The adaptive cycle of resilience:
Identification of phases
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1. Introduction

Today’s business world is increasingly complex, full of uncertainties and constantly changing. Particularly the developments in ICT have led to a globalized world in which the traditional image of an organization, which is defined by the striving for security and standardization, is no longer sufficient. Therefore, in order to cope with these dynamics, organizations need to be constantly engaged in scanning, interpreting and aligning their own demands with the changes in the environment. On many occasions, however, external events can hardly be foreseen and result in situations where the existing is suddenly no longer enough. These situations are denoted as ‘crisis’ and more than often demand innovative ideas, creativity and radical changes in order to be overcome. This notion highlights the diverging requirements that are laid upon today’s organizations. On the one hand, organizations need to be able to manage the present in order to earn profits and satisfy short-term interest. Yet, on the other hand, they are required to be flexible, innovative and capable of quickly adapting to new situations. In regard of these dynamics, Abcouwer & Parson (2011) developed a model that is called “the adaptive cycle of resilience”. The model is driven by the assumption that an organization runs through a succession of phases over time. Each phase poses different demands on the organization and leads to varying characteristics in terms of strategy, management and culture. Abcouwer & Parson argue that a better understanding of the phases will help an individual organization in developing the required strength to deal with the dynamics.

The aim of this paper is to provide a better understanding of the varying characteristics of the four phases of the adaptive cycle. More specifically, it attempts to tackle the following research problem:

“How can the phase, an organization resides in, be identified?”

To investigate on this issue, this paper will elaborate on the development of a theoretical framework that identifies various organizational dimensions that are argued to define an organization and vary cross the four phases of the adaptive cycle. The specified dimensions will be translated into a scientific questionnaire that attempts to identify the phase an organization resides in.

The paper will be structured as follows: In the beginning a thorough literature review concerning the adaptive cycle theory and its underlying concepts will be presented and discussed. Next, the development process and the characteristics of the theoretical framework
will be elaborated. Following, the paper clarifies the methodology in terms of the research design and the research strategy. Consequently the results and appropriate analysis will be discussed. Finally, the paper concludes by evaluating the findings in connection to the research problem and by offering recommendations for further research.

2. Literature review: The adaptive cycle theory

“Conceptualizations of adaptive cycles have arisen independently in ecology, archaeology, and economics, among other fields“ (Redman & Kinzig, 2003). This notion also applies to the research of this paper in which the adaptive cycle theory serves as the theoretical foundation. More specifically, the research of this paper is based on a conceptualization of the adaptive cycle theory by Abcouver & Parson (2011) who derive insights from ecology and social sciences and translate these into a model that can be applied within the field of organizational theory. In order to provide an adequate understanding of the theoretical approach of this research, it is necessary to begin with an elaboration of the three underlying concepts that constitute the model by Abcouver & Parson.

The first fundamental concept that constitutes the adaptive cycle model by Abcouver & Parson (2011) is based on the assumption that the functioning of any organization is shaped by its environment. By referring to the concept of coevolution, Abcouver & Parson argue that “developments within the organization cannot be viewed separately from the developments that take place in its environment”. Therefore, the interaction between the organization and its environment define the functioning of any organization.

![Figure 1. Want - must - can dilemma (Heene, 2002)](image_url)
In order to function optimally within this paradigm of coevolution, the organization is constantly engaged in scanning, interpreting and aligning to the dynamics in the environment. In this regard, Heene (2002) introduces the “want – must – can” dilemma (Fig. 1), which plays a significant role for the adaptive cycle model by Abouwer & Parson.

It is the goal for every organization to bring these three dimensions, namely the desirable (want), the necessary (must) and the achievable (can), into balance. Yet, since these dimensions are constantly influenced by the changes in the external environment, the organization is permanently engaged in the search of new equilibrium states between the want - must – can dimensions. This notion prompts an organization to be in a continuous rotation between stability and chaos (Prigogine & Stengers, 1987). Consequently, this constant motion represents one of the fundamental aspects of the adaptive cycle theory that is utilized in this research.

A strategic framework by Thompson (1967) represents the second fundamental concept that constitutes the adaptive cycle model by Abcouwer & Parson (2011). His work is theoretically related to the aforementioned want – must – can dilemma in that he argues that the decision making process in an organization involves the following two dimensions: First, the beliefs about cause and effect relations, which is related to the can, and second, preferences regarding possible outcomes, which is related to the want. Each dimension is dichotomized and takes on the value of either certainty or uncertainty regarding the outcome and certainty or uncertainty concerning outcome preferences (Thompson, 1967). By confronting the two dimensions, Thompson developed a framework that introduces four different decision issues (Fig. 2).

![Figure 2: Strategic decision-making framework (Thompson, 1967)](image-url)
In this regard, he claims that each type of decision issue requires a different type of strategy for the decision-making. First, at times where an organization is certain about the cause and effect relationships as well as about the preferences regarding the outcomes, Thompson (1967) speaks about a computational strategy for decision-making. The computational strategy is characterized by a decision-making style that focuses on the short term and is based on clear and adequate information. Second, when the preferences are clear, but the cause and effect relation is not clear, he refers to a judgmental strategy for decision-making. As cause and effect relations are unclear, decisions should be adapted from experience. Third, a compromise strategy for decision-making involves certainty towards the cause and effect relation but uncertainty regarding the preference for possible outcomes. The denotation of this strategy indicates that compromises are needed in order to find a common ground for decision-making. Fourth, an inspirational strategy for decision-making is asked for when both, the beliefs about cause and effect relations and the preferences regarding the possible outcomes, are uncertain. This strategy demands a decision-maker who is able to inspire and lead. The implications of these strategies play a significant role for the development of the theoretical framework of this research and will be further elaborated in section 4.2.

On the basis of the theoretical insights by Thompson (1967) and Heene (2002), Parson et al. (1990) developed a preliminary version of the adaptive cycle model that is dwelled upon in the research of this paper (Fig. 3). The model uses the axes “want” and “can” which reflect to a certain degree the findings by Heene. The “want” represents the “desirable” in terms of the indented direction the organization wants to go in the future. On the other hand, the “can” represents the achievable in terms of an organization’s ability to take the desired path.

![Figure 3. Preliminary version of the adaptive cycle model (Parson et al., 1990)](image-url)
The model functions within the context of its environment, the “must”, which sets the limits of choices that can be made by the organization. Further research on this topic has discovered that internal and external influences are causing an organization to move back and forth between these quadrants. Abcouwer et al (2006) found that this motion is not random but rather adheres to a certain logic that can be represented by a lemniscate. This lemniscate movement exhibits great similarities to the adaptive cycle motion that has been recognized in the field of ecology (Gunderson & Holling, 2002; Walker et al. 2006). Consequently, the ecological insights by Gunderson & Holling represent the third fundamental concept that constitutes the adaptive cycle model of Abcouwer & Parson (2011).

“The adaptive cycle was originally conceptualized by Holling (1986, 2001) to interpret the dynamics of complex ecosystems in response to disturbance and change” (Deadlow, 2011). Fundamentally, the ecological conceptualization of the adaptive cycle is based on the widely accepted assumption that ecological succession is being controlled by four distinct ecosystem functions, namely exploitation, conservation, release and reorganization (Fig. 4).

Two incumbent dimensions define the movement of adaptive cycle model by Gunderson & Holling (2002). First, the degree of connectedness (x-axis) “reflects the strength of internal connections that mediate and regulate the influences between inside processes and the outside world – essentially the degree of internal control that a system exerts over external variability” (Gunderson & Holling, 2002). Second, the potential (y-axis) is defined as the “inherent potential of a system that is available for change” (Gunderson & Holling, 2002).
The four different functions can be explained as follows. First, the exploitation function represents the r-phase and emphasizes the rapid colonization of recently disturbed areas. Second, the conservation function represents the K-phase and deals with the slow accumulation and storage of energy and material. Third, the release function represents the Ω phase. Here, the accumulation and storage of energy and material reaches a point of overconnectedness and results in an increased sensibility to external influences. The appearance of unexpected events such as forest fires, drought, insect pests, or intense pulses of grazing trigger a sudden release of the accumulated energy and material. Fourth, the reorganization function represents the α phase, in which soil processes reorganize nutrients so that they become available for the next phase of exploitation.

The dynamics of the adaptive cycle can be described as follows. The cycle begins with a slow transition from exploitation (r) to conservation (K) that is followed by a rapid move to release (Ω) that in turn is followed by a very rapid transition to reorganization (α). Next, the movement goes back to exploitation (r). “Depending on the particular configuration of the system, the system can then begin a new adaptive cycle or alternatively it might transform into a new configuration, shown as an exit arrow in the popular ‘figure eight model’” (Deadlow, 2011) (Fig. 1).

On various occasions, Gunderson & Holling (2002) draw comparisons between their ecological model and its relevancy to social systems. In this regard, Deadlow (2011) argues that “the succession of the four phases is assumed to be generally applicable to all social systems”. Redman & Kinzig (2003) approve this claim by stating that supporters of the concept have recognized the opportunity to enrich and refine this model by integrating insights of social sciences and thus, have expanded the concept in collaboration with mathematicians, economists, and political scientists. This notion is consistent with the work from Abcouwer & Parson (2011) who recognized that the lemniscate movement in their model shows a strong resemblance to the adaptive cycle motion that has been acknowledged in the field of ecology. Albeit the two models have different axes, the insights concerning the movement through the phases are specifically useful for the conceptualization of this research.

Summing up, the aforementioned insights from Heene (2002), Thompson (1967) and Gunderson & Holling (2002) constitute the adaptive cycle model by Parson & Abcouwer (2011). The model will be discussed in the following.
Based on the aforementioned insights from ecology and social sciences, Abcouwer & Parson (2011) developed an adjusted version of the adaptive cycle that is applicable within the field of organizational theory (Fig. 5). Essentially, the model indicates that any organization goes through a succession of phases throughout its lifetime. Each phase represents a different state that can be defined within the want-can-must dilemma developed by Heene (2002) in combination with the previously described work by Thompson (1967). In this regard, the model contains two opposing developments. The left-hand side of the model deals with order and repetition. The right-hand side comprises chaos and adjustment (Abcouwer and Parson, 2011). Additionally, the cyclic motion through the phases is derived from the ecological conceptualization of the adaptive cycle by Gunderson & Holling (2002).

Basically, the starting point of the process is quadrant I, the phase of equilibrium. During this phase, an organization faces a situation where both dimensions, the want and the can, are certain. More specifically, the cause and effect relations are clear and it is therefore obvious which goals an organization strives for and how these goals can be obtained. Moreover, the equilibrium phase is characterized by the pursuit for standardization, efficiency and predictability (Abcouwer and Parson, 2011). Any problems or improvements are coped with on the basis of the existing knowledge, skills and objectives. In line with the assumption by Gunderson & Holling (2002), Abcouwer & Parson (2011) argue, that this notion increases the
rigidity of the organization. In the case of an unexpected internal or external event, this rigidity is a major reason that prevents an organization to cope with the problem sufficiently. At the moment when the complexity of the situation becomes so high that the organization is no longer capable of dealing with the developments, Abcouwer & Parson speak of a crisis. The transition from phase I, the equilibrium, to phase II, the crisis, is comparable to the release function of the ecological model by Gunderson & Holling (2002). As mentioned earlier, the system becomes overconnected and thereby increasingly fragile. Unexpected events lead to the breakdown of the tightly connected system. It should be noted that the transition to a new phase is officially completed as soon as the organization becomes aware of the changed circumstances (Abcouwer & Parson, 2011). This assumption is consistent with the concept denoted by the term Gestalt-switch that implies a spontaneous change in the perception and interpretation of a situation (van Es, 2008). “Anything initially seen as background suddenly appears to be central stage when considered” (Abcouwer & Parson, 2011). This awareness in combination with an organization’s capability to cope with the sudden change determines either the success or the failure of an organization.

Christine Pearson & Judith Clair (1998) provide a widely accepted definition of an organization crisis: “An organizational crisis is a low probability, high impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effects and means of resolution, as well as by a belief that decisions must be made swiftly.” While a crisis can either be recognized as a negative matter or as an opportunity for innovation (Jaques, 2007), it is certain that during a crisis, an organization is faced with ambiguity on different levels (Abcouwer & Parson, 2011). Emerging issues cannot be resolved by holding on to past experiences. There is a demand for innovation in terms of creating new opportunities and possibilities. In this regard, (Flamholtz, 2006) discuss a positive connection between an organization’s commitment to innovation and organizational performance. Consequently, in line with the work from Thompson (1967), an organization requires an inspirational strategy to cultivate an innovational mode of thought. In this regard, Abcouwer and Parson (2011) state: “The main objective during the phase of crisis is to develop a set of realistic options that an organization can choose from”.

The creation of new opportunities marks the transition from crisis to new combination. In the adaptive cycle model, this intermediate phase is denoted as reorganization. The term is derived from the ecological conceptualization of the adaptive cycle by Gunderson & Holling (2002) who argue that “the reorganization phase is essentially equivalent to one of innovation and restructuring in an industry or in a society”. The arrival at a set of viable options triggers
another gestalt switch that includes the re-establishment of confidence towards the future. This change in awareness represents the completed transition to phase III, the phase denoted as new combination.

During the phase of new combination, an organization faces a situation of certainty towards the *can* dimension but uncertainty towards the *want* dimension. One the one hand, the organization knows about its capabilities because it has developed various realistic options. However, on the other hand it hasn’t decided which one to pursue. Thompson (1967) describes this dilemma as follows: “I do know how to do it but I have no idea whether I want it and what I want”. Therefore, the main objective of this phase is to decide on one option. In order to do that, an organization further investigates the feasibility of each option for the purpose of narrowing down the number of choices until the potentially best option is found (Abcouwer & Parson, 2011). This approach demands from an organization to reach compromises and is therefore theoretically consistent with the compromise strategy identified by Thompson. “In this instance, it is all about acquiring experiences and thus ultimately making the ‘right’ choice.” (Abcouwer & Parson, 2011). The selection of the final choice triggers another gestalt switch and consequently marks the transition to phase IV, the phase of entrepreneurship.

Abcouwer & Parson (2011) resort to the ecological process of exploitation identified by Gunderson & Holling (2002) to describe the transition from new combination to entrepreneurship. During exploitation the potential decreases because new initiatives are no longer sought. In contrast, the degree of connectedness between internal controlling variables and processes start to accumulate again.

As an organization enters the phase of entrepreneurship, it faces a situation of certainty towards the *want* dimension yet uncertainty towards the *can* dimension. Abcouwer & Parson (2011) argue that while an organization made a choice and acquired a clear view of its objectives, it is not capable of an immediate full-scale implementation of its chosen plan. Therefore, during the phase of entrepreneurship, an organization puts a lot of effort in the improvement and development of its choice. In order to achieve a new equilibrium state and therefore certainty towards both the *can* and the *want*, an organization works constantly towards the reorganization and rationalization of business processes (Abcouwer & Parson, 2011). The incessant effort towards reaching the new equilibrium is theoretically consistent with the ecological term conservation, which deals with the slow accumulation and storage of energy and material (Gunderson & Holling, 2002).
In summary, the foregoing elaboration of concepts related to the adaptive cycle theory represents the foundation for the theoretical framework of this research. The appropriate development process will be explained in the following section.

3. Development of theoretical framework

**Approach**

The theoretical framework serves as the underlying basis for the research approach of this paper. The development process includes several steps.

![Figure 6. Development process of theoretical framework](image)

**3.1 Pooling of literature**

The first step towards setting up the research included the pooling of existing literature. A wiki about the adaptive cycle that had been established by Mr. Abcouwer serves as the starting point for pooling the literature. Generally, a wiki enables the reader to edit the content through a web browser and represents a user-friendly platform that facilitates collaborative working (Ebersbach & Glaser, 2005). With regard to the adaptive cycle, the aim of the wiki is to make the topic more publically available and also to generate a rich database of academic literature that is connected to the topic. In order to enrich the wiki with content, Mr. Abcouwer incorporated the wiki in the course ‘Virtual organizations in a dynamic context’. For the academic years of 2011/2012 and 2012/2013, several groups of students were given the assignment to contribute to the wiki by searching for relevant academic literature and adding an appropriate entry to the wiki. Due to the contributions of students throughout the foregoing years, a rich list of approximately 211 academic articles had been accumulated. Yet, the wiki missed a clear structure because of irrelevant contributions, duplicates and no standardized entry format. In order to get a clear overview of the collected literature an Endnote database was created.
3.2 Creation of Endnote database
Endnote is a commercial reference management software package that provides additional tools for searching, organizing and sharing the bibliography (Endnote, 2013). Every literature entry in the wiki was imported to the database. This offered the involved parties a clear overview of the existing literature and an efficient way to manage the database simultaneously. The next step in setting up the research included the development of a categorization scheme. Developing the categorization scheme made it possible to acquire a deeper understanding about the topic and discover new insights that help in answering the research question of this paper. Moreover, by applying the scheme to the wiki, a user is presented with a clear structure and is able to search the wiki for topics of his or her interest.

3.3 Development of categorization scheme and application to wiki
The categorization scheme can be applied to the wiki in form of an additional layer in order to provide a clear overview about the content. The scheme has been developed as follows. First, all academic articles form the respective wiki entries were downloaded and subsequently assessed for their relevance. Since it was the obligation of each student to add several academic articles to the wiki during the foregoing years, a number of duplicates and clearly irrelevant articles had been added. Therefore, sorting these out was a first step towards restructuring the database. To achieve a fast and efficient way to get a first glance at the content of an article, each entry in the database was enhanced by a short summary about the respective article. In the majority of cases, an abstract was available and applied as summary. The process of reviewing the literature on a high-level made it possible to identify key-concepts related to the adaptive cycle. These key-concepts served as a first basis for developing a categorization scheme. However, in order to facilitate the classification and moreover to make it as straightforward to the reader as possible, it was agreed upon by the involved parties to develop the categorization scheme along the lines of the different phases of the adaptive cycle and the concepts of revolt and remember. Additionally, basic characteristics such as the type of research study (case study, qualitative or quantitative), the scientific context (ICT, organizational, management, business, economics etc.) as well as the metadata in Endnote (year of publication, authors and the type of journal) served as reference points for the classification. A complete overview of the categorization scheme can be found in Appendix 1. In order to achieve a high degree of usability for the user of the wiki, it was decided to apply the categorization scheme in form of a tagging system. Therefore, each term of the developed classification scheme was translated into a tag that was subsequently
assigned to an appropriate article. Incorporating the tagging system in the Endnote database facilitated searching and finding literature of interest. After each entry in the Endnote database was enhanced with a short summary and the appropriate tags, the wiki had to be aligned to the database. Due to the fact that the foregoing contributors didn’t follow a standardized format for adding literature to the wiki, each entry differed from each other. This affected the user experience negatively. Consequently, a standardized format that incorporated the author, title, year of publication, journal, source, tags and abstract was developed (Appendix II). Browsing for literature on the wiki could be realized in different ways. First, the wiki offered a website where all relevant articles were listed based on their title in an alphabetical order. However, this way didn’t make use of the developed tagging system. In order to apply the tagging system, a wiki extension called “Multi-category search” was installed. “The extension allows users to find pages that are included in several specified categories at once” (Mediawiki, 2013). Consequently, the extension enables the user to select up to five different tags that should be matched by the resulting search results.

The development of the categorization scheme demanded an extensive review and analysis of the existing literature and consequently provided many insights that were essential in developing the theoretical framework. The next section will elaborate the structure and characteristics of the theoretical framework.
4. Theoretical Framework

The theoretical framework serves as the basis for research approach of this paper. The literature review resulted in the identification of five organizational characteristics (organizational climate, innovative capability, strategy, management and learning) that define an organization and vary across the four phases of the adaptive cycle (as depicted on the right-hand side of Fig. 7). Moreover, consistent with the assumptions by Heene (2002), figure 7 illustrates that an organization is constantly engaged in scanning, interpreting and aligning to the dynamics in the environment. In order to tackle the research problem of this paper, the theoretical framework will be translated into a questionnaire that attempts to identify the phase an organization resides in. Before elaborating further on this research approach, each of the five identified organizational characteristics as well as the environment dimension will be discussed.

![Theoretical Framework](image)

**Figure 7. Theoretical Framework**

4.1 Organizational Climate

Abcouwer & Parson (2011) argue that culture of an organization varies throughout the four phases of the adaptive cycle. However, the concept of organizational culture is not in line with the research approach of this paper because most of the research on organizational culture...
applies qualitative measures and focuses on single organizations (Patterson et al., 2005). Yet, as already mentioned before, the aim of this research is to develop a quantitatively based questionnaire that utilizes measures applied comparatively across several organizations. With regard to the research approach of this paper, organizational climate, a related concept to organizational culture, proves to be more suitable because most climate research applies quantitative measures (Patterson et al., 2005). Schneider (2000) suggests that organizational climate is behaviorally oriented as it depicts the things that happen to employees in an organization. Consequently, climate represents the surface form of appearance of culture (Schein, 1985). In this regard, it should be possible to indirectly measure the changes in organizational culture on the basis of organizational climate.

The Competing Values Model by Quinn & Rohrbaugh (1983) represents the theoretical foundation to explain the changing degrees of organizational climate along the lines of the adaptive cycle. The framework is based on the assumption that criteria for organizational effectiveness can be comprehended when organized along two fundamental dimensions—organizational focus and organizational preference for structure. Each dimension involves two opposing extremes. First, organizational focus ranges from an internal emphasis on the welfare and education of people to an external emphasis on the welfare and formation of the organization itself (Quinn & Rohrbaugh, 1983). Second, the organizational preference for structure ranges from a focus on stability and control to a focus on flexibility and change (Quinn & Rohrbaugh, 1983). Confronting the two dimensions results in a framework that involves four quadrants of which each “represents a broad domain of valued outcomes and associated managerial ideologies about the means through which these outcomes may be achieved” (Patterson et al., 2005) (Fig. 8).

Figure 8. Competing Values Model (Quinn & Rohrbaugh, 1983)
The model highlights how “organizations are likely to adopt different mixtures of values that are reflected in their desired ends and in the means to attain them, such as their structural designs and mechanisms of co-ordination and control” (Zammuto & O’Connor, 1992). Quinn derived four major models of organization and management theory of which each matches one quadrant (as depicted in figure 8). First, the human relations approach is characterized by an internal focus and flexibility in relation to the environment. This approach emphasizes the welfare and education of the community of workers within an organization. Second, the internal process approach is characterized by an internal focus and tight control within the organization. This approach “reflects a Tayloristic concern with formalization and internal control of the system in order that resources are efficiently used” (Patterson et al., 2005). Third, the open systems approach is characterized by an external focus and flexible relationships with the environment. This approach emphasizes flexibility, readiness and growth of an organization. Fourth, the rational goal approach is characterized by an external focus but tight control within the organization. This approach emphasizes planning and goal-setting in order to achieve a high degree of productivity.

In a study, Patterson et al. (2005) employ the Competing Values Model by Quinn & Rohrbaugh (1983) in order to derive and validate a multidimensional measure of organizational climate. As each quadrant of the Competing Values Model reveals similarities to the four phases of the adaptive cycle framework, the climate scales by Patterson et al. (2005), which are attributed to an appropriate quadrant of the Competing Values Model, can be applied to describe the varying climate characteristics across the phases. Therefore the conceptualization by Patterson et al. represents the theoretical foundation for the climate dimension of this research. The manner in which the climate scales will vary throughout the phases of the adaptive cycle will be elaborated in the following.

4.1.1 Equilibrium

The characteristics of the equilibrium phase of the adaptive cycle model by Abcouwer & Parson (2011) bear great analogy to the internal process model of the Competing Values Model (lower left corner). The quadrant places emphasis on an internal focus and tight control within the organization in order to promote formalization and an efficient use of resources (Quinn & Rohrbaugh, 1983). Patterson et al. (2005) argue that the internal process model represents the classic bureaucracy and states that “the effects of environmental uncertainty are
ignored or minimized and coordination and control are achieved by adherence to formal rules and procedures”. This is in line with the characteristics of the equilibrium phase specified by Abcouver & Parson (2011) who argue that the typical organizational setting during this phase is a bureaucratic culture that places a strong emphasis on rules and procedures, which often results in the disregard of the true causes of the problems.

4.1.2 Crisis
The open systems model of the Competing Values Model shares similar characteristics with the crisis phase of the adaptive cycle. With regard to the dimensions of the Competing Values Model, the open systems model features an external organizational focus and a flexible orientation towards the organizational preference for structure (Patterson et al., 2005). Similar to the characteristics of the crisis phase specified by Abcouver & Parson (2011), the open systems model emphasizes readiness, change and innovation, where norms and values are associated with growth, resource acquisition, creativity and adaptation.

4.1.3 New Combination
The human relations model of the Competing Values Model evinces strong similarities to the new combination phase of the adaptive cycle. The human relations model is characterized by an internal focus and a flexible orientation towards the organizational preference for structure (Patterson et al., 2005). At the time an organization reaches the phase of new combinations, it has developed a number of relevant new strategic directions (options) but still doesn’t know which one to pursue (Abcouver & Parson, 2011). Therefore, the aim of the phase of new combination is to actually choose and pursue the new direction of the organization. According to Abcouver & Parson (2011), this impacts the organizational climate in different ways because as they state, “there are two sides to choosing”. The selection of one option includes the disregard of various alternative options. Those who were involved in the development of options will be disappointed by the rejection of their option. In order to absorb this disappointment and to focus everybody in the organization on the chosen option, the organization needs to promote fast learning and encourage trust and belonging. This is in line with the characteristics of the human relations model in which “norms and values associated with belonging, trust, and cohesion achieved through the means such as training and human resource development” (Patterson et al., 2005). By doing this, the organization creates a basis for change that leads to the new phase of entrepreneurship.
4.1.4 Entrepreneurship

The characteristics of the phase of entrepreneurship bear a great resemblance to the rational goal model of the Competing Values Model that is defined by an external focus and a preference for control. During this phase, “one strives for a desired improvement or new development with much energy and focus” (Abcouwer & Parson, 2011). Additionally, an organization seeks a new ‘business-as-usual’, which implies an active striving for market share and moreover a standardization of knowledge, skills and processes. This is in line with the rational goal model that emphasizes “the pursuit and attainment of well-defined objectives, where norms and values are associated with productivity, efficiency, goal fulfillment, and performance feedback” (Patterson et al., 2005).

4.2 Strategy

The strategy dimension is based on the aforementioned strategic framework developed by Thompson (1967). The framework represents one of the fundamental concepts that constitute the adaptive cycle model applied in this research. Abcouwer & Parson (2011) refer to the insights from Thompson in order to explain how the strategic adjustment of an organization varies across the phases. The manner in which the characteristics of the strategy dimension vary across the phases of the adaptive cycle will be elaborated in the following.

4.2.1 Equilibrium

The computational strategy defined by Thompson (1967) represents the theoretical foundation of the equilibrium phase of the adaptive cycle. Thompson argues that in the cases where both the preference regarding the outcome as well as the belief about cause and effect relationship are certain, decision-making is computational. Consequently, the accuracy of data is of sole interest to the organization and results in the demand for a full and accurate communication approach (Thompson, 1967). In this regard, information is mostly unequivocal and thus the decision-making is usually focused on the short term (Thompson 1967). Clearly, the assumptions of the computational strategy are consistent with the characteristics of the equilibrium phase of the adaptive cycle. Abcouwer & Parson (2011) recapitulate that “efficiency, standardization, specialization, obsession with power and predictability” represent the strategic orientation and form the dominant way of thinking during the phase of equilibrium.
4.2.2 Crisis
As the organization is no longer able to cope with the unexpected or unthought-of developments, the equilibrium becomes distorted and turns into a crisis. Once the gestalt switch occurs, confidence switches to insecurity and results in cause and effect relations being uncertain. In terms of the adaptive cycle framework, both the want and the can dimensions are uncertain. This is consistent with the characteristics of the inspirational strategy by Thompson (1967). In his framework, both the preference regarding the possible outcome as well as the belief about cause and effect relations are uncertain. According to Abcouwer & Parson (2011), the inspirational strategy centers on the assessment of the situation and a subsequent development of new ideas. Clearly, the inspirational strategy implies strong demands on the management. As the organization is marked by insecurity, the organization is in the need of a strong and charismatic leader or leadership team that is able to inspire and find a way out of the crisis (Abcouwer & Parson, 2011).

4.2.3 New Combination
After a number of options have been developed, an organization regains its confidence toward the future. With regard to the adaptive cycle framework, this results in the can dimension turning to certain whereas the want dimension remains uncertain. This is in line with the compromise strategy identified by Thompson (1967) who describes the strategy by stating, “I do know how to do it but I have no idea whether I want it and what I want”. This is reflected in his strategic framework where preferences regarding possible outcomes remain uncertain but the beliefs about cause and effect relations turn to certainty. The overarching goal during the phase of new combinations is the final selection of an option. As already mentioned, this process includes weighing up options and making compromises.

4.2.4 Entrepreneurship
The selection of one option marks the transition to the phase of entrepreneurship. In terms of the adaptive cycle framework, this phase is characterized by the want dimension turning to certainty and the can dimension switching to uncertainty. This development is similar to the strategic framework by Thompson (1967) where the preference for the possible outcome switches to certainty and the beliefs about cause and effect relations return to uncertainty. Thompson designates this configuration as judgmental strategy. Abcouwer & Parson (2011) argue that during the selection process of the final choice, “intuition and emotions play an important part”. Therefore, the choice can hardly ever by made on purely rational grounds and
hence, future success can never be guaranteed (Abcouwer & Parson, 2011). This notion represents the reason why the *can* dimension and accordingly the beliefs about cause and effect relations turn to uncertainty. Consequently the strategic aim of an organization during the phase of entrepreneurship is the fast development of the selected choice and a continuous gain in market share (Abcouwer & Parson, 2011).

### 4.3 Learning

The findings by Argyris (1974, 1976), Argyris & Schon (1974) and Argyris et al. (1985) in combination with the assumptions by Abcouwer & Parson (2011) constitute the learning dimension. As described before, other authors like Walker et al. (2006) claim that the adaptive cycle involves two main developments instead of four transitions. Abcouwer & Parson (2011) identify and characterize the two main developments accordingly. The first development affects the right-hand side of the model and encompasses the transitions of release and reorganization (Fig. 9). Here, the organization is forced to move from a situation of certainty and security regarding the present to a situation that is characterized by uncertainty and an urgent demand for creativity and innovation. The second development stirs towards the left-hand side and concerns the transitions of exploitation and conservation (Fig. 10). In this case, the organization moves from a situation of uncertainty back to a situation that is characterized by the striving for stability and standardization.

![Figure 9. Main development concerning right-hand side](Abcouwer & Parson, 2011)

![Figure 10. Main development concerning left-hand side](Abcouwer & Parson, 2011)

With regard to the learning dimension, Abcouwer & Parson (2011) argue that the first movement is characterized by second order learning whereas the second movement is characterized by first order learning. The concept of first and second order learning is fairly similar to what Watzlawick, Weakland and Fisch (1974) call first and second order change.
Anderson (1997) describes the concepts as follows: “First Order Change exists when the norms of the system remain the same and changes are made within the existing norms. Second Order Change describes a situation where the norms of the system themselves are challenged and changed”. This is in line with the conceptualizations by Argyris, Putnam & McLain Smith (1985) who refer to single-loop and double-loop learning (Fig. 11).

Figure 11. Single and double-loop learning (adapted from Argyris et al., 1985)

Argyris et al. (1985) frame the two concepts within two diverse models. The models can be summarized as follows.

Table 1. Model I & Model II theory-in-use characteristics

<table>
<thead>
<tr>
<th></th>
<th>Model I</th>
<th>Model II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governing values</td>
<td>• Achieve the purpose as the actor defines it</td>
<td>• Valid information</td>
</tr>
<tr>
<td></td>
<td>• Win, do not lose</td>
<td>• Free and informed choice</td>
</tr>
<tr>
<td></td>
<td>• Suppress negative feelings</td>
<td>• Internal commitment</td>
</tr>
<tr>
<td></td>
<td>• Emphasize rationality</td>
<td></td>
</tr>
<tr>
<td>Strategies</td>
<td>• Control environment and task unilaterally</td>
<td>• Sharing control</td>
</tr>
<tr>
<td></td>
<td>• Protect self and others unilaterally</td>
<td>• Participation in design and implementation of action</td>
</tr>
<tr>
<td>Consequences</td>
<td>• Defensive relationships</td>
<td>• Minimally defensive relationships</td>
</tr>
<tr>
<td></td>
<td>• Low freedom of choice</td>
<td>• High freedom of choice</td>
</tr>
<tr>
<td></td>
<td>• Reduced production of valid information</td>
<td>• Increased likelihood of double-loop learning</td>
</tr>
<tr>
<td></td>
<td>• Little public testing of ideas</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>• Single-loop</td>
<td>• Double-loop</td>
</tr>
</tbody>
</table>

1 Source: Argyris, Putnam & McLain Smith (1985)
As stated in table X, model I is characterized by a striving for control and win maximization. Moreover it is argued to inhibit double-loop learning (Argyris, 1980) and in turn promote single-loop learning. This results in a defensive behavior that prevents the evaluation of the governing values. Consequently, this defensive behavior leads to an increased rigidity and results in the inability of an organization to cope with unexpected circumstances. This notion is consistent with the findings by Abcouwer & Parson (2011) who argue that single-loop learning is present in the left-hand side of the adaptive cycle.

On the other hand, table X illustrates that model II is characterized by valid information, commitment and shared control. This behavior results in a minimally defensive relationship and is argued to promote double-loop learning. Anderson (1994) argues, that in double-loop learning “the basic assumptions behind views are confronted, hypotheses are tested publicly, and processes are disconfirmable, not self-sealing. As Abcouwer & Parson (2011) argue, the right-hand side of the adaptive cycle includes double-loop learning. By confronting the basic assumptions behind views, i.e. the norms, an organization clears the way for innovative thinking and creativity.

Concluding, the learning dimension, which is based on the theoretical concepts of single and double-loop learning, is argued to change across the two specified main developments of the adaptive cycle.

4.4 Management

The theoretical foundation of the management dimension is composed of an additional perspective of the Competing Values Model by Quinn (1988) and the theoretical assumptions concerning the changing characteristics of management by Abcouwer & Parson (2011).

![Figure 12. Competing Values Model: Leadership Roles (adapted from Quinn, 1988)]
In a further study Quinn (1988) expanded the Competing Values Model with a model that comprises eight different roles of leadership that he derived theoretically (Fig. 12). The roles are developed along the lines of the four quadrants of the model. Quinn (1988) argues that an effective manager is required to be able to adopt multiple and even competing leadership roles. Factors such as the environment and the strategic direction of an organization impact the role a manager needs to adopt. As already argued before, the Competing Values Model bears a strong resemblance to the general motion of the adaptive cycle model. Therefore, the different roles a manager needs to adopt vary across the phases of the adaptive cycle. The manner in which the characteristics of the management dimension vary across the phases of the adaptive cycle will be elaborated in the following.

4.4.1 Equilibrium
As already discussed above, the characteristics of the phase of equilibrium correspond with the internal process model of the Competing Values Model. With regard to the leadership roles, the equilibrium phase of the adaptive cycle corresponds with the characteristics of the monitor and coordinator role. “As a monitor, a manager is expected to know what is going on in the unit, to determine if people are complying with the rules, and to see if the unit is meeting its quotas” (O’Neill & Quinn, 1993). Moreover, the role of the coordinator is to create reliability and efficiency by means of organizing, coordinating and scheduling (O’Neill & Quinn, 1993). These characteristics comply with the findings by Abcouwer & Parson (2011) who identify “management, optimization, efficiency and certainty” as the key managerial features during the phase of equilibrium. Summing up, the management dimension is defined by predictability, stability and conformity during the phase of equilibrium.

4.4.2 Crisis
In accordance with the discussion of the climate section, the characteristics of the phase of crisis correspond with the open systems model of the Competing Values Model. In respect to the leadership roles, the innovator bears resemblance to the crisis phase of the adaptive cycle. The main responsibility of a manager who suits the innovator role is the promotion and facilitation of adaptation and change (O’Neill & Quinn, 1993). Moreover, O’Neill & Quinn (1993) argue that a manager in this role “is expected to be a creative, clever dreamer who sees the future, envisions innovations, packages them in inviting ways, and convinces other that they are necessary and desirable”. This is consistent with the assumptions by Abcouwer &
Parson (2011) who describe the role of management during the phase of crisis as inspirational and innovative.

### 4.4.3 New Combination
In accordance with the discussion of the climate section, the characteristics of the phase of new combination correspond with the human relations model of the Competing Values Model. In respect to the leadership roles, both, the mentor role corresponds with the characteristics of the new combination phase of the adaptive cycle. In the role of a mentor, the manager is expected to be participative and empathetic. When problems arise, the manager needs to be approachable and provide help and guidance. In order to do that, a manager is required to possess a certain degree of charisma and persuasiveness (O’Neill & Quinn, 1993). The demands for characteristics such as persuasiveness and charisma are consistent with the findings by Abcouwer & Parson (2011) who argue that the selection of a new strategic direction requires empathy and participation on the management side. As many developed options will be turned down, people will be disappointed. In this regard, managers need be helpful and be able to persuade those, who are disappointed, that the new direction is worth the effort (Abcouwer & Parson, 2011).

### 4.4.4 Entrepreneurship
In accordance with the discussion of the climate section, the characteristics of the phase of entrepreneurship correspond with the rational goal model of the Competing Values Model. With regard to the leadership roles, the entrepreneurship phase of the adaptive cycle corresponds with the characteristics of the director role. As a director, the manager is expected to “define problems, establish objectives, define roles and tasks, generate rules and policies, evaluate performance and give instructions” (O’Neill & Quinn, 1993). The findings of Abcouwer & Parson (2011) support this notion. They argue that as the organization strives for a new ‘business-as-usual’, the role of the management is to promote standardization and efficiency by creating rules and defining clear roles (Abcouwer and Parson, 2011).

### 4.5 Innovative Capability
The theoretical foundation for the ‘innovative capability’ dimension is represented by the insights from Abcouwer & Parson (2011) in combination with the findings by Muller, Välikangas & Merlyn (2005) who argue that organizations “must exploit their innovative
capabilities to develop new businesses if they are to successfully confront the disruptive effects of emerging technologies, empowered customers, new market entrants, shorter product life cycles, geopolitical instability, and market globalization” (Muller et al., 2005). This is in line with the basic underlying assumption of the adaptive cycle theory that organizations can survive a crisis, which is often the result of an unexpected event such as a disruptive technology, by creating new business opportunities. Muller et al. developed a framework that aims at assessing an organization’s capacity for innovation by means of analyzing the existent capabilities and resources of an organization. The authors argue that there is no ‘one-size-fits-all’ composition of capabilities and resources that lead to an optimal capacity for innovation but that it is contingent to the individual situation of an organization. They point out that in some situations the focus on innovation can be over-emphasized and lead to unintended consequences (Muller et al., 2005). In that regard, it can be argued that the emphasis on innovation varies across the phases of the adaptive cycle. First, as already elaborated, the phase of equilibrium is characterized by an emphasis on rules, procedures and standardization, which often leads to tunnel vision (Abcouwer & Parson, 2011). It is argued that this tunnel vision prevents an organization from innovating and eventually triggers a crisis. Therefore, it can be argued that the degree of innovative capability is the lowest during the phase of equilibrium. Second, this notion changes with regard to the phase of crisis in which innovation is essential for the survival of an organization (Abcouwer & Parson, 2011). Therefore, it can be assumed the degree of innovative capability is highest during the phase of crisis. Third, as organizations enter the phase of new combination, it is the overarching goal to make a final choice regarding the strategic direction it is going to pursue (Abcouwer & Parson, 2011). In this regard, it is essential for the organization to retain an innovative mindset in order to find new and creative ways of implementing the selected choice. Therefore, it can be argued that the degree of innovative capability slightly decreases in respect to the phase of crisis but is still essential for an organization. Fourth, the phase of entrepreneurship is characterized by the striving for a new ‘business-as-usual’ that implies a recurrent focus on efficiency and standardization (Abcouwer & Parson, 2011). Therefore, the emphasis on innovation is of secondary importance. Consequently, it can be argued that during the phase of entrepreneurship the degree of innovativeness continuous to decrease until it ends up lowest in the phase of equilibrium.
4.6 Environment

The environmental dimension is based on the “leader’s framework for decision making” by Snowden (2007) in combination with the assumptions by Abcouwer & Parson (2011). In his framework, Snowden identifies four different types of organizational environments, namely simple, complicated, complex and chaotic. In this regard, Abcouwer & Parson propose that each type of environment matches one phase of the adaptive cycle. First, Abcouwer & Parson argue that characteristics of the simple environment identified by Snowden (2007) correspond with the phase of equilibrium. The simple environment features clear cause and effect relations, fact-based management as well as repeating and consistent events (Snowden, 2007). Second, the chaotic environment identified by Snowden (2007) is argued to match the phase of crisis. Unknown cause and effect relations, high tension and strong turbulence characterize the chaotic environment (Snowden, 2007). Third, Abcouwer & Parson propose that the complex environment is conceptually consistent with the phase of new combination. Snowden states that the complex environment is characterized by unpredictability, no right answers and many competing ideas. Fourth, in line with the argumentation of Abcouwer & Parson, the complicated environment matches the characteristics of the phase of entrepreneurship. Here, cause and effect relations are not immediately apparent and multiple answers are possible. It should be noted that conceptually, the environmental dimension is not a part of a characteristic that defines and constitutes an organization. Rather, it is argued to define the phase an organization resides in and consequently triggers the variations in the characteristics of the other five dimensions. This notion has special indications for the research approach and will be elaborated in the following section.
5. Method

5.1 Research Strategy and Design

In order to tackle the research problem of this paper, the developed theoretical framework was translated into questionnaire that serves the purpose of identifying the phase an organization resides it. The development of the questionnaire included several steps and will be elaborated in the following section. An overview of the development process is given by figure 13.

![Diagram of Development Process of Questionnaire]

**Figure 13.** Development process of questionnaire

5.1.1 Research Meeting

In order to investigate the validity of the theoretical framework and to obtain further insights, a research meeting with participants from various professional backgrounds was held at the Science Park of the University of Amsterdam at May 29th 2013. The meeting comprised the presentations and subsequent discussions of three master thesis projects that were thematically concerned with the adaptive cycle of resilience. The attendance list comprised of Toon Abcouwer, supervisor of the three thesis projects, 3 master students and 11 invited guests, of whom the majority worked in consulting. The meeting was structured as follows. First, Toon Abcouwer welcomed the participants, informed them about the course of actions and held a brief introduction about the adaptive cycle. Next, each student presented his or her research project followed by a discussion about the topic. After four hours, the meeting ended with a round of feedback and conclusions from the participants.

With regard to the research of this paper, the findings of the meeting proved useful in developing the questionnaire. Generally, the participants agreed that the theoretical approach of the adaptive cycle is relevant and present in the realm of organizational practice. In order to clarify the theoretical conceptualization of this research, each of the identified dimensions was elaborated along the lines of the fours phases. The proposed dimensions stimulated a vivid discussion and lead to diverse insights. First, the general approach of identifying the phases was consistently approved. However, it was argued that the varying characteristics of one dimension across the phases often overlap in practice. Therefore, it was suggested to pay close attention to the distinguishability of characteristics between the phases when developing the questionnaire. In this regard, the type of questionnaire was debated. The participants
suggested that the application of multiple choice type questions would be inappropriate since the characteristics practically always overlap across the phases. The advice supported the choice to apply constant-sum type questions in the questionnaire. Further information about the question type will be elaborated in the next section.

Another important insight from the meeting was the exclusion of organizational structure as an additional dimension that was originally included in the theoretical framework. The participants disagreed with the assumption that organizational structure can be aligned to the four phases. It was argued that organizational structure is contingent on too many miscellaneous factors such as the organizational size, age and sector. In this context it was observed that incorporating demographic data such as organizational type and size could prove valuable during the data analysis and moreover improve the quality of the results. After the discussion was finished, the participants were asked to take part in a pilot version of the questionnaire that would be developed on the basis of the theoretical framework in combination with the insights obtained during the research meeting.

5.1.2 Questionnaire design (Pilot version)

The pilot version of the questionnaire was structured as follows. The questionnaire comprised six unfinished statements that represented the six identified dimensions of the theoretical framework (including the environment dimension). Five statements were followed by four possible completions of which each represented one of the four phases of the adaptive cycle. Yet, as it was discussed earlier, the learning dimension only varies across the two main developments. Therefore, the statement that represented the learning dimension was solely followed by two completions. For each statement, a total of 15 points could be distributed among the number of completions. It was obligatory to utilize all 15 points for each statement. This question type is referred to as constant-sum because every question requires the distribution of all available points (in this case, 15 points) in order to be answered correctly. One of the major findings of the research meeting suggested that the varying characteristics of each dimension overlap across the four phases of the adaptive cycle. The constant-sum question type represents the most suitable approach to incorporate this notion into the questionnaire as it “permits the collection of "ratio" data, meaning that the data is able to express the relative value or importance of the options” (Surveyranalytics, 2013). As a result, the participant is not obliged to choose solely one completion-option but is able to distribute the points across the completions in accordance to his or her assessment of reality. While this approach may blur the straightforwardness of the results, it does a better job in reflecting the
reality and moreover is in line with the findings of the research meeting. Finally, it should be noted that the environment dimension plays a particular role in the analysis of the results. As mentioned in the previous section, the environment dimension differs conceptually from the other five dimensions, as it is not a part of a characteristic that defines and constitutes an organization. Rather, it defines the environmental characteristics of a phase of the adaptive cycle and consequently triggers the changes in the characteristics of the other dimensions. Therefore, with regard to the analysis of this research, the environment dimension is applied to test whether the selected type of the environment are in accordance with the identified phase.

5.1.3 Pilot version of questionnaire

The pilot version of the questionnaire was solely directed at the participants of the research meeting and served two reasons. First, a text entry field at the end of the questionnaire offered the participants a direct way to provide feedback. Since the participants of the research meeting were already familiar with the topic and the research approach, the feedback they provided represented a valuable source of information that could be incorporated in the final version of the questionnaire. Second, the majority of participants of the research meeting works in the field of consulting and thus, possesses a large network of business partners and clients who are of interest to the research. Keeping the participants involved in the development process of the questionnaire raises the reasonability to ask for support at the time the questionnaire is finalized and ready to be distributed.

The primary objective of running the pilot was the attainment of informed feedback concerning the structure and content of the questionnaire. The actual results of the answers were of secondary importance. Out of the 11 participants who attended the research meeting and who were consequently invited to take part in the pilot version of the questionnaire, 7 responded. Hence, the response rate amounts to approximately 63%. Of the 7 respondents, 5 left elaborate feedback that was of considerable value to the final development the questionnaire. In most cases, the feedback was centered on minor issues concerning the structure and phrasing of statements. Moreover, it was requested to shorten the introductory text and change the declaration about the expected duration time that is needed fill out the survey from 5 to 10 minutes. Furthermore, some of the participants questioned the approach to allocate 15 points across the completions and argued that a score of 10 points would be more straightforward. In consultation with the supervisor it was decided to continue the approach of allocating a score of 15 points across the completions in order to avoid confusion.
concerning the utilized approach. Finally, one respondent advised to offer a more specific explanation “why the questions are asked that way” since the statements are unusually long for a research questionnaire. On account of the very low number of respondents, an analysis of the data of the pilot proved to be unfeasible. However, a brief inspection of the raw data indicated adequate results.

5.1.4 Final Questionnaire

The feedback was thoroughly considered and appropriately incorporated in the final version of the questionnaire. Overall, the questionnaire design is fairly similar to the pilot version. As already mentioned, most of the feedback lead to changes that were concerned with minor issues in respect to the structure and phrasing of statements. Therefore, it is not necessary to elaborate on the design of the questionnaire again. The 6 statements, which constitute the final version of the questionnaire, can be found in the appendix. Overall, the questionnaire was running for a period of two weeks.

6. Results and Analysis

6.1 Demographics

Overall, the questionnaire received 86 responses. Table 4 shows that almost 34% of the respondents hold a senior management position. This fact impacts the quality of the data positively as it can be assumed that managers who hold senior position are actively engaged in the organization-wide decision-making and therefore possess insights that enable them to assess the organizational situation more adequately. Moreover, it is noteworthy that more than 50% of the participants work for organizations that employ a workforce of more than 1,000 employees (table 3).

Overview: Demographic characteristics of questionnaire respondents

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>Service</td>
<td>24</td>
</tr>
<tr>
<td>Government</td>
<td>26</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 2. Industrial field of respondents

<table>
<thead>
<tr>
<th>Size</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>9</td>
</tr>
<tr>
<td>11-100</td>
<td>12</td>
</tr>
<tr>
<td>101-500</td>
<td>10</td>
</tr>
<tr>
<td>501-1,000</td>
<td>9</td>
</tr>
<tr>
<td>1,001-5,000</td>
<td>17</td>
</tr>
<tr>
<td>Over 5,000</td>
<td>29</td>
</tr>
</tbody>
</table>

Table 3. Organizational size

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior management</td>
<td>30</td>
</tr>
<tr>
<td>Middle management</td>
<td>16</td>
</tr>
<tr>
<td>Supervisory</td>
<td>9</td>
</tr>
<tr>
<td>Non-Management</td>
<td>22</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 4. Position of respondents
6.2 Relevance of the adaptive cycle

Table 5 shows how on average the 15 points are distributed across the phases within each of the identified dimensions. Generally, it is observable that no outstandingly strong tendency towards one phase or side within one of the dimensions can be identified. The only exception to this notion is represented by the noticeably low average of 1,93 of the phase of entrepreneurship within the dimension of innovative capability. Yet, it can be argued that in general, each phase of the adaptive cycle is fairly equally represented within each dimension. Table X, which illustrates how the points of all dimensions combined are distributed across the phases, confirms this assumption. Moreover, as assumed by Walker et al. (2006) who argue that the adaptive cycle follows solely two main movements, table 6 shows how the points of all dimensions taken together are distributed across these two main movements. The results reveal that each phase and each main movement of the adaptive cycle is fairly equally represented in the data. This demonstrates that the all the four phases and accordingly the two main movements of the adaptive cycle are equally existent in the realm of organizational reality.

Table 5. Average distribution of points across phases within each dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Phase</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equilibrium</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>Climate</td>
<td>4,09</td>
<td>3,36</td>
</tr>
<tr>
<td>Strategy</td>
<td>4,29</td>
<td>4,10</td>
</tr>
<tr>
<td>Management</td>
<td>5,19</td>
<td>3,12</td>
</tr>
<tr>
<td>Innovative Capability</td>
<td>4,01</td>
<td>1,93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning</th>
<th>Left-Side</th>
<th>Right-Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Equilibrium &amp; Entrepreneurship)</td>
<td>(Crisis &amp; New Combination)</td>
</tr>
<tr>
<td></td>
<td>7,24</td>
<td>7,76</td>
</tr>
</tbody>
</table>

Table 6. Average distribution of points across phases of all dimensions

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equilibrium</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>Average</td>
<td>21,20</td>
<td>16,13</td>
</tr>
<tr>
<td>Left-Side</td>
<td>(Equilibrium &amp; Entrepreneurship)</td>
<td>(Crisis &amp; New Combination)</td>
</tr>
<tr>
<td>Average</td>
<td>37,34</td>
<td></td>
</tr>
</tbody>
</table>
6.3 Identification of phases

Since the aim of the developed questionnaire is to identify the phase an organization resides in, the next step of the analysis includes the evaluation of the degree to which the results are actually capable of identifying the appropriate phase.

Table 7. Overall tendency towards one phase

<table>
<thead>
<tr>
<th>Range</th>
<th>Equilibrium</th>
<th>Crisis</th>
<th>New Combination</th>
<th>Entrepreneurship</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-51</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>50-41</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>40-31</td>
<td>14</td>
<td>12</td>
<td>4</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>30-21</td>
<td>26</td>
<td>13</td>
<td>7</td>
<td>2</td>
<td>48</td>
</tr>
<tr>
<td>20-11</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>42 (49%)</td>
<td>28 (32%)</td>
<td>12 (14%)</td>
<td>4 (5%)</td>
<td>86</td>
</tr>
</tbody>
</table>

In this regard, table 7 provides several insights. First, it shows how the identified 86 responses are distributed across the four phases of the adaptive cycle. The response of each participant represents the appropriate assessment of his or her organization. As explained before, each dimension is represented by one unfinished statement with a number of four (except learning) completions that reflect the appropriate phases of the adaptive cycle. Overall, a total number of 75 points can be distributed across the four phases. The phase, to which a participant assigns the highest number of points, is identified as the phase an organization resides in. In approximately 49% of the cases, a response represents an organization that is identified to reside in the equilibrium phase. Subsequently, 32% of the responses typify an organization that resides in the crisis phase followed by 14% of the responses that are projected to represent an organization in the phase of new combination. Finally, in 5% of the cases, a response represents an organization that resides in the phase of entrepreneurship.

The second insight, table 7 provides, centres on the degree to which the results reflect the appropriate phase. The “range” on the left-hand side of table X indicates this degree. In this regard it can be observed that two respondents allocated between 60 to 51 points to the phase of equilibrium by selecting the completions that represent this phase. As the maximum score that can be allocated to a single phase adds up to 75 points, a score that is located within the range of 60 to 51 indicates a strong result and a high probability that the organization resides
in the respective phase. Overall, the results are acceptable. A number of 37 respondents, who constitute approximately 43% of the data set, assign more than 30 points to a single phase. Moreover, 48 respondents, who represent approximately 56% of the dataset, assign between 21-30 points to a single phase. Only one respondent assigns less than 21 points to a single phase.

Furthermore, consolidating the four phases into the two main developments raises the adequacy of the results (Table 8). In this case, a number of 33 respondents, who represent around 38% of the data set, assign more than 50 points to one of the main developments. Including the range of 50 to 41 in this calculation raises the number of respondents who assign more than 40 points to one of the main developments, to a quantity of 72. It is worthy to note that the results of the consolidation also show a fairly equal distribution between responses that represent an organization in the left side of the model (45) and those that reside in the right side (41). This notion reconfirms the assumption that both main developments of the adaptive cycle are existent and also observably distinguishable from each other.

**Table 8. Overall tendency towards one of the ‘main developments’**

<table>
<thead>
<tr>
<th>Range</th>
<th>Main development</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left-Side</td>
<td>Right-Side</td>
</tr>
<tr>
<td>80-71</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>70-61</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>60-51</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>50-41</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>40-31</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>41</td>
</tr>
</tbody>
</table>

**6.4 Environment**

Finally, the application of the conceptualization of Snowden in order to test whether the selected characteristics of the external environment are in accordance with the identified phase, leads to inadequate results. Table 9 indicates that in solely 21 of 86 cases the identified phase matches the hypothesized characteristics of the external environment specified by Snowden.
Table 9. Number of compliances between identified phase and appropriate context

<table>
<thead>
<tr>
<th>The type of context</th>
<th>Matching phase</th>
<th>Compliance (Number of cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Equilibrium</td>
<td>13</td>
</tr>
<tr>
<td>Complicated</td>
<td>Entrepreneurship</td>
<td>1</td>
</tr>
<tr>
<td>Complex</td>
<td>New Combination</td>
<td>0</td>
</tr>
<tr>
<td>Chaotic</td>
<td>Chaotic</td>
<td>12</td>
</tr>
</tbody>
</table>

Overall, the majority of respondents (almost 50%) characterize the external environment of their organization as “chaotic” (Table 10). It should be noted that the total number of environmental assessments only accounts to 78. This is due to the fact that six respondents distributed the 15 points equally across the potential answers. Therefore, no clear tendency could be identified and thus, the response was not considered.

Table 10. Selected type of environment (based on Snowden, 2007)

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Simple</th>
<th>Complicated</th>
<th>Complex</th>
<th>Chaotic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
<td>10</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>

6.5 Limitations

The research approach of this paper includes several limitations that should be acknowledged. First, the classification of an organization into one of the four phases of the adaptive cycle is based on the assessment of a single respondent. In order to increase the quality of results and make a more adequate judgement about the phase an organization resides in, future research should attempt to include the responses from various individuals of the same organization. Second, the questionnaire encompasses solely one statement per dimension. The reason for this is the unusual length and complexity of the statements and its respective completions. On average, the duration time to answer the questionnaire amounted to approximately 12 minutes. It can be assumed that a higher number of statements would have resulted in fewer responses. At the same time, however, it can also be expected that more statements would have increased the quality of the results. Consequently, future research should consider including more statements in the questionnaire. Third, the statements of the questionnaire didn’t factor in the differences between the distinct types of organizations. The dataset includes many responses from governmental organizations. Clearly, governmental or non-profit organizations follow different visions and approaches as business organizations whose overarching goal is profitability. Therefore, future research should aim at specifying differences and translate those findings into the questionnaire.
7. Conclusion

In order to provide a better understanding of the various phases of the adaptive cycle and to tackle the related research problem, i.e. “How can the phase, an organization resides in, be identified?”, this paper has developed a theoretical framework by means of an elaborate literature review. The presented framework identifies five theoretically founded dimensions that are argued to define an organization and vary across the four phases of the adaptive cycle. On the basis of the assumptions of the theoretical framework, a questionnaire that attempts to identify the phase, an organization resides in, was developed. The results show that the notions of the adaptive cycle are relevant and present in the realm of organizational practice. Moreover, the results concerning the degree to which the questionnaire is capable of identifying a phase particularly prove the existence of an observable difference between the two main developments of the adaptive cycle. With regard to the identification of single phase, the quality of results is fairly acceptable. Future research should be able to improve the results by considering and incorporating the mentioned limitations of the research approach.
8. References


Holling, Crawford Stanley. (2001). Understanding the complexity of economic, ecological,


9. Appendices

Appendix 1 – Categorization Scheme
Appendix II – Example of standardized entry format of in the wiki

From Crisis Prone to Crisis Prepared: A Framework for Crisis Management

Authors: Pearson, O.M. & Mitroff, I.I.
Title: From crisis prone to crisis prepared: a framework for crisis management
Year of Publication: 1993
Journal: The academy of management executive
Volume: 7 Issue: 1
Source: http://www.jstor.org/stable/4165107
Keywords: business, crisis, management, organization, qualitative
Abstract: For the first time in history, human-induced crises have the potential to rival natural disasters in both scope and magnitude. The financial costs of some crises have exceeded one billion dollars, the devastation wrought by these crises has included loss of hundreds of human lives as well as irreversible damage to future generations and to the environment. For instance, major crises such as Chernobyl and Exxon Valdez, as well as the oil spills and fires during the Gulf war, affected large regions of the globe. Previously, such effects could only have been wrought by natural disasters. This article seeks to explore how organizations may actually contribute to their own crises, as well as what can be done to avert human-induced disasters, and to manage those that still occur. A framework is provided for executives interested in improving their organizational crisis preparedness. First, we consider how to determine these crises for which a company should prepare. Next, the phases of a crisis are described followed by a description of the organizational systems which affect and are affected by it. Stakeholders’ roles in the management of a crisis are discussed. The article concludes with implications for managers and executives interested in taking action.

Contributors

Appendix III – Questionnaire statements

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Organizational Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>The emphasis of my organization is on...</td>
</tr>
<tr>
<td>1.</td>
<td>Stability, where the effects of environmental uncertainty are ignored or minimized. Coordination and control are achieved by adherence to formal rules and procedures.</td>
</tr>
<tr>
<td>2.</td>
<td>Readiness, change and innovation, where norms and values are associated with growth, resource acquisition, creativity and adaptation.</td>
</tr>
<tr>
<td>3.</td>
<td>Formulating objectives and creating a basis for change, where norms and values are associated with learning, compromising and high commitment.</td>
</tr>
<tr>
<td>4.</td>
<td>The pursuit and attainment of well-defined objectives, where norms and values are associated with productivity, efficiency, goal fulfillment, and performance feedback.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Innovative Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>These words and phrases describe my organization best...</td>
</tr>
<tr>
<td>1.</td>
<td>My organization likes to keep to established, traditional ways of doing things</td>
</tr>
<tr>
<td>2.</td>
<td>Assistance in developing new ideas and support for approaching things differently is readily available and necessary for the survival of my organization.</td>
</tr>
<tr>
<td>3.</td>
<td>My organization has been supportive of innovativeness to the point that we are almost overwhelmed by all the ideas. Right now it is important to focus and clear the way for new strategic direction.</td>
</tr>
<tr>
<td>4.</td>
<td>Formulation of new ideas or challenging the existing would unnecessarily trouble my organization in its strive for stability.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>A typical project in my organization...</td>
</tr>
<tr>
<td>1.</td>
<td>Clearly defined in terms of scope, cost and schedule. The project leader is in control: he claims ownership, defines and follows the development process and reports to the top-management that relies on documentation. The potential customer is not engaged in the process of the project and certain information may even be withheld.</td>
</tr>
<tr>
<td>2.</td>
<td>A transparent and iterative process that is subject to frequent feedback and continuous testing. Emerging requirements can always change the course of the project. Control is shared among all participants, the customer is engaged in the development</td>
</tr>
</tbody>
</table>
and it is the highest priority to make informed decisions based on valid information.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Decision-making in my organization...</td>
</tr>
<tr>
<td>1. Vision, targets as well as cause-effect relations are clear. Decision-making is often short-term and information about the decision is fairly unambiguous.</td>
<td></td>
</tr>
<tr>
<td>2. Vision and targets are clear but cause-effect relations are uncertain. Decision-making is based in prior experience and is often qualitative in nature.</td>
<td></td>
</tr>
<tr>
<td>3. Vision and targets are uncertain but cause-effect relations are clear. Decision-making is based on making compromises.</td>
<td></td>
</tr>
<tr>
<td>4. Vision, targets as well as cause-effect relations are unclear. Decision-making is dependent on a charismatic and inspirational leader who clears the way for a future direction of the organization.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>The management style in my organization is characterized by...</td>
</tr>
<tr>
<td>1. Shared control, risk-taking, innovation, freedom and uniqueness.</td>
<td></td>
</tr>
<tr>
<td>2. Competitiveness, clear targets and control.</td>
<td></td>
</tr>
<tr>
<td>3. Predictability, stability and conformity.</td>
<td></td>
</tr>
<tr>
<td>4. Persuasiveness, charisma and participation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>The context in which my organization is operating can be characterized as...</td>
</tr>
<tr>
<td>1. Simple. The context is characterized by stability and clear cause-and-effect relationships that are easily discernible by everyone. Often, the right answer is self-evident and undisputed. In this realm of “known knowns,” decisions are unquestioned because all parties share an understanding.</td>
<td></td>
</tr>
<tr>
<td>2. Complicated. Context may contain multiple right answers, and though there is a clear relationship between cause and effect, not everyone can see it. This is the realm of “known unknowns”.</td>
<td></td>
</tr>
<tr>
<td>3. Complex. Here, right answers can’t be ferreted out. It’s like the difference between, say, a Ferrari and the Brazilian rainforest. This is the realm of “unknown unknowns”.</td>
<td></td>
</tr>
<tr>
<td>4. Chaotic. Searching for right answers would be pointless: The relationships between cause and effect are impossible to determine because they shift constantly and no manageable patterns exist—only turbulence. This is the realm of unknowables.</td>
<td></td>
</tr>
</tbody>
</table>