

EXAMINING PROSUMERS' PARTICIPATION IN BUSINESS PROCESSES

Ziemia E., Eisenhardt M.*

Abstract: Modern business reality forces enterprises to collaborate with various external entities. One of them is prosumers, i.e. active consumers who collaborate with enterprises in various areas. The goal of this paper is to analyze activities connected with business processes in which prosumers can participate to support enterprises. The paper consists of three parts. The first part briefly discusses the prosumption theory and identifies a research gap. The second part embraces a methodology of research. The third part presents the findings of the conducted research, which indicate how prosumers can participate and improve business processes. The required data was collected from a survey questionnaire administered to a sample of Polish prosumers. The main statistical results indicated that prosumers actively participate in two processes: *Develop and manage products and services* and *Market and sell products and services*. The study concludes with a discussion on the findings, implications, limitations, and avenues for further research.

Key words: prosumption, prosumer, enterprise, business process development, participation, engagement

Introduction

Currently, scientific studies highlight a changing attitude and function of the consumers (Bywalec and Rudnicki, 2002; Dąbrowska and Janoś-Kresło, 2010; Izvercianu et al., 2012; Mróz, 2013). Modern consumers want to decide about the quality and functionality of products they use. They want to design products according to their taste, expectations, and needs (Jelonek, 2013; Tapscott and Williams 2006; Ziemia 2013). Thus, a line between the consumer and the enterprise is getting blurred. Consumers are entering the world of business, taking over some responsibilities of the enterprise. They are becoming engaged in this way to obtain better quality products or services, adjusted to their needs and expectations.

Active consumers are called prosumers and the process in which they share their knowledge and ideas with an enterprise is called prosumption (Bylok 2013; Ritzer and Jurgenson, 2010; Siuda, 2012; Tapscott and Williams, 2006; Xie et al., 2008). Prosumption involves both – prosumers and the enterprise and benefits each part (Levy, 2009). Prosumers, by taking an active part in the creation of knowledge and ideas, bear an impact on the final shape and nature of the product, which then they can use. They obtain a specific control over the product and create directions for its development (Brabham, 2012). The enterprise can faster and more accurately follow the real needs of prosumers (Sinclair and Vogus, 2011; Reitz, 2012).

* **Prof. Ewa Ziemia, Monika Eisenhardt, MSc**, University of Economics in Katowice, Faculty of Finance and Insurance

✉ corresponding author: ewa.ziemia@ue.katowice.pl

✉ monika.eisenhardt@ue.katowice.pl

By engaging in the exchange of knowledge, ideas and even experiences, prosumers participate in the enterprise's business processes, support and improve them. Currently, the transfer of knowledge and ideas between prosumers and business is increasingly supported by means of ICTs (Zembik, 2015).

Researchers have noticed some business opportunities connected with prosumption (Gustafsson et al., 2011; Jurgenson and Ritzer, 2009; Tsai et al., 2012). Nevertheless, researchers taking up the issues of prosumption and prosumers often emphasize the relevancy of their knowledge or analyze characteristics of prosumers which can be used in a business practice (Bylok, 2013; Mróz, 2013). On the other hand, the literature on a business processes mostly focuses on describing processes from the management point of view (Łobaziewicz, 2013; Jeston and Nelis, 2014). Furthermore, considerations focus on ICTs enabling efficient and effective management of processes (Kania, 2012; Ziamba and Oblak, 2012).

However, there is a lack of complex studies that would relate to these two issues – prosumers and business processes. Thus, this research is designed to fill this gap. A better understanding of how prosumers may participate in business processes is one of the key issues for adopting prosumption in enterprises and deriving benefits from the prosumption.

The aim of this paper is to examine how prosumers can participate in business processes, according to APQC Process Classification Framework (APQC, 2014), such as *Develop and manage products and services* and *Market and sell products and services*, and thus to support enterprises. A choice of these business processes is a result of authors' case studies analysis of current prosumers' engagement by enterprises. Case studies suggest that prosumers can participate in these business processes to a large extent (Ziamba and Eisenhardt, 2015).

The empirical part consists of two sections. The first section presents a research methodology. The second section presents the research findings, which indicate possibilities of prosumers' participation in business processes. The study concludes with a discussion on the findings, limitations, and avenues for further research.

Research Methodology

This study focuses on addressing the following research questions:

- RQ1. Which activities may prosumers take up participating in business processes?
- RQ2. What did prosumers do to participate in *Develop and manage products and services* process?
- RQ3. What would prosumers like to do to participate in *Develop and manage products and services* process?
- RQ4. What did prosumers do to participate in *Market and sell products and services* process?
- RQ5. What would prosumers like to do to participate in *Market and sell products and services* process?
- RQ6. What are the obstacles for prosumers' participation in business processes?

In order to answer the above research questions, a multi-step approach was applied. This approach embraced the steps as follows.

Step 1. The critical and analytical review of existing studies on the concepts of: 'consumption' and 'consumer', as well as 'prosumption' and 'prosumer'.

Step 2. The goal of the second step was to decide which classification of business processes is appropriate for research devoted to prosumption and could be adopted in further research. As a result of in-depth studies APQC Process Classification Framework (PCF) was adopted.

Step 3. Based on outcomes of the previous study (Ziemia and Eisenhardt, 2015) a conceptual framework of prosumers' participation in business processes was proposed.

Step 4. The survey questionnaire was elaborated. The questionnaire embraced questions concerning prosumers' activities related to business processes. The task of prosumers was to assess their engagement in specified activities. They could choose one of five responses, according to a Likert scale: (1) definitely not (never), (2) unlikely, (3) no opinion, (4) rather yes, (5) definitely yes (many times).

Step 5. In November 2014 a pilot survey was conducted which purpose was substantive and methodological scrutiny of the questionnaire. To conduct reliability analysis, Cronbach's coefficient alpha (α) was used. The ranges of reliability suggested by Hinton et al. (2004) were adopted. Cronbach's alpha was 0.881, which means that the scale has high reliability and it can be used in the research process. Moreover, substantive scrutiny of the questionnaire enabled to perform minor changes in order to improve the quality of the questionnaire.

Step 6. Data collection took place between December 2014 and March 2015. After screening responses and excluding outliers, there was a final sample of 783 usable, correct and complete questionnaires. Therefore, the final response rate was 24.44%. The respondents were diverse as regards their characteristics. With regard to gender, 599 (76.5%) respondents were female, and 184 (23.5%) were male. This study recommends age ranges defined by McCrindle (2014). Majority of respondents 369 (47.1%) were in the range of 21–35 years old, and 257 (32.8%) were less than 21 years old. With regard to ICT skills, 695 (88.7%) of the respondents indicated high or rather high skills in this area.

Step 7. As the process of collecting data was completed the reliability was calculated. The Cronbach's alpha value was 0.791, which means that the reliability of the scale was high.

Step 8. In processing the findings, statistical analysis and data analysis techniques incorporating pivot tables were employed. It enabled formulating conclusions and recommendations regarding application of prosumption in business processes.

Research Findings

Framework of Prosumers Participation in Business Processes

Prosumers participate in various areas supporting enterprises. Their activities are connected with particular business processes. It has been noticed that in practice prosumers mainly take part in two business processes, i.e. *Develop and manage products and services* and *Market and sell products and services*. Thus, the proposed framework is limited to these two business processes. The conceptual framework, presented in Table 1, specifies activities which prosumers may take up while participating in business processes, and it responds to the first research question. This framework was a basis for further research.

Table 1. The conceptual framework of prosumers' participation in business processes
(Source: Ziamba and Eisenhardt, 2015)

Operational business process	Types of prosumers' participation
<i>Develop and manage products and services</i>	<ul style="list-style-type: none"> – products' designing (colors, shape or design of product); – materials requirement (with what kind of materials the product should be done); – graphic elements (e.g. logo or package); – improving functionality of product; – improving reliability and durability of product; – improving ease of product use; – improving efficiency of product; – improving ICT made available to consumers
<i>Market and sell products and services</i>	<ul style="list-style-type: none"> – creating advertising spots or taking part in marketing campaigns; – influencing products' prices; – influencing promotions, discounts or loan programs; – influencing product availability and new distribution channels

Prosumers Participation in Develop and Manage Products and Services Process

Figure 1 presents research findings with regard to actual and preferred prosumers' participation in terms of their engagement in *Develop and manage products and services* process. The presented research findings are an answer to the second and the third research question.

Figure 1 shows that prosumers may participate in *Develop and manage products and services* process, being engaged in various activities. The actual engagement of prosumers shows in which activities prosumers were engaged by enterprises. It reflects which kinds of activities are available for prosumers. In this sense, prosumers only participate in certain activities, because the available possibilities are limited by the offer and activities of the enterprise.

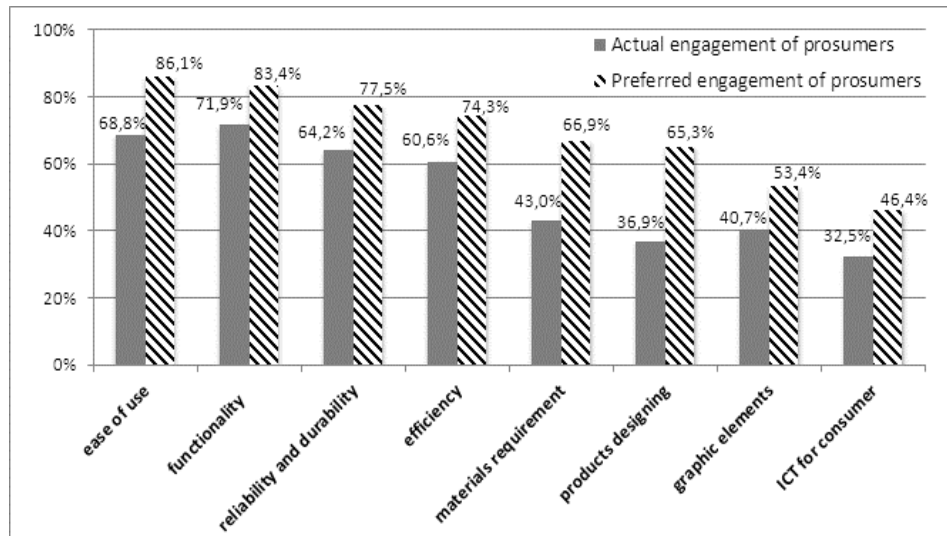


Figure 1. Prosumers' participation in *Develop and manage products and services* process

On the other hand, it may depend on the prosumers' willingness to collaborate with the enterprise, as an expression of their interest. The majority of prosumers were engaged in improvement of functionality (71.9%), ease of use (68.8%) as well as reliability and durability (64.2%) of products and services.

The preferred prosumers engagement reflects in which activities prosumers would prefer to participate. Research findings indicate that the majority of prosumers would like to improve the ease of use (86.1%), functionality (83.4%), reliability and durability (77.5%) of products or services. The biggest difference between actual and preferred prosumers' engagement pertains to products designing. It amounts to 28.4%, indicating that more than 28% of prosumers would like to be engaged in a product design to a greater extent than enterprises allow them.

To sum up, overall data analysis presented in Figure 1 leads to the conclusion that prosumers would prefer to participate in specified activities connected with the *Develop and manage products and services* process to a greater extent than they are currently being enabled by enterprises.

Prosumers Participation in Market and Sell Products and Services Process

Figure 2 shows research findings which are the answer to the fourth and the fifth research questions. They present actual and preferred participation of prosumers in *Market and sell products and services* process.

Figure 2 shows that prosumers participating in *Market and sell products and services* process have been engaged in influencing products' prices (indicated by 47.7% of prosumers) and influencing product availability and new distribution channels (indicated by 44.8% of prosumers).

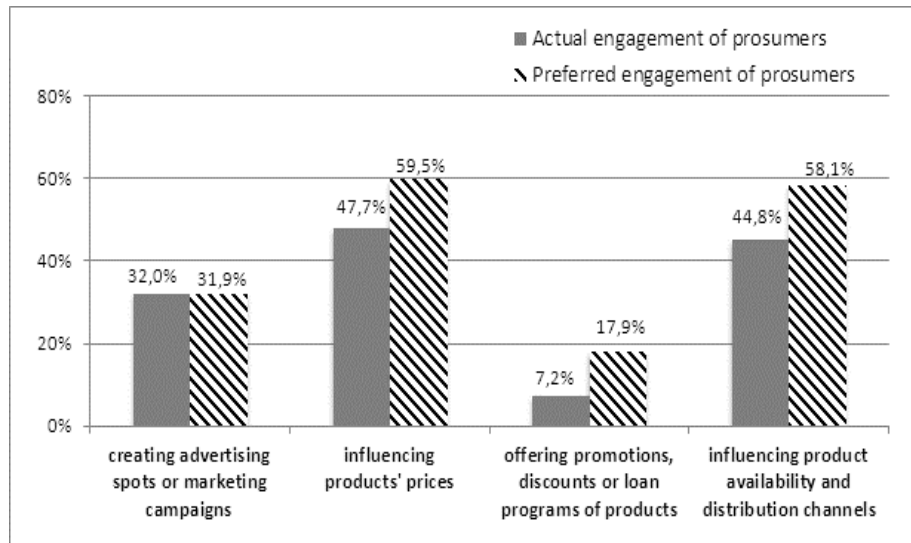


Figure 2. Participation of prosumers in *Market and sell products and services* process

The research findings show that prosumers are not interested in offered promotions, discounts or loan programs of products or services – such activity was indicated by merely 7.2% of prosumers.

Analyzing the second part of the study, concerning the preferred engagement of prosumers, it is easy to notice, that prosumers would like to be engaged to a greater extent, than enterprises enabled them. Most prosumers (59.5%) indicated that they would like to influence products' prices. The difference between prosumers who are now engaged (47.7%) and those who would like to be engaged in a such way (59.5%) amounts to 11.8%.

The preferred engagement of prosumers concerning their influence on product availability and new distribution channels is also high – 58.1% of prosumers would like to participate in the *Market and sell products and services* process in that way, compared to 44.8% of prosumers, who already did it. In this case, the difference related to actual and preferred engagement of prosumers amounts to 13.3%. Presented findings do not indicate the difference between the actual and the preferred prosumers' participation in creating advertising spots or marketing campaigns.

To sum up, overall data analysis presented at Figure 2 leads to the conclusion that prosumers would prefer to participate in specified activities connected with the *Market and sell products and services* process to a greater extent than they are currently being enabled by enterprises. The only exception is the creating advertising spots or marketing campaigns.

Obstacles for Participation in Business Processes

It has been noticed that many consumers do not participate in business process, although they have this opportunity. In addition, the research findings indicate that the willingness to participate in business processes demonstrated by prosumers is greater than they are currently being enabled by enterprises. For this reason prosumers were asked about the obstacles concerning their participation in business processes. The results, shown in Figure 3, are an answer to the sixth research question. As shown in Figure 3, the lack of time is the most important obstacle for prosumers. This obstacle was indicated by 71% of them. In addition, prosumers indicated that for 63.6% of them the obstacle was the lack of information about this kind of projects, and for 60.2% it was the lack of interest in this kind of projects. The obstacle, which to a lesser extent impact on prosumers is lack of proper ICT skills (7.7%). The research findings indicate that in order to engage prosumers in business processes, associated activities should not be time-consuming. Enterprises should pay more attention to delivering proper information to prosumers about projects for them. Moreover, projects should have an interesting form and scope, and should be organized using these ICTs which may pull prosumers in. The findings indicate that using ICTs in projects aimed at prosumers is not obstacle for them.

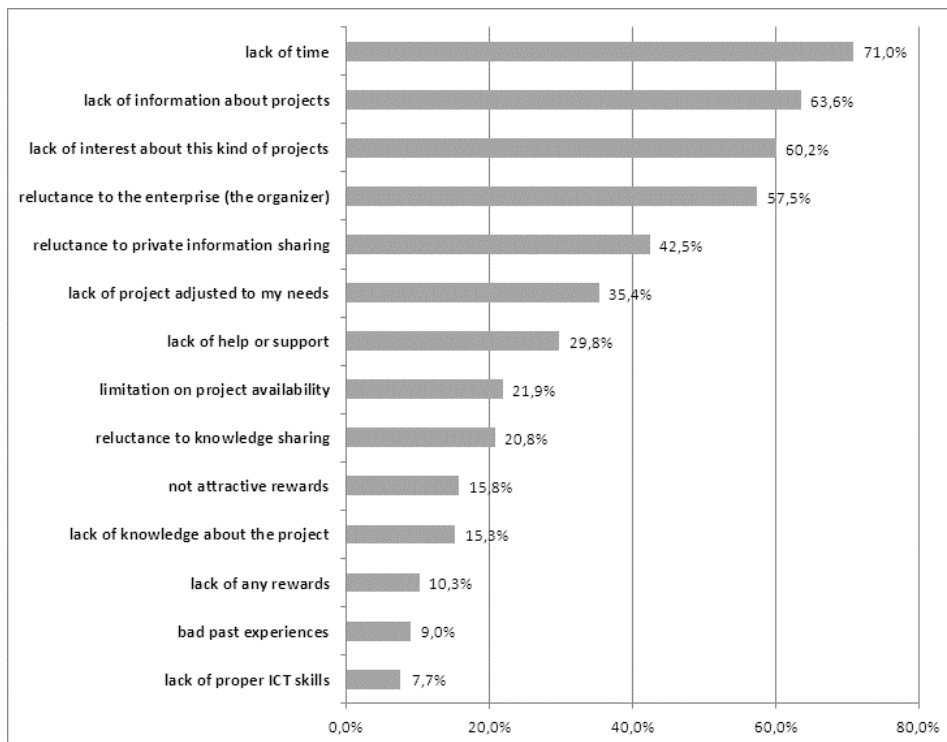


Figure 3. Obstacles for participation in business processes

Conclusions

The presented research findings correspond to the research questions. They indicate what prosumers did to participate in *Develop and manage products and services* and *Market and sell products and services* business processes and what would prosumers like to do to participate in particular activities connected with those processes. Additionally, they specify obstacles for prosumers' participation in business processes.

Overall analysis of presented findings leads to the conclusions as follows:

1. Prosumers want to influence quality, utility and projects concerning products and services, and thus actively participate in *Develop and manage products and services* process.
2. Prosumers would like to have a greater impact on the product design and used materials, compared to the current situation. The research findings show that over 20% more of prosumers would like to improve these product features.
3. Prosumers want to impact on promotional and marketing activities of the enterprise. Thus, they want to participate actively in *Market and sell products and services* process.
4. Prosumers would like to participate in a wider range of marketing and promotional activities, than they are currently being allowed by enterprises. The research findings indicate that they would like mostly to impact on product availability and distribution channels.
5. The findings show that in case of one activity – creating advertising spots or marketing campaigns – prosumers would not like to be more engaged, than they are currently. Prosumers' attitude is not surprising to the authors. On the Internet one can find many projects, which encourage prosumers to become engaged in this way.
6. One crucial factor that enterprises should consider is time-consumption of a given project. The findings show that lack of time is indicated by prosumers as the main obstacle for their participation in the business processes improvement.
7. The enterprises should consider ICT deployment in projects aimed at prosumers. 92.3% of prosumers claim that the use of ICTs is not a barrier or an obstacle for them.

Taking into account the presented research findings can be helpful for researchers, who can develop presented conceptual framework of prosumers' participation in business processes in their own research. Especially, it is worth to develop this framework for other business processes according to APQC's Process Classification Framework.

Taking into account the presented research findings can also be helpful for enterprises, particularly those which: (1) have not engaged prosumers in the improvement of their business processes yet – but this is one of their business goals; (2) have already engaged prosumers in the improvement of their business

processes, however, they would like to verify whether they perform everything correctly, and whether their activities are properly targeted.

The findings of this study can provide an answer to the important question: In which activities and assignments connected with business processes development, it is worth to engage prosumers? Moreover, the findings show what are obstacles from prosumers point of view, to active participation in activities which enable business processes development. Knowledge about activities which prosumers would like to undertake and identifiable obstacles may contribute to better matching proper activities and assignments to proper prosumers.

The results of the study are not exhaustive. Prosumption is a phenomenon that thrives and evolves continuously. This creates opportunities for conducting further interesting research and setting research challenges for the future. There are some limitations to this study. Firstly – the territorial limitation. This study gathered data from only one county, Poland. Further research is needed in order to confirm prosumers' participation in business processes with respect to foreign enterprises. Secondly – age limitation. Most of the respondents were under 35 years of age. Further research is needed in order to extend the research to elder generations, especially prosumers 50+. Thirdly – the limitation of the examined business processes. This study embraces two operational business processes. The aim of the further studies will be to extend conducted research to all operational processes of the enterprise.

This research has been supported by a grant entitled “Transformation of business and public administration by information technology and information systems” from the University of Economics in Katowice, Poland, 2014-2016.

References

- APQC, 2014, *Process Classification Framework. 6.1.1*, American Productivity and Quality Center, Houston; Available at: <http://www.apqc.org/pcf>; Access on: November 2014.
- Brabham D.C., 2012, *Motivations for participation in a crowdsourcing application to improve public engagement in transit planning*, „Journal of Applied Communication Research”, 40(3).
- Byłok F., 2013, *Konsumpcja, konsument i społeczeństwo konsumpcyjne we współczesnym świecie*, Wydawnictwo Naukowe „Śląsk”, Katowice.
- Bywalec Cz., Rudnicki L., 2002, *Konsumpcja*, Polskie Wydawnictwo Ekonomiczne, Warszawa.
- Dąbrowska A., Janoś-Kresło M., 2010, *Konsument na rynku e-usług w krajach Europy Środkowo-Wschodniej*, Difin, Warszawa.
- Gustafsson A., Kristensson P., Löfgren M., Witell, L., 2011, *Idea generation: customer co-creation versus traditional market research techniques*, „Journal of Service Management”, 22(2).
- Hinton P., 2004, *Statistics explained: a guide for social science students*, Routledge, New York.
- Izvercianu M., Seran S., Buciuman C.F., 2012, *Changing marketing tools and principles in prosumer innovation management*, European Conference on Management, Leadership

- & Governance, Academic Conferences International Limited, Kidmore End; Available at: <http://search.proquest.com/docview/1326751610?accountid=45580>; Access on: March 2014.
- Jelonek D., 2013, *Prosumption in creating value for the customer*, Proceedings of International Scientific Conference "Business Management - Practice and Theory in the 21st Century", 6-7 June 2013, Nitra, Slovakia.
- Jeston J., Nelis J., 2014, *Business Process Management*, Routledge, New York.
- Jurgenson N., Ritzer G., 2009, *Efficiency, effectiveness, and Web 2.0*, [In:] S. Kleinman (Ed.), *The Culture of Efficiency*, Peter Lang Publishing, New York.
- Kania K., 2012, *Doskonalenie zarządzania procesami biznesowymi w organizacji z wykorzystaniem modeli dojrzałości i technologii informacyjno-komunikacyjnych*, University of Economics, Katowice.
- Levy M., 2009, *WEB 2.0 implications on knowledge management*, „Journal of Knowledge Management”, 13(1).
- Łobaziewicz M., 2013, *Effectiveness of business process management in B2B model*, „Polish Journal of Management Studies”, 8.
- Mról B., 2013, *Konsument w globalnej gospodarce. Trzy perspektywy*, Oficyna Wydawnicza Szkoła Główna Handlowa, Warszawa.
- Reitz A., 2012, *Social media's function in organizations: a functional analysis approach*, „Global Media Journal”, 5(2).
- Ritzer G., Jurgenson N., 2010, *Production, consumption, prosumption: the nature of capitalism in the age of the digital 'prosumer'*, „Journal of Consumer Culture”, 10(1).
- Sinclair J.K., Vogus C.E., 2011, *Adoption of social networking sites: an exploratory adaptive structuration perspective for global organizations*, „Information Technology and Management”, 12(4).
- Siuda P., 2012, *Mechanizmy kultury prosumpcji, czyli fani i ich globalne zróżnicowanie*, „Studia Socjologiczne”, 4(207).
- Tapscott D. Williams A.D., 2006, *Wikinomics: how mass collaboration changes everything*, New York, Penguin Group.
- Tsai W., Tsai M., Li S., Lin C., 2012, *Harmonizing firms' knowledge and strategies with organizational capabilities*, „Journal of Computer Information Systems”, 1(53).
- Xie C., Bagozzi R.P., Troye S.V., 2008, *Trying to prosume: toward a theory of consumers as co-creators of value*, „Journal of the Academy of Marketing Science”, 36.
- Zembik M., 2015, *Brand image in social media – an outline of the research related issues*, „Polish Journal of Management Studies”, 11(2).
- Ziemba E., Eisenhardt M., 2015, *Prosumers' participation in business processes*, „The Online Journal of Applied Knowledge Management”, 3(1).
- Ziemba E., 2013, *Conceptual model of information technology support for prosumption*. [In:] V. Ribiere, L. Worasinchai (Eds.), „Proceedings of the International Conference on Management, Leadership and Governance”, Bangkok University, Bangkok.
- Ziemba E., Obłąk I., 2012, *Systemy informatyczne w organizacjach zorientowanych procesowo*, „Problemy Zarządzania”, 10(3).

ZAANGAŻOWANIE PROSUMENTÓW W PROCESACH BIZNESOWYCH – WYNIKI BADAŃ

Streszczenie: Współczesna rzeczywistość biznesowa zmusza przedsiębiorstwa do współpracy z różnorodnymi podmiotami zewnętrznymi. Jedynymi z nich są prosumenci. Celem artykułu jest analiza aktywności związanych z procesami biznesowymi, w których mogą uczestniczyć prosumenci, aby wspierać przedsiębiorstwa. Niniejszy artykuł składa się z trzech części. Część pierwsza zwięźle charakteryzuje teorię prosumpcji oraz prezentuje lukę badawczą. Druga część prezentuje metodologię badań. Trzecia część prezentuje wyniki badania, które wskazują, w jaki sposób prosumenci mogą uczestniczyć w procesach biznesowych i je doskonalić. Dane do analizy zebrano z wykorzystaniem kwestionariusza ankietowego. Badanie zostało przeprowadzone na próbie polskich prosumentów. Analizy statystyczne wskazują, że prosumenci aktywnie uczestniczą w dwóch procesach biznesowych: *Rozwój i zarządzanie produktami i usługami* oraz *Marketing i sprzedaż produktów i usług*. Artykuł wieńczy konkluzje oraz wskazówki dla badaczy i praktyków biznesowych wynikające z przeprowadzonych badań. Wskazano ponadto możliwe dalsze kierunki badań.

Słowa kluczowe: prosumpcja, prosument, przedsiębiorstwo, rozwój procesów biznesowych, uczestniczenie, zaangażowanie

產消合一者承諾在業務流程中 – 結果

摘要：強制企業協作與各種外部實體現代商業的現實。其中之一是個人用戶，即活動的消費者誰與企業在各個領域的協作。本文的目的是分析與其中個人用戶參與它可以支持企業的業務流程有關的活動。本文由三個部分組成。第一部分簡要論述了產消合一的理論和識別的研究空白。第二部分涵蓋和研究方法。第三部分介紹了研究和進行的調查結果，這表明如何參與和個人用戶可以改進業務流程。所需要的數據是從調查問卷給藥於波蘭的個人用戶的樣本收集。主要的統計結果表明，個人用戶積極參與兩個過程：開發並管理產品和服務，市場和銷售產品和服務。這項研究的結論與調查結果，影響，限制和途徑進一步頂尖的研究討論。

關鍵詞：產消合一，專業消費者，企業，業務流程開發，參與，參與。