

THE ROLE OF TIME IN POST-MERGER INTEGRATION

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Abstract

This paper investigates the dual role of time in post-merger integration (PMI). Prior research has focused on the determinants of M&A success, and highlighted the importance of meeting implementation schedules as a pivotal, yet usually unachieved, goal of a PMI. In this paper, I propose a dual explanation of this phenomenon: the implementation schedule timelines are usually too optimistic, and actual implementation is too slow. The theorizing behind these explanations is grounded in the heuristics, biases and temporal orientation literature as well as in Crossan et al.'s (1999) 4I organizational learning framework, which is used to propose how integration complexity influences integration time. Overall, this paper contributes to the explanation of the so-called M&A success paradox (double digit M&A growth in spite of 60%-90% failure rates). Financial analysts, who rarely participate in PMI, underestimate implementation time, which then becomes an excessively aggressive deadline, usually missed because of unanticipated integration complexity.

Keywords: Post-merger integration, time, heuristics and biases, integration complexity, organizational learning

Introduction

Double digit growth of merger and acquisition (M&A) deals in the 1980's and 1990's fuelled extensive research program. This research produced a surprising result coined as the success paradox: M&A popularity persists in spite of overwhelming of failure rates (60%-90%, depending on the industry and the time period). However, conclusions about M&A results must be tempered by the assumed definition of success, which is often in the eye of the beholder.

In spite of decades of M&A research, the scholars failed to converge into one cohesive framework (Pautler, 2001). However, there is a general consensus that the key impediment to success lies in an inadequate *post-merger integration process* (Haspeslagh & Jemison, 1987, 1991; Cording et al., 2002; Bert et al., 2003), which "often destroys more value than it creates" (Haspeslagh & Jemison, 1987).

The post-merger integration (PMI) is the last phase of a merger, during which two companies combine to form a single entity. The integration literature has been plentiful yet fragmented. The scholars have proposed several factors that might jeopardize PMI, including poor organizational fit (Jemison & Sitkin, 1986), resource embeddedness (Haspeslagh & Jemison, 1987), corporate and national culture differences (Weber et al., 1996) and poor human resource management (Buono & Bowditch, 1988).

The concept of time has been explored in a variety of disciplines in the social sciences, but the study of time as it relates to organizations has been limited (Ancona et al., 2001). The role of time in an M&A context has been virtually ignored with a recent exception of Homburg & Bucerius (2006) who explored the role of the integration speed in M&A success. However, their measure of time in six-month chunks was too coarse-grained, and their model treated it as an objective variable. Meanwhile, in a real life situation, the role of time in PMI is more complex. As Apaydin (2008) has found, PMI participants form their expectations in two forms: as financial results and the timing of their achievement. Importantly, both of these

criteria are established for them, usually by investment bankers and consultants alike who would not be involved in the PMI process itself.

Predicting the future is a difficult task, as people are not accustomed to thinking in the future perfect tense (Weick, 1984). Forecast under uncertainty is a subject to heuristic-based biases (Tversky & Kahneman, 1974) and unrealistic optimism (Weinstein, 1980). Optimistic biases may also occur because decision-makers believe that they may not have to bear the outcomes of their decisions (Kahneman & Lovallo, 1993). Moreover, information may be too complex to enable objective evaluation of outcomes, especially when their components are ambiguously interdependent and conjunct, leading to overestimation of their probability (Tversky & Kahneman, 1974). As a result, this a priori unrealistically optimistic implementation schedule becomes a de facto deadline for PMI managers, transforming the process into a time constraint project.

PMI is a complex process, in which many informational, procedural and behavioral uncertainties have to be resolved through communication and learning. The role of organizational learning in PMI should not be underestimated. The capacity to learn is one of the key drivers of integration performance (Haspeslagh & Jemison, 1991). Yet, learning takes time. Integrating complex deals may take longer as suggested in Apaydin (2008) research.

The main contribution of this paper is the theoretical explication of the role of time within a comprehensive framework, which includes both, PMI and its antecedent, the pre-deal valuation. The paper is structured in three parts. The first part explains how PMI implementation schedules are set based on the heuristics, biases and temporal orientation literature. The second part is built on Crossan et al.'s (1999) 4I organizational learning framework, which is used to explain how integration complexity influences integration time. The third part is based on the aspiration theory. It explains how pre-deal forecast time and the PMI realized time interact to produce a success or a failure. Finally, I discuss the contribution, limitations, and implications for future research and managerial practice.

Forecasting Implementation Schedule

Apaydin (2008) explored the definition of success as viewed by different PMI stakeholders (external consultants, PMI managers, and target's employees). The respondents were asked to reflect on their PMI experience focusing on the process dynamics and the role of various factors in achieving or undermining the ultimate success. The study has found that PMI participants form their expectations in two forms: as financial results and the timing of their achievement. Importantly, both of these criteria are established for them, usually by investment bankers and consultants alike who would not be involved in the PMI process itself. It is interesting that the financial targets were more rigorously tracked than the implementation schedule, which was missed in all of the reported cases. Paradoxically, while the markets were punishing the company stock for missing the deadlines, the PMI participants tended to discount away this part of the performance expectations. What is it about time that makes people treat it so frivolously and almost haphazardly? How do cognitive and behavioral processes interact to produce such a result?

The temporal perspective

The concept of time has been explored in a variety of disciplines in the social sciences, but the study of time as it relates to organizations has been limited and fragmented (Ancona et al., 2001). Although theories of time are lacking in the organizational literature, temporal perspective can be found in the strategy literature (Das, 1987; Waller et al., 2001). In a consolidation effort Ancona et al. (2001) introduced three categories of temporal phenomena in organizations: conceptions of time, mapping activities to time and actors relating to time. In the last category, the authors differentiate between temporal perception variables and

temporal personality variables. Although actor implies that the analysis can be applied to multiple levels, including groups, organizations, for the purpose of this study society psychologists' traditional individual level of analysis is more appropriate.

Time can be conceptualized as a referent point (Mosakowski & Early, 2000). Actors may view the past, present or future as the most salient time frame. These different temporal orientations may shape their perceptions and behaviors. Amyx & Mowen (1995) associate future-time oriented individuals with high achievement, low impulsivity, the ability to delay gratification, and higher social status; while present-time oriented individuals are more impulsive and they plan less. Future-time oriented people also perceive the future as being closer than their present-time oriented counterparts.

Heuristics and Biases

In the context of a PMI, analysts and consultants preparing the PMI implementation schedule are charged with a task to make their best estimates about the level and timing of the benefits and costs of the integration. However, in spite of the sophisticated financial models they use and the diligent historical analyses they base these estimates on, the forecast schedule is far from being certain. Unlike computers that use algorithms – effortful, detailed and exact rules that guarantee correct result, - in their decision-making humans resort to simplified heuristics because of their cognitive limitations (Keren & Telgen, 2004).

Temporal perceptual asymmetry may lead to disparity of the forecasts. Individuals with a future time perspective were found to be highly goal oriented and having more clearly defined future goals than individuals with a present time perspective (Waller et al., 2001). Individuals' future time perspective was also linked to their preference for short and long term planning: those who view important events as occurring in the short-term have a near future time perspective, while those who have a longer term view have a distant future time perspective (Das, 1987).

P1: Past- and present-oriented individuals will set up more aggressive time schedules for PMI than future-oriented individuals.

Forecasting time schedules for a complex new entity, which has never existed by an external consultant not directly involved in operations, may be subject to numerous biases. For example, availability heuristic based on the ease with which the occurrences can be brought to mind can lead to retrievability and illusory correlation biases (Tversky & Kahneman, 1974). The private and public information surrounding a major event such as M&A create a lot of hype and excitement among investors (French & Roll, 1986) and memories about past deals more salient. But due to the survival bias, only the successful outcomes will continue appearing in the news, thus making accessibility easier and creating a positive predisposition towards the likelihood of success. In the absence of direct company experience, an external consultant would then default to heuristic processing favouring optimistic forecast. Another reason why an external evaluator might maintain an unrealistic optimism is temporal discounting (Highhouse et al. 2002). Individuals might discount future losses because they will not be there to bear their consequences (Kahneman & Lovallo, 1993).

P2: External consultants not participating in a PMI will set up more aggressive time schedules for PMI than internal managers.

Many decisions involve delayed consequences. Experimental research in behavioral decision-making suggests that people consistently devalue the significance of both future losses and gains but loss aversion erodes more quickly than does gain attraction (Highhouse et al. 2002). Coupled with the finding that immediate gains are more psychologically unpleasant than immediate losses (Kahneman & Tversky, 1979), leads to a suggestion that evaluators confronted with a forecast task presented in terms of gains and losses (projected revenue growth and corresponding costs) would be more optimistic in achieving revenue targets than

in accounting for costs. Put differently, they would forecast the timing of the revenues earlier and push costs further into the future. In doing so, they would tend to create more realistic forecasts for costs than for gains, which is in line with prior empirical findings that companies tend to do a better job in estimating cost-based synergies, than revenue-based synergies (Early, 2004). Meanwhile, the consequences of this mis-forecasting are quite serious. Bekier et al. (2001) suggest that failure to focus on revenues is one of the leading reasons of merger failures: 1% shortfall in revenue needs a 25% reduction in targeted costs to stay on track; 2-3% increase on targeted growth can offset 50% cost overruns.

P3: Forecasts for revenues will have a more aggressive time schedules than for costs.

Kahneman & Tversky (1974) point out that biases in evaluation of compound events are particularly significant in the context of planning. A PMI is a perfect example of such an event. As it will be shown in the next section, PMI complexity increases with integration extent, necessitating more linkages to be readjusted and reconfigured. However, the relationship between complexity and timing of the forecast is not unambiguous. On one hand, the successful completion of the undertaking typically has a conjunctive character: for an event to succeed, each of a series of events must occur. Even when each event is very likely, the overall probability of success can be quite low, if the number of events is large. This implies that the great integration complexity would lead to less realistic forecasts.

P4: the greater integration complexity, the less realistic will be the forecast integration time.

Executing Implementation Schedule

Two streams of literature are important for this part of the paper. The complexity literature delineates the types of factors contributing to complexity, while organizational learning literature provides a theoretical lens, which can be used to connect integration complexity to performance.

Complexity

Complexity covers a broad scope from computational complexity to biological and social complexity (Sivadasan et al., 2006). However, the notion of complexity should not be confused with Complexity Theory, which states that critically interacting components self-organize to form potentially evolving structures exhibiting a hierarchy of emergent system properties (Lucas, 2004). Complexity can be associated with something that is difficult to understand, describe, predict and control, but it has a subjective quality since its meaning is largely understood within the scope of the phenomenon at hand (Scuricini, 1987). Extrapolating from various contexts in which the idea of complexity is used, a complex system may refer to one whose static structure or dynamic behavior is counterintuitive or unpredictable. (Deshmukh et al, 1998) Several components contribute to complexity (Sivadasan et al., 2006):

- Number of elements;
- Degree of order within the structure;
- Degree of connectivity between the elements;
- Level of variety between the elements; and
- Degree of uncertainty or predictability within the system.

The constructs of static and dynamic complexity are especially studied in manufacturing, operations and information systems management. This paper introduces this important construct to the realm of M&A.

Integration complexity

Complexity is an attribute indicating presence of a multitude of objects, which are hard to separate, analyze or solve. Therefore, integration complexity can be defined as a degree of process complexity, which increases with an increase in number of elements involved, the variety of these elements and the degree of difficulty in separating or analyzing them. “The interplay of diversified structure, external and internal firm factors, and firm performance may be more complex than prior research has assumed”(Hoskisson & Hitt, 1990).

The research on PMI has been fragmented so far. However, it provides a basis for developing the structure of the integration complexity construct. Apaydin (2008) proposed that integration complexity is a formative construct, which has three independent theoretical dimensions: integration extent, integration parties’ differences, and resource embeddedness.

Integration extent is the amount of work involved in integrating each department. It depends on how much is there to integrate, and how much needs to be changed in the process. Although integration extent increases with parties’ relatedness, these two constructs are different because integration extent incorporates the difficulty of integration of related but different functions. Integration extent contributes to the integration complexity by necessitating more changes in the incumbent operations and more linkages among the parts of two companies (Cording et al., 2002): “as the complexity of the interface increases, the need to unbundle and rebundle the target’s resources increases.”

Integrating parties’ differences is the degree of dissimilarity between parties’ structures, systems and cultures. The greater the differences between parties, the more elements need to be re-aligned and adjusted, and the greater the effort needed to bring them together into one entity.

Resource embeddedness is the degree of resource tacitness, rarity and immobility, all of which lead to an increased difficulty of PMI (Cording et al., 2002). Tacitness is an especially causally ambiguous characteristic (King & Zeithaml, 2001). It contributes to the uncertainty part of the complexity. Resource embeddedness speaks to a particular part of integration complexity, the difficulty of disentangling the components from the whole.

Integration complexity therefore is a formative construct, which can be visualized as a vector in a three-dimensional space. Since its value is a function of the values of these dimensions, different combinations of these values can produce similar results. For example, PMI A, which has high integration extent but low parties’ differences and resource embeddedness, might be similar in integration complexity to PMI B, which has low integration extent but high parties’ differences and resource embeddedness. However, it is important to note that being similar in integration complexity does not mean being equivalent. The fact that the vectors have different directions can be interpreted as different types of integration complexity requiring different PMI processes.

Now that the integration complexity construct has been defined, and explained in terms of its three dimensions, I will next turn to its role in meeting PMI implementation schedule as viewed through the organizational learning lens.

Organizational Learning Perspective

Organizational learning research stream has been dominated by the application of a learning perspective to the study of strategic issues, particularly those associated with joint ventures and alliances. As a result, there has been a strong focus on various types of external learning (Huber, 1991; Lane & Lubatkin, 1998). M&A are another arena where external learning takes place.

From a process view (Jemison & Sitkin, 1986), an M&A consists of three phases: pre-deal due diligence and valuation; deal-making; and PMI. The last one is the longest and the

most important phase, being one of the most cited reasons for M&A failure (Haspeslagh & Jemison, 1991). Several groups of scholars applied an organizational learning perspective to the PMI process, coming to the same basic conclusion using various frameworks and different terminology. They all point to a combination of cognitive and behavioral learning (Leroy et al., 1997), which needs to be applied during the integration in a feed-forward/feed-backward manner (Greenberg et al., 2003), whereby the tacit knowledge gets articulated to become explicit and recorded in routines (Zollo & Winter, 2002), which, in turn feed the development of a new tacit knowledge.

Although all these authors draw a distinction between individual and organizational learning, and suggest the mechanism through which knowledge transfer and learning occur across levels, none of them explicitly uses the 4I multi-level learning theory proposed by Crossan et al. (1999). However, the 4I framework lends itself perfectly to this argument. The 4I theory views organizational learning as a four-step process of intuition, interpretation, integration and institutionalization. Attending to both cognitive and behavioral dimensions of organizational learning, this framework consolidates all the proposed theories under one umbrella, and explains in detail, not only what but also how and why. This presents an opportunity to build the PMI performance framework on this elegant and comprehensive theory.

Scholars have proposed several definitions of organizational learning (see Bontis et al. (2002) for a list). I will use the one adopted by Crossan et al. (1999) in their 4I model: learning is a dynamic process of change in behavior and cognition occurring across the three levels of the organization: individual, group, and organization.

Change is a necessary predecessor for learning. “At the core of learning is a process that involves: 1) the detection of a mismatch between one’s beliefs and perception of stimuli, and 2) the modification of beliefs to resolve a mismatch. A mismatch, or discrepancy, may be experiences...as a conflict between expectations and actual experience ... discrepancies in partner competencies are the fuel for learning” (Inkpen & Crossan, 1995). Thus, the greater the discrepancy, the greater is the need for learning.

An increase in any of the three dimensions of integration complexity will lead to a greater discrepancy between the business reality of joint operations and the knowledge stock at each level of analysis: each party’s cognitive maps (individual knowledge and competencies) at the individual level; and business routines at the group and organizational levels. The greater the extent of the integration, the more parts will need to be realigned and the more changes will be involved in bringing the two parties together in one joint entity. Big differences between parties’ structures, systems or cultures will require not only large tangible changes but will also demand a high rate of mental and behavioral adjustment. An increase in embeddedness of resources of either party will lead to an increase in the difficulty of sharing these resources (Cording et al., 2002) and will require integrated learning (Inkpen & Crossan, 1995), including knowledge articulation and codification (Zollo and colleagues, 1998, 2002, 2004). Thus, the greater the integration complexity, the more organizational learning will be required for a successful PMI. Capacity to learn is one of the key success factors of PMI (Haspeslagh & Jemison, 1991).

The learning required is not always the learning achieved and therefore “The acquisition process often destroys more value than it creates.”(Haspeslagh & Jemison, 1987) The empirical test of the Strategic Learning Assessment Map scale for measuring organizational learning (Bontis et al., 2002) has not only demonstrated a positive effect of organizational learning on collaborative performance, but it has also modeled the learning bottlenecks in the knowledge flows. Greater integration complexity will lead to a bigger difference between the parties’ stocks of knowledge and thus will require more flow between them. Put differently, assuming the same rate of learning, a PMI with a high integration

complexity will take longer to adjust the individual, group and organizational knowledge stocks to a new, common level than a PMI with a low integration complexity. Additionally, increased complexity requires more linkage reconfiguration among parts and members of PMI and more learning across all levels. This will invariably lead to a lower rate of performance conceptualized as integration time.

P5: The greater the integration complexity, the longer will be the integration time.

Meeting Implementation Schedule

The debate about the definition of success is intrinsically related to the notion of aspirations. The aspiration level is the borderline between perceived success and failure. It is a result of a boundedly rational decision maker trying to simplify evaluation by transforming a continuous measure of performance into a discrete measure of success or failure (March and Simon, 1958; March, 1988). Individuals and organizations may have different aspiration levels depending on their social and performance history, so the same performance level might be evaluated differently by different parties (Greve, 1998). Thus, different schools adopt different criteria for measuring M&A performance varying between market, accounting or social performance (Haspeslagh & Jemison, 1991), with the financial measures being dominant. M&A success is typically conceptualized as the creation of a broadly defined synergy: the value of the combined firm is greater than that of the two firms operating separately (Seth, 1990a) with non-financial strategic goals being “only valid if they have financial basis and can be clearly translated into financial outcomes” (Chanmugam et al., 2005).

This paper neither focuses on the deliberations about the performance measurement, nor on the benefits of one method over the other. Instead, an aspiration-based view is adapted to control for those differences. Since Lant (1992) argued that the processes of expectation formation and aspiration formation are similar, the dependent variable is conceptualized as meeting performance expectations, which means that the aspiration level is achieved. The benefit of this definition is that it allows us to accommodate different performance views, which may include formalized measures such as an integration plan (Bert et al., 2003; Galin & Herndon, 1999) or represent a subjective view of integration stakeholders of whether or not their expectations are met (as used in the cross-border empirical study by Lahovnik, 2000).

The success then consists of two parts: the performance expectations and the actual rate of performance. The former represents a firm’s aspiration level: a prediction about future results, which is usually based on past performance (Greve, 1998) and on the average industry performance: available data are combined with simple processing rules to create an expectation of future performance, which then becomes the aspiration level (Meyer and Gellatly, 1988). So, the performance expectations are an intrinsically subjective, path-dependent measure, even if being formalized in seemingly objective quantitative terms. According to Weick (1984), predicting the future is a difficult task, as people are not accustomed to thinking in the ‘Future Perfect’ tense. Application of complexity theory to PMI postulates that it simply cannot be done (Mitleton-Kelly, 2005). Instead, she proposes to use an alternative adaptation approach, which implies that aspiration levels will be constantly changing during the PMI process. However, in managerial practice, the expectations are usually set before the PMI process begins, and are rarely changed (Galin & Herndon, 1999). The rate of performance, which includes financial milestones achieved and the speed of integration, on the other hand is an objective variable, which can be measured (Apaydin, 2008).

Given human bounded rationality (Simon, 1945), our ability to conceive of, not to mention predict, is diminishing with the complexity of the task at hand. Research has shown that companies tend to underestimate the efforts required to complete integration (Sirower,

1997; Early, 2004). On the other hand, an increasing complexity would require more ‘linkage reconfiguration’ among parts and members of PMI and more learning across all levels. This will invariably lead to a lower rate of performance. Therefore, integration complexity will negatively impact the both parts of the dependent variable. On one hand it will lead to over-optimistic expectations, and on the other, it will slow down PMI process, decreasing the chances of meeting the performance expectations, leading to the high rate of M&A “failures” that we observe in the literature.

Conclusion

The main contribution of this paper is the theoretical explication of the role of time within a comprehensive framework, which includes both, PMI and its antecedent, the pre-deal valuation. This linkage across different stages of an M&A has not been done before. Financial analysts, who rarely participate in PMI, underestimate implementation time, which then becomes an excessively aggressive deadline, usually missed because of unanticipated integration complexity.

The theoretical contribution of this work is three-fold. First, it applies basic psychological theories to explain behavior of PMI evaluators. Second, it develops a new formative construct, integration complexity, specified in terms of its three dimensions - integration extent, parties’ differences and resource embeddedness and explains its impact using theories of complexity and organizational learning. The history of applying the organizational learning lens to the PMI context is relatively recent, and research on the subject has been quite fragmented. Meanwhile, the consolidation of the organizational learning perspective itself has culminated in the 4I framework, which explains both cognitive and behavioural learning processes across levels. Application of this framework helps to hypothesize and explain the empirical results. Third, this paper invokes aspirations theory to tie together the two contributing factors of success in meeting performance expectations: forecast and realized implementation schedule. Overall, this paper presents an opportunity to link together multiple theories and promote cross-discipline collaboration in such an important area as M&A context.

Limitations

Being devised in general terms, this framework is based on certain assumptions and has limitations. The model assumes two firms participating in an M&A, while more parties might conceivably enter the deal. Conceiving integration complexity as a vector implies two attributes: a value and a direction, whereas only the former has been treated in this paper. The role of geographical distance between locations is not explicitly treated, although it can be incorporated as an element of the parties’ differences dimension. On the other hand, there is no reason to exclude international M&A from this model, as they are often included elsewhere. The parties’ differences dimension includes national cultures and thus can be used for both national and cross-border M&A research.

Future research

Future researchers could test the propositions presented in this paper, or tackle some of the limitations presented here. Eisenhardt (1989) suggests using exploratory case studies for building a grounded theory. She maintains that it can be particularly useful for the development of new constructs. As a further expansion of the model, the relationship between integration time and performance can be studied in more details.

Managerial implications

The proposed concepts have far-reaching implications for managers. Participation of the PMI manager in forecasts and awareness of the behavior biases can lead to more realistic expectations. Given the low success rate across the board, but the persistent growth of M&A transactions, managers can learn how to be more successful by either redefining success or by speeding up the process. The former can be done by learning how to deal with discrepancies in the aspirations of different stakeholders, and how to adjust the expectations based on the level of integration complexity. The latter would require a rigorously planned and enforced organizational learning process to aid in dealing with integrations of high complexity.

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