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Research of transformation models leading to organizational performance improvement

Irina O. Korova
IT Business Process Manager,

Abstract *— To enable successful organizational change and transformation, the goal of this research is to make a literature overview of organizational models containing organizational components that must be in alignment to achieve organizational performance improvement. The elements of the models are then compared against each other. The paper contribution to the knowledge domain is the development of a semantic map that explains the terminology, a heatmap that lists the organizational components based on their importance leading to success – the most important ones being strategy/purpose, structure, and processes/systems – a comparative analysis, and a discussion of the key relationships between the organizational components, including the order in which they should be changed.*

Keywords *— organizational change and transformation, organizational performance, organizational models and components, comparative analysis*

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I.INTRODUCTION

The Greek philosopher Heraclitus said, "There is nothing permanent but change." Change is part of organizational life, and the sustainability and growth of an organization depends on change and transformation [1]. Still, studies completed in the last 30 years consistently show that only one third of organizational changes are considered successful [2, 3, 4, 5]. Therefore, an interesting question to answer is: How can we ensure the success of organizational change and transformation?

According to [5], the main underlying problem is semantic, stemming from confusion between what constitutes organizational "change" versus "transformation": Change management means implementing finite initiatives, which may or may not cut across the organization. The focus is on executing a well-defined shift in the way things work. Simply doing more of the same is not an organizational change [6, 7]. Transformation, however, does not focus on a few discrete, well-defined shifts, but rather on a portfolio of initiatives, which are interdependent or intersecting. More importantly, the overall goal of transformation is not just to execute a defined change, but to reinvent the organization and discover a new or revised business model based on a vision for the future. It is much more unpredictable, iterative, experimental and entails much higher risk. And even if change management leads to the successful execution of certain initiatives within the transformation portfolio, the overall transformation could still fail. [5]

The above definitions also highlight the dependences between organizational change and transformation, which are further explained by [6] and visualized in Figure 1: Change management is dependent on one or more projects. Business transformation is dependent on multiple change management initiatives. Therefore, change has no dependency on transformation, but transformation is entirely dependent on change.

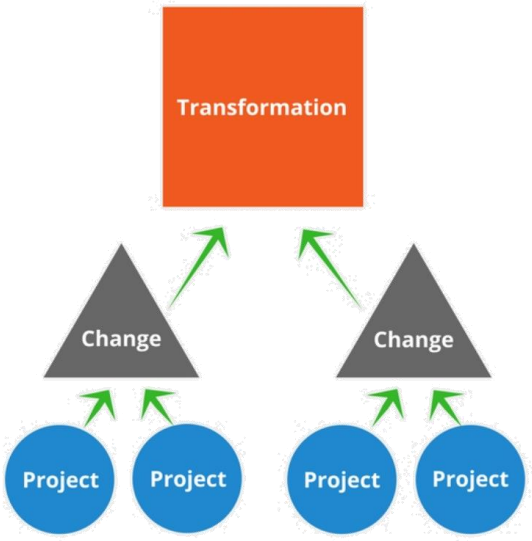

Figure 1: Transformation – Change – Project Relationships [6]

Additionally, [2] sees part of the problem in having little agreement on what factors most influence change and transformation initiatives: Both change agents and experts are guided by their different perspectives, based on personal experience and preference. Their ideas have a lot to offer, but taken together, they force companies to tackle many priorities simultaneously, which

spreads resources and skills thin. Moreover, executives use different approaches in different parts of the organization, which compounds the turmoil that usually accompanies change.

This research looks at organizational changes and transformation as "planned alterations of organizational components to improve the effectiveness of the organization" [7]. The focus is especially on the components, not on the actual process of planning and executing changes. The methodology used is a literature overview of scientific papers, books, and desk research. The goal of this research is to select the respective organizational models for review, to compare their organizational components against each other, to analyze them, and to identify the key organizational components that influence organizational change and transformation the most and, thus, lead to organizational performance improvement.

Part I defines the goals and methods of this research. Part II explains the domain-specific terminology, what models are chosen, and what organizational components the comparative analysis is based on. Part III talks about the importance of leadership and provides the overview of the organizational models. Part IV compares the models and analyses the results. Part V lists the contributions of this research, possible next steps and uses.

II.SEMANTIC MAPPING

The review of organizational models showed that some focus on listing critical organizational elements for achieving effective change (i.e. the system), others focus on how changes must be introduced in the organization, irrespective of what organizational elements exactly need to be changed (i.e. the process), and some explain both.

The relevant processes that cover the whole organization in their scope are *Organizational Design*, *Organizational Development*, and *Organizational Change Management*. Stanford explains them by using the human body as an analogy: "The underpinning *design* of the human body is a given – skeleton, cardiovascular system, etc. But keeping the body fit and healthy is the *development* aspect – nutrition, exercise, learning and managing stress, for example. The *change management* aspect is the specific plan that someone follows to lose weight or to train to run a marathon." [8]

Viewing the organization as a system has its premises rooted in systems theory and system thinking. A "system" is a set of *interrelated elements* organized in a *pattern or structure* which has a certain behavior classified as its *function or purpose* [9]. A system can be *open or closed* depending on whether it interacts with its environment or not. Organizations are considered open systems [10].

Several basic system thinking principles apply to organizations [10]:

- *Internal interdependence* – changes in one system component has repercussions for other components;
- *Capacity for feedback* – information about the output can be used to control the system;
- *Equilibrium* – when an event puts the system out of balance, the system reacts and tries to bring itself back into balance;
- *Equifinality* – different system configurations can lead to the same output;
- *Adaptation* – the system maintains a favorable balance with its environment.

The organizational system is made up of components which can be *hard or soft*: The hard ones are concrete, easier to define, understand, communicate, measure, and influence quickly (e.g. operating processes, reward and other systems, technologies, organizational structure). The soft ones are intangible, hard to manage and measure, and take time to change (e.g. corporate culture, leadership style, motivation, communication) [2, 7].

Based on these definitions, the following semantic map can be designed:

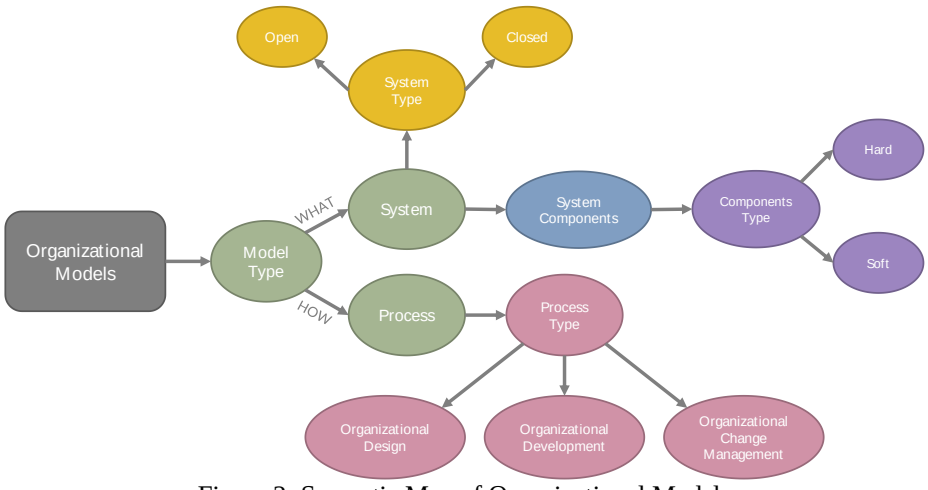

Figure 2: Semantic Map of Organizational Models

As already mentioned in Part I, this research focuses on organizational models as a system, as opposed to as a process; the goal is to understand what needs to be changed to improve organizational performance, rather than how. Moreover, all organizational models in this review represent an open system. Based on the definition of open systems, the organization's environment, inputs from the environment, and outputs to the environment are explicitly or implicitly present in all organizational models reviewed in this research. Therefore, the comparative analysis in Part IV ignores such external elements and focuses only on the internal organizational components which are relatively easier to influence when transforming the organization. Lastly, all organizational models in this review contain both hard and soft components, which sometimes have a different "weight" for achieving successful transformations, according to their authors. For the development of the heatmap in Part IV, all elements of the models are considered equally important, however, the discussion of the key relationships between the organizational components takes this "weight" into account.

III.OVERVIEW OF ORGANIZATIONAL MODELS

Management's primary job is to make organizations operate more effectively. However, understanding organizational complexity and managing organizational behavior proves to be quite challenging. This is where organizational models can help as they indicate which organizational factors are the most critical and how they relate to each other [10].

Several things must be indicated before proceeding with the overview of the organizational models:

1.Leadership/management might not be directly pointed out as a component inside some organizational models, however, managers are the ones who choose if and how to implement a model. Therefore, the management of an organization is, in fact, the major factor for increasing its performance [11].

2.There is no best organizational model that can be useful in all situations: Each model will influence what kind of data the managers collect and what kind they ignore [10]. That is why leadership remains an art, since managers must go beyond the limits of theoretical knowledge [12, as quoted by 13].

Studies show that it is unclear what is required for good leadership/management in every situation. Managers are expected to be able to understand the organization and its requirements and make adequate decisions. The organizational models are a tool which supports the understanding of the organization but how this tool is used depends on the managers' knowledge and abilities [13].

A. Leavitt's Diamond Model (1965)

Leavitt's Diamond Model [14] describes the organization from four perspectives (see Figure 3):

- **Structure** – organization design;
- **People** – employees, members, social relationships;
- **Information & Control** – processes, process automation, technology;
- **Task** – organizational goals.

To identify where to begin introducing changes, managers should first understand if the problem they are trying to solve is *programmable*, i.e. clear, well-defined, and familiar. If so, then the best entry point is structural. However, if the problem is *unprogrammable*, i.e. unclear, open-ended, and new, then the best starting point is the human head.

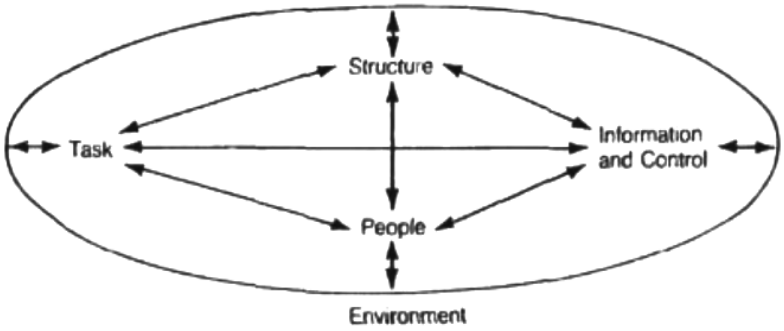

Figure 2: Leavitt's Diamond Model [14]

Even more importantly, managers must consider their mission, vision, philosophy, and the kind of organization they want to create, also taking the organizational environment into account. If these goals are not clear, managers should start by defining them before moving to the model to modify the rest of the organizational components.

B. Galbraith's Star Model (1973)

Galbraith's Star Model [15, 16] consists of five organizational components (see Figure 4):

- **Strategy** – company goals, objectives, values, mission, basic direction. This is the first component that must be addressed by the organization, as the rest of the components will be defined to support it.
- **Structure** – determines the distribution of power and authority in the organization. Four areas must be addressed:
  - **Division of Labor** – specialization, type and number of job specialties;

○**Departmentalization** – how departments are formed at each level of the structure (e.g. based on functions, products, workflow processes, markets, customers, geography, hybrid, matrix);
○**Shape** – number of levels in the structure and number of people in departments at each level;
○**Distribution of power:**
▪**Vertical** – centralization vs. decentralization;
▪**Horizontal** – which department deals directly with issues critical to the organizational mission.
•**Processes** – the way in which work gets done, i.e. the way in which information flows (incl. technology and automation) and decisions are made. If the structure is the organization's anatomy, the processes are its physiology or the way it functions. There are three types of processes:
○Bottom-up = **Informal processes** – voluntary behaviors, self-organization;
○Top-down:
▪Vertical = **Management processes** – allocating resources, budgeting;
▪Horizontal = **Business processes** – predictable, understandable, replicable, and, therefore, automated; usually cross-functional.
•**Rewards** – aligning the goals of the individual with the goals of the organization (policies regulating salaries, promotions, incentives, profits sharing, stock options, etc.). Directly supports the way the organization operates, i.e. its processes.
•**People** – recruiting, selection, rotation, training, and development of talent. Directly supports the organizational structure.

Due to the interrelation of organizational elements, Galbraith explains that there is no need for the corporate culture to be called out as a specific component in the model, since changing any organizational parameter will change the corporate culture as well.

Figure 3: Galbraith's Star Model [16]

Regarding the usability of the model, Galbraith highlights that there is no one-size-fits-all organization design that companies can implement. Furthermore, each organization design has its positive and negative sides. Since all elements of the Star Model are interwoven, the model should be used on one hand to align all organizational policies to contribute to the common company goals (i.e. the strategy), and on the other hand to create policies that emphasize the positive organization design sides and minimize the negative.

C. Weisbord's 6-Box Model (1976)

As the name suggests, Weisbord's model [13] contains six components (see Figure 5):
•**Purposes** – the most important is to have goal clarity and goal agreement; purposes provide overall direction;
•**Structure** – organization design can be based on functions, or products, programs, projects, or both; the rule is: form follows function;
•**Rewards** – salaries, benefits, incentives;
•**Helpful Mechanisms** – procedures, policies, meetings, systems, committees, bulletin boards, memos, reports, meeting rooms, space, information, and so on that facilitate concerted efforts; binds all the other boxes of the model together;
•**Relationships** – consist of three types:
○between people – peers or boss and subordinate;
○between units doing different tasks;
○between people and their technologies (i.e. systems or equipment).
•**Leadership** – consists of four tasks:

- defining purposes;
- embodying purposes in programs;
- defending institutional integrity;
- managing internal conflict.

Weisbord's 6-Box Model is applied by analyzing and comparing the formal and informal systems inside the organization: what exists on paper vs. what people actually do. Identified gaps signify misalignment between the individuals and the organization. Furthermore, analysis and comparison must be carried out between "what is" and "what ought to be". Discrepancies found there highlight misalignment of the organization (i.e. the given scope) and its environment.

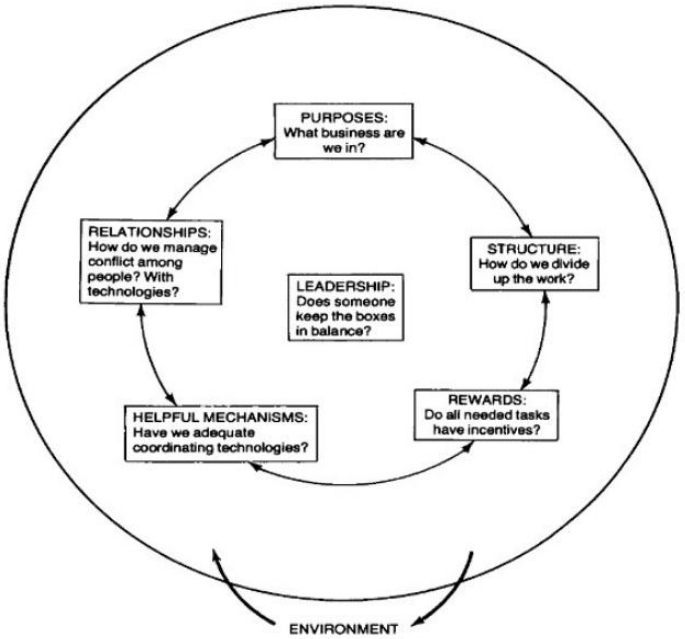

Figure 4: Weisbord's 6-Box Model [13]

D. McKinsey's 7-S Model (1980)

As the name suggests again, the management consulting firm McKinsey & Co. has designed a model [18] consisting of seven components (see Figure 6):

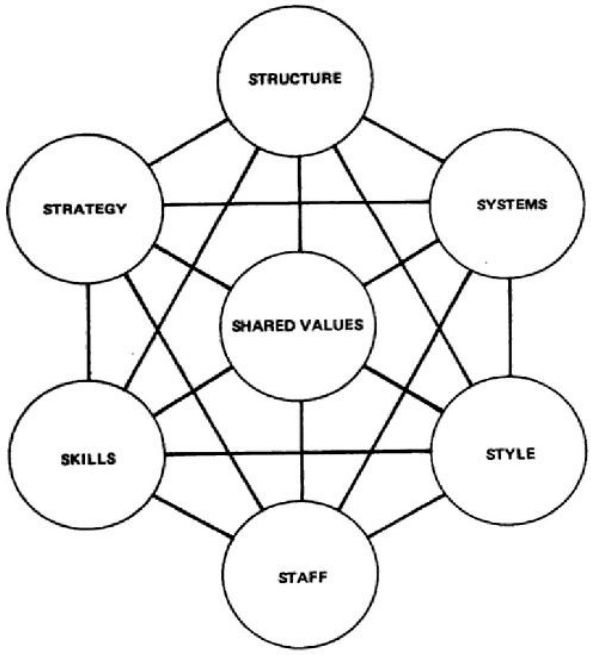

Figure 5: McKinsey's 7-S Model [19]

- **Strategy** – the actions that the company plans in response to or in anticipation of changes in its external environment; strategy is a critical variable in organization design;
- **Structure** – centralized, decentralized, matrix; structure follows strategy [17, as quoted by 18]
- **Systems** – all the processes and procedures, formal and informal, that make the organization function (budgeting, accounting, training, etc.); systems have the potential to dominate all other elements of the model;
- **Style** – patterns of action (corporate culture, leadership style, agility, etc.);
- **Staff** – people, appraisal systems, pay scales, formal training programs, morale, attitude, motivation, behavior;
- **Skills** – characterizes what a company does best;
- **Shared Values** (Superordinate Goals, as per the first version of the model in [18]) – a set of guiding principles and aspirations, often unwritten, that go beyond the conventional formal statement of corporate objectives.

McKinsey's 7-S Model was designed to address decision-making based only on the interaction between strategy and structure. The model argues that the organization is not solely its structure, and that successful organizational change relies on the interrelationship between at least seven identifiable organizational elements.

Unlike Galbraith's Star Model, McKinsey's 7-S Model does not have a starting point: organizational change can be initiated from anywhere. However, like with the other models, all elements are interrelated, therefore, regardless of where the change begins, all elements must be aligned to successfully achieve the desired future state.

E. Nadler-Tushman's Congruence Model (1980)

Nadler-Tushman's Congruence Model [10] is based on the premises of system thinking and systems theory: It describes critical inputs, major outputs, and the transformation processes that characterize organizational functioning (see Figure 7).

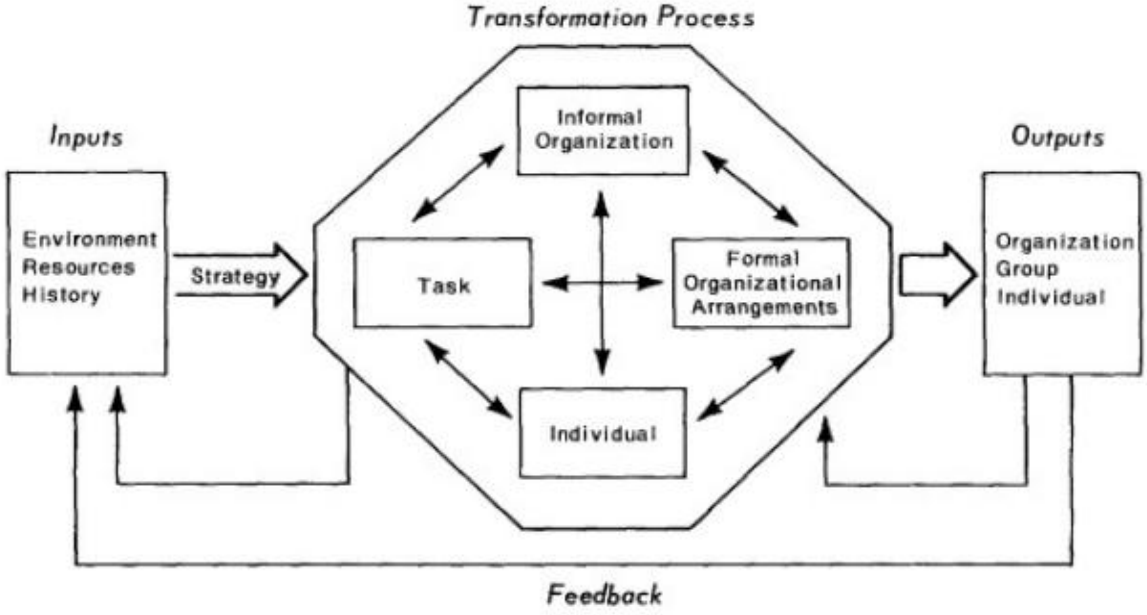

Figure 6: Nadler-Tushman's Congruence Model [10]

- Inputs – the material that the organization has to work with:
  - **Environment** – all factors outside the organization (e.g. individuals, groups, other organizations, larger social forces) that have an impact on how the organization performs;
  - **Resources** – range of different assets to which the organization has access (e.g. employees, technology, capital, information);
  - **History** – major stages/phases of an organization's development over a period of time (e.g. key strategic decision, behavior of key leaders, nature of past crises and the organization's response to them, evolution of core values and norms in the organization); history is important because the way the organization functions today is greatly influenced by past events;
  - **Strategy** – in its broadest context describes the set of decisions that are made about how the organization will configure its resources against the demands, constraints, and opportunities of the environment within the context of its history; strategy is based on the other three inputs and is the most important single input for the organization.
- Transformation process – the organization and its major component parts are the fundamental means for transforming energy and information from inputs to outputs:
  - Organizational components:
    - **Task** – the work to be done by the organization, the activity the organization is engaged in (in light of its strategy); not the process of how the organization works; this is starting point of the analysis;
    - **Individuals** – nature and characteristics of the employees, members;
    - **Formal organizational arrangements** – structures, processes, methods, procedures, etc. which are developed to get individuals to perform the task;
    - **Informal organization** – implicit and unwritten arrangements influencing the behavior of individuals towards completing the task (includes leadership, human relationships, communication, cultural norms, etc.).
  - Relationship between organizational components – must have congruence, alignment, fit between each pair of organizational components.
- Outputs – what the organization produces, how it performs, and how effective it is, measured by effectiveness, efficiency, and adaptability (on organizational and departmental level) and job satisfaction, stress, quality of life, etc. (on individual level).

Organizational analysis based on the Nadler-Tushman's Congruence Model means searching for misalignment anywhere in this generic organizational framework. A basic problem-solving process can be used, as well as additional, more specific models for resolving issues when they are identified.

F. Tichy's Technical, Political, Cultural (TPC) Model (1982)

Tichy's TPC Model [20, as quoted by 21] is similar to the Congruence Model, as it also includes inputs, throughputs or change levers (i.e. the organizational components), and outputs (see Figure 8). All of these variables are interrelated, including the inputs and the outputs. Furthermore, some variables have a strong impact on others, while others have a weak impact (represented by the straight vs. dotted lines). The model includes:

- Inputs (similar to the Congruence Model):
  - **Environment**
  - **History**
  - **Resources**
- Throughputs or change levers (i.e. the organizational components):
  - **Mission/Strategy** – the organization's approach to carrying out its purpose; its criteria for effectiveness;
  - **Tasks** – the technology by which the organization's work is accomplished;
  - **Prescribed networks** – the formal organization (designed social structure, communication and authority networks, etc.);
  - **People** – the characteristics of the organizational members (their background, motivation, managerial style, etc.);
  - **Organizational processes** – the mechanisms which enable the formal organization to carry out the work (organizational communication, decision-making, conflict management, control, rewards systems, etc.);
  - **Emergent networks** – informal structures and processes;
- Outputs: organizational effectiveness.

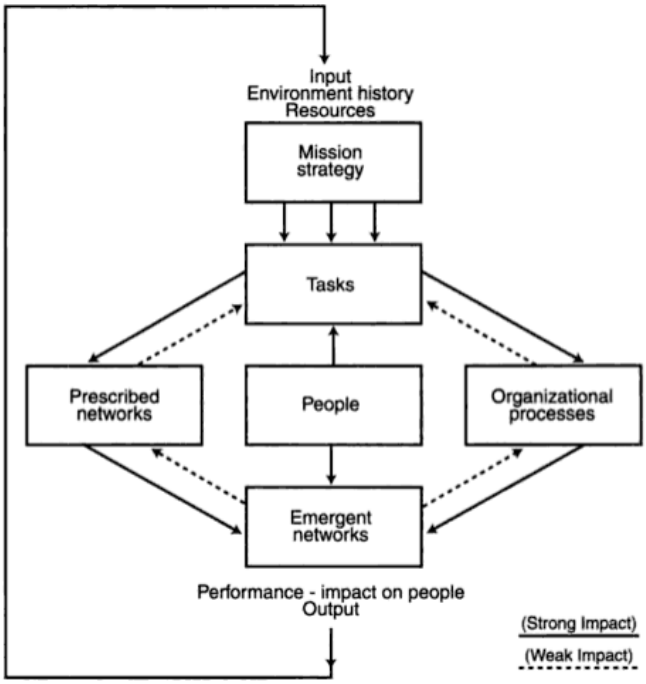

Figure 7: Tichy's Technical, Political, Cultural Model [21]

Tichy's Model must be viewed from the perspective of the technical, political, and culture dynamics inside an organization. The technical perspective represents those aspects of the organization which are known (e.g. production processes, available resources). The political perspective represents the views of the dominant groups, including bargaining by powerful organizational groups. The cultural perspective represents the shared symbols and values which make up the corporate culture. These three perspectives are interwoven like the three strands of a rope. Therefore, organizational analysis carried out based on the TPC model must answer the questions of how well the parts of the organization are aligned with each other for solving the organization's technical, political, or cultural problems, and how well these three aspects of the organization (technical, political, and cultural) are aligned with each other.

G. MIT 90's Critical Success Factors (CSF) Model (1983)

MIT 90's CSF Model [22] is based on the previous work of Chandler [17] and Leavitt [14], therefore, certain similarities with Leavitt's Diamond Model are inevitable (see Figure 9). The main purpose of the MIT 90's CSF Model is to highlight the impact that technology (especially emergent technology) has on organizational strategy.

MIT 90's CSF Model consists of five organizational components:

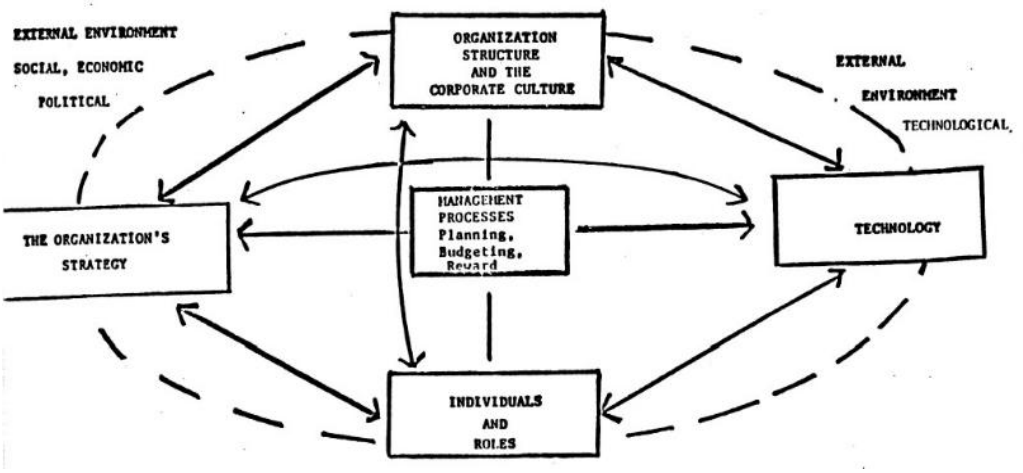

Figure 9: MIT 90's Critical Success Factors Model [22]

- **Organizational Strategy** – the goals to be achieved;
- **Organizational Structure & Corporate Culture** – organization design, social relationships;
- **Management Processes** – the glue that holds the organization together (e.g. strategy management, meetings, discussions, budgeting, planning, manufacturing, human resources);
- **Individuals & Roles** – employees, job descriptions;
- **Technology** – emerging information technologies.

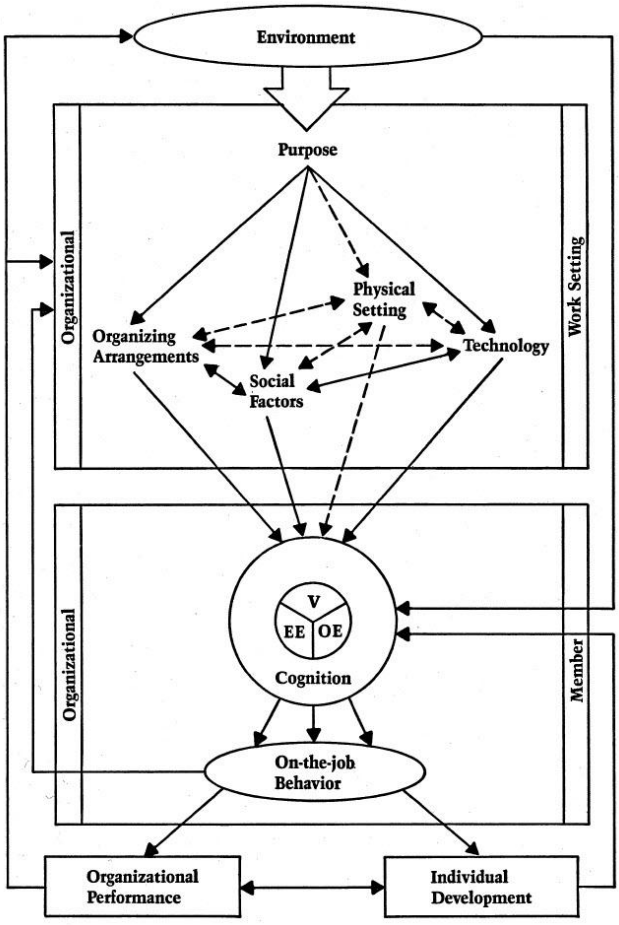

Figure 8: Porras' Stream Organization Model [24]

It is important to mention that in this organizational model Environment has a different impact on the internal organizational components: it impacts to a greater extent the Strategy and the Technology, and to a lesser extent the Structure and the Individuals (as represented by the dotted line).

H. Porras' Stream Organization Model (SOM) (1987)

Porras' SOM [24] appears complex (see Figure 10), however, if the organizational member's cognition section is ignored, what remains are six organizational components (both internal and external; the internal ones being interrelated) which influence the organizational member's behavior and lead to changes in organizational performance:

- **Environment** – rapidly changing, so organizations must be highly flexible and adaptable; purpose determines how an organization responds to its environmental challenges;
- **Purpose** – the collective reasons for the organization's existence; provides the framework around which the organization designs itself and makes decisions; integrates the components inside the Organizational Work Setting;
- Organizational Work Setting [23, as quoted by 24]:
  - **Organizing Arrangements** – goals, strategies, formal structure, administrative policies and procedures, administrative systems, formal reward systems;
  - **Social Factors** – culture, interaction processes, social patterns and networks, individual attributes;
  - **Technology** – tools, equipment, machinery, technical expertise, job design, work flow design, technical policies and procedures, technical systems;

○**Physical Setting** – space configuration, physical ambiance, interior design, architectural design.

The SOM is used for creating Stream Diagnostic Charts based on the four Organizational Work Setting components, analyzing their relationships, and arriving to a clear definition of the problem to be solved. Even in situations where the problem is already known, the model has proven useful for keeping all organizational components in alignment.

l. Henderson-Venkatraman's Strategic Alignment Model (1989)

MIT 90's CSF Model, Henderson-Venkatraman's Strategic Alignment Model [25] is also designed with a focus on the transformational impact information technologies have on the organization (see Figure 11). The model includes the four key domains:

•**Business Strategy**:

○**Business Scope** – choices pertaining to product-market offerings;

○**Distinctive Competencies** – those attributes of strategy (e.g. pricing quality, value-added service, superior distribution channels) that contribute to a distinctive, comparative advantage over other competitors;

○**Business Governance** – structural mechanisms that organize the business operations (e.g. strategic alliances, joint ventures, and licensing).

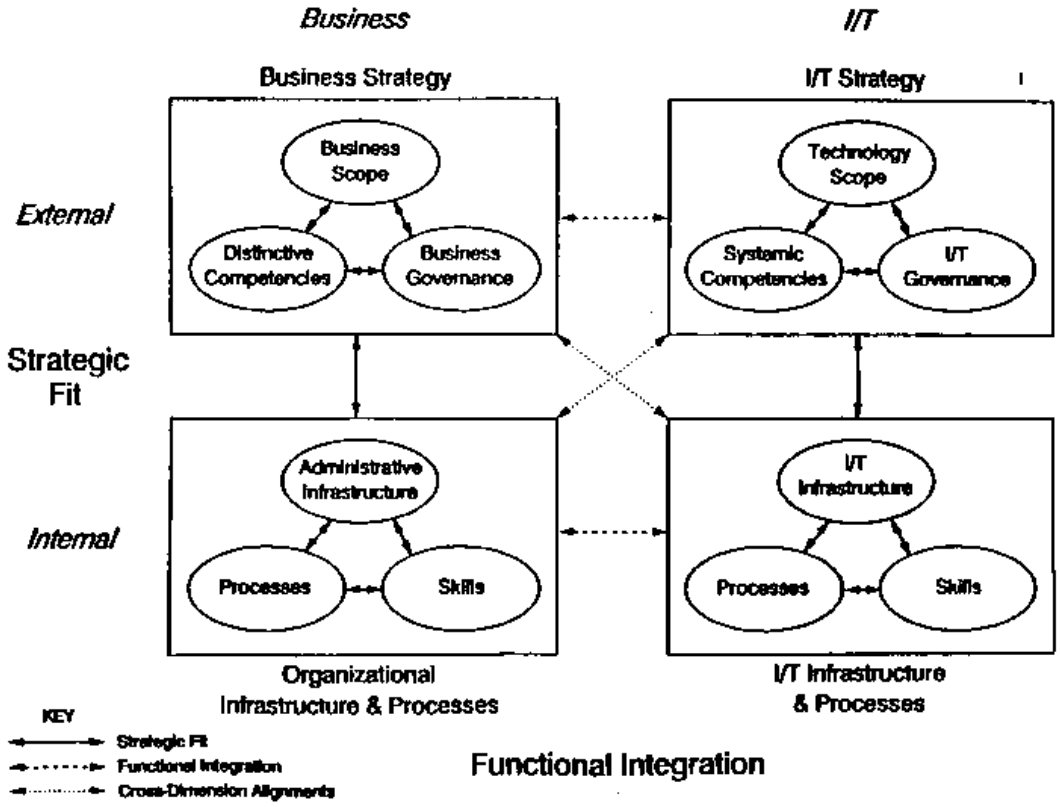

Figure 9: Henderson-Venkatraman's Strategic Alignment Model [25]

•**Organizational Infrastructure & Processes**:

○**Administrative Infrastructure** – organizational structure, roles, reporting relationships;

○**Processes** – workflows and the associated information flows for carrying out the key activities;

○**Skills** – the capabilities of the individuals and the organization to execute the key tasks that support the business strategy.

•**Information Technology Strategy**:

○**IT scope** – types and range of IT systems and capabilities potentially available to the organization;

○**Systemic Competencies** – distinctive attributes of IT competencies (e.g. reliability, availability, flexibility) that contribute positively to the creation of new business strategies or better support the existing business strategy;

○**IT Governance** – choices of structural mechanisms (e.g. partners and suppliers) to obtain the required IT capabilities.

•**Information Technology Infrastructure & Processes**:

○**IT Infrastructure / Architecture** – application, data, technology configurations;

○**Processes** – work processes central to the operations of the IT infrastructure, incl. processes for systems development, maintenance, monitoring, control;
○**Skills** – knowledge and capabilities required to effectively manage the IT infrastructure.
The Strategic Alignment Model also contains three types of relationships between the four domains, depicted by the different arrows: strategic fit, functional integration, and cross-dimensional alignment. The model argues that the most important alignment for successfully leveraging emergent technologies is the one between the Business and the IT.

J. Burke-Litwin's Causal Model (1992)

Burke-Litwin's Causal Model [26] also depicts inputs, organizational components, and outputs (see Figure 12). It contains twelve organizational variables in total, of which all interact with each other, however, the model only displays the most important interactions:

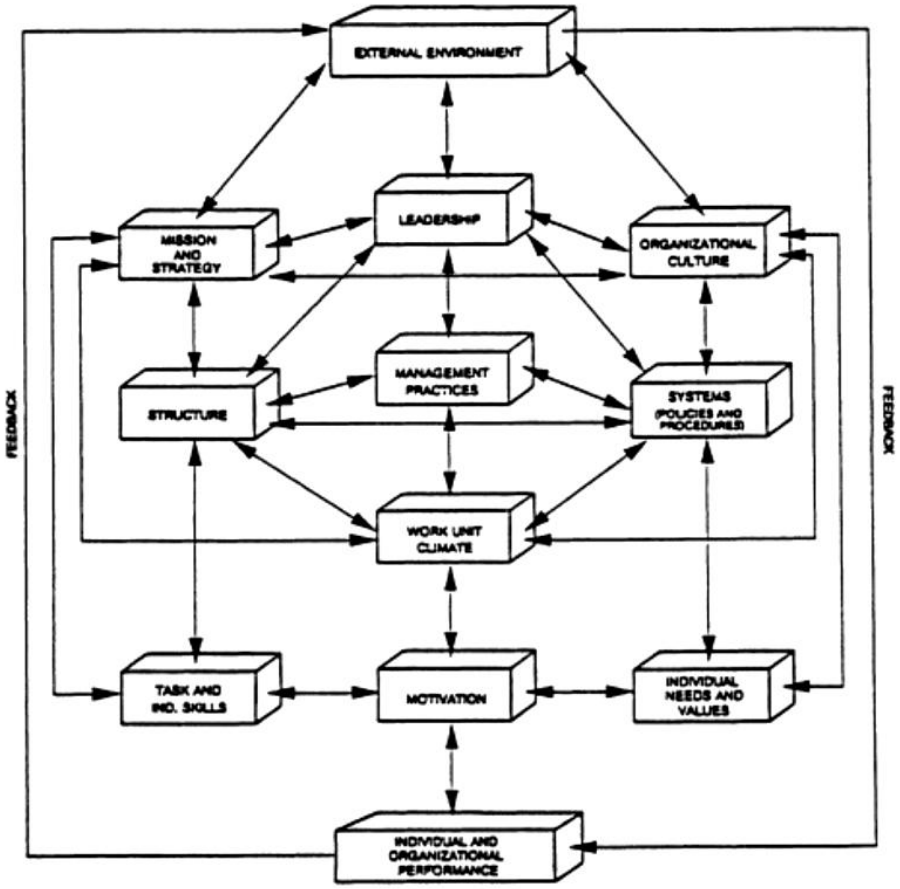

Figure 10: Burke-Litwin's Causal Model [26]

- **External environment** – any outside condition or situation that influences the performance of the organization (e.g. marketplaces, world financial conditions, political/governmental circumstances);
- **Mission and strategy** – the central purpose of the organization;
- **Leadership** – executives providing overall organizational direction and serving as behavioral role models for all employees;
- **Culture** – the collection of overt and covert rules, values, and principles that are enduring and guide organizational behavior;
- **Structure** – the arrangement of functions and people into specific areas and levels of responsibility, decision-making authority, communication, and relationships to assure effective implementation of the organization's mission and strategy;
- **Management practices** – what managers do in the normal course of events to use the human and material resources at their disposal to carry out the organization's strategy;
- **Systems** – standardized policies and mechanisms that facilitate work, primarily manifested in the organization's reward systems, management information systems, and control systems, such as performance appraisal, goal and budget development, and human resource allocation;
- **Climate** – the collective current impressions, expectations, and feelings that members of local work units have that, in turn, affect their relations with their line manager, with one another, and with other units;
- **Task requirements and individual skills/abilities** – the required behavior for task effectiveness, including specific skills and knowledge;
- **Individual needs and values** – the specific psychological factors that provide desire and worth for individual actions or thoughts;
- **Motivation** – aroused behavior tendencies to move toward goals, take needed action, and persist until satisfaction is attained; the resultant net energy generated by the sum of achievement, power, affection, discovery, and other important human motives;

•**Individual and organizational performance** – the outcome or result, as well as the indicator of effort and achievement (e.g. productivity, customer satisfaction, profit, and quality).

Burke-Litwin's Causal Model is designed to support organizational change. The authors argue that the external environment influences organizational change (especially a change in the business strategy) more than any other factor. Furthermore, for a full-scale organizational change to be successful, the top factors of mission, strategy, leadership, and culture are the most important because they affect the whole system (i.e. their impact cannot be restricted to only a part of the system). However, if the organizational problem to be resolved lies in the alignment of the organization to its strategy and mission, or in improving the organizational processes, then factors like structure, management practices, systems, etc. should be in focus.

K. Falletta's Organizational Intelligence (OI) Model (2008)

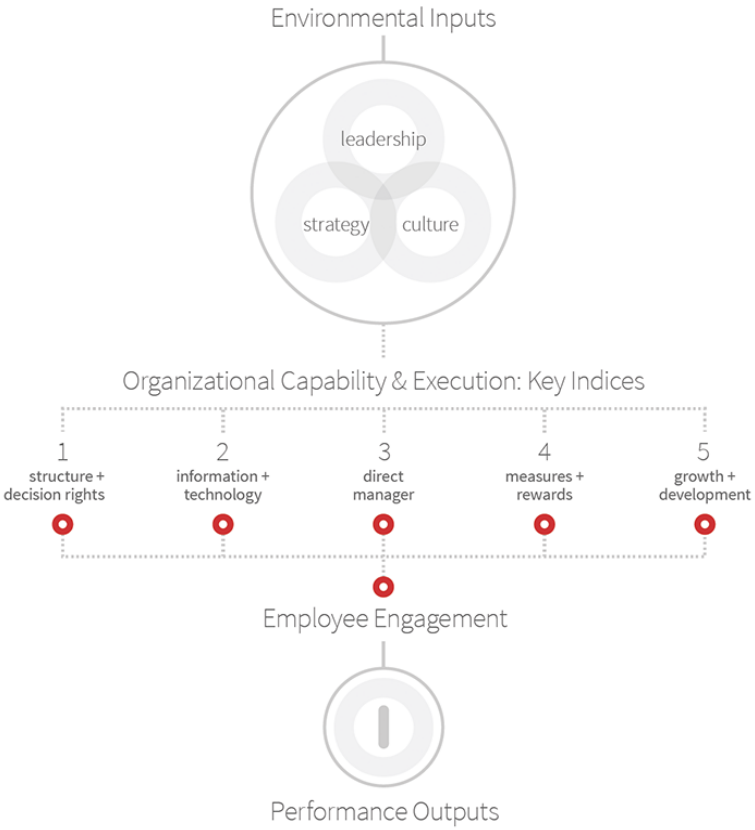

Figure 11: Falletta's Organizational Intelligence Model [28]

Falletta's OI Model [27, 28] contains eleven organizational factors or variables (see Figure 13):

- **Environmental Inputs**
- **Leadership**
- **Strategy**
- **Culture**
- **Structure + Decision Rights**
- **Information + Technology**
- **Direct Manager**
- **Measures + Rewards**
- **Growth + Development**
- **Employee Engagement**
- **Performance Outputs**

The variables in the upper part (leadership, strategy, and culture) represent the strategic drivers, whereas the variables in the lower part represent the primary drivers or key indices of organizational capability and execution, which in turn drive performance.

The OI Model serves as a framework to facilitate the design and interpretation of employee engagement surveys and it can be thought of as a representation of the organization. That is why it can also be used for assessing organizational change efforts.

IV.COMPARATIVE ANALYSIS OF ORGANIZATIONAL COMPONENTS

The organizational components of the different models are aligned based on their definitions to enable the comparison, presented in the form of a heatmap:

Organizational Components	**Diamond Model** (1965) - [14]	**Star Model** (1973) - [15, 16]	**6-Box Model** (1976) - [13]	**7-S Model** (1980) - [18, 19]	**Congruence Model** (1980) - [10]	**TPC Model** (1982) - [20, 21]	**CSF Model** (1983) - [22]	**SOM** (1987) -[24]	**Strategic Alignment Model** (1989) - [25]	**Causal Model** (1992) - [26]	**OI Model** (2008) - [27, 28]
Strategy, Mission, Organizational Goals, Organizational Purpose	x	x	x	x	x	x	x	x	x	x	x
Organizational Structure	x	x	x	x	x	x	x	x	x	x	x

Organizational Components	**Diamond Model** (1965) - [14]	**Star Model** (1973) - [15, 16]	**6-Box Model** (1976) - [13]	**7-S Model** (1980) - [18, 19]	**Congruence Model** (1980) - [10]	**TPC Model** (1982) - [20, 21]	**CSF Model** (1983) - [22]	**SOM** (1987) -[24]	**Strategic Alignment Model** (1989) - [25]	**Causal Model** (1992) - [26]	**OI Model** (2008) - [27, 28]
Policies, Processes, Systems, Methods, Procedures, Roles, Rewards (as a formal system)	x	x	x	x	x	x	x	x	x	x	x
People, Staff, Individuals, Skills	x	x		x	x	x	x	x	x	x	
Culture, Informal Organization, Emergent Networks, Relationships			x	x	x	x	x	x	x	x	x
Technology, Information	x		x			x	x	x	x		x
Leadership and Management Processes, Practices			x						x	x	x
Individual Needs, Values, Motivation, Engagement, Growth, Development, Performance								x		x	x
Physical Setting			x					x			

The comparison shows that, according to the model's authors, the most important organizational factors for successful change and transformation are defining what the organizational goals are (strategy, mission, purpose), after which setting up the organizational formal systems, processes, and structure accordingly (form follows function, as per [18]). People, their skills, and the formal and informal social structures in an organization follow as the next important factors to be aligned to the strategic goals. The technology used by the organization is interestingly not higher up the list. This might be because the processes are more important than the technology which supports them and/or people and their skills are more important than the tools they use. Leadership/management has also not scored very high. The explanation for this is in the beginning of Part III: Leadership/management drives the whole organization forward. Therefore, similarly to the environmental factor, leadership/management is implicit in all organizational models, even if not explicitly mentioned. The individual needs, motivation, etc. are also towards the bottom of the list, however, this is to be expected as a) the models are organizational (i.e. the components listed will mainly be related to the scale of the whole organization), and b) the people and their skills have already been mentioned before and this factor scores higher. Lastly, there is the physical setting in the organization. Although some authors find it important, the recent global events have indeed proven that the physical setting can be easily substituted by good technology without any negative impact on the overall organizational performance.

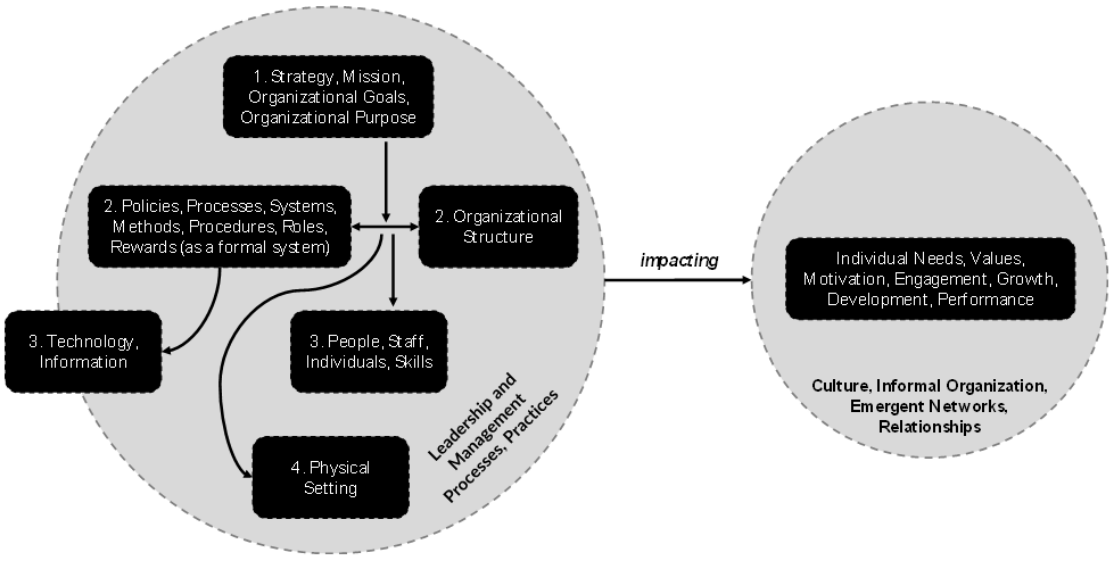

Figure 14: Key Relationships of Organizational Components

In addition to the heatmap, Figure 14 shows the key relationships between the organizational components (arrows), as well as the order in which they should be changed when carrying out organizational transformations (numbering). As everything is connected the everything, the arrows in Figure 14 represent the key relationships only. It can even be argued that the arrows should be bi-directional, however, for simplicity, the relationship is presented as one-directional.

Legend:	
circles	organization
boxes	organizational components
numbering	transformation order
numbered items	hard components
unnumbered items	soft components
dotted lines	interaction with environment
arrows	key relationships

The transformation starts with the first step of defining what the organization aims to achieve and how it will achieve it, i.e. what drives the organization (Strategy, Mission, Organizational Goals, Organizational Purpose). When this is clarified, step 2 is to establish the formal systems and structures which will support the definition in step 1. Due to the "form follows function" principle [18], the formal systems (Policies, Processes, Systems, Methods, Procedures, Roles, Rewards) and the structure (Organizational Structure) must be constantly aligned at each new level of granularity. In step 3, there are two parallel workstreams: On one hand, the systems (Policies, Processes, Systems, Methods, Procedures, Roles, Rewards) must be supported by the available current technology (Technology, Information), and on the other hand, the formal structures (Organizational Structure) must be filled with people (People, Staff, Individuals, Skills). Lastly in step 4, based on the previous step 2 (and inherently also on step 3), the physical environment (Physical Setting) must be designed accordingly. All these four steps are defined and driven by the organizational leadership (Leadership and Management Processes, Practices) – they can, of course, be delegated to someone else (internal or external), however, the accountability still remains with the leaders of the organization. The activities in all four steps also influence the individuals inside the organization (Individual Needs, Values, Motivation, Engagement, Growth, Development, Performance) and the informal systems and structures the organization establishes (Culture, Informal Organization, Emergent Networks, Relationships).

The four steps defining the transformation order are referring to the hard organizational components, as per their definition in Part II. Hard components are not only easier to manage, change, and measure, but they also drive the transformation of the soft components [7, 15]: For example, transforming the corporate culture can be broken down into hard-component steps, such as altering the reward systems, shifting the decision-making downwards, or creating participative management committees, all of which will increase the likelihood that a cultural change will happen over time [7]. The decision of what exactly to change and how is ultimately driven by the definition of the organizational purpose, strategy, mission, goals.

V.CONCLUSION

This research aligns the different perspectives on organizational change management and transformation. By reviewing and comparing organizational models, conclusions are drawn on what factors most influence change and transformation initiatives: the organization's purpose and strategy, established by the organization's structure and systems/processes. In addition to what the leaders must focus on, this research shows how changes and transformation should be carried out to be successful: the order of the organizational components and their key relationships.

The specific contributions of this research are:

- semantic mapping of the terminology related to organizational models;
- development of a comparison matrix of the selected models (heatmap);
- identification and analysis of the key relationships of the organizational components;
- identification and analysis of the transformation order of the organizational components.

This research can be further enhanced by establishing indicators for measuring the most important organizational components for success and proving their validity in practice. Furthermore, studies can explore the process of improving organizational performance (the "how"), since this research focuses on the organizational components that lead to organizational performance improvement (the "what"). Lastly, research can be done on the chronology of the emergence of the organizational models and the relationship between organizational components inside the models (theory) and the organizational environment at the time (practice).

The results of this study can also be used in practice when discussing or delivering organizational change and transformation projects: The research provides a comprehensive overview of the corresponding organizational elements to keep in mind when introducing changes to one part of the organization. Additionally, when practitioners follow only one organizational model, they are inevitably exposed to its shortcomings too. However, following multiple models at once minimizes this risk. Lastly, the results of this research can be used

by organizational managers and leaders as a guide for the critical factors to focus on when driving the organization performance.

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