the effects of innovation researchers targeted: financial performance, business processes and competitiveness. Financial performance referred mainly to the increase in sales. However Chaney and Devinney [1992] signalled for the first time the positive relation between innovation and market value. In the maturity phase the researchers targeted the role of consumers in shaping innovation. The involvement of consumers took place in all phases of the innovation process from the concept definition to the implementation of the methods of evaluation. It was indicated that users themselves might develop innovation as efficiently as professional developers. Indirectly focusing on non-technological innovation caused such a situation. From the point of view of the effects of innovation researchers

targeted three fields: business process, relationships and financial performance. It was indicated that innovation impacts on productivity, efficiency, service quality and consumer satisfaction. Also it may allow the exploitation of economies of scale. In the multidimensional phase researchers' employed comprehensive approaches. The authors indicated that innovation management requires dynamic capabilities. A two-dimensional – system and market – analysis was proposed. The classifications of innovation covered its heterogeneity by covering new products and processes, changes in the delivery method, business strategy innovation, modification of managerial technique and modification of marketing strategies and concepts. Also it was mentioned that a distinction between high-tech and low-tech companies is nowadays difficult as most companies use advanced technologies on a daily basis. In the context of the effects of innovation the researchers covered four fields: capabilities, relationships, competitiveness and business process. The authors indicated that innovation results in changes in a company's culture, the firm's growth and firm-wide orientation. The client-provider service co-creation was analysed in the light of loyalty. The intensity of innovation infers that only breakthrough innovation has a market-creating potential. The study of literature demonstrated the multitude of approaches to innovation in services. It resulted from the lack of a widely accepted theoretical framework. Research addressed innovation in respect of the specific nature of the studies concerned. Evidently in each investigation the approach needs to be individually shaped to account for the uniqueness of the research.

1.4. Innovation in tourism companies

From the point of view of the present research innovation in tourism is of key importance. Most tourism companies belong to the service sector [Gołembski 2007]. However they have their own specificity which may be transmitted to innovation. Therefore the discussion on innovation in services needs to be deepened to capture the particularities of innovation in tourism.

As Carvalho and Costa state: "tourism is currently one of the most promising industries in the world and there is an urgent need to better understand innovation in this sector" [2011, p. 23]. The innovativeness of tourism was underestimated for a long time which was reflected in the few studies in this field. However the spread of new information and communication technologies resulted in growing recognition of innovation in tourism by both practitioners and researchers [Decele 2006].

Tourism companies form heterogeneous group [Gołembski 2009]. The tourism industries selected cover accommodation for visitors, food and beverage activities, passenger transportation, travel agencies and other reservation activities [UNWTO 2010]. Tourism characteristic activities as determined by UNWTO cover: accommodation for visitors, food and beverage activities, railway passenger transport, road passenger transport, water passenger transport, air passenger transport, transport equipment rental, travel agencies and other reservation service activities, cultural activities, sports and recreational activities, retail trade of country-specific tourism characteristic goods and other country-specific tourism characteristic activities [2010].

A set of characteristics which distinguish tourism from other sectors in the context of innovation may be stated as follows: "tourism produces and sells product bundles instead of products (products being "experiences") which are very intangible, products which cannot be stored (simultaneity of production and consumption), the consumption of tourism products involves the active participation of the customer (prosumer) and tourism production/marketing may involve large capital assets (airlines, hotel chains or car rental firms) or at the intermediate, distribution and final consumption stage may involve interaction personnel (e.g. travel agencies, restaurants, coaches, etc.)" [Weiermair 2004].

In the present research a holistic approach was proposed to study the particularities of innovation in tourism. It covered the evolution and the topical division of the research. One of the topics covers the effects of innovation which is in line with the present research. The evolution of the approaches to innovation in tourism was rather distinctive from the evolution of the approaches to innovation in services described in the previous chapter. According to Nagy the beginning of the investigation of innovation in tourism appeared in the 1980s and a considerable intensification of research occurred in the 2000s when the importance of the topic was fully recognised by both researchers and entrepreneurs [2012]. The author delineates the year 2000 as the crossover point between the early and late periods in the scientific investigation into innovation in tourism. Therefore two distinctive phases may be identified – initiation (before the year 2000), and maturity (after the year 2000) [Nagy 2000]. However, contrary to the situation in services, no further distinctive periods may be seen in the maturity phase.

The research on innovation in tourism after the year 2000 was not consistent. Different researchers focused on different topics. In the extensive review of innovation research in tourism Hjajager presented different trends followed by the research [Hjalager 2010]. In the present chapter the present division of the research conducted in the new millennium will be delivered.

The present chapter will be organised as follows. First the approaches to innovation in tourism that occurred in the initiation phase will be presented jointly. Second, the approaches to innovation in tourism that developed in the maturity phase will be presented, broken down into separate topics.

1.4.1. Initiation phase (1980–1999)

The early period of investigation of innovation in tourism was characterised by the lack of sound theoretical foundations. The authors presented different approaches to innovation in tourism and there was not any dominant logic.

In the initiation phase the authors emphasised that the development of tourism depends on the implementation of innovation which in turn stands for an ability to anticipate and respond to the changes in the international tourism marketplace [Poon 1988]. In the similar vein the researchers referred to the contribution of research to the new product development in tourism. The researchers indicated that live product tests are often the most cost-effective and appropriate use of research funding and time [Riley 1983].

Two typologies of innovation were introduced: at the enterprise level which covers: "process innovations, product innovations, transactions innovations, innovations of the distribution system, management innovations and innovations in the handling of information", and at the meso- and macro-economic levels which include: "innovation in the market niche phase, regular innovations, architectural innovations and revolutionary innovations" [Hjalager 1994, p. 197]. In a later work Hjalager [1997] took into consideration the issue of sustainability. A typology of innovation connected to the environment was offered. It isolates "product innovations, classical process innovations, process innovations in information handling, management innovations and institutional innovations" [Hjalager 1997, p. 35]. It appeared that the majority of innovation was developed in other sectors and adopted by tourism companies.

It was demonstrated that the expansion of booking through the adoption of electronic media introduces new opportunities for tourism enterprises [Buhalis 1999]. In order to survive growing competition innovation is indispensable. Moreover the adoption of information technology tools (which were innovative at the time) delivers considerable benefits as the company's presence in the virtual world results in increased demand [Buhalis 1999].

Innovation and creativity were isolated as one of the key elements of entrepreneurship [Morrison, Rimmington and Williams 1999]. However the competitive advantage based on innovation is often impermanent as successful innovation

attracts imitators. Furthermore the strategy focused on the development of breakthrough innovation is more difficult to imitate and extends the time taken for leaps forward in productivity and competitiveness. In relation to marketing the focus on the existing consumer needs may lead to "incrementalism" which does not offer fundamental innovation [Morrison, Rimmington and Williams 1999].

1.4.2. Maturity phase (2000–present)

The maturity phase expands over 16 years (from the year 2000). The academic achievements of the period will not be presented in the evolutionary perspective but in the topical viewpoint. In the new millennium researchers conducted diversified studies on innovation in tourism which covered such fields as: categories of innovation, determinants and driving forces, search process and knowledge source for innovation and the effects of innovation.

Categories of innovation

An important part of the research on innovation in tourism covered the introduction of adequate categorisation [Hjalager 2010]. In the present research this field of study is of primary importance.

The Schumpeterian division of innovation was adapted. It includes: "generation of new or improved products, introduction of new production processes, development of new sales markets, development of new supply markets, reorganisation and/or restructuring of the company" [Weiermair 2004, p. 2]. The OECD's four categories were used: product, process, organisational, marketing [Hall 2009]. In tourism Hjalager et al. isolated "new products and services for tourists, new managerial methods and resource mobilization, educational spin-offs and innovation in the educational sector, reverse community innovation – innovation aiming at the benefits of the residents, reverse business innovation – innovation furthering other business branches" [2008, p. 33]. In the work of 2010 Hjalager divided innovation in tourism into: product or service, process, managerial, marketing and institutional [Hjalager 2010]. It appears that in comparison to the works published in the previous phase Hjalager extended the typology of innovation to encompass its diverse types.

There seems to be a lack of consensus on the classification of innovation in tourism. The adoption of general classifications is opposed to the creation of classifications dedicated to tourism. Therefore this field requires further scientific investigation.

Determinants and driving forces of innovation

Researchers in the maturity phase approached the issue of forces driving innovation from three viewpoints: Schumpeterian – assuming the dominant role of entrepreneur, technology-push/demand-pull paradigm and Marshallian innovation system.

Managerial skills are the key determinants of a firm's performance. The lack of skilled managers is an important barrier to a venture's success and lowers its innovativeness. It is especially the case of small companies where owners are managers involved in all areas of the firm's activity. In tourism such situation is common [Kachniewska 2011]. In the case of large tourism companies the barrier is less significant [Lerner and Haber 2000]. It was suggested that in the case of small entities innovation occurs "in arts and crafts, rather than in the form of new ventures and growth" [Getz and Petersen 2005, p. 235]. The innovativeness of such entities is relatively small in comparison to large, international tourism companies. Lifestyle entrepreneurs are able to create and introduce innovation to the wider industry. However, they specialise in developing and reproducing of niche market products [Ateljevic and Doorne 2000].

The other important stimulus of innovation is the interplay of push and pull factors. In the context of push factors the disintermediation effect of ICT on distribution channels in tourism was indicated. Moreover thanks to the use of communication technologies small travel agencies increase the chances for growth in travel distribution segment [Bowden 2007]. The efficiency of ICT in reducing costs and improving distribution strategy was showed [Buhalis 2004]. Also the employment of gamification mechanism and social media tools enabled location-based social media marketing on a large scale [Kachniewska 2015]. From the perspective of pull factors the European leisure styles were described. Some of the groups (e.g. "e-freaks") emerged recently and require tourism products suited especially to them. Therefore changing society exerts pressure for new products and innovation [Weiermair and Mathies 2004].

The systems of innovation in tourism are built on social networks and geographical proximity which support the processes of dissemination and implementation of innovation [Gołembski 2009]. In this context the geographical and activity-based clusters in tourism were described. They lead to co-localisation, complementarity, integration and synergies [Decelle 2006]. Clusters in tourism usually have strong linkages to other sectors such as: food and beverage, equipment or design. In tourism cooperation is relatively easy compared to other sectors as the sector itself "embraces a multitude of sectors" [Nordin 2003, p. 19].

In the similar vein, efficient governance is the way to stimulate innovation. The role of governance is to ensure linkages between business and knowledge production organisations such as universities and research institutions [Svensson, Nordin and Flagestad 2005].

Search process and knowledge source for innovation

Some researchers in the maturity phase focused on the research and development processes. For a tourism company the important source of knowledge is the presence in a business chain or network. Usually knowledge transfer spreads from the head offices through managerial capacities and capital. In this context the technology transfer in hotel chains was studied. The collaboration between hotel chains and local companies facilitates the implementation of innovation [Jacob and Groizard 2007].

Furthermore some knowledge is already in the organisation but needs to be captured, understood, adapted and recorded. Entrepreneurial implementation of innovative products helps to exploit the competitive differentiation opportunities [Frehse 2005]. Hallenga-Brink and Brezet analysed the process of developing sustainable innovation in micro-sized enterprises in tourism. The authors demonstrated the key role of internal and external communication in developing and implementing innovation [2005].

Moreover innovation may result from the interactions between tourism companies [Gołembski 2007]. The development of clusters takes a bottom-up perspective and authorities may only create the favourable environment. Nevertheless, once it is set, the exchange of knowledge between the collaborating actors is beneficial and results in innovation [Nordin 2003].

The impact of the cooperation between academia and business on innovation is inconsiderable due to the "impasse between consultancy and academic research; the difficulty in transfer between the differing cultures of researchers and practitioners; the past failure of researchers to engage in codification; the real barriers to transferring research to operational adopters" [Cooper 2006, p. 59]. However the important connection between universities and practitioners lies in delivering a qualified workforce. Vocational aspects in connection with deep sets of experience augment the quality of alumni which in turn leads to increased innovation capabilities [Stergiou, Airey and Riley 2008].

Effects of innovation

The studies on the effects of innovation are crucial due to the fact that they deliver an answer to the question – why innovate? Furthermore they are fundamental from the point of view of the present research. In the light of the research objectives it was crucial to determine the categories affected by innovation and their coverage in the previous research. The examination of the effects of innovation in tourism companies was based on the method of systematic literature studies – SALSA – Search, AppraisaL, Synthesis, Analysis [Booth, Papaioannou, Sutton 2012] [4]. In order to search the publications the Scopus database was employed. The research procedure resulted in 872 relevant publications. The duplicates and the papers in languages other than English were eliminated. Also the research was limited to the articles published in journals listed on the Thomson Reuter's Journal Citation Report. Finally the full texts of the remaining publications were examined and 24 publications which focused on the effects of innovation in tourism were pinpointed[5]. The procedure is presented in Figure 2.

The whole set of publications under investigation was analysed with the use of content analysis. The results of the investigation covering the categories of effects and postulated effects are delivered in the Table 2.

In the previous research eight categories of effects were covered in the context of implementing innovation in tourism companies. Improvement in the internal organisation was achieved through: human capital management improvement, change of organisational culture and an increase in productivity due to the implementation of information technologies.

The effects on financial measures and relations with clients were covered in previous research. The increase in profits, income and market value was the result of such innovations as: the use of information and communication technologies and expanding the offer. The innovations leading to a decrease in costs included: recycling, energy-saving technologies and the minimisation of the amount of waste.

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[4] The comprehensive research on the effects of innovation in tourism companies was published in Szutowski 2014a.

[5] Berezina et al. 2012, Blake, Sinclair and Soria 2006, Chang, Gong and Shum 2011, Chou 2014, Fuchs et al. 2010, González and León 2001, Grissemann, Plank and Brunner-Sperdin 2013, Hashim et al. 2014, Hjalager 2002, Hjalager 2010, Jacob et al. 2003, Khan and Khan 2009, Lawton and Weaver 2010, Lee, Qu and Kin 2007, López-Fernández, Serrano-Bedia and Gómez-López 2011, Martin 2004, Martinez-Ros and Orfila-Sintes 2009, Nicolau and Santa-Maria 2013a, Ottenbacher and Harrington 2010, Siguaw, Enz and Namasivayam 2000, Victorino et al. 2005, Walsh, Enz and Siguaw 2003, Weiermair 2005, Weiermair 2004.

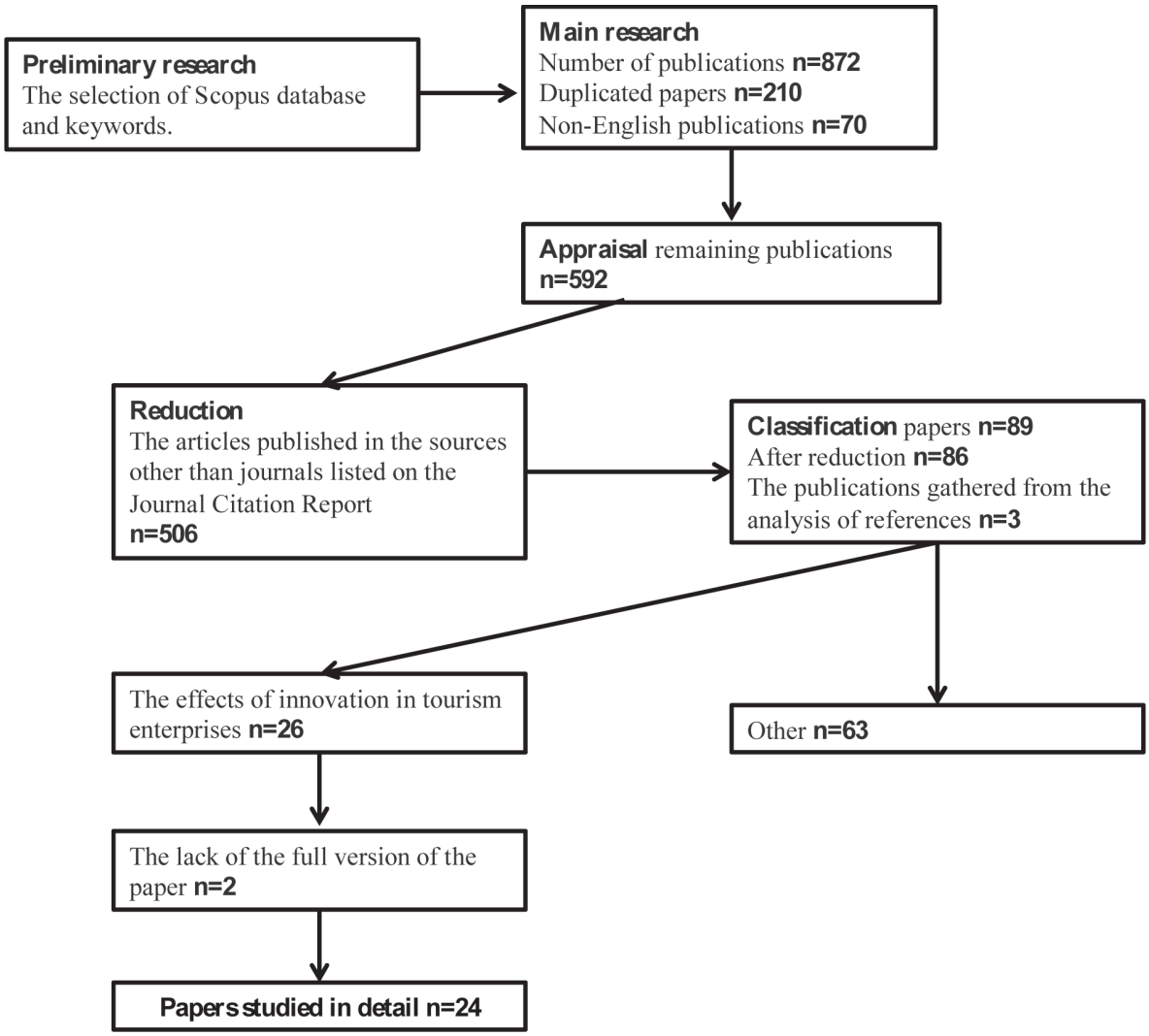

Figure 2. The strategy of the systematic literature study on the effects of innovation is tourism

Source: own elaboration

Table 2. The effects of innovation in tourism enterprises

No	Category	Postulated effects of innovation
1	Financial measures	Diminishing costs as the result of the diminishing use of resources, increase in income, profit and market value
2	Organisation	Improvement of internal processes
3	Relations with clients	Increase in the client satisfaction
4	Communication with clients	Improvement of the quality of communication
5	External relations	Improvement of the competitive position

6	Growth	Increase in employment, training
7	Service quality	Increase in the quality of services
8	Reputation	Improvement of the reputation

Source: own development

The key role of clients was reflected in two categories concerning: relations and communication. The effects on relations covered: increased client satisfaction, propensity to re-book the hotel and propensity to recommend the hotel to friends and family. The innovations analysed included the use of ICT and an innovative price policy. The improvement of the communication with clients resulted from the employment of Internet communication channels and the introduction of business customer service centres.

The improvement of the position towards competitors and the improvement in the relationships with suppliers were mainly the effects of the implementation of ICT. Such effects resulted also from the introduction of new services and repositioning.

The three other indicated categories included: growth, service quality and reputation. The improvement in the overall functioning of the company resulted from the implementation of new training and recruitment systems. The increase in quality resulted from: the implementation of ICT in the customer service centre. The improvement in reputation resulted from the change in the internal attitude towards innovation.

In conclusion innovation in tourism was approached from the holistic, evolutionary perspective. Two distinctive phases were isolated: initiation (1980–1999), and maturity (2000-present). In the initiation phase the researchers suffered from the lack of sound theoretical background. The authors focused on the new product implementations and the adoption of information technologies. The classifications of innovation in tourism were introduced.

In the maturity phase researchers covered four main topics: categorisation of innovation, determinants and driving forces of innovation, search process and knowledge source of innovation and the effects of innovation. As far as categorisation is concerned, there was no consensus between researchers. Further scientific investigation is necessary in this field. The driving forces of the innovation process covered mainly the involvement of entrepreneurs and changing demand which is in line with the technology-push/demand-pull paradigm. In tourism the important source of knowledge is the company's business chain

or network. However the cooperation with academia is still inefficient. As far as the effects of innovation in tourism are concerned eight categories were created. They derived from the scientific coverage in the previous research and included: financial measures, organisation, relations and communication with clients, external relations, growth, service quality and reputation.

Chapter summary

The issue of innovation is crucial for contemporary economics. However the comprehensive theory of innovation is still missing. The present chapter aimed at summarising the knowledge on innovation, innovation in the service sector and innovation in tourism. The chapter was based on literature studies.

In the context of the present research the definition of innovation was fundamental. Its formulation was based on the evolutionary overview of the approaches to innovation in the world. Based on the analysis of the evolution of the different approaches the definition of innovation was formulated as follows: "innovation is a process of implementing positive and new ideas into business practice". The effects of the multi-stage process of innovation are presumed to be positive but may not be determined a priori due to the unpredictability of innovation projects.

The analysis of the most important economic theories referring to innovation resulted in the determination of the broad context for analysing innovation which was crucial for the present research. Amongst the theories referring to the external environment, the structure of the market, the competitive position of a company, the actions of competitors and the interactions between public and private sector were named as the forces influencing the innovation process. Furthermore marketing and diffusion theories indicated that changing market needs and the diffusion process stimulate innovation in companies. Theories focusing on the internal environment emphasised the role of the combination of resources, sunk costs, cohesive internal structure, agreement between agents and principals and the acting in favour of the common good by all participants of the inter-organisational game. Other theories concentrated on the evolutionary character of innovation, the unpredictability of an innovation project's outcome and the possible irrationality of decision makers.

Due to the focus of the present research the general discussion on innovation was complemented by a deeper investigation on innovation in services. It was ascertained that innovation in services constitutes a separate field from innovation

in manufacturing. However the approaches to innovation in services are strongly diversified. The studies on the effects of innovation in services covered the increase in a firm's capabilities and the external and internal relationships. Also the researchers examined the effects on competitiveness, business processes and financial performance. Furthermore it was concluded that innovation in services shares some of the characteristics of innovation in low-tech industries and that nowadays traditional low-tech industries also apply sophisticated technological solutions.

In the light of the present research innovation in tourism was crucial. Two distinctive phases were isolated – the initial phase characterised by the lack of a firm theoretical background, and the maturity phase characterised by the acknowledgement of the importance of innovation in tourism, and in consequence, by the number of different approaches and studies. In the maturity phase researchers mainly examined one of the four fields: categories, determinants and driving forces, search process and knowledge source and the effects of innovation in tourism. In the studies covering the effects of innovation researchers referred mostly to the diminishing costs, the improvement in organisational processes and in financial measures. There were only two studies covering the effects of innovation on market value. It reveals an important research gap. The approaches to innovation differed strongly from one to another. It appears that innovation is a very wide category and needs to be addressed individually in each research project to capture its particularities.