

# **THE INFLUENCE OF REVOLUTIONARY AND EVOLUTIONARY STRATEGIC CHANGES ACCORDING TO TUSHMAN AND ROMANELLI'S MODEL IN THE CONSTRUCTION SECTOR**

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## **ABSTRACT**

The objective of this paper is to discuss strategic changes in construction companies according to the model of Tushman and Romanelli (1985). A multi-case study was developed, in which it could be observed that most of the time, the process is incremental, punctuated by revolutionary changes, caused mainly by the federal government's economic plans. Based on the history of the companies, and on a number of critical events the strategic periods of each company was described, using both Miles and Huberman's (1984) and also Mintzberg and McHugh's (1985) through methodologies. This aim of this research study was to explain how companies in the Building Industry formulate their strategies.

## **KEY WORDS**

Construction Sector, Strategic Changes, Qualitative Method

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## **INTRODUCTION**

The Brazilian Building Industry, like several other industrial sectors, has been through relevant environmental changes in the last decades. The environment has been characterized by uncertainty and intense competition. As a result, the managerial perspective of organizations in this industry, has adapted to new circumstances, in order to accompany environmental transformations, i.e., to implement actions seeking to fit into the environment. This has led to deep changes in the strategies of these organizations, which are found to be a requirement for the organizational survival (Rossetto 1998).

In short, these problems hinder the work of entrepreneurs who try to conduct their businesses according to the environmental changes they deem important. The adaptation to the environment is achieved by making strategic changes in the company.

Hence, this study takes a closer look at the relationship between production management concerns, such as the adoption of lean construction approaches and strategic decisions related to the firms' process of adaptation to its environment. This analysis was carried out in two Brazilian building firms and it is based on Tushman e Romanelli's model.

## **STRATEGIC CHANGE ACCORDING TO TUSHMAN AND ROMANELLI'S MODEL**

Tushman and Romanelli (1985) developed the model of punctuated balance to describe organizational change through time. The organizational evolution is described as periods of incremental change punctuated by periods of discontinuous change. They say that organizations evolve through convergent periods punctuated by reorientations that determine limits for the convergent times

According to the model, the convergence stage refers to a long period of time where incremental change and adaptation occur. Reorientations are relatively short periods of revolutionary changes. Convergence periods are continuous processes in which the leadership role of the main executive of the company is to reinforce the effective strategy, the essential values and the mission, while observing the opportunities and threats of the environment (Tushman et al. 1986).

The two types of convergence changes are: fine-tuning of the effective strategies and incremental adjustments to the environmental. This involves gradual changes that are easy to implement, and they give time for the organization to concentrate on the search for effectiveness. Long convergence periods occur when the strategy is adapted to the external and internal conditions of the organization. If it faces a big threat, such as a great alteration in the environment and an inappropriate strategy, the forces of inertia act to prevent new changes from being adopted. The longer the convergence period (success period), the longer the period between the environmental change and the divergence (reorientation) in the organization (Tushman et al. 1986).

Reorientation periods are characterized by revolutionary changes that take the form of simultaneous and defined changes in the strategic dimensions. Typically, these changes occur not only in the strategy, but also in the structure, in the people and in the processes, so much so that the organization is restructured.

This type of change is used in response to the discontinuity in the environment, just as the regulation or increase in competitive pressures. Frequently, inertia forces act to prevent new strategies from being implemented, considering that the current strategy

provokes a decline in performance. At this time, the reorientation periods are activated. Figure 1 presents Tushman and Romanelli's (1985) model of punctuated balance of the organizational evolution.

First, an environmental change occurs. In response to this change, the organization acts experimentally because stability and certainty are reduced by that change. This leads to a period in which the company prepares itself for a revolutionary change. At the same time, inertia forces are built to maintain the status quo.

However, during this time, the forces of the change begin to be built and they unleash a revolutionary change. With this, a new dominant strategy appears with the coming of a new convergence period. Incremental adjustments and fine tuning characterize the change in the strategy during this period.

As stability is restored, inertia forces begin to act again, determining the stage for the next change.

Tushman and Romanelli's (1985) outlined model forms the conceptual basis that will be used to describe the process of strategic adaptation of the companies studied. This structure is necessary to identify the conditions in the context of the changes and to understand how they interact to inhibit or create them.

Greenwood and Hinings (1988) have treated the subject of macro organizational change using the concept of ways. A way is a sequence that involves the alteration of elements in the structure of an effective interpretative scheme, the appearance of new interpretative schemes and their rearrangement with appropriate elements of the structure. This should be a transformational reorientation; movements that started a transformation process proceeded by the stability where incremental changes occur.

Mintzberg (1973) characterizes incremental or adaptive change as a series of small steps where new strategies are formed gradually.

By contrast, revolutionary change is characterized as dramatic steps forward, usually due to environmental uncertainty (Mintzberg 1978). Miller and Friesen (1980) approach revolutionary change as a drastic change of a great number of variables of the strategy and of the structure.

Therefore, with respect to the magnitude of the process of change, it can be considered that a strategic change can have as much incremental configuration as a revolutionary one.

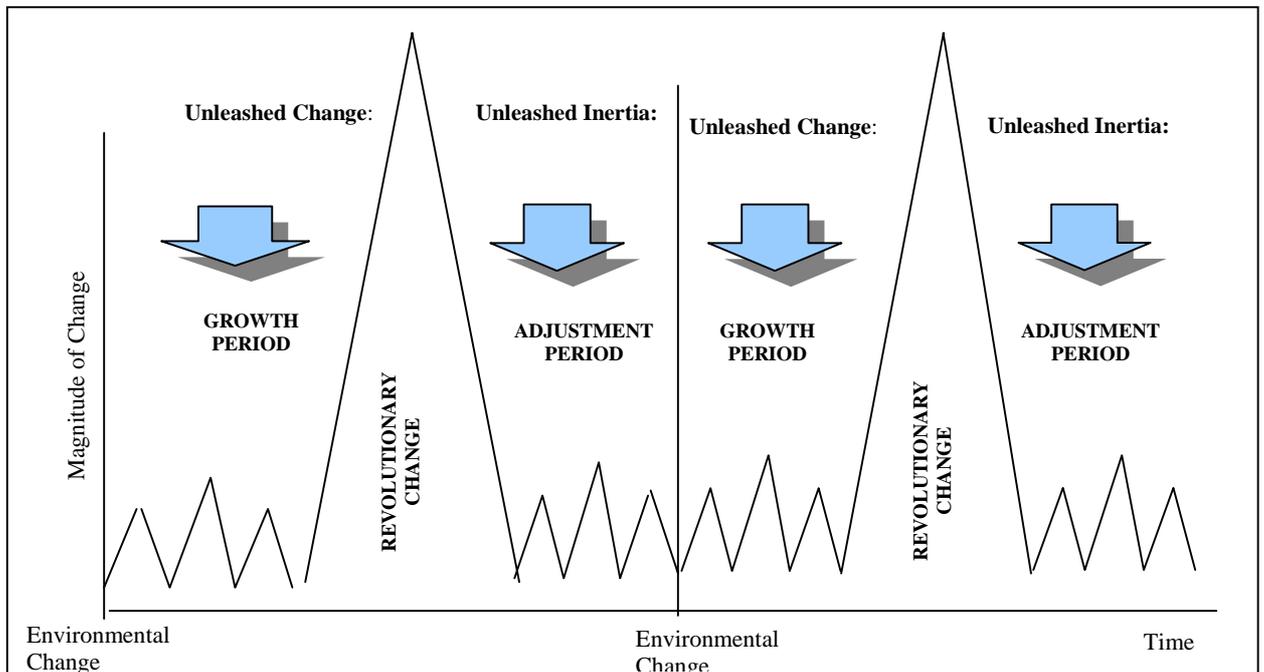


Figure 1: Model of the Punctuated Balance. Source: Tushman and Romanelli (1985)

## METHODOLOGY

The study described the strategic changes that occurred along the period of 1980-97, according to the perception of the dominant coalition. The qualitative approach was used (Lüdke and André 1986; Triviños 1992). Mintzberg (1979) describes his journey through the qualitative approach, pointing out seven basic themes that form the basis of this study. The seven basic themes confirm a lot of what has been said about several activities that should compose a so-called qualitative study: (1) it has to be as purely descriptive as the researcher is able to do; (2) it depends on simple methodologies; (3) it has to be as inductive as possible; (4) it has to be systematic in nature; (5) it has to be measured in real organizational terms; (6) it has to make sure that the systematic data is supported by data obtained in the interviews and (7) it has to integrate several organizational elements inside the configurations of ideal or pure types.

## DATA COLLECTION AND ANALYSIS

In the qualitative study the data collection and analysis were developed in dynamic interaction, retro feeding, being constantly reformulated so that, for instance, the collection of data instantly stopped being such and became data analysis, and this soon afterwards became a vehicle for a new search of information (Triviños 1992).

## Data Collection

As it was an *ex-post-facto* study, data collection was carried out with participants of the phenomenon, through open interviews, recorded, with a maximum duration of one hour. In order to define who the interviewees would be, the main executives of the companies were questioned to identify the main participants in the process who would be able to aid in the investigation. The interviews permitted the researcher to find out the opinions of

the informers that participated in the different stages of the process of strategic change, so as to build a solid general picture.

As soon as the data was collected, the researcher sought to identify themes and relationships, building interpretations and generating new subjects and/or improving the previous ones, which, at this time, led him to look for new data, complementary or more specific, that could test their interpretations, in a process of fine tuning that continued up until the final analysis. This led to the return to new interviews so that the researcher was able to validate some of the data reported by the interviewees.

### **Data Analysis**

Miles and Huberman (1984) offer some rich material to guide the registration tasks, analysis and presentation of qualitative data. This material suggests procedures to be adopted in the analysis, from the collection of data up to the final point, and it includes specific suggestions for studies developed in a single context and for those that compare two or more contexts.

Other works in organizational studies (Mintzberg 1979; Bourgeois and Eisenhardt 1988; Mintzberg and McHugh 1985) have called attention to the use of collection techniques and analysis of suitable data with the qualitative study.

A methodology study using a direct research approach requires a longitudinal approach, with the researcher reconstructing the fact after it has happened, making a historical reconstruction of the phenomenon.

The methodology used in this study can be described in the following tasks:

1. Collection of data from secondary sources, followed by interviews. In this stage emphasis was given to the constant comparison of the data with the objective of identifying categories.

2. Construction of a list of events based on the primary and secondary data, emphasizing the critical events. The method of the list of events proposed by Miles and Huberman (1984) allows us to have a general view of the process of strategic change. Methods similar to this are used by Pettigrew (1987), Child and Smith (1987) and Mintzberg and McHugh (1985).

3. Definition of periods and strategies based on both the interpretation of those investigated and of the researcher.

4. Theoretical analysis of each period.

5. Construction of the case according to Tushman and Romanelli's model.

## **THE STUDY OF THE PROCESS OF STRATEGIC ADAPTATION ACCORDING TO TUSHMANN AND ROMANELLI'S MODEL**

### **THE STUDY OF THE STRATEGIC CHANGES IN THE ALMEIDA PEDROSO GROUP**

In order to explain this adaptation process, the critical events that were most influential in the strategic changes adopted by the organization were identified (Table 1). Starting from this, the strategic periods were defined (Table 2).

*Table 1: Strategic Changes of the Process of Strategic Adaptation of the Almeida Pedroso Group*

Critical Event	Year
1. Appearance of the Almeida Pedroso Group	1979
2. The search for a new market	1980
3. First organizational crisis	1983
4. Entrance in the public work sector	1985
5. Return to the real estate sector	1987
6. Exit from the public work sector	1991
7. Implantation of the corporate strategic planning	1992
8. Release of the Plan CASA ( <i>HOUSE</i> )	1994
9. Creation of Almeida Pedroso Constructive Components Ltd	1995
10. Beginning of the organizational restructuring	1996

Source: Interviews made by the authors (1996/97)

Based on Table 1, between 1979 and 1997, four strategic periods of the Almeida Pedroso Group were defined (Table 2). These periods, characterized by a set of decisions that established a pattern of strategic behavior, were identified, using the theoretical framework adopted as a basis in this research.

*Table 2: Strategic Periods of the Process of Strategic Adaptation of the Almeida Pedroso Group*

Description	Year
1. Entrance in the Civil Construction and Search of New Market	1979-1984
2. Strategic Reorientation	1985-1991
3. Planned Change	1992-1995
4. Corporate Reorganization	1996-1997

Source: The Author's Research (1996/97)

### **The Process of Strategic Adaptation of the Almeida Pedroso Group**

In the process of strategic adaptation of the Almeida Pedroso Group, incremental changes occurred, merged with some revolutionary changes. For a better understanding of this process, it will be explained, through the model of the punctuated balance of Tushman and Romanelli (1985) (Table 3), how they occurred in each studied strategic period. Later, an analysis was made of the main characteristics of this process.

#### **STRATEGIC PERIOD 1**

At the beginning of this period, the dominant strategy was to act in the niche of residential buildings, for the lower middle class, in the incorporation regime, with financing from SFH. In the course of time, changes occurred in the objective environment, from the boom in ICC, in the year of 1980, going through the economic recession of 1981, until a deep crisis in 1983. The company responded in an incremental way, because stability and certainty were the tonic until the year 1982. The unleashing factors of the organizational inertia were: private clients, financial institutions and competitive competition. In 1983, what Tushman and Romanelli (1985) called the growth period began, when the unleashed changes appeared. These are, especially, the government and the financial institutions. The poor performance of the organization can

also be included in this group. Then, there was a period in which a new dominant strategy took over.

### **STRATEGIC PERIOD 2**

At the beginning of this period the new dominant strategy was to carry out projects contracted by the state. From this point, an adjustment period begins with the new dominant strategy with the appearance of the inertia triggers. These are the public clients and the good profitability of this market segment. Besides these, private clients also collaborated for the stability of the dominant strategy. However, changes occurred in the objective environment since President José Sarney took office in 1985; the Cruzado Plan in 1986; the difficult situation from 1987 to 1990; and the crisis of 1991. Because of this, the company responded in an incremental way, getting contracted for government projects and also developing some residential building projects, when resources allowed. In 1990 what Tushman and Romanelli (1985) called the growth period started, when the triggers of change appeared. These were the federal government, public clients and the new abilities of the company's leader. The decline in organizational performance that was critical in 1991 can also be considered one of them. Then there was a period in which a new dominant strategy took over

### **STRATEGIC PERIOD 3**

At the beginning of this period, the new dominant strategy was to finance, develop and construct residential buildings for low-income groups. After this was established, an adjustment period began, with the appearance of the factors that triggered off inertia. They were the private clients, suppliers and the teaching and research institutions. Again, the crisis is originated by the instability in the objective environment of the company, due to the continuation of the crisis in 1992, going through the reaction of the economy and of the ICC in 1993, until reaching the shortage of financing and the popularization of the Real Plan in 1994. This last one was the main factor unleashing a new process of organizational transformation. In the growth period, the company searched for alternatives to reach a new balance.

### **STRATEGIC PERIOD 4**

At the beginning of this period, the embryo of a new dominant strategy appears, in the beginning of the organizational restructuring. This process was conducted during the whole year of 1996 and 1997, where the factors that triggered off inertia are competitive competition and private clients.

### **THE STUDY OF THE STRATEGIC CHANGES OF THE MAGNO MARTINS GROUP**

During the period covered by this study - 1982-1996, the Magno Martins Group was adapting its organizational field through the use of several strategies. To explain this adaptation process, they outlined the strategic changes adopted by the organization (Table 3). From these changes, the strategic periods were defined (Table 4).

*Table 3: Strategic Changes of the Process of Strategic Adaptation of the Magno Martins Group*

<b>CRITICAL EVENTS</b>	<b>YEAR</b>
1. Creation of Emecon Engineering Ltd.	1982
2. Entrance in the commercial buildings niche	1987
3. Entrance in the niche of public works	1987
4. Beginning of condominium DEVELOPMENT AND CONSTRUCTION	1988
5. Approval of a new urban plan for Florianópolis	1988
6. Entrance in the beach towns construction niche	1989
7. Beginning of the use of self-financing	1991
8. Entrance of Encol in Florianópolis	1992
9. Entrance in the hotel branch	1993
10. Backward Integration Steps	1994
11. Reformulation of the productive processes	1995

Source: Adapted from Martignago (1998)

Each of the Magno Martins Group strategic periods has a different pattern of behaviour in terms of decision making.

*Table 4: Strategic Periods of the Process of Strategic Adaptation of the Magno Martins Group*

<b>DESCRIPTION</b>	<b>PERIOD</b>
1. Entrance and consolidation in the market	1982-1986
2. Search for new markets	1987-1991
3. Organizational Restructure	1992-1994
4. Search for competitiveness	1995- 1996

Source: Adapted of Martignago (1998)

## **The Process of Strategic Adaptation of the Magno Martins Group**

### **Strategic Period 1**

At the beginning of this period, the dominant strategy was to act in the niche of residential buildings for the middle class, in the proximities of UFSC (*Federal University of Santa Catarina*) in the incorporation regime, with financing from SFH, denominated gestalt strategy. With the appearance of factors that triggered off inertia: private clients, PPCL, financial institutions, competitive competition and the municipal government. In the course of time, changes in the objective environment appeared, from its foundation in 1982, through the recession of the economy in 1984, until the appearance of the deep crisis in 1986. In this year, what the authors call the growth period began to occur, where the unleashed change appeared: the federal government, private clients and suppliers. The low performance of the organization can also be included in this group. Approaching a period where a new dominant strategy took place: to search for new markets.

### **Strategic period 2**

At the beginning of this period, the dominant strategy was to act in the core business, but also in the segment of condominiums in beach towns, commercial buildings with financing from SFH and public works. Unleashed inertia appeared: private clients, competitive competition and financial institutions. A change in the objective environment occurred during this time. The financing began to be reduced in 1988; and the crisis was

installed with the Collor Plan in 1990. What the authors call the growth period began to occur that year, factors triggering off appeared: the federal government, state and municipal public clients and financial institutions. The poor performance of the organization due to the inefficiency of its core business can also be included in this group. Then, there was a period where a new dominant strategy took place: Organizational Restructuring.

Strategic period 3

At the beginning of this period, the dominant strategy was to act in its new core business: residential buildings in the vicinity of UFSC (Federal University of Santa Catarina), downtown and in beach towns, in the incorporation regime. Private clients, competitive competition and suppliers acted as unleashed inertia. But modifications in the environment began to occur. The continuing financing situation began in 1990. That improved the situation of building industry slightly in 1993, but the Real Plan in 1994 and the search of the companies for competitiveness and productivity to supply the demand of the market, in 1995, significantly altered the rules of the market, generating a growth period, where the unleashed change occurred: the federal government and private clients. Then there was a period in which a new dominant strategy took place: The search for competitiveness.

Strategic period 4

At the beginning of this period, the dominant strategy was the restructuring of the productive processes of new essential business (core business). Unleashed inertia occurred: private clients and competitive competition. The company now continues its operational restructure.

## **CONCLUSION**

This research project is intended to develop a model of strategic formulation of two companies of the building industry, based on the reality of the facts that happened according to the interpretation of these facts by the organizational actors.

Another differential of this study was the use of contextual research (Pettigrew 1985), because the context was considered an important element in the study of the process of strategic adaptation. It was not our aim to study this process as a series of self-contained episodes, but to carry out a thorough and detailed study of internal and external contexts in the process of the formulation of the strategies in an organization.

With this objective, we have used longitudinal and historical analysis in order to understand the process of development of the strategies. Kimberly (1976) already affirmed that research was very static and unhistorical, interpreting only tight episodes and failing to understand the context. Pettigrew (1985), in the same line of thought, affirmed that longitudinal analysis is more interesting when the processes of strategic changes being used are studied because the language used is the language of *becoming* rather than the language of *being*.

The study of the history or the biography of the organizations offers the researcher rich theoretical insights into the organizational development. One of the important elements of this historical approach is that researchers choose to focus on the context to describe the process of strategic organizational adaptation.

One of the most relevant contributions of this study, mainly for the sector analyzed (Building Industry), is the understanding of how a dominant coalition perceives the

organizational field and responds to the organizational context. At the same time this study could represent the start of future discussions about the process of longitudinal and historical research into the Building Industry.

Finally, one can infer that only in the fourth strategic period of both firms (organizational restructuring and search for competitiveness) there seems to be managerial concern about the operations management process.

In the first firm (Almeida Pedroso Group), during the fourth period there were several decisions made towards the development of integrated solutions of construction systems, through which the firm attempted to put together all the companies involved in the supply chain, from project design blueprints to the execution of the project.

In the second firm (Magno Martins Group), only after the Real Plan in 1994, due to the increasing demand for competitive improvement, managerial attention turned to the management of its productive processes.

Furthermore, the decision makers' attention in both firms only turned to the management of their productive processes to be relevant for their success and survival under external environmental pressures like the possibility of opening the building sector to foreign competitors.

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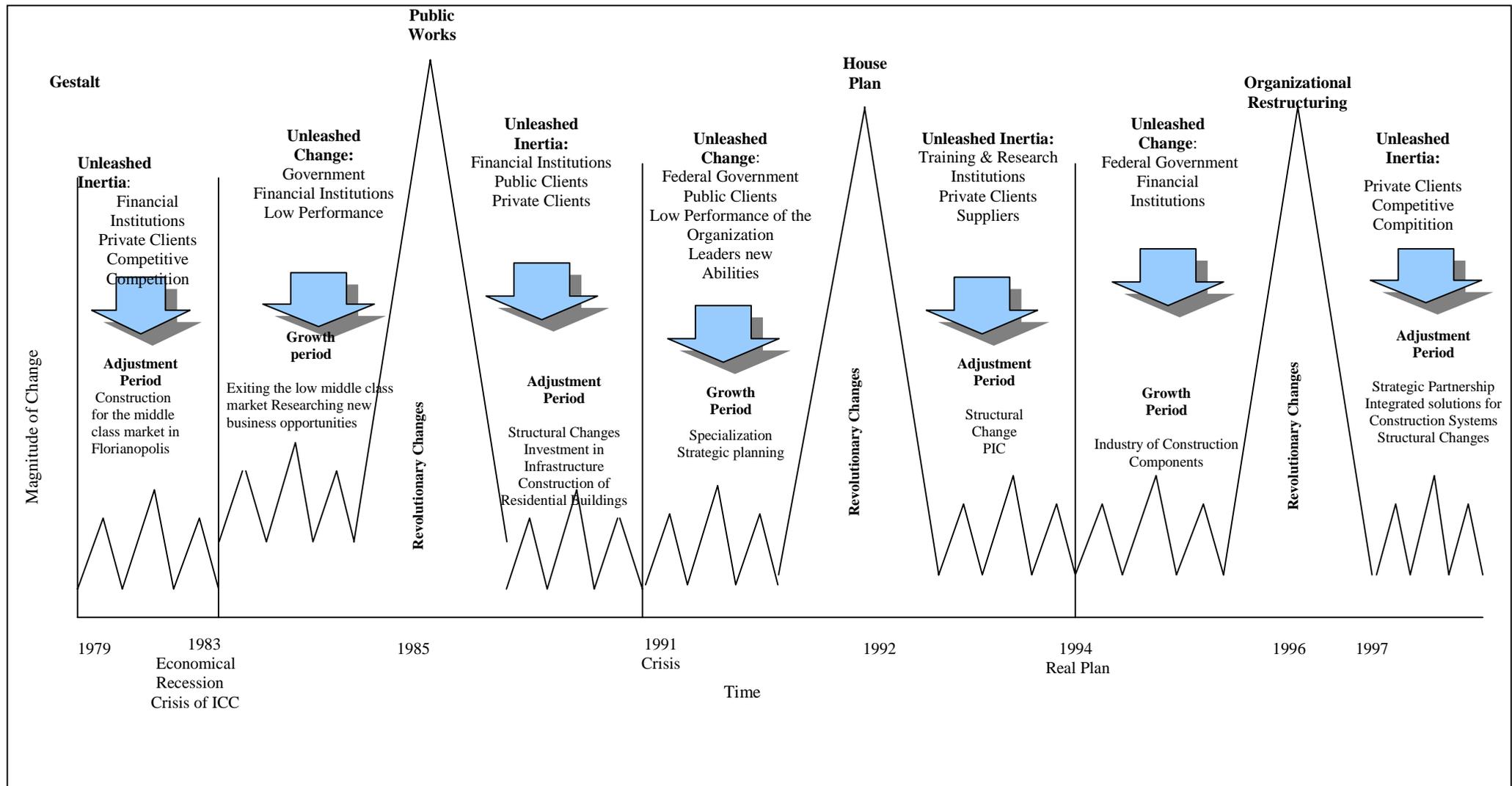


Chart 4.3–Process of strategic Adaptation of the Almeida Pedroso Group. Source: The Author's Interviews adapted from the model of Tushman and Romanelli (1985)

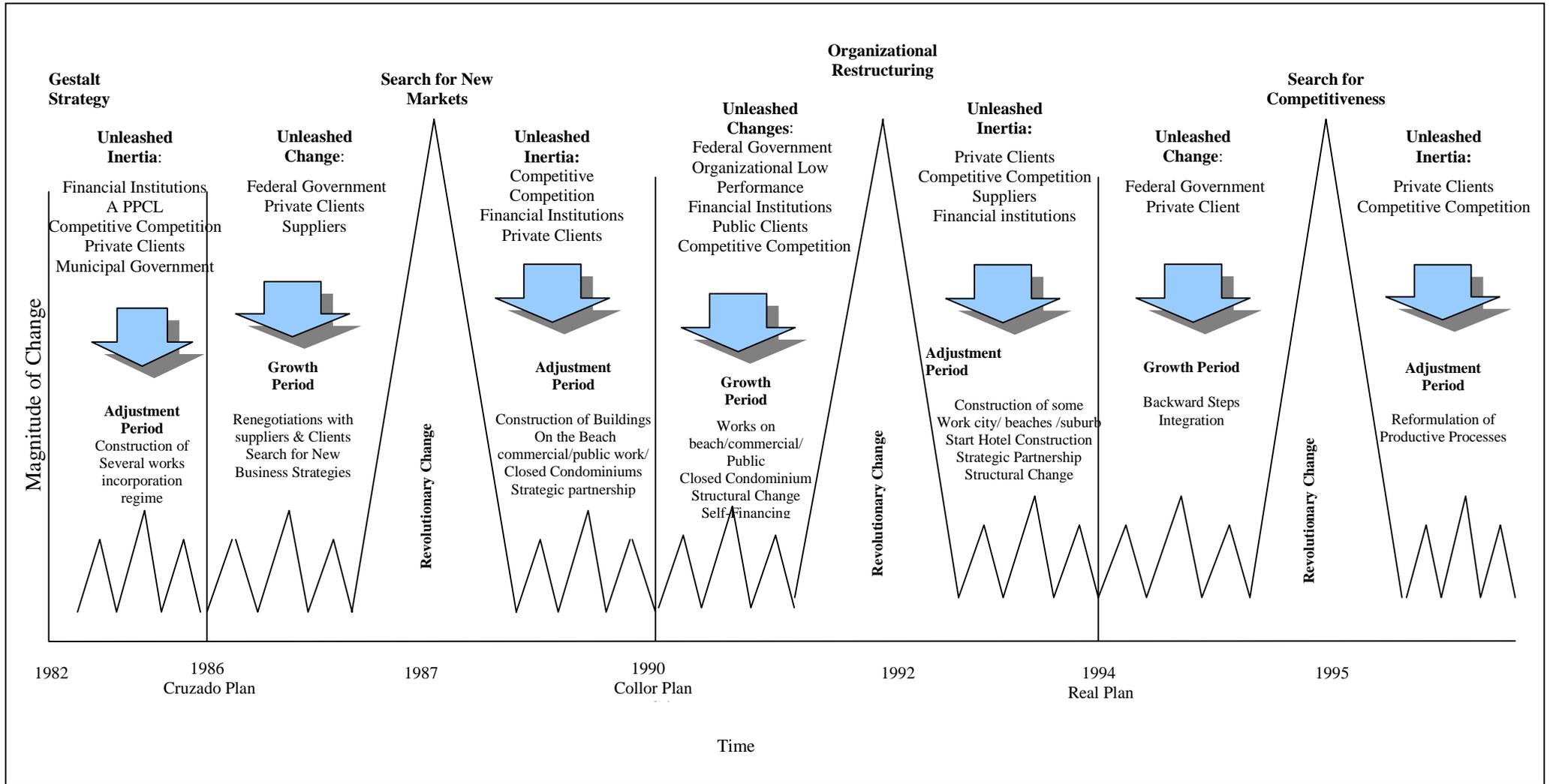


Chart 4.6 – Process of Strategic Adaptation of the Magno Martins Group  
 Source: Adapted from Tushman & Romanelli (1985)