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INFLUENCE OF LEADERS' SOCIAL CAPITAL ON CHANGE IMPLEMENTATION

WPŁYW KAPITAŁU SPOŁECZNEGO LIDERÓW NA SKUTECZNOŚĆ WDRAŻANIA ZMIAN

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Summary: The article, based on empirical research in one of the production and service companies acting in energy industry, develops the introductory implications on how social capital of change leaders is linked to the effectiveness of change implementation. Using organisational network analysis the author examines influence of social capital of change leaders in the area of real work flow during change implementation and open communication flow on change effectiveness. One finds that ties among change leaders in those two dimensions have distinct change effectiveness effects. In broader aspect, findings have major implications on change management research and imply further research in this matter to be conducted by the author.

Keywords: social network analysis, social capital, organisational changes, change management.

Streszczenie: Artykuł, oparty na badaniach empirycznych w jednej z firm produkcyjno-usługowych w branży energetycznej, rozwija wstępne wnioski na temat wpływu kapitału społecznego liderów zmian na skuteczność wdrażanych zmian. Używając analizy sieci organizacyjnej, autorka bada wpływ kapitału społecznego liderów zmian na przestrzeni: rzeczywistego przepływu pracy podczas wdrażania zmiany oraz przepływu otwartej komunikacji na skuteczność wdrażania zmian. Odkrywa, że więzi pomiędzy liderami zmian w tych dwóch wymiarach wyraźnie wpływają na efektywność zmian. W szerszym aspekcie wnioski z opracowania mają wpływ na badania zarządzania zmianą i sugerują potrzebę dalszych prac w tej materii.

Słowa kluczowe: społeczna analiza sieci, kapitał relacyjny, zmiany organizacyjne, zarządzanie zmianą.

1. Introduction

There is no doubt that in relentless competition, companies feel convicted to constant changes. It is not only the competition that makes this sentence but also advance in technology, new customer demands and globalisation. Change has been compared by the author to sentence as the studies show that from the 70s up to 2013 the failure rate of change management initiatives was constant and amounted to 60-70% [Askhenas 2013]. In order to prevent failure of change introduction, researchers have invented many change models from Lewin's steps through Bullock & Batten approach, Kotter's steps, Greiner's model, Stacey and Shaw approach [Lewin, Cartwright 1951; Bullock, Batten 1985; Kotter 1995; Greiner 1978; Stacey 2001; Shaw 2002].

However, the change management science has not delivered sufficient directions so far to succeed in this matter. Systematic literature review of change empirical studies, dated from January 1980 up to December 2011, unveiled 10 major reasons for change failure. Five of them were connected to the usage of human capital [Mosadeghrad, Ansarian 2014]. There appears the first pieces of research which prove that even human capital at the highest level of quality does not guarantee the proper exploitation of competencies without appropriate social capital completing human capital [Szarek 2016; 2017].

Especially during change implementation in which the procedures, systems and structure are not defined, communication and knowledge sharing is at the highest rate and need in order to keep work towards organisational aims in line. In such unstructured workflow, the knowledge of social capital could be helpful. The article is the introductory research for further studies about proper usage of human resources with social capital taken into consideration. The author focused on relations among change leaders as leadership was one of the top obstacles for change success discovered by the systematic review mentioned earlier.

Firstly, the article is to depict theoretical backgrounds for the research and the main definitions. Further, the article divides the research into two parts. The first one, treats about problems during change implementation that has occurred based on the concept of Triad of Change. The second one unveils correlations between ties of workload and ties of open communication existing among change leaders delegated to change implementations. Finally, the conclusions are presented together with plans for further research in the given subject.

2. Theoretical background

On daily basis effectiveness of workflow of organisation is enabled by (among others) good structure of the company or setting written ISO procedures indicating standardisation of task fulfilling. However, during the change, the flow of workload and the flow of information are often not defined by regular procedures or structure.

Thus, the effectiveness of the team involved in the change might be affected mainly not by the official structure as this is not existing, but it can be affected by social structure which is created among change leaders or among other change participants. Thus, the relations existing among team members or their social capital, or lack of it, can dictate the success or failure of change implementation. Delegating certain members to the change team is a substantial challenge as such a team not rarely involves members from different departments.

Change management theory offers managers a variety of solutions how to approach the change implementation effectively and deal with differences. Kotter [Kotter 1995; 2008] underlines the need of decent preparations for change and choosing carefully the right change leaders. His concept proposes the managers to choose the most competitive and influential employees who will guarantee the authority and informal marketing of change implementation. Mainly change leaders or so called change agents are chosen based on their individual competencies verified by questionnaires, employee seniority or social network analysis. Is that sufficient ground to be in the change implementer? The question is whether a good level of human capital without social capital completion is sufficient to properly exploit the competencies indispensable to change implementation. Human capital for this research is defined according to Baron and Armstrong as knowledge, skills, abilities and potential of development and introducing innovations demonstrated by humans working for certain organisation [Baron, Armstrong 2008]. At the same time social capital is understood as: "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" [Nahapiet, Ghoshal 1998, p. 243].

Change leaders, for this research, are defined via the concept of Triumvirate of Management which declares the coexistence of three managerial archetypes: managers, leaders and entrepreneurs. Managers are responsible for administrative tasks. Leaders gain employees to change and entrepreneurs indicate the direction to take [Belz, Barabasz 2010]. Those three role types are responsible for fulfilling three major phases of Triad of Change [Skalik, Barabasz, Belz 2010], which concludes three phases of change:

- Indication of direction of change (answering the question: WHERE to go?).
- Indication with which team members to change (answering the question: WITH WHOM to change?).
- Indication what systems, procedures etc. to change (answering the question: WHAT to change?).

The role of all three types are equally desired in the company. What has been examined via Triad of Change is whether any of them affects to some extent the failure of change. The respondents have been asked which/if any of the following 4 elements from Triad of Change with regard to leadership has been causing inconvenience during change implementation.

The guided scientific problem is then how the elements of social structure of change leaders, delegated to change management, influence the effectiveness of change implementation. Firstly, via the concept of Triad of Change it has to be verified which (if any) of the leadership archetype roles has caused any problems during change implementation. Secondly, there is to be measured the influence of elements of social structure of change leaders on change effectiveness in two elementary areas: a) flow of real workload exchange among change leaders during change implementation, b) flow of open communication among change leaders during change implementation.

3. First part of research

3.1. Main definitions

The research involved two changes implemented in the company acting in energy industry and strongly connected to one of the biggest coal power stations in Poland. The company did not implement any major changes for over 14 years and only when new CEO took over company leadership some major changes started to be implemented. The two changes: the first change called Z1 involved creating new central department of logistics and purchasing. The second change, called Z3, involved dividing existing service department into north and south one. Z1 change has ended with failure and Z3 change has ended with success. Both changes have been compared to indicate any discrepancies in social structure of change agents leading both changes.

Change is defined for this research according to J. Katzenbach as a situation in which the efficiency of organisation demands from the majority of employees in organisation requires learning new behaviours and skills [Katzenbach, McKinsey Real Change Team 1996]. *Competencies* are defined as disposals in the area of knowledge, skills and approaches allowing task realization on the appropriate level. *Behaviours* are observable categories of actions which indicate the disposal or lack of certain competency [Filipowicz 2004]. Following the above mentioned definition, the effectiveness of change implementation is measured dually:

1. By realization of organisational aims.
2. By realization of aims of raising intensity of employees' competencies.

In the examined company, both changes involved the majority of organisation – Z1 concerned 53% of employees and Z3 was connected to 61% of organisation. Organisational aims and the level of realisation of each one of them are depicted in Table 1. As shown, Z3 change has not enabled reaching organisational aims depicted by top management.

Secondly, the change effectiveness is measured by the intensity of developing existing competencies or learning the new ones. Table 2 shows 6 areas of competencies which were defined by top management, from the point of view of change

Table 1. Realization of organisational aims

	Z1. Creating new central department of logistics and purchasing	Z3. Diving service department into north and south one
Organisational aim of change	Decreasing Index of defected semi-finished products	Decreasing Index of time reaction in case of claims/malfunctions; Increasing customer satisfaction rate
Level of aim realization during 13 months after change implementation	Decreasing index by 12.47%	Increasing index by 15.02% and decreasing customer satisfaction rate by 10.08%

Source: own elaboration.

Table 2. Realization of aims connected to raising intensity of competencies

Competencies	Intensity of organisational behaviours indicating possessing certain competencies				
	Level of Management	Z1		Z3	
1. Sharing knowledge and experience	level 1	A1	A1	A1	D4
2. Building and developing of organisation	level 1	B2	C3	B2	D4
3. Planning and organising demand	level 2	B2	B2	A1	D4
4. Taking decisions	level 2	A1	B2	B2	C3
5. Technical capabilities	level 3	B3	B3	B3	D4
6. Awareness of procedures and their application	level 3	C3	C3	C3	E5

* Legend: A1 – the smallest visibility of competence; E5 – the biggest visibility of competence; Z1 – successful change; Z3 – unsuccessful change; level 1 – the highest level of management.

Source: own elaboration.

implementation, to be transferred into a higher level. Various competencies were linked to each level of management in organisation. Certain behaviours observed by human resources department and direct superordinates were estimated via indexes A1, B2, C3, D4, E5 where A1 indicates the lowest level of possessing competency and E5 expresses the highest level of certain competency. We can observe that in case of Z3 change the intensity of competencies was in most of the competence area at the higher level. Thus, Z3 change did not succussed in reaching the aims connected to competencies.

Then to sum up, from organisational point of view Z3 change did not succeed with regard to reaching organisational aims. From competence view Z1 and Z3 changes are comparable as they were involving the same areas of competence and again Z3 change can be concerned as not successful one.

3.2. Methodology and results

In order to complete the first aim of research – to identify potential problems connected to leadership of each change, the method of survey and the concept of Triad of Change have been applied. Table 3 depicts 4 elements from Triad of Change that concern existing leaders in organisation. The four elements have been transferred into survey questions to identify whether in those scopes the leaders did not manage to lead. Employees participating in the change were asked to identify, if any, of the 4 following elements of Triad of Change could be concerned as a problem during change implementation.

Please choose from the following matters 3 key problems that appeared during the implementation of Z1/Z3 change:		Area of Responsibility	Scores for:	
			Z1	Z3
a)	changes were initiated and sponsored only by the authoress herself	WHO? → Leaders	2	105
b)	in company there was no leader who coordinated and implemented change among people		1	126
c)	people in company stood back and did not engage in change implementation		2	39
d)	people were used to “the old” and new solutions were only temporary		0	21

Figure 1. Survey questions based on Triad of Change

Source: own elaboration.

As observed in Z1 which ended successfully there was no remarks as to leadership of change management. While in Z3 change the comments were made in all of the areas.

4. Second part of research

4.1. Methodology

One used the method of Organisational Network Analysis (ONA) for identifying ties between certain change leaders appointed for change management. This method was taken from social science and depicts relational data where the relations are treated as linkages which run between the agents (in ONA – employees) [Scott 2000]. The method has been used in two ways: in a conventional way which enables to locate embedded in the overall network ties and in a holistic way meaning that

nodes have been described not to buy their attributes but by their social (in this case) relations. As for organisational network analysis the population of network is each employee participating in change implementation. With regard to sampling ties one can underline that there has been used full network method and each employee has attended in the survey. Answers of the ONA survey have been characterized according to ordinal rank order meaning that each value of edge has been rated from 1 up to 3 and on when the indication of value 1 is multiplied by 3 and indication value of 2 is multiplied by 2 and indication of value 3 is multiplied by 1.

Table 3. Questions in organisational network survey

<i>Identifying Leader's attribute</i>	
B.2.	He/she changed people's beliefs and attitudes and encouraged their engagement thanks to trust, communication skills and charisma
B.4.	He/she achieved effects as a leader who infused his/her team with a sense of shared goals, common identity and purposefulness of the performed work
<i>Identifying Real Work Flow Tie</i>	
A.1.	My everyday work and its effects depended to the greatest extent on my cooperation with
<i>Identifying Real Open Communication Tie</i>	
A.5.	The biggest amount of important and interesting information that helped me to understand what is going on in the company was provided by
A.6.	I could discuss various matters, problems and ideas most openly and sincerely with

Source: own elaboration.

Graphs used in the analysis are undirected which connects the nodes with no arrow heads and without displaying who is directing the tie toward whom. Respondents were asked about the attribute of leadership competencies, about the tie of real work flow appearing during change implementation and about the tie of open communication appearing during change implementation. Survey questions are depicted in Table 4.

4.2. Results

Table 5 depicts the results of top 5 nodes representing the highest number of indications regarding leadership attribute. Those 5 leaders reflect the group of change leaders delegated to lead the change implementation in each case. In case of Z1 change 4 change leaders out of 5 were coming from the first, the highest level of management hierarchy. In case of another Z3 change only 1 change leader was representing the first level of management.

The relation among all change leaders managing Z1 and Z3 changes is depicted via sociograms in Figure 1 and in Figure 2. The shape of nodes reflects appropriately: square – change leaders, circle – other change participants. The size

Table 4. Survey questions based on Triad of Change.

Average centrality index of 5 top nodes					
Z1			Z3		
Name of node	Number of indications	%	Name of node	Number of indications	%
57 940	286	13%	58 005	135	7%
57 974	287	13%	58 030	122	6%
57 944	176	8%	57 985	106	5%
57 970	89	4%	58 009	62	3%
57 939	93	4%	58 026	79	4%

Source: own elaboration.

of nodes indicates average central degree of each change participant calculated with regard to leadership attribute. The colour of nodes represents: blue – 3rd level of management, velvet – 2nd level of management, orange – 1st level of management. Edges represent real work flow taking place during change implementation. Social graph is undirected so the edges represent both types of indications – one directed and both directed (either node A indicating node B and node B not indicating node A or node A indicating node B and node B indicating node A). With red colours one marked subject of research interest – nodes of change leaders of each change and their edges.

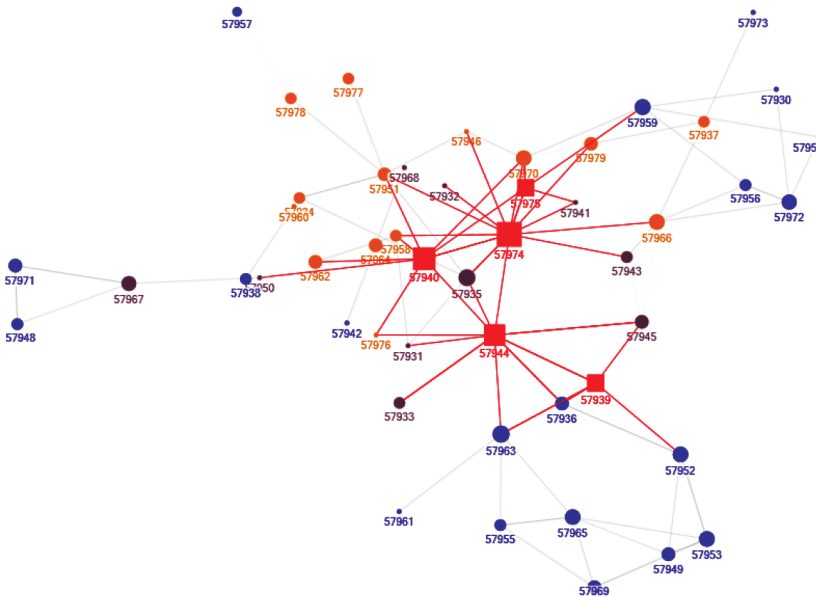


Figure 2. Real work flow among change participants in Z1 change

Source: own elaboration.

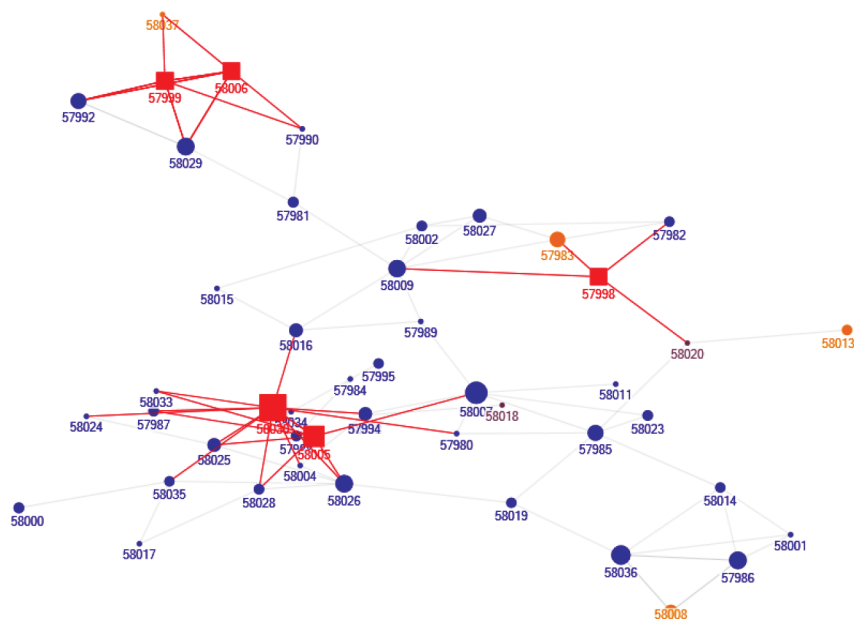


Figure 3. Real work flow among change participants in Z3 change

Source: own elaboration.

One can observe that in case of Z1 change, ended with success, change leaders are tightly connected with one another with real work flow during change implementations. At the same time in Z3 change, ended with failure, social structure of change leaders reflects created three subgroups involving change leaders. In Z1 change change leaders were working together. On the other hand in Z3 change work of change implementation was divided into three groups.

Figure 3 and Figure 4 represent sociograms as in the previous figures with the difference that edges represent not the real workflow but open communication among change participants. Similarly as in the previous figures, the number of edges among change leaders in Z1 change is high and edges of open communication flow are centralized around change leaders. At the same time in Z3 change edges of open communication of change leaders are decentralized into three groups which are again separable and not centralized.

Also edges of open communication flow of change leaders delegated to Z1 change are mainly connected to nodes from the first and second level of management. At the same time in Z3 change the role of nodes from those two highest organisational levels are placed peripherally in social structure. Edges of open communication of change leaders from Z3 change connect in majority nodes from the 3rd level of management.

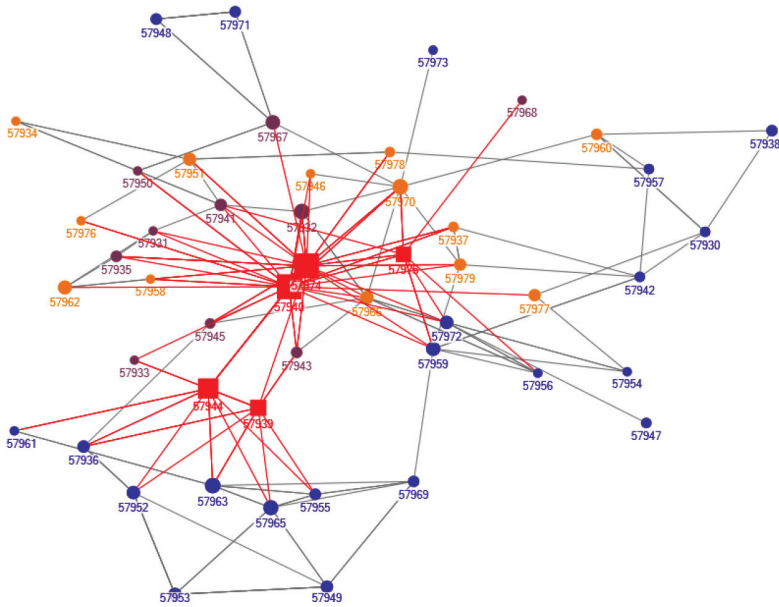


Figure 4. Open communication flow among change participants in Z1 change
Source: own elaboration.

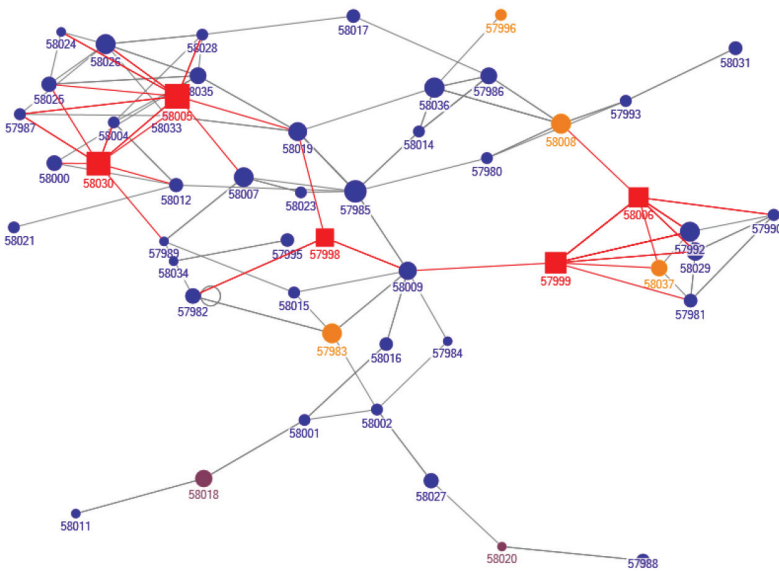


Figure 5. Open communication flow among change participants in Z3 change
Source: own elaboration.

5. Conclusions and Limitations

With regard to the above depicted analysis of Triad of Change and graphic displays of social structure of change participants, one can sum up the answers on scientific problems.

Firstly, in the first part of the research the analysis of Triad of Change has indicated that in Z3 change which ended with failure the leadership of change management has been perceived by change participants as poor and not efficient. The elements of Triad of Change which laid under leaders' responsibility have caused problems in comparison to Z1 change, ended with success.

Secondly, in the second part, the change leaders and their social capital regarding open communication have been examined to verify initiatory influence on change effectiveness. The following conclusions appears:

1. In both changes, successful and unsuccessful one, the leadership employees have been correctly chosen. All of the 5 top leaders of each change have represented the highest level of leadership competencies out of each change group. However, one can underline some distinction in their ties among each other. So choosing leaders based only on their individual competencies does not guarantee effectiveness of sufficient level of team work.

2. Success in Z1 change was supported by the fact that change leaders were working in one group in contrary to change leader group from Z3. Open communication ties did not recompense this state as similarly in Z1 change change leaders openly exchanged information with one another. At the same time in Z3 change, change leaders were still working in three separate subgroups. Thus top management should either encourage leaders not to divide change management into separate tasks fulfilled by separate teams or if done this way, top management should try to create centralized open communication among change leaders.

Limitations in the conclusions lie in the properties of social structures which are reflected by Table 6. Graph density in Z1 change is more beneficial as in Z3 graph. Graph density means the ratio of the number of edges and the number of possible edges [Scott 2000]. Also graph diameter is a distance along the graph, namely the length of any shortest path between two given nodes connecting them [Bouttier, Di Francesco, Gutter 2002]. By distance we mean here geodesic distance along the graph, namely the length of any shortest path between say two given faces (also

Table 5. Properties of social structure of Z1 and Z3 changes

Properties of open communication graph	Z1	Z3
Number of nodes	49	50
Graph diameter	6	9
Graph density	11%	8%

Source: own elaboration.

called a geodesic graph) connecting them. This value of diameter in Z1 change is more convenient for change implementation as it is lower than in Z3 change.

Therefore, as limitation might suggest, the conclusions have introductory character and need to be analysed with further aspects as: a) examining other archetype roles in social structure: entrepreneurs and managers, b) examining whole social structure of each employee of a company, c) examining more attributes of social relations such as for example trust, innovative abilities etc. The author plans to continue research in the subject matter.

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