Examples of Applications of the Sknowinnov Model in Creating an Innovative Company

5

The success of a company lies more in its IC than in its physical assets. The capacity to manage knowledge and convert it into useful products and services is fast becoming the current primary executive skill. As a result, there has been a flurry of interest in IC, creativity, innovation, and learning within an organization. However, surprisingly little attention has been given to the management of dependence on the value of IC and innovation in a company.

The Sknowinnov method (Chap. 4) allows the construction of a decision model that involves all the elements of Sknowinnov, including an assessment of the method's implementation efficiency. The modeling object consists of a pair of values: the values of the personnel usefulness function for the m-th knowledge worker and the values of innovation characteristics. The application of the Sknowinnov model makes it possible to forecast the value of knowledge workers. The solution, defined in terms of predictive indicators for the efficiency in knowledge worker selection, will be shown using the consulting software. Only the employment of appropriate knowledge workers can guarantee a company's enduring competitive edge in the market.

This chapter presents my system for assessing knowledge workers in relation to increasing innovation in a company (Sknowinnov system). Through the research studies, I will show how forecasting the values of strategic knowledge resources (values of the personnel usefulness function for the m-th knowledge worker) are carried out. Two medium-sized companies that fulfill the qualifying criteria of innovative companies, were chosen as test subjects for the effectiveness of the Sknowinnov method. The research questions included the following. Is it possible to forecast the values of the personnel usefulness function for the m-th knowledge worker when given the values of the characteristics of innovation in a company? Is it possible to identify knowledge workers who can become innovative workers?

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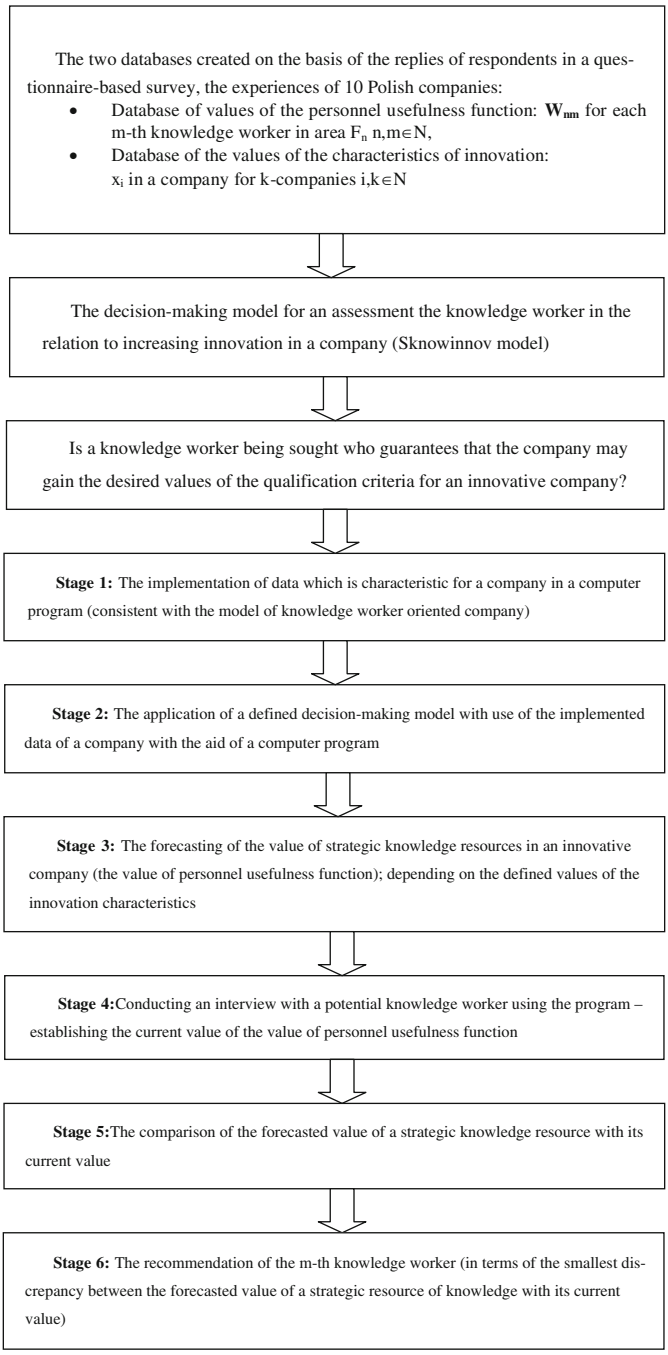


Fig. 5.1 The decision-making situation in which an innovative company is considering the employment of a new m-th knowledge worker

5.1 Sknowinnov System

5.1.1 Selection of Appropriate Knowledge Workers

The decision regarding the selection of appropriate employees requires that the company management assess the efficiency of the investment. The application of this model allows a forecast to be made about the value of the strategic knowledge resources within a given organization (Patalas-Maliszewska 2009). The decision-making situation, in which an innovative company is considering the employment of the m-th knowledge worker, is presented in Fig. 5.1.

The decision-making situation of the company has been presented; this determines whether the new knowledge worker should be employed in sales. In addition, I will describe the example of company A2, which is looking for an employee to fill the position of regional assistant. That company expects to retain its current level of innovation.

The decision situation is as follows.

Stage 1. Using the computer-based Sknowinnov system, it is possible to check whether the company complies with the specified reference model. A potential new employee selects actions that will be performed in the company. The developed reference model will help companies determine the work place for a new employee.

Stage 2. A tool in the Sknowinnov method supports decision making at the strategic level for assessing knowledge in an innovative company. The following information is produced:

- For m_4—regional assistant:

$$\mathbf{m_4}^* = -\mathbf{0,6490} + \mathbf{3,4592X_7} - \mathbf{2,2539X_{13}} - \mathbf{2,0984X_7}^2 - \mathbf{1,7486X_{13}}^2 + \mathbf{3,8323X_7X_{13}},$$

where

X_7—number of employees with science degrees,

X_{13}—number of purchased and used licenses.

Stage 3. For a new potential knowledge worker as a regional assistant, by using the decision model we obtain the following forecast of the personnel usefulness function. This is the company's request for the sample of A2's values for knowledge worker:

$$\mathbf{m_4}^* = -\mathbf{0,6490} + \mathbf{3,4592X_7} - \mathbf{2,2539X_{13}} - \mathbf{2,0984X_7}^2 - \mathbf{1,7486X_{13}}^2 + \mathbf{3,8323X_7X_{13}},$$

where

X_7—number of employees with scientific degrees, and
X_{13}—number of purchased and used licenses.

Stage 4. Using the Sknowinnov system, the actual value of the personnel usefulness function for a new employee is checked (see Appendix 1).

Stage 5. We then compare the actual value of the personnel usefulness function with the expected value for the new employee. If these values are similar, it is assumed that the employment of the employee will allow the current level of innovation to be maintained within the company.

The actual value of the function: $\mathbf{Wm_4} = 19$

The forecast value of the function:

$$\begin{aligned}\mathbf{Wm_4}^* &= -\mathbf{0,6490} + \mathbf{3,4592X_7} - \mathbf{2,2539X_{13}} + \mathbf{2,0984X_7}^2 - \mathbf{1,7486X_{13}}^2 \\ &\quad + \mathbf{3,8323X_7X_{13}} \\ &= \mathbf{19,6231}\end{aligned}$$

for X_7—number of employees with science degrees, $X_7 = 2$,
X_{13}—number of purchased and used licenses, $X_{13} = 1$.

The company may decide to recruit new employees for the position of regional assistant. This is because the predicted value of the personnel usefulness function for the new employee is in line with the actual value of the function, which would allow the company to maintain a certain level of innovation.

The resulting decision-making models may take different forms if changes are made to the databases (database of values for the personnel usefulness function, database of values for the characteristics of innovation). The larger the database is (based on experiments and research results), the more accurate the defined decision-making models will be.

The following section presents the decision-making situation in which an innovative company is considering the employment of a new m-th knowledge worker.

5.1.2 Designing a Decision-Making Model for Assessing the Value of a Knowledge Worker

Based on information found in the database for the values of strategic knowledge resources and the qualification criteria for an innovative company, the variants of the GMDH algorithm available in the computer program are examined.

Because of the possibility of using the GMDH algorithm only for nonsingular matrices, the decision-making model with the following characteristics of innovation is obtained:

- X_2—number of new products implemented in a given year (for the last 5 years),
- X_4—number of completed research topics in a given year (for the last 5 years),
- X_7—number of employees with science degrees,

- X_8—number of employees with higher education in relation to other staff, and
- X_{13}—number of purchased and used licenses.

For m_1—sales director:

The GMDH algorithm uses the best possible polynomial, which is characterized by the lowest-value criteria for regularity assigned to the pair object (the values of the characteristics of innovation in a company and the values of the personnel usefulness function for the sales area). The algorithm evolution process is completed on the second iteration. It should be noted that the second-degree polynomial is obtained as a result of implementing the defined database. Thus, it can be different from the value of characteristics of innovation.

In this way, the best polynomial is chosen, which is the one with the smallest error of modeling.

$$\mathbf{m_1}^* = \mathbf{20,07759} + \mathbf{0,6842X_2} - \mathbf{2,1282X_4} + \mathbf{0,0909X_2}^2 + \mathbf{0,1610X_4}^2 - \mathbf{0,1818X_2X_4},$$

where

X_2—number of new products implemented in a given year (for the last 5 years), and

X_4—number of completed research topics in a given year (for the last 5 years).

For m_2—sales specialist:

In this way, the best polynomial is chosen, which is the one with the smallest error of modeling.

$$\mathbf{m_2}^* = -\mathbf{34,1402} + \mathbf{10,12823X_4} - \mathbf{4,3094X_{13}} + \mathbf{0,0861X_4}^2 + \mathbf{0,8112X_{13}}^2 - \mathbf{1,0611X_4X_{13}},$$

where

X_4—number of completed research topics in a given year (for the last 5 years),

X_{13}—number of purchased and used licenses.

For m_3_marketing specialist:

In this way, the best polynomial is chosen, which is the one with the smallest error of modeling.

$$\mathbf{m_3}^* = -\mathbf{1,0920} + \mathbf{6,0274X_2} - \mathbf{5,3324X_4} + \mathbf{0,3174X_2}^2 + \mathbf{0,5490X_4}^2 - \mathbf{0,8606X_2X_4},$$

where

X_2—number of new products implemented in a given year (for the last 5 years), and

X_4—number of completed research topics in a given year (for the last 5 years).

For m_4—regional assistant:

In this way, the best polynomial is chosen, which is the one with the smallest error of modeling.

$$\mathbf{m_4}^* = -\mathbf{0,6490} + \mathbf{3,4592X_7} - \mathbf{2,2539X_{13}} + \mathbf{2,0984X_7}^2 - \mathbf{1,7486X_{13}}^2 + \mathbf{3,8323X_7X_{13}},$$

where

X_7—number of employees with science degrees,

X_{13}—number of purchased and used licenses.

For m_5—product manager:

In this way, the best polynomial is chosen, which is the one with the smallest error of modeling.

$$\mathbf{m_5}^* = -\mathbf{10,0552} + \mathbf{3,4124X_4} - \mathbf{0,2434X_8} - \mathbf{0,2298X_4}^2 - \mathbf{0,0193X_8}^2 + \mathbf{0,1261X_4X_8},$$

where

X_4—number of employees with science degrees,

X_8—number of purchased and used licenses.

Polynomial models of decision making (Figs. 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24, 5.25, 5.26, 5.27, 5.28, 5.29, and 5.30) are constructed from the four groups in the Sknowinnov method (Chap. 4). The Sknowinnov model allows the determination of the value of the personnel usefulness function for a new employee, including the value of innovation characteristics. Based on the projected value of these indicators, the company management can decide on the selection of a new knowledge worker (Fig. 5.1).

5.2 Case Studies Using the Sknowinnov System

5.2.1 Selection of Appropriate Knowledge Workers in an IT Company

The decision about selection appropriate knowledge workers requires the company management to assess the efficiency of the investment. The application of the Sknowinnov model allows a forecast to be made about the value of knowledge workers. The decision-making situation for a company considering the employment of the m-th knowledge worker is presented below.

To illustrate the use of the Sknowinnov model, I will consider an IT company that provides services in the form of projects for both organizations and individual customers (Fig. 5.31). The company decides that it needs to find a new employee to fill the position of sales specialist. It is assumed that in hiring the new employee, the company wishes to maintain its level of innovation.

The Sknowinnov model was used to assess the following employment decisions:

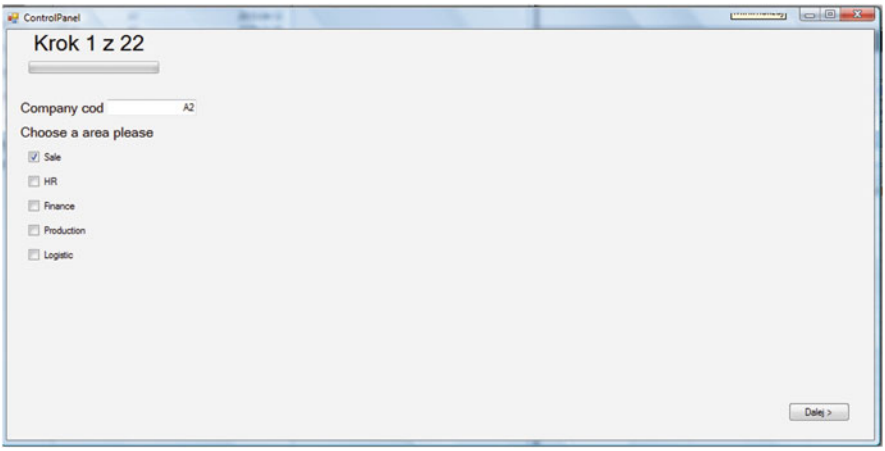


Fig. 5.2 Example of the Sknowinnov system in use

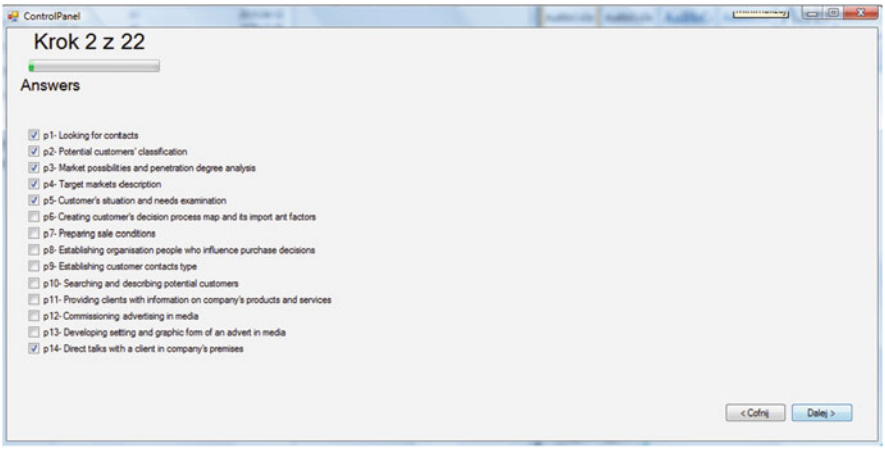


Fig. 5.3 Example of the Sknowinnov system in use

$$\mathrm{Wm}*_2 = -34,14 + 10,13x_4 - 4,31x_{13} + 0,09{x_4}^2 + 0,811{x_{13}}^2 + 1,06x_4x_{13,}\text{where}$$

Wm*$_2$—value of the personnel usefulness function for the sales specialist, x_4—number of completed research topics in a given year (for the last 5 years—at the IT company this was four research topics), x_{13}—number of purchased and used licenses (at the IT company this was three licenses).

The model compiles all groups of the elements of the Sknowinnov method. A decision-making model for a selection of the knowledge (Sknowinnov model) was built for each of five knowledge workers based on empirical research and using

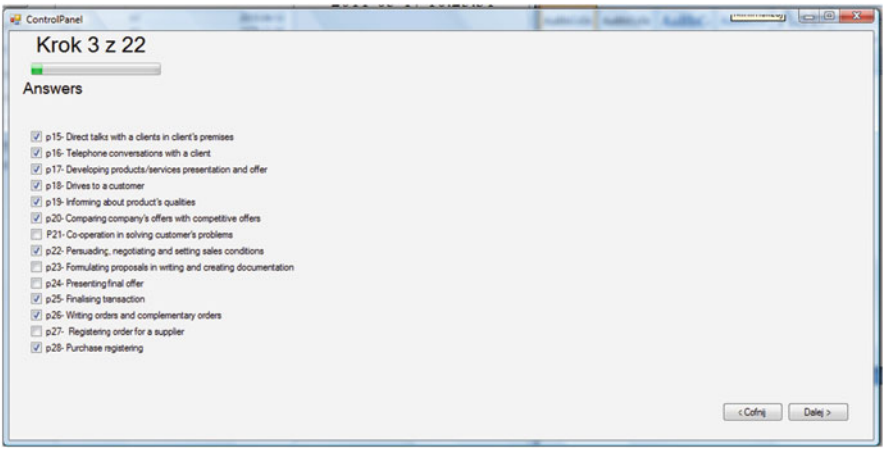


Fig. 5.4 Example of the Sknowinnov system in use

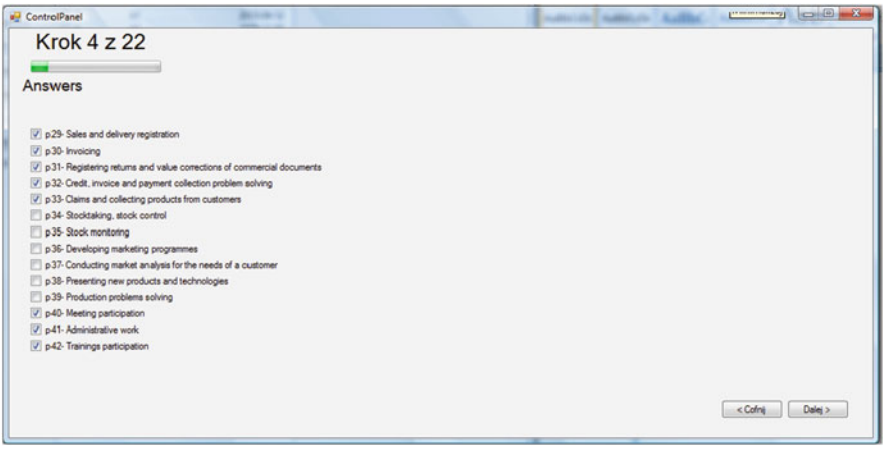


Fig. 5.5 Example of the Sknowinnov system in use

GMDH. It allows a forecast to be made about the future value of the decision about the selecting an employee to increase a company's innovation capacity.

With the Sknowinnov model, the estimated value of the personnel usefulness function (Wm^*_2) for the new knowledge worker to fill the position of sales specialist was determined as: $Wm^*_2 = 14{,}86$. The prospective knowledge worker then completed the test for the Sknowinnov system to obtain the value of the personnel usefulness function (Wm_2). The actual value of the personnel usefulness function for the prospective employee was $Wm_2 = 11$. Examples of using the Sknowinnov system to obtain actual values for the personnel usefulness function Wm_2 are presented in Figs. 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13,

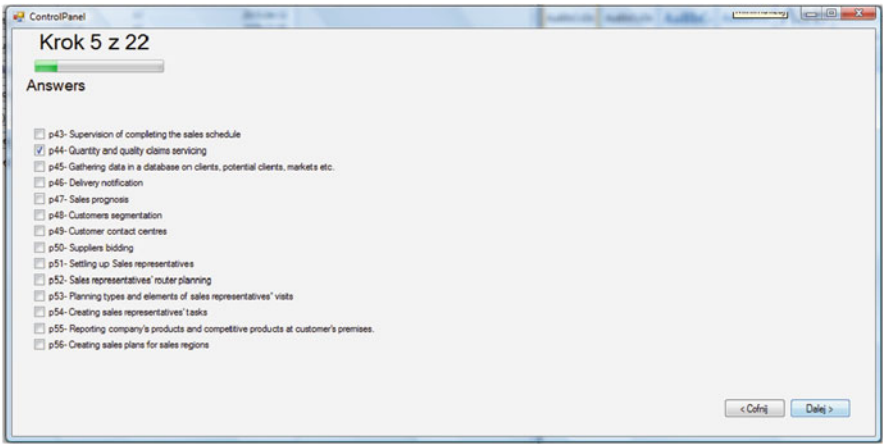


Fig. 5.6 Example of the Sknowinnov system in use

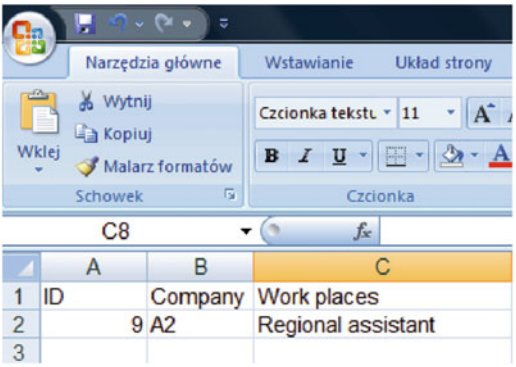


Fig. 5.7 Example of the Sknowinnov system in use

5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24, 5.25, 5.26, 5.27, 5.28, and 5.29. The managing director of the IT company should not select this person since his personnel usefulness function was unsatisfactory compared with the projected value of this function at a given level of innovation.

In addition to being a calculation of the profitability of investment, this approach would appear to be an excellent tool for an "economic" quantitative knowledge analysis. The Sknowinnov model (based on collected data) connects selected determinants described for an innovative company with the value of the personnel usefulness function. It thus allows an assessment of the rationality of hiring knowledge workers and their potential effectiveness. In consequence, this model permits a quantitative evaluation of knowledge workers in a company to be made.

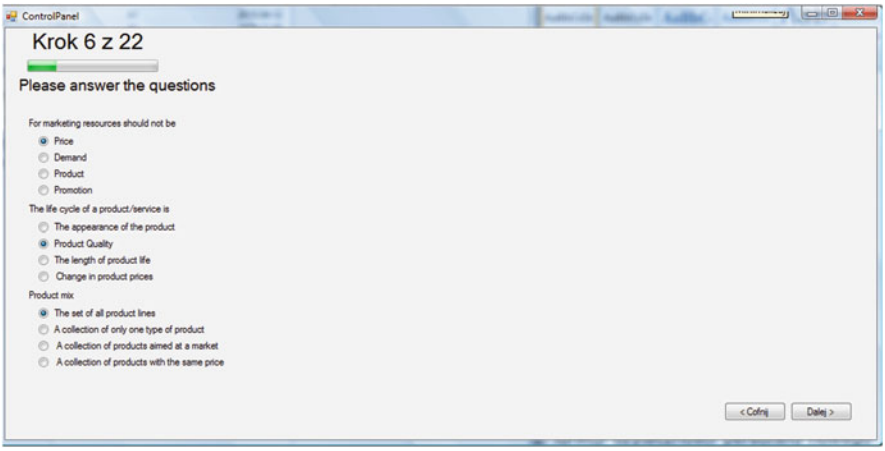


Fig. 5.8 Example of the Sknowinnov system in use

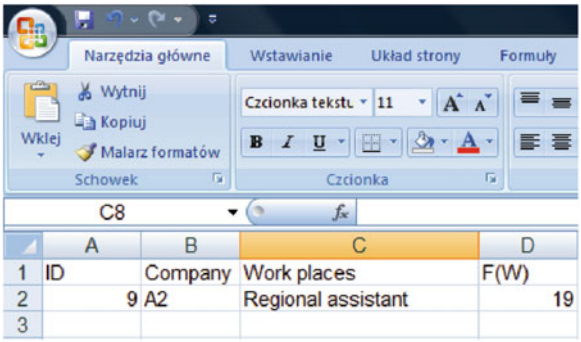


Fig. 5.9 Example of the Sknowinnov system in use

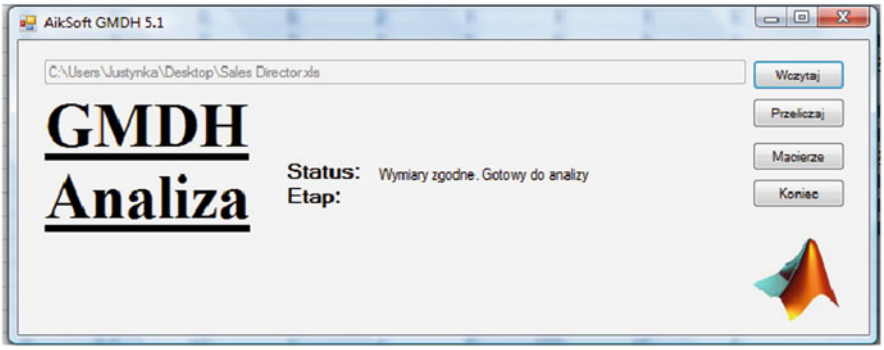


Fig. 5.10 Example of the Sknowinnov system in use

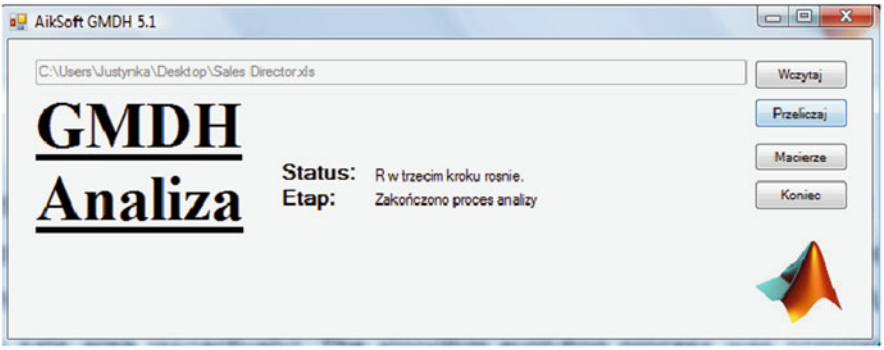
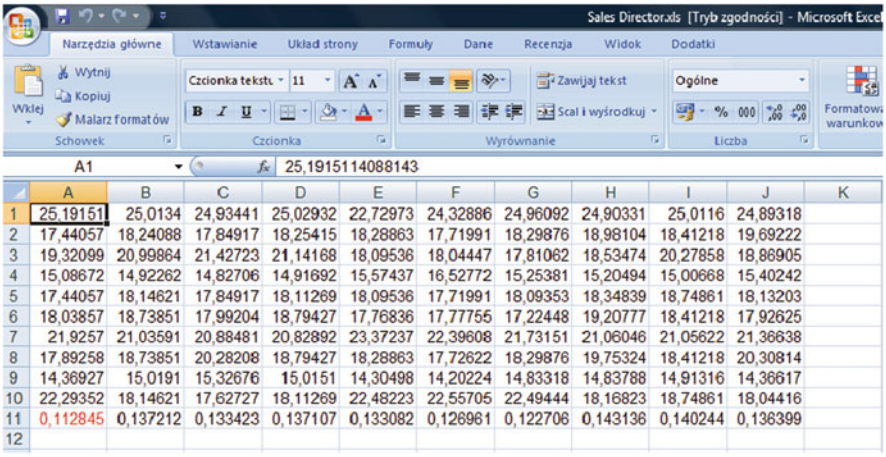
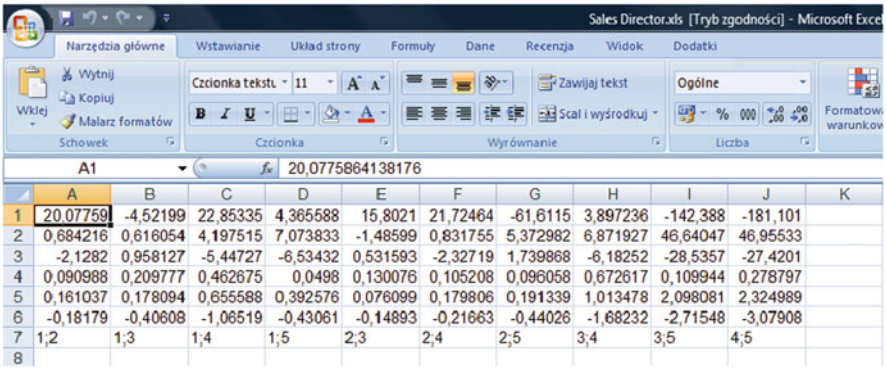


Fig. 5.11 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	25,19151	25,0134	24,93441	25,02932	22,72973	24,32886	24,96092	24,90331	25,0116	24,89318	
2	17,44057	18,24088	17,84917	18,25415	18,28863	17,71991	18,29876	18,98104	18,41218	19,69222	
3	19,32099	20,99864	21,42723	21,14168	18,09536	18,04447	17,81062	18,53474	20,27858	18,86905	
4	15,08672	14,92262	14,82706	14,91692	15,57437	16,52772	15,25381	15,20494	15,00668	15,40242	
5	17,44057	18,14621	17,84917	18,11269	18,09536	17,71991	18,09353	18,34839	18,74861	18,13203	
6	18,03857	18,73851	17,99204	18,79427	17,76836	17,77755	17,22448	19,20777	18,41218	17,92625	
7	21,9257	21,03591	20,88481	20,82892	23,37237	22,39608	21,73151	21,06046	21,05622	21,36638	
8	17,89258	18,73851	20,28208	18,79427	18,28863	17,72622	18,29876	19,75324	18,41218	20,30814	
9	14,36927	15,0191	15,32676	15,0151	14,30498	14,20224	14,83318	14,83788	14,91316	14,36617	
10	22,29352	18,14621	17,62727	18,11269	22,48223	22,55705	22,49444	18,16823	18,74861	18,04416	
11	0,112845	0,137212	0,133423	0,137107	0,133082	0,126961	0,122706	0,143136	0,140244	0,136399	
12											

Fig. 5.12 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	20,07759	-4,52199	22,85335	4,365588	15,8021	21,72464	-61,6115	3,897236	-142,388	-181,101	
2	0,684216	0,616054	4,197515	7,073833	-1,48599	0,831755	5,372982	6,871927	46,64047	46,95533	
3	-2,1282	0,958127	-5,44727	-6,53432	0,531593	-2,32719	1,739868	-6,18252	-28,5357	-27,4201	
4	0,090988	0,209777	0,462675	0,0498	0,130076	0,105208	0,096058	0,672617	0,109944	0,278797	
5	0,161037	0,178094	0,655588	0,392576	0,076099	0,179806	0,191339	1,013478	2,098081	2,324989	
6	-0,18179	-0,40608	-1,06519	-0,43061	-0,14893	-0,21663	-0,44026	-1,68232	-2,71548	-3,07908	
7	1;2	1;3	1;4	1;5	2;3	2;4	2;5	3;4	3;5	4;5	
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Fig. 5.13 Example of the Sknowinnov system in use

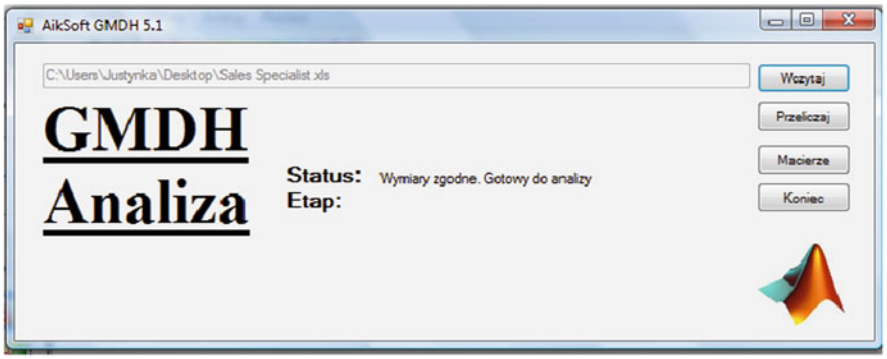


Fig. 5.14 Example of the Sknowinnov system in use

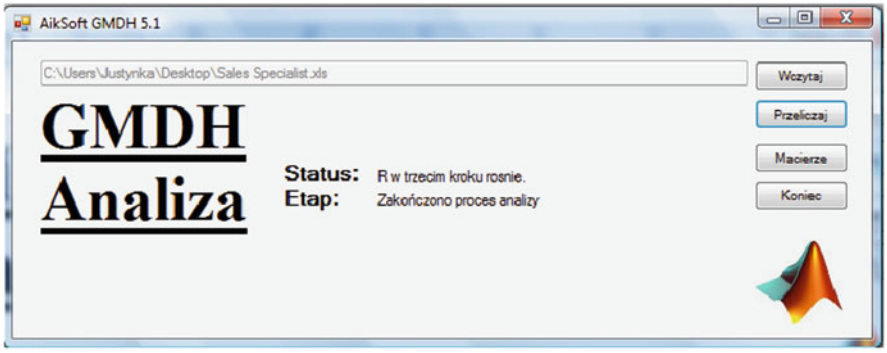


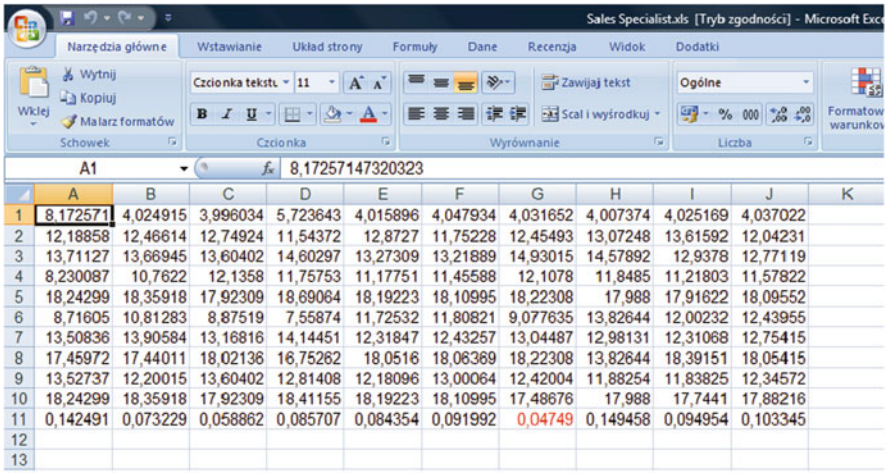
Fig. 5.15 Example of the Sknowinnov system in use

5.2.2 Selection of Appropriate Knowledge Workers by a Service Company

The main purpose of the next experiment was to determine and compare the forecasts of the value of the personnel usefulness function for a new m-th knowledge worker; this depends on the defined values of the characteristics of innovation. The object of this experiment for examining the effectiveness of the Sknowinnov method consists of two features—a service company faced with choosing a new employee and the defined innovation characteristics.

A service company decided that it needed to find a new employee to fill the position of sales specialist. It was assumed that following the hiring of the new employee, the company would maintain its current level of innovation. The Sknowinnov model was used to assess the employment decisions:

$$\begin{aligned} Wm*_{12} = {} & -34,14 + 10,13x_4 - 4,31x_{13} + 0,09{x_4}^2 + 0,811{x_{13}}^2 \\ & + 1,06x_4x_{13,}\text{where:} \end{aligned}$$



	A	B	C	D	E	F	G	H	I	J	K
1	8,172571	4,024915	3,996034	5,723643	4,015896	4,047934	4,031652	4,007374	4,025169	4,037022	
2	12,18858	12,46614	12,74924	11,54372	12,8727	11,75228	12,45493	13,07248	13,61592	12,04231	
3	13,71127	13,66945	13,60402	14,60297	13,27309	13,21889	14,93015	14,57892	12,9378	12,77119	
4	8,230087	10,7622	12,1358	11,75753	11,17751	11,45588	12,1078	11,8485	11,21803	11,57822	
5	18,24299	18,35918	17,92309	18,69064	18,19223	18,10995	18,22308	17,988	17,91622	18,09552	
6	8,71605	10,81283	8,87519	7,55874	11,72532	11,80821	9,077635	13,82644	12,00232	12,43955	
7	13,50836	13,90584	13,16816	14,14451	12,31847	12,43257	13,04487	12,98131	12,31068	12,75415	
8	17,45972	17,44011	18,02136	16,75262	18,0516	18,06369	18,22308	13,82644	18,39151	18,05415	
9	13,52737	12,20015	13,60402	12,81408	12,18096	13,00064	12,42004	11,88254	11,83825	12,34572	
10	18,24299	18,35918	17,92309	18,41155	18,19223	18,10995	17,48676	17,988	17,7441	17,88216	
11	0,142491	0,073229	0,058862	0,085707	0,084354	0,091992	0,04749	0,149458	0,094954	0,103345	
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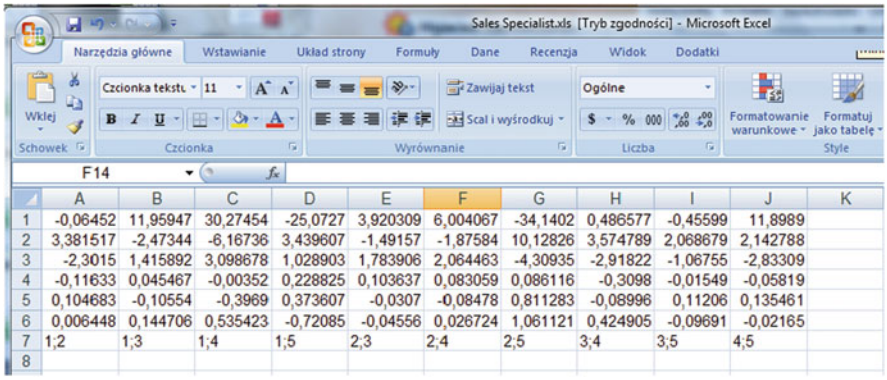
Fig. 5.16 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	-0,06452	11,95947	30,27454	-25,0727	3,920309	6,004067	-34,1402	0,486577	-0,45599	11,8989	
2	3,381517	-2,47344	-6,16736	3,439607	-1,49157	-1,87584	10,12826	3,574789	2,068679	2,142788	
3	-2,3015	1,415892	3,098678	1,028903	1,783906	2,064463	-4,30935	-2,91822	-1,06755	-2,83309	
4	-0,11633	0,045467	-0,00352	0,228825	0,103637	0,083059	0,086116	-0,3098	-0,01549	-0,05819	
5	0,104683	-0,10554	-0,3969	0,373607	-0,0307	-0,08478	0,811283	-0,08996	0,11206	0,135461	
6	0,006448	0,144706	0,535423	-0,72085	-0,04556	0,026724	1,061121	0,424905	-0,09691	-0,02165	
7	1;2	1;3	1;4	1;5	2;3	2;4	2;5	3;4	3;5	4;5	
8											

Fig. 5.17 Example of the Sknowinnov system in use

where Wm^*_2—value of the personnel usefulness function for the sales specialist, X_4—number of completed research topics in a given year (for the last 5 years—at the this was 5 completed research topics), X_{13}—number of purchased and used licenses (at the company this was one license).

The estimated value of the personnel usefulness function (Wm_{12}) for the new employee to fill the sales specialist position was $W_{12}^* = 20{,}46$. The prospective employee then completed the test to obtain the value of the personnel usefulness function (Wm2) according to the employee personnel evaluation sheet (described in detail in Appendix 2). The actual value of the personnel usefulness function for the prospective employee was $W_{12} = 21$ (Figs. 5.32, 5.33, and 5.34).

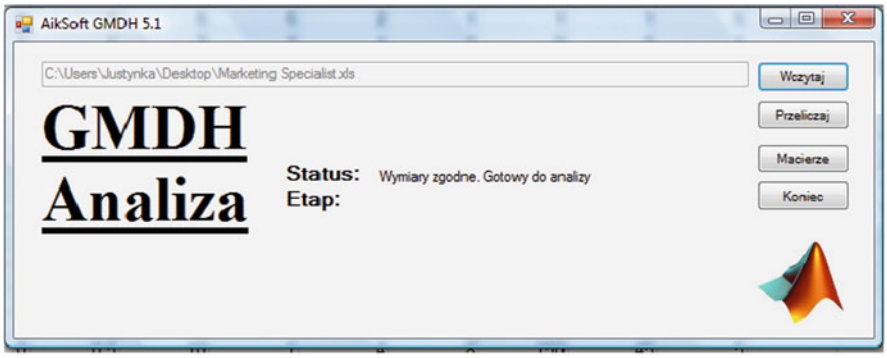


Fig. 5.18 Example of the Sknowinnov system in use

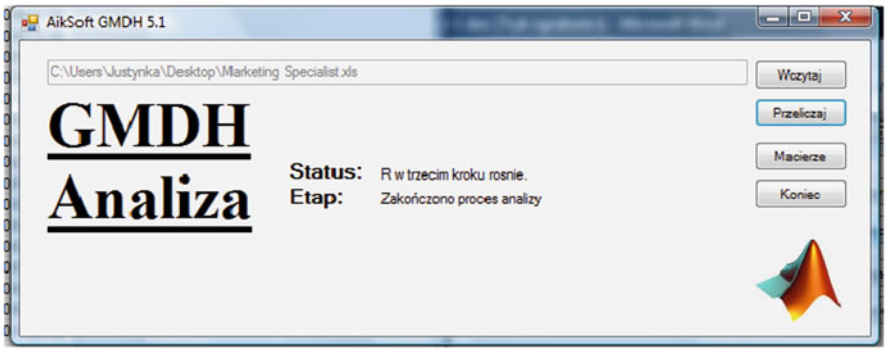
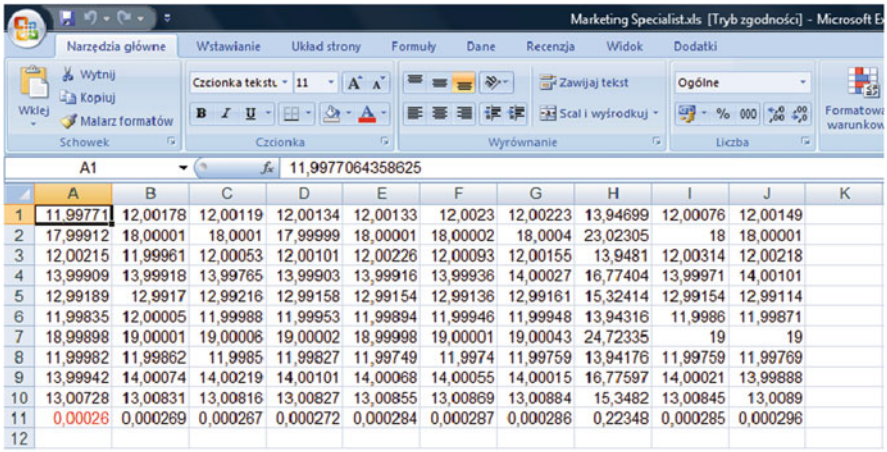


Fig. 5.19 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	11,99771	12,00178	12,00119	12,00134	12,00133	12,0023	12,00223	13,94699	12,00076	12,00149	
2	17,99912	18,00001	18,0001	17,99999	18,00001	18,00002	18,0004	23,02305	18	18,00001	
3	12,00215	11,99961	12,00053	12,00101	12,00226	12,00093	12,00155	13,9481	12,00314	12,00218	
4	13,99909	13,99918	13,99765	13,99903	13,99916	13,99936	14,00027	16,77404	13,99971	14,00101	
5	12,99189	12,9917	12,99216	12,99158	12,99154	12,99136	12,99161	15,32414	12,99154	12,99114	
6	11,99835	12,00005	11,99988	11,99953	11,99894	11,99946	11,99948	13,94316	11,9986	11,99871	
7	18,99898	19,00001	19,00006	19,00002	18,99998	19,00001	19,00043	24,72335	19	19	
8	11,99982	11,99862	11,9985	11,99827	11,99749	11,9974	11,99759	13,94176	11,99759	11,99769	
9	13,99942	14,00074	14,00219	14,00101	14,00068	14,00055	14,00015	16,77597	14,00021	13,99888	
10	13,00728	13,00831	13,00816	13,00827	13,00855	13,00869	13,00884	15,3482	13,00845	13,0089	
11	0,00026	0,000269	0,000267	0,000272	0,000284	0,000287	0,000286	0,22348	0,000285	0,000296	
12											

Fig. 5.20 Example of the Sknowinnov system in use

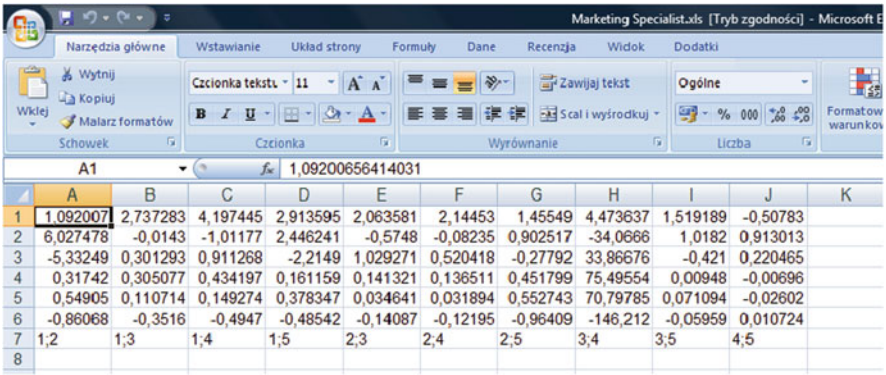


Fig. 5.21 Example of the Sknowinnov system in use

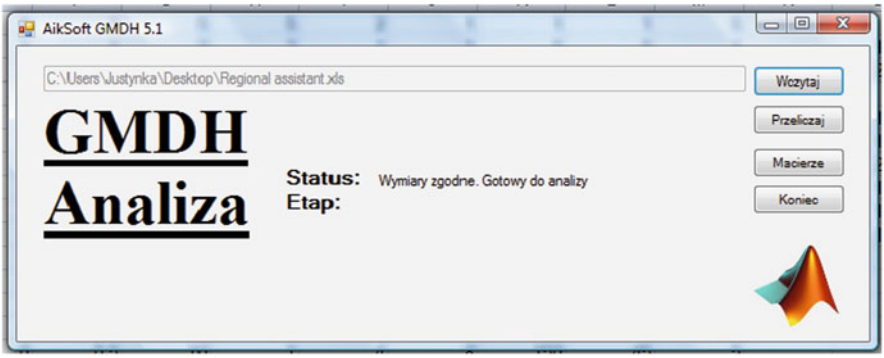


Fig. 5.22 Example of the Sknowinnov system in use

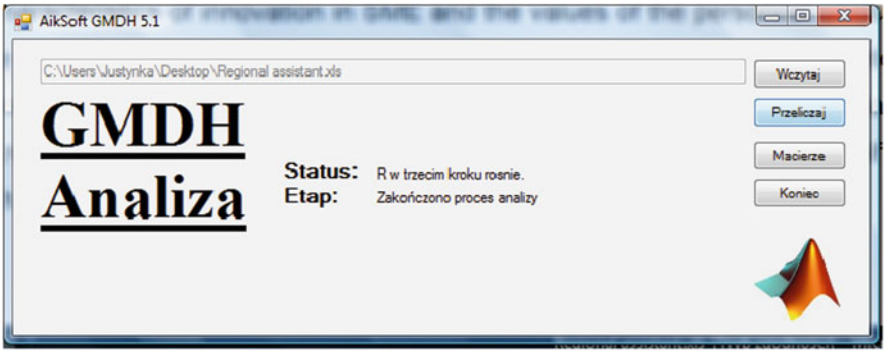
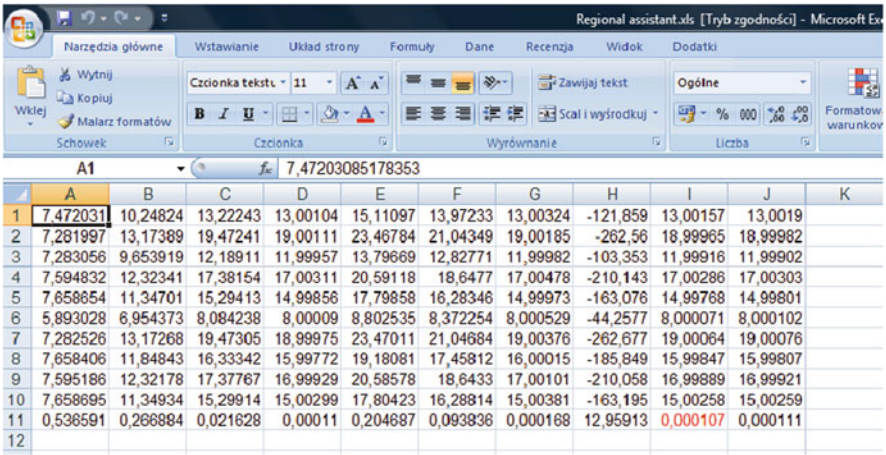
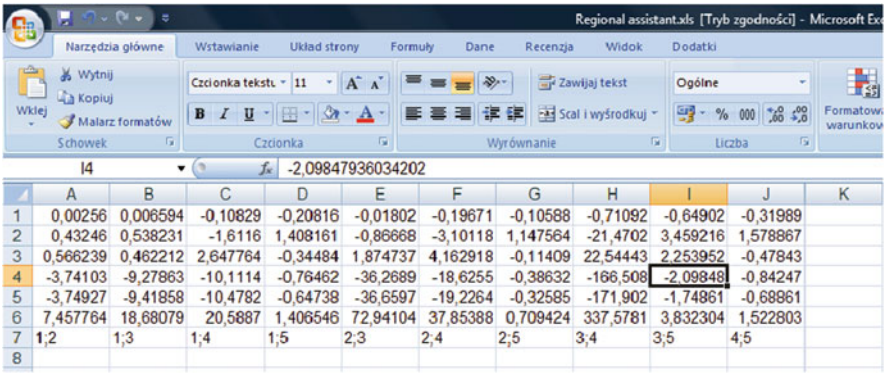


Fig. 5.23 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	7,472031	10,24824	13,22243	13,00104	15,11097	13,97233	13,00324	-121,859	13,00157	13,0019	
2	7,281997	13,17389	19,47241	19,00111	23,46784	21,04349	19,00185	-262,56	18,99965	18,99982	
3	7,283056	9,653919	12,18911	11,99957	13,79669	12,82771	11,99982	-103,353	11,99916	11,99902	
4	7,594832	12,32341	17,38154	17,00311	20,59118	18,6477	17,00478	-210,143	17,00286	17,00303	
5	7,658654	11,34701	15,29413	14,99856	17,79858	16,28346	14,99973	-163,076	14,99768	14,99801	
6	5,893028	6,954373	8,084238	8,00009	8,802535	8,372254	8,000529	-44,2577	8,000071	8,000102	
7	7,282526	13,17268	19,47305	18,99975	23,47011	21,04684	19,00376	-262,677	19,00064	19,00076	
8	7,658406	11,84843	16,33342	15,99772	19,18081	17,45812	16,00015	-185,849	15,99847	15,99807	
9	7,595186	12,32178	17,37767	16,99929	20,58578	18,6433	17,00101	-210,058	16,99889	16,99921	
10	7,658695	11,34934	15,29914	15,00299	17,80423	16,28814	15,00381	-163,195	15,00258	15,00259	
11	0,536591	0,266884	0,021628	0,00011	0,204687	0,093836	0,000168	12,95913	0,000107	0,000111	
12											

Fig. 5.24 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	0,00256	0,006594	-0,10829	-0,20816	-0,01802	-0,19671	-0,10588	-0,71092	-0,64902	-0,31989	
2	0,43246	0,538231	-1,6116	1,408161	-0,86668	-3,10118	1,147564	-21,4702	3,459216	1,578867	
3	0,566239	0,462212	2,647764	-0,34484	1,874737	4,162918	-0,11409	22,54443	2,253952	-0,47843	
4	-3,74103	-9,27863	-10,1114	-0,76462	-36,2689	-18,6255	-0,38632	-166,508	-2,09848	-0,84247	
5	-3,74927	-9,41858	-10,4782	-0,64738	-36,6597	-19,2264	-0,32585	-171,902	-1,74861	-0,68861	
6	7,457764	18,68079	20,5887	1,406546	72,94104	37,85388	0,709424	337,5781	3,832304	1,522803	
7	1;2	1;3	1;4	1;5	2;3	2;4	2;5	3;4	3;5	4;5	
8											

Fig. 5.25 Example of the Sknowinnov system in use

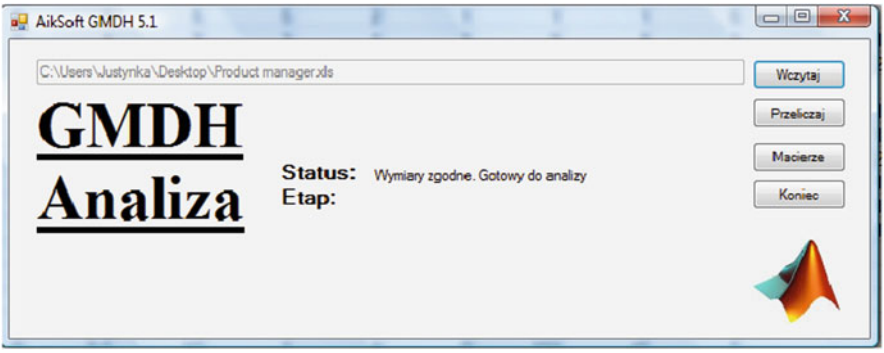


Fig. 5.26 Example of the Sknowinnov system in use

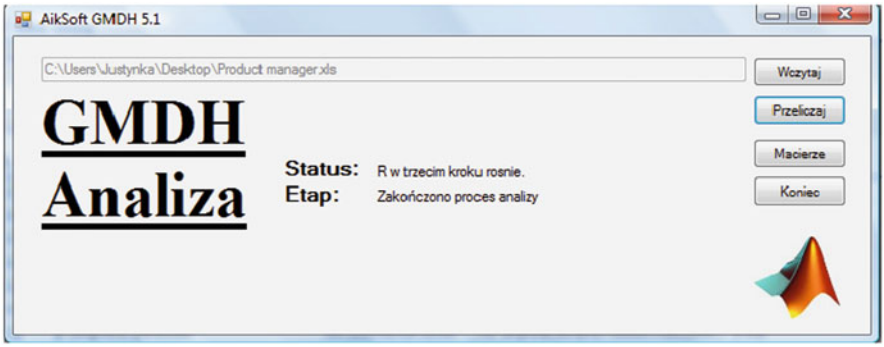
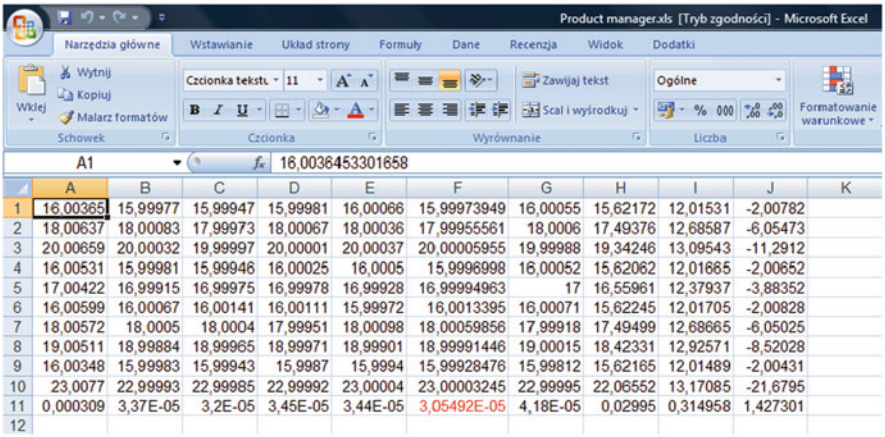
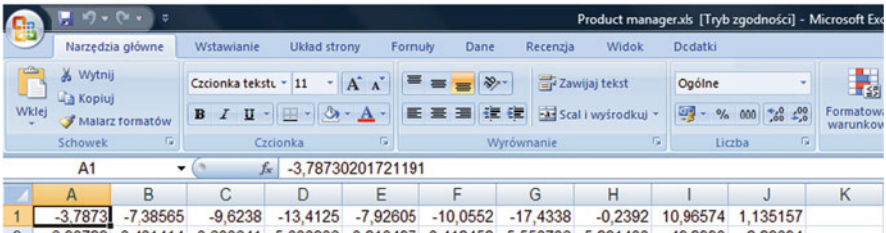


Fig. 5.27 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	16,00365	15,99977	15,99947	15,99981	16,00066	15,99973949	16,00055	15,62172	12,01531	-2,00782	
2	18,00637	18,00083	17,99973	18,00067	18,00036	17,99955561	18,0006	17,49376	12,68587	-6,05473	
3	20,00659	20,00032	19,99997	20,00001	20,00037	20,00005955	19,99988	19,34246	13,09543	-11,2912	
4	16,00531	15,99981	15,99946	16,00025	16,0005	15,9996998	16,00052	15,62062	12,01665	-2,00652	
5	17,00422	16,99915	16,99975	16,99978	16,99928	16,99994963	17	16,55961	12,37937	-3,88352	
6	16,00599	16,00067	16,00141	16,00111	15,99972	16,0013395	16,00071	15,62245	12,01705	-2,00828	
7	18,00572	18,0005	18,0004	17,99951	18,00098	18,00059856	17,99918	17,49499	12,68665	-6,05025	
8	19,00511	18,99884	18,99965	18,99971	18,99901	18,99991446	19,00015	18,42331	12,92571	-8,52028	
9	16,00348	15,99983	15,99943	15,9987	15,9994	15,99928476	15,99812	15,62165	12,01489	-2,00431	
10	23,0077	22,99993	22,99985	22,99992	23,00004	23,00003245	22,99995	22,06552	13,17085	-21,6795	
11	0,000309	3,37E-05	3,2E-05	3,45E-05	3,44E-05	3,05492E-05	4,18E-05	0,02995	0,314958	1,427301	
12											

Fig. 5.28 Example of the Sknowinnov system in use



	A	B	C	D	E	F	G	H	I	J	K
1	-3,7873	-7,38565	-9,6238	-13,4125	-7,92605	-10,0552	-17,4338	-0,2392	10,96574	1,135157	
2	-6,93728	3,401414	3,633641	5,030836	3,213497	3,412452	5,550736	5,281433	-49,2993	-2,28094	
3	8,766108	-0,80963	-0,55337	-1,15819	-0,51705	-0,24339	-0,83808	-4,17896	47,55554	3,075378	
4	-0,82566	-0,20199	-0,25554	-0,34306	-0,18132	-0,22981	-0,38165	-4,04677	63,02307	-3,34985	
5	-1,60048	-0,02394	-0,02898	-0,03722	-0,01444	-0,01934	-0,03027	-3,56447	56,71576	-3,48779	
6	2,39956	0,149988	0,168783	0,229865	0,112857	0,126144	0,208682	7,591217	-119,586	6,791992	
7	1;2	1;3	1;4	1;5	2;3	2;4	2;5	3;4	3;5	4;5	
8											

Fig. 5.29 Example of the Sknowinnov system in use

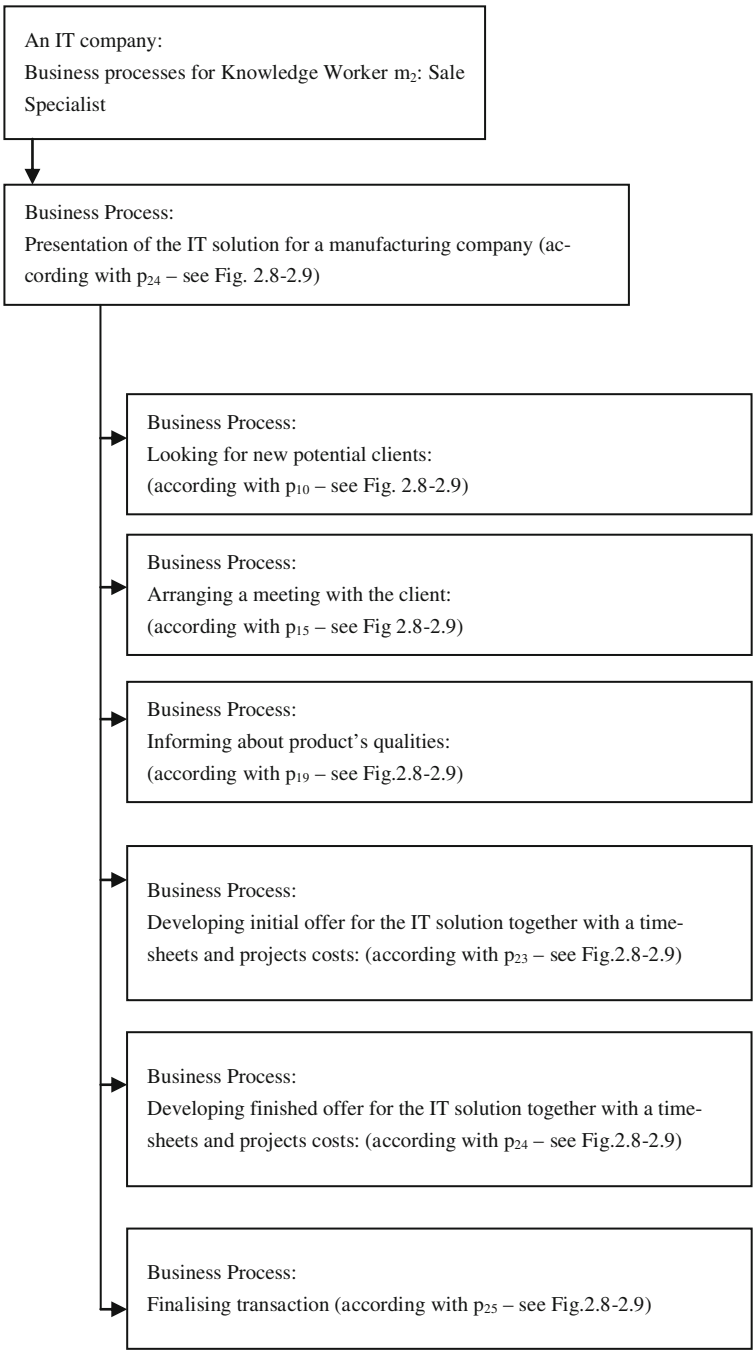


Fig. 5.30 Business processes in an IT company for a knowledge worker, m_2—sales specialist

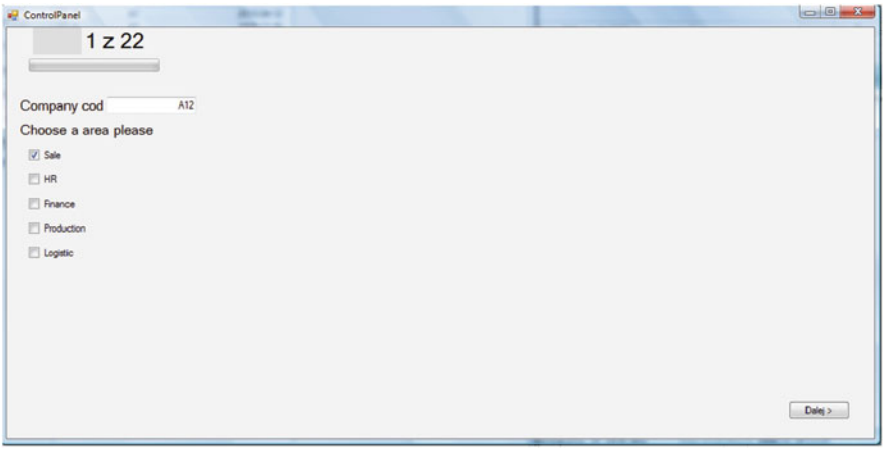


Fig. 5.31 Examples of the Sknowinnov system in use

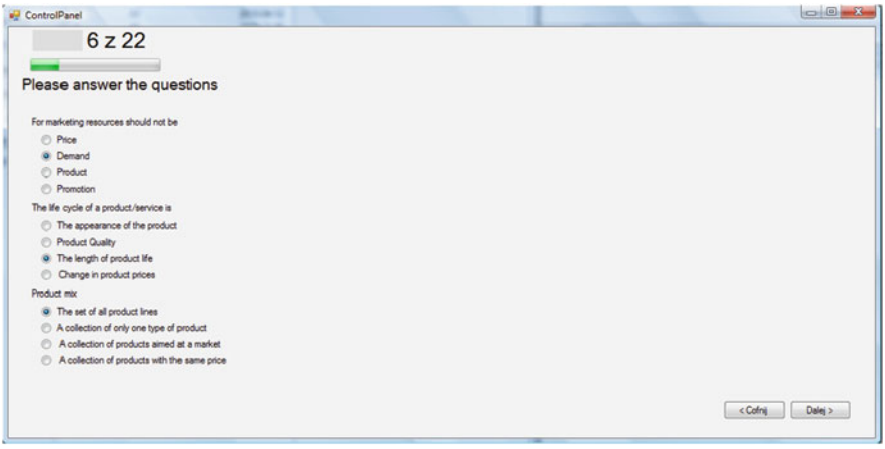


Fig. 5.32 Examples of the Sknowinnov system in use

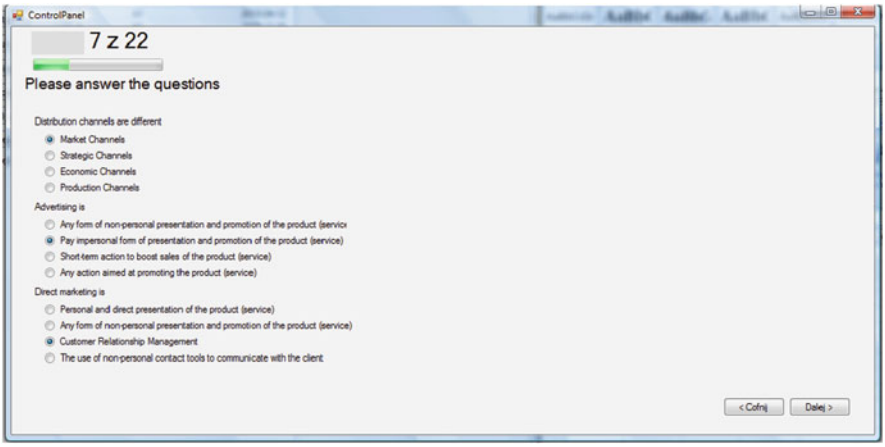


Fig. 5.33 Examples of the Sknowinnov system in use

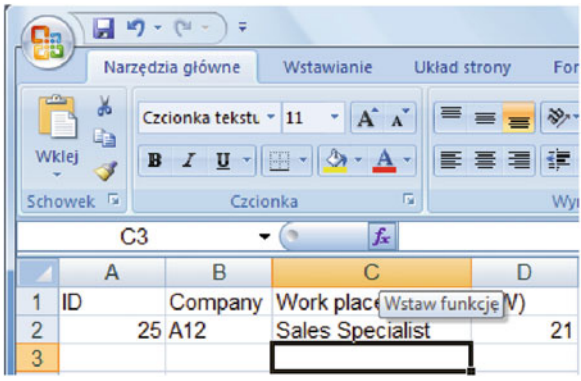


Fig. 5.34 Examples of the Sknowinnov system in use

Since there was similarity in the values—the actual personnel usefulness function and the predicted values based on the answer sheet—it was decided that this company should hire the employee as sales specialist.

This monograph examines the usefulness and the applicability of my decision-making model for selecting knowledge workers from a group of specialists in selling. The information presented is based on a real case study. The sections above presented a review of the appropriate research.

Reference

Patalas-Maliszewska, J. (2009). The concept of system supporting decision making enabling to asses and forecast of knowledge in SMEs—Research results. *Applied Computer Science, 5*(2), 27–41.