Dynamics of Organizational Adaptation, Inertia, and Routines: Generic Contributions from a Study of Change

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Abstract

Inertia and routines are important organizational characteristics affecting organizations' evolution. Empirical research has found mixed results concerning the question whether change establishes change routines that make organizations more malleable or whether transformations inhibit further alterations. Reasons for these results are analyzed in this paper by means of a case study of organizational change at the New York Stock Exchange and respective system dynamics modeling. The analysis reveals that there are multiple forces working which dynamically interact and become important determinants of change and adaptation. The simultaneous consideration of balancing and reinforcing effects of inertia, routines, and change sheds light on the ambiguous empirical results.

Key Words

Organizational Change, Inertia, Routines, Adaptation

1 Introduction

Both scholars as well as practitioners have high interest in organizational change as it is often assumed to ensure an increase in performance. Yet at the same time it is considered to be difficult to initiate and implement. Faced with rapid transformations in their environment, e. g. from technological developments, many organizations cannot meet the requirements their environments make because of organizational impediments to change (Hannan and Freeman 1977, 1984; Tripsas and Gavetti 2000; Tushman and O'Reilly III 1996; Utterback 1994). Failure to change may lead to organizational decline and collapse.

Inertia and hardly changeable routines are important organizational characteristics affecting organizational evolution, and they can be an important impediment to an organization's required adaptation to changes in its environment (Aldrich and Ruef 2006;Hannan and Freeman 1977, 1984; Larsen and Lomi 2002, 1999; Leonard-Barton 1992; Tushman and Romanelli, 1985). Empirical research has found mixed results concerning the question whether on the one hand change reduces organizational impediments to alteration establishing change routines that make organizations more malleable or whether on the other hand transformations inhibit further change (Amburgey, Kelly, and Barnett 1993). Reasons for these results will be analyzed in this paper with special focus on balancing and reinforcing feedback processes involving change and inertia. The paper centers on the causal relationships leading to the success and failure of change and of adaptations to environmental transformations. The analysis is supported by a case study of the implementation of electronic trading at the New York Stock Exchange.

2 Divergent views on inertia and change routines

Routines and change routines: In the organization theory tradition much research has focused on inertia as an impediment to change. Opinions about the sources as well as about the effects of inertia—good or bad—differ because theories focus on different levels and objects of analysis. Explanations range from individual bounded rationality (March 1994; March and Simon 1958; Simon 1949) to group characteristics like management homogeneity (Murray 1989; Tushman and Romanelli 1985) and organizational homogeneity coming from institutionalization processes (Hannan and Freeman 1977, 1984). At the organizational level, routines are of paramount importance (Aldrich and Ruef 2006; Larsen and Lomi 2002, 1999; Leonard-Barton 1992). However, many authors regard routines as a major impediment to change. According to Larsen and Lomi (2002) the extent of inertia depends on the feasibility and speed of the change of established routines.

Organizational routines may also serve as a source of flexibility and further change instead of being an impediment to alterations (Feldman 2000, 2004; Feldman and Pentland 2003). Organizational evolution can become habituated and routines can also undergo change. Building on work of Tushman and Romanelli (1985), Sastry (1997) shows by a system dynamics model that change reduces inertia, making organizations more ready for further transformations.

Beck, Brüderl, and Woywode (2008) point out that prior research on organizational change almost unanimously showed that change initiatives in an organization increase the likelihood of further change. Their current research challenges the repetitive momentum hypothesis, and they show that change propensity decreases when changes accumulate. In a study of organizational

niche change, Baum and Singh (1996) have found similar results. Beck et al. (2008, p. 428) justify their finding by indicating that the more the organization changed in the past the less further changes are necessary. The authors find no evidence for a reinforcing process of organizational change.

Amburgey, Kelly, and Barnett (1993) empirically test the assumption of increased flexibility for content and frequency changes of newspapers and find mixed results. They can show that if organizational processes are understood as routines, change routines can also establish momentum for further changes. They support that change of content increases the probability of subsequent change of the same type. For changes in the frequency of publication, however, their hypothesis is not supported: early changes in frequency diminish the likelihood of further changes. These mixed results serve as an indicator for different effects of routines working in differing directions.

Environmental threats and change: When faced with demands of their environments, e. g. due to rapid technological change, organizations thus show different reactions. Once change gets initiated, it is uncertain whether it amplifies or whether accumulated changes decrease the propensity of further alteration. This ambiguity results from the combination of routines and inertia for change momentum and is also related to the threat that the developments in the environment poses for the organizations. Observed inertia can be a consequence of a firm's threat rigidity (D'Aveni 1989; D'Aveni and MacMillan 1990; Gilbert 2005, 2006), meaning that a performance threat enforces the current inappropriate situation and strategic orientation. Nevertheless, in the case of misalignment with the environment a perceived threat from a performance gap can also function as a catalyst for change (Cyert and March 1963; Gilbert 2005, 2006; Levitt and March 1988). Gilbert (2005) addresses the very question whether a threat works as a catalyst or constraint on discontinuous change. He argues against a monocausal relationship between a threat and inertia that is postulated by many researchers. According to him inertia needs to be divided into resource and routine rigidity because they underlie different causal mechanisms, and he finds that a perceived threat diminishes resource rigidity, i. e. it reduces the commitment to the current distribution of resources. It does not directly reduce routine rigidity, meaning it does not change the patterns and logic of thinking involving different behavior (Gilbert 2005, p. 759–761). The redistribution of resources is no sufficient answer to external changes, but routines and decision rules, which the distribution of resources bases on, needs to be revised. Gilbert understands the threat as a chance to loosen the system and the resources for change.

The behavior which organizations exhibit in response to a changing environment remains ambiguous. It is thus not surprising that empirical studies find mixed results (e. g. Amburgey, Kelly, and Barnett 1993; Gilbert 2005, 2006; vs. Baum and Singh 1996; Beck, Brüderl, and Woywode 2008). The mixed results found by Amburgey et al. (1993) point toward the existence of two different effects that have an influence on an organization's evolution. First, change diminishes inertia and increases the likelihood of change of a similar kind. This is the reinforcing mechanism postulated by Amburgey et al. (1993) as well as by Larsen and Lomi (2002, p. 275). Change also closes the gap to the environment, creating a balancing mechanism. Having both loops working simultaneously and influencing each other can cause the observed mixed results.

> *Proposition 1(Inertia): A reinforcing mechanism of change in the strategic orientation and inertia creates path dependent behavior of organizations, meaning it inhibits change after long times of stability and enhances flexibility once change has been initiated.*

Proposition 2 (Adaptation): A balancing mechanism of change in the strategic orientation and pressures for further change from the environment creates goal-seeking behavior and reduces the likelihood of further change.

There are several effects influencing an organization's evolution: inertia may inhibit necessary adaptation, change may make an organization more malleable or it may only close the threat-induced performance gap. The management's perception of the treat and its subsequent decision-making seem to be of paramount importance here. The introduction and successful growth of a new business model represents a threatening external alteration. As an example of environmental change, the introduction of electronic trading in the US securities market will be presented as it provides the basis for a case study of the implementation of electronic trading at the New York Stock Exchange. This study will help elucidate the relations between inertia, perception, and decision-making. Here, the focus will be on causal relationships and the dynamics resulting from the structure of the management decision to automate trading. By the analysis of the case study general relationships that may inhibit or support organizational change are to be clarified and understood better.

3 Case study of the implementation of electronic trading at the New York Stock Exchange

The New York Stock Exchange (NYSE) provides an example of an organization with more than a 200-year history and a very successful past that faces an external transformation. Between 2006 and 2007 it made great changes in its long-established trading mechanism by switching from mainly manual to almost exclusively electronic trading, as depicted in Figure 1. It implemented the Hybrid Market, a market mechanism that simultaneously allows for fast electronic and people-handled floor trading. The trading floor space and the number of traders present were heavily reduced. Although the NYSE has recently undergone other changes, this transformation of a core capability—the trading mechanism—will be analyzed.[1]

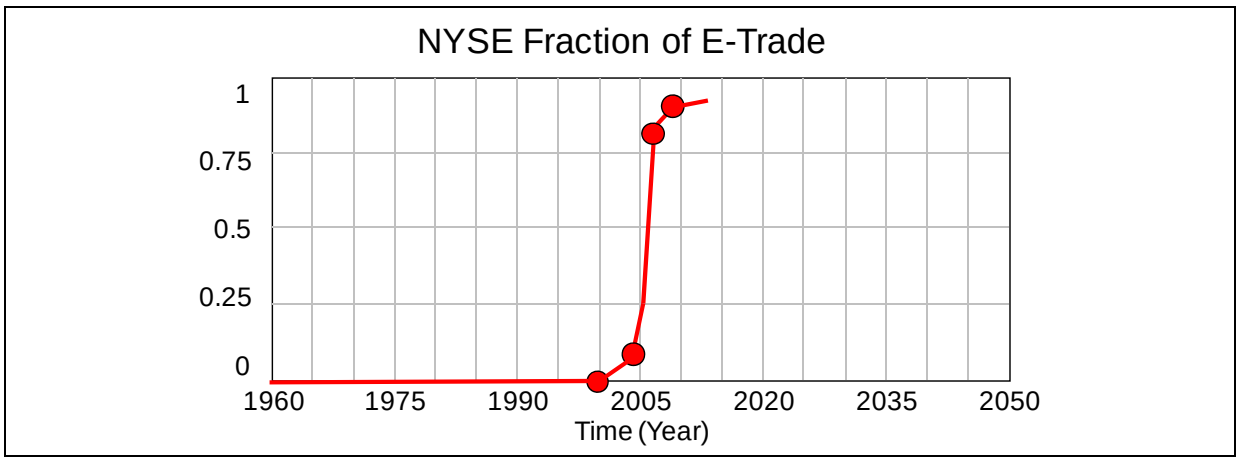

Figure 1: Reference mode

[1] Apart from the move from manual to electronic trading, the NYSE also demutualized; in order to merge with the electronic trading venue Archipelago, it became a publicly traded company. Later it also merged with the European Euronext Exchanges.

3.1 Methods

The data for the case study of the New York Stock Exchange's transformation were collected from multiple sources. First, information available in journal as well as newspaper articles was used. Second, the NYSE Facts and Figures, published on the NYSE Euronext website, provided useful time series data of variables relating to NYSE trading, ownership, customers, and the US securities market. In order to capture the cultural information, third, the Exchanges Blog, a weblog published by the New York Stock Exchange, provided information through entries of NYSE staff, reprint of management speeches, magazine and newspaper articles, and through comments to the entries. Since NYSE employees moderate the weblog and since customers provide comments and/or involve in a discussion with NYSE staff, the weblog illustrates both the New York Stock Exchange's and its customers' point of view. A qualitative analysis of blog entries written between December 2005 and March 2008 plus their following discussions were used to gain insight about issues in a time of change. Entries were coded, and concepts related to the NYSE and the market before and after the change and during the time of transition were derived (Lofland et al. 2005; Strauss and Corbin 1998). In addition, four interviews with individuals of the NYSE, its related parties, and customers supported the general understanding and helped the analysis of events and data.

The findings were then used to build a causal diagram of the structural relationships that the combined data base revealed. Variables and causal relationships were derived mostly based on concepts that repeated in the time series data and articles—e. g. extent of e-trade, market share and specialist participation—as well as on more soft concepts derived from the qualitative analysis of the weblog (Luna-Reyes and Andersen 2003; Schwaninger and Grösser 2008). The causal diagram follows the notion of the system dynamics method which is used to analyze behavior of social systems (Forrester 1994, 1968; Sterman 2000). It points to feedback mechanisms and their resulting behavior, in relation to their polarity, meaning in relation to whether they exhibit reinforcing or balancing (equilibrating) behavior. The structural diagram was quantified and tested with system dynamics modeling. This analysis led to better understanding about which balancing or reinforcing mechanisms dominate the system's behavior in different situations.

3.2 Routines and customer orientation at the New York Stock Exchange

With more than a 200-year history, the New York Stock Exchange was for long the largest and most prestigious stock exchange of the world and a symbol of strength for the US economy. Yet already in the 1970s and the 1990s some researchers believed that it faced the threat of extinction (Blume, Siegel, and Rottenberg 1993; Abolafia 1996). The securities market had begun to change because large institutions like funds and insurances started trading in big order sizes. Blume, Siegel, and Rottenberg (1993, p. 108) regard institutional investors as the driving force in the market. Many institutions pressured for the automation of trading and the elimination of people in the order matching mechanism particularly in order to trade with much greater speed. In manual trading, the involvement of *specialists* and *floor brokers* improves the price quality and volatility, but it also severely slows down the trading process.[2] Nevertheless, for a long time the NYSE did not

[2] In the traditional trading mechanism, a customer order is communicated from a customer to a brokerage firm. Brokerage firms or large institutional customers communicate with floor brokers on the trading floor. These brokers then take the orders to the *specialist* who is *makes the market*. This means he or she matches the sell and buy orders that he or she received. Additionally, in times of demand and supply imbalances, he or she steps in with own liquidity and a price offer. "Specialists on the trading floor are charged with maintaining fair, orderly

react to these voices calling for substantial change. It could yet retain a high market share of about 80 percent of handled volume in NYSE-listed securities and of 65 to 85 percent of respective trades (NYSE Euronext Inc. no date-b, no date-a). It remained the market leader for a long time in spite of unmatched external change. Beginning with the 1980s, the automation of the originally manual matching process became more and more prevalent in the US securities market. The Cincinnati Exchange as the first purely electronic exchange started in the late 1970s (Seligman 2003), and in the following decades, the NASDAQ as a purely electronic communication system also increased in popularity. While the rest of the market moved towards automation and electronic trading, the NYSE management perpetuated the tradition of manual trading. In 2003, the then CEO Grasso who left after being involved in a scandal

> has seen to it that even after he is gone, change at the NYSE is likely to be incremental at best -- with the interests of his seat holders [mostly specialist and floor broker firms] remaining a matter of paramount importance. Elimination of the exchange's floor-trading system, as urged by some exchange critics, […] is not about to happen. The specialists are the exchange […].'Some people say: "The exchange will die in 100 years. […]." Forgive me if I don't elect that strategy', he says. (Weiss 2003, pp. 90–92)
>
> Specialists and floor brokers are likely to continue to hold sway at the exchange, for the simple reason that they own it and dominate its corporate culture. (Weiss 2003, p. 92)

Van de Ven and Poole state that inertia and tradition perpetuate the organizational form and work against the self-reinforcing variation loop (Van de Ven and Poole 1995, pp. 514 and 518.). This reinforcing loop is shown in Figure 2.

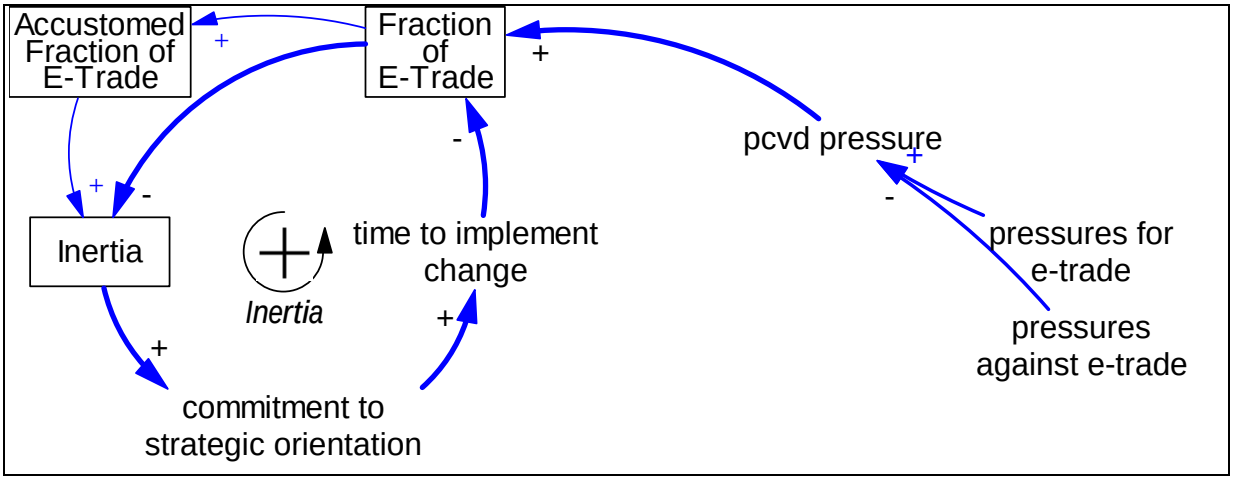

Figure 2: Organizational and management inertia

The simplified causal structure of Figure 2 implies that inertia grows when the actual and accustomed fraction of electronic trading are the same, leading to a strong commitment to the strategic

and continuous trading markets in specific stocks by bringing buyers and sellers together and, when circumstances warrant, adding liquidity by buying and selling stock for their own account." (NYSE Euronext Inc. 2007, p. 4).

orientation and strongly impeding change processes. But once the pressures on the NYSE are sufficiently strong to force the implementation of some e-trade, inertia diminishes and a reinforcing change mechanism gets initiated. This feedback mechanism brings to mind the assertion that change routines can serve as a source of flexibility and change as it is supported by Amburgey et al. (1993), Feldman (2000; 2004), Feldman and Pentland (2003), and Sastry (1997).

Today, the New York Stock Exchange regards its own past success and the resulting complacency as a reason for the missing reaction to changing demands in its environment. The past success made the NYSE management inattentive, and inertia made it concentrate on what it had always done. Ray Pellecchia, Vice President of Corporate Communications, states on the Exchanges weblog:

> The Big Board [i. e. the NYSE management] […] also was widely seen as not listening to large customers who wanted to be able to trade with greater speed, certainty and anonymity. For example, we had developed the NYSE Direct+ automatic-execution service, but had placed restrictions on order size, frequency and type. (Pellecchia 2006c)

It becomes obvious that the NYSE management was anchored in its patterns of thinking. This does not only mean that the management was inert in general, but also that it used to put its attention on specialists and floor brokers and their respective firms. The CEO as well emphasized the formerly missing concentration on customers (Ewing 2005). Large customers pressured for electronic trading and greater speed, but the management did not listen to them. The causal structure of the missing attention on customers is shown in Figure 3.

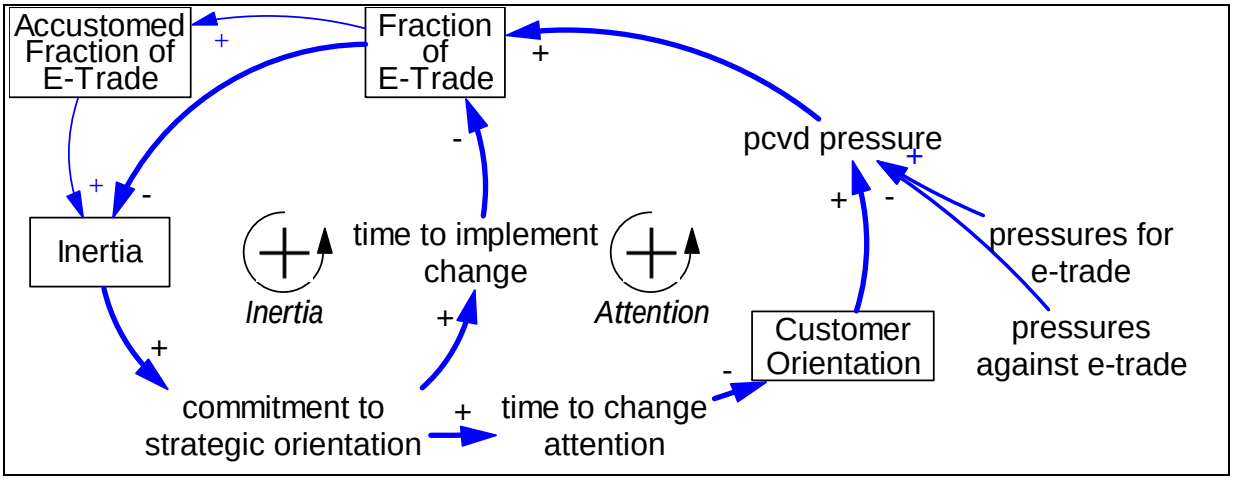

Figure 3: Management attention

The mechanism displayed in Figure 3 reveals that high commitment to the current strategic orientation also leads to a slow adaptation of the management's attention, i. e. it takes very long to shift from a focus on floor firms and their interests and pressures to a customer focus.[3] The causal diagram exposes the full picture of the reinforcing change mechanism that was already

[3] Management attention can shift between a focus on customers and on floor firms. The level of customer orientation then works as a weight for the different pressures coming from customer groups and floor firms for the implementation of electronic trading or for the maintenance of the trading floor.

mentioned. Long periods of convergence bolster inertia (Tushman and Romanelli 1985: 192) as well as attention to traditional issues and stakeholder groups. Once change gets initiated, two reinforcing mechanisms perpetuate it. Yet these feedback mechanisms only explain path dependent behavior. The long-term concentration on manual trading leads to a log-in, to low customer orientation, misperceptions of pressures and a long implementation time of change. But once one variable starts to change, the causal structure reinforces the instability in the same manner as it inforced the stability before. The feedback mechanisms described above do not explain a change of path as they do not answer the question why customer orientation increased and why the New York Stock Exchange changed so quickly. The following statements indicate a reason for the change in attention. At the Investment Company Institute 2005 annual conference the former CEO of the NYSE, John Thain, said:

> When I first started, a group – not everyone – said: 'You know what? We want to trade a different way. We want to trade electronically, we want to trade instantaneously, and we want to trade anonymously.' That push from customers was really how this all started. Making ourselves fit into Regulation NMS[4] is also very important to us. But we moved in this direction because of the reaction from our customer base, which we hadn't previously been listening to well enough. (Pellecchia 2006a)

> If you have a group of big and important customers who want to trade in a certain way and you don't give them the capability and somebody else does, that's where they're going to go. So the first objective of the Hybrid Market is to allow those institutions that want to trade electronically, instantaneously and anonymously to do so. (Pellecchia 2006a)

Falling market share or the mere threat of it were a paramount driver of this shift towards customer orientation and of organizational change:

> With its market share slipping away, the New York can no longer afford such arrogance. It has had to reconnect with the sources of its order flow. (Chapman, Mehta, and Scotti 2007, p. 48)

Market share, traditionally ranging around 80 percent, fell to 44 percent in September 2007 and 29 percent in June 2008 (Chapman 2008). One reason for reconnecting to customers, particularly to institutional customers, was this decrease in market share. Figure 4 depicts these mechanisms together with the effects that this has on the perception of pressures. This change in performance, the dissatisfaction and pressure of institutional clients, and the reinforcing processes of the dynamic structure are responsible for the change in the distribution of attention. The effects finally led to the acknowledgement of customer demands (Lucchetti 2008). In this case the performance threat from falling market share served as a catalyst for change.

[4] Promulgated by the US Securities and Exchange Commission (SEC), the Regulation NMS (Regulation National Market Share) is supposed to strengthen the national market system. It requires orders and order fragments to be sent to the trading venue that offers the best price as well as sub-second execution. Orders sent to manual trading floors are exempt from this order protection rule.

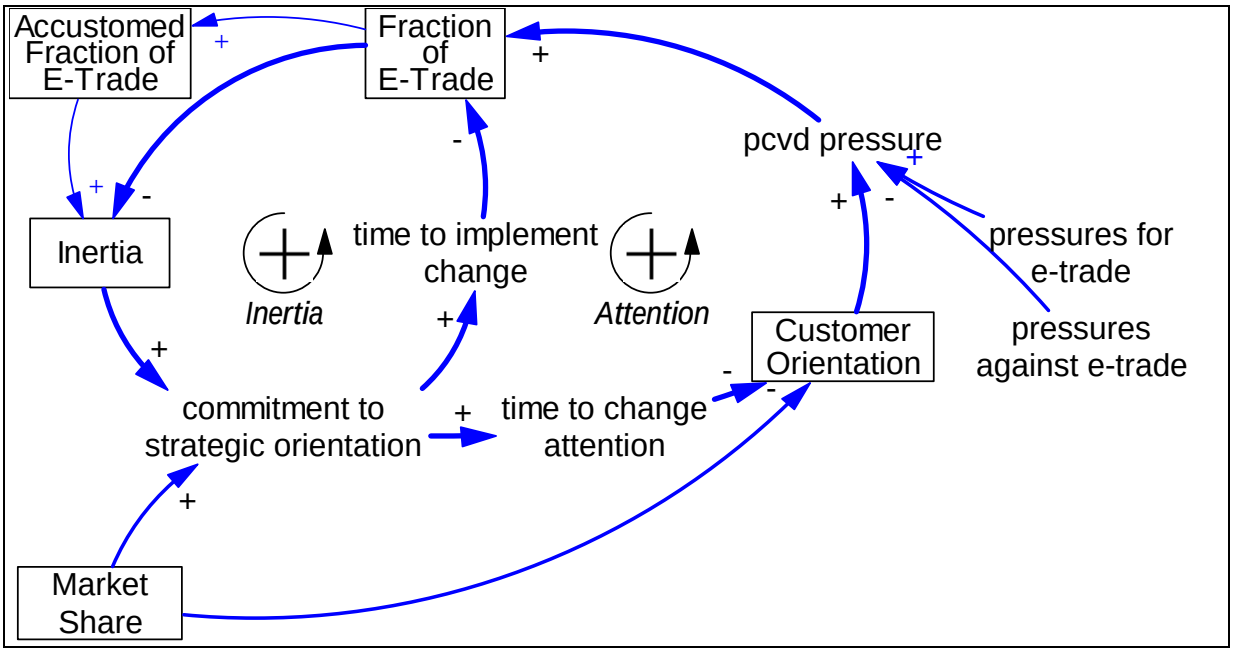

Figure 4: Performance threat from market share

Change at the NYSE was also an adaptation process. The perceived threat from market share made the NYSE aware of pressures for electronic trading from customers in its environment, and the organization decided to "adapt and evolve" (Pellecchia 2006b). The causal mechanism of adaptation can be seen in Figure 5.

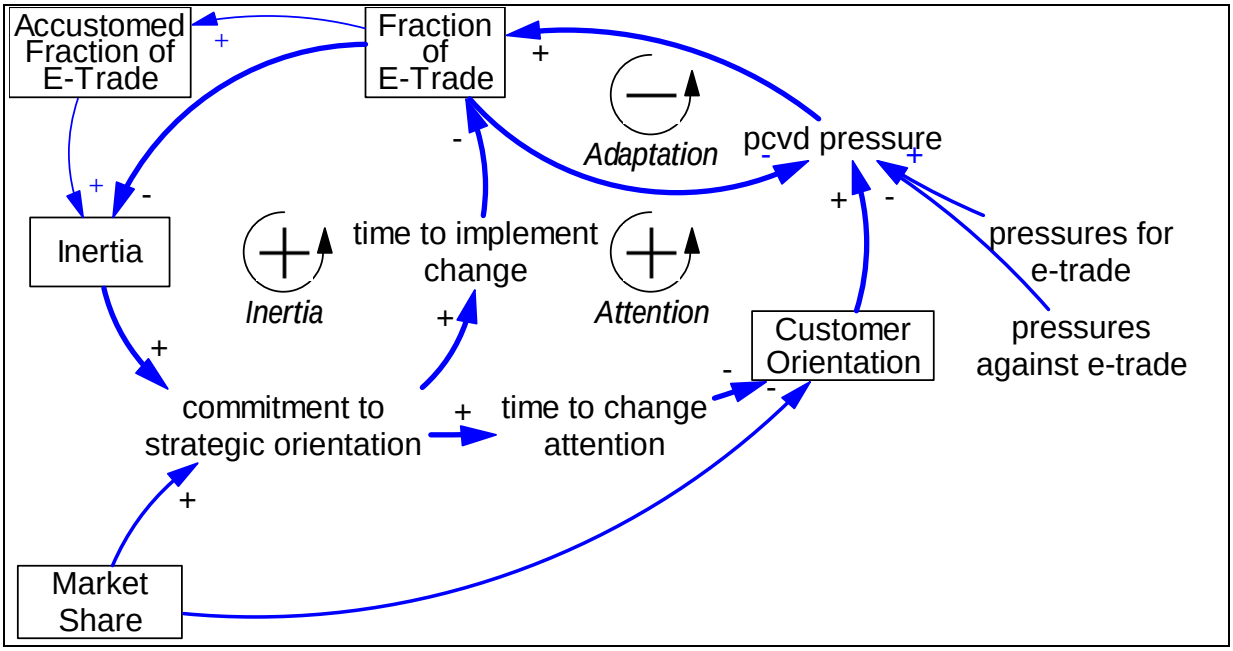

Figure 5: Adaptation to the environment

The causal diagrams shown in figures 1 to 4 were supported by a system dynamics model. The model developed here represents the core part of a broader system dynamics model of the

NYSE's move towards electronic trading. This broader model also includes an endogenous view of stakeholder reactions and pressures from customers and from the trading floor as well as the endogenous computation of market share (Zimmermann 2008). The model described in this paper represents the core mechanism of the management decision process. Its structure bases on the causal relationships that the NYSE case study reveals, and the model's behavior can be compared to real-world data. Figure 6 reveals that the simulated behavior closely matches the observed radical shift in the NYSE's way of doing trading. Organizational inertia caused the great difference between the market's (line 1) and the NYSE's (line 5) move towards electronic trading. The simulation of two different scenarios shows that in the base run as well as in a hypothetical scenario in which neither an exogenous regulatory change (Regulation NMS) nor the exogenous Grasso scandal take place, the patterns of behavior for market share (lines 3 and 4) and for the fraction of electronic trading (lines 2 and 5) are much alike.

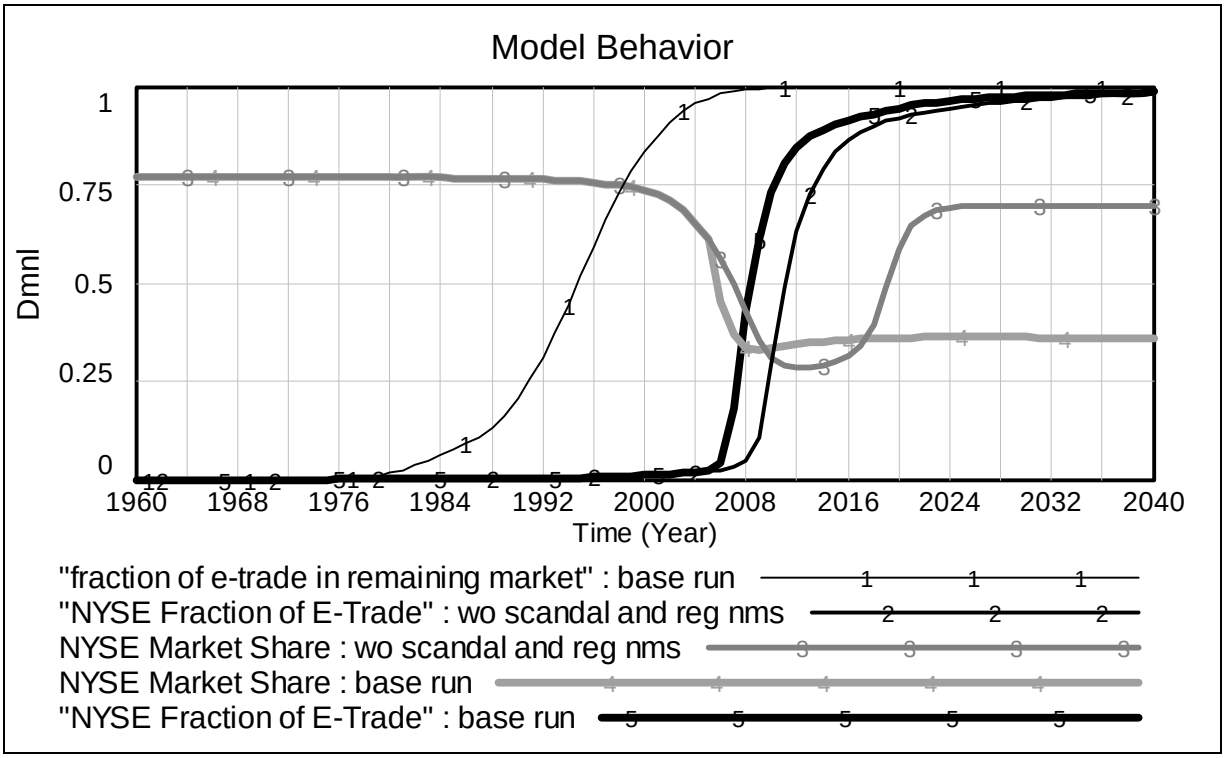

Figure 6: NYSE model behavior

Since the change at the NYSE reveals mechanisms that were also described earlier in the literature, a more general view on the mechanisms will be helpful. For example, empirical studies on the effects of threats on attention show mixed results: threat-rigidity as well as threat-induced change may be possible. Furthermore, authors do not agree on the effect of change, whether it is a source of further flexibility and change or whether the adaptation process decelerates. A generic model of inertia, routines, and management attention that addresses these questions will thus be proposed in the following.

Parting from the example of the New York Stock Exchange, three hypothetical transformations in the environment were simulated. As line 1 in Figure 7 shows, starting around 1980 the industry moves from a fraction of electronic trading from 0 to 1, starting in 2010 it moves back to a fraction of 0.25 before in the year 2030 the fraction of electronic trading in the market starts to

rise to 1 again. Then two assumptions concerning managerial attention were tested: First, illustrated by line 2, managerial attention moves towards customers and stays here, representing persistence. This also becomes obvious in the behavior, as—once the first change has been initiated—the organization adapts to the second one and then quickly the third one. The last adaptation happens so quickly because the organization already focuses on the stakeholders who demand this change. Second, revealed by the third line, managerial attention is assumed not to stick with customers, but returns to floor-based groups, once performance starts to improve. In this case, the organization responds much slower to the third change because the group demanding this change is not within the current attentional vision of management. Interestingly, due to the returning attention to floor firms, the organization overshoots and reaches a fraction of electronic trading much smaller than in the market because it highly attends to floor firms. The differences between line 2 and 3, here expressed by the distance between the curves, reveal great variability in the extent of adaptation to environmental stimuli. They are caused by different foci of attention and thus reveal the importance of considering attention for organizational behavior. It also provides evidence that the question whether change induces more or less subsequent change does not have a simple answer.

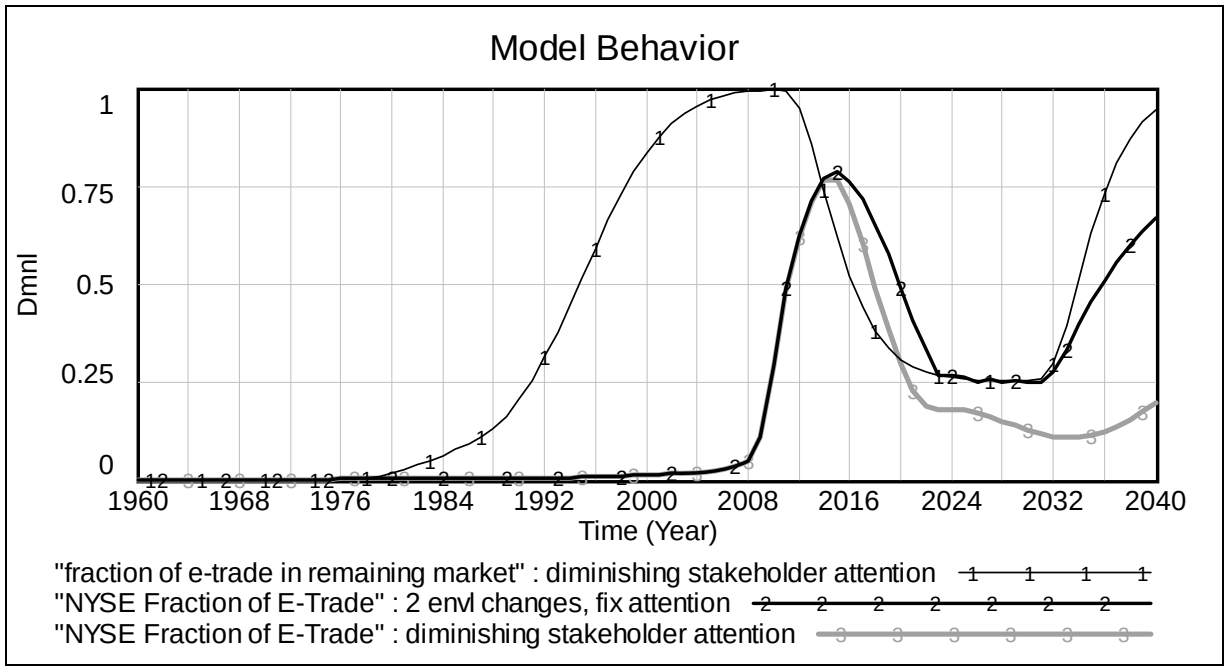

Figure 7: Several transformations in the environment

Attention provides important for answering the question whether change induces more or less subsequent change. It has an effect on the reinforcing feedback loop that stabilizes the current strategic orientation. Depending on what strength organizational attention gives to this feedback loop in relation to the direction the environment shifts, the reinforcing inertial or the adaptive loop dominate and inertial or adaptive forces prevail.

4 Implications for a generic model of inertia and routines

Path-dependent behavior: Many organization theories agree that inertia can be a major impediment to change and to an organization's required adaptation to changing environmental demands (Hannan and Freeman 1977, 1984; Tripsas and Gavetti 2000; Tushman and Romanelli 1985). Concerning the question whether routines are an impediment to change or whether they may be a source of flexibility, the causal structure that was derived from the case study of the New York Stock Exchange shows two effects working in opposite directions that can explain the different empirical results. The causal structure developed directly links to the case study, but it describes causal relationships and concepts that relate to the literature of inertia, routines, adaptation, and organizational change. In line with Sastry (1997) as well as Larsen and Lomi (1999) reinforcing feedback leads to inertia and inhibits change within organizations. Writings on managerial cognition and by the Carnegie School emphasize the importance of attention in limiting the intake of environmental stimuli by the management (Cyert and March 1963; March 1994; Tripsas and Gavetti 2000). This also creates a reinforcing process that perpetuates the current orientation. The authors of the Carnegie School as well as Beck, Brüderl, and Woywode (2008) point to adaptive balancing processes bringing the organization in line with its environment. Therefore, these feedback mechanisms do not seem particular to the NYSE, but may shape the evolution of many organizations. The study revealed that it makes much sense to consider all mechanisms simultaneously. Figure 8 describes the generic causal structure.

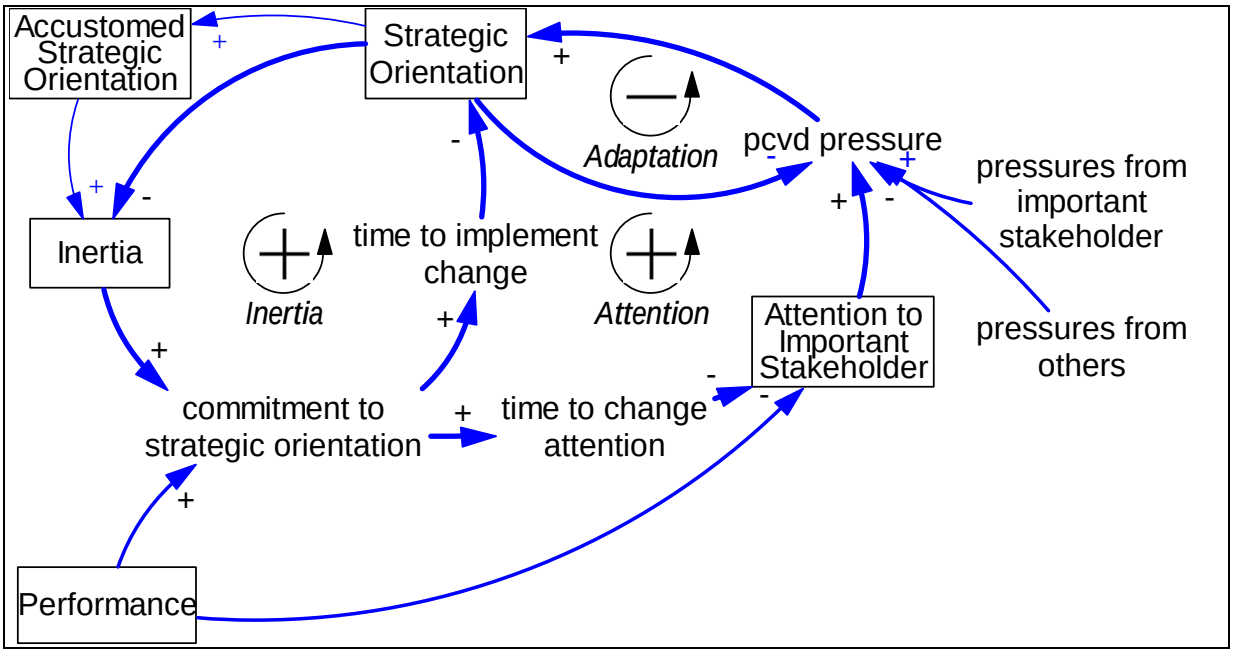

Figure 8: Generic causal structure

Two reinforcing loops are able to explain path dependency. The *inertia* as well as the *attention* loop tell how an existing strategic orientation perpetuates. If the strategic orientation has not changed for a long time, high inertia and high commitment to the strategic orientation of an organization make an organization unresponsive to environmental change. This perpetuates the current strategic orientation. But once this reinforcing cycle has been interrupted, the reinforcing

mechanism works in the other direction, enhancing flexibility and change. These mechanisms provide support for proposition 1.

Goal-seeking behavior: Change initiatives that get launched also reduce the gap between the actual strategic orientation of an organization and the demands that the environment makes on the organization. This creates a balancing mechanism of *adaptation*.[5] As proposition 2 suggests, this adaptation mechanism balances the gap between organizational reality and environmental demand, reducing the likelihood of further change once a change initiative has been launched.

Loop dominance: When the mechanisms described above work together, loop dominance determines change or stability. There are situations in which change creates further change, but it is also possible that a change initiative is a one-time event. The causal structure suggests that this also depends on the evolution of the environment, i. e. on the pressures that the environment exerts on the organization. After a one-time shift of the environment, once the organization is able to unglue from its past, the balancing mechanism induces a one-time adaptation process and change diminishes the likelihood of further change because the organization is then well adapted to its environment. In times when no further change is needed, the organization may be malleable, but it does not undergo any changes, and as time passes inertia consolidates again. If the environment continues to change, a previous organizational change unfreezes the organization (Lewin 1951), making it more malleable and increasing the likelihood of further change. These differences in loop dominance can serve as an explanation for the mixed results that other researchers propose. They bridge the gap between studies like that of Amburgey et al. (1993) and Sastry (1997) whose system dynamics modeling process shows that change induces further transformation with findings by Beck et al. (2008) who arrive at the conclusion that change decreases the propensity of further change. It is possible to explain why different behaviors occur in different organizations or situations.

Threat-induced change: The case study of the New York Stock Exchange shows an example of an organization that experienced pressures to move towards electronic trading for a long time, but that did not react to these pressures until it saw its position threatened. As the comments by the then CEO John Thain reveal, the felt threat led to a more malleable organization in two ways: the NYSE started to question its strategic orientation in general and it also focused more heavily of the stakeholder group that caused the threat. Since both the strategic orientation was loosened as well as there was a trigger for attention change, a transformation was possible. “The allocation of attention affects the information available and thus the decision” (March 1994, p. 23). The mechanisms remind of research by Cyert and March (1963), Gilbert (2005; 2006), and Levitt and March (1988) who regard a threat as a catalyst for change.

If even after a performance an organization remains committed to its strategic orientation, the implementation of change would happen very slowly or not at all. In the case of the NYSE true threat-rigidity as suggested by D’Aveni (1989), D’Aveni and MacMillan (1990) as well as under certain circumstances by Gilbert (2005; 2006) could not be ovserved. For many years even decades the NYSE remained inattentive to pressures which came from specific customer groups. These pressures represented forces from the NYSE environment that fully got released only when

[5] This view bases on the assumption that a change initiative that an organization initiates is reasonable and not misdirected. In reality, a failed change initiative due to its misdirection may be a reasonable possibility, but it is not the point of focus here, as I concentrate on inertia and the mere initiation of change.

a threat was imminent, but they do not represent the performance threat itself. The case of the New York Stock Exchange thus rather supports threat-induced change than threat-ridid behavior. In a more general case, it was shown that attention can mediate the effect of the threat. This means attention to stakeholders is an important concept as it can serve as a filter, translating the threat into action.

5 Conclusion

Contribution to organization theory: The current work analyzes change processes and the causal relationships leading to the success and failure of change and of adaptations to environmental transformations. In the analysis of reasons for failure to change, it becomes obvious that inertia, routines, and the reaction to performance threats have high importance. Whereas much research tries to establish unidirectional correlational or causal influences, the current work focuses on ambivalences and multiple effects in the explanation of organizational change and failure to adapt. A structural diagram could show that the reinforcing nature of routinized inertia and routines in management attention can serve both as an impediment to change as well as a source of flexibility once a change initiative gets initiated. These effects work together with an adaptation process in which the organization adapts to its environment's demands. Taken together, the strength of the effects together with the evolution of the environment determines whether and how organizations change.

The analysis revealed that when organizations face a threat to their performance, they are likely to feel inclined to shift their attention towards what causes the threat. Furthermore, they are likely to unfreeze and diminish the commitment to their strategic orientation. Particularly if both effects work together a real shift of attention towards the pressures of those causing the threat is possible. For decision-makers this means that in times of crisis a change of action can only be accomplished by a consistent change of thinking.

Limitations and future research: The quality of these findings highly depends on the soundness of the interpretation of the case study data, and it was tried to gain face validity by reference to original data (e. g. by quotes). This interpretive mechanism is yet still influenced by a specific lens of the researcher and particularly by the theoretical underpinnings set by the ethnographic as well as system dynamics theory. Here, modeling helped reduce these shortcomings by providing causally coherent explanations. Additionally, only a single case was studied in depth. While it could reveal general structures which bear high resemblance to phenomena discussed earlier in the organizational change theory, the further grounding in additional examples would be useful. Future research will therefore compare the structural findings with other cases of successful organizational change as well as with cases of organizational decline and failure. Furthermore, the causal mechanisms of organizational and management attention will receive closer attention; and the extension of the generic model by an endogenous formulation of performance measurement (here market share) will be a further step.

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