

Towards a Multi- paradigmatic Analysis of Organisational Change Processes: a Case Study Approach.

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Abstract

This paper presents an in-depth longitudinal analysis of an organisational change process at Technico, a large European Company. The central question is the following: is there a "dominant" paradigmatic approach enabling to understand change processes or is there a need for adopting a multi-paradigmatic view to improve our understanding? The intent was to refrain from adopting an *a priori* conceptual framework right from the beginning. We explored literature on three organisational core processes: decision-making, strategy elaboration and innovation. This enabled to identify five *generic processual models* we labelled: "linear", "political", "pattern", "interpretative" and "chaotic". These models were validated and used to interpret our case study.

Our findings show that change is a dynamic non-linear process rather than a linear one. Our meta-model suggests maintaining a "balance" in a process that is analytic and negotiated, logical and intuitive, coherent and critical. It can be analysed into three periods. During the initial stage, the process is strongly formalised. During the activating stage, the process becomes more and more characterised by adaptability, flexibility and it is evolving. The stage of consolidation shows a fuzzy and chaotic process revealing drifts that can be viewed as opportunities to be activated. The content of change is continuously re-invented by actors during the process and calls for support of a powerful political coalition. It calls managers to take account of the political context surrounding change, paying special attention to the activating stage, when change infiltrates through the field and exacerbates potential resistances.

1. INTRODUCTION.

"A way of seeing is a way of not seeing" (Poggi, 1965)

The flourishing literature on organisational change does not lead to a "theory of change" that is unanimously accepted (Van de Ven & Poole, 1995; Barnett & Carroll, 1995). Theories are fragmented and enable to shed lights on a given aspect of the phenomenon. Even if there is an increasing concern to better understand organisational change processes, the great majority of works deal with the content of change (Van de Ven & Huber, 1990). This research aims at analysing the process of organisational change generated by the "Work Force Management" (WFM) project at TECHNICO¹, a large European company. WFM project was designed to implement a new integrated management system involving more than three thousands persons.

To refrain from adopting a "monolithic" approach or an *a priori* conceptual framework right from the beginning, a decision was made to briefly explore literature on three organisational core processes : decision-making, strategy elaboration and innovation (Langley 1997). This review enabled to identify similarities and communalities in the literature and to identify five "generic processual models" we labelled: "linear", "political", "pattern", "interpretative" and "chaotic". These models were validated and used to organise the literature review on change processes and to interpret our case study.

2. EXPLORING A SET OF ORGANISATIONAL PROCESSES.

Organisational processes take place in almost every organisational activity. Due to their characteristics (complexity, number and variety of variables and actors involved), decision-making, strategy elaboration and innovation provide rich opportunities to identify "processual models" to study organisational change. Our objective is not here to perform an exhaustive literature review, but to identify "mainstream" research and central concepts and dimensions enabling to identify emerging "generic models" to explore change processes at Technico. We suggest to present central dimensions and concepts from the field of decision-making, strategy elaboration and innovation.²

¹ Technico is a fictional name in order to maintain the anonymity of the company.

2.1 Decision-making

Research on decision-making processes in organisational contexts led to a great number of works based on a variety of ways of looking at both organisations and the nature of these processes. Most typologies are drawn from Allison (1971) who identified, in the study of the Cuba crisis, three decision-making models: rational, organisational and political bureaucracy. Seminal works on bounded rationality (Simon, 1957), organisational behaviour (Cyert&March, 1963), "garbage can" (Cohen, March, Olsen, 1972) and more recently on the "irrational" model (Brunsson, 1982, 1985) provide the foundations for the development of a set of models (sometimes composite) that stress different but overlapping dimensions such as "logical incrementalism" (Quinn 1978, 1980), "political bargaining in the search of compromise"(Lindblom, 1959; Pettigrew, 1985); "political coalitions" (March 1991). The political and organisational dimensions are often combined to form "composite models" (Eisenhard&Zbaracki, 1992)

- "Rational": *Decision-making as sequential process made of clearly identified stages* (Allison, 1971). Each stage is clearly identified and **the process is sequential and "linear"** : Formulating the problem, identifying the set of possible solutions or actions, assessing and evaluating each action (by the means of criteria drawn from objectives or preferences), choice of the "optimal" solution. This model has been largely debated, criticised and enriched. By bounded (or procedural) rationality (Simon 1957) due to cognitive limits leads decision makers to chose a "satisfactory" rather than an "optimal" solution. The linearity of this model has been more than questioned. (Mintzberg *et al.*, 1976; Hickson *et al.*, 1986). Decision-making processes are characterised by complexity, uncertainty and a great variety in actors' preferences. This leads to the political model.
- "Political": *decision-making as a process of "negotiated compromises"*. In that model, the organisation is made of **political coalitions** (March 1991) of persons having their own objectives, divergent and often-conflicting interests, and controlling different resources. The objectives of the organisation are not clearly defined *a priori* and are discussed and re-defined according to their interpretation by actors (Quinn 1978,1980). Decision-making is a process of negotiation and political bargaining in search of compromises (Lindblom; 1959, Pettigrew 1985). This process evolves depending on the relative power of individuals or coalitions. Decisions are a set of processes of **conflicting adjustments**

² These dimensions and concepts are typed in bold.

among divergent logics of action, because of actors' bounded rationality. This "political arena" is constrained or regulated by the organisational context (March 1991).

- "Organisational or behavioural": *decision-making as a process of splitting by routine units*. Following Simon, the behavioural theory (Cyert&March, 1963) shows that besides political games and coalitions, decision-making process is rooted in organisational routines that guide information search and processing and the perceptions of possible solutions and actions.
- "Irrational": *decision-making as a process led by actions*. According to this model decision-makers are more concerned by action than decision-making that is a cognitive phenomenon (rational model). Actions do not follow the stages of the "rational" model (Brunsson 1982, 1985). Actions are driven by commitment, public adhesion and motivation. The link between the **rationality of action** and the decisional rationality is established through the organisational ideology that guide actors' perceptions in the choice of actions sustaining their involvement and motivation. To a certain extent this approach is close to the description of organisation as generating thoughtless actions, based on "automatic programmes" prescribing behaviours. (Starbuck, 1983). Actors' perceptions and **interpretations** of the organisational reality are in the heart of this model.
- "Garbage can": *decision-making as a process of "casual meetings"*. This model (Cohen, March, Olsen, 1972) describes the decision-making processes in "**organised anarchies**". Decisional action arises from the "**casual meetings**", in some circumstances, of choices, problems, solutions and decision-makers. Decision-making is a "random" process made of problems and solutions and decision-makers looking for decisions to be made.

2.2 Strategy' elaboration

Literature on strategy elaboration has for a long time privileged the model of "strategic planning" grounded on an analytical methodology. More recently, complementary or different models have been developed and labelled "incremental-emergent", "interpretative" and "complex". These models present similarities with those identified in the field of decision-making.

- "Strategic planning" : *Strategy elaboration as a deliberate and analytical process made of clearly identified "stages"*. The **strategic planning** school (Learned *et alii*, 1965, Ansoff, 1965, Andrews 1971) views strategy as intentional and **deliberate** process and presents a **rational** model based on a **sequential linear process** (Chaffee 1985) of

analysis consisting in two main stages (elaboration and implementation). Strategy' elaboration is made of sequences: external analysis-internal analysis- setting objectives- choice of activities and strategic options.

- “Incremental-emergent” : *strategy elaboration as a step-by-step negotiated and emerging process*. The realised strategy is the result of the interplay of deliberate and emergent components (Mintzberg&Waters 1985, Mintzberg, 1987). Strategy partly emerges from circumstances, internal and external events and multiple organisational processes and past experiences by managers (Mintzberg 1987) **Strategy formation develops incrementally, emerging as a "coherent" flow of decisions**. Strategy formation builds its content through its process and on the basis of past strategic actions, in a given organisational and environmental context. Several authors have stressed the importance of political games, negotiations and coalitions in the strategy elaboration process (formulation and implementation). (Lindblom, 1959, Cyert et March, 1963; Mintzberg *et al*, 1976; Johnson, 1988; Pettigrew, 1985, 1987). In the same vein, the "logic-incremental" model (Quinn 1978,1980) has been applied to explain the strategy elaboration process.
- “Interpretative” : *strategy elaboration as a "shared frame of reference" constructive process*. This model is grounded on a conception of **reality as a social construct** (Berger, Luckmann, 1966). Reality is not objective but subjective and progressively constructed through social interactions by individuals adjusting progressively their ideas and perceptions. Several authors have adopted this model to address the issue of strategy formation. (Chaffee, 1985; Johnson 1990; Gioia&Chittipedi, 1991; Isabella, 1990). The interpretative model (Chaffee 1985) presents **strategy as a set of metaphors or frame of references enabling organisational members to understand the organisational realities and to guide their attitudes**. To a certain extent, Pettigrew (1977) has also contributed to this model, putting emphasis on symbols and sense making at the very centre of the strategy process. Several authors have stressed the leader's role in building a shared interpretation of the reality. Leaders are able to manage symbols and to influence sense making. (Pfeffer, 1981, Daft&Weick, 1984, Gioia&Chittipeddi,1991).
- “Complex” : *strategy elaboration as a "trial-error" and "groping" process*. Recent research on the complexity of organisational phenomena (Genelot, 1992, Morin, 1990a, 1990b, Le Moigne, 1990) put emphasis on the importance of strategy due to the complexity and uncertainty of managerial stances. **Chaos theory** (Thiétart&Forgues, 1993) shows that the organisation moves in an unpredictable environment. Managers

cannot assess all the variables and predict their effects. Nevertheless, in certain contexts, the experience accumulated by managers enable them to identify some recurrent structures in complexity and uncertainty and to identify gaps. Strategy enables to elaborate scenario for action and to modify them in the course of actions. (Morin, 1990b). This model of strategy formulation has been ranged between deliberate and emergent strategy (Avenier, 1997). This strategy is grounded on the "**groping**" **implementation** of deliberate actions in emerging situations. The deliberate dimension places in a perspective of procedural rationality, based on past experience, the **trial-error mechanisms** as well as the evolution of decision' criteria in the strategy formation process.

2.3 Innovation.

Literature review on decision-making and strategy elaboration enables us to identify similar evolution in the underlying paradigms. This section explores research streams in pour third selected domain: innovation processes. Early studies on innovation processes (Zaltman et alii, 1973) presents a model based on clearly identified "stages". Later, authors have developed more sophisticated and less linear stage models (Rogers, Complementary and different models have been progressively developed; -the "translation-socio technological networks" model (Callon, 1986) that put emphasis on coalitions and negotiations - the model of "organisational routines" (Nelson, Winter 1982) that insists on the role of routines in innovation processes, -the "adaptation" model (Barley, 1986; Leonard Barton, 1988a,b; Ramirez&Bartunek, 1989; Orlikowski, 1992; King&Anderson,1995; Rogers, 1995) that stresses the role played by social interactions and interpretations ;- the "disorder" (Alter 1990) that considers innovation as a chaotic process.

- "Stages" : *innovation as sequential process made of clearly identified stages*. In this traditional model, innovation processes are made of sequences of stages that are clearly identified (Zaltman *et alii*, 1973; Rogers, 1983, 1995). A distinction has been made between two stages: the start (initial steps) and the implementation (Zaltman *et alii* 1973). Each main stage covers sub-sequences:- shared consciousness of innovation and its advantages,-building positive attitudes and -the decision made by users to adopt the innovation on the one hand and - test and experimentation of the innovation- adoption through routines. More recently, researches on innovation as a stage model have developed. Pre-defined events and stages do not enable retroactive loops or limit the possibilities to perform activities in parallel (Schroeder, 1989; Van de Ven& Poole, 1990). Moreover, certain problems arise when stages are overlapping or when the order of events

do not correspond to the model that has been *a priori* defined. A more general stage process model has been developed (Schroeder, 1989). This model is made of stages but these stages do not necessarily follow linear sequences but are made of a flow of activities performed in parallel and that can diverge or converge during the process. Other authors have stressed that the stage and linear model can be applied in the case of simple innovations but not in complex and radical innovations (Pelz, 1983). This model has also been criticised for its simplicity and because it does not take into account the social and political phenomena that take place in organisational contexts (Schwenk, 1985)

- “Social Translation” : *innovation as networks creating processes*. This model, founded on sociology is articulated on two central concepts: **translation and socio-technical networks** (Callon & Latour 1991). "Socio-technical" networks are at the very centre of innovation processes. They are articulated around three axes: economical (that elaborates codified knowledge)- technical (that produces artefacts)- market (that represents users' demands). Networks are "meta organisations" gathering human beings and "non human-beings", connected and establishing relations (Amblard *et alii*, 1996). These relations, through networks, necessitate the establishment of a process of translation. Translation is defined as a symbolic relation transforming terms of a particular problematic in the language of another particular problematic. The concept of translation enables to integrate psychological, political and cultural in the understanding of innovation processes. Translation consists in producing terms of problems that fit the interests of actors. The translation process covers several (and sometimes overlapping) steps: - building the problematic - sharing meanings- actors' involvement-and the **mobilisation of allies. Spokesmen who represent each group of actors involved in the process lead negotiations**. This model insists on the fundamental importance of social interactions in innovation processes
- “Organisational routines” : *innovation as processes of recombining organisational routines*. A central contribution of the evolutionary theory in the organisational context (Nelson, Winter 1982) lies in the concepts of organisational routines and organisational memory and their definitions. Organisational routines are individual "skills". Three categories of routines can be identified: -operational (automatically applied), - generic (enabling the improvement of processes)- search routines (enabling innovation). Most innovations consist in **recombining existing routines** (p.130). This approach of innovation is inspired by Schumpeter (1935) who considered innovation as a process

consisting in a new combination of resources. In this perspective, organisation is, due to its routines, the driving force of innovation processes.

- “Adaptation” : *innovations as social processes of mutual adaptation and "re-invention"*. Founding their work on the "interpretative" stream (Daft&Weick, 1984), several authors have developed a stream of research on innovations as social processes (Barley, 1986 ; Leonard Barton, 1988; Ramirez&Bartunek, 1989; Orlikowski, 1992; King *et al.*,1995; Rogers, 1995). Interactions between individuals and groups are central in the way innovations develop and are implemented. The perceptions of the same innovation can differ among groups (King *et al.*, 1995). Organisational and managerial innovations projects also induce and create conflicts between groups (Ramirez&Bartunek, 1989). Works on technological innovations have also stressed the social dimension in the innovation processes. During the implementation stage, actors and users modify the innovation through a process of "re-invention" (Rogers, 1995). As a social process innovation is created and modified by human actions and interactions takes place between actors and the innovation (Orlinowski, 1992, Barley, 1986). The same innovation corresponds to different forms of organisations (Barley, 1986). According to Leonard-Barton (1988a), for an innovation to be a success, there is a need for a continuous interaction and exchange between people in charge of the design and development of the innovation project and the potential users, who are considered as co-developers. Innovation is not a linear process planned by active developers for passive users but a continuous process of interaction and **mutual adaptation** between the innovation and the users' environments. (Leonard-Barton, 1988b)
- “Disorder”: *innovations as processes of disordered construction*. This model , developed by Alter (1990) states that it is difficult to predict the outcomes of an innovation as well as the innovation process because the modalities of actions are revealed during the process itself. Innovation processes generate new rules emerging from the reactions of individuals and groups and not from *ex-ante* analysis of needs. Innovations are partly made of trial and errors and "**groping**" processes because the incomplete information do not enable the organisation to make final and rational choices. Organisational actors are unpredictable and inconstant. They can modify organisational constraints during the innovation process. As a consequence, innovation processes are **chaotic and characterised by disorder**.

Table 1³ presents a synthesis of the models drawn from this literature review on organisational processes in the field of decision-making, strategy' elaboration and innovation. Five generic processual models can be identified. These processes are labelled: "linear", "political", procedural, interpretative and chaotic⁴. This typology is, by nature, debatable and incomplete. The advantage of classification lies in the possibility to "validate" the existence of these processual models in several managerial research fields. The authors we selected are cited as examples and illustrations of the generic models. It is self-evident that their thought goes largely beyond these models.

MAIN FIELDS PROCESS MODELS	DECISION-MAKING	STRATEGY	INNOVATION
"LINEAR" Organisation=black box	Rational <i>Analytic, sequential and linear process</i> Allison (1971)	Planning <i>Planning process through clearly identified stages</i> Ansoff,(1965) ; Chaffee, (1985) ; Andrews, (1971)	Stages <i>Linear process by stages</i> Zaltman et al., (1973) ; Program MIRP ; Van de Ven, Poole, (1990)
POLITICAL Organisation=political arena	Political <i>Process by negotiated compromises</i> Allison (1971) ; March, (1988) ; Lindblom, (1959) ; Simon (1957)	Incremental-emergent <i>Step-by step negotiated process</i> Mintzberg (1988), Quinn, (1978, 1982), Pettigrew (1985), Johnson (1988)	Translation <i>Network creating processes</i> Callon&Latour (1991) ;
PATTERN Organisation = Structure de routines	Organisational <i>Process in decomposed routines/units</i> Allison (1971) ; Cyert et March (1963)	Incremental-emergent <i>Context -dependent emerging process</i> Pettigrew (1985); Mintzberg (1988)	Routines <i>Re-combination of organisational routines</i> Schumpeter (1935); Nelson et Winter (1982)
INTERPETATIVE organisation=social construct	Irrational <i>Decisional process through actions</i> Brunsson, (1982, 1985) Starbuck (1983)	Interpretative <i>"Frame of references" constructing process</i> Gioia&Chittipeddi, (1991) ; Isabella, (1990) Daft et Weick, 1984	Adaptative <i>Process of adaptation and re-invention</i> Leonard Barton (1988) Barley, (1986) ; King et al, (1991)
CHAOTIC Organisation = Organising Anarchy	Garbage can <i>Process of casual meetings</i> Cohen, March, Olsen, (1972)	Complexity <i>Hazardous and groping process</i> Avenier (1997) Genelot (1992), Morin (1990) Chaos:Thiéart&Forgues (1995)	Disorder <i>Disordered construction process</i> Alter (1990)

³ This table is not exhaustive but illustrative of main streams emerging from a rich and fragmented literature.

⁴ The term "model" must be understood as a simplification of the reality

At the end of this exploration, the central question remains: do these processes represent competitive or complementary explanations of organisational phenomena ? If these theoretical propositions are competing it is important to think about different organisational contexts. If they are complementary, the central issue and task are to build a "hybrid-model" or a "meta-model" that could be composite. This model could form theoretical foundations for the study of organisational change processes.

3. BRINGING CHANGE PROCESSES TO LIGHT: TOWARDS AN HYBRID AND MULTI-PARADIGMATIC MODEL.

This section aims to articulate and organise our literature review on change process around the five generic processual models that emerged from other fields.

3.1 Change as a linear process

Several authors insist on the necessity and the actors' capabilities to deliberately act on organisation in order to change it (Child, 1972). One of the main research streams is based on this planned change model. Planned change represents all attempts made by **social actors** to trigger on a rational way a **social system**. This implies explicit reasoning to identify ends or goals to support the change efforts to be made and to articulate **means** and **ends**. (Tessier&Tellier, 1973). According to the "planned change" school, change is not a natural characteristic of organised systems but the outcome of voluntary and deliberated actions by those in charge of driving them. The notion of planned change has rapidly been assimilated to the research stream on Organisational Development.

A great number of authors in OD have a practical and managerial background and are primarily concerned by managerial methods and techniques (surveys, team-building, etc.) to support and perform change in large organisations Bennis (1969, p.2) presents OD as "*a response to change, a complex strategy intended to change beliefs, attitudes, values and structures of organizations*". Other authors insist on the need to pursue a long lasting effort to improve the problem-solving processes and to renew organisations. (French&Bell, 1973:14-15). In the same vein, OD has been presented as a planned action, led by top management for the entire organisation to improve the effectiveness and its overall performance. Change is performed thanks to programmed interventions in organisational processes. These

interventions are founded on behavioural sciences (Beckhard, 1975). According to several authors (Bennis,1969; Beckhard,1975; Beer,1976; French&Bell;1973) the central issues and tasks in every change process are planning and to systematically and obligatory follow each sequential stage. This sequential path approach of change processes is grounded on research led by Kurt Lewin (1947a) on group dynamics. Lewin identifies three main dimensions and stages in change processes:- unfreezing the present organisational equilibrium , - moving to a new position and -refreezing into a new equilibrium position.

*« A change towards a higher level of group performance is frequently short lived; after a 'shot in the arm', group life soon returns to the previous level. This indicates that it does not suffice to define the objective of the planned change in group' performance as the reaching of a different level. Permanency at the new level, or permanency for a desired period, should be included in the objective. A successful change includes three aspects: **unfreezing** (if necessary) the present level ..., **moving** to the new level, and **refreezing** group life on the new level. Since any level is determined by a force field, permanency implies that the new force field is made relatively secure against change.»* (Lewin, 1947a p.228-229)

The unfreezing stage consists in a process aiming to increase individuals' awareness of the need to change. The central task is to convince individuals of the change' advantages creating a sort of dissatisfaction about the present situation. The second stage of the move is a transitional period from past equilibrium to a new desirable equilibrium. The equilibrium state is justified by the presence of a "balanced field of forces" resulting from tensions between forces in favour of change and forces against change (Lewin 1951). The trigger of organisational move necessitates manoeuvring these forces towards a new equilibrium. The key issues during this stage are to clearly set and define the objectives of change, to maintain strong communication' efforts and to structure the path from the past to the new situation. During the refreezing stage, the persons in charge of driving change must make efforts to strengthen the new situation and to stabilise the new equilibrium. Lewin (1947,1951) stresses that changes that are supported by groups have more chance to succeed because the major resistances to change arise from norms that are dictated by groups. These works reinforce the OD stream that is based on a change strategy that is participative. The central idea is that individuals are oriented towards improvements and that OD managerial actions and methods enable to reinforce this goodwill and to lead to successful change. Nevertheless the results of reviews on research led on OD' methods and interventions are contradictory and mitigated (Porras&Berg, 1978; Golembiewski *et alii*; 1982; Porras&Robertson, 1992). These mitigated results led to numerous criticisms (Pettigrew, 1985 pp3-25). Even if the theories of OD plaids in favour of a systemic perspective on change, it seems superficial. The effectiveness of

voluntary action is often based on an underlying hypothesis of a linear and foreseeable sequence of actions-reactions on all the organisational sub-systems. Even if OD takes into account the relations between sub-systems, it shares a view that is close to the behavioural logic of stimulus-response. OD postulates an organisation that is coherent and rather monolithic. This has been strongly challenged by Crozier&Friedberg (1977 : 379).

Works of Kurt Lewin have also been criticised, sometimes vigorously, in recent literature on change.

« Lewin's model was a simple one, with organizational change involving three stages; unfreezing, changing and refreezing ... This quaintly linear and static conception- the organization as an ice cube – is so wildly inappropriate that it is difficult to see why it has not only survived but prospered except for one thing, it offers managers a very straightforward way of planning their actions, by simplifying an extraordinarily complex process into a child's formula.» (Kanter et alii, 1992 p.10)

Kanter *et alii* (1992) rejected the "planned change" model and developed a model where the change process is emergent, made of overlapping and inter-penetrating stages. According to these authors, change has not to be "frozen", but it must be conceived as a continuous process. Change is not only a move from a present situation to a future one but rather as "*« a complex analytical, political, and cultural process of challenging and changing the core beliefs, structure and strategy of the firm »* (Pettigrew, 1987 : 650).

3.2 Change as a political process.

Contrary to the previous model, that is mechanistic, the political model lies on a vision of organisation as being heterogeneous. Numerous authors (Lindblom,1959, Etzioni, 1961, Crozier, 1963) have presented the organisation as a set of players having their own objectives and who control multiple resources (authority, time, money, information,...). In this perspective, change can emerge or be stopped during the course of a tempestuous process matching divergent interests. According to Pfeffer (1981), the objectives and the results of change programmes are more influenced by struggles of power than by a process leading to a consensus emerging from a rational decision-process. He stresses, as several authors, the political nature of change processes (Pettigrew&Whipp, 1993). Change processes are characterised by political games based on power, -the ability actors have to use their resources-to influence situations and decisions, to build coalitions, etc. This model is close to the political model described by Allison (1971). Pettigrew (1985) insists on the importance of

the legitimacy of those who support the process and on the context that is crucial to legitimate change. The change process is triggered when a change in the environment leads to a decrease in the organisation's performances. Change process is similar to a process of justification of the project that develops around the search of coalitions and supports to perform the project. The persons who lead the change are in charge of rally supporters and to avoid opponents. This is performed through a symbolic management of the process: using symbols, myths and language that will justify some positions and not others (Quinn, 1980; Pettigrew, 1985).

3.3 Change as an interpretative process.

As mentioned above, the interpretative stream rapidly develops in organisation theory. The organisation is presented as "« *a socially constructed system of shared meanings* » (Burrell & Morgan, 1979). Change processes are interpretative processes that are constructed through social interactions led by individuals. One of the main challenges in managing major organisational changes is to enable the newly created representations to be collectively shared by organisation's members. Because of the diversity of perspectives, reaching a shared consensus is the main challenge to perform major changes in highly complex organisations (Hafsi & Demers, 1989).

The interpretative stream concentrates on organisational actors' point of views. It takes into account the diversity of interpretations by different actors pursuing their own objectives and interests. Many works deal with the point of view of managers in the piloting of change. Managers are not equally open to change and some of them prefer the *status quo*. (Hambrick, Geletkanycz, Fredrickson, 1993). In crisis situations, top managers have sometimes a great difficulty to formulate and implement change even if the organisation collapses (Starbuck, Greve, Hedberg, 1978). Personal traits of organisational actors, the contexts in which they evolve and their interpretations of these contexts would play a central role in the way they deal with organisational change (Lant, Miliken, Bartra, 1992).

The theory of "enactment" (Weick, 1969) propounds a stimulating and fruitful conceptual framework to deal with the subjective origins of organisational transformations. This perspective competes with the classical enterprise-environment paradigm. Environment is not "objective" but it is a social construct by interacting organisation's members, depending on their interpretations (Koenig, 1996). In order to reduce the perceived equivocal nature of

complex situations, Weick (1969) proposes an organising process made of three stages. In the enactment stage, top managers call organisational members' attention to a given set of phenomena. On the basis of information produced during the stage of enactment, managers construct, reorganise or erase some "objective" aspects of their environment. Weick (1969) insists on the relation between the enactment stage and change (Pichault, 1993, p.37). In the selection stage, information processing enables to select the most relevant interpretations and to retain those that would be of use later. This model "enactment-selection- retention" contributes to reinforce the process of sense- making in organisational change processes. Managers play the role of "sense-givers" or "sense-producers", re-affirming in most cases pre-existing schemes of reference or introducing new schemes during organisational changes (Pichault, 1993). Several authors have thrown to light the importance of symbols (actions, events, metaphors, images etc.) in the processes of sense making and influence (Gioia *et alii*, 1994). Change process is presented as a negotiated social construct, by means of symbols and symbolic actions that create and legitimate the meanings attributed to change (Dutton&Duncan, 1987).

3.4 Change as a "pattern" process.

Change in organisations has been presented as a process of choice between different existing organisational routines. The more routines are used, the more they repeated and adapted to new situations (Cyert&March, 1963, 99-100). Routines are stable schemes of behaviour that characterise organisational members' actions and reactions. According to Nelson and Winter (1982), "*The organizational equivalent of individuals' skills in that they provide capability for a smooth sequence of coordinated behavior*". One of the key issues is to understand how the organisation selects routines and control how these routines evolve or remain stable. One of the mechanisms of the organisation' potential transformation is the managerial intervention. Top management has the political capability to modify members' behaviours by means of directives, rules of conduct, incentives, rewards and punishments. Managers can intervene in the change process by eliminating non-effective routines, transferring the most effective one in other parts of the organisation or by creating new routines through imitation or experimentation. If the outcomes of present routines are positively assessed, the manager will tend to repeat and reinforce them. As a consequence, past performances contain information that is considered as valid to make decisions about future developments. This behaviour creates a systematic bias promoting **incremental change**. The expected results of the exploitation of existing competencies are often better and less risky than the expected

outcomes through exploration of new opportunities (March 1991). The more the accumulation of perceived success, the more routines become formal and stabilised in organisational members' behaviours. Evolutionist theory (Nelson&Winter, 1982) states that change comes from interactions between organisational routines. These routines trigger change when new situations are faced. More major changes arise as interdependent routines are modified to adapt to new situations. Nelson and Winter make a distinction between **operational routines** that imply repetitions and **learning routines** (search) that identify the changes needed in existing routines. Operational routines are necessary and sufficient to deal with relatively stable environments. Then organisational changes develop through incremental improvements and the accumulating of experience. In this context, learning routines not indispensable and can be expensive. On the contrary, in turbulent, fast and continuously changing environment, the application of operational routines can rapidly be useless. Efforts to learn through learning routines are necessary. They enable the organisation to adapt to its environment and they must be steadily questioned. The impossibility to adapt organisational routines that are used can turn **core competencies** into **core rigidities** (Levinthal&March, 1993; Leonard Barton, 1992). **Defence routines** can lead to organisational rigidity (Argyris, 1990). These routines are patterns of behaviour developed by organisational members to guard against problems and anxiety. According to Argyris, OD programs often fail because they induce and reinforce defensive routines. It is difficult to identify and even more to effectively process these routines.

“Organizational defence routines make it highly likely that individuals, groups, inter-groups, and organizations will not detect and correct the errors that are embarrassing and threatening because the fundamental rules are to (1) bypass the errors and act as if that were not being done, (2) make the bypass undiscussable, and (3) make its undiscussability undiscussable. These conditions, in turn, make it difficult to engage the organizational defence routines in order to interrupt them and reduce them. Indeed, the very attempt to engage them will lead to the defensive routines being activated and strengthened. This, in turn, reinforces and proliferates the defensive routine.” (Argyris 1990 : 43).

3.5 Change as a chaotic process.

As complex systems, organisations develop their own cause-effects laws (Starbuck, 1983). These systems generate actions that are not totally under the control of individuals. When organisations move, actions often do not reach their objectives and debouch on unexpected and unforeseeable consequences. The causal effects and retroactions of each part of the

system on the others make the results of actions hazardous. Organisations are no more characterised by stability and coherence but by uncertainty and unpredictability whose future surpass the will of its actors.

Chaos theory (Gould, 1980, Stacey, 1993, Thiétart&Forgues, 1993) suggests that even if the social system seems to hazardously evolve, it contains an underlying logic or a programme that regulates the process of change and deploys from one point to an objective that is already prefigured in the past situation. Incremental (step-by-step) change seems to be able to keep the system into its "holms of stability" that are, by nature, temporary. According to chaos theory, continuous dialectic tenseness between order and chaos. Due to their bounded cognitive capabilities, actors try to reach order to "close" the system that is too complex. On the other hand chaos is inherent in the dynamic and non-linear nature of organisations. (Stacey, 1993; Thiétart&Forgues, 1993)

Systemic analysis presents the organisation as a complex set of sub-systems (human-beings, technology, information, structure) interrelated by formal and informal ties. Modifications in a sub-system have direct and indirect implications at others organisational levels. This leads the actors who drive the change to develop a vision that is more global and less partial or fragmented. The interdependences create interactions that are the sources of collective action. Change consists above all in the transformation of a complex system of action (Crozier&Friedberg, 1977). Change requires the transformation of a whole system of actions. The process of change must be addressed in its systemic dimension. It means that the change process is contingent to the action system that elaborates it and to which it applies. (Crozier& Friedberg, 1977). Due to the interdependence between sub-systems, traditional linear and simplifying reasoning are inoperative. Finally, there is a need to put emphasis on contexts during the process of change (Crozier, Friedberg, 1977, Pettigrew, 1985).

4 . METHODOLOGY.

On the basis of the literature review, a first stage led to the selection of "discriminating" indicators enabling to deal with the change processes and presenting different characteristics in the five generic processual models. We opted for the perspective developed by Pettigrew (1985b) who identified three pillars in his study of organisational change : context, content,

process. Our research strategy is "multi paradigmatic" and systemic and enables to integrate various schools of thought on organisational change.

Table 2 presents the five generic processual models and their main discriminating characteristics in terms of content, process, context and outcomes.

FIVE GENERIC PROCESSUAL MODELS

MODELS	Chaotic	Linear	Political	Pattern	Interpretative
DISCRIMINATING CRITERIA					
Content	Undefined	Invariant	Compromise	Decomposed	"Re-invented"
Process	Chaotic	Linear	Tempestuous	Procedural	Sense-making
Context	Inter-dependent	Universal	Political	Structuring	Constructed
Outcomes	Unforeseeable	Foreseeable	Negotiated	Expected	Polysemic
Key words	Hazard	Stage	Influence	Routine	Sense

The five processual models identified above have been confronted to the longitudinal study of the "Work Force Management" (WFM) project at the I&M (Installation and Maintenance) department of Technico. Our study focuses on the stages of launching and implementing WFM from 1999 till 2001. As mentioned earlier, the objective of this research is to perform an in-depth analysis of an organisational change process in order to detect either the existence of a "dominant" paradigmatic approach to understand change processes or, on the contrary, the need for adopting a multi-paradigmatic view to improve our understanding. If theoretical perspectives are competing, it would be important to think about various contexts. If they are complementary, the task would be to conceptualise an "hybrid" or "meta" model.

It is always difficult to conduct a study on organisational processes. We came to a decision to simplify the organisational reality by defining *a priori* three stages in the change process and three categories of actors.⁵

⁵ Following Weick cited by Koenig (1996 -p.9), it is central to combine methods and to simplify reality in order to better understand the organisational complexity.

- ***A change process in three stages.*** Following Lewin (1951), who developed a model in three stages: unfreezing, move, refreezing, a decision has been made to decompose the change process at WFM in three broad periods:

"Launch" that corresponds to the decision to launch the project, its planning and start-up.

"Activation" corresponding to the implementation and the enactment of change in its context

"Consolidation" consisting in the integration of change in organisational life.

- ***Two out of three categories of organisational actors.*** In their book on organisational change, Kanter, Stein and Jick (1992, p. 378) identify three main categories of actors who are involved in the change process: "change strategists", "change implementers" and "change recipients". Even if this is a simplification of the reality, building such categories enables to better understand the roles played by organisational members at each stage of the process. In the framework of this paper, we focus exclusively on "change strategists" and "change implementers" we called "change leaders".

4.1 Longitudinal analysis of a single case.

The longitudinal qualitative analysis of a single case (Yin 1989) is justified by the will to understand a process in its real context. We chose a qualitative approach for several reasons. First, the study of change requires a direct, in-depth contact with the actors involved, in order to better understand the underlying mechanisms of change. Secondly, the qualitative research method based on case study monograph is recommended when focusing on contemporary events in their real-time context, where limits between the phenomena studied and the context are not evident (Yin 1989: 18). Finally, this methodology favours both a descriptive approach and a theoretical generation (Eisenhardt, 1989). The easy access to the field enabled to follow up the project in real time and to lead interviews with the "change leaders" involved at each stage of the process.

4.2 Data collection

Data collection was performed through semi structured interviews with project team members and the analysis of documents (reports of the steering committee, minutes of follow-up meetings, business plans, Project Quality Planning (PQP), etc). The presence of one researcher in the field during two days per week during two years also favoured frequent informal and rich contacts with the "change leaders" of the project team. Three interviews

have been led with the 8 key actors during the three main stages of the project' life cycle (n=24): start-up, activation (after 5 months) and consolidation (10 months later). Interviews have been extensively transcript in order to perform the qualitative analysis based on the content analysis (Bardin, 1977; Miles&Huberman, 1991)

4.3 Data Coding.

Following Miles and Huberman (1991, p.98) a coding project has been developed. It consisted in establishing a list of codes that were attributed to the segments of interviews. Codes must enable a reliable representation of the five generic models presented in previous sections. We opted for an inferential coding method that enabled to identify patterns and trends that are potentially valid to fit with one out of the five models. We opted multiple-coding method if a segment of interview seemed to simultaneously refer to several models.

About 500 segments extracted form interviews have been selected and drawn from the 24 interviews. Several authors insist on the usefulness to involve different "coders" in the process (Eisenhardt, 1989, Miles&Huberman, 1991) to test the reliability of results and to avoid bias. An "independent" coder, who had no contact with the field, has been asked to code 50 randomly chosen excerpts; 41 (82%) have been classified in the same category. For instance, some excerpts classified in the "linear model" (drifts) revealed to be more representative of the "chaotic" one. The possible bias in the way coding was performed initially was reduced by a "re-coding" of three interviews later. Initial coding was performed as soon as possible after the interviews. The second coding has been realised after two weeks and compared. The evaluation of the degree of internal coherence of our classification has been performed as follows (Miles&Huberman, 1991 p.108). The first operation gave a coefficient of reliability of 84%. In some cases, systematic overlapping existed between two models (linear and procedural for instance). After an adjustment of the definitions of codes and coding rules, a decision was made to "re-code" three other interviews: this led to a level of reliability of 96%. Even if these results could be due to hazard, we consider that their reliability was about correct. The third step consisted in the classification of excerpts in the five *a priori* defined categories, each extracts has been chronologically recoded, and classified in sub-categories corresponding to the three main stages of the process: start-up (T1), activation (T2) and Consolidation (T3)

5. INTERPRETATING DATA.

The interpretation was realised by comparing the frequencies of the presence or absence of certain codes. The unit analysis is the sentence (sometimes extracts) or one complete transcript paragraph. This method enables to test the behavioural validity of interviewed actors.(Denzin, 1978). The researcher observes if a social phenomenon appears in the behavioural repertoire of an actor and, if it the case, according to which frequency, in which situations and when? The higher the frequency is observed, for different periods and various situations, the higher will be the behavioural validity (Denzin, 1978,p.22-24).

5.1 Overview of Technico

For more than 60 years, Technico operated in a stable monopolistic environment that protected it from any fundamental changes in its internal organisation. In the middle of the 1990s, the explosion of technological innovations, the opening of markets to competition and the arrival of a new CEO marked the beginning of a drastic transformation. A vast program of structural and cultural change was implemented, coupled with a plan of early retirement and retraining which affected more than half of the staff. The change program set up from 1996 onwards has helped to transform a strongly introspective technology-oriented company into a customer-oriented organisation. To accompany this thorough transformation, a « Business Process Reengineering » (BPR) Centre has been set up. Various basic operations are analysed in depth to elaborate new, more efficient processes. The BPR Centre coordinated various reengineering programs over two years and the reengineering team then suggested re-examining the "end to end" Installation&Maintenance process, by centralising several core functions. The WFM project constitutes the continuation of a large re-engineering project that specifically affected Technico's Installation and Maintenance department (I&M).

The former I&M department worked in a very decentralised way, with more than 70 local offices, directed by a section leader, now called a "field coach". The section leader was in charge of area management. He was responsible for the administrative and technical follow-up of each technician, for fixing appointments with customers, for dispatching work orders to technicians, and for managing hardware suppliers. The new I&M department has set up 3 Integrated Assignment Centres (IAC) whose mission is to document all technical situations, and 6 Integrated Dispatching Centres (IDC) for the whole country. From a decentralised

management in 70 autonomous local offices, the I&M department switched to the centralised management of key functions such as dispatching and technical analysis. This change constituted a tremendous upheaval for the actors involved in the process, on all organisational levels. Since the creation of Integrated Dispatching Centres (IDC), the automation of the new I&M' process is being envisaged. The Work Force Management (WFM) project has begun.

5.2 The Work Force Management Project (WFM).

Launched in 1999 WFM' aim is to design and implement, within the next two years, a sophisticated computer system able to collect, from within the IDCs, technical and commercial information to generate and automatically sort work orders and dispatch them to the field technicians. The plan is to replace fax transmission to the local offices by allocating a personal PC laptop to each field technician. The employees will be directly connected to a central server by mobile phone. The purpose of the system is to optimise work dispatching. The central server selects the most competent technicians who are nearest to the intervention site and sends them to carry out the job required. The system permits an almost real-time follow-up of each field technician. WFM is a major challenge for the I&M department. The project involves more than three thousands people of all hierarchical ladders and an investment of about 2 millions EURO. WFM has major implications for the organisational actors. The role of "dispatchers" is profoundly affected. Dispatchers are now in charge of solving and managing difficult situations that are not automatically manageable by the system. For the field technicians, the drastic change is to use the PC. After about twenty years of manual tasks, technicians had to profoundly modify their work practices. They receive their orders progressively through the PC and no more once in the morning. They are supposed to inform in real-time where they are, what they are doing, etc... To help technicians, the WFM project team organised a standardised three days education program and accompanied the technicians in the field during the first day they used the system.

6. RESULTS AND COMMENTS

Our meta-model of change processes is given in the figure 1 :

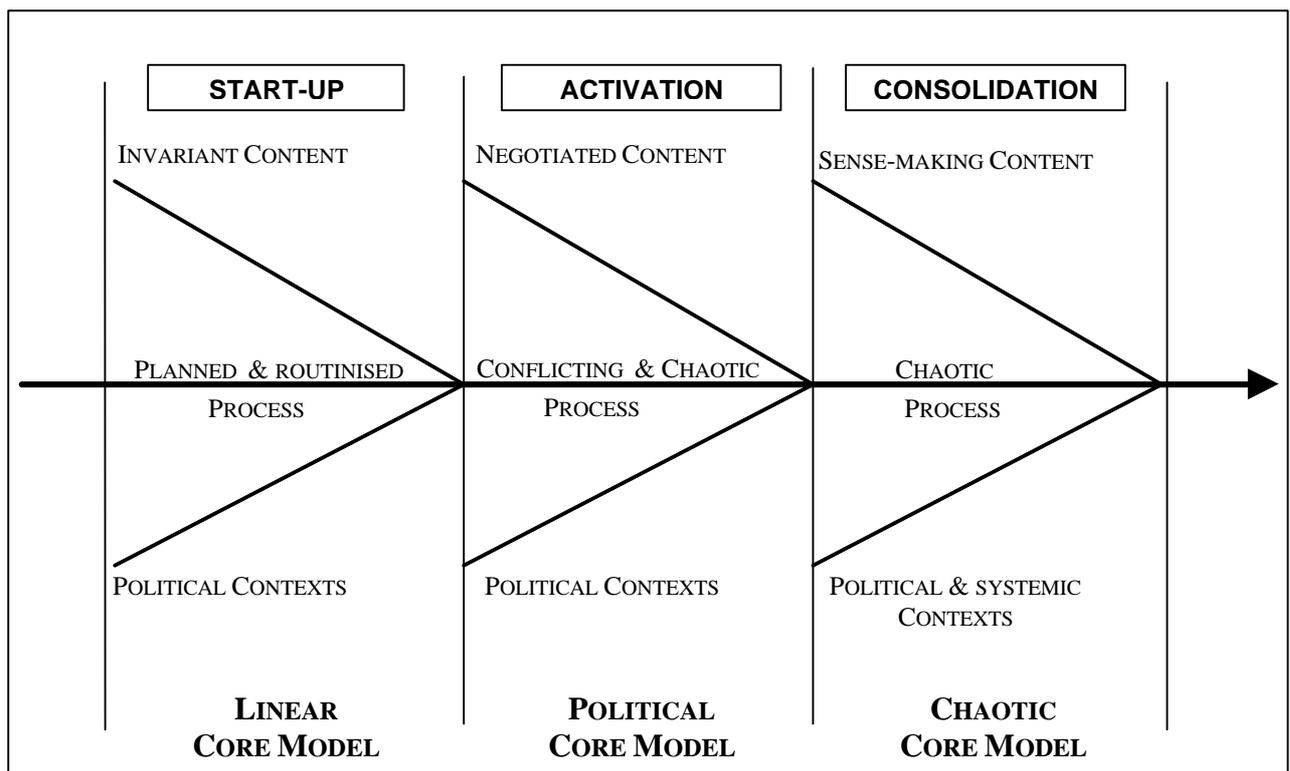


Figure 1 : A Meta-model of Change Processes

6.1 Start-up stage.

CHANGE' START-UP T1			
INDICATORS	PREDOMINANT MODEL (Highest frequencies)		
Content	Linear:	(16 / 22)	73%
Process	Linear :	(25 / 50)	50%
	Pattern:	(20 / 50)	40%
Context	Political:	(28 / 51)	55%

During this first stage, the linear model (50% of coded extracts) that is based on a planned approach of change is mobilised as the dominating frame of reference to present both the content and its process of elaboration and implementation.

"People from the system team have well defined what they wanted to be in this system" P.8

"I was one of the authors of the PQP (Project Quality Planning) that guides the whole project' organisation. A detailed schedule contains dates of the important stages of the project, what each party involved must produce. It is really a document that constitutes the basis enabling to control change generated by the project and that indicates if everybody keep his promises » P.3

"PQP is our bible. Everything has been defined in it" P.5.

These results confirm the thesis defended by the supporters of the planned change. The analytic and planned steps seems to "naturally" prescribed to the change leaders, right from the beginning of the project. The linear model as well as the procedural one, which is based on the application of routines (40% of excerpts), are closely imbricated. It appears that the planned and linear approach of change inscribes in a set of organisational routines that guide the projects management at Technico.

"...Everything has been detailed in a document of about 100 pages that we name PQP(Project Quality Plan)... This comes from de IT and it is required to manage projects at Technico." P.5.

"Here we are accustomed (in the IT projects), to select some users to test the system and then this leads to a pilot, to the production of the system on a limited number of users..." P.6.

"To launch a project at Technico, you have to make a business case to get the budget". P.7.

These routines correspond to the application of practices that are considered as usual. It means that there are both common and compulsory in the I&M division. They support a process that is essentially prescriptive and based on implicit assumptions of coherence, homogeneity of the organisational context and linearity of change processes.

"We have established a detailed planning of education that should work well... We will replicate the same education program in every region " P.5.

"We learn a lot from this first phase of the project. After, this is a matter of repetition and it becomes a routine. You just have to replicate the method everywhere,.. it is almost an assembly line work." P.3.

The change process is formed as the deployment of a plan, elaborated by the change leaders, in accordance with the organisational prescriptions in use. This process applies to every type of project, whatever the situation and the course of time at Technico. These linear and procedural frames of references rests on the hypothesis of a vision shared by all the parties involved in the project and of the existence of a collective interest to perform the WFM change project. Our results also insists on the tendency the change leaders have to make the change process "technical", in other words to present it as a technical product, that is conceived out of a human context. They seem to take refuge in a reducing "technicist" vision of the project. This position is encouraged by a care to keep to the pattern of I&M and IT divisions. Each division is a sub-system of Technico, developing its own routines, its own rationalities and generating a context propitious to the planned and linear approach of change.

"The communication plan is not programmed in PQP because PQP is a document drawn from a methodology developed for informatics projects. The communication is made by the "client" and not by the developers. Then the communication' matters are not included." P.3

Besides its function of normative legitimatisation, the planned approach also enables to reduce the uncertainty that is inherent to the introduction of change in the organisational environment. Setting a rational " programme" lead the change leaders to the illusion they are able to foresee, to optimise resources, to plan future actions. Having a care for formalisation during the start-up stage seems to contribute (and this is one of the main advantages) to overcome initial resistances to change. The rational and formal features of this approach (objectivates) coupled with its conformity to the existing norms at Technico, (legitimisation) refrains everybody to be avowedly opposed to the project, at least during this first stage.

" We felt that the regional managers' (line managers) opinions were " we can continue with out this system", because in the short run, it is true that this can negatively impact their results.... As a consequence they made, as if nothing had happened, all what was in their power to slow down the project". P1

"I felt right from the beginning of the project that neither the district managers nor the I&M managers were interested in, because they did not want to appoint their employees to give an impetus to the project." P

From the beginning of the change project, the study of the context lies on an interpretation that is essentially political. The start-up stage shows political games, mainly localised at the top management level and which will penetrate the lower ladders in the course of the process

" The coming of Mister X has totally modified the priority attributed to the WFM project, at the level of the RAC (Resources Allocation Council). He has strongly supported the project and we became a priority ." P.3.

"With Mister X, the priorities at the highest level have changed. ...WFM became a priority" P.5.

The linear model seems to fit with the characteristics of this first stage of the process under study. We have stressed the tendency to structure the process along well grinded planning methods, corresponding to the normative practices in use at Technico and disconnected from their application' context. The dominant model during this first stage ignores organisational and political conflicts, or at least, simply considers them as problems to be overcome. Technico is designed as an homogeneous organisational environment that can be mastered and is mastered by change leaders. The longitudinal study of WFM enabled us to express faint differences in this mechanistic and linear vision of the process.

6.2 The "activation" stage.

CHANGE ACTIVATION T2	
INDICATORS	PREDOMINANT MODEL <i>(Highest frequencies)</i>
Content	Political : (23 / 53) 43%
Process	Political (32 / 93) 34 % Chaotic : (29 / 93) 31 %
Context	Political : (39 / 57) 68%

This stage, which corresponds to the implementation, is dominated by the political nature of the change process

"After all, you need above all a political strategy if you want to carry your project through. Detailed planning elaborated in the early stages of the projects brake down later, especially if you do not take into account the political pressures that impact the project." P.5.

The process looks like a succession of sequences of bargaining, implicit or explicit negotiations, that is based on continuous adjustments between the objectives to be reached and the problems that are identified in the field. During this stage, the resistances and influences exercised by organisational actors are symptoms of the difficulties faced during the implementation. There are a signal of the need to modify or adapt both the content and the process of change in order to take account of unexpected constraints and reserves that arise in the course of the process.

"WFM stretches its scope according as operational problems arise in divisions. The Managers have short term objectives and they try to exercise an influence on the project as much as they can according to their temporary interest ". P.6. (Negotiated content)

« Now, as the project is launched, everybody seems to want being involved in. They (the managers) try to exercise an influence on the planning, to speed -up the move, the implementation of the system, but we must pay attention because a lot of things are to be done simultaneously. » P.1. (Conflict process)

The political context becomes very important during this stage. The political stakes manifest at all the hierarchical ladders impacted by the change project. The effects of the political context are felt

From the top as the need to adapt to the new strategic guidelines increases...

"The strategy has changed. Now we feel that there is a stronger pressure, from the top to realise cost savings. With the change in the government, we have now a liberal minister who is in charge

of public enterprises. The privatisation is on the verge. Then, it is necessary to realise good performances for the entry on the stock market. Our project is a means to reduce costs and save money". P.1.

... to the frontline members who want to protect their own interests faced to the new system,

" There has been a profound change in the IMN directors' attitude. They tried at 200% to slow down the project and now they want to speed it up. The pressure on cost cuttings becomes strong in the division. » P.3.

... through the middle management who considers that this change deteriorates their past political position.

"The section' managers (middle management) react negatively to the project because they already felt that their power decreased when the responsibility to distribute the technicians' work-load has been assigned to IDC. Before, they were the chiefs distributing work orders (WO), now, some of them say they are becoming social workers, the real chief is IDC. They disavow their role to the extreme and refuse to give the leaves to their technicians".P.2.

The change process is characterised by a progressive and pragmatic process, based on experimentation. Experimentation enabled to keep the power structures in place and to adjust the functionalities of the new system. Nevertheless, the launching of pilot sites is a tangible proof of the effectiveness of the change and of its concrete implications on the operational way of working on the field. The WFM project, that was globally acceptable in the early stage of start-up, becomes a real political stake when it is "put into production" in pilot sites, before being generalised and expanded in the whole organisation. It justifies the adaptations both in the content and the process of change.

This second stage is characterised by on a predominant political model in the three dimensions; contents, process and context. The organisation is considered as a political system in which coalitions, groups and divergent interests cohabit. This second step unveils actors with inconstant behaviours depending on the contexts and the steps in the project life cycle and not stable behaviours due to the intrinsic quality of the proposed project, their hierarchic position or their role in the organisation. Actors' behaviours seem to be above all characterised by strategy and adaptability. Crozier and Friedberg (1977-334) works showed that organisational members are not anchored in their routines with limited view and passivity. They are ready to change very rapidly if they are able to serve their interests in the proposed political games.

As a conclusion one member of WFM states :

"In this project 50% of problems arise from the project itself and 50% from the political environment that takes a lot of energy " P.3.

The change process is by nature characterised by conflict and continuous adaptations. Actors who have contradictory opinions and strategies made of political manoeuvres support it

Change processes affect organisational actors who have their own interests and strategies and a limited view of the change 'global challenges, depending on their position and their role in the organisation. This period of stirring up insists on the necessity to build and maintain a supporting coalition that is large enough to enable change to deploy in the whole organisation. The chaotic model that is characterised by uncertainty, ambiguity, fuzziness, disorder and the emergence of unexpected events also marks this period. This model insists on the mechanisms of local adjustments and improvisations in the course of the change process..

"Our implementation strategy, we make it day after day. There are many overlapping of functions in the team. We work principally with goodwill and we face unexpected events." P2

"Before the roll out of Gent, we usually referred to the PQP to define tasks and responsibilities... but after the roll out we did not used it anymore. Everything was fuzzier in the project". P7

"To me, what can be foreseen in the planning has to be done in order to have stable and broad basis. We learn that finally only one small part will be implemented and that a lot of last minute things will be unforeseeable" P.7

6.3 The consolidation stage.

CHANGE CONSOLIDATION		
T3		
INDICATORS	PREDOMINANT MODEL <i>(Highest frequencies)</i>	
Content	Interpretative:(22 / 37)	59%
Process	Chaotic: (28 / 56)	50%
Context	Political: (29 / 52)	56%
	Chaotic: (20 /52)	38%

This third stage reveals a implementation process that is more and more de structured. The apparent disorder stresses the importance of contexts that promote or obstruct the organisational transformation, reinforce or weaken existing power structures.

" When we talk about projects' key success factors, we must add the political context as a constraint to change in project. This is central" P5

"There is a continuous pressure on the projects leaders, to make the project evolve according to the needs of the top line management. It is really a matter of lobbying. P5

During this period of consolidation, the political nature of the organisational context remains predominant (56% of excerpts), followed by the chaotic model (38%) that dominates essentially description of the process (50% of the excerpts). Divergent political stakes, the increasing of uncertainty and ambiguous situations , even sometimes contradictory, contribute to the elaboration of a chaotic process, nurtured by a set of not programmed events, arising in the course of the process.

"I am aware that the more we progress in the project, the more the way we work is very disorganised. We are more and more disorganised. Nevertheless Francis made a good job in the PQP. He had defined everything with precision. I think that this way of proceeding (to apply the plan) is the right one as long as there is no important problem to be faced."

"The more we progress, the more we proceed from a proactive to a reactive mode facing problems and especially human problems". P2

"More than 50 PCs have been stolen. This is a reality of the field but it was not anticipated in the budget. Now we must react. This is what we are doing. We do not replace them anymore." P1

The operational matters in the field have been more important than we thought. We did not expect that at all. P6

In this third stage, the change leaders state more and more that they are huge gaps compared to the forecasts.

"I had a detailed communication plan at each levels during the change process. All has fallen through. We have "swim in the improvisation". " P.8.

"We have the feeling that the more we progress in this project and the more we are confronted to the reality of the field, the more we must react and care rather than prevent. It is easier to predict the reactions of an information system. " P.2.

The analytic and rational approach that presided in the beginning progressively gives place to mutual adjustments, improvisation and reaction to unforeseen events that punctuates the process. All this contributes to give a chaotic shape to the process under study.

"We act in urgency, on a more reactive than proactive way". P3

"We spend time to solve conflicts and unexpected things and all is based on the goodwill of the team' members" P7

The gaps compared to the established plan, often described as dysfunctions in the literature, have to be seen as opportunities to be ceased, shepherded, activated and valued in the process. The opinion of one of the project team' members comes in point.

"In this project there are the best and the worst. Sometimes we made mistakes, we followed the wrong way because there are a lot of unexpected things that happened. If you look at the straight line we had imagined, we have always diverged from. The important is to be aware of that and to narrow and rectify the gap. Rectifying the course this is the worst thing we can face but at least you progress because everybody is sometimes wrong. Even if you are not able to come back on the straight line you perform more than if you stay at the backward bifurcation." P4

In a context of constant instability and complexity, the change leaders are no more able to manage the process sin great details but globally. The signal is the resigning of the manager in charge of project ' "methods and procedures". The continuous non compliance to the defined procedures and their frequent modifications made him conscious of the ineffectiveness of his job in a chaotic process.

"I leave because I'm frustrated; I feel I can no more fully exploit my capabilities. My job in the team is no more affordable because there are so many changes in the responsibilities, in the organisation. This requires continuous adaptations of the procedures that were clearly defined. This is very heavy and demanding and this is a bootless work. Why not work without any structure and to react to urgencies as they come". P3

A this stage, the change process can no more be seen as a coherent and stable process but as an unpredictable, uncertain and evolving process. Uncertainty and unpredictability naturally refer to the systemic character of the process under study. During this stage of consolidation the change leaders insist on the inter-connections of several projects that are inter- related and have a direct impact on WFM.

" WFM is related to other projects, this makes its management complex. If there are delays in the OMS (Order Management System) project, it will impact future stages in WFM" P5

" We are obliged to take into account a lot of different parameters. The question is not only to perform well our job. Others IT projects such as OMS, MDSI and finally the field must follow. All is related and imbricate; that makes things much more complicated." P.4.

The interdependence of numerous sub-systems forming the organisation reveals the importance of the organisational context in its systemic dimension

"In reality, everything is related. If the new OMS system is not ready, there are important consequences I-on the implementation of WFM and as a consequence on the "staff requirement" of IDC s because WFM must reduce the IDC' staff. And thus, this as an impact on the forecasted savings that are central to come out with good yearly results for Technico and to attract investors in case of introduction on the stock market." P1

"The more we progress, the more we realise that we are dependent upon GSM connections, PCs , servers, reliable data and parameters that are in the system, OMS, etc. It is far from being easy to inter-connect all this" P7

"WFM is like a brick in a wall. If you take away the brick, the wall could fall." P2

This stage change' consolidation enabled us also to stress the importance of the interpretative model to understand the content of change. The evolution of this content during the three stages enables to stigmatise the dominant impact of the interpretative model in the last stage. During the initial stage (T1), the definition of the "scope" of the project is rational and analytic. Nothing can predict a modification of the content because it has been agreed and formalised in a Business Plan that is constraining.

"I know that NTS (a division made of technicians) told that they were interested in our WFM system, But finally, after analysis, we evaluated that the cost will be to high and the benefits very low. It was not profitable. So we have only defined the project on I&M" P1 (rational)

"People from NTS certainly will not receive PCs because this was not in the Business Plan. They do not perform enough work orders by day". P4 (procedural)

During the activation stage (T2) political pressures modify the organisational constraints that have been imposed to the project. The political context changes and pushes the change leaders to modify the content of the project in order to adapt it to the requirements and demands of the dominant political coalitions.

"At the beginning, the scope of this project did not foresee to provide NTS' technicians with PCs. Now the project sponsor moved from I&M to NTS. There are strong pressures to give PCs to NTS' people. They found other reasons, such as the need to access to technical data,..." P5 (political)

"Now, as the project works well, NTS brings pressures to have PCS but this has many implications for the future" P.3. (political)

During the consolidation stage (T3) actors re-interpret the content of the project to legitimate the adaptations that have been allowed during the whole process. The content of change is "re-invented" through a mechanism of sense-making.

"At the beginning, as PCs were tools use to distribute work, it was evident that NTC's technicians did not need them. But the NTS' manager has revisited his position since he saw lap-top computers. The directors now consider the PC as a tool devoted to measures and information storing" P1 (interpretative).

" Through discussions, we changed the philosophy of this project. The way we see the WFM PC has changed. At the beginning we wanted a tool dedicated to receive work orders. Now it becomes the number 1 tool of every technician whatever his job. This is no more a means to transmit and receive work orders but equipment enabling to get a lot of information. This is now the number 1 tool used in the field. This arose progressively. » P7 (interpretative)

These results are similar to the enactment theory developed by Weick (1969). Actors enact the content of change according to their interpretations. On the basis of "objective information" actors construct, re arrange and destroy certain aspects of the available information. Then they select the most pertinent interpretations. Finally they store them in their collective memory. Beyond the intrinsic quality of the change project, our results stress the importance of the perceive content of change as well as the importance of a supporting political coalition to bring the project to its end.

As the process confronts to the human reality of the organisation, early rational and linear methods reinforcing certainty break down due to the increasing complexity of the process. Paradoxically, the content analysis shows a significant persistence of the linear model (26% of the extracts) during the consolidation stage.

The following excerpts essentially deal with the process that is supposed to follow the period under study in this paper. This organisational field environment is presented as homogeneous and manageable., where chaos and political games are excluded.

" As a whole, technicians are similar, in Flanders and in the Walloon region. They attended the same education program, they have their PC and they have learned to use them. Till now, the timing is in line as well as the budgets. There is only one thing to do: to sequence the roll out." P1

"On the field, on the frontline, the reactions are about the same all over Belgium. They were a little bit reluctant at the beginning but now it works. This system will make their job easier. " P.7.

The change leaders seem to decree a dynamic of change that is much more linear for the change' receptors. The process they described as being merely political and chaotic is not transposed to the future stages that involve front line executants.

"We face a lot of problems in the team but on the frontline, it works well, and that is what matters. They have their PC, they go in the morning and back in the evening. They use their PC in every "repair" teams in Belgium, then the others will have their turn and so on." P.3

"They do not see or feel our hesitations, our conflicts, our political games etc. They see nothing; this is not their problem, they do not care. They receive a system, which is useful, and they use it. That is all. » P.2

On the contrary the change leaders imagine a process of change that is based on a simplistic, mechanistic and linear vision.

"I have worked in the field and I say to you that these workers do what their boss tell to do. This is the reason why after 12 months, we are still in the schedule and we have so many guys who work with the WFM system. People on the field do everywhere the same things. " P.4.

It will be worth studying and understanding this paradox, through a detailed analysis of the next steps in the change process. We must test to what extent the deployment of the change process can be viewed as a linear process, in view of the compulsory dimension of the change process under study.

"I mean that in Wallonia, the reaction to the system is about the same everywhere, excepted in Liege, where they are a little bit reluctant, but it is OK. Everybody use the system in due time. It is evident that they had no choice." P.3

7. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

This research enabled to build a meta-model that suggests a pluralistic, complex and multi dimensional vision of an organisational change process. Even if this single in-depth case study has been performed through a robust methodology, we are aware that there are many limits. It is difficult to generalise the results because of the validity of our conclusions depends on the organisational environment of Technico. Nevertheless the choice we made to investigate in depth one single change project enabled us to perform a longitudinal study of the phenomenon that shows the complementarity of generic models presented in this article

One of the main lessons we draw from this research is that change is rather a dynamic non-linear process than a rational and linear one. Nevertheless our research does not preclude the linear approach of change. On the contrary we argue that a "balance" between an analytic and negotiated, logical and intuitive, coherent and critical process. This "balance" necessitates

accepting ambiguity, uncertainty and risk that are inherent to organisational change processes. The ambivalence starts during the early stages of starting up the change, when the process is formalised and ruled by planning. The objective is not to foresee the unfolding of the process but to provide a means to legitimate the change, a means to convince managers and the actors involved and to get over their apprehensions. During the activating stage, the process becomes more and more characterised by adaptability, flexibility and it is evolving. Change is negotiated according to the constraints, fears and reserves that appear during the process. The process is marked by arbitrations made by actors who are involved in to come out with negotiated and concerted agreements between dominant coalitions. The stage of consolidation shows a fuzzy, chaotic and obscure process that reveals drifts compared to the defined plan. To avoid considering these gaps as dysfunctions to be sanctioned, managers use improvisations and continuous adjustments. On the contrary, these organisational drifts can be viewed as opportunities to be ceased, canalised, activated and valued during the process. This change process is complex and reveals the insufficiency of the intrinsic quality of the change project. Indeed, the content of change is re-invented by actors during the process. It necessitates the support of a powerful political coalition.

Our meta-model of change presents a process based on the concepts of coherence and legitimacy but it is eminently contingent to the political contexts. It calls managers to be concerned by political context surrounding change, paying a special attention to the activation stage, when change infiltrates in the operational reality and exacerbates potential resistances to change.

Between the defenders of planned change and the defenders of emerging models, we propound, in this research, an "opportunistic" model; in other words a model that ceases unexpected events that appear in the process to integrate them in a planned approach.

REFERENCES

- ALLISON, G.T., (1971). *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston, Mass. : Little Brown.
- ALTER, N., (1990). *La gestion du désordre en entreprise*, Paris : L'Harmattan.
- AMBLARD, H., BERNOUX, P., HERREROS, G., LIVIAN, Y-F., (1996). *Les Nouvelles Approches Sociologiques des Organisations*, Paris : Editions du Seuil (2^{ième} éd.).
- ANDREWS, K.R., (1971), *The Concept of Corporate Strategy*, Homewood, Ill : Dow Jones Irwin.
- ANSOFF, I.,(1965), *Corporate Strategy*, New York : McGraw Hill Book Co.

- ARGYRIS, C., (1990), *Overcoming Organizational Defences : Facilitating Organizational Learning*, Boston : Allyn&Bacon, Prentice-Hall.
- AVENIER, M-J.(1997), *La stratégie « Chemin Faisant »* (édition), Paris : Economica.
- BARDIN, L., (1977), *L'Analyse de contenu*, Paris, Edition PUF.
- BARLEY, S.R., (1986). Technology as an Occasion for Structuring : Evidence from Observations of CT Scanners and the Social Order of Radiology Departments. *Administrative Science Quarterly*, vol 31 : 78-108.
- BARNETT, W.P. & CAROLL G.R., (1995). Modeling internal organizational change. *Annual Review of sociology*, 21 : 217-236, Palo Alto, CA: Annual Reviews.
- BECKHARD, R., (1975), *Le développement des organisations, stratégies et modèles*, Paris : Dalloz. Traduit de (1969), *Organization Development : Strategies and Models*, Reading, Massachusetts : Addison Westley.
- BEER, M., (1976), The Technology of Organization Development, in DUNNETTE, M. (Ed.), *Handbook of Industrial and Organizational Psychology*, Chicago, Illinois : Rand MacNally.
- BENNIS, W., (1969), *Organization Development : A System view*, Santa Monica, California : Goodyear. Trad. française (1975), *Le développement des organisations*, Paris : Dalloz.
- BERGER, P., LUCKMANN, T ;, (1966), *The Social Construction of Reality*, New York : Doubleday.
- BRÜNSSON, N., (1982). The Irrationality of Action and Action Rationality : Decisions, Ideology and Organisational Actions, *Journal of Management Studies*, 19: 29-44.
- BRÜNSSON, N., (1985). *The Irrational Organization*. United Kingdom : JohnWiley.
- BURRELL, G., MORGAN, G., (1979), *Sociological Paradigms and Organizational Analysis*, Londres : Heinemann.
- CALLON, M., (1986), Eléments pour une sociologie de la traduction, *Année Sociologique*, vol.36 : 169-208.
- CALLON, M., LATOUR, B., (eds), (1991), *La Science telle qu'elle se fait*, Paris : La Découverte.
- CHAFFEE, E., (1985), Three models of strategy, *Academy of Management Review*, 10 : 89-98.
- CHILD, J., (1972). Organizational structure, environment and performance : the role of strategic choice, *Sociology*, 6 : 2-22.
- COHEN, M.D., MARCH, J.G. & OLSEN, P.J. (1972). A garbage can model of organization choice. *Administrative Science Quarterly*, 17 : 1-25.
- CROZIER, M. & FRIEDBERG, E., (1977), *L'acteur et le système*. Paris: Ed. du Seuil.
- CROZIER, M., (1963), *Le phénomène bureaucratique*, Paris : Ed. du Seuil.
- CYERT, R. M., MARCH, J.G., (1963) *A Behavioural Theory of the Firm*. Englewood Cliffs, NJ : Prentice Hall.
- DAFT, R.L., WEICK, K.E., (1984). Toward a Model of Organizations as Interpretation Systems. *Academy of Management Review*, vol 9, N°2 : 284-295.
- DENZIN, N.K., (1978), *The research act*. (2nd ed.), New York : McGraw-Hill.
- DUTTON, J., E., DUNCAN, R., B., (1987), The Creation of Momentum for Change through the Process of Strategic Issue Diagnosis, *Strategic Management Journal*, 8 : 279-295.
- EISENHARDT, K.M., ZBARACKI, M.J. (1992). Strategic Decision Making . *Strategic Management Journal*, 13 : 17-37.
- EISENHARDT, K.M., (1989). Building theories from case study research. *Academy of Management Review*, 14:532-550.
- ETZIONI, A., (1961) *Comparative analysis of complex organization*, New York : Free Press.
- FRENCH, W.L., BELL, C.H., (1973), *Organization Development*, Englewood Cliff, NJ, USA : Prentice Hall.
- GENELOT, D., (1992), *Manager dans la complexité*, Paris : INSEP Editions.

GIOIA, A.D.& CHITTIPEDDI, K., (1991), Sensemaking and Sensegiving in Strategic Change Initiation, *Strategic Management Journal*, 12 : 433-448.

GIOIA, A.D., THOMAS, J.B., CLARK, S.M. & CHITTIPEDDI, K., (1994). Symbolism and strategic change in Academia : The Dynamics of Sensemaking and Influence. *Organization Science*, 5 (3) : 362-383.

GOLEMBIEWSKI, R., PROEHL, C., SINK, D., (1982), Estimating success of OD applications. *Training and Development Journal*, 72 : 86-95.

GOULD, S., (1980), *The Panda's Thumb*, New York : Norton.

HAFSI, T., DEMERS, C., *Le changement radical dans les organisations complexes : Le cas d'Hydro-Québec*, Gaëtan Morin.

HAMBRICK, D.C., GELETKANYCZ, M.A., FREDRICKSON, J.W., (1993). Top executive commitment to the status quo : some tests of its determinants., *Strategic Management Journal*, vol. 14, 401-418.

HICKSON, D.J., BUTLER, R.J., CRAY, D., MALLORY, G.R., WILSON, D.C., (1986). *Top Decisions : Strategic Decision-Making in Organization*, San Francisco : Jossey Bass.

ISABELLA, L.A., (1990). Evolving Interpretations as a Change Unfolds : How Managers Construe Key Organizational Events, *Academy of Management Journal*, 33 : 7-41.

JOHNSON, G., (1988), Rethinking Incrementalism, *Strategic Management Journal*, vol 19 : 75-91.

KANTER, R.M., STEIN, B.A., JICK, T.D., (1992), *The Challenge of Organizational Change*. New York, USA : Free Press.

KING, N. & ANDERSON, N.(1995). *Innovation and Change in Organizations*. London : Routledge.

KOENIG, G., (1996). Management : les constructeurs : Karl E. Weick, *Revue Française de Gestion*, n°108, mars/avril/mai : 57-70.

LANGLEY, A., (1997). L'étude des processus stratégiques : défis conceptuels et analytiques. *Management International*, Vol 2, N°1 : 37-50.

LANT, T.K., MILLIKEN, F.J., (1992). The role of managerial learning and interpretation in strategic persistence and reorientation : an empirical exploration. *Strategic Management Journal*, vol 13 : 585-608.

LE MOIGNE, J-L., (1990), *La modélisation des systèmes complexes*, Paris : Dunod.

LEARNED, E., P., CHRISTENSEN, C., R., ANDREWS, K., R., GUTH, W.,D., (1965), *Business Policy : Text and Cases*, R. Irwin.

LEONARD-BARTON, D., (1988a). Implementation Characteristics of Organizational Innovations : Limits and Opportunities for Management Strategies. *Communication Research*, October : 603-631.

LEONARD-BARTON, D., (1988b).Implementation as mutual adaptation of technology and organization. *Research Policy*, vol. 17 : 251-267.

LEONARD-BARTON, D., (1992), Core Capabilities and Core Rigidities : A Paradox in Managing New Product Development, *Strategic Management Journal*, vol.13 : 363-380.

LEVINTHAL R., MARCH, J.G., (1993), The Myopia of learning, *Strategic Management Journal*, winter, 14 : 95-113.

LEWIN, K., (1951), *Field Theory in Social Science*, New York : Harper Row.

LEWIN, K.,(1947a). Frontiers in group dynamics, in CARTWRIGHT, D. (ed.) (1952) : *Field theory in Social Science*, London : Social Science Paperbacks.

LEWIN, K.,(1947b). Frontiers in group dynamics, in NEWCOMB, T.M., HARTLEY, E.L., (eds) : *Readings in Social Psychology*, New York, USA : Henry Holt. (ed.) (1952) : *Field theory in Social Science*, London : Social Science Paperbacks.

LINDBLOM, C., (1959), The Science of Muddling Through, *Public Administration Review*, 19 : 91-99.

- MARCH, J., G., (1991), *Décisions et organisations*, Paris : Les Editions d'Organisation.
- MILES, A.M., HUBERMAN, A.M., (1984). *Analysing Qualitative Data : A Source Book for New Methods*, Beverly Hills, CA, Sage. Trad. Franç : *Analyse des données qualitatives : Recueil de nouvelles méthodes*, (1991), Bruxelles : De Boeck.
- MINTZBERG, H., (1987), « Crafting Strategy », *Harvard Business Review*, July-August : 66-75.
- MINTZBERG, H., RAISINGHANI, D., THEORET, A., (1976). The Structure of « Unstructured » Decision Processes. *Administrative Science Quarterly*, vol. 21, June : 246-275.
- MINTZBERG, H., WATERS, J., A., (1985), Of Strategies, Deliberate and Emergent, *Strategic management Journal*, vol 9 : 257-272.
- MORIN, E.(1990a), *Introduction à la pensée complexe*, Paris : ESF.
- MORIN, E.(1990b), *Science avec conscience*, Paris : Edition du Seuil.
- NELSON, R., R., WINTER, S., G., (1982), *An evolutionary theory of economic change*, Cambridge, Massachusetts, The Belknap Press of Harvard University Press.
- ORLIKOWSKI, W.J., (1992); The Duality of Technology : Rethinking the Concept of Technology in Organizations, *Organization Science*, vol 3, N°3, August : 398-427.
- PELZ, D., C., (1983), Use of Information Channels in Urban Innovations, *Knowledge*, 5 (1) : 3-25.
- PETTIGREW, A., M., (1977), Strategy Formulation as a Political Process, *International Studies of Management and Organization*, 7, 2 : 78-87.
- PETTIGREW, A., M., (1987). *The Management of Strategic Change*, (éd.), Blackwell Edition, Oxford, UK.
- PETTIGREW, A.M., & WHIPP, R.(1993). *Managing Change for Competitive Success*, Blackwell Edition, Oxford, UK.
- PETTIGREW, A.,M., (1985). *The awakening giant: Continuity and change in imperial chemical industries*. Oxford, England; Basil Blackwell.
- PETTIGREW, A.,M., (1985b). Contextualist research : a natural way to link theory and practice, In LAWLER, E. (Ed.), *Doing Research that is Useful in Theory and Practice*. San Francisco : Jossey-Bass : 222-249.
- PFEFFER, J., (1981), Management as symbolic action : The creation and maintenance of organizational paradigm, in CUMMINGS, L., STAW, B., (eds), *Research in Organizational Behavior*, 3, Greenwich : JAI Press, 3 : 1-52.
- PFEFFER, J., (1981), *Power in organizations*, Marshfield, Mass : Pitman.
- PICHAULT, F., (1993), *Ressources Humaines et Changement Stratégique : Vers un management politique*, Bruxelles : DeBoeck Université.
- PORRAS, J., BERG, P., (1978), The impact of organization development, *Academy of Management Review*, 3 : 249-266.
- PORRAS, J., ROBERTSON, P., (1992) Organization Development, in *Handbook of Industrial and Organizational Psychology*, eds DUNNETTE, M., & HOUGH, L., 3 : 719-822. Consulting Psychologists Press.
- QUINN, J.B., (1978). Strategic Change : Logical Incrementalism. *Sloan Management Review*, Fall : 7-21.
- QUINN, J.B., (1980). *Strategies for Change : Logical Incrementalism*, Homewood III : Irwin.
- RAMIREZ, I.J., BARTUNEK, J., (1989), The Multiple Realities of Organizational Development Consultation in Health Care, *Journal of Organizational Change Management*, 2 (1) : 40-57.
- ROGERS, E.M., (1983,1995), *Diffusion of Innovations*. (third and fourth edition), New York : The Free Press.

- SCHROEDER, R.G., (1989), The Development of Innovation Ideas, in VAN DE VEN, A.,H., ANGLE, H.A., POOLE, M.,S., (eds), *Research on the Management of Innovation : The Minnesota Studies*, New York : Ballinger/Harper & Row.
- SCHUMPETER, J.,(1935), *Théorie de l'évolution économique*, Paris : Dalloz.
- SCHWENK, C.R., (1985), Management Illusions and Biases : Their Impact on Strategic Decisions, *Long Range Planning*, 18 : 74-80.
- SIMON, H., A., (1957), *Administrative Behavior*. New York : Mac Millan.
- STACEY, R., D., (1993), *Strategic Management and Organizational Dynamics*, London : Pitman Publishing
- STARBUCK, W,(1983). Organizations as Action Generators, *American Sociological Review*, 48 :91-102.
- STARBUCK, W.H., GREVE, A., HEDBERG, R., (1978). Responding to crises, *Journal of Business Administration*, 9 : 111-137.
- TESSIER, R., TELLIER, Y., (1973), *Changement planifié et développement des organisations*, Montréal : éd. de l'I.F.G.
- THIETART, R-A., FORGUES, B., (1993). La dialectique de l'ordre et du chaos dans les organisations. *Revue Française de Gestion*, Mars-Avril-Mai : 5-15.
- VAN DE VEN, A.H., & HUBER, G., (1990). Longitudinal Field Research Methods for studying Processes of Organizational Change, *Organization Science*, vol.1,N°3: 213-219.
- VAN DE VEN, A.H., & POOLE, M.S., (1990). Methods for studying Innovation Development in the Minnesota Innovation Research Program, *Organization Science*, vol.1, n°3, August : 313-335.
- VAN DE VEN, A.H., & POOLE, M.S., (1995). Explaining development and change in organizations. *Academy of Management Review*, 20: 510-540.
- WEICK, K., (1979 [1969]), *The Social Psychology of Organizing*, (2d ed.), Readings, Mass : Addison Westley.
- YIN, R.K., (1984). *Case Study Research : Design and Methods*, Newbury Park, CA, Sage, rééd. 1989, 1990.
- ZALTMAN, G., DUNCAN, R., HOLBEK, J., (1973), *Innovations and Organizations*, New york : Wiley and Sons.

Appendix 1.

Discriminant Indicators	CODES	DEFINITIONS
CONTENT		
Political	CONT-POL-T1/T2/T3	<i>Indicators of the dominant role played by power relations in the definition of change (scope of the project) and in the evolution of its content.</i>
Pattern	CONT-PROC-T1/T2/T3	<i>Indicators of the dominant role played by past organisational routines in the definition of change and in the evolution of its content.</i>
Linear	CONT-RAT-T1/T2/T3	<i>Indicators of the dominant role played by rationalisation in the definition of change and absence of modifications in the content.</i>
Interpretative	CONT-SENS-T1/T2/T3	<i>Indicators of the dominant role played by actors' interpretations in the definition of change (scope) and in the evolution of its content.</i>
Chaotic	CONT-CPLEX-T1/T2/T3	<i>Indicators of absence of clear and precise definition of change and chaotic evolution of the content..</i>
PROCESS		
Political	PROCES-POL-T1/T2/T3	<i>Indicators of the dominant role played by power relations in the way change is elaborated and implemented.</i>
Pattern	PROCES-PROC-T1/T2/T3	<i>Indicators of the dominant role played by past routines in the way change is elaborated and implemented.</i>
Linear	PROCES-RAT-T1/T2/T3	<i>Indicators of the dominant role played by rationalisation in the way change is elaborated and implemented</i>
Interpretative	PROCES-SENS-T1/T2/T3	<i>Indicators of the dominant role played by actors' interpretations in the way change is elaborated and implemented</i>
Chaotic	PROCES-CPLEX-T1/T2/T3	<i>Indicators of the dominant role played by hazard and uncertainty in the way change is elaborated and implemented.</i>
CONTEXT		
Political	CTX-POL-T1/T2/T3	<i>Indicators of the role played by power relations in the impact of the organisational environment on the change pilots (project team)</i>
Pattern	CTX-PROC-T1/T2/T3	<i>Indicators of the dominant role played by past routines in the impact of organisational environment on the change pilots (project team)</i>
Linear	CTX-RAT-T1/T2/T3	<i>Absence of significant (a- contextual) impact of organisational environment on change pilots (project team)</i>
Interpretative	CTX-SENS-T1/T2/T3	<i>Indicators of the dominant role played by actors' interpretations in the impact of organisational environment on the change pilots (project team)</i>
Chaotic	CTX-CPLEX-T1/T2/T3	<i>Indicators of the dominant role played by complex interdependencies between the organisational environment and the change pilots (project team)</i>