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A MODEL FOR INFORMATION SUPPORT FOR KNOWLEDGE WORKERS

Justyna PATALAS-MALISZEWSKA

University of Zielona Góra, Zielona Góra, Poland
e-mail: j.patalas@iizp.uz.zgora.pl

Abstract: This article aims to elaborate on a model of information support for knowledge workers in Polish enterprises. Earlier research has explored the use of Web 2.0 technology for information sharing. Nevertheless, relatively little information has been published that focuses on the impact of information sharing among knowledge workers within a company and its subsequent influence on a firm's effectiveness as identified via the number of new products created, number of completed research topics, or number of new patents. The author aims to analyze the effectiveness of information sharing in Polish enterprises based on the research results gained from the study described in this paper. In particular, this study pays attention to the likely consequences and results of information sharing by the use of employee web logs. This is followed by a discussion of the results of the empirical studies and of the supporting literature. The summary indicates potential directions for further work.

Keywords: knowledge workers, employee web logs, information sharing.

1 Introduction

The progress of information technology has made it feasible for firms in many industries to collect and process information like never before. Generally, information technology (IT) can be regarded as a natural medium for managing knowledge [1, 10]. Organizations usually use information technology to transfer tacit knowledge from individuals to a knowledge repository [4]. Moreover, the tacit knowledge transfer process could be focused on transferring a specific type of knowledge from one employee to another.

IT in enterprises has evolved from traditional information systems (IS) implementations (monolithic, centralized, and controlled) to implementations based on social media and collaborative sharing: Web 2.0, social media, online communities, etc. [13]. According to Von Krogh [26], Web 2.0 and social media have had an impact on the way knowledge is enabled. Huang, Chen, Kuo, and Jeng [9] state that most Web 2.0 technologies are usually free and have made it easy for users to create a personal space where they can share information immediately or transmit information more rapidly than by other more conventional means. Furthermore, Nonaka and Von Krogh [16] claimed that Web 2.0 technologies and social media have had an impact on the processes of knowledge creation, sharing, and capture. Information sharing using Web 2.0 can be carried out through technologies such as Voice over Internet Protocol **(**VoIP), e-mail, tagging, phone/video-conferencing, web logs, or wiki pages.

This paper focuses on the impact of information sharing among knowledge workers within a company and its subsequent influence on a firm's effectiveness as identified via the number of new products created, number of completed research topics, or number of new patents. Knowledge workers can be defined as the employee, who has the characteristics of deepening the knowledge.

This paper provides a study on the use of web logs by employees. The author of this paper agrees with Efimova and Grudin [6] that an employee web log is "action that is authorised, acknowledged, or in a formal way associated with an organization". It can be claimed that knowledge workers create, distribute, or apply knowledge within their working environments. Since the existence of a clear impact of information sharing among knowledge workers using Web 2.0 has not been yet verified in the literature, this study tries to answer the following research question: What are the effects on the company for sharing of information among knowledge workers through the use of employee web logs?

Liu and Phillips state that employee information or knowledge sharing enhances firm performance in areas such as absorptive capacity and innovation capability [12]. Understanding the purpose of information sharing among knowledge workers within an enterprise allows for a definition of its effects that might be obtained from the use of employee web logs.

The implications of tacit knowledge transfer focus on knowledge workers communication via web logs can be major knowledge medium by top management.

To achieve a more contextually-rooted discussion, this paper explores the perceptions of the potential of employee web logs among knowledge workers in Polish companies. This paper also explores the influences that impact the way Polish companies perceive employee web logs, and thereby how these influences may facilitate or inhibit thinking about employee web log use in information sharing within such companies.

The remainder of this paper is organized as follows: Section 2 presents the theoretical background of the study. Section 3 describes the research model and hypotheses. Section 4 explains the research methodology and examines the research results. Section 5 discusses the implications of the results and provides a conclusion and highlights the limitations of this research.

2 Theoretical background

- Information sharing

Von Hippel [25] defined the concept of information "stickiness" as "the incremental expenditure required to transfer a given unit of information to a specified locus in a form usable by a given information seeker". Park and Favrel [17] stated that information sharing is an integral component of enterprises, which are based on IT. Advances in IT are constantly increasing and enabling information availability [2], however, in many studies, it has been noted that the benefits of information sharing depends on the type of information, as well as on demand patterns and capacity constraints [3, 11]. While most papers have shown the benefits of information sharing, the role of innovation level in the company enhancing has been largely ignored in the literature. In this study, the effect of information sharing among knowledge workers who are supported by employee web logs is investigated via the simulation of a hypothetical model using the Group Method of Data Handling (GMDH).

- Firm's effectiveness

Zahra and George [27] stated that the qualifications of employees have an impact on their capabilities to generate new knowledge. Information sharing reflects the dynamic aspect of a higher level of organizational capability that protects firms against imitations [23]. IT is well accepted as a means to facilitate operations within a firm [5]. The development of open standards between firms can dramatically reduce communication costs [21], so the Internet (e.g. employee web logs) can be used in inter-firm communication. Firm's effectiveness has been defined as an increase in the innovation level of the company. Information sharing plays an important role in such innovation processes (e.g., new products, patents). Poland, together with Slovakia, Lithuania, Hungary, Romania, Latvia, and Bulgaria is among those countries that have a low share of innovative enterprises [(from 27 to 36%) Eurostat Statistics Database]. I try to clarify and analyze how knowledge sharing among knowledge workers in Polish companies via employee web logs is linked to firm's effectiveness in the context of an increase in the level of its innovation. So, I suggest the following outputs of firm's effectiveness:

(1) number of new products that have been implemented in a given year (for the last 5 years),
(2) number of completed research topics in a given year (for the last 5 years),
(3) number of patents in a given year (for the last 5 years).

Knowledge sharing between company employees is the critical issue to manage the creation of a new product within an organization. Worker can exchange data through a database built on the information and communication technology infrastructure [24]. Developing the new products in the company needs innovation ideas supported by knowledge management tools, for example, employee web logs.

- Employee web logs

Schoendienst *et al*., [20] state that the existing studies do not highlight the use of web logs or blogs as a platform for information/knowledge sharing within organizations. However, they do not differentiate between organizational blogs, individual web logs, and employee web logs within organizations; all of which constitute a lightweight means of sharing of information. In agreement with Müller and Stocker [14], this paper provides a study of the adoption of employee web logs from a technological acceptance perspective, that is, how readily employees adopt such technologies, but furthermore, it is important to know the impact of information sharing between knowledge workers within a company on a firm's effectiveness. This paper proposes and tests a model for knowledge worker information support through the use of blogs.

Table 1. Research model

	Knowledge worker: W_1	Knowledge worker:…	Knowledge worker W_m; m∈N
Monthly number of blog entries. relating to client C_1	B_{W1C1}	$B_{W...C1}$	B_{WmC1}
Monthly number of blog entries relating to client $C_{...}$	$B_{W1C...}$	$B_{W...C...}$	$B_{WmC...}$
Monthly number of blog entries relating to client C_n,n∈N	B_{W1Cn}	$B_{W...Cn}$	B_{WmCn}

The aforementioned literature on web logs has highlighted the need to provide a better understanding of the factors underpinning information sharing from a technological perspective. The research model builds on the concepts of technology acceptance, information sharing between knowledge workers within a company, as well as on the resulting effects for a company, chiefly identified as the (1) number of new products that have been implemented in a given year (for the last 5 years), (2) the number of completed research topics in a given year (for the last 5 years), and (3) the number of patents in a given year (for the last 5 years).

- Research model

The aim of this study is to explore the impact of information sharing among knowledge workers within a company on a firm's effectiveness.

The impact of information sharing among knowledge workers is understood as the enhancing of the level of three defined factors. In agreement with Fabrizio [7], I state that collaboration between knowledge workers is critical for innovation development. Therefore, an attempt was made to examine the relative significance of such collaboration between knowledge workers on a firm's effectiveness, namely in those three factors.

Premkumar, Ramamurthy & Crum [19] stated that inter-firm IT is used to reduce operational costs and improve customer service. So, this study formulated the monthly number of blog entries relating to clients created by each knowledge worker in the sales department in company announcements of employee web log implementations (see Table 1). As presented in Fig. 1, the research model posits, from the preceding argument, that information sharing among knowledge workers within a company in employee web logs will have a positive influence on effectiveness in these firms.

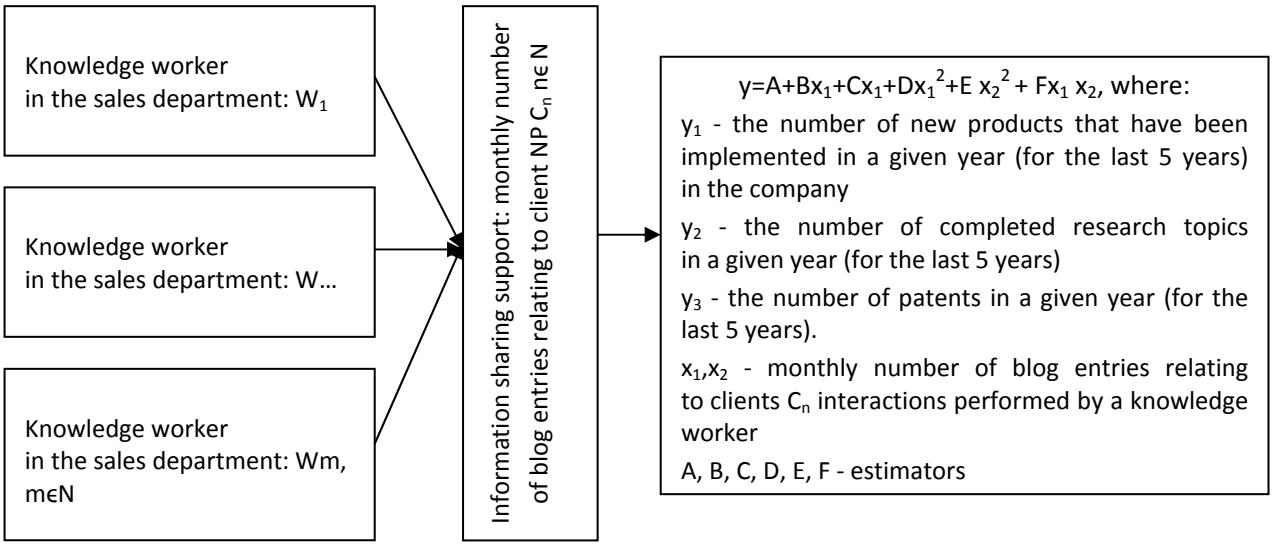

Figure 1. Research model

Knowledge worker in the sales department: product manager
• providing the sales team
• providing the technical expertise
• providing the product training
• reviewing product data
• preparing and reviewing of the promotional material
• conduct the design market research projects
• development of the annual marketing plan
• preparing product forecasts
• customer relationship management

Figure 2: Knowledge worker's activities in the sales department

This research proposes and tests a model to explicate the impact of information sharing in employee web logs. The subjects for this research were a number of Polish companies that have exploited information sharing through employee web logs.

A model for assessing the impact of information sharing between knowledge workers was built using the GMDH. The multilevel GMDH allows for an optimized synthesis of a mathematical model for a given class of regression functions, and it can be used in both evaluating criteria and in quality assessment [8, 18]. Both elements of the algorithm are defined arbitrarily by the author. In this study, there are:

- monthly number of blog entries relating to client C_n interactions performed by a knowledge worker by knowledge worker,
- the number of new products that have been implemented in a given year (for the last 5 years) in the company or the number of completed research topics in a given year (for the last 5 years) or the number of patents in a given year (for the last 5 years).

The following section describes the item measurement and data collection carried out in the research.

3 Measures and methods

Before the survey was carried out, it was assumed that those employees who took part in the research would realize at least 80% of the defined activities in the sales department (see Fig. 2) and use the defined employee web logs to support this work.

A survey was conducted in Poland to test the research model. The data for this study were collected from 40 knowledge workers from sales departments in five small and medium-sized enterprises (SMEs) that exploit the use of employee web logs. These data were collected between April and May 2013 through the use of direct interviews with respondents, who in this case were product managers of sales departments. The indicators (monthly numbers of blog entries relating to client C_n,nϵN created by knowledge workers) include measures to show the value of the impact of information sharing among knowledge workers within a company on a firm's effectiveness.

The firm's effectiveness level is defined as the degree to which the growth of the Polish firm's effectiveness level is affected from the information sharing through employee web logs among knowledge workers.

4 A model for knowledge worker information support using the GMDH method

This section extends the previous analysis by dealing with the question of whether or not the sharing of information between knowledge workers has an impact on the effectiveness of a firm. Formally, this section is characterized by the assumption that each knowledge worker's blog entry relating to clients should be shared with other knowledge workers and employees of the firm.

In order to obtain the relevant information, each employee was required to complete a questionnaire. It defined each product manager in the sales department as: W_1 – 0-2 years in a company; W_2 – 2-3 years in a company; W_3 – 3-5 years in a company, W_4 – 5-7 years in a company; W_5 – 7-10 years in a company; W_6 – 10-14 years in a company; W_7 – 14-20 years in a company, W_8 – more than 20 years in a company. The author received the data from each company for 2012 (see Table 2).

Table 2. Research results

SME		W1	W2	W3	W4	W5	W6	W7	W8
SME1	Monthly number of blog entries relating to client C_{SME11}	2	3	3	2	1	1	1	1
	Monthly number of blog entries relating to client C_2	4	3	3	3	2	2	1	1
	Monthly number of blog entries relating to client C_3	3	4	4	3	2	2	2	1
	Monthly number of blog entries relating to client C_4	2	4	4	4	1	1	1	1
	Monthly number of blog entries relating to client C_5	2	4	4	4	2	2	1	1
SME2	Monthly number of blog entries relating to client C_1	4	4	3	2	2	2	1	1
	Monthly number of blog entries relating to client C_2	3	3	2	2	2	2	2	2
	Monthly number of blog entries relating to client C_3	3	3	3	3	2	2	2	2
	Monthly number of blog entries relating to client C_4	4	5	5	4	3	3	3	3
	Monthly number of blog entries relating to client C_5	4	3	3	3	3	2	2	1
SME3	Monthly number of blog entries relating to client C_1	2	2	2	2	2	2	1	1
	Monthly number of blog entries relating to client C_2	1	1	2	2	1	1	1	3
	Monthly number of blog entries relating to client C_3	3	3	3	3	2	2	2	2
	Monthly number of blog entries relating to client C_4	2	2	2	2	1	1	1	1
	Monthly number of blog entries relating to client C_5	1	2	2	1	1	1	1	1
SME4	Monthly number of blog entries relating to client C_1	4	4	5	5	5	4	4	4
	Monthly number of blog entries relating to client C_2	4	5	5	5	4	4	4	4
	Monthly number of blog entries relating to client C_3	4	4	4	4	5	5	4	4
	Monthly number of blog entries relating to client C_4	5	5	5	4	4	4	4	4
	Monthly number of blog entries relating to client C_5	4	4	4	3	3	3	2	2
SME 5	Monthly number of blog entries relating to client C_1	3	3	4	3	2	2	1	1
	Monthly number of blog entries relating to client C_2	1	3	2	2	1	1	1	3
	Monthly number of blog entries relating to client C_3	2	2	3	3	2	2	1	1
	Monthly number of blog entries relating to client C_4	2	4	4	4	2	2	2	2
	Monthly number of blog entries relating to client C_5	2	2	3	3	3	3	1	1

The variables in the research model are 40 input variables defined as the monthly number of blog entries relating to client C carried out by a knowledge worker in the enterprise:

- if $x_1; x_2 \in \langle 0;100 \rangle$, it belongs to set 1,
- if $x_1; x_2 \in \langle 101;200 \rangle$, it belongs to set 2,
- if $x_1; x_2 \in \langle 201;300 \rangle$, it belongs to set 3,
- if $x_1; x_2 \in \langle 301;400 \rangle$, it belongs to set 4,
- if $x_1; x_2 \in \langle 401;\infty \rangle$, it belongs to set 5.

The factors of the examination of the monthly number of blog entries relating to each defined client were based on feedback surveys and their sources are listed here (Table 2):

The output variables (Table 3) in the research model will be the vector of values of three factors: (y_1) the number of new products that have been implemented in a given year (for the last 5 years):

- if $y_1 \in \langle 0;50 \rangle$, it belongs to set 1,
- if $y_1 \in \langle 51;100 \rangle$, it belongs to set 2,
- if $y_1 \in \langle 101;200 \rangle$, it belongs to set 3,
- if $y_1 \in \langle 201;300 \rangle$, it belongs to set 4,
- if $y_1 \in \langle 301;\infty \rangle$, it belongs to set 5 [18].

(y_2) the number of completed research topics in a given year (for the last 5 years):

- if $y_2 \in \langle 0;5 \rangle$, it belongs to set 1,
- if $y_2 \in \langle 6;10 \rangle$, it belongs to set 2,
- if $y_2 \in \langle 11;20 \rangle$, it belongs to set 3,
- if $y_2 \in \langle 21;30 \rangle$, it belongs to set 4,
- if $y_2 \in \langle 31;\infty \rangle$, it belongs to set 5 [18].

(y_3) and the number of patents in a given year (for the last 5 years):

- if $y_3 \in \langle 0;5 \rangle$, it belongs to set 1,
- if $y_3 \in \langle 6;10 \rangle$, it belongs to set 2,
- if $y_3 \in \langle 11;20 \rangle$, it belongs to set 3,
- if $y_3 \in \langle 21;30 \rangle$, it belongs to set 4,
- if $y_3 \in \langle 31;\infty \rangle$, it belongs to set 5 [18].

The factors of the examination of the monthly number of blog entries relating to each defined client were based on feedback surveys and their sources are listed here (Table 3).

This study presents the possibility of defining a model for knowledge worker information support using the GMDH method. This enables the monthly number of blog entries relating to clients that were created by each knowledge worker and those of the values of firm effectiveness to be determined. In accordance with the data included in Table 2 and Table 3, all the variations of the GMDH algorithms were investigated in the consulting IT computer software system [18].

Table 3. Research results

	(1) Number of new products that have been implemented in a given year (for the last 5 years)	(2) Number of completed research topics in a given year (for the last 5 years)	(3) Number of patents in a given year (for the last 5 years)
SME1	1	3	1
SME2	2	5	1
SME3	1	1	1
SME4	4	5	1
SME5	1	4	1

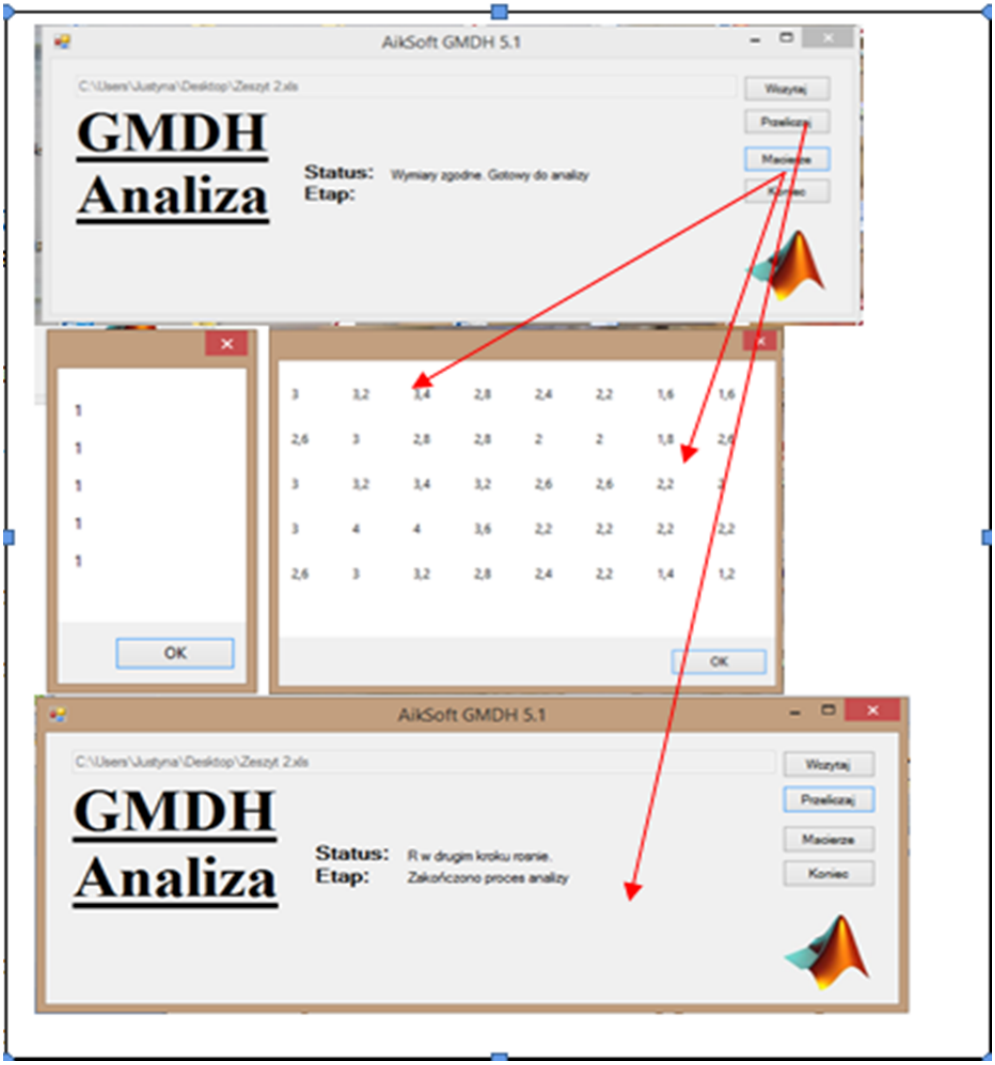

Figure 3. The variations of the GMDH algorithms in the consulting IT computer software system

As a result of the implementation of the algorithm, the best possible polynomial was obtained; this was characterized by the lowest value criteria for regularity assigned to the pair object. The algorithm evolution process was completed on the second iteration.

In this way, the best polynomials are chosen; which is the one with the smallest error of modeling:

- Model 1

$$y_1(B_{W2}B_{W6}) = 2.89 + 2.29B_{W2} - 7.37B_{W6} - 0.67B_{W2}^2 + 5.05B_{W6}^2 - 1.06B_{W2}B_{W6}$$

where:

B_{W2} – monthly number of blog entries relating to clients that were created by knowledge worker W_2

B_{W6} – monthly number of blog entries relating to clients that were created by knowledge worker W_6

y_1 – number of new products that have been implemented in a given year (for the last 5 years)

- Model 2

$$y_1(B_{W3}B_{W8}) = -0.01 + 1.04B_{W3} - 0.02B_{W8} - 0.07B_{W3}^2 + 0.01B_{W8}^2 + 0.06B_{W3}B_{W8}$$

where:

B_{W3} – monthly number of blog entries relating to clients that were created by knowledge worker W_3

B_{W8} – monthly number of blog entries relating to clients that were created by knowledge worker W_8

y_2 – number of completed research topics in a given year (for the last 5 years).

- Model 3

$$y_3(B_{W3}B_{W5}) = 0.69 + 0.01B_{W3} + 0.31B_{W5} + 0.04B_{W3}^2 - 0.00B_{W5}^2 - 0.18B_{W3}B_{W5}$$

where:

B_{W3} – monthly number of blog entries relating to clients that were created by knowledge worker W_3

B_{W5} – monthly number of blog entries relating to clients that were created by knowledge worker W_5

y_3 – number of patents in a given year (for the last 5 years).

It should be noted, that the monthly number of blog entries relating to clients, which were created by knowledge workers defined as W_2 and W_6 are critical for new product development in the company, those created by knowledge workers defined as W_3 and W_8 for completed research project development, and those created by knowledge workers defined as W_3 and W_5 for patent development.

Knowledge worker W_2 is one who has worked in the company for max. 3 years, W_3 max. 5 years, W_5 max. 10 years, and W_6 max. 14 years. According to Fabrizio [7], personal knowledge relationships are critical for innovation development. Therefore, I maintain that a firm needs a specific mix of knowledge worker collaboration in different developmental phases; and this collaboration increases the number of new product/research projects and patent development within a firm.

To illustrate the use of the determined models, I will consider a manufacturing company that produces parts for the multifamily housing construction. The company decides that it needs to maintain its level of innovation. In the sales department of this company, the web logs are used by product managers.

So, it can be simulated the number of new products in a company/year according to Model 1:

$$y_1(B_{W2}B_{W6}) = 2.89 + 2.29B_{W2} - 7.37B_{W6} - 0.67B_{W2}^2 + 5.05B_{W6}^2 - 1.06B_{W2}B_{W6}$$

where:

B_{W2} – monthly number of blog entries relating to clients that were created by knowledge worker W_2

B_{W6} – monthly number of blog entries relating to clients that were created by knowledge worker W_6

y_1 – number of new products that have been implemented in a given year (for the last 5 years)

So, if a product manger in the sales department works in a company for 2-3 years and enters 100 monthly blogs relating to the client, and the second employee (a product manager) works in a company for 10-14 years and increases the monthly use of the blog related to the client, then the number of new products in a company will be:

- 1.13 new products/year, if the second employee works in a company for 10-14 years and enters 100 monthly blogs related to the client,
- 7.85 new products/year, if the second employee works in a company for 10-14 years and enters 200 monthly blogs related to the client,
- 24.67 new products/year, if the second employee works in a company for 10-14 years and enters 300 monthly blogs related to the client,
- 51.59 new products/year, if the second employee works in a company for 10-14 years and enters 400 monthly blogs related to the client,
- 88.61 new products/year, if the second employee works in a company for 10-14 years and enters more than 400 monthly blogs related to the client.

If a product manger in the sales department works in a company for 2-3 years and enters 200 monthly blogs relating to client, and the second employee (a product manager) works in a company for 10-14 years increases the monthly use of the blog related to the client, the number of new products in a company will be:

- 0.35 new products/year, if the second employee works in a company for 10-14 years and enters 100 blogs related to the client,
- 6.01 new products/year, if the second employee works in a company for 10-14 years and enters 200 monthly blogs related to the client,
- 21.77 new products/year, if the second employee works in a company for 10-14 years and enters 300 monthly blogs related to the client,
- 47.63 new products/year, if the second employee works in a company for 10-14 years and enters 400 monthly blogs related to the client,
- 83.59 new products/year, if the second employee works in a company for 10-14 years and enters more than 400 monthly blogs related to the client.

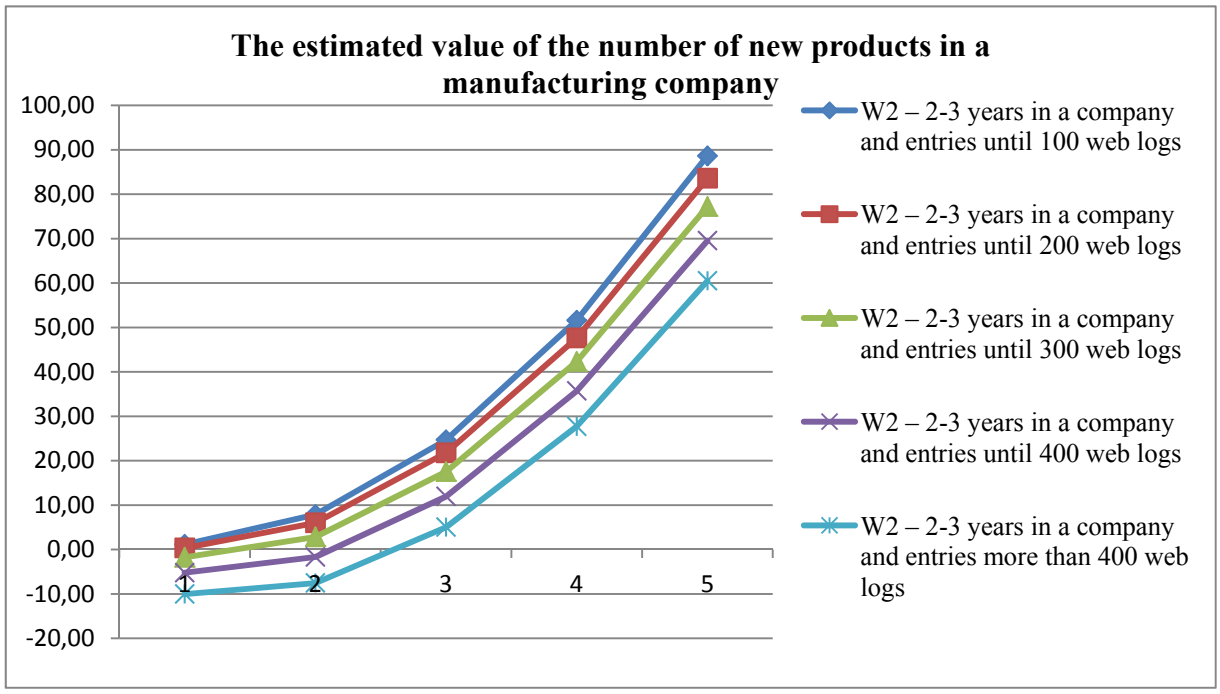

Figure 4. The estimated value of the number of new products in a manufacturing company

If a product manager in the sales department works in a company for 2-3 years and enters 300 monthly blogs related to the client, and the second employee (a product manager) works in a company for 10-14 years and increases the monthly use of the blogs related to the client, the number of new products in a company will be:

- unfortunately –1.77 new products/year, if the second employee works in a company for 10-14 years and enters 100 monthly blogs related to the client,
- 2.83 new products/year, if the second employee works in a company for 10-14 years and enters 200 monthly blogs related to the client,
- 17.53 new products/year, if the second employee works in a company for 10-14 years and enters 300 monthly blogs related to the client,
- 42.33 new products/year, if the second employee works in a company for 10-14 years and enters 400 monthly blogs related to the client,
- 77.23 new products/year, if the second employee works in a company for 10-14 years and enters more than 400 monthly blogs related to the client.

If a product manager in the sales department works in a company for 2-3 years and enters 400 monthly blogs related to client, and the second employee (a product manager) works in a company for 10-14 years and increases the monthly use of the blogs related to the client, the number of new products in a company will be:

- unfortunately −5.23 new products/year, if the second employee works in a company for 10-14 years and enters 100 monthly blogs related to the client,
- unfortunately −1.69 new products/year, if the second employee works in a company for 10-14 years and enters 200 monthly blogs related to the client,
- 11.95 new products/year, if the second employee works in a company for 10-14 years and enters 300 monthly blogs related to the client,
- 35.69 new products/year, if the second employee works in a company for 10-14 years and enters 400 monthly blogs related to the client,
- 69.53 new products/year, if the second employee works in a company for 10-14 years and enters more than 400 monthly blogs related to the client.

And finally, if both employees enter more than 400 monthly blogs related to the client, the number of new products in a company will be:

- −10.03 new products/year, if the second employee works in a company for 10-14 years and enters 100 monthly blogs related to the client,
- −7.55 new products/year, if the second employee works in a company for 10-14 years and enters 200 monthly blogs related to the client,

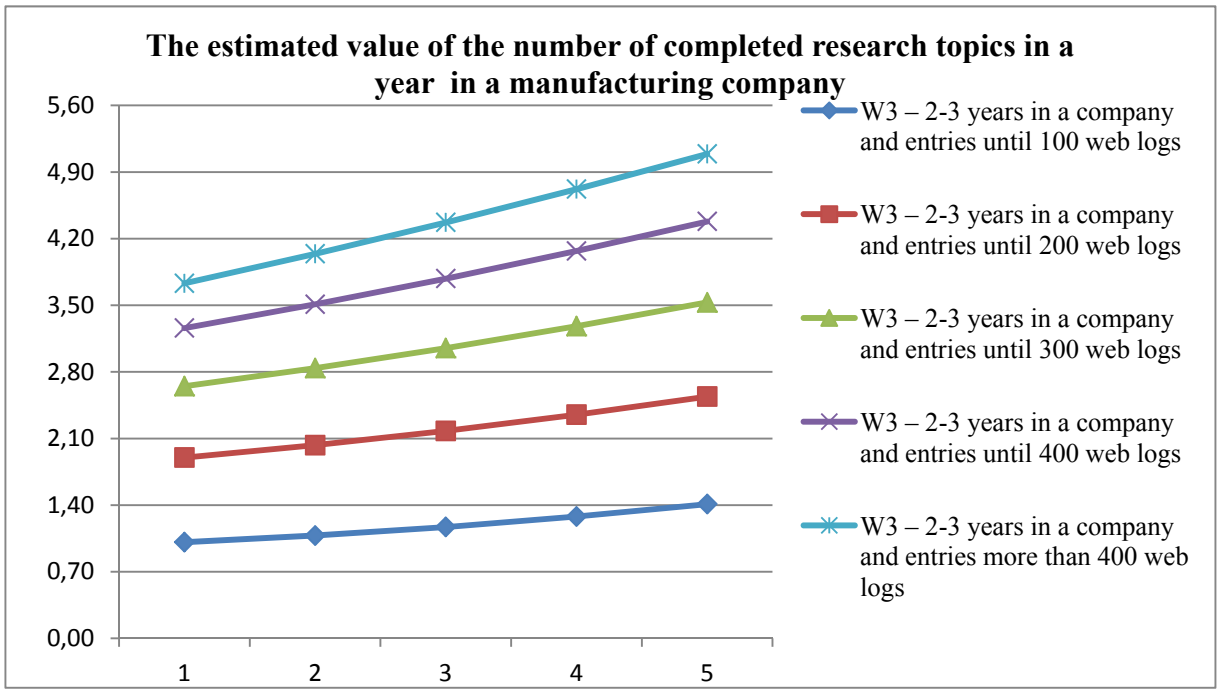

Figure 5. The estimated value of the number of completed research topics in a year in a manufacturing company

- 5.03 new products/year, if the second employee works in a company for 10-14 years and enters 300 monthly blogs related to the client,
- 27.71 new products/year, if the second employee works in a company for 10-14 years and enters 400 monthly blogs related to the client,
- 60.49 new products/year, if the second employee works in a company for 10-14 years and enters more than 400 monthly blogs related to the client.

The estimated value of the number of new products in a manufacturing company is presented in Fig. 4.

It is noted, on the basis of the presented simulations that, the higher the frequency of the information sharing via web logs among employees, the higher the number of new products in the company. The different frequency of the use of web logs among employees unfortunately leads to a decrease in the number of new products.

In the same way, it can be simulated the number of completed research topics in a year in a manufacturing company according to Model 2 (see Fig. 5):

$$y_2(B_{W3}B_{W8}) = -0.01 + 1.04B_{W3} - 0.02B_{W8} - 0.07B_{W3}^2 + 0.01B_{W8}^2 + 0.06B_{W3}B_{W8}$$

where:

B_{W3} – monthly number of blog entries relating to clients that were created by knowledge worker W_3

B_{W8} – monthly number of blog entries relating to clients that were created by knowledge worker W_8

y_2 – number of completed research topics in a given year (for the last 5 years).

It is noted, on the basis of the presented simulations, that the higher frequency of the information sharing via web logos among employee that the higher number of completed research topics in a year.

And it can be simulated the number of patents in a year in a manufacturing company according to Model 3 (see Fig. 6):

$$y_3(B_{W3}B_{W5}) = 0.69 + 0.01B_{W3} + 0.31B_{W5} + 0.04B_{W3}^2 - 0.00B_{W5}^2 - 0.18B_{W3}B_{W5}$$

where:

B_{W3} – monthly number of blog entries relating to clients that were created by knowledge worker W_3

B_{W5} – monthly number of blog entries relating to clients that were created by knowledge worker W_5

y_3 – number of patents in a given year (for the last 5 years).

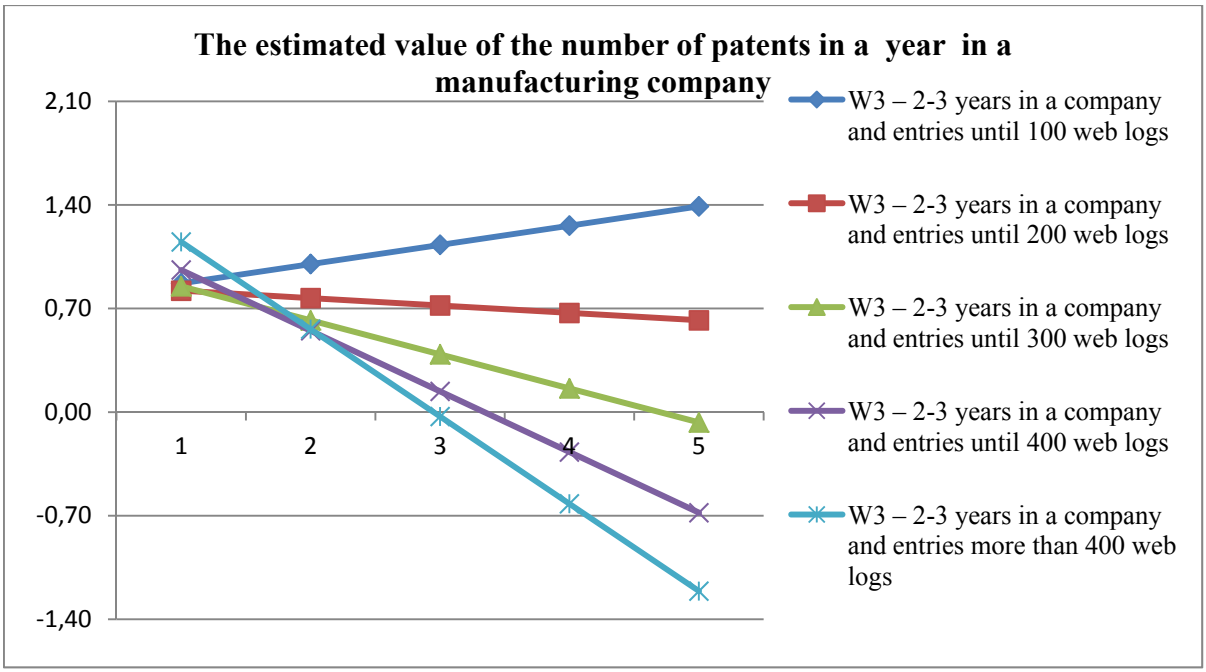

Figure 6. The estimated value of the number of patents in a year in a manufacturing company

Unfortunately, it is noted, on the basis of the presented simulations, that the higher frequency of the information sharing via web logs among employee leads to a decrease in the number of patents in a year in a manufacturing company.

The results of this study validate the existence of a direct effect on the effectiveness of a firm in the context of information sharing among knowledge workers who are supported by employee web logs. The literature commonly points out that IT affects the performance of a firm, but the effects are sometimes dependent upon the particular alignment of such IT with a firm's strategy, structure, and environment [15, 22]. However, it seems that information sharing among knowledge workers supported by employee web logs has a clear impact on the effectiveness of a firm.

5 Conclusions

This section of the paper summarizes the new findings of this study and discusses the related implications. The results of this study demonstrate the clear and measurable existence of a positive effect of information sharing among knowledge workers supported by web logs on the effectiveness of a firm. Specifically, the results reveal these effects on the number of a firm's new product/research topics and patent developments. Transparency in customer information flow supported by employee web logs may facilitate the information needed to enhance innovation at the company level. This is even more important in Poland, as well as in other developing economies, where the external environment of the market changes rapidly.

Like all studies, this one has certain limitations that further research should aim to overcome. First, because the intention is to analyze Polish companies, this study focuses on Polish knowledge workers. It would be unwise to generalize the findings too broadly to other countries. Furthermore, all the variables were measured at the same moment in time. So, it would be useful to provide such research over a longer time period and at different stages. These conclusions and limitations suggest proposals for future research directions, such as exploring additional factors that could improve the effect of the collaboration of knowledge workers on the effectiveness of a firm.

6 References

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