

CHANGES IN MANAGEMENT SUPPORT/INFORMATION SYSTEMS AND BARRIERS IN IMPLEMENTING THESE METHODS. THE CASE OF POLAND AND INDIA

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Abstract:

Changes in management information and support systems play a key role in the overall management process in the company. It is even more important in nowadays economy because of the rapid changes in the business environment of the enterprise. Implementing new solutions in management systems is a complicated process and it encounters numbers of barriers. The main purpose of this article is to analyze and describe problems which may appear during the implementation of MIS/MSS. Case studies used in the article help to outline barriers and problems so the whole process may proceed fluently. They also show how important is human capital and knowledge during the changes in every area of management. Not only the managers but each and every employee. Description of the Polish case in the first part of the article is then compared to the Indian case described in the second part. Conclusions learned during the comparison bring out the recurrence of the barriers managers have to face in each case. Systematizing them will not eliminate them but will help to understand them and handle them in a proper way being aware of what managers implementing innovation in MIS/MSS are facing.

Keywords: management support systems, management information systems, barriers in the implementation of management support/information systems, case study

1. INTRODUCTION

Management systems evolve continually. There are processes such as globalization, automatization of manufacturing process or overall technological progress supported by innovations nearly in every sphere of economic life. It makes management systems methods change. These changes force managers to adjust to modern methods of managing so that their company remains competitive and does not go out of business. If their reaction is not quick enough, it may cause previous methods become unreliable and inefficient.

Searching for changes and being ready to implement them is extremely important. However such implementation can occur difficulties. It results from many various factors. Company which decides on implementing new management instruments has to be ready to overcome the upcoming resistance. Managers have to be aware that continuous changes will require not only the adjustment to them but the permanence of the whole process as well. Moreover this is the only way that leads to success and provides survival in nowadays economic reality.

Not only the selection of management systems is important but their consistency as well. It is common to see the fortuity of management systems in some companies. Generally, choosing one system makes it dominant. Actually, finding companies that constantly implement changes in their systems is rare. The perfect managing model does not exist. Any chosen model has disadvantages that disqualify it as being the only right. It is important then to be open minded for changes not only as single processes targeting one specific modification but as continuous endeavor to improve currently achieved state.¹

Structural changes in Poland after 1989 extorted implementing modern methods of management on Polish enterprises. That process was very arduous and time consuming. Nowadays in similar situation is Indian economy. It gains in importance in international economy area and it already is one of the fastest developing economy in the world. The approach to changes is important in such situation. If every barrier is overcome, changes in management methods will improve efficiency and quality of the enterprises.

The purpose of this article is a presentation and comparison the results of researches conducted in Poland and India which analyzed changes in management information systems (MIS) and management support systems (MSS). In the Polish case research was conducted for Lublin Region in 2002-2013. Researched enterprises were ISO 9000:2000 or higher certified. In India research was conducted on wider scale because whole country was taken under consideration. Indian enterprises were ISO 9001:2008 certified. Conclusions refer mainly to barriers and problems of implementing MSS and MIS and inhibit factors of using and developing new managing methods in enterprises.

2. POLISH CASE

2.1. Characteristic of researched group of enterprises

Research conducted by Maria Curie-Skłodowska University in Lublin was to recognize the changes in approach to the issue of implementing new solutions supporting decision making process in Polish enterprises facing needs of improving the efficiency of their actions. Another purpose was to recognize the situation in implementation of management support systems. CFOs, CEOs, CAOs and financial and economic analysts were surveyed. The questionnaire that was created for the research purposes covered questions in the field of changes in the perception of the company environment, cost accounting methods relevance in the decision making process and management methods.

The test contained 31 enterprises in 2002 and 2005 and 30 in 2009 and 2012². Most of them were manufacturing enterprises (80%). Trading companies were 13% of the whole group and construction

¹ Kaleta A. (2010). Uczestnicy procesu zarządzania strategicznego w przedsiębiorstwie (Participants of strategic management proces in enterprise) (p.137). In Kaleta A., Moszkowicz K. (Ed.), *Zarządzanie strategiczne w praktyce i teorii (Strategic management in theory and practise)*, Wrocław, Poland: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

² The latest data concerned earlier accountancy year, ie. for year 2002 data concerned year 2001 etc. One of the manufacturing enterprises was liquidated over the years of the research.

companies – 7%. Third of the surveyed companies belonged to the medium-sized enterprises sector (employment was more than 100 employees but not more than 200). Large-sized companies (employment higher than 250 employees) were 46% of the whole group.

Tables below show researched enterprises according to the level of employment and the ownership at the end of every presented years.

Table 1: The structure of researched enterprises by the level of employment (at the end of 2001, 2004, 2009 and 2012)

Specification	2001 and 2004		2009 and 2012	
	Amount of enterprises	Percentage of enterprises	Amount of enterprises	Percentage of enterprises
0-50	0	0	0	0
51-100	5	16	1	3
From 101 to 200	10	32	10	33
From 201 to 250	3	10	5	17
From 251 to 500	6	19	9	23
Over 500	7	23	5	23
Sum	31	100,0	30	100

Source: Own elaboration based on survey data

Table 2: The structure of researched enterprises by the ownership (at the end of 2001, 2004, 2009 and 2012)

Specification	2001		2004		2009		2012	
	Amount of enterprises	Percent age	Amount of enterprises	Percent age	Amount of enterprises	Percent age	Amount of enterprises	Percent age
Companies with foreign capital	9	29.0%	11	35.5%	15	50.00%	25	83.3%
Companies with Polish capital only	22	71.0%	20	64.5%	15	50.00%	5	16.7%
State-owned companies	6	19.4%	4	25.0%	3	28.60%	0	0%
Private companies	16	51.6%	16	75.0%	12	71.40%	5	100.00 %

Source: Own elaboration based on survey data

As it is stated in the table above, most of companies belong to private sector (data until 2009). To the latest year of the research fisc got rid of the majority stake in every company. However until 2011 (the year when the last sale took place) fisc left some of the stakes itself. It is interesting that most companies until 2012 had found a foreign investor who became the only owner or own the majority stake. This phenomenon had emphatic impact on the direction of development of the owned company.

2.2. Results and conclusions from the study

Implementing effective management systems is a laborious and cost-intensive process. Most of all however it requires taking the whole concept and direction of actions in consideration to make the consistent upgrade.³ Purchase and implementation process only are not enough to make the whole

³ Nowak E. (2006). Geneza i istota strategicznego zarządzania kosztami (Origin and essence of strategical costs management). In E. Nowak (Ed.), *Strategiczne zarządzanie kosztami (Strategical costs management)*, Kraków, Poland: Oficyna Ekonomiczna.

operation a success. The problem may occur when employees will not know how they are supposed to use them and what to expect from them.⁴

The analysis of answers from the survey shows that the incentive which was forcing enterprises to introduce changes was the change in their environment. They were forced to search for managing methods adequate to the current situation. 30 companies from the research group indicate new trends in economy as a factor to change their management strategy (as for 2012). In conclusion, for every researched company until 2013 changes in the business environment had important influence on its functioning. It is a growth from 96.8% from 2004. For 83.9% surveyed enterprises, the development of business environment led to transformation in internal organization business processes.

Another factor which impacted pressure for changes on every respondent was a competition (in 2000-2012). Changes in this area were indicated by 80% of enterprises as leading to transformation in internal organization business processes. Remaining percentage of this factor was specific extortion by the owner changing process.

Significant conclusions appear during the analysis of MSS itself. First years of the study (2002-2004) show that surveyed enterprises wished to implement modern managing methods such as Time-Driven ABC – 8 enterprises (27%), Activity-Based Costing – 2 enterprises (7%), Total Quality Management – 10 enterprises (33%), Balanced Scorecard – 7 enterprises (23%), Target Costing – 10 enterprises (33%), Controlling – 2 enterprises, Management Information Systems – 2 enterprises and Responsibility Accounting – 1 enterprise.

Research shows that every company in 2002-2012 made changes in their accounting system.

The knowledge of managers is another significant factor which was changing over the years. In 2002 that knowledge was not good enough. The managers were aware of the existence of some of the managing systems although often it was limited to the name only, not to the essence itself. In 2012 the knowledge was far more complex.

Only 4 enterprises in 2009 claimed that they had extended controlling or accountancy systems. In the majority of the researched companies (27), managers had done short-term and long-term plans as well. They knew what they were going to achieve and what methods they should have used. Managers in remaining enterprises limited their planning to the short description of actions they wanted to undertake.

The important factor which decided about the need of changes in the researched group was the information and the way it was gathered. This need for the more and more better quality information influenced on managers and their decisions about modernization of management information systems. Managers pointed out that with changes in consumers' needs, wide angle of information is necessary. Managers (almost 50% of them) claimed that information that was gathered was not complex or even sufficient for efficient managing. One respondent pointed out that current MIS in the company do not meet expectations at all. Only for 10 respondents MIS in their company (Decision Support System) reflected the situation of the enterprise properly.

Among the researched group, in 80% of it, took up actions leading to upgrading information systems. Surveys show that economic crisis was an important factor that forced managers to implement management support systems definitely quicker. The other factor that put the similar pressure on managers was investors (mostly foreign) who forced such implementations.

Another factor that influenced the approach to the implementation of MSS that came up during the research was the lack of mid-level managers with adequate economical knowledge. Such people could effectively cooperate in a process of creating and implementing new management systems.

⁴ Wroński P. (2005). Nowoczesne metody rachunku kosztów w przedsiębiorstwie. Uwarunkowania i perspektywy (Modern methods of costs calculation in an enterprise. Conditions and perspectives). Lublin, Poland: Wydawnictwo UMCS.

3. INDIAN CASE

Similar research was conducted in India for International Journal of Engineering Science and Innovative Technology (IJESIT). The difference in the approach resulted from the fact of India and its economy level. The scale of the research was wider but the main focus on MIS and MSS allows to conduct a comparison analysis between Polish case and Indian case.

3.1. Characteristic of researched group of enterprises in India

The main purpose of the research conducted by C.G. Ramachandra, T.R. Srinivas i T.S. Shruthi was to present the acceptance of new management information systems or changes in currently existing ones. The group contained 120 enterprises from India. Among them 80 were medium-sized companies, 40 belonged to large-sized companies sector. Parameters such as employees working, total turnover or production rate were foundation of the choice such companies. Chosen enterprises belonged to the manufacturing industry, processing industry and services industry. The research was conducted based on the survey where respondents were Chief Executives, Industrialists, General Managers, line supervisors, engineers etc. The questionnaire created by authors of the research was based on five-degree scale and consisted questions about management systems used in the company and what are contraindications if there were none.⁵ Great emphasis was put on the computerization process because of India's stage of economic development where this phenomenon allows to make tremendous progress in business and other spheres of life.⁶

3.2. Results and conclusions from the study

The basic distinction which was done was to establish in which enterprises there was management information systems and where were not. The research proved that among medium-sized companies 67.5% (54 companies) there were MIS used. The rest – 26 companies (32.5%) there were not. Among large-sized companies MIS were used in 36 cases (90%), in 4 they were not (10%). It can be easily seen that the tendency of using MIS is definitely higher in large-sized companies. This results from their attitude to expansion and development, so they cannot let themselves avoid upgrading their managing methods.

If the company was not using MIS, the respondents were asked to reveal why. Answers were summarized in the table below where is shown 9 reasons why there are no MIS in the company.

Table 3: Reasons for non-usage of MIS in Medium Scale and Large Scale Organizations

Possible reasons	Medium-sized companies			Large-sized companies		
	Yes	No	Total	Yes	No	Total
1. There is a computerization in our organization	26	0	26	4	0	4
	Average		S.D.	Average		S.D.
2. We do not know much about potential usage of Computers	1.77		0.18	1.50		0.25
3. Financial Constraints is a reason for non-use of Computer/MIS	2.12		0.64	1.25		0.19
4. Trained Personnel are not available	2.08		0.61	2.00		0.50
5. MIS is too expensive to use	2.50		0.48	2.25		0.19
6. Benefits from MIS are low	2.85		0.51	2.25		0.69
7. I have not heard of MIS	1.92		0.56	1.75		0.18

⁵ Ramachandra C. G., Srinivas T. R., Shruthi T.S. (2012). Case Study on Comparison of Usage and Acceptance of Management Information System (MIS) in Medium Scale and Large Scale Organizations. *International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 1, Issue 2.*

⁶ Rajaraman H. (2012). History of Computing in India. Bangalore, India: Supercomputer Education and Research Centre Indian Institute of Science.

8. Decisions I make are mostly too simple to need a computer	3.11	0.56	0.20	0.50
9. I usually do not have time pressure when making decisions	3.35	0.23	1.25	0.18
10. I usually do not face "what if" questions when making decisions	3.53	0.25	2.50	0.25

Source: Ramachandra C. G., Srinivas T. R., Shruthi T.S. (2012), p. 131.

The analysis of the table shows various reasons of not using MIS. As far as medium-sized companies are concerned the most often reason was the lack of problems in decision making process (average 3.53). Managers do not ask themselves "what if" questions, so they do not need developed systems supporting their decisions. Other reasons were the lack of time pressure during the decision making process (average 3.35) and possibly simplicity of problems (average 3.11).

Obstacles, which were stated rarely were those connected to the knowledge about management systems themselves or possibilities they were bringing (average 1.77 and 1.92). It is seen that it is not the lack of knowledge about such methods a problem but the financial aspect (average 2.50) or the conviction about the lack of benefits gained from MIS (average 2.85). Those can be connected because managers are looking for the best cost to quality ratio when implementing a management system.

The aspect of lacking suitable human resources with the adequate knowledge about using MIS/MSS (average 2.08) is relatively high, however taking the rate of development of Indian enterprises under consideration this parameter will be lower and lower.

In large companies definitely the rarest problem was uncomplicated decision making process (average 0.20). Next reason by the least important obstacles managers indicate financial restrictions and time pressure (average for both 1.25). The lack of knowledge was also pointed out relatively rare (average 1.50; 1.75 – unconsciousness of the existence of MIS/MSS).

However it is interesting that among the large-sized companies such parameters as high costs and unconsciousness of the benefits which MIS/MSS are bringing are indicated that often (average for both 2.25). Moreover managers of large companies in India do not face the question "what if" when making decisions, although this parameter is slightly lesser than their medium-sized counterparts (average 2.50). Apart from that lacking suitable human resources with a knowledge of using management systems was indicated quite often (average 2.00).

Summing up it can be said that the results of the study showed that medium-sized company sector does not use the potential in the implementation of management information systems and management support systems. Large companies outperforms them in that area. However this potential in large companies is not utilized completely. The awareness of implementing MIS/MSS in India has to be enlarged to increase the percentage of using MIS/MSS.⁷ Investments in human capital which would be able to actively support the implementation of management methods would help in building the company's position, turn quickly increasing, upgrading and using the whole managing system at the same time.

4. BARRIERS IN IMPLEMENTING MANAGEMENT INFORMATION/SUPPORT SYSTEMS AND COMPARISON POLISH AND INDIAN CASES

Implementing new solutions in management systems is a complicated process and it encounters numbers of barriers which can be grouped in three categories by their character: organizational and resource, information and social. This stand point includes problems in implementing new methods improving functioning of the company⁸:

⁷ Ramachandra C. G., Srinivas T. R., Shruthi T.S. (2012). Case Study on Comparison of Usage and Acceptance of Management Information System (MIS) in Medium Scale and Large Scale Organizations (p. 133). *International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 1, Issue 2*.

⁸ Cobb I., Innes J., Mitchell F. (1992). Activity-Based Costing Problems: the British Experience, Discussion Papers in Accountancy & Business Finance (p. 20-25). Dundee, Scotland: University of Dundee; Dyhdalewicz A. (2001), Wykorzystanie rachunku kosztów w zarządzaniu przedsiębiorstwem – wyniki badań (Usage of costs calculation in

- necessity of engagement large amount of work connected to the project, implementation and then gathering data especially about factors causing actions;
- lack in competence to execute a plan, implement and operate the system;
- difficulties in gathering information;
- resistance of employees (too little incentives) and lack in engagement.

The important fact is that employees are not interested enough in implementing innovations because of the managers do not want to delegate their authority to employees. Subordinates are afraid of taking the responsibility because:

- they will be strictly punished for not fulfilling their duties;
- it can be connected with the necessity of further training;
- they are taking whole responsibility for their actions;
- there is no precise motivation to increase the duties.

The obvious is that the resistance of employees results from being afraid of changing current situation for the worse.

For the comparison purposes of both Polish and Indian cases there might be used a little different division of barriers in implementing management information/support systems:

- difficulties in understanding a system;
- employees' reluctance to implementing changes;
- lack of awareness of benefits brought by a system;
- high costs of implementing a system;
- too little knowledge about implementing MIS/MSS;
- too little engagement of the managers;
- others.

Analyzing both cases for barriers in implementing management information/support systems there can be conclusions to every area stated beyond.

Firstly, difficulties in understanding a system and benefits provided by its implementation. Initially, in the case of enterprises from Lublin Region managers were aware of the existence of management systems but that knowledge was limited mainly to the name. Throughout the research process the knowledge of the managers was increasing so they had better understanding potential benefits provided by MIS/MSS. This process has lasted for 10 years what shows how a single barrier is connected to others and can occur the whole implementation process. Indian research showed similar results where misunderstanding of the system was pointed out often. However, from the respondents' point of view it was not the most important factor – other were indicated far more often. It is worth noticing that some of the Indian respondents did not hear about MIS/MSS at all what did not take place in Polish research. The awareness of the managers of Polish enterprises was higher from the very beginning.

Secondly, employees' aversion is very common barrier. Moreover, social factor is difficult to overcome. Managers from Polish companies appear to be positive. Even at the beginning of the research (2002-2004) they showed a lot of desire for implementing changes. Unfortunately in India situation is completely different. Indian managers assume that their upcoming decisions are straightforward and not burdened with the pressure of time so they do not need complicated decision support systems. It is, however, short-term approach because companies and their environment develop continually so the decision making problems will become more and more complicated and without appropriate management support systems it turn out to be fateful for the whole company.

Moreover, high costs are the second most important barrier in implementing management systems in India. This factor plays an important role because many enterprises are afraid of spending money for the MIS/MSS implementation which eventually will not provide any improvement. That is why they give up on the implementation completely. Most of the researched companies in Poland despite the high costs decided to run the implementation of MIS/MSS (80% surveyed enterprises). Remaining

business management – results of studies) (p. 33-38). In *Zarządzanie kosztami w przedsiębiorstwach w aspekcie integracji Polski z Unią Europejską. Materiały konferencyjne (Cost management in enterprises in Poland-European Union integration aspect. Conference materials)*, Częstochowa, Poland: Wydawnictwo Wydziału Zarządzania Politechniki Częstochowskiej.

percentage was forced by external investor (foreign mostly) to do it, however, the appearance of that investor solved financial aspect at the same time.

Finally, other barrier worth mentioning in the Polish case is the need for information and need for appropriate human resources in Indian case. Polish managers are aware of the importance of how quick and complex access to the information is, so large expenses cover this aspect. For Indian managers investing in human capital and appropriate training for their employees is a lot more important, so as the company could implement management information/support systems harmonically to gain full benefits for the whole company.

5. SUMMARY

Nowadays appropriate management is crucial to allow the company a permanent growth. Management information and support systems play a significant role in the whole process. They have to be developed and expanded all the time. However, it is not an easy task. During the process of implementing MIS and MSS, managers may and probably will face the barriers that stall the progress.

The purpose of this article was to analyze and describe common and difficult problems connected to implementing by means of the case study. Researches in Poland and India were taken under consideration because of certain similarities between them. This allowed to highlight such problems as resource and organizational, social and information barriers.

Using the case study it is clearly seen that implementing management information systems and management support systems can be done in a proper way but the most important factor here is knowledge. Without the appropriate human capital such difficult implementation process cannot be done.

The result of research in both cases produces similar conclusions. Every barrier that appeared during the implementation process had to be managed. They cannot be avoided but dealt with in a proper way they do not stall the progress and let the enterprise to develop further.

Conclusions from the research show that certain state of the business environment, employees and the industry itself which make an impact on economic processes impose barriers on the possibility of choice and adequate management solution. The choice of appropriate management methods is a difficult task especially that many various factors should be identified and considered during the whole process. This in turn requires managers to implement changes to all management systems. In conclusion implemented methods have to be constantly improved.

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