

# The Process of Designing a Company's Organizational System in Light of Empirical Research

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## Abstract

*Traditional methods for designing a company's organizational system do not meet contemporary requirements. It results, among others, from increased uncertainty, organizational restructuring processes as well as changes in companies' business environment. The paper defines "an organizational system" as a complex system characterised by the following factors: its subjective structure comprises teams of employees, business entities and institutions; its objective structure is composed of material and non-material elements; it is a construct which performs structural, process, coordinating, motivating and integrating functions; its instrumental area comprises methods and techniques related to diagnosing, designing, decision-making, controlling, IT activities, etc. Organizational systems represent a special type of management systems.*

*The author presents the results of research related to the process of designing a company's organizational system. Also, the paper discusses a theoretical approach to the designing process and presents a framework for the concept of research studies.*

*The conducted analysis is aimed to identify problems which occur in the practice of designing a company's organizational systems. The collected data allow for presenting a critical review of the usefulness of designing methods offered in literatures. This general outline of research work is a basis for setting two specific and more focused objectives: (1) identification of relationships between a company's conditions of functioning and its organization, and (2) analysis of methodological approaches adopted by people engaged in the process of designing organizational systems.*

## 1. An organizational system as a research area

Due to companies' changing environment, traditional methods for designing organizational systems<sup>1</sup> do not meet contemporary

<sup>1</sup> The term "organizational system" indicates a complex system with the following characteristics: its subjective dimension refers to employee teams, business entities and institutions; the objective dimension refers to tangible and intangible components; it is a construct which performs structural, process, coordinating, motivating and coordinating functions; the instrumental foundation is based on methods and techniques related to designing, decision making, diagnosing, controlling, IT, etc. Organizational systems are specific cases of management systems (Stabryła 2011).

requirements. It results, among others, from greater uncertainty and organizational restructuring processes.

An organizational system can be treated as a specific outcome of design work – an effect of people's creative work, an intellectual or physical foundation for implementation processes. An organizational system as an effect of design work can be described from the perspective of the following factors (Stabryła, 2006, p. 72):

- functions of the outcome of designing,
- properties of the outcome of designing,
- testing,
- assessment criteria.

The basic organizational system is an organizational structure characterised by elements, relationships and functions related to

ownership. In traditional hierarchic structures organizational systems can be defined on the basis of relationships between elements. Another group of organizational systems comprises modern structures which have a greater ability to adapt to the changing environment – matrix and fractal structures as well as network structures (*Doskonalenie struktur organizacyjnych...* 2009). In the case of network structures the function of organizational systems is performed by structures belonging to particular companies as well as inter-organization structures.

A process-oriented organization represents a specific organizational system (process organization, a process management system). A process structure can also be found in intra-organization networks (Grajewski 2007).

Therefore, in order to gain understanding of the dynamics of organizational systems it is necessary to consider the mutual and simultaneous impacts of a number of factors and to identify their positive and negative correlations as well as to consider time shifts in cause-effect chains.

In this context, the following questions arise: how should network structures be designed which are mainly characterised by a large degree of spontaneity in the process of their creation? How should process organizations be designed? How should quality management systems be designed? The selection of a method and its impact on the development of organization are the major challenges faced by contemporary management theory and practice<sup>2</sup>. However, this issue is not given

<sup>2</sup> The analyses of designing organizational systems are conducted within the area of design methodology which focuses on research and practical issues. Research issues include the analysis of design process structures, the performance of design systems, the formulation of general conclusions and design hypotheses and their verification. With regard to practical issues, design methodology aims to identify optimal procedures for performing elementary tasks as well as optimal structures of design processes and optimal conditions for the functioning of design systems (Siedlecki and T. Jeleniewski

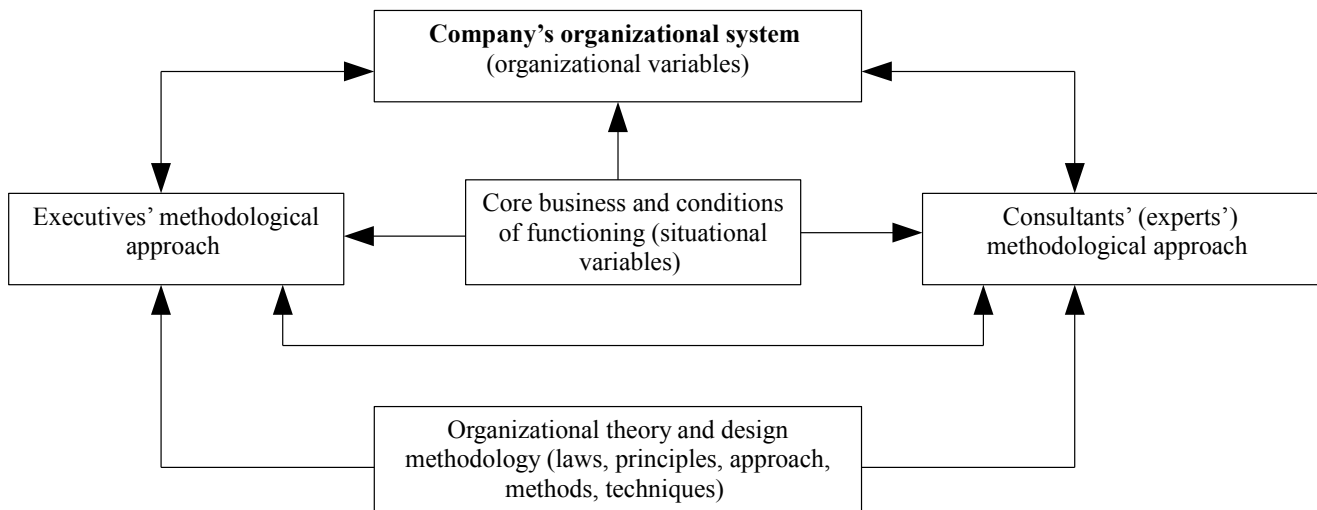
sufficient attention in Polish and foreign literatures (Stabryła 2011).

The author presents the results of a research grant implemented by the Management Process Department. The project aims to develop a universal methodological concept for designing a company's organizational system in the changing environment. The developed concept can be a basis for creating more specific methods for the needs of selected corporate management areas. The presentation of the results related to designing a company's organizational system is preceded by theoretical remarks concerning the designing process. Also, the paper presents a framework for the concept of conducting research work.

## 2. Presentation of a research framework

The study focuses on identifying the problems related to the practice of designing corporate organizational systems as well as on collecting materials allowing for a critical review of the usefulness of designing methods offered in literatures. This general outline of research is a basis for setting two specific and more focused objectives: (1) identification of relationships between a company's conditions of functioning and its organization, and (2) analysis of methodological approaches adopted by people engaged in the process of designing organizational systems.

The research study is based on the opinions expressed by people directly engaged in organizational designing. They are divided into two groups. The first group is composed of company executives while the second one comprises external experts. The conditions of corporate functioning are described by selected variables referred to as situational variables (company size, core business, uniformity of activities, applied technologies, scope of cooperation with external entities, character of links with external entities, impact of competitors, customer preferences, customer profile and company strategy). A company's organi-  
1980, p.17).



**Fig. 1. Structure of research assumptions**

Source: Cabała 2014.

zation, on the other hand, is described with the use of organizational variables (executives' job descriptions, scope of supervision activities, changeability of executives' tasks, character of communication, access to information, staff meetings, decision-making, participation of staff in decision-making, initiation of changes). Because most of the above variables are qualitative in character, the questionnaire is based on the nominal and partially ordered scale of measurement.

The study is based on the assumption that designing corporate organizational systems is a decision-making process in which methodological approaches adopted by designers – both executives and external consultants – are of key significance. The significance of methodological approaches in developing a corporate organizational system is presented in Fig. 1.

The structure of assumptions in Fig. 1 reflects the research problem. On the one hand, organizational systems are created by company executives and, quite frequently, external experts (organizational consultants). Relatively permanent inclinations of people participating in organizational designing can be described on the basis of their approach to general heuristic processes including assessments of the effectiveness of strategies and

designing principles or methods. On the other hand, organizational designing is conditioned by situational factors. A significant role is played by the environment's factors (customers, suppliers, business partners and competitors) as well as by such factors as a company's core business and size, technologies and, in particular, company strategy treated as a fundamental structure-creating driver.

The measuring function in the analysis is performed by a questionnaire prepared in two versions – one for managerial staff and the other one for external experts. The first version contains sets of questions related to a company's core business and the organization of company activities.

The selected respondents include exclusively senior managers or people who have performed or perform the functions of external consultants (experts) engaged in various phases of designing organizational systems – diagnostic, conceptual and analytical research as well as implementation projects. The relationships between a company's activities and its organization are analysed on the basis of the first group of respondents (executives). Methodological attitudes are analysed in both groups (executives and experts).

### **3. The problem of designing – a**

**Table 1. Designing process according to different authors**

E. Krick	J. Alger and C. Hayes	M. Asimow	A. Hall	G. Nadler	J. Wilson and M. Wilson
General description of problem	General understanding (analysis)		Definition of problem	Identification of objective	Concept
Analysis and detailed description of problem	Problem identification	Analysis	Selection of objectives	Attempt to find ideal system Gathering information	Formulating assumptions Gathering information
Choice of solutions	Synthesis	Synthesis of solutions	Synthesis of variants	Initial synthesis	Synthesis
Assessment of solutions and decision	Assessment of variants Decision	Assessment and decision Optimisation Verification	Analysis of variants Selection of best variant	Assessment and decision	Analysis Decision Improvements Verification
Description of solution	Implementation	Implementation	Presentation of results	Synthesis and verification of project	-

Source: Sielicki and Jeleniewski, 1980 p. 40.

### theoretical approach

Organizational designing should be considered from the perspective of the object (content) as well as the process<sup>3</sup>. In this approach greater significance is attributed to designing itself (treated as a decision-making process) than to an organizational system and its components. This general approach to designing is adopted in engineering sciences. For example, E.V. Krick identifies the following stages of technical designing: problem identification (in general terms), problem analysis (problem identification with attention given to significant details), looking for solutions (collection of a certain number of variants), decision (assessment of collected variants and identification of the best option), and the development

<sup>3</sup> Designing can also be considered from the point of view of tasks. Designing in technical areas represents preparatory activities which precede the production process. It aims to develop a model of a target product or technological process. The designing process is based on the intentional actions undertaken by an individual or a group of individuals. These actions should lead to the satisfaction of needs (Sielicki 1980, pp. 101-102).

of detailed documentation for the selected variant (1975, p. 129).

According to S. Berkun, the designing process is a stage at which it is possible to effectively protect an undertaking against unexpected problems (2006, pp. 62-63).

Several other authors representing engineering sciences identify similar sequences of activities in the designing process<sup>4</sup>. Table 1 presents different approaches to the designing process.

Organizational theory offers two different interpretations of the designing process. According to the first one, organizational designing is a decision-making process<sup>5</sup> (this approach is adopted in this analysis) (Nadler and

<sup>4</sup> The specifications and analyses of different approaches to designing in engineering sciences are presented by Sielicki and Jeleniewski, 1980 p. 27-48; Jaworski, 1999, pp. 85-91.

<sup>5</sup> Designing complex organizational systems is based on multi-criteria decision support systems which play a key role in the process. They can be applied at various stages including a diagnosis, problem identification or the selection of the final organizational solution.

Tushman, 1997). In the second interpretation the designing process presents the order of activities related to creating the components of an organizational model (R.M. Burton, B. Obel, G. DeSanctis, 2011).

It seems that a universal approach to organizational system designing is justified when the decision-making process is referred to the specific characteristics of the subject of designing which are described, among others, by the presented organizational models. A key role in this process is played by a diagnosis and the identification of an organizational problem – a basis for defining a project.

#### **4. The results of empirical research**

The analysis is based on three, relatively independent criteria for classifying various approaches to designing: a starting point in the designing process (prognostic and diagnostic), the degree of the programming of actions (programmed and adaptive), and the manner of assessing and selecting organizational solutions (sequential and simultaneous).

With regard to the question related to the starting point of organizational designing, 73 respondents (29%) among 251 analysed people indicate the identification of an ideal solution which is then adapted to a company's potential (a prognostic approach), while 178 respondents (71%) refer to the second variant – the starting point in the designing process should be an analysis of the existing organizational solutions which are modified and improved (a diagnostic approach).

As regards the designing process, 37% of respondents believe it should be predefined (programmed), while 63% state that it should be implemented depending on the circumstances (adaptive). In this case executives hold different views than experts. A smaller percentage of executives believe that the designing process should be predefined - 34% (49% of experts).

All the participants of the analysis were asked to assign the stages of the organization-

al designing process to the specific categories of problems. The identified designing process stages are as follows:

I. Identification of an organizational problem.

II. Situational analysis and setting a project's objective.

III. Development of variants of organizational solutions.

IV. Assessment of variants and selection of optimal variant.

V. Detailed designing of selected variant.

The above stages are assigned to the following categories of problems:

A. Acquisition of indispensable information.

B. High complexity of conducted analyses.

C. Communication problems within a project team.

D. Tensions and conflicts between project stakeholders.

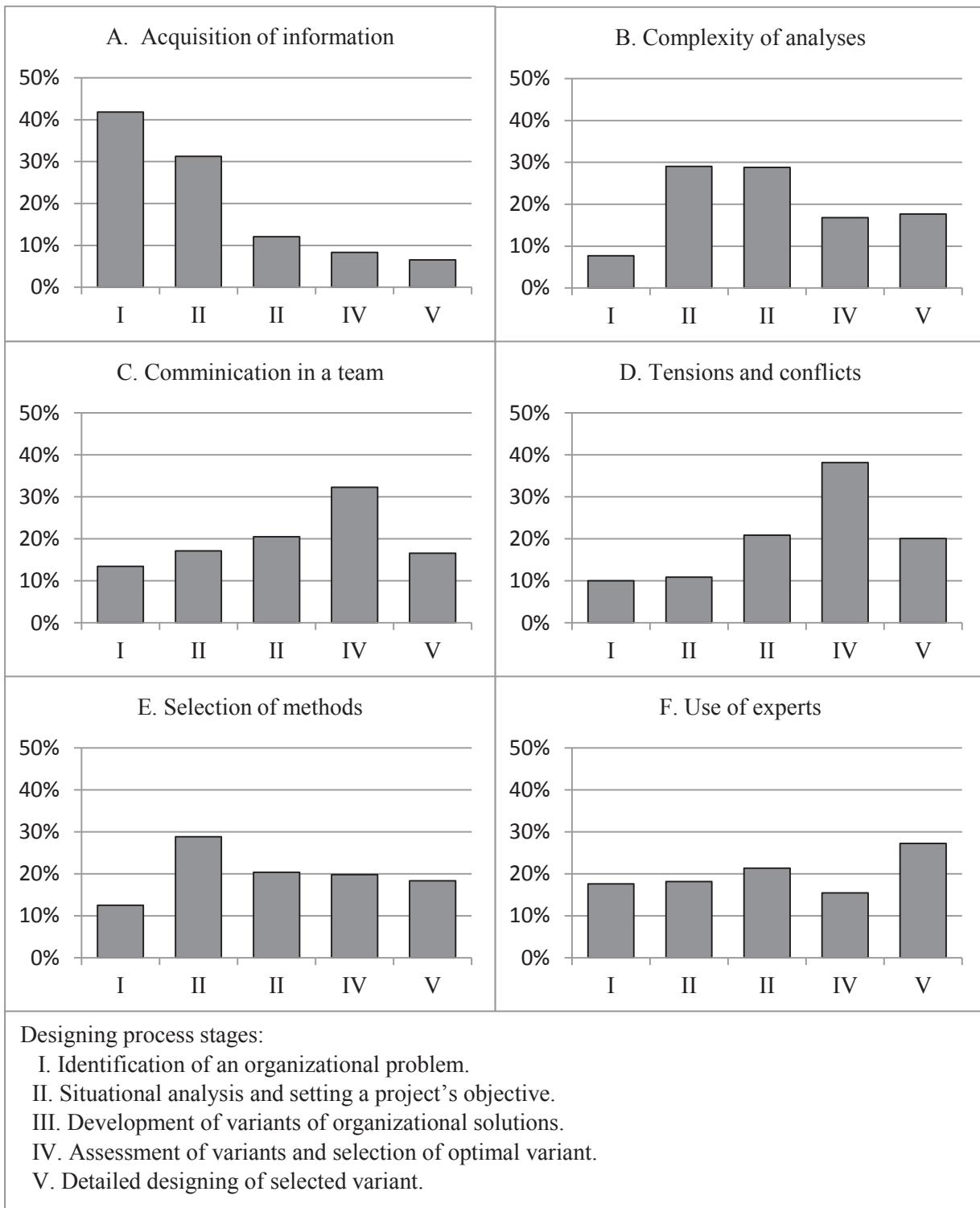
E. Difficulty in selecting appropriate research methods and techniques.

F. The use of external experts' knowledge.

Respondents were expected to assign designing stages (from I to V) to problem categories (from A to F). The assigned stages, in the opinion of respondents, corresponded most closely to the statements describing particular problem categories. Respondents could assign more than one stage to a given category. As a result, a specific "map" was created which reflected the distribution of challenges related to implementing the subsequent designing process stages with regard to the defined categories.

The percentage of assignments for all 251 respondents was calculated to present a clear picture of the obtained results. The distributions of the share of responses (particular stages) in the total responses (particular categories) are presented in Fig. 2.

The presented figures point to the diversity of responses related to Project stages in the particular categories. The values of correlation coefficients between executives' and experts' responses are presented in Table 2.



**Fig. 2. Percentage of indicated designing stages in the analysed categories**

Source: Cabała 2014.

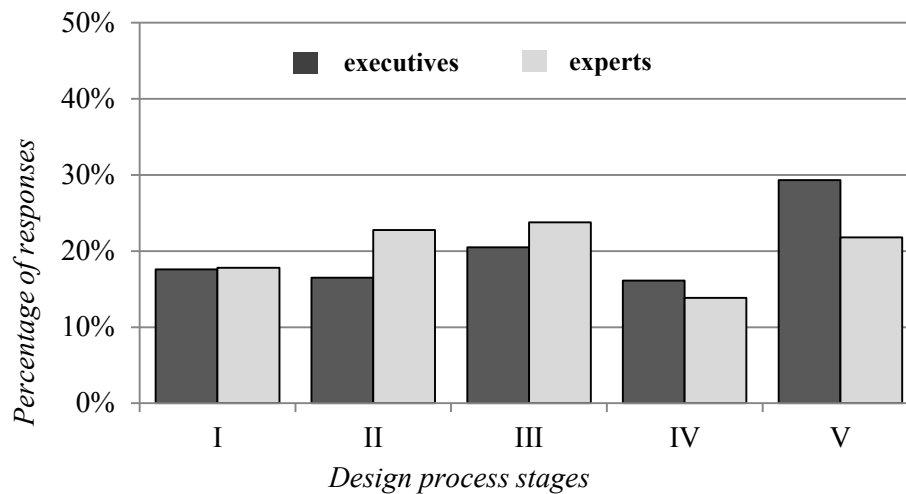
The data presented in Table 2 lead to the conclusion that correlation between responses of the two groups of respondents is high and not coincidental (at the significance level of 0.05) for categories A, B, C, D and E. For cate-

gory F, on the other hand, there are no grounds for claiming correlation ( $r = 0.421 < 0.805$ ). It indicates that opinions expressed by the two groups may differ in terms of the possible use of external experts' knowledge in particular

**Table 2. The values of correlation coefficients between experts' and executives' responses for particular problem categories**

Problem categories	r
A. Acquisition of indispensable information	0.985
B. High complexity of conducted analyses	0.911
C. Communication problems within a project team	0.858
D. Tensions and conflicts between project stakeholders	0.993
E. Difficulty in selecting appropriate research methods and techniques	0.843
F. The use of external experts' knowledge	0.421

Source: Cabała 2014.

**Fig. 3. Distributions (%) of executives' and experts' responses for category F**

Source: Cabała 2014.

designing process stages. These differences are illustrated by Fig. 3, presenting – separately for executives and experts – the distributions of the share of responses (particular stages) in the total number of responses.

In the particular designing stages the values of correlation coefficients  $r$  between executives and experts are high and statistically significant (0.05). They are presented in Table 8. Critical value  $r$  in a one-sided test is equal to 0.729 at the level of 0.05 for 4 degrees of freedom ( $n = 6$ , indicating the number of problem categories).

Overall, the values of correlation coefficients (Table 3) indicate high correlation between executives and experts in terms of their opinions with regard to the significance of par-

ticular problem categories in the subsequent designing process stages. The lowest level of correlation is recorded for stage III, for which correlation between the frequency of indications stands at 0.76. Nevertheless, this value is high and it exceeds critical value.

## 5. Conclusion

The collected data indicate that the greatest difficulty in acquiring indispensable information (A) occurs during the identification of an organizational problem (II) as well as situational analysis and setting a project's objective (stage II). The complexity of necessary analyses (B) manifests itself most visibly at the stage of situational analysis and setting a project's objective (II) as well as in the course of devel-

**Table 3. The values of correlation coefficients between experts' and executives' responses for particular designing stages**

Designing process stages	r
Identification of an organizational problem	0.996
Situational analysis and setting a project's objective	0.820
Development of variants of organizational solutions	0.760
Assessment of variants and selection of optimal variant	0.993
Detailed designing of selected variant	0.801

Source: Cabała 2014.

oping the variants of organizational solutions (stage III). Communication problems within a project team (C) occur most frequently at the stage of assessing and selecting an optimal variant (IV). The fourth stage of the designing process is also most frequently indicated in the category referred to as tensions and conflicts between stakeholders (D). With regard to the selection of appropriate research methods and techniques (E), respondents referred most frequently to stage II – situational analysis and setting a project's objective. Finally, with regard to the use of expert knowledge, most respondents referred to the last stage (V) – detailed designing of the selected variant.

Also, the analysis of the obtained data indicates that experts, as compared with execu-

tives, attribute greater significance to their role at the stage of situational analysis and problem identification (II) and slightly less significance at the stage of developing the variants of organizational solutions (III). On the other hand, executives benefit more from the work of external experts at the two subsequent designing stages: stage IV – the assessment of variants and selection of optimal variant and, in particular, at stage V – detailed designing of the selected variant.

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