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A Systems Approach to Sustaining Change: Managing Boundaries

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Abstract:

In understanding why most organizational changes fail, it is important to understand the complexity of the organization. Prior to the introduction of General Systems Theory in the 1950s, management saw organizations through the lenses of Scientific Management. Affecting change happened to an organization with no social consideration. Aligning the parts in a systems approach requires planning. Planned change, through a systems lens, considers barriers and boundaries. Boundaries are dynamic by allowing deconstruction and reconstruction and assist the organization to constantly adapt and sustain. This paper demonstrates the applicability of the theory in a manufacturing setting to gain cooperation in setting boundaries and accountability in maintaining them.

1. Introduction

Von Bertalanffy (1950) introduced the concept of systems in the 1950s addressing issues in physics and biology. That led to identifying properties characteristic of systems in what he called General Systems Theory (GST) (von Bertalanffy, 1968):

Open or closed: This characteristic refers to the relationship of the system with its environment. In an open system, information is both internal and external to the system, information comes in and goes out. In a closed system, the information is contained within the system – nothing enters or leaves the system. While the original theory was presented in the scientific world, this characteristic has increased in importance with organizations today competing in the world economy.

- **Equifinality:** This characteristic state that an outcome can be reached from different initial conditions and that there are multiple successful paths to a desired outcome. This characteristic is not found in closed systems.
- **Interdependence:** This characteristic state that the parts of a system are interdependent. The parts influence each other. Affecting one part affects another and the effect needs to be considered in optimizing the whole. The characteristic of the system is not summative. The parts by themselves do not express the characteristics of the system.
- **Homeostasis/self-organizing nature:** There is a tendency for a system to seek a stable nature. Regardless of changes outside the system, the system seeks stability or status quo.
- **Dynamic equilibrium:** This happens when the rate of loss is equal to the rate of gain and keeps the system in a steady state.
- **Steady state:** This happens when the system maintains, unchanged, with an equal balance of movement and stasis.
- **Entropy:** This is the decrease of available energy in organizations. As energy decreases, systems move from steady state to disorganization.

Prior to GST, organizations were viewed as machines following the Scientific Management theory of Taylor or Weber's classic bureaucracy (Katz & Kahn, 1978). The traditional approach did not address social change. Katz and Kahn (1978) described organizations as systems. They described a systems model with inputs, transformations, and outputs connected by a feedback loop and affected by factors in the environment. This model can be useful in explaining organizations and looking at the organization as a system. Von Bertalanffy (1968) also described this as the flow of energy.

Ackoff (1999) described different types of systems to include deterministic, animated, social, and ecological. Of these four types, he described organizations as social systems. In an organization as a social system, the organization has a purpose, but so do the parts. One of the challenges of social systems is aligning the parts to the organization's purpose. In planned change, changing the performance of a part has to consider the performance of the whole as well as the impact on other parts.

Boundaries are an important component of systems. Boundaries serve to make distinctions for organization members. Boundaries are multi-faceted and exist as physical barriers or cognitive lines of demarcation. Hernes (2004) describes boundaries as composite, central to organization, and dynamic. Change in organizations is about changing boundaries: changing, deconstructing, and reconstructing. When change is introduced to an organization, it causes changes in expectations and changes in how the organization functions. These are boundary changes. Hernes stated that an organization changes or evolves through a process of setting boundaries, which could involve construction of new boundaries or deconstruction and reconstruction of existing boundaries. Boundaries are not by-products of organization, but the essence of the organization. All of these boundary changes

occur through interactions. The boundaries are constantly modified and managed. This is also how organizations pursue homeostasis. The boundaries help to maintain the stability of the organization.

Hernes (2004) offers a framework for organizational boundaries that includes mental boundaries, social boundaries, and physical boundaries.

- Mental boundaries: This refers to the core ideas that are central to the organization.
- Social boundaries: This refers to the identities or groups within the organization and how they interact or bond with the organization. Trust and norms of interaction are measures of social boundaries.
- Physical boundaries: This refers to the formal rules and procedures and physical structures that regulate the interactions of organization members.

Like an open system, the boundaries emerge and change to accommodate the current situation. Since energy flows in and out of the open system, it is only natural that the boundaries may change according to the environment and organizational experience, while some boundaries may be static (Hernes, 2004).

Fenwick (1994) identified organizational boundaries that need to be managed in implementing and sustaining change. These boundaries included purpose of change, system requirements or operational requirements, roles, structure, and procedures. These were the core boundaries that are reconstructed when implementing change (figure 1).

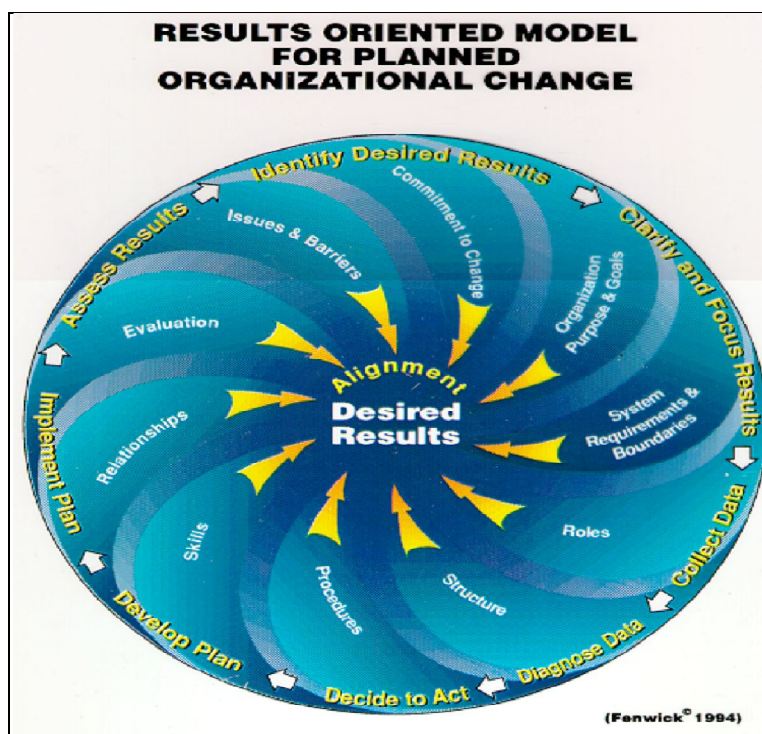


Figure 1

2. Description of the Model

The model consists of three parts:

- Implementation Steps,
- Organizational Variables
- Desired Results.

The action steps on the circumference of the model describe the implementation process and serve as a procedure in implementing the model:

- Identify the desired results,
- Clarify and focus the results,
- Collect data,
- Diagnose the data,
- Decide to take action,
- Develop the plan,
- Implement the plan, and
- Assess the results.

The spiral shapes inside the model that spiral towards the centre, list the organizational variables that relate to organizational effectiveness and serve as the basis for planned change activities:

- Issues or barriers,
- Commit to a change strategy,
- Organization purpose and goals,
- System requirements and boundaries,
- Roles,
- Structure,
- Skills,
- Procedures,
- Relationships, and
- Evaluation.

The centre of the model identifies the focus of the planned change:

- Desired results, and
- Alignment of the organizational variables.

Alignment refers to "aligning" or achieving congruence with all the organizational variables to achieve the desired results.

3. Description of Organizational Variables

3.1. *Issues and barriers*

The description of the model begins with the organizational variables. The first variable is "issues or barriers". The planned change process begins with issues and/or barriers. The organization becomes aware of the need for change because there is a gap between actual and desired performance.

In addition, when organizational variables are not aligned toward a specific and desired organizational outcome, the organization is usually experiencing difficulty in resolving an issue with organizational members. In many cases, the issue is a relationship-based conflict between individuals or groups within the organization. The conflict could be between labour and management, between individual organizational leaders, between departments competing for limited resources, or between support groups and manufacturing or service.

Before the organization's leadership can focus organizational members on improving performance, the leaders must resolve the issues. Sometimes, an issue can be difficult to resolve immediately such as the relationship between managers and workers. If workers are experiencing a relationship issue, then in the beginning of planned change leaders can focus workers on improving performance by presenting a plan for resolving the relationship issue.

3.2. *Commitment to Change*

Once organizational leaders focus the attention of organizational members on improving performance, it is important for leaders to build commitment throughout the organization to the plan or strategy for change. There are many models and processes for guiding planned change within organizations to include managerial actions. Furthermore, people throughout the organization need to believe that their adherence to the plan for change can lead to the desired results in performance.

Organizational leaders need to define commitment with behaviours so that organizational members know what behaviours leaders expect to be committed. Accountability is an important part of the commitment. Organization leaders need to identify how the organization will hold individuals accountable so that the organization maintains commitment throughout the planned change efforts. The organization links the specific and desired results to the plan for change. Organization members are committed to a strategy of planned change to achieve the specific and desired results.

3.3. *Organization Purpose and Goals*

The third organizational variable focuses on the organization's functional purpose. Organization members clarify the functional purpose of the organization along with major goals. Organization members compare the specific desired results with the functional mission for congruence. Throughout the activities of planned change, organization members align their goals with the specific desired results while the functional mission serves to guide organization members in clarifying their roles.

3.4. *System Requirements and Boundaries*

The fourth organizational variable in the model is system requirements and boundaries. In developing planned change activities, organization members at all levels may need to be involved in various steps. Organization members need to know what leaders require to be productive.

The organizational leaders need to agree on the requirements of organization members and the limitations that exist in fulfilling the requirements before organization members participate in role clarification or negotiation. The leaders are determining the "rules of the game" or "the playing field" so that organization members can focus on the micro steps of how to go about achieving the requirements.

The system requirements and boundaries are the non-negotiable parts of role clarification and role negotiation. The requirements serve to assure goal alignment as the organization focuses on the desired results and the boundaries manage organizational resources available to support the efforts of organization members to achieve specific goals.

3.5. Roles

The fifth organizational variable is role clarification. Organization members clarify and negotiate roles within the requirements and boundaries set by leaders. This process removes uncertainty in roles, aligns organizational goals, and helps to build commitment to the planned change activities and the desired results.

Roles are a source of interpersonal conflict. Role clarification and negotiation can reduce the conflict in day-to-day operations.

3.6. Structure

The sixth organizational variable is structure. Organizational leaders can determine the most productive structure by examining the organization's functional purpose, the interdependency of roles, and the needs of organization members.

When examining organizational structure, leadership needs to consider changes in leader roles as well as the roles of organization members. Organizational leaders may examine rewards, incentives, and motivation as part of the structure.

3.7. Procedures

The seventh organizational variable identifies how members will go about achieving tasks. Even though procedures are in place for performing most tasks within an organization, one absent procedure can be a major source of task interference for the organization member. Absence of a procedure can have adverse effects on quality, downtime, or productivity.

3.8. Skills

The eighth organizational variable is where the organization identifies the skills organization members need to perform their roles within the structure. The organization identifies actual skills, desired skills, and develops a plan for closing any gaps that exist between actual and desired skills in organization members. By identifying skill gaps in this sequence of the planned change, there is some assurance that skills identified as needed will be reinforced by the structure. It also assures that skill related training is relevant to the particular role. In some situations, this step could involve selection criteria if organizations are recruiting new organization members for specific roles.

3.9. Relationships

The ninth organizational variable is relationships. The planned change activities that align the first eight organizational variables will resolve many of the problems previously considered to be relationship problems. The most common sources of conflict between organization members are roles and procedures.

Some relationship problems may exist such as problems between labor and management. These problems might require special procedures within the planned change activities to maintain harmonious working relationships.

3.10. Evaluation

The tenth organizational variable in the model is evaluation. It provides for the organization to evaluate its effectiveness and to re-evaluate organizational goals.

Organizational leaders evaluate the alignment of the organizational variables in the model. Leaders may decide to repeat some planned change activities to continuously improve while other activities are skipped because the organizational variable is still in alignment with other variables. Organizational leaders may also use managerial actions to maintain or improve performance. During evaluation, organizational leaders can determine the return on the investment from planned change activities.

4. Description of the Implementation Steps

4.1. Identify the Desired Results

The action steps on the circumference of the model, serve as a procedure for the change agent in implementing the planned change activities associated with the organizational variables. The implementation process starts with awareness and identification of the desired results. The organization desires to change or improve performance and may be experiencing an issue that is serving as a perceived or real barrier to managerial actions.

The organization requests assistance from a change agent that is either internal or external to the organization. The change agent is the person who will guide the process steps for developing and implementing the plan for change.

4.2. Clarify and Focus Results

The second step in implementing the model is to clarify and focus the results. The change agent helps the organization to define what the specific and desired results of the planned change will be.

The implementation step of clarifying and focusing the desired results for planned change involves listening to the organizational leaders' presenting problem. The change agent identifies what organizational leaders perceive as barriers and clarifies what they would like changed. This information is important in developing a structured interview for collecting data.

4.3. Collect Data

The third step in applying the model involves data collection. The consultant uses the organization's issues and desired results as the context for asking questions concerning each of the organizational variables. The consultant constructs a structured interview using the variables in the model, and interviews a cross-section of the organization or the part of the organization that is targeted for planned change.

4.4. Diagnose Data

The fourth implementation step is diagnosis. The consultant organizes the interview data for presentation to the organization. The data show which organizational variables are out of alignment with the desired results. The consultant develops a recommended plan for change from the information on each organizational variable.

4.5. Decide to Take Action

The fifth step is feedback and decision to act. In this step, the change agent presents the interview data and a recommended plan for action. The recommended plan for action is a process plan outlining the planned change activities needed to align the organizational variables. Organizational leaders determine the content of the activities, the timing of the activities, and the general strategy for approaching the activities.

Organizational leaders agree on the meaning of the data and agree to and/or modify the general plan for change.

4.6. Develop the Plan

After the organization makes the decision to pursue the general plan for change, the consultant and organizational leaders together develop a specific plan based upon the organizational variables, the external demands on the organization, and the organization's internal resources. Organizational leaders determine the pace of the planned change based upon the availability of resources for supporting the planned change activities. The organization may also identify immediate needs based upon external demands and with assistance from the consultant sequence these needs into the plan.

4.7. Implement the Plan

The organization implements the plan after developing the sequence of planned change activities. Organizational leaders and the consultant evaluate each step for the quality of results achieved before the next step is attempted. In sequencing steps, some activities at different levels within the organization can take place simultaneously. Throughout the implementation of the plan, developing people and improving relationships are a secondary focus of the planned change activities.

4.8. Assess the Results

The last step in applying the model is to assess the results of the planned change. The organization can continue to improve performance with managerial actions, continue planned change activities with a different part of the organization, or maintain the performance improvements through normal operations.

5. The Target of Planned Change

5.1. Alignment of the Variables and Desired Results

The center of the model is the desired results. The desired results are the focus of each of the activities within the organizational variables. The planned change activities align the organizational variables to achieve the desired results. All planned change activities are job relevant and contribute to the organization as a system to produce the desired results.

The involvement of organization members in the planned change activities that align the organizational variables can be satisfying to organization members. Organization members clarify their roles, receive the support needed to perform their roles, and experience a sense of achievement by obtaining the desired outcomes.

The desired results guide the reconstruction of boundaries and the boundaries align with the results. The new boundaries work together to produce the desired results. The problem in sustaining change is when an organizational leader does not commit to the reconstruction of a boundary. Organization members tend to revert to the old boundary or a hybrid combination of the old and new boundaries holding the organization at status quo or wasting organizational energy. Once boundaries are reconstructed for productive change, they have to be managed or organization members will revert to the old boundaries that existed prior to the change or to an undesired hybrid of the old and new boundaries. This is characteristic of systems.

For example, in one large manufacturing environment, production teams were implemented, which represented a change from traditional management. This facility had functioned in a traditional management system for generations. The expectations and boundaries for the operation of teams were clearly defined, reconstructed, and agreed to by leaders. The boundaries were managed and the production teams performed well meeting performance expectations. After 3 years of successful performance, there was a change with the top manager. The new manager preferred a traditional style of leadership and ignored the expectations and reconstructed boundaries guiding the operation of production teams. Production managers throughout the facility were instructed by the top manager to change back to a traditional style of leadership. After several months, production teams had evolved into large information sharing teams of more than 75 members each. This was a hybrid boundary combining information sharing of the old system with teams of the new system. The production teams that were engaged in self-management of team activities and problem solving no longer functioned on their own. They were once again dependent upon traditional management for supervision. The overall performance of the facility declined as well.

5.2. Most Change Fails

The literature, as reported by multiple authors, stated, up to 70% of change initiatives fail in achieving or sustaining the desired results (Higgs & Rowland, 2005; Maurer, 2010; Miller, 2002; Pelletiere, 2006; Warrick, 2009). This history of failed changes serves to illustrate the complexity of organizational change. In an organization as a social system, boundaries are maintained by social systems. As in any system, it is the interaction of people within the organization that create and maintain boundaries. In

introducing and managing change, the boundaries are often left untouched. A sort of stasis is apparent. People are brought together and even shown new ways of interacting, but if the boundaries are unchanged, they will foster the same behaviors that existed before the change was introduced. This may offer a partial explanation as to why so many changes fail to achieve the desired results.

When introducing change into an organization, large or small, it must be noted that any change creates additional change. What changes occur in the present, will no doubt cause some sort of problem in the future if not managed. It is imperative to assess what needs to change and when to initiate the change. Most change falls into the following types: technical, managerial, action, and planned change. It is important to note that each type of change has its own challenges and its own process.

6. A Systems Approach to Sustaining Change

Rogers (1995) identified a five-stage process model for innovation-decision. Rogers identified the prior condition that included past practices and needs and issues, the degree of innovation, and the norms of the current social system. The communication channels included knowledge, persuasion, decision, implementation, and finally confirmation. Based on the boundaries identified by Fenwick (1994), implementing and sustaining an innovation in an organization becomes a process of managing the boundaries of the organization as a system. The interdependent parts are brought together to identify and discuss the boundaries that are affected by the change. The boundaries are deconstructed and reconstructed to support the innovation while mediating conflicts among the parts. Changes to the boundaries are recorded in a document. The new boundaries have to be communicated to all organizational members and managed by leaders to prevent the tendency to regress to the old boundaries.

7. Application

A large manufacturing company competing in the global environment was managed traditionally. The company wanted to implement self-managed production teams. Doing this would allow first-line supervisors to be redeployed in troubleshooting and correcting production problems and reduce the number needed on the factory floor for supervising manufacturing. This created flexibility for the organization in the deployment of these roles. For example, the plants could function with more engineering support by reducing the cost of traditional management. In addition, it was desired to improve quality at all levels of production. The systems approach to change was used in multiple facilities, with similar issues, to implement self-managed production teams. Each facility was located in a different location and operated autonomously. The corporate leaders managed and coordinated interactions among facilities.

The change process started with qualitative interviews of key leaders at each facility to determine similarities and differences in how teams would operate (boundaries). The interviews targeted the key leaders' vision for teams as well as details of how teams would function. The results of the interviews identified the boundaries for individual leaders. Once similarities and differences in boundaries were identified, the key leaders were assembled as a large group. The groups averaged 50 leaders with the largest being 100. Key leaders included union and management leaders at the top, middle, and operating level of the organization. Collectively, the key leaders served as the critical mass of leadership for the organization. The interview data was presented for discussion and all leaders in each organization agreed on a vision and details for how teams would function. Doing this required the deconstruction of existing boundaries, reconstruction, and creation of new boundaries. The new boundaries were recorded in a memorandum to be used by all leaders for boundary management. The document was also used in training with employees along with training on competencies needed to be successful functioning in self-managed production teams. The role of leaders was to manage the new boundaries. Mediation was used as a conflict resolution process for boundary disputes and boundaries were reviewed periodically for their efficacy.

This systems approach to change resulted in the successful implementation of self-managed production teams as well as achieving the desired results. Teams are dynamic so there was an ongoing review and support of boundaries in order for the teams to sustain high performance. When a boundary created a problem, it was reviewed and modified as part of boundary management. The key to implementing and sustaining successful change is to deconstruct, reconstruct, and manage the key boundaries related to the innovation.

8. References

1. Ackoff, R. (1999). *Ackoff's best: His classic writings on management*. New York, NY: Wiley.
2. Bertalanffy, L. V. (1950). The theory of open systems in physics and biology. *Science*, III, 23-29. doi: 10.1126/science.111.2872.23
3. Bertalanffy, L. V. (1968). *General systems theory*. New York, NY: George Braziller.
4. Fenwick, R. (1994). *The development of a model for organizational change: The Results-Oriented Model for Planned Organizational Change and application of the model in a case study* (Doctoral dissertation). Retrieved from Proquest dissertation database.
5. Hernes, T. (2004). Studying composite boundaries: A framework of analysis. *Human Relations*, 57(1), 9-29. doi: 10.1177/0018726704042712
6. Higgs, M., & Rowland, D. (2005). All changes great and small: Exploring approaches to change and its leadership. *Journal of Change Management*, 5(2), 121-151. doi:10.1080/14697010500082902
7. Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). New York, NY: Wiley.
8. Maurer, R. (2010). Why so many changes fail—and what you can do about it. Retrieved from <http://www.amanet.org/training/articles/Why-So-Many-Changes-Fail-and-What-You-Can-Do-About-It.aspx>

9. Miller, D. (2002). Successful change leaders: What makes them? What do they do that is different? *Journal of Change Management*, 2(4), 359-368. doi: 6769079
10. Pelletiere, V. (2006). Organization self-assessment to determine the readiness and risk for a planned change. *Organization Development Journal*, 24(4), 38-43. doi: 24234169
11. Rogers, E. M. (1995). *Diffusion of innovation* (4th ed.). New York, NY: Free Press.
12. Warrick, D. D. (2009). Developing organizational change champions. *OD Practitioner*, 41(1), 14-19. doi: 36124778