

Model evaluation of the effectiveness of business processes in terms of managing knowledge workers

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Abstract: This article elaborates on the model of managing knowledge workers. The authors aim at analysing a effectiveness of business processes in the sale functional area in enterprises based on the research results. Specifically, likely consequences of managing knowledge workers as “sale specialist” on the effectiveness of internal business processes are studied. This was followed by a discussion on the results of the literature and empirical studies. The summary shows the directions of a further work.

Keywords: knowledge workers, business processes, effectiveness

1. Introduction

Drucker (1993) claimed that knowledge had become a part of productivity, and was the most important key resource in the global economic environment. Because an enterprise performance is achieved through the execution of business processes, business process and enterprise performance are closely interrelated [Han and Kang, 2007]. In order to achieve a higher effectiveness of business processes, knowledge should be attached to the executed tasks, and workers must capture knowledge as part of their normal work. “Knowledge sharing is the fundamental means through which employees can mutually exchange their knowledge and contribute to knowledge application, innovation, and ultimately the competitive advantage of the organization” [Wang and Noe, 2010].

The term “knowledge worker” seems to have started to appear after 1973 when Peter Drucker [Drucker, 1973] first presented it. However, a clear definition has not yet been established. Thomas H. Davenport’s definition [Davenport, 2005] is “knowledge workers have high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution, or application of knowledge”. The capacity to manage knowledge workers and to convert it into useful product and services – is fast becoming the critical executive skill of the age.

This study aims to explore the relationships between the knowledge workers in the sale area in the enterprises. Their experience is the foundation of tacit knowledge sharing [Nonaka and Takeuchi, 1995]; [Polanyi, 1966], because individual cannot take advantage of new knowledge unless he or she has earlier “social software” connected to it.

So, the following questions may arise: whether knowledge sharing between knowledge workers influences business process effectiveness directly? What are the key indicators that would be affected by knowledge sharing activities which would result in business process effectiveness?

This study aims to explore the knowledge sharing between knowledge workers in sale area in the enterprises and business process effectiveness. Based on a survey of 50 knowledge workers in the sale functional area from the enterprises in Poland, this study employed the correlation analysis to investigate the research hypothesis. The remainder of this paper is organized as follows. Section 2 presents the literature review for introducing key constructs of our research. Section 3 develops a research model to depict hypothesized relationships and data collection. Data analysis and the findings are reported in Section 4. Implications and limitations of this study, research directions, and concluding remarks are discussed in Section 5.

2. Literature review

Our research has connected knowledge sharing and knowledge workers helping to a variety of factors such would result in business process effectiveness. Sathe concluded that knowledge sharing is the way of communication, explaining and rationalizing what they people say [Sathe, 1985]. Knowledge sharing can be defined as the “dissemination of information and knowledge through the whole department and/or organization” [Yang, 2004].

The creation of new knowledge is the central activity during the development of new products and services [Madhavan and Grover, 1998]. We argued with Madhavan and Grover, but we look out that knowledge sharing among knowledge workers is the key to improving the efficiency of the business processes.

Knowledge workers try to search for the right knowledge from expanded sources, i.e., other people, literature, and knowledge databases. The literature highlights the following specializations of knowledge workers [Lord and Farrington, 2006]: engineers, economists, people occupying managerial positions in business, planners, specialists in research and development, marketing specialists, specialists in selling, logisticians, analysts, IT professionals, people involved in the acquisition of human resources, those responsible for co-operation with other companies.

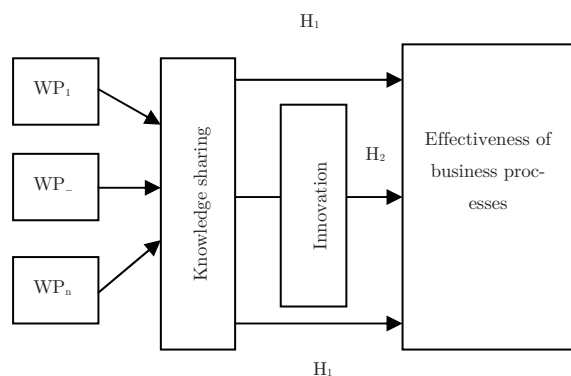
Business performance is an overall concept used to display the final result of the operation activities of an organization [Szilagyi, 1984]. Evans et al. (1996) suggest that performance evaluation is a key to helping an organization manage its resources and effectively control its goals. We describe performance for our analysis with annual sale.

Zott and Amit (2007) suggest, that “designing a business model is a salient issue for entrepreneurial firms”. So, we try to develop a model evaluation of the effectiveness of business processes in terms of managing knowledge workers.

Our goal is to understand the reasons whether knowledge sharing among knowledge workers influences business process effectiveness directly and indirectly.

3. Research model and data collection

This paper aims to develop the model evaluation of the effectiveness of business processes in terms of managing knowledge workers also to investigate the relationship between knowledge sharing and effectiveness of business processes. A research model is brought forward, as shown in fig. 1.



WP –workplace in the sale area in the company

Fig. 1. A research model

Rys. 1. Model badawczy

Therefore, this paper proposes the following hypotheses:

H1. Knowledge sharing between knowledge workers worker has a direct effect on effectiveness of business processes of a company

H2: Knowledge sharing between knowledge workers has an indirect effect on effectiveness of business processes of a company through an increase on innovation level in a company.

A survey was conducted in Poland to test our research model according with defined a reference model. The authors has determined, based on survey results, average values of personnel usefulness function for defined work-

places in the 10 enterprises from 50 knowledge workers in the sale area [Patalas-Maliszewska, 2011].:

for m_1 – Sales Director – the average values of personnel usefulness function: $W = 18.9$ pkt. (max.: 35 points);
 m_2 – Sales Specialist – the average values of personnel usefulness function: $W = 13.2$ pkt. (max.: 35 points);
 m_3 – Marketing Specialist – the average values of personnel usefulness function: $W = 13.9$ pkt. (max.: 35 points);
 m_4 – Regional Assistant – the average values of personnel usefulness function: $W = 15.1$ pkt. (max.: 35 points);
 m_5 – Product Manager v the average values of personnel usefulness function: $W = 17.9$ pkt. (max.: 35 points).

The values of the following personnel usefulness function W for the m -th employee in the company were received by an interview in each enterprise belonged to the reference model. Each employee should complete the questionnaire. On the basis of an algorithm for testing solutions for each employee it was possible to receive the specific value of the personnel usefulness function and each of the parameters of this function.

For each work place are defined a set of business processes and the key indicators that would be affected by knowledge sharing activities (see fig. 2):

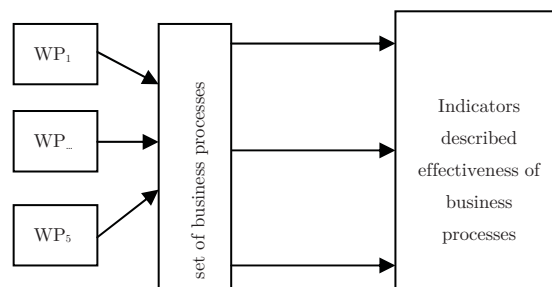


Fig. 2. Effectiveness of the business processes

Rys. 2. Efektywność procesów biznesowych

So, based on the research results we defined the values of the indicators, which would result in business process effectiveness (see table 1).

Set of indicators, which would indirect result in business process effectiveness (which would result in innovation level in company):

- (1) the number of sold licenses developed in a given year (for the last 5 years),
- (2) the number of purchased and used licenses,
- (3) the number of new products have been implemented in a given year (for the last 5 years),
- (4) the number of new technologies implemented in a given year (for the last 5 years),
- (5) the number of completed research topics in a given year (for the last 5 years),
- (6) the number of scientific publications,
- (7) The number of implementations of solutions developed in a given year (for the last 5 years).

An indicator, which would direct result in business process effectiveness in the sale area in a company: (8) annual sale (value in thousand euro).

Tab. 1. Set of indicators, which would result in business process effectiveness

Tab. 1. Zbiór wskaźników, które opisują efektywność procesów biznesowych

I	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
1	0	150	0	0	0	13	0	0	0	0
2	38	5	58	47	23	3	10	23	52	17
3	100	2	20	130	5	50	100	2	204	24
4	0	0	4	0	0	0	0	1	0	0
5	2	5	2	10	0	12	45	2	34	21
6	4	4	5	0	0	0	0	0	0	0
7	0	45	0	0	0	4	0	0	0	0
8	10 000	2.5	20 000	433	12	55	125	100	408	60

So, the next step of modelling were fitted to test the proposed research model.

4. Model evaluation of the effectiveness of business processes in terms of managing knowledge workers

As shown in table 2, knowledge sharing between knowledge workers influences business process effectiveness indirectly, which validates the chosen classification criteria summarized in table 1.

Tab. 2 The impact of knowledge sharing between knowledge workers on the efficiency of business processes

Tab. 2. Wpływ dzielenia się wiedzą na pracowników wiedzy i efektywność procesów biznesowych

WP	1	2	3	4	5	6	7
m ₁	-0,0056	-0,0785	-0,1881	0,2259	0,0129	0,4568	-0,0059
m ₂	-0,044624	-0,103696	-0,493845	0,235150	0,005492	-0,337008	-0,045365
m ₃	0,543712	-0,405677	0,127171	-0,325074	0,567778	-0,014404	0,543157
m ₄	0,343343	-0,028980	0,195769	-0,297719	0,389873	-0,129211	0,341712
m ₅	-0,010012	-0,125363	-0,535989	0,364295	0,026235	0,076095	-0,010667

And knowledge sharing between knowledge workers influences business process effectiveness directly:

for m₁ – Sales Director: -0,4456

for m₂ – Sales Specialist: -0,0687

for m₃ – Marketing Specialist: 0,0845

for m₄ – Regional Assistant: 0,3453

for m₅ – Product Manager: -0,3786

The research results indicate that knowledge sharing among knowledge workers in the sale area in the enterprises does not direct impact on the efficiency of business processes (on the value of the indicator: annual sale).

But, the research results indicate the positive correlation between knowledge sharing among knowledge workers: marketing specialist in the sale area and indicators, which would indirect result in business process effectiveness (which would result in innovation level in company): (1) The number of sold licenses developed in a given year (for the last 5 years): (SL), (5)The number of completed research topics in a given year (for the last 5 years): (CR), (7) The number of implementations of solutions developed in a given year (for the last 5 years): (IS).

So, our model of evaluation of the effectiveness of business processes in terms of managing knowledge workers summarized in fig. 3:

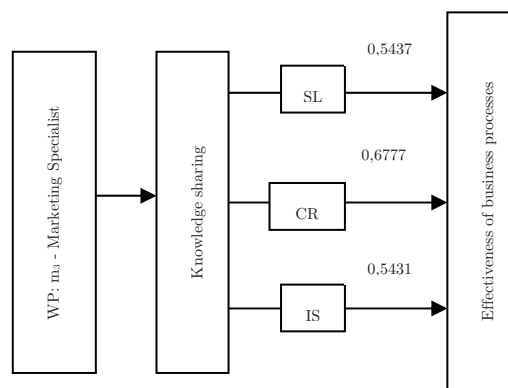


Fig. 3. Model evaluation of the effectiveness of business processes in terms of managing knowledge workers

Rys. 3. Model oceny efektywności procesów biznesowych w aspekcie zarządzania pracownikami wiedzy

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Model oceny efektywności procesów biznesowych w aspekcie zarządzania pracownikami wiedzy

Streszczenie: W artykule zaprezentowano model oceny efektywności procesów biznesowych w obszarze sprzedaży w aspekcie zarządzania pracownikami wiedzy na podstawie wyników badań empirycznych. Zaprezentowano wyniki badań dotyczące wpływu wymiany wiedzy pomiędzy pracownikami wiedzy na wartości

zdefiniowanych wskaźników oceny efektywności procesów biznesowych. W podsumowaniu pokazano kierunki dalszych prac.

Słowa kluczowe: pracownicy wiedzy, procesy biznesowe, efektywność

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