

Entrepreneurship in Virtual Economy: the Case of Currency One SA

Ewa Badzińska¹, Magdalena Brzozowska-Woś²

Submitted: 05.12.16. Final acceptance: 23.05.17

Abstract

Purpose: The scientific purpose of the study is an attempted synthesis of interpretation of “the virtual economy” and “the virtual environment” in the Polish and foreign literature on the subject. The cognitive purpose thereof is to offer an identification and a qualitative analysis of the factors that determine the development of e-entrepreneurship using an example of business practice.

Methodology: The theoretical basis of the study is a scientific research of leading scholars on the theory of entrepreneurship in the context of virtual economy. An exploratory, qualitative case study methodology has been applied for the purpose thereof. The research has been conducted using the example of Currency One SA, operating on the currency exchange market in virtual economy. The application of the empirical method of a case study has made it possible to characterize the essence of e-entrepreneurship and present the studied phenomenon in business practice.

Findings: Research results reveal an existence of interdependencies between the intellectual potential of staff members and the market success of a company. Explanation of the critical success factors, showing the implementation of innovative ICT solutions and stages of company development, illustrates how the existing theory is experienced by practitioners in virtual economy. Furthermore, the paper confirms the positive impact of e-entrepreneurship on the effectiveness of the company subject to analysis, and presents virtual economy as a completely new sphere through which it is possible to offer new products and services.

Research implications: The rationale for conducting research on case studies is the need to orient the practice towards a better understanding of modern economic reality. The study may provide a starting point for empirical quantitative research, as well as act as a contribution to the discussion on entrepreneurship in the rapidly changing virtual economy.

Originality: This paper comprises not only a set of notions related to and the concept of e-business models, but also offers new arguments in the discussion on the framework for entrepreneurship in virtual economy. The conducted research is an original attempt to explain the essence of the studied phenomenon and to illustrate its progress in a changing business environment.

Keywords: e-entrepreneurship, e-business models, ICT (Information and Communication Technology), virtual economy, virtual environment.

JEL: 031, 032, 033

¹ Poznan University of Technology

Correspondence address: Poznan University of Technology, Faculty of Engineering Management, 11 Strzelecka St., 60-965 Poznan, e-mail: ewa.badzinska@put.poznan.pl.

² Gdansk University of Technology

Correspondence address: Gdansk University of Technology, Faculty of Management and Economics, 11/12 G. Narutowicza St., 80-233 Gdańsk, e-mail: mbr@zie.pg.gda.pl.

Introduction

The moment one starts taking advantage of modern information technology in the field of business management can be safely considered a breakthrough in the global economic development. In fact, its importance can be compared only to the Industrial Revolution. Companies have been subject to the logic of the virtual world and its characteristic technologies linked to hypermedia, which refers to both the multiplicity of media used in the communication process and the multitude of relationships appearing therein. The digitization of business and trade processes, as well as the growing importance of Internet technologies make the impact of the virtual environment (a multidimensional system of computer networks, devices, applications, and data) increasingly visible in many areas of economic and social development.

A special role in the development of e-business is played by information networks, including the Internet. It is a space in which “new information communication technologies change the form and nature of relationships between companies and their external environment” (Frąckiewicz, 2013, p. 55). Thanks to the use thereof in entrepreneurship, geographic barriers have ceased to exist, and so have those related to the introduction of innovations and shaping relationships with partners and consumers. There is also a visible increase in the use of electronic systems in the context of customer relationship management – CRM (Dzopalic, Zubovic and Bradic-Martinovic, 2010). The development of information and communication technology has also affected the changing behaviour of entrepreneurs and the ways they work. Products, whether material or immaterial, are created on the basis of observation of rapidly changing customer needs, which tend to be of an increasingly individual nature. The process of their distribution has also undergone certain modifications. The following concepts have become popular in literature: virtual economy, virtual organization, and electronic business. The development of e-business has involved a number of models of conducting business and communication between the virtual actors of the market (Bouwman, de Vos and Hacker, 2008). Innovative e-business models bring together business strategy, organizations, and technology (Szpringer, 2012). In many sectors and branches, the intertwining of the traditional and the electronic sphere of economy is already so far-reaching that economy should be discussed without implementing any artificial divisions.

Given the above reasons, the scientific purpose of the publication is to offer an attempted synthesis of interpretation of “virtual economy” and “virtual environment” as covered in both Polish and foreign literature. The cognitive purpose thereof is to provide identification and a qualitative analysis of the factors that determine the

development of e-entrepreneurship based on the example of Currency One, operating in virtual economy on the currency exchange market. For simplification and readability reasons, the terms “e-entrepreneurship”, “entrepreneurship in virtual environment”, and “virtual entrepreneurship” will be used in this study synonymously. The empirical method applied makes use of a case study involving an analysis of the processes implemented in the enterprise in question (Dyer and Nobeoka, 2000).

Entrepreneurship in the context of virtual economy and virtual environment

While analysing economy and entrepreneurship from a virtual perspective, it is necessary to consider the concept of virtuality itself. It is ambiguous and depends largely on the context in which it occurs. Virtual space is primarily created via the Internet, but also extranet and intranet (inter-organizational networks), and the applications and the hardware infrastructure that determine the functionality and usability of technology for the users thereof. In addition to that, there is also the matter of technological solutions and information in the field of data transmission, sharing information resources, and the co-creation of content shaped by virtual environment. Its impact must be considered in the context of subjects and beneficiaries of its potential because they provide the cyberspace with specific value and importance (Badzińska, 2013). Selection of the components of virtual environment from the point of view of their performance, usability, functionality, and smooth application determines this environment's penetration and popularity among users, understood as market players (Małachowski, 2005). The mutual relations between the elements of the virtual market are characterized by both multi-tasking and interdependence. The speed and interactivity of communication in a virtual environment, as well as the specificity and timeliness of information often shape the established relationships and determine the success of a transaction. It is even common to see a competition of speed taking place in such setting, which is an undeniable value in the virtual space and makes it possible to offer an immediate response to customer inquiries (Brodie, Winklhofer, Coviello and Johnston, 2007).

Virtual economy, in turn, is referred to as new economy, information economy, internet economy, digital economy, Internet value network, network economy, Net Economy, or e-economy. The literature devoted to this area uses these terms synonymously (Table 1).

Table 1. Varying definitions of virtual economy applied in selected research

Autors	Used terms	Explanation of terms
Tapscott (1997, p. 8)	“new economy”	A dozen overlapping themes differentiate the new economy from the old. The new economy is (i) a knowledge economy, based on human capital and networks, (ii) a digital economy, (iii) virtualized, (iv) a molecular economy, (v) a networked economy, (vi) eliminating middlemen, (vii) being created by the new media, a convergence of the computing, telecommunications, and content industries, (viii) an innovation based economy, (ix) blurring the gap between producers and consumers, (x) immediate, (xi) a global economy, and (xii) causing discord.
Kelly (1998, p. 1)	“new economy”	We now live in a new economy created by shrinking computers and expanding communications. (...) This new economy represents a tectonic upheaval in our commonwealth, a far more turbulent reordering than mere digital hardware has produced. The new economic order has its own distinct opportunities and pitfalls. (...) This new economy has three distinguishing characteristics: It is global. It favors intangible things—ideas, information, and relationships. And it is intensely interlinked. These three attributes produce a new type of marketplace and society, one that is rooted in ubiquitous electronic networks.
Shapiro and Varian (1999, pp. 6–9, 173)	“information economy”	The tension between giving away your information to let people know what you have to offer and charging them for it to recover your costs is a fundamental problem in the information economy. (...) In short, today’s breathless pace of change and the current fascination with the information economy are driven by advances in information technology and infrastructure, not fundamental shift in the nature or even the magnitude of the information itself. (...) The information economy is about both information and the associated technology. (...) Information economy is populated by temporary monopolies. Hardware and software firms vie for dominance, knowing that today’s leading technology or architecture will, more likely than not, be toppled in short order by an upstart with superior technology.
Castells (2000, p. 10)	“new economy”	We live in a new economy, characterized by three fundamental features (...) First, it is informational, that is, the capacity of generating knowledge and processing / managing information determine the productivity and competitiveness of all kinds of economic units, by they firms, regions, or countries (...) Second, this new economy is global in the precise sense that its core, strategic activities, have the capacity to work as a unit on a planetary scale in real time or chosen time. (...) Third, the new economy is networked. At the heart of the connectivity of the global economy and of the flexibility of informational production, there is a new form of economic organization, the network enterprise.

Hartman, Sifonis and Kador (2000, p. XVIII)	“e-economy”, “digital economy”, “cyber economy”	E-economy: the virtual arena in which business actually is conducted, value is created and exchanged, transactions occur, and one-to-one relationships mature. These processes may be related to, but are nevertheless independent of, similar activities occurring in the conventional marketplace; sometimes called the digital economy or the cyber economy.
Afuah and Tucci (2000, p. 17–18)	“Internet value network”	Associated with each of the components of the Internet is an industry or group of firms that market similar or related products. (...) We call this the “Internet value network” because in the broadest sense, all the components described and their interrelations create value for the end users, the customers, and organizations that actually use the network. (...) The Internet value network can be divided into three major groups: users, communications service providers, and suppliers.
Shy (2001, p. XI)	“network economy”	The network economy is an important part of the whole economy as it applies to a wide variety of industries that influence our life and will even become more influential in this millennium. In addition, it provides some link between consumer behavior and social interaction.
Combe (2006, p. 21)	“internet economy”, “information economy”, “digital economy”, “new economy”	The terms “internet economy”, “information economy”, and “digital economy” are used to define the distinct contributions to the economy through use of the Internet, digital technology, or information and communications technology (ICT). Together these types of technologies have created the so-called “new economy”, that is based on entrepreneurship in knowledge creation and sharing, innovation and creativity, and utilizing information technology for developing and selling new products and services. The new economy defined the industrial landscape of the late twentieth century and will be the dominant driver of economies well into the new millennium.
Kollmann (2006, p. 323, 325)	“network economy”, “Net Economy”	The constant development of technology in the accompanying net economy has had a significant influence on various possibilities for developing innovative business concepts based on electronic information and communication networks, and realizing these by establishing a new company (e-ventures). (...) The growing relevance of IT and the expansion of electronic data networks have created a new commercial/business dimension that can be called “the network economy” or “the Net Economy”. (...) The basis of “the Net economy” is formed by four technological innovations: telecommunication, information technology, media technology and entertainment (the so-called “TIME” markets).
O'Reilly (2006)	“virtual economy”	“Virtual economies” are emerging phenomena in virtual worlds, usually in the context of Internet entertainments such as multiplayer virtual reality games. As could be expected, people enter these virtual environments for entertainment purposes rather than by necessity; recently, however, there is a trend for many people to interact within them for real economic purposes.

Source: own study.

The first researchers to establish the concept of virtual economy include Tapscott (1997), Kelly (1998), Shapiro and Varian (1999), Castells (2000) and Shy (2001), and then Combe (2006), Kollmann (2006) and O'Reilly (2006). Speaking of e-economy, we can assume that we are dealing with a virtual arena resembling the real world where economic activities are carried out, transactions are made, value is created and shared, and direct contacts between its participants are established and mature (Hartman, Sifonis and Kador, 2001). Virtual economy is a specific market for the exchange of information, services, and goods between companies and surrounding entities. Thanks to the relationships established within it, value is generated for its end-users (households, organizations, and companies) who take advantage of various networks, including the Internet (Afuah and Tucci, 2003). From this perspective, the network somehow coordinates the processes occurring between particular entities (Perechuda, 2007). The possibility of cooperation between market players increases thanks to global flows of information, capital, resources, and a continuous development of technology (Lu and Wang, 2008). Easy access to information technology makes it simpler to establish and maintain relationships between market players, which is of significance to the development of entrepreneurship.

The concept of entrepreneurship is a complex notion. The multidimensionality of this phenomenon raises a number of difficulties in assessing its size and effects, hence the literature on the topic and business practice have both adopted different criteria and measures for entrepreneurship (Dyduch, 2008). It can be described through the prism of personal qualities, skills, but also values, motivations, behavior, creative skills, and the willingness to take risks (Drucker, 1992; Hisrich and Peters, 1992; Timmons, 1990). A process approach to entrepreneurship is popular in the literature of the subject. It involves identifying and implementing opportunities arising in the environment (Glinka and Gudkova, 2011). The most important aspect in the entrepreneurial process is "the decision to enter new international markets or to enhance the presence into international markets, which can be considered as innovation" (Wach, 2015, p. 19). Kollmann (2006, p. 333) argues, in turn, that "E-entrepreneurship refers to establishing a new company with an innovative business idea within the Net Economy, which, using an electronic platform in data networks, offers its products and/or services based upon a purely electronic creation of value. Essential is the fact that this value offer was only made possible through the development of information technology." As the significance of Internet-based technologies has triggered a technological and societal development that is irresistible, "e-entrepreneurship can be expected to gain further importance in the future" (Kollmann, 2009, p. 13).

It is the continuous development of information and communication technology that constitutes the driving force behind modern business (del Giudice and Straub, 2011).

This is particularly evident in the context of Internet start-ups (Kollmann, 2006; McKnight, Vaaler and Katz, 2002; Seraroi-Tarrés, Padilla-Meléndez and del Aguila-Obra, 2006), taking advantage of the Internet and mobile technologies in the process of offer creation and communication (Badzińska, 2016; Brzozowska-Woś, 2012, 2013). The focus on the needs of future customers, providing unique value, and early market entry often allow companies to achieve competitive advantage (Grover and Saeed, 2004). Examples of such projects include Google, Skype, Twitter, Facebook, Dropbox or Instagram. Zhao (2007, p. 945) emphasizes additionally that “a combination of entrepreneurship and innovation will be a crucial factor to the long-term sustainability of e-commerce and e-businesses”.

The concept of e-business models – theoretical background

Virtual entrepreneurship, also referred to as electronic entrepreneurship, is closely linked to the concept of e-business models. Over the years there have appeared a number of publications presenting various concepts of e-business models both with regard to theory (e.g. Combe, 2006; Hartman et al., 2001; Lai, Weill and Malone, 2006; Olszak, 2004; Rappa, 2003; Szpringer, 2012; Tapscott, Ticoll and Lowy, 2000; Timmers, 1998; Weill and Vitale, 2001) and their pragmatic importance (e.g. Doganova and Eyquem-Renault, 2009; Hacklin and Wallnöfer, 2012; Perkmann and Spicer, 2010). These classifications contain a few to several dozen e-business models. Some authors have proposed a few basic models, while others have identified a dozen or more – Combe (2006), for instance, offered twenty. However, a comparison of different approaches reveals an existing convergence. An example may involve trade models bearing different names, including intermediary buyers, buyer brokers, transaction brokers, online auctions, stores, markets, auctions and Internet exchanges, market creators, electronic supply, distributors, shopping malls, or the manufacturer model.

Companies selling via the Internet and market organizers usually make use of a few of these models simultaneously. The key features of e-business models are their innovativeness, flexibility, openness, and generation of value for stakeholders (Szpringer, 2012). However, it is possible to distinguish a single and clearly dominant model, with others playing supporting, secondary roles. The essence of the use of e-business models lies in a greater efficiency resulting from an easier access to information. This makes it possible for organizations who employ these models to take decisions and carry out activities to bear the lowest cost at the assumed quality criteria, or lets them make the best use of the market potential, which increase sales as a result. Both the high quality of the offered products and an increase in the market potential could lead with time

to maximization of profit earned by companies. The success of organizations depends largely on their ability to develop the adopted business models and to adapt them consistently to changes occurring in the environment (Andries and Debackere, 2007; Poole, 2001). This adaptation to market reality may also be associated with combining the characteristics of various business models in the so-called hybrid models.

The changes we experience and the continuous development of information technology enable the transformation of an increasing number of material elements into a virtual (intangible) sphere. This concerns document workflow, distribution and logistics, customer service, marketing communication process, and sometimes also products. Thus, we are faced with increasingly virtual organizations. A virtual organization can be defined using the following two terms (Appel and Behr, 2004; Łobejko, 2000): narrow and wide. In narrow terms, it is a decentralized organization consisting of a number of physically existing entities and headquarters localized geographically in many places, cooperating with each other using ICT systems and virtual connections. In the wide sense, a virtual organization is an organization without its physical dimension; it exists temporarily for a common goal, combining different businesses, departments, and individuals. After completing its goal, it usually disappears. On the Internet, an organization can pursue typically virtual projects or projects related to activities taking place on the traditional market, despite the fact that it remains independent from them.

A continued modernization of information infrastructure in companies operating in the realm of virtual economy, their organizational skills (including flexibility and ease of adaptation to the surrounding conditions), and continuous training along with their wish to contribute to the information society all constitute primary sources of competitive advantage (Falk, 2007; Flanagan, Harrison, Chaari and Comeau-Vallée, 2012; Uyarra and Laranja, 2011). The continuous development of the global information technology and the possibility of its commercial application have not only changed the framework of competition among companies, but, in many, cases have affected the competitiveness of national economies. The further part of this research presents a case study covering a hybrid model of electronic business, which combines the following three models: merchant, middleman, and virtual community – according to classification by Rappa (2003).

Methodology and Research Framework

The broad scope of the problem area of e-entrepreneurship requires acceptance of the limitations of the study area. An exploratory, qualitative case study methodology has

been applied in order to conduct an analysis of processes implemented by Currency One SA. The purpose of the case study is to provide an identification and a qualitative analysis of the factors that determine the development of e-entrepreneurship on the basis of the example of Currency One, a company operating in virtual economy. The cognitive aim thereof is to present innovative business solutions employed on an online currency exchange market, designed and implemented by the company in question. Considerations regarding the research area focus on measurable economic and social outcomes achieved by the company (including implementation of practical solutions in the area of ICT, recognition among customers and in the business environment, rewards for innovativeness, the quality of the services offered, and promotion of the culture of entrepreneurship). The research is limited in that the practical implementation of its findings is limited to one case study only. The positive impact of e-entrepreneurship on the effectiveness of business could be captured better using a broader sample.

In order to identify factors that determine the development of e-entrepreneurship in business practice, a direct (in-depth) interview has been conducted with the founder of the company. A semi-structured interview questionnaire was prepared in advance. The example of practical implementation of e-entrepreneurship was selected using a purposeful sampling technique (Maxwell, 2005; Merriam, 1998). The purposeful selection of Currency One has resulted from a pragmatic criterion of data availability and because of the fact that the company offered a clear example illustrating the analysed regularities (Flyvberg, 2004). The necessity to confront a variety of data sources has forced the application of the principle of triangulation: i) qualitative has been obtained through a direct interview; ii) quantitative data has been collected using the analysis of materials from secondary sources available in databases, and iii) qualitative data has been gathered on the basis of customers' opinions featured on opineo.pl website. Both descriptive and explanatory techniques have been used in the presented case study. The exploratory research has been designed to identify the problem of e-entrepreneurship in business practice and the direction of further in-depth research.

The applied case study has helped recognize the analysed phenomenon in real conditions (Yin, 1984). The rationale for conducting research on case studies is the need to orient the practice towards a better understanding of modern economic reality. Case studies will make it possible to better understand and develop the analysed processes, taking into account the economic, social, and cultural characteristics of the region. The findings of case studies can help practitioners allocate the available resources better and improve the level of efficiency in general (Czakon, 2013; Salerno, de Vasconcelos

Gomes, da Silva, Bagno and Freitas, 2015). The obtained quantitative and qualitative data has constituted the basis for creating the characteristics of innovative business solutions offered on an online currency exchange market.

The Case of Currency One SA

Entrepreneurship in a virtual environment is an expression of new challenges and opportunities that open up for young and innovative organizations, particularly in the area of information and communication technologies. In addition to that, the development of business in virtual economy is a driving factor behind structural changes, and is a source of innovative solutions creating the basis for shaping competitive advantage. In the era of hypercompetition, the condition *sine qua non* has become the ability to offer not only services customized to the needs of individual customers, but also services available on mobile devices anytime and anywhere.

This study covers a range of specialized ICT services. The subject of the research is Currency One SA – today, one of the largest companies on the online currency exchange market in Poland (over 400,000 users have already trusted Currency One, 2016). The company has emerged as a result of a combination of the first social networking exchange platform – Walutomat.pl and the first electronic bureau de change – Internetowykantor.pl. The founders of Currency One SA (three persons) are all graduates of Poznań universities, who, on the basis of the possessed interdisciplinary knowledge and experience related to the IT industry, finance and economics, have created a modern e-business model. The first service was launched in November 2009, helping to create a new market in the Polish sphere of e-commerce – an online exchange market. It is based on the idea of peer-to-peer, or exchange rates between the service users, and is an undisputed leader among online exchange platforms. Internetowykantor.pl began its operations in April 2010 as the first exchange service in Poland, based on the model of an exchange office. The service enables rapid and secure exchange of currencies, especially EUR, USD, CHF, and GBP. The platform's mechanism is based on the principle of bank transfers, and the range of cooperating partners includes over 15 Polish banks, with transfers accepted from foreign banks from 40 countries (Currency One, 2016). The company's team consists of young, dynamic, and creative people, with a total of over 100 employees at present. These include programmers, FX dealers, and marketing and customer service specialists. The company's motto is "we are building the future of online currency exchange." The creators of Currency One claim that the purpose of their business is to offer customers an extensive, quick exchange platform that guarantees security of transactions, transparency of terms and conditions, and

attractive currency prices. The factors of significance to e-entrepreneurship in the case of the company in question include a set of endogenous components. The company manager has pointed to the human factor and, more precisely, to the potential of staff members and organizational culture based on knowledge, expertise, and commitment. The pillars of entrepreneurial culture of the organization include an ability to implement innovation and take actions towards technology development. The CEO of Currency One SA emphasizes both the individual characteristics of employees and the creativity of the team. Managers attach great importance to building the ability to generate new business ideas and ICT solutions to improve adaptation to the changing environment. Undoubtedly, responsible leadership plays an important part in shaping a unique configuration of organizational creativity as well (Bratnicka, 2015).

Exogenous factors were surely very important stimuli for the development of such a young company, and determined its success in virtual economy. The rapid development of electronic banking undoubtedly contributed to the surge in entrepreneurial activities taking place on virtual market. One of the crucial success factors was the increase in the demand for specialized online banking services. The condition here, however, was skilful use of the human potential and the willingness to take financial, psychological, and social risks. The changing environmental conditions of financial services meant intense efforts for the young entrepreneurs. The number of banks on the market was growing constantly. Transactions were made free of charge and in an express fashion, and the number of currencies offered for exchange was also increasing. New features, such as electronic invoices, payments linking, or being able to purchase the exact amount of products began facilitating the use of services for customers. The implementation of the so called Antispread Act in August 2011 allowed the citizens of Poland to repay foreign currency loans much cheaper by buying currency at, for example, Walutomat.pl or Internetowykantor.pl. instead of at a traditional bank lender. Flexible adjustment of services to changing environmental conditions and the ability to capitalize on market opportunities resulted in a significant success for the teams behind both sites. At the end of 2011, they enjoyed a nearly 300% increase in turnover compared to 2010 (Currency One, 2016). It should be emphasized that opportunity recognition is an important aspect in e-entrepreneurship, especially for technology-based ventures. The authors of the paper would thus like to conclude that the crucial factors for the development of e-entrepreneurship in the case Currency One were responsible leadership, commitment, and a great determination of the company's employees to reach the set objectives.

The company places a great emphasis on the quality of the services offered and on providing online services tailored to individual needs of their users. Customer Service

plays an important role, involving active engagement of staff members, who provide the platform's users with an ongoing support and an additional control, and respond constructively to common questions and requests. To meet the needs of the customers and to personalize the scope of the services offered, the creator of Internetowykantor.pl developed a new "customer panel" in cooperation with customers to create added value for them. This is an example of a skilful building of relationships with customers and of practical implementation of entrepreneurship in conditions of a virtual economy.

The entrepreneurship, flexibility, and commitment of the team resulted in a measurable success on the market and in a need to increase the number of staff. The end of 2012 brought new challenges and was a kind of a turning point for the business: Internetowykantor.pl transformed into a joint stock company. Recognition of the business opportunities existing in the virtual environment and effective implementation of the adopted strategy meant further development for both sites. Walutomat ranks currently among the top ranking cantors and online platforms, offering the most favourable currency exchange rate on the Internet. Internetowykantor.pl, in turn, has reached a number of 100,000 customers, and the service itself is a founding member of the Chamber of E-Commerce Poland, an initiative that brings together the biggest brands in the Polish e-commerce environment.

A significant breakthrough for both sites occurred in September 2013: following a merger, the largest company on the online currency exchange market appeared in Poland – the Currency One SA. The hard work was crowned with tangible economic and social outcomes. In the second half of 2014, there came a record-breaking level of currency exchange – over a billion zloty per month. The company's sales for 2014 amounted to over PLN 10.4 billion (Currency One, 2016). The employees knew that the company's market position was owed largely to customer satisfaction, skilful social command, and recognition in the business environment.

Innovation in business solutions, creativity, and professionalism of the team have been noticed and awarded by numerous bodies of the province in both Greater Poland and in Poland alike. But most importantly, these qualities have been appreciated by the customers. It is worth highlighting that Currency One SA – Internetowykantor.pl service operator has won the title of the Poznań Leader in Entrepreneurship in a competition organized by the City Hall and the County Office. The company has received an award in the "Small Entrepreneur" category (Poznańscy liderzy przedsiębiorczości, 2014). The competition intends to promote outstanding enterprises belonging to the SME sector in building a strong market position.

A significant distinction for the founders of Internetowykantor.pl was the prize in a competition organized by Ernst & Young for the Entrepreneur of the Year 2013; the distinction was awarded in the category of new businesses. The competition aims to reward the best founders of companies and to promote Polish e-entrepreneurship. The prize was awarded for the development and implementation of advanced technological business-information solutions which revolutionized the currency exchange market in a short time. Among the numerous awards and distinctions that act as a testimony to the high-quality of the services offered and the innovation of e-business solutions created by the team of Internetowykantor.pl is the inclusion in a prestigious ranking – a ranking of Deloitte Technology Fast 50 CE 2014 for the fastest growing technologically innovative companies in Central Europe. The company scored 10th in the “Rising Stars” category. The abovementioned awards confirm that entrepreneurship, creativity, team commitment, and a shared vision of the present and the future of a company can contribute to a commercial success in virtual economy.

Currency One SA is an example of a company that consistently develops innovative business solutions in virtual environment and promotes a culture of e-entrepreneurship. The dynamic development of the company and the ability to identify opportunities in virtual environment have translated into a successful international expansion. Valutomat.cz service has been operating in the Czech Republic since January 2015, with an office in Prague. The service is equivalent to the Polish Walutomat.pl, and is a currency exchange platform with peer-to-peer-based bank transfers. Moreover, in 2015, the company launched a new platform – Valuto.com – a European multi-currency account for B2B and B2C payments. It is a cost-effective solution that facilitates everything from foreign exchange to sending and receiving transfers in local currencies across Europe. Clients from 32 European countries can register for a free Valuto account and make transfers in 9 fiat currencies. The company has been constantly adding new currencies to meet the expansionary needs of its customers. Valuto was recognized as one of the 100 leading global Fintech Innovators in 2015 (Currency One, 2016). This is the next example of a skilful use of entrepreneurial opportunities and good utilization of the employees’ skills to create value for customers, thereby increasing the market value of the company.

Advanced technological business solutions developed by Currency One SA and implemented in virtual economy have revolutionized the currency exchange market. The concept of e-entrepreneurship is permanently inscribed in the strategy of the company. The main purpose of the team of young entrepreneurs is to create the future of online currency exchange and promote innovative ICT solutions that will explore new opportunities in virtual economy.

Conclusions and recommendations

Technological infrastructure used in the virtual environment of today undoubtedly increases the attractiveness of activities pursued in the field of virtual economy, expanding the functionality of services and creating value for customers. Thus, a new service concept in an environment of new technologies can lead to creation of new e-business models (Bouwman, de Vos and Hacker, 2008). Due to the growing number of Internet users, virtual environment implies a number of changes in the functioning of modern enterprises and socio-economic life. An important aspect in the development of e-entrepreneurship is to create an attitude of openness among employees regarding knowledge, study the environment in terms of the demand for new ICT solutions, and look for external sources of information to fill any possible gaps in intellectual resources.

The empirical findings of the study are reflected in the light of development of e-entrepreneurship as illustrated by the example of Currency One SA. The paper finds that the potential of both the company's employees and the company's external environment have contributed to the company's ability to recognize entrepreneurial opportunities in a virtual economy setting. Currency One SA uses innovative solutions in its products, based on knowledge, latest technology, and experience of top IT professionals. A clearly defined mission and priorities allow the company to set its sail towards development. The team of young entrepreneurs aims to create and promote innovative IT projects that will explore new opportunities and offer unique business solutions in virtual environment. Creating a culture based on knowledge, a sense of identification of with the company, and a continuous technological development are the key values that determine the analysed company's success in virtual economy. The pro-innovation attitude of the company's managers, a shared vision of the development strategy, and the ability to cope with the changing environment support innovative processes, which translates into effective implementation and commercialization of the designed solutions and applications.

The case study proves that people who are entrepreneurial and creative can successfully fill the gap in virtual environments. Continually expanded services, a focus on innovation, and care for customer satisfaction are the basis for gaining competitive advantage on the online currency exchange market. One of the key challenges that e-entrepreneurship and e-innovation face today is that e-business needs to be really responsive to market needs and gain market credibility. In addition to that, the intangibility of an online service needs to be addressed in order to build brand awareness (Zhao, 2007). The continuous increase in the demand for specialized and modern

e-business solutions offers an opportunity to create and develop new businesses that would be able to diagnose and accurately assess the chances of success in the rapidly growing virtual economy. A set of clearly defined objectives, intentions, and priorities will pave the future direction for organizations. The results of the research confirm that the activity of a company in virtual economy can bring tangible benefits both for the company and for its customers. However, implementation of new business solutions must be appropriate and adjusted to the company's resources at hand.

Acknowledgements

The authors would like to express their gratitude to Łukasz Olek, the CEO of Currency One SA, for the interview and the suggestions helpful in conducting the research on the case study in question.

References

- Afuah, A. and Tucci, C.L. (2000). *Internet business models and strategies: Text and cases*. New York: McGraw-Hill Higher Education.
- Afuah, A. and Tucci, C.L. (2003). *Biznes internetowy. Strategie i modele*. Kraków: Oficyna Ekonomiczna.
- Andries, P. and Debackere, K. (2007). Adaptation and performance in new businesses: understanding the moderating effects of independence and industry. *Small Business Economics*, 29(1): 81–99, <https://doi.org/10.1007/s11187-005-5640-2>
- Appel, W. and Behr, R. (2004). *Towards the theory of Virtual Organizations: A description of their formation and figure*, http://geb.uni-giessen.de/geb/volltexte/2004/1711/pdf/Apap_WI_1996_12.pdf, Newsletter 1998 (10.05.2016).
- Badzińska, E. and Ryfa, J. (2013). Ekonomia wirtualnych światów – tendencje rozwoju. *Ekonomia. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 305: 24–36.
- Badzińska, E. (2016). Innovative Multimedia Project – the Exemplification of the Concept of Technological Entrepreneurship. *Economics and Management*, 8(2): 38–46, <https://doi.org/10.1515/emj-2016-0015>
- Bouwman, H., de Vos, H. and Hacker, T. (eds.) (2008). *Mobile Service Innovation and Business Models*. Berlin-Heidelberg: Springer Verlag, <https://doi.org/10.1007/978-3-540-79238-3>
- Bratnicka, K. (2015). Relationship Between Leadership Styles and Organizational Creativity. *Management and Business Administration. Central Europe*, 23(1): 69–78, <https://doi.org/10.7206/mba.ce.2084-3356.134>
- Brodie, R.J., Winklhofer, H., Coviello, N.E. and Johnston, W. (2007). Is e-marketing Coming of Age? An Examination of the Penetration of e-marketing and Firm Performance. *Journal of Interactive Marketing*, 21(1): 2–21, <https://doi.org/10.1002/dir.20071>
- Brzozowska-Woś, M. (2012). Komunikacja marketingowa a wybrane narzędzia marketingu mobilnego. In: G. Rosa and A. Smalec (eds.), *Marketing przyszłości. Trendy. Strategie. Instrumenty: Komunikacja marketingowa podmiotów rynkowych. Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 712, Problemy Zarządzania, Finansów i Marketingu*, 26: 135–146.

- Brzozowska-Woś, M. (2013). QR Code jako narzędzie komunikacji z klientami. In: J. Buko (ed.), *Europejska przestrzeń komunikacji elektronicznej*, tom I. *Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 762, Ekonomiczne problemy usług*, 104: 89–97.
- Castells, M. (2000). Materials for an exploratory theory of the network society. *British Journal of Sociology*, 51(1): 5–24, https://xa.yimg.com/kq/groups/23061093/1524810508/name/1Castells-Theory_of_Network_Society-2000.pdf (23.08.2016), <https://doi.org/10.1080/000713100358408>
- Combe, C. (2006). *Introduction to E-business Management and Strategy*. Oxford: Butterworth-Heinemann.
- Currency One (2016). <http://currency-one.com/nasze-serwisy> (25.08.2016).
- Czakon, W. (2013). Zastosowanie studiów przypadku w badaniach nauk o zarządzaniu. In: W. Czakon (ed.), *Podstawy metodologii badań w naukach o zarządzaniu*. Warszawa: Wolters Kluwer Polska.
- Czerniawska, F. and Potter, G. (1998). *Business in a Virtual World*. London: MacMillan Press, <https://doi.org/10.1057/9780230509337>
- Dyer, J. and Nobeoka, K. (2000). Creating and Managing a High Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal*, Special Issue: *Strategic Networks*, 21(3): 345–367, [https://doi.org/10.1002/\(SICI\)1097-0266\(200003\)21:3<345::AID-SMJ96>3.0.CO;2-N](https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<345::AID-SMJ96>3.0.CO;2-N)
- Doganova, L. and Eyquem-Renault, M. (2009). What do business models do? Innovation devices in technology entrepreneurship. *Research Policy*, 38(10): 1559–1570, <https://doi.org/10.1016/j.respol.2009.08.002>
- Drucker, P. (1992). *Innowacje i przedsiębiorczość*. Warszawa: PWE.
- Dyduch, W. (2008). *Pomiar przedsiębiorczości organizacyjnej*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.
- Dzopalic, M., Zubovic, J. and Bradic-Martinovic, A. (2010). Effective implementation of e-CRM strategy. *Polish Journal of Management Studies*, 1: 52–63.
- Falk, R. (2007). Measuring the effects of public support schemes on firms' innovation activities. *Research Policy*, 36(5): 665–679, <https://doi.org/10.1016/j.respol.2007.01.005>
- Flanagan, K., Uyarra, E. and Laranja, M. (2011). Reconceptualising the “policy mix” for innovation. *Research Policy*, 40(5): 702–713, <https://doi.org/10.1016/j.respol.2011.02.005>
- Flyvbjerg, B. (2004). Five Misunderstandings About Case-Study Research. In: C. Seale, G. Gobo, J.F. Gubrium and D. Silverman (eds.), *Qualitative Research Practice*. London and Thousand Oaks: Sage Publications, <https://doi.org/10.4135/9781848608191.d33>
- Frąckiewicz, E. (2013). Zmiany modelu relacji biznesowych w środowisku wirtualnym. *Management and Business Administration. Central Europe*, 21(1): 55–70, <https://doi.org/10.7206/mba.ce.2084-3356.46>
- Glinka, B. and Gudkova, S. (2011). *Przedsiębiorczość*. Warszawa: Wolters Kluwer Polska.
- Grover, V. and Saeed, K.A. (2004). Strategic orientation and performance of Internet-based businesses. *Information Systems Journal*, 14(1), 23–42. doi:10.1111/j.1365-2575.2004.00161.x, <https://doi.org/10.1111/j.1365-2575.2004.00161.x>
- Hacklin, F. and Wallnöfer, M. (2012). The business model in the practice of strategic decision making: insights from a case study. *Management Decision*, 50(2): 166–188, <https://doi.org/10.1108/00251741211203515>
- Haidar, J.I. (2012). The Impact of Business Regulatory Reforms on Economic Growth. *Journal of the Japanese and International Economies*, 26(3): 285–307, <https://doi.org/10.1016/j.jjie.2012.05.004>
- Harrison, D., Chaari, N. and Comeau-Vallée, M. (2012). Intersectoral alliance and social innovation: when corporations meet civil society. *Annals of Public and Cooperative Economics*, 83(1): 1–24, <https://doi.org/10.1111/j.1467-8292.2011.00452.x>

- Hartman, A., Sifonis, J.G. and Kador, J. (2000). *Net Ready: Strategies for Success in the E-economy*. New York: McGraw-Hill.
- Hartman, A., Sifonis, J.G. and Kador, J. (2001). *E-biznes. Strategie sukcesu w gospodarce internetowej. Sprawdzone metody organizacji przedsięwzięć e-biznesowych*. Warszawa: Wydawnictwo K.E. Liber.
- Hisrich, R.D. and Peters, M.P. (1992). *Entrepreneurship*. Boston: Irvin.
- Kelly, K. (1998). *New rules for the new economy. Twelve dependable principles for thriving in a turbulent world*. Victoria: Penguin Book.
- Kline, K. and Rosenberg, W. (1986). An overview of innovation. In: F. Landay and W. Rosenberg (eds.), *The Positive Sum Strategy*. Washington DC: National Academy Press.
- Kollmann, T. (2006). What is e-entrepreneurship? Fundamentals of company founding in the net economy. *International Journal of Technology Management*, 33(4): 322–340, <https://doi.org/10.1504/IJTM.2006.009247>
- Kollmann, T. (2009). E-entrepreneurship: The principles of founding electronic ventures. In: I. Lee (ed.), *Selected readings on information technology and business systems management*. Hershey, PA: IGI Global, <https://doi.org/10.4018/978-1-60566-086-8.ch001>
- Lai, R., Weill, P. and Malone, T. (2006). *Do Business Models Matter?*, <http://seeit.mit.edu/Publications/DoBMsMatter7.pdf> (20.03.2016).
- Lu, L. and Wang, G. (2008). A study on multi-agent supply chain framework based on network economy. *Computers & Industrial Engineering*, 54(2): 288–300, <https://doi.org/10.1016/j.cie.2007.07.010>
- Łobejko, S. (2000). Wirtualne sieci prywatne szansą dla przedsiębiorstw wirtualnych. In: R. Knosala (ed.), *Komputerowo Zintegrowane Zarządzanie*. Warszawa: Wydawnictwa Naukowo-Techniczne.
- Małachowski, A. (2005). *Środowisko wirtualnego klienta*. Wrocław: Wydawnictwo AE we Wrocławiu.
- McKnight, L.W., Vaaler, P.M. and Katz, R.L. (2002). *Creative Destruction: Business Survival Strategies in the Global Internet Economy*. Cambridge: MIT Press.
- Olszak, C.M. (ed.) (2004). *Systemy e-commerce. Technologie internetowe w biznesie*. Katowice: Wydawnictwo Akademii Ekonomicznej w Katowicach.
- O'Reilly, T. (2006). *What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*, <http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html> (23.08.2016).
- Pachura, A. (2012). Innovation theory – an epistemological aspects. *Polish Journal of Management Studies*, 5: 128–135.
- Perechuda, K. (2007). *Dyfuzyja wiedzy w przedsiębiorstwie sieciowym. Wizualizacja i kompozycja*. Wrocław: Wydawnictwo UE we Wrocławiu.
- Perkmann, M. and Spicer, A. (2010). What are business models? Developing a theory of performative representations. *Research in the Sociology of Organizations*, 29: 265–275, [https://doi.org/10.1108/S0733-558X\(2010\)0000029020](https://doi.org/10.1108/S0733-558X(2010)0000029020)
- Piotrowski, A.J. (2002). Gospodarka elektroniczna. In: W. Cellary (ed.), *Polska w drodze do globalnego społeczeństwa informacyjnego. Raport o rozwoju społecznym*. Warszawa: Program Narodów Zjednoczonych ds. Rozwoju.
- Poole, G. A. (2000). *Zagadka porzuconego koszyka*. *Standard Industry*, 11(10): 77–82.
- Poznańscy liderzy przedsiębiorczości* (2014). <http://www.poznan.pl/mim/lidermsp/poznanscy-liderzy-przedsiębiorczosci,p,9019,9025.html> (12.05.2014).
- Rappa, M. (2003). *Business Models on the Web*, <http://digitalenterprise.org/models/models.pdf> (12.11.2015).

- Salerno, M.S., de Vasconcelos Gomes, L.A., da Silva, D.O., Bagno, R.B. and Freitas, S.L.T. U. (2015). Innovation processes: Which process for which project? *Technovation*, 35: 59–70, <https://doi.org/10.1016/j.technovation.2014.07.012>
- Serarois-Tarrés, C., Padilla-Meléndez, A. and del Aguila-Obra, A.R. (2006). The influence of entrepreneur characteristics on the success of pure dot.com firms. *International Journal of Technology Management*, 33(4): 373–388, <https://doi.org/10.1504/IJTM.2006.009250>
- Shapiro, C. and Varian, H.R. (1999). *Information rules: a strategic guide to the network economy*. Cambridge: Harvard Business School Press.
- Shy, O. (2001). *The Economics of Network Industries*. Cambridge: Cambridge University Press, <https://doi.org/10.1017/CBO9780511754401>
- Szpringer, W. (2012). Innowacyjne modele e-biznesu – perspektywy rozwojowe. *Problemy Zarządzania*, 10(3/38): 67–82, <https://doi.org/10.7172/1644-9584.38.5>
- Tapscott, D. (1997). Strategy in the new economy. *Strategy & Leadership*, 25(6): 8–14, <https://doi.org/10.1108/eb054601>
- Tapscott, D., Ticoll, D. and Lowy, A. (2000). *Digital Capital: Harnessing the Power of Business Webs*. Boston: Harvard Business School Press.
- Times, P. (1998). Business Models for Electronic Markets. *Electronic Markets*, 8(2): 3–8, <https://doi.org/10.1080/10196789800000016>
- Timons, J. (1990). *New Venture Creation*. Boston: Irvin.
- Wach, K. (2015). Entrepreneurial Orientation and Business Internationalisation Process: The Theoretical Foundations of International Entrepreneurship. *Entrepreneurial Business and Economics Review*, 3(2): 9–24, <https://doi.org/10.15678/EBER.2015.030202>
- Weill, P. and Vitale, M.R. (2001). *Place to Space: Migrating to eBusiness Models*. Boston: Harvard Business School Press.
- Yin, R.K. (1984). *Case Study Research: Design and Methods*. Thousand Oaks: Sage Publications.
- Zhao, F. (2007). Issues and challenges facing e-entrepreneurship and e-innovation. In: M. Khosrow-Pour (ed.), *Managing Worldwide Operations and Communications with Information Technology*. Hershey USA: IGI Global.