

Résumé

L'économie est rentrée dans une période d'instabilité environnementale, et l'incertitude augmente dans les entreprises. Ils sont obligés de se transformer en permanence, de traiter des volumes d'informations augmentant et en parallèle garder le statut quo des opérations quotidiennes. Les processus de changements sont par nature complexes, fréquemment flous, incomplets et imprécis en communications. Il n'y a ni le temps d'agir décentement, et ni assez de temps d'analyser l'environnement afin d'arriver à des décisions bien fondées.

La planification initiale s'arrête et est redéfinie; les cas d'urgences en devenant prioritaires imposent leurs contraintes imprévues. Nous présentons l'analyse de ce type de situations sous l'aspect de prise de décision et de gestion de temps et suggérons un ensemble de règles heuristiques pour gérer pertinemment l'information, maintenir l'efficacité et un comportement proactif même dans les circonstances défavorables.

Mots clefs :

Management des changements, contraintes de temps, management d'information, prise de décisions, contraintes systémiques

Abstract

In the age of increasing environmental instability and uncertainty, organizations are forced to change continuously and frequently drastically. Change processes are complex, often fuzzy, incomplete and imprecisely expressed despite the constantly growing volume of information to treat. There is neither time to act foresightedly nor is there enough insight of the environment to arrive at well founded decisions. Prior planning has to be discontinued and redefined and emergencies too often take over with priority. We analyze this kind of typical situations under the aspect of decision making and time management and suggest a turnaround model. The model can be used by managers to efficiently and effectively understand the mechanisms of organizational change and avoid systematic inferences under unfavorable circumstances of organizational change process.

Key-words:

Change management, time constraints, information management, decision-making, and systematic constraints.

MANAGERIAL ACTIVITY AS A FUNCTION OF INFORMATION INTERFERENCES IN ORGANISATIONAL CHANGES

ACTIVITE MANAGERIALE EN FONCTION DES INTERFERENCES D'INFORMATION DANS LES CHANGEMENTS D'ORGANISATION

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Introduction

Managing information is vital for organizations, particularly, in the period of increasing environmental instability and uncertainty. Over the last few years, we have observed a growing interest towards information efficiency and proactive behaviour in information management. The rapid globalization has brought accelerating business exchanges on national and international levels, imposed a search for harmonizing and homogenizing world standards for products and services, pushed forward the innovative processes in information services, and questioned the development of uniform IT solutions. Organizations have been forced to change continuously (Brown and Eisenhardt, 1997).

The starting recession and severe economic crisis has harshly interrogated the value priorities of organizations, unequivocally entailed organizations' transformations and radical changes which again sharpened the issues of information efficiency.

Change processes are by nature complex, often fuzzy, incomplete and imprecisely expressed. In order to be successful they must have clearly formulated priorities, well-defined structure reflected through the stages of initiating changes, planning and realizing them, and finally stabilizing the work under the transformation (e.g. Cameroun, Green, 2004; McGuire et Hutchings, 2006).

Change management comprises revolutionary one-off projects (like reengineering) and evolutionary transformations (known as organizational development). We focus on the first type of changes which presents a more radical form of change, since it challenges all elements of processes or structures and reveals a need for an efficient information analysis.

In more than 75% of cases the transformation process suffers of considerable changes in scope, budget and severe time constraints (Valls et Weglarz, 2005). Within such situations in a short timeframe and under the pressure of strong interferences in activities, it becomes difficult for a manager to function properly (Axelrod, 1997). The more effectively a manager will cope with information coming from all horizons and with necessary change, the more likely he/she will gain benefits from changing opportunities. A systematic approach is needed to adapt successfully to dynamic situations both from the perspective of an organization and on the individual level.

Excessive complexity and frequent inconsistencies require a manager and a team to overcome the problems of alarming dysfunction of internal operations, catch up with irregularities in functioning, planning, scheduling, invoicing, budgeting, etc. (Beeson et Davis, 2000). Seeing ultimate goal of change processes in improving business performance and a better managing information in a whole system, yet this process frequently turns out to become chaotic in many aspects, and in particular in everyday decision-making.

How to find an equilibrium and restore the status quo of day-to-day operations and deal with the overwhelming amount of information to be processed at one time and out of one's depth? There is neither time to act foresightedly nor is there enough insight of the environment to arrive at well founded decisions (Hiatt et Creasey, 2003). Prior planning has to be discontinued and redefined and emergencies too often take over with priority.

The question we pose in our study is: "How to maintain managerial efficiency in the transformation process? How to manage information interferences? Is it possible to foresee and avoid a drastic turn into reactive behaviour instead of being proactive?"

1. Information challenges underneath of organizational change

Revolutionary changes within organizations frequently lead to chaotic transformations, to drastic changes in scope of operations, transfer of processes, and problems with everyday functioning (Muavyad, 2004). Evidently the growing information challenges emerge beneath the above mentioned processes. The two fundamental concepts for a managerial everyday activity: decision-making and time management; based on the growing information flow become questioned.

Change process touches context, content and form of a manager's everyday activity. The dynamic situation of transformation creates problems with functioning due to myriad of unexpected events. A manager observes them, has to analyse them, make a founded decision and act. However under severe time constraints he/she has neither time to reflect and anticipate possible consequences nor sufficient holistic insight of the environment to come up with well grounded decisions.

A value system is fundamental to management principles, and a value statement is worked out as an extension and basis to the classic requirements of a mission statement, in particular during a change process (see for example Sullivan, 2002). We focus on the first two levels, Time Management and Decision-Making, as an examination of the highest level, a value system, exceeds the scope of our study.

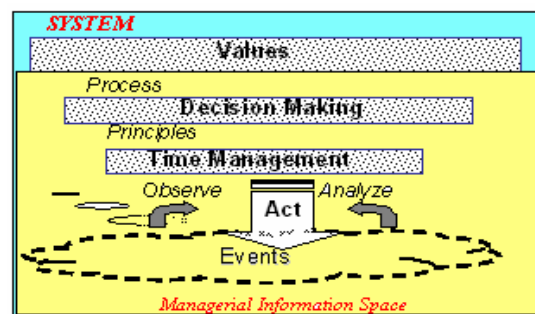


Figure 1 – Time management and decision-making on a scale of abstraction.

1.1. Gathering intelligence to perform transformation

According to Russo and Schoemaker (Russo et al. 2002), the decision making process is a loop construction divided into four stages: Framing, Gathering Intelligence, Coming to Conclusions and Learning from Experience (see Figure 2). In an ideal case, these stages must be relatively balanced in time consumption for a manager.



Figure 2. The stages of the decision process (adapted from Russo 2002)

The change management process causes disturbances on the first two stages Framing and Gathering Intelligence. These disturbances being in so far serious, as these two stages build the foundation of a decision. They “expand ones options, challenge ones assumptions and add knowledge and diversity to ones interpretation” (Russo et al. 2002). The consequences of strong disturbances during these stages are wrong or bad decisions (Murphy et Gorchels, 1996).

Within the first stage Framing, a manager verifies the issue and chooses which aspects are important or not. In the second stage of Gathering Intelligence, a decision maker seeks knowable facts, tries to estimate uncertainties and guess the “unknowables”. In situation of organizational change it often appears that small issues start escalating and demand more energy and time from everybody. Energy and time needed for other pressing tasks that get under “unknowable” finally lead manager to turmoil of the missing competences at the Coming to Conclusions stage.

1.2. Time Management Principles

The unbalanced decision-making process starts absorbing time because information is not classified correctly in the first two stages. D. Eisenhower (1890 – 1969) invented a classification tool which developed into a basic principle of Time Management (referred to in Seiwert, 1995). He organized tasks into a decision raster offering two dimensions: Importance and Urgency. Out of this raster the “one” rule of Time Management derived: “The important before the urgent!” The four ways on how to answer to a task dependant on its importance and urgency are illustrated in Figure 3.

This raster was originally intended for decisions about delegation. However, it also applies to general decision-making as well. The term “task” can be replaced by the term “information” Therefore it can be used as a principle

of classification in the first two stages of decision-making according to Russo and Schoemaker (2002).

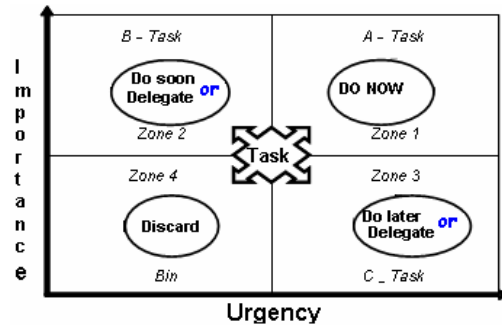


Figure 3 – Decision matrix of D. Eisenhower

The analysis of these four situations and a thorough verification right on the spot (Zone 1) could save everybody energy and time. The impact of the Learning from Experience stage in decision-making process brings to the understanding how to shape the decision process and how the application of principles can offer more visibility in the classification.

Eisenhower’s tool can also be used to explain why decision-making turns difficult with abrupt changes. Framing is distorted because communication is ambiguous. The ambiguity and the missing of information increased the uncertainty in the first two stages of the decision-making model. The uncertainty could have only been decreased with experience (Pich et al, 2002).

The above two concepts help to explicate why there appears a fast change in quality of change process: the environment that is falsely interpreted turns out to be more complex as originally thought. The classification of information becomes difficult and the majority of decisions under these unfavourable circumstances turns out to be unfortunate. Everything seemingly is turning important and urgent; so under the emerging time constraints behavior turns reactive.

2. Turn-around model of proactive and reactive behaviour in information management

Organisational change management process starts with developing a plan of activities needed to be undertaken: "planning the work (the change) and then working the plan." This summarizes how change management process should be. Yet the slogan above turns frequently into the situation of "planning the change and then changing the plan."

Three questions we pose in our study are: “What happens if reality starts ruling planning in change management and why it might happen? How to maintain information efficiency in this case? Is it possible to avoid a drastic turn of managerial behaviour from proactive to reactive

management?" A conceptual point of view on such situations brings forth a so-called Turn-Around Model suggested in (Bouzdine-Chameeva, 2006).

2.1. Turn-around function of interferences.

Activity is assumed to be a function of interferences (see Figure 4 for the assumption).

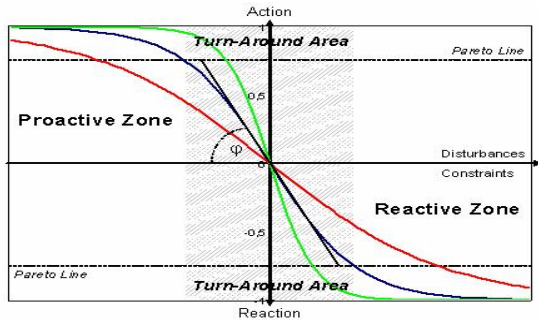


Figure 4. Turn-Around function for change management.

In the coordinate system the ordinate y represents activity. A positive value is action and the function falls into the proactive zone, a negative value is reaction which falls into the reactive zone. The abscise x represents the interference. The interference is composed of constraints and disturbances. The function that seems to best describe the changes from proactive to reactive behaviour is the (negative) tangents hyperbolicus (Bronstein, 1979):

$$Y_x = -\tanh(ax) = -\frac{(e^{ax} - e^{-ax})}{(e^{ax} + e^{-ax})}$$

The asymptotes ($y-1=0$ and $y+1=0$) can be interpreted as the ideal respectively the worst state of activity. The number 0 offers to be the turning point between Action and Reaction. It is surrounded by the so-called "Turn-Around Area". This zone determines the beginning of a status change. The width of this zone is defined by the Pareto Line: with more than 80% activity, the change process is still in control. Below this point the management loses control over the course of events, and the function develops a momentum of its own. In this approach, the constant a in the argument is called the "turning determinant". The angle of inclination φ equals π/4 for α=1 (blue line). The angle changes with a: the bigger a, the bigger φ, the steeper the negative ascent, the smaller the threshold area, the faster the turnaround from proactive to reactive (green line and vice versa red line). This determinant is supposed to reflect the risk at stake in a process: the higher the risk, the faster the turn around which is reflected in an increase of α.

There are numerous factors that build the interferences represented by the variable x and thus shape the course of the function (Clausen et al, 2001, Zhu et al, 2005). These factors are classified into constraints and disturbances which in turn can be systematic and random as well as internal and external. The analysis of the factors that build the basis of interferences brings forth the two fol-

lowing questions addressed in the study: "What are the variables that may change the outcome? What drivers give the tanh(x) function a momentum of its own?"

A general idea of parameters regardless of their characteristic suggests: competencies, tools, work discipline, intellectual capabilities, procedures and structures, cultural and geographical issues.

Being examined under the aspects of decision making organisational change processes accompanied in three French industrial companies have revealed the interdependence between systematic and random characteristics of interferences.

2.2. Classification of interferences

Similar in time scope the three studied change management process were quite different by their nature: waste management programme to put in place; knowledge base system to develop; a new training centre for clients to create. All three processes supposed to keep in parallel the old system while transforming it into a new one.

Firstly, we state that negative parameters that shape the outcome of change management process can be categorized according the distinction by object and by character.

The object interference can be broken down to constraints and disturbances of the process. These sub-objects again can be characterized due to a systematic or random origin. This reasoning is illustrated in Figure 5 below.

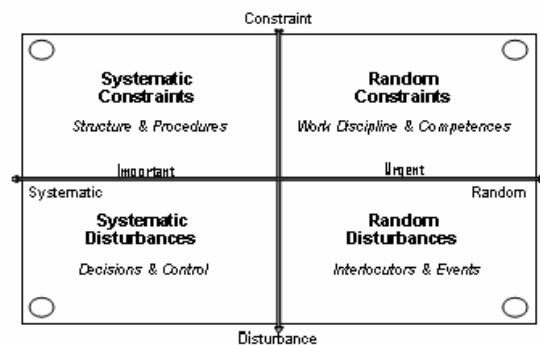


Figure 5- Classification of Interferences in Managerial Activity.

In terms of Time Management principles, systematic objects need to be classified as important, random objects as urgent. This statement finds its roots in system analysis (as for example in Woolbridges, 2002); it is well known that the abstraction of multi agent systems also transfers to "(artificial) social systems"(Chopard et al, 2000). This classification applies for any system set up of a change management process.

Systems are composed of multiple interacting elements. These elements have two important capabilities: autonomous actions based on own decisions and free interaction with other elements based on normal social abilities like cooperation, coordination and negotiation. Such capabilities derive from the system setup. The system architecture

empowers its elements to act. Therefore it builds the source for success and failure. If there is a misconception, than the elements have no choice but to act wrong. They are "set up for failure" because their mistakes are system-inherent. A typical example for system inherent failure is understaffing in form of numbers and/or competences.

Urgencies on the other hand are not system-inherent. They are brought to the system from the exterior, they have to be dealt with as they come. This dealing is done by the elements themselves as they act autonomous and interact freely. It is somewhat out of control how the elements react. However, if the system architecture is correct, the general direction of actions comes out as devised. An example for random objects can be customer inquiries.

To conclude on systematic and random constraints and disturbances, it is important to understand that systematic constraints are system-inherent and derive from structural and procedural dysfunctions while systematic constraints become obvious with a (repeated) failing of objectives and missing of deadlines. Systematic disturbances are also system-inherent and comprise decisions and control. Systematic disturbances occur as reiterative tasks, tasks that were thought to be completed but then reoccur because of a wrong decision and/or lack of control.

Random constraints are element-inherent and derive from the work discipline and competences of elements, i.e. the system conformity of their autonomous action (competences) and free interaction (work discipline). Random constraints provoke the prolonging of tasks. Random disturbances are also element-inherent and derive from interlocutors and events exterior to the system. They include the classical definition of disturbances. Random disturbances initiate a mix-up of tasks.

A typical example is email and phone communications during a normal working day. The primary objective for one day was to create a template for a commercial proposition. Normally this is a task which takes about 3 hours - if ones sole attention is dedicated to it. However, with clients calling for urgent demands, sales people needing help on a customer file, employees verifying a delegated task, partners needing details for the partnership contract and the superior needing a summary of information for a meeting, the original - and essentially important task - is constantly interrupted. Finally at the end of the day, none of the assignments are completed. If there are serial instead of parallel occurrences, at least half of them would have been completed.

2.3. Impact of information interferences

A categorization of parameters performed above helps to understand the functioning. The next step is to understand their influence. A pyramid at Figure 6 illustrates the force of each interference class built on the following observation: "The more systematic the interference - the more

negative its impact, the more random the interference - the less negative its impact". According to these statements, systematic constraints are the most fundamental interferences to a system.

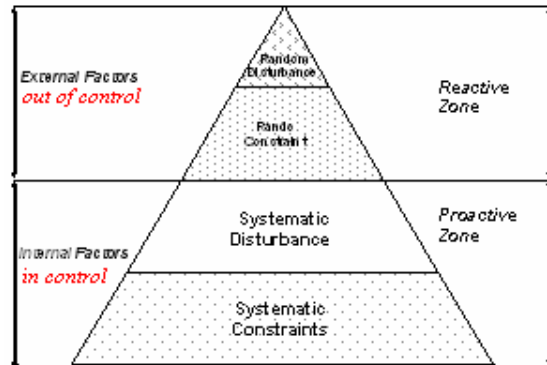


Figure 6- Classification of Information Interferences versus reactive and proactive zones of managerial activity.

Random disturbances on the other hand seem to be the easiest to handle (when excluding a "force majeure"). This point of view regarding the impact of a class allows merging the definitions of interferences and the classification of interferences. Systematic interferences are internal factors. They are made in the proactive period and they can be controlled with proper planning and system setup. Interferences of this kind derive from management (planning) mistakes. Random interferences are external factors. They occur during the implementation phase and they can not be controlled directly but depend on the ability of the system's elements to react. Interferences of this kind derive from implementation mistakes.

In change management the systematic constraint, and therefore biggest challenge, is to achieve the objectives in a turbulent environment. Literally every task is prolonged, delayed and reiterative and can only be completed with somehow working around and falling back into time consuming procedures. The second type of challenge and systematic disturbance is often coming from inadequate decisions because of incomplete knowledge of the environment: a change in sector, culture changes working parameters. The random constraint is due to the swift changes in management positions, for example. Random disturbances can be numerous, however they are part of everyday working life and therefore not the biggest challenge.

The model with a systematic and random approach suggests another inference: the stronger the system, the more flexible its response. If the system architecture allows its elements to act autonomously and interact freely while at the same time imperatively commanding the direction, there will never be descend into the Turn-Around Area. With this setup, only random disturbances can challenge the system and these interferences alone cannot produce emergencies (if a "force majeure" is excluded).

3. A rescue curve of information management efficiency

The change management turns from proactive to reactive when the Turn-Around Function gains a momentum of its own (or vice versa). This momentum is driven by the four categories of interferences with varying impact as we have seen above.

Systematic constraints over all force a process to tip. If one fundamental structure is missing, the change management process has a limited chance of succeeding. Planning and forecasts turn obsolete when there is a chain reaction of all interferences. A structural misconception such as a complicated organization chart may lead to systematic disturbances with decisions based on incomplete information and inefficient control mechanisms. The result can be some form of understaffing. This systematic disturbance with a lack of control again gives room for inefficient performance based on lacking work discipline and competences. So the complete system is unstable and literally every random disturbance turns into an emergency.

If the system has turned unstable, the process is in the reactive zone. Once in the reactive zone, only the elements of the system, i.e. the people involved, can save the process by compensating for structural deficiencies. It is here where rigid time management principles have to be applied. These principles act as a complementary system and replace the original system architecture. The reactive behaviour is compelling as it is a turn-around application of time management principles: Delete the urgent before the important. Once in the reactive zone, system inherent deficiencies cannot be handled because it would take up too much time and too many resources before they started working. A simple example: If a person has a heart attack the first thing to treat is the attack, the initiators of the attack like bad working or consumption habits, need to be treated later to avoid a second attack.

Where is the fine line when a process turns around? There is no fine line, it is an area, so-called the Turn-Around Area. In this area the change in process status starts gaining momentum. Depending on the turning determinant, which is an indicator for risk issues, the change in process status is slow with a low and gradual negative ascent or it is the opposite. The opposite is a function that stays longer in proactive control, i.e. is able to compensate for more interference, but if it tips, it tips very fast with a steep ascent. The beginning of this momentum is congruent with the Pareto-principle. With more than 80% proactive working, the change process is still under control.

What could be done if the turning momentum has been nonetheless gained and the Turn-Around Area has been crossed over? As we have shown above, the origin of this momentum has its roots in systematic constraints (e.g. delays, recurrences) and disturbances (e.g. cultural change, sector or market change). They present the big-

gest challenge in turbulent environment of change management process. Therefore the solution to rescue the process and regain control over this situation lies in the analysis of systematic interferences and active interaction.

A careful analysis of systematic information interferences reminds in some sense a situation when you need to make 3 triangles with 6 sticks: a feasible solution is found only if you change/add a new dimension. Finding the turning determinant, which possesses a positive ascent in another dimension, could compensate the loss and bring the process back onto another reactive management curve.

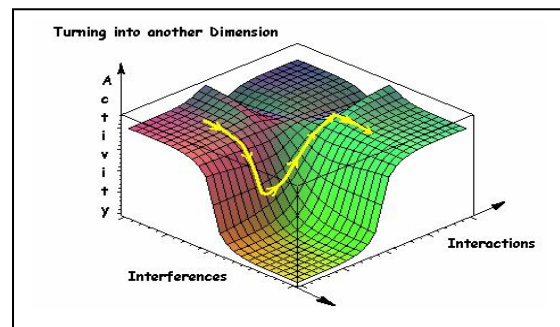


Figure 7- A rescue reactive management curve: turning into another dimension.

This behaviour in this case is well described by the following function $Z(x,y)$:

$$Z_{xy} = -\tanh(ax) - \tanh(\beta y) - \tanh(xy).$$

A new variable refers to the coordinate of Interaction which is added into the model. A successful rescuing turn into another dimension must be supported by active interactions based on efficient information management (Waistell, 2006).

An ascent can be quite steep, which will be interpreted as the ideal take-over of activities in organisational change process. The function of interferences in this new dimension gets into the monotonously increasing phase within the new Pareto line of proactive management behaviour.

If a manager gets into the Turn-Around zone, possible proactive behaviour curves (based on contingency plans, meaningful communication, and social interaction) on which a manager could get choosing a new dimension are to be analysed. As explicated in Carr and Hancock (2006), space and time in organisational change management are interrelated, and social constructions are open to "reconstruction". This is what we describe in Figure 6 to illustrate how to evade a reactive management curve bending a new dimension. The emphasis in this difficult situation will be on the axe of Interaction important for this breakthrough. The more effectively a manager will cope with change, the more likely he/she will even gain benefits from changing opportunities and the step forward made into another dimension.

4. Conclusion

Organisational changes frequently bring turbulence into the functioning and reveal the interdependence between processes. The true challenge for a manager lies in the successful merging of the systematic and random characteristics of information interferences.

The suggested model with a systematic and random approach suggests another inference: The stronger the system, the more flexible its response. If the system architecture allows its elements to act autonomously and interact freely while at the same time imperatively commanding the direction, there will never be descend into the Turn-Around Area. With this setup, only random disturbances can challenge the system and these interferences alone cannot produce emergencies (if force major is excluded).

The interrelation of the four interference classes also leads to a simple conclusion: Trust does not exclude control. Control mechanisms may take time, nevertheless in the long run they save time. This also needs to be seen from the other side: Control does not communicate mistrust. It is rather a tool to assure that once a task has been completed, it is completed.

Another point that is revealed by the model is the ease and obviousness of communication in a systematic architecture. Definitions that are concise and procedures that are logical allow unambiguous decisions. Without vagueness in the environment, every request, every attempt to "match priorities" will be answered with clarity and authority. Tasks are easy to classify and delegate.

Assuming that everyday activities of managers under the dynamic constraints of transformation processes are well-described as a function of interferences, we suggest a new conceptual model for decision-making in a change management process, which is consistent with "making sense" thesis (Cameron et Green, 2004). This model provides a holistic view on business transformation process and addresses the questions we have posed in our study: "What happens if reality starts ruling planning in change management, why it might happen? How to maintain manager's efficiency in this case? Is it possible to avoid a drastic turn from proactive to reactive management?"

The developed Turn-Around Model draws manager's attention to the turning zone existing in change management process. We define this area putting forward the Pareto rule and explain when and why proactive behaviour of a manager might turn into reactive behaviour.

The model adapts the philosophy of systematic and random characteristics of interferences, assists in classifying these interferences and reveals their interdependence in a change management process. For managers working under time pressure in complex dynamic environment of changes, the suggested Turn-Around Model can help to understand the clear mechanisms of system.

After the analysis of the three accompanied change management processes within French industrial companies it has been confirmed that when valid change program or model is used before starting a process, system inherent misconceptions can be taken care of before they even start to produce systematic constraints.

The suggested model does not pretend to explain and treat any situation in change management process. Systems are very complex and chances are that there will never be a model which allows any problem of change management related to imperfect planning or implementation. For managers working within complex environment of changes, the Turn Around Model can be used to efficiently and effectively understand the mechanisms of system and avoid systematic interferences of the information flow to succeed in organisational change process.

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