

A taxonomic approach to some problems of company organization

Sven-Erik Sjöstrand

RESUME

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Points of departure

This paper has as its starting points my attempts to analyse certain problem areas which I have perceived in the field of organization theory. I have been especially concerned with problems of integrating various specific languages (concepts, terms) used in organization theory. The heterogeneity of the specific languages creates at least two kinds of problems:

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contradictions in empirical findings which are hard to clarify, and uncertainties which limit the researchers' chances of generalizing fruitfully.

A number of more or less well-developed conceptual schemes exist today, focusing on different aspects of (company) organization. There also exists a growing collection of empirical generalizations, sometimes relevant to, but often rather unrelated to these conceptual schemes. The conceptual disorder made me perceive a need of some sort of integrative effort.

Another problem area challenged me. This investigation comprises a comparative study of several units of analysis. A comparative analysis of organization raises some specific demands regarding the language used to describe the units of analysis. A comparative analysis as such emphasizes the importance of the capacity of a specific language to make distinctions at a certain level of description.

A researcher's opportunity of continuously changing his basic frame of reference is restricted in a comparative study compared to a case study. This restriction emphasizes the necessity of preempirical work. I found it very important in my comparative studies to consider knowledge derived from earlier empirical and theoretical studies. Up till now, relatively few comparative studies of organization have been carried out. Mostly, the work has been directed towards either case studies or generalizations on a high level of abstraction, too often with none or little empirical foundation.

Another important problem area, which in my opinion has not yet been sufficiently analysed, is the general problem of aggregation. It is important especially in a comparative organizational analysis that the sources of essential information are located on the individual level, while the units of analysis represent the organizational level.

Objectives of the study

I have tried to achieve four related but different objectives in my investigation:

A contribution in the methodological field regarding comparative organizational analysis and development of typologies. I decided on a taxonomic approach for this.

The development of a specific language which to a certain degree linked necessary concepts in organization theory. This specific language represented an important element in the developed taxonomy of organization.

The assertion of the function of the researcher as a component in the taxonomic system.

The presentation and analysis of some organizational types and the description of the characteristics by which they are distinguished.

Also, I tried to analyze the relations between a taxonomy and a deduced typology.

This paper is intended to give an overview of my investigation, emphasizing on the description of the taxonomic approach, and the development of organizational types.

The taxonomic approach

“Taxonomy” stems from the Greek words “taxis” and “nomos”. Together, these words now mean roughly principles (“laws”) of classification. Often the concept taxonomy is used as a substitute for the concept “classification” but I prefer to reserve “taxonomy” for the theory(ies) basic to classification. Thus, classification is restricted to mean arranging of units of analysis into different classes.

Some authors have reserved the concept of taxonomy for “hierarchical” systems (Bunge, 1967), and some use it synonymously with “frame of reference” (Zetterberg, 1965). Pugh et al (1969) refer to a taxonomy when discussing classifications based on multi-dimensionality. The units of analysis correspond to the objects of classification, while the object of the taxonomic work in this case is represented by the whole area of organization theory.

The need for taxonomies and classification is to be found in the researchers’ endeavour to find new perspectives, overview, economy of knowledge, and information. Classifications (and typologies; see below) represent a fruitful way of describing results from comparative analyses.

Type and typology

One way to describe units of analysis in this comparative study is by using the notion of type and typology. A type is the result of a more pragmatically directed kind of conceptualization, involving processes of simplification and (often) idealization.

A typology is composed of a number of types derived from a certain classification, and deduced from a common taxonomy. Organizational analysts are well aware of the need for typologies. They are, however, at the same time convinced that the unsophisticated *prima facie* typologies so far published are unsatisfactory. When units of analysis are combined into certain types, one must consider whether this allocation refers to "the whole" of the unit or only to one or few *a priori* selected characteristics. This is described in detail in Sjöstrand (1973).

Certain well-known concepts have to be distinguished from taxonomy and classification: identification, cataloguing, and division. Identification refers to the deductive process of putting units into classes established in an earlier stage. Cataloguing corresponds to the provision of numbers and/or letters to units, and the arranging according to these (number/letter) systems. Division, finally, refers to some kind of logical, deductive process where units are divided (differentiated) into sub-classes. Marc-Wogau (1950) describes classification as an extensional concept and division as its intensional equivalent.

Another important distinction which is often brought up by researchers concerns the relationship between "traditional" and "numerical" taxonomy (classification). The more traditional taxonomy is characterized by a restriction to a few general traits when describing the units of analysis. The resulting classifications are often perceived by the consumers as elementary and non-controversial. Strong claims are often made regarding the "purity" of the resulting classes when considering the sharpness of the definitions and the significance of the characteristics.

Numerical taxonomy, on the other hand, involves a large number of characteristics which usually are treated as if they all were of the same importance. The resulting classes can be described with statistical measures but not in uncomplicated verbal formulations. It should be pointed out that for certain characteristics the researcher himself has to construct scales.

Early taxonomic attempts

A number of researchers have tried to develop a taxonomic approach in organization theory. Quite a few of these early attempts should in my terminology not be described as taxonomic but rather as classificatory approaches (cf. "some related concepts" above). They lack some critical ingredients required in a taxonomic approach. I intend to elaborate this statement below.

Sells (1964) suggests a multi-dimensional approach for a taxonomy of organization. His attempt is based on several important assumptions.

Among other things, he assumes that human behavior in organization will vary depending on either individual, organizational or environmental factors. These "factors" could furthermore be reduced to more stable and non-redundant comprehensive groups of factors (classes). Then human behavior in organizations could be explained by using weighted combinations of these (reduced) classes of factors. The dimensions of an organizational taxonomy should be indicated by the differentiated patterns of predictive weights which will be the results of different combinations of factor groupings.

A somewhat different approach is proposed by an English group of researchers (Pugh et al, 1963). After extensively reading the literature of organization theory, they reduced the amount of concepts to a few fundamental ones. Their attempt was in that sense deeply rooted in the past, theoretically as well as empirically. Pugh et al themselves relate their tinkering to a concept of taxonomy, criticizing previous taxonomic classificatory studies in organization theory.

A third approach is introduced by Johnson (1963) and Haas et al (1966).

They tried to create an empirically based taxonomy of organizations. Their heavy emphasis on the empirical work – a multidimensional attempt – raised the problem of defining non-trivial characteristics of the chosen units of analysis.

The descriptions above indicate an important distinction between two approaches: the analytical and the empirical method. In the former case a researcher emphasises earlier theories, while in the latter case he uses a wide empirical relevance criterion.

Early typologies

Some researchers have examined typologies of organizations without discussing the taxonomic approach. Parsons (1960), for example, introduces his organizational types as a part of his exhaustively described frame of reference. He distinguishes between four organizational types according to which societal problems each type of organization tries to solve (economic production, political goal formulation, integration, and pattern maintenance).

Etzioni (1961) constructs a typology based on the concept of "compliance", which refers both to the superior's power to control a subordinate and the latter's adjustment to that controlling effort. Etzioni's "common sense" approach results in these organization types: coercive, utilitarian, and normative organizations.

Blau and Scott (1962) start from a "cui-bono" criterion. They try showing the usefulness of their typology in organizational studies. Neither the relevance of the criterion used (cui-bono) nor possible alternatives are discussed, but their typology is a point of departure in an interesting discussion of several earlier organizational studies.

The authors mentioned above (Etzioni, Blau and Scott) have not used an analytic nor an empirical approach. There is a lack of systematic analysis of alternative criteria for classification as well as of a discussion of the significance of the selected characteristic (compliance, cui-bono) for the whole of the organization. In their discussion of typologies of organizations Katz and Kahn (1966) stress that the fact that an organization could be described by a certain characteristic, which allows it to be classified as a specific type, is less important than to what extent this characteristic represents the "whole" (the essence) of the organization. That insight raises both the problem of differentiating kinds of characteristics and the problem of finding essential characteristics of units of analysis. These problems are partly analysed in Lazarsfeld (1968), Österberg (1972) och Sjöstrand (1973).

An alternative approach

I have distinguished the taxonomic approach from different attempts to classify and typify. Additional motives for those distinctions will be pre-

sented in the following paragraphs. Both taxonomic and classificatory approaches, however, have to be distinguished from what I denote as "additive" efforts.

The difference between the taxonomic and classificatory efforts on one hand, and on other the additive efforts is most easily understood when considering the results. In a taxonomic approach the researcher starts from his concept of the organization and continues, searching a theoretical base for differentiating and integrating the units of analysis in meaningful classes. In the latter case the researcher adds new intensional, conceptual specifications, without considering whether all resulting classes (individually) represent meaningful units or not.

There are certain critical ingredients in a taxonomic approach. In my discussion above, I emphasize the importance of earlier theoretical and empirical studies. Multidimensionality (not haphazard) has also been stressed, as well as the demand for a typology, based on differentiated and/or essential characteristics representing the whole of the organization.

The choice of a specific language

There are certain other main features not yet mentioned in a taxonomic approach. The requirement "integration" creates a need to use only a few "primitive" concepts (cf. Zetterberg, 1965) as a point of departure in a process of gradual intensional (cf. Bunge, 1967), conceptual specification.

In a taxonomic approach the selected "key-concepts" and the specific language have to possess certain characteristics. The definition of "organization" together with the comparative objective put certain limitations on relevancy of organizational languages. Some of the demands that could be deduced from the objectives of the study are shown in table 1 (below).

Other demands than those presented below (table 1) are also relevant in a taxonomic approach. Biddle (1964), Sells (1964) and Landsberger (1970) have investigated and classified languages describing organization. I found some of their distinctions most useful in this study, especially the discrimination between a latent and a manifest (description) level, and between a component and a relation. The latter implies a structural, not a processual, approach. These distinctions I have taken into consideration in developing my specific language.

Some critical ingredients in the formulated objectives of the study	Important characteristics of the selected specific
Organization	should refer to and cover conceptualization on a specific range of continuum of magnification
The units of analysis	should give priority to the organizational level
The comparative approach	should refer to a reasonable mature body of theory, giving chances of formulating descriptions of the units of analysis in comparable concepts
The integrative approach	it should be possible to relate to each other concepts selected from different specific languages referring to different levels of magnification
(Communicative aspects)	<p>should include concepts with explicit and homogeneous internal relations (transformability)</p> <p>should avoid having one term referring to several concepts and vice versa</p> <p>should include established term-concept relations</p>

Table 1. Some demands on the specific language used that could be deduced from the formulated objectives of the study.

The role process

The concepts of "role" and "expectation" could be of great interest as basic or "primitive" concepts in a specific language, describing organization in line with the discussion above. The concept of expectation is usually described as an element in "role theory".

Both these concepts and a complementary concept, "reference", will be described here.

This section will describe both the primitive concepts used as a point of departure and the integrative devices. Also important in this process of gradual intensional specification is the use of certain basic "reconstructed logic elements" (cf. Kaplan, 1964). In this section I will use the distinc-

tion between an extensional and an intensional description of the units analysed. The result of the first part of this specification, focusing on the situation of an individual in an organization, is described in this section as the "role process". Although role theory has been heavily criticized for being the most overworked and underdeveloped theory in the social sciences, several researchers have pointed out the fact that a role theory approach is of particular merit in providing a consistent set of concepts, analytically useful in describing personality, interaction, and the formal structure of organizations. Thus, to my mind, the concept of role is one of the few concepts clearly linking social structure, social process, and social character.

The role concept is associated with individuals developing expectations regarding each other. These expectations contain a predictive as well as a normative element, where the latter increases in importance as the relations become more reciprocal. In organizations which constitute collaborative systems, the normative element is essential. The expectations sent towards a particular individual and the way he/she understands those expectations constitute a latent role. This latent role is then made manifest through role behavior. The identification of the senders of expectations is to my mind crucial in descriptions of organizations, based on role analysis.

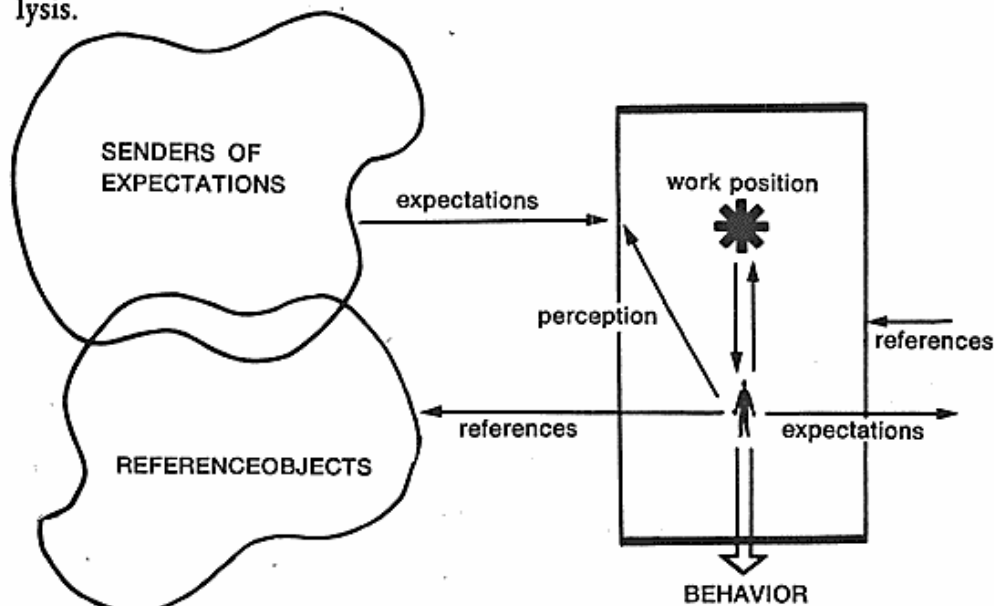


Fig. 1. Basic components and relations forming the role process.

My conception of "reference" is in a sense complementary to my conception of "expectation". This relationship is illustrated above (fig. 1). A reference object represents an individual, a group, an organization, or any other form of collective, to which an individual relates himself as he/she tries to identify alternatives, evaluates them, chooses ways of behaving, and evaluates circumstances in his/her environment.

Expectation and reference constitute the two most critical relational concepts in the role process. This description of the role process is a cornerstone in my effort towards a taxonomy of (company) organization. In the simplified figurative description of the role process (above), I try to show that role behavior is related to the characteristics of certain components (positions, especially work positions, individuals, senders of expectations, and reference objects), and to the nature of certain relations normative expectations, references, especially normative) between those components. This role model is elaborated in Sjöstrand (1974 a).

The role process in organizational context

The role process is basic in the sense that it does not refer to organization theory in particular. The model is used to structure and to integrate different concepts used in "traditional" organization theory and it constitutes a platform for a deductive system or, taken as a whole, for a taxonomy of (company) organization.

When elaborating the description of the role process in an organizational context, influential kinds of relations become important. An organization is (among other things) defined in terms of relations of dependence which constitute the base for exercising influence between individuals and/or groups. There is a connection between "influence" and normative expectations, which constitutes a base for integration between the role process as described above and basic concepts in organization theory. Jackson (1964) points out the fact that the concept expectation, suitably defined, could be used to bring together into a unified model many of the existing concepts in organization theory (authority, influence, power, and so on).

I try to integrate and define specific kinds of influential relations, using concepts from the role process. Six basic concepts in organization theory (sequential and dominance control, leadership, responsibility, delegation, and direction) are described and defined by the concepts of expectation

and reference. (This integrative attempt is further penetrated in Sjöstrand (1974 a).

Components are also intensionally specified in the organizational context, using the description of the role process as the point of departure. This specification includes characteristics of the individuals and their work positions as well as those of the senders of expectations and of the reference objects.

Different kinds of system of roles are looked for, both role systems within a specific unit of analysis, and cross-unit role systems. Furthermore, I distinguish between functional, goaldefined, professional, "geographical", "natural", and formal role systems. At the end of this procedure of adding to the description of the role process and of developing a tentative taxonomy of organization, I will elaborate some characteristics unique for the whole organizational system; e.g. hierarchical complexity, functional complexity, size, specific competence, and so on. The environmental relations of the organizations are considered from the points of view of expectation and reference. The latter (environmental) description is further discussed in Sjöstrand (1974 b).

Population, sample and representativity

The investigation contained an analysis of thirtyeight Swedish building companies. These companies were randomly selected from three strata, differentiated by variations in organizational size. The minimum size of each company was ten employees. The sampled companies included close to fifty per cent of the individuals in the defined population. Seven hundred individual members of the organizations were studied. The non-respondent companies consisted of bankruptcies, close-downs, and refusals – altogether about twenty-five per cent of the original sample. A separate analysis of some characteristics of the non-respondent companies showed a slight tendency for the somewhat smaller organizations to be overrepresented.

The sampling of the individuals in each organization was carried out with priority given to hierarchical and functional differentiation and excluding messengers and secretaries. The portion of non-respondents in the companies studied varied from zero to twenty per cent. An analysis of some characteristics of the non-respondents shows a slight but definite over-representation of somewhat more successful individuals. A disadvantage

with this kind of analysis of non-respondents is that it can never be complete and has to be limited to certain available characteristics. There was, however, nothing in the analysis of non-respondent companies and non-respondent individuals that contradicted the notion of these samples being fairly representative of their respective populations.

A typology of company organization

The presentation of the empirical findings was arranged in three main sections: the description of the organization of one building company, the description of two different typical organizations, and the analysis and presentation of a typology of (building) company organization (cf. Sjöstrand 1973). The purpose of the first section, the description of one building company, was to illustrate the principles of aggregation empirically. There I tried to show how information collected mainly on an individual basis was aggregated to represent a description of the organization as a whole. The second section contained two different views of the organization of a typical building company. One was based on the company as the unit of analysis, with all companies regarded as "equal". The other view used the individual as the unit of analysis independently of the companies in which the individuals were employed. In other words, the latter view focused on the situation confronting an individual. The third section presented a few classifications of company organization and a typology.

To classify the various companies, three cluster-techniques based on somewhat different assumptions were used. This was done in order to eliminate the dependence of the results of one specific technique. Taking the variations of different cluster-techniques into consideration, the emerging typology consisted of eight types of building company organization. Four types included several of the studied companies and four represented more "unique" (in the sample) companies.

The figure (2) above illustrates eight types of company organization. The largest group in the sample I call *the complex (company) organization*; it included thirteen companies. A complex organization was distinguished i.a. by an extensive functional and hierarchical differentiation and a wide geographical dispersion. The individuals working in the complex organization were i.a. characterized by a complicated set of reference objects, where a single reference object often was found outside the or-

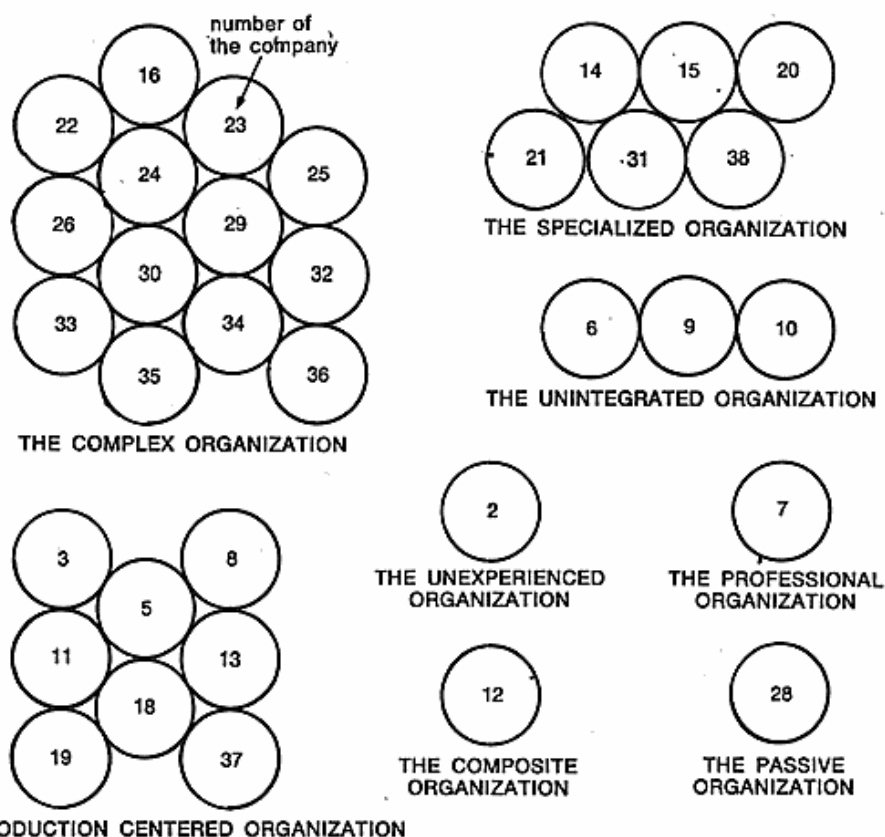


Fig. 2. A typology of company organization.

ganization analyzed. The geographical dispersion was reflected in the existence of separate "geographical" role systems. The formal role system stood out in this type of organization. A lower degree of normativity was experienced at the individual level. For example: manifest influence seldom appeared as giving orders.

The second type of (building) company organization was represented by *the production centered organization*. This type included eight companies. It was distinguished by a relatively simple and uncomplicated functional (and formal) role system. The simplicity implied a low grade of differentiation and an emphasis on relatively well-equipped separate production units. The natural role systems were based on (coincided with) production units. Furthermore, the congruence between the planned and the realized role systems was high.

In the production centered organization, line personnel's responsibility and authority was extended, and this category also had most external contacts. Moreover, the heterogeneity of these contacts was extraordinarily high. The normativity of internal contacts was high, compared to the "typical" or average building company organization. Looking at the organization as a whole, it contained a comparatively large number of workers, considering the number of staff and line personnel in the organization. This emphasized the fact that this type of organization was production centered.

The third type of building company organization I called *the specialized organization*; it included six building companies. The specialized organization was mainly distinguished by several characteristics, all referring to the existence, extent and content of the specialist functions supporting production. There existed a wide variety of defined special functions and the formal system was based on functional differentiation.

The individuals in the specialized organization were characterized by their theoretical education. Their reference objects were often external. The choices of reference objects were often associated with similarity in educational background. Interpersonal control was carried out mainly in the form of the sending of expectations and less in the sequential form. Professional role systems were more frequent in specialized organizations than in the average or "typical" organization. The specific competence of the specialized companies was described by top management as relatively narrow but deep. Accordingly, the reputation of the name of the company was emphasized. Moreover, different kinds of functional specialists were the critical resources in this type of firm.

The fourth non-unique type of company organization was called *the un-integrated organization*; it included three companies. The un-integrated company organization was distinguished by functional diversification and a high hierarchical central point. The individuals displayed a high level of uncertainty in their work positions. They mentioned a lack of received expectations, a felt limitation of responsibility and too little control over their own assignments. Nor did individuals in the un-integrated organization show executive leadership. Their competence was mainly based on experience (rather than education).

As the sample was from a stratified population, it was difficult to estimate more precisely the relative importance of the four types. When I

weighted the different types according to the size of the companies and used the company as the unit of comparison, I found that the production centered organization was more frequent than the others. When, on the other hand, I used the individual and his/her situation as the unit of comparison, the complex organization turned out to be the most common type in the population.

Four "unique" organizational types were represented in the sample. It was not possible to decide whether they were unique or relatively frequent in the whole population. The "unique" types of company organization were the following: *the unexperienced*, *the professional*, *the passive*, and *the composite organization*. Thirty-four building companies were classified as unique or non-unique organizations. I found it difficult, however, to classify four company organizations using the developed taxonomy and the criterion of similarity.

Concluding remarks

The typology presented raises some questions concerning the taxonomy of company organization developed. A typology is always a consequence of the intensional specificity of the taxonomy. A taxonomy leads to an improved formulation of hypotheses as well as gives a chance to evaluate existing deducted/intuitive typologies. I have tried to stress the problem of specificity by discussing the choice of a specific language, the use of certain critical distinctions, and the description of the role process in an organizational context. Specificity is not necessarily a hindrance to further development, nor is it opposed to integration.

The flexibility of a taxonomy is especially important, as it affects the significance of a deduced typology. Flexibility raises several questions. It may involve both variation in amount of characteristics taken into consideration, and used level of description. Attention is paid to the latter in using hierarchical differentiation. It may also raise the question regarding how to weigh different ingredients and their relevancy over time. There is a fundamental difference between the time relevance of a taxonomy and that of a single classification.

A typology can be regarded a basis for decision-making. It gives the user a chance to describe a population as well as its elements.

The members of the units analyzed are given a situational perspective of the population (and perhaps of similar companies and/or competitors). A typology also makes comparative analysis more structured.

Fruitful alternatives for future research could be replications of this study, in order to get a clearer picture of the stability and generality of the organizational types described. A control of the findings in the form of an intensive case study in one of the sampled building companies might be another interesting way of continuing this research program on taxonomy of organizations.

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