

## **The Dynamic Modeling as organizational change process validation tool.**

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### **Abstract**

At the present time, organizations should be transformed and redesigned in order to increase the level of competitiveness and to be able to adapt themselves to the quick changes that regulate the ways of carrying out the business processes, which are the only constant in the markets. On the other side, the executives don't have tools that give an effective aid and support to make decisions related with the organizational change process, and it exists a high degree of uncertainty and risks that put in danger the success of the processes redesign implemented in the organization. A dynamic model of the change process validation is described as well as a tool of organizational learning, which allows the generation of dynamic and flexible scenarios, where the personnel involved with the change can observe the consequences of their decisions at the future, without risks for the company, selecting the alternative whose results are appropriately aligned with the organization's mission and with the goals proposed in the process of organizational change.

### **Introduction**

In the last years the level of competitiveness of most companies has changed dramatically. Many of them are unable to get adapted to the quick changes that are happening in the way of carrying out their strategies to make business. One consequence of this loss of competitiveness is that the managers are unprepared in order to face a strong and aggressive competition, that has a high integration of new technologies in their processes, as well as qualified personnel, with experience in their operation, that allows them to distinguish their products and lift barriers to their competitors.

The managers know that the transformation of their companies is an imperious necessity that they could not delay longer, and that they need to redesign their critical processes in order to compete in the new global markets. One of the problems that they face today, is that they do not have effective methodologies of qualifying organizational change that help them and give them effective support in making decisions related to the organizational transformation.

At the present time there are a lot of theories in order to carry out the change inside the organization, but most of them make up of a great number of sequential activities, which create confusion to the personnel, besides that they are difficult to achieve and to assure during their implementation; it is important to stand out that managers at this moment do not have tools that allow them to validate effectively the process of organizational change that produce a high degree of uncertainty and risk in the moment of making the recommendations for the desired change into the organization.

### **The Dynamics of Change**

It is proposed as a solution to this situation, use of dynamic systems in order to model the implementation of change in the companies through the time, as an useful tool for the identification of the critical factors of success, and align the processes redesigned with the strategy and mission of the business, looking for the client satisfaction and to increase the level of the organization competitiveness. For the above-mentioned situation, it was developed a robust methodology that uses the systems thinking in order to evaluate the organizational change impact generated by the processes redesign; enabling the personnel with tools that give support making strategic decisions, reducing the degree of uncertainty and the risks that put the attainment of the goals of an organizational change project in danger.

This methodology, let in turn the generation of dynamic scenarios of the process and to formulate strategies

in order to move organization from the current state toward desired state, analyzing the impact of change in other areas of the company and visualizing its capacity to absorb the recommendations of change, before being implemented in a real way.

#### **Case Study**

In order to check the methodology proposed for the organizational change validation, a case study in the agricultural implements parts plant of John Deere Industries located in Monterrey City was developed. The change process implemented by the processes reengineering in the Product Development department was modeled, where the results obtained were very similar to the past performance results, and they were used to validate the processes redesign accomplished previously by the organization, what lead to conclude that the dynamic modeling of systems in this environment is an effective tool in the process validation of organizational change and in the forecast of change behavior in future.

#### **Validation**

The systems dynamics modeling is a tool based on computer science technology, in order to give validation to the processes reengineering implementation, and it allows to increase the success feasibility in the organizational change. The model developed is used to reduce the uncertainty of selecting the procedures for the processes reengineering implementation; or the necessity of waiting for a reasonable period of time in order to observe the behaviors of the system's key variables, as consequence of the changes implemented in the organization, and to observe which of them are the prospective. The utilization of virtual models of the organization's critical processes allows to analyze behaviors and dynamics of the main variables of the system through the time. The observation of the behaviors allows to structure mechanisms for the generation of new changes and see how they influence the decisions taken in the whole system, what gives a systemic focus to the acquired learning. In this way the product of change could be observed and measured indeed. Besides, modeling is a proved and economic method of testing and validate the organization's change strategies, before being implemented, which reduces risks and the uncertainty, upon allowing to generate a great variety of changes inside the system, before selecting the most effective, one that offers better results, according to the strategic goals of the company. We believe that upon using the transformation of processes and the dynamics systems modeling, as an organizational change verification and pursuit methodology allows to achieve the objectives previously mentioned.

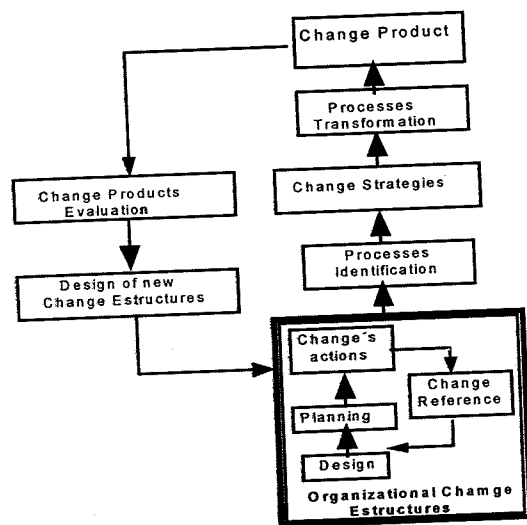
#### **Transformation Model**

In order to model the organizational change process, it is necessary first to carry out the model of the processes sequence's initial state, where it's aimed to represent the structure of the current system and reproduce the behaviors of variables related with change process, the most closed to reality. For the above-mentioned is necessary gather excellent information and carrying out a deep and detailed investigation of the organization, based on interviews with the personnel directly involved with the change desired, standing out the following activities:

- Identification of an organizational change situation, which requires to be implemented.
  - Know the processes customers, their necessities and analyze their main activities and the relationships existing between them.
  - Identify the process most related with the situation of change.
  - identify and determine the critical factors that impel an identified situation like organizational change.
- Besides, it is necessary to consult the files of the statistical data related with the results previously obtained and the performance measures used in the selected processes. Once the behaviors of the system's key variables in their current state have been able to be reproduced in the model, and have been validated with the historical data of the processes key variables; in this case the following variables were selected as important to be modeled.

But the stages generation has other uses, besides validating the process of organizational change, it allows us to model other strategies like: impact of new technologies implementation in the profits and the customer satisfaction degree, increase the employees motivation in order to increment the productivity and reduce the operation costs or reduce the delay in the perception of customer satisfaction degree; included strategies whose results are uncertain and making decisions implies a high risk for managers, how it could be: knowing the competitors answer to the launching of new products, that could reduce their participation in the market.

It is important stand out that the dynamic modeling gives an effective support to all the decisions related with the organizational change, besides the generation of dynamic and flexible scenarios is a tool to create strategies of long term change, where definitive solutions are required to solve the complex problems that face the organizations today.



Modeling the dynamics of Change process. [Scheel, 96]

The Product Development process was selected developing the model of the original situation before implementing the organizational change, using the *Ithink* software.

Once the model has been validated appropriately, it could be used to model several organizational change strategies, before implementing them in the company, generating significant savings in time and resources. The strategies that were modeled for the Product Development, were:

- Capacity to absorb a salary increment, by means of the productivity generated by having more motivated personal in order to perform their work.
  - Know the synergy and the benefits generated upon implementing the organizational change, accompanied by an education and training program.
  - Reduce the delay in the perception of customer satisfaction degree.
- All the strategies were validated with the real behaviors in the organization, which gives a great value to the dynamic modeling as validation tool in the implementation of organizational change in the manufacturing and services companies.

#### Advantages of Dynamic Modeling

Among the advantages that modeling of dynamics systems offers to the solution of organizational situations related with the improvement process in the companies, we found the following:

- Allows to **Validate** change process upon modeling it through the time, detecting negative behaviors that are occult because of the existent delays in the system.
- Allowing to design strategies to reduce the impact of the change process in the organization.
- The important of the validation of the change process, is that it's independent of the methodology used for the change implementation.
- It is a tool for complex problems solution using systemic focus, different from the traditional Cause-Effect secuential focus , that has proven being ineffective in the problems solution that face the organizations today.
- Enables the personnel involved with change process, with a tool of organizational learning, since they can observe the consequences of their decisions in the model, without risks for the company.

### **Conclusions**

1. Having a support and aid tool for making decisions, where the personnel learns by modeling the recommendations of organizational change by visualizing how they impact in the system, what allows to make an effective selection of strategies that generate positive results in the processes, to later on be implemented in the organization.
2. In order to increase the results of dynamic modeling in substantial way, it suggests to implement simultaneously to the organizational change, a program of continuous education and training for the personnel involved in change.
- 3 The organizations transformation is not an isolated event, it is a continuous process; and it's needed to have tools like the dynamics systems modelation, in order to be more effective in the implementation of organizational change, which becomes another variable that managers should learn to manage within their company.
4. Dynamic modelation of systems allows to modify the organizational change strategies, in order to use systems thinking and holistic focus in their problems solution, visualizing the whole environment that surrounds the company and the relationships that govern the way of carrying out their business processes.
5. Modeling change process to medium and long term, helps to carry out an effective identification of variables that in the future could destabilize the organization, their effects are not visible as a consequence of system delays, so it give us time to take measures that reduce their negative effects.
6. Having a tool for complex problems solution, using the systemic focus, could break the organizational paradigms that only lead to traditional proposals of Cause-Effect solution (break into fragments the problem), which have already demonstrated their little effectiveness in problems solution that the organizations face in the today's competitive markets.

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