

## **17. Social engineering in the company management**

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### **Abstract**

Purpose: The aim of this article is to indicate opportunities for the practical use of social engineering in the company management.

Design/methodology/approach: The method of analysis and idiographic method were used as research methods. The latter enables the acquisition of information which reveals unusual, distinct, unique and distinguishing features of a phenomenon of social engineering operations.

Findings: The first part of the article is a presentation of social engineering as science with specification of its origin and scientific interpretation disputes. The methodological bases of social engineering were specified. The rules and methods as well as basic social engineering models were indicated. Subsequently, having conducted an analysis of opportunities for the use of social engineering, features of social engineering

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which qualify it to the group of practical sciences were indicated. The second part of the article constitutes the transmission of scientific considerations into the practical use of social engineering in business entities management. The use of social engineering in relation to an individual and groups of employees in order to form adequate attitudes in a company and the opportunities of its practical exploitation to solve problems are indicated.

**Research limitations/implications:** The use of social engineering which is presented in the article does not exhaust the problem and does not constitute any remedy. It is only an attempt of indication of opportunities of the use of this science and an impulse to further studies regarding its effective implementation in company management.

**Original value:** The connection between a theory of science on social engineering and its practical use in the management of a company through the formation of adequate attitudes of both an individual and groups of employees in a company.

**Keywords:** models, management, social engineering

## Introduction

All people are born with an inner need to learn more about their nature and surroundings. The process of creation of a social order requires a conscious emphasis on adopting an adequate model, the creation of values, acceptance of agreed norms or making changes. Social engineering in relation to social groups or the whole society refers to rational action aimed at attaching reality to specific way of understanding. The issue of evaluation and subjective stimulation of appropriate attitudes, targets worth of implementing and ideas which should be addressed is a very important aspect of social engineering, especially in management.

Sociotechnical aspects in management became the leitmotif of this article whose main purpose is an attempt to indicate opportunities of the practical use of social engineering in management of an enterprise. The idiographic method and the method of analysis which was used as the research method were used to pursue the adopted aim.

Managers who manage business entities and are successful, consciously or unconsciously influence their workers to pursue adopted targets. Therefore, in management it is very important to effectively use work and capital as well as the information and knowledge, including social engineering in order to change the behaviour of people, influence and form them depending on the needs of the organisation. The knowledge of rules which function in science, methods of impacting on people as well as

basic sociotechnical models on the highly competitive market is nowadays necessary for managers.

Except from the indication of the above-mentioned principles, methods and models, this study considers also scientific aspects regarding social engineering making an attempt to transfer scientific considerations to its practical use in managing business entities. The indication of opportunities of the use of social engineering in relation to the individual and employee groups to form adequate attitudes within the company as well as the practical use of sociotechnical operations to deal with the problems within the organisation is the effect of the analyses conducted in the article.

The use of social engineering presented in the article does not cover the problem and is not the remedy but only an attempt to indicate opportunities of the use of this science and an impulse to further works on its effective use in the management of an enterprise.

### **17.1. Social engineering, genesis and scientific interpretations**

Modernisation processes of the 19<sup>th</sup> and 20<sup>th</sup> centuries were the impulse to generate social context of creation of social engineering. Industrialisation, urbanisation, democratisation gave rise to the demand for social knowledge which enabled us to manipulate people and symbols like objects (Amsterdamski, 1999, p. 299). The creation of social engineering as a science is, first and foremost, the occurrence of a theoretical approach of the creation of a new scientific discipline which was formulated, described and published in the Principles of social engineering. The study of recommendations for solving detailed problems (presented in the following volumes of Social engineering) was the second stage. The institutionalisation of social engineering, i.e. the creation of the Social Engineering Section within the Polish Sociological Association as well as the creation of the Institute of Social Prevention and Resocialisation was the conclusion of operations related to the creation of the new scientific discipline. L. Pietrażycki in policy of law, T. Kotarbiński in praxeology and S. Ossowski in techniques of social operations were precursors of social engineering (Ozierański, 2014). The assumptions of L. Pietrażycki were developed in America by R. Pound (law as a tool for social change). W. Lenin tackled the social engineering of revolution providing guidelines for transformations within great social structures. G. Myrdal dealt with the problem of solving social conflicts with the use of sociological knowledge. He also, and then K. Popper (partial social engineering) disseminated sociotechnical directives and contributed

to the conduction of analysis and reflections concerning social engineering as science.

The notion of social engineering is determined in the scientific literature ambiguously (Trejderowski, 2009, p. 15). This author states that the notion of social engineering refers to the sum of methods and operations aimed at achieving appropriate behaviour of individuals and groups of people as well as the science on methods and results of conscious impact on surroundings through law, education, exercise of public authority, etc. T. Trejderowski argues that social engineering in its fundamental meaning is the impact on people which causes that people behave subconsciously in such a way that is completely different than the way of behaviour compatible with their own will. Therefore, social engineering is called influence, manipulation and the control of people. Desired behaviours or decisions are obtained also through an inappropriate presentation of the reality beginning from changing facts and choosing them in such a way that they support a particular thesis to a bold-faced lie (Trejderowski, 2009, p. 15).

Podgórecki distinguishes three ways of understanding the notion of social engineering. Firstly, when he mentions social engineering in a broad sense he is thinking about the technical capabilities of the social sciences thus their role in inspiring effective strategy and procedures with the use of techniques and methods of planning social changes. Secondly, social engineering may be perceived as a separate practical science with the subject matter relying on evolving the purposive procedure in which an individual or collective maker has control of a social group and pursues adopted goals influencing a social system. In the third and the narrowest meaning, social engineering is equated with purposive procedure alone, considered as the way of reaching adopted targets based on an adopted system of values and accepted theoretical statements (Czapów and Podgórecki, 1972, p. 9–10).

Whereas T. Koćkowski divides the notion of social engineering into social engineering of the first stage which relies on the creation of a set of incentives which induce people to specific behaviours with a direct use of the system of punishments and prizes as well as social engineering of the second stage which is specified as the way of the creation of specific motivation among people or forming particular features of personality. A similar influence in both described cases with the difference that social engineering of the second stage relies on the indirect influence of legal standards because of their internationalisation in the consciousness of the individual is the effect of the notion interpreted in such a way (Zajęcka, 2014).

While compiling presented definitions for the needs of this article it was adopted that social engineering is a practical science which is based

on the techniques offered by science (sociology, praxeology, juridical studies, psychology, logic, political science, management) and methods aimed at influencing reality, relying on acquiring the desired behaviour of individuals or social groups to pursue adopted aims.

To sum up, in accordance with the presented definitions, social engineering does not include all changes resulting from individual or collective human activity, but only the ones which are the result of aware activity and influence on these entities. Sociotechnical processes are the most interesting from a scientific point of view. Purposive stimulating operations contributed to their creation or described phenomena were caused by intended changes in the conduct of behaviour of individuals or groups.

## 17.2. Rules, methods and basic sociotechnical models

The knowledge of basic functional elements of social engineering, such as rules, methods of influencing as well as sociological models is a very important aspect of the use of social engineering in the management of an enterprise.

The rules which may be specified in a formal way as actions, which may be applied in a specific field have also been used in social engineering. Sociotechnical rules present specific aspects of human life (they refer also to professional life), which are used as grounds of possible actions. Sociotechnical rules refer to our features of character, our way of behaviour or thinking. Due to these features each of them may be ordered and named (Trejderowski, 2009, p. 58–60):

- The rule of authority is mainly power, knowledge, experience, i.e. all forms and symptoms of superiority over others. It is a very important rule in management,
- The rule of consequence involves all issues, events, forms as well as ways of using sociology which are based on consistent activity, following concrete stimulus or impulse,
- The rule of maximisation of own profit. This rule refers to issues and tools of influence and manipulation techniques which are connected with value. Measurable, quantifiable as well as unquantifiable values, the most important for every man in a psychological and personal sense, such as reverence, dignity, safety and the future,
- The rule of mutuality or showing gratitude for favours done for us. Many ways of using social engineering include mainly influencing the behaviour of colleagues from work and subordinates may be built based on such feelings,

- The rule of liking refers to everything which is recognised by us as nice, friendly, good, and pleasant. The features of liking are considered by the staff of an enterprise as very positive,
- The rule of non-availability is the most extensive among all the rules. Depending on the aspect and the way of its action we connect it with controversy or temporality, curiosity, mystery or prohibition. Everything which is unavailable, controversial, temporary, transient, prohibited, mysterious or interesting for us stimulates our unconscious desire to own or learn it,
- The rule of social proof which is the pressure of surroundings. We have this rule each time we take into account the opinion of society or our closest environment instead of our own convictions.

The rules presented above constitute basic pillars of social engineering in management. The issue of influence could not be complete without description of the basic methods of influence which supplement and strengthen the operation of sociotechnical rules.

K. Mlicki (1986, p. 21–25) indicates the following triggering sociotechnical methods: persuasion, manipulation and control, creation of situations of deprivation. The encyclopaedia of management describes three classical forms of a sociotechnical message: persuasive and manipulative actions as well as facilitative actions.

Four methods of influence of social engineering on the management of business entities were adopted for the needs of this article:

- The method of persuasion which relies on convincing staff with clearance of indicators of persuasion to accept presented views due to the obtaining interest of staff, understanding and approval for these intentions,
- The method of authority is involved to soft sociotechnical methods which are based on acquired or created authority influencing an individual or a group of employees,
- The method of manipulation basing on the use of psychological power in order to change opinions, behaviours and attitudes of an individual or group of employees against their will or without their knowledge,
- The method of coercion based on the opportunities and privileges of the authority forcing to accept the proposed solutions.

The models of social engineering described in the literature on the subject are supplement of the basic functional elements of sociology. We may distinguish three main models (Podgórecki, 1966b, p. 30, 44–52).

The first is the “Classical” model which relies on systematisation and selection of various general regularities from the field of sociology as well as other social sciences. This model transfers these regularities into

appropriate practical directives. The presented recommendations in the form of the set of directives are some kind of transmission of descriptive, general and detailed statements into the simple language of recommendations referring to pure action. The classical concept of social engineering is not interested in the fact that if a given set is used in practice or not.

The second is the “Clinical” model. It specifies not only the prepared set of practical directives. It mainly aims at the need for cooperation with those to whom these directives are directed. To accept and implement directives on the way of persuasion.

The “Intervention-expert” model is the last presented model. Its purpose is not only the creation of a recipe for practical operation as well as a specified influence on the person who ordered the research but it also stands for inherent intervention against various social groups, institutions, organisations, etc. At the same time it indicates the necessity of sociotechnical action together with the calculation of losses and profits which would appear as its result and the value which will be engaged in this action.

### **17.3. Social engineering as practical science**

Definitions quoted in this study indicate unambiguously that social engineering is a practical science. It is also proved by A. Podgórecki (1966b) in scientific considerations between sociology as a theoretical science and social engineering as a practical science. He claims that sociology tackles formulating and verifying statements concerning relations between different elements of social life whilst social engineering manages how to pursue adopted targets on the basis of these statements. Sociology endeavours to find out social reality and social engineering endeavours to learn a rational change of this reality.

According to A. Podgórecki (1970a, p. 14) the issue of practical sciences, which is presented by social engineering, relies on the course of purposive procedure, the course of special action which may not be brought down to anything else.

From a methodological point of view, in social engineering as a practical science connected with the rules of effective action the course of purposive procedure consists of four stages:

- The first refers to the determination of values crucial for planned social change, i.e. their revealing and ordering,
- Social diagnosis is the second stage which is focused on catching the coexistence of various phenomena or causative relationships which connect them,

- The third is the use of theoretical statements to formulate socio-technical directives. This stage of the purposive procedure expresses a scientific plan in the fullest way which aims at the creation of a practical science on the certain foundation of the verified statements with an agreed period in force,
- The last and fourth stage is a measurable assessment of the effects of action which is made both ex-post and ex-ante and based on the analysis of costs and benefits (Ozierański, 2014).

Social engineering is included to the practical sciences mainly because of forming social awareness through giving people rational tools for the description of reality as well as participating in giving predictions which influence leading social processes. However, the most important aspect which qualifies it as a practical science is the creation of directives resulting from the cause and effect relationships which provide a foundation for effective action.

Thus, social engineering as a practical science gives knowledge whose use having appropriate instruments and means allows its users to persuade individuals or groups of people to behaviours expected by makers of impacts (Podgórecki, 1966b, p. 23).

#### **17.4. The attempt to indicate opportunities of practical use of social engineering in the management of business entities**

The management of an enterprise is a difficult and complex action whose main processual aim is to generate decisions in four of the most important spheres of management, i.e.: planning, organising, motivating and controlling (Gajda, 2014, p. 133).

The skill of managing teams of workers through influencing them towards forming desired attitudes and behaviours is one of the priorities in all fields. The attitudes of staff influence directly the operation of all resources and a part of the organisation. Managers must use a modern variety of methods and realisational tools created by social engineering.

Persuasion is the first sociotechnical method used successfully in management. The principle of use of this method relies on influencing the mental sphere of a worker or a group of workers in order to accept formulated targets, expectations, requirements and decisions as the result of convincing workers to presented reasons due to acquiring their interest, understanding and approval. Persuasion is a means for changing not only the personality of a worker but also his situation through interference in the rational or emotional sphere. It creates a situation where a person impacting on staff determines behaviours and behaves

in a way desired by both sides. There is mutual consent and there is no punishment or prize.

Skilful persuasion results in the effect of the equation of aims of a worker with the aims of an enterprise, participation in management, influencing the fate of a plant and dedication to a place of work. In general, low-skilled workers are more prone to emotional persuasion made by a person with great authority. As regards highly skilled workforce, partner persuasion is more effective. Persuasion means take the form of negotiations, consultations, suggestions, appeal or propaganda.

The role of persuasion, especially the one which is based on convincing, consulting, suggesting and informing increases along with an increase of qualifications and an awareness of workers, their needs of participation in the process of making decisions, independence, authority and competence. Persuasion substitutes order and stimulates impact on behaviours and attitudes of people towards work, strengthening inner motivation. There is no absolute advantage of emotional persuasion of convincing and partner persuasion or of individual to group persuasion. The range of use of emotional persuasion is decreasing not only because of the growing level of qualifications but also due to the nature of aims in the process of work as well as a scarcity of managers who have the gift of carrying people away who would induce among them boundless faith in the sense of particular actions. In conditions of autocratic style of management there is a danger of transferring persuasion into orders. Even though its form is kept, i.e. desired behaviour is not directly connected with sanction, in reality such sanctions appear with delay. In the case of misunderstanding of a suggested direction of behaviours or not accepting them, the workers fall into disfavour and suffer the consequences (Penc, 2000, p. 205–207).

Persons holding managerial positions in an enterprise have to do well in being a manager and also a leader. Therefore, they have to develop their communication competences – improving themselves in impacting on people successfully. Here, there is temptation of using simple rules of social engineering instead of becoming a leader of subordinates. The leader who will cause that the workers will follow his visions of operation of an entity, style of management and implemented and planned changes in the company. The authority and the use of this method of social engineering gives an opportunity to impact on the staff. This method of authority relies on impacting on people through referring to knowledge, skills, experience or opinion of a person considered as an authority. Paradoxically, this method of authority works also when the authority expresses his opinion on the subject in which he is not an expert. The communicators of authority are assessed on the basis of the positive qualification of the source – “recognised authority”. The workers agree and accept the

influence of the authority because the person with authority knows more and can do more than them, they see the difference in experience and want to use this experience. Moreover, in case of adequate communication relationships, between the authority and a subordinate, the subordinate wants to accompany the authority because it gives him the feeling of safety and acceptance. We are yielded to this method almost automatically. The impact of this method is more effective in situations when workers of enterprise do not have appropriate knowledge or experience in order to assess the situation without any help. It is a very effective form of impact and management of a modern enterprise which allows it to pursue strategic as well as tactical aims, implement changes in the production and organisation system or to manage staff.

Manipulation is different than the methods presented above. It is not so important to implant ones own thinking process in workers of the enterprise and to cause that they would feel well but to extort from them doing what we want and without their awareness and without giving intention of our action. Manipulation relies on using psychical power to change convictions, attitudes and behaviours of employees. The point of the use of this method is to implement it step by step that a person towards whom the method is used cannot see it (Hadnagy, 2012, p. 297). It is "a short cut", in cases when the manager cannot or does not want to agree with a worker, he uses tools which act beyond his awareness in order to achieve his target without cooperation or without an attempt to meet the requirements of a worker as the other party of the cooperation. The basic tools of this method of impact include: lie, fraud, uncertainty, doubts, lack of knowledge, needs, fears, associations programmed on purpose, putting vigilance to sleep or its purposive evoking, modulation, fitting. The person who manages an entity should take into consideration that the use of the above-mentioned tools of manipulation without being aware of the consequences of their use is a short-sighed action. Manipulation is a short cut action which makes the way and effort of the manager easier, however, without any guarantee that it will be successful (it may be discovered) and with a guarantee of uncertainty. When the worker or the group discovers that it is manipulated, then the reactions are usually drastic and in the majority of cases the cooperation is finished. Therefore, manipulation in the management of an entity may be used as a last resort and with huge limitations. It is not possible to cooperate and manipulate, because manipulation closes the way to constructive cooperation and cooperation will disclose manipulation sooner or later.

The order of presentations of sociotechnical methods gives an opportunity to gradual moving to the following forms of impacting on the staff of an enterprise when previous forms are not effective. When persuasive

influence is ineffective, a manager may try to control workers through his authority or manipulation and when these forms fail, the workers may be forced to do something or their resistance may be broken through the use of coercion. Coercive measures in modern entities have the form of orders, bans, instructions, recommendations and advice of a manager as well as own commitments and duties undertaken voluntarily which force the worker to a specific behaviour. The method of coercion assumes subordination of behaviours of workers to aims and will of the manager (business of the enterprise), there is no space for individual needs or expectations of the workers. In the practice of private business because of economisation of expenses the managers very often use the method of coercion at the beginning predicting resistance and ineffectiveness of the soft forms of influence. Such action is justified only in situations which require quick reaction or in situations of danger. At the same time, almost all are ineffective when creative ideas and the integration of workers with the targets of the company are desired. The means of coercion impose on the staff a specific way of behaviour. First of all, they regulate the range of competences and responsibility of a worker for work discipline, the way of making tasks and perception of health and safety requirements. They aim at total elimination or limitation to minimum undesired behaviours of workers who bring losses to the enterprise. The tools of coercion impact in one way and force the employee to a particular type of behaviour, subordinate to the manager or act in a particular way towards the plant (Zieleniewski, 1981, p. 509). Part of them such as orders or recommendations are of obligatory character and have deadline. The fact that they are obligatory causes that any failure is subject to penalty. However, recommendations and advice are optional and lets the worker freedom to decide on the way of execution. Nevertheless, in practice the persons who use the means of coercion think that only they may offer right advice and that subordinates should abide to them and if they fail to do this they may be exposed to the allegation of neglecting the authority, disapproval and courtesy from the managers (Penc, 2000, p. 205–207).

The use of all of the sociotechnical methods presented above aims at the improvement and increase of skills and effectiveness of making changes of attitudes and behaviours of individual and working teams. The attitudes of staff influence directly the operation of all other resources and parts of organisations but they are also the causes of conflicts in the organisation. These conflicts may be connected with functional and technical relations, i.e. with the division of tasks, actions, duties in an enterprise. They may also occur in connection with the order of relationship of authority, the way of division of benefits and privileges, level of following standards and rules binding in the company, type of organisation of

individuals and groups as well as the level of their subordination to moral principles which provide social order in the enterprise. Conflicts may appear also as the result of cultural and social differences in the community which constitutes the human substrate of the enterprise (Karwińska et al., 2002, p. 87).

The subject of dispute, engaged parties and ways of existence of the conflict should be diagnosed and identified to solve a problem. The right diagnosis should be the basis of selection of an adequate strategy of action. That science of management indicates three main strategies for solving problems in enterprises (Ivancevich et al., 1977, p. 258):

1. The strategy of waiting – its issue is to create conditions which enable to wane conflict emotions, make aware of factual reasons of dispute, agree to the terms and conditions in which effective actions which lead to compromise or the “creation of community” may be taken.
2. The strategy of avoiding – which relies on minimizing contacts between parties to conflicts through purposive negligence of dysfunctional situations, ignoring actions and separation of parties of the conflict, limitation of interaction only to formal relations.
3. The strategy of confrontation – in which direct actions are taken aimed at solving the conflict through the exchange of staff between the parties of the conflict, putting emphasis on priority goals, confrontational meetings or discussions on solving the problem.

If a manager wants to use all three strategies successfully, the strategies have to use the methods of impact from persuasion and authority through manipulation to coercion worked out by social engineering.

## Conclusion

The management of an entity on the modern highly competitive market is an art of using all chances and avoiding or limiting to minimum occurring threats. Therefore, management should use and uses all possible fields of science which offer the opportunity of endeavour to described state.

In order to use the chances which occur and limit threats, very often the behaviour of an individual or all workers in an enterprise is controlled and social engineering is exploited to impact on them towards desired attitudes and behaviours.

Nevertheless, social engineering is not only a set of methods and actions endeavouring to achieve appropriate behaviour of individuals and working groups. It is a new way of internal and external impact on the

whole entity and surrounding legal, social and economic environment. Social engineering constitutes a modern, aware approach to needs, systems of behaviour of individuals as well as entire enterprise and its surrounding. Social engineering which influences the operation of an enterprise is a new style of life for a company. This is the path which should be followed to be successful on the competitive market. To succeed managers must use a modern arsenal of methods and the realisational tools worked out by social engineering, which are presented in this article.

Global market which is open is the result of a well-managed enterprise which knows sociotechnical methods and is able to use them for increasing its functionality and competitiveness. Subsequently, the lifetime of such an enterprise will be generational.

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