



1998

Knowledge Codification, Process Routinization, and the Creation of Organizational Capabilities: Post-Acquisition Management in the United States Banking Industry

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Abstract

How do firms create strategically relevant capabilities? In this study, insights from evolutionary economics and organizational learning theories are combined to explore the mechanisms behind the creation of organizational capabilities in the context of infrequent, heterogeneous, and complex administrative tasks. More specifically, the investigation covers the effects of both tacit and codified knowledge accumulation mechanisms on the development of a practice specialized in the management of post-acquisition integration processes. Hypotheses about the performance implications of pre-acquisition resources, post-acquisition integration decisions, and knowledge accumulation and codification processes are tested with primary data collected from a sample of 51 bank holding companies in the United States and Canada, for a total of 577 completed acquisitions. Results show that codification and routinization processes play a key role in shaping the evolution of post-acquisition integration practices, and that both mechanisms have a positive influence on acquisition performance, within specific limitations. The effectiveness of tacit knowledge accumulation is constrained by the degree of homogeneity of past experiences, whereas knowledge codification impacts performance only when high levels of integration are to be achieved. Results also show that greater level of integration have positive implications for acquisition performance and that decisions to replace top management affect performance negatively. Conclusions are drawn about necessary refinements of current theoretical approaches to accommodate complex learning conditions, and the potential implications for the management of acquisitions, as well as other infrequent and complex organizational events, such as strategic alliances and internal reorganizations, are discussed.

Degree Type

Dissertation

Degree Name

Doctor of Philosophy (PhD)

Graduate Group

Management

First Advisor

Habir Singh

Keywords

mergers and acquisitions

Subject Categories

Business Administration, Management, and Operations | Economics | Finance and Financial Management | Management Sciences and Quantitative Methods | Organizational Behavior and Theory

**KNOWLEDGE CODIFICATION, PROCESS ROUTINIZATION,
AND THE CREATION OF ORGANIZATIONAL CAPABILITIES:
Post-Acquisition Management in the US Banking Industry**

MAURIZIO ZOLLO

A DISSERTATION
IN
MANAGEMENT

for the Graduate Group in Managerial Science
and Applied Economics

Presented to the Faculties of the University of
Pennsylvania in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

1998

Supervisor of Dissertation

Graduate Group Chairperson

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Maurizio Zollo

1998

Dedicated to:

*A mamma Dora e a papa' Mimmo
In memoria del loro immenso amore
A conferma dell'eterno valore
dei loro insegnamenti*

* * * * *

*To my beloved wife, Valeria,
sweet, loving pillar
of my very existence*

* * * * *

*Sancta Mater
Domina Nostra
Genetrix Mundi
Fons Verae Sapientiae*

ACKNOWLEDGEMENTS

The completion of a doctoral dissertation can be a time either of high excitement or of painful frustration, depending on the stature, the involvement and the support of all those who work with the candidate. I had the good fortune to have the former experience, being one of those Ph.D. students who received extraordinary help, unwavering support and continuous encouragement from a selected group of exceptional individuals.

First and foremost my advisor, Harbir Singh, taught me all I know about mergers and acquisitions, patiently guiding me through the entire dissertation process and lighting the way with precious insights, pragmatic advice and rock-solid support. The amount of time and effort he dedicated to this research project is the single most important antecedent to the quality of its output. I consider Sid Winter the scientific father of whatever theoretical advancement the reader might find in the following pages. Standing on the shoulders of such a giant is not only rare good fortune, but also a unique opportunity to enjoy a panoramic view of seemingly distant fields, such as economics, strategic management and organizational theory. Dan Levinthal was the instructor in the strategy seminar I attended during my first semester at Wharton, and has continued to provide crystal clear and penetrating comments on and critique of my research ever since. I owe him more than he probably realizes. Similarly, Dave Jemison contributed crucial comments and critique based on his unique understanding of the post-acquisition integration process, for which I am wholeheartedly grateful. In addition to guiding me on the sociological angle of my research questions, John Kimberly proved to be a model of professional success and personal balance that I wish every doctoral student could have during such a crucial formation period. I hope that at least some of the best practices in

completing a dissertation project mastered by Gabriel Szulanski, recipient of the 1996 Best Dissertation Award in strategic management, have percolated into this work. His expertise in knowledge transfer processes, survey-based research and process analysis improved the quality of my thinking and of this document beyond description.

Aside from the members of my dissertation committee, a number of faculty members of the Wharton School have offered valuable insights and continual encouragement. I thank Bruce Kogut for the uncountable pieces of advice he gave me over the years and for his most precious friendship; Hans Pennings for his generosity in providing time, suggestions and penetrating questioning; Connie Helfat, ETTY Jehn, Paul Rosenbaum, Dan Raff, and Yiorgos Mylonadis for their patience and availability when I needed them most. Additional, healthy criticism came from the participants in the “doctoral discussion group”: Ron Adner, Adam Fein, Prashant Kale, Gary Moskowitz and Steve Walston.

I am also obliged to all those who provided advice, observations and critical comments during various seminars, presentations and other formal or informal encounters: Bill Barnett, Jay Barney, Robert Burgelman, Laurence Capron, Sajan Chatterjee, Clay Christensen, Karel Cool, Michael Cusumano, Yves Doz, Syd Finkelstein, Ari Ginsberg, Sumantra Ghoshal, Philippe Haspeslagh, Rebecca Henderson, Marco Iansiti, Tarun Khanna, Don Lessard, Gianni Lorenzoni, Franco Malerba, Costas Markides, Will Mitchell, Cynthia Montgomery, Will Ocasio, Anju Seth, Mark Shanley, Mark Sirower and Gordon Walker.

This dissertation would simply not have seen the light of day without the financial support of the Sloan Foundation and without the industry expertise, company access and

logistical support offered by the Wharton Financial Institutions Center. I am indebted to Tony Santomero, Peter Burns, Kathleen Holmes and Tina Horowitz for all of the above reasons, and to Chip Hunter for inviting me to join the bank productivity study. That was when the empirical part of this dissertation was conceived.

Finally, let me take a moment to express my deep gratitude to all those who contributed in their own special way to the successful completion of my doctorate: Joy and Alex Bhattacharya, Lorna Doucet, Libby Scott, Andy and Maya Spicer, Giovanni Gavetti, Remo Lalli, Paul Almeida, Jaeyong Song, Michael Jacobides, Harsh Mehra, Angel Caballero, Alessandro Zollo, Giuliana and Luigi Berchicci, and zia Rina. Their love and their wisdom forged four and a half unforgettable, unrepeatable years of my life.

ABSTRACT

KNOWLEDGE CODIFICATION, PROCESS ROUTINIZATION, AND THE CREATION OF ORGANIZATIONAL CAPABILITIES: Post-Acquisition Management in the US Banking Industry

Maurizio Zollo

Harbir Singh

How do firms create strategically relevant capabilities ? In this study, insights from evolutionary economics and organizational learning theories are combined to explore the mechanisms behind the creation of organizational capabilities in the context of infrequent, heterogeneous, and complex administrative tasks. More specifically, the investigation covers the effects of both tacit and codified knowledge accumulation mechanisms on the development of a practice specialized in the management of post-acquisition integration processes. Hypotheses about the performance implications of pre-acquisition resources, post-acquisition integration decisions, and knowledge accumulation and codification processes are tested with primary data collected from a sample of 51 bank holding companies in the United States and Canada, for a total of 577 completed acquisitions. Results show that codification and routinization processes play a key role in shaping the evolution of post-acquisition integration practices, and that both mechanisms have a positive influence on acquisition performance, within specific limitations. The effectiveness of tacit knowledge accumulation is constrained by the degree of homogeneity of past experiences, whereas knowledge codification impacts

performance only when high levels of integration are to be achieved. Results also show that greater level of integration have positive implications for acquisition performance and that decisions to replace top management affect performance negatively.

Conclusions are drawn about necessary refinements of current theoretical approaches to accommodate complex learning conditions, and the potential implications for the management of acquisitions, as well as other infrequent and complex organizational events, such as strategic alliances and internal reorganizations, are discussed.

(Keywords: organizational learning, evolutionary economics, organizational knowledge, codification, routinization, capabilities, corporate development, corporate strategy, strategy implementation, mergers, acquisitions, post-acquisition, integration, banking)

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1. INTRODUCTION

“E’ cosa veramente molto naturale e ordinaria desiderare di acquistare; e sempre quando gli uomini lo fanno che possono, saranno laudati, o non biasimati; ma quando non possono, e vogliono farlo in ogni modo, qui e’ lo errore e il biasimo”

(The desire to acquire is a very common and natural thing; and when a man who is capable of doing it makes the attempt, he will generally be praised, or at least not blamed; error and blame arise when a man lacks the necessary ability and still wants to make the attempt at all costs)

Niccolo’ Macchiavelli, De Principatibus
Ch. III - De Principati Misti

During 1996, US firms invested \$495 billion, or about 7% of their country’s gross domestic product, in merger and acquisition (M&A) activities. By comparison, the total private investment in R&D by US firms in 1996 was \$185 billion. US corporations seem to be investing more in mergers and acquisitions than they do in internal growth activities, even before other external development channels such as joint ventures and strategic alliances are taken into account. Moreover, the trend appears to be strengthening; in the first six months of 1997, deal volume increased by 37% and the number of deals increased by 29% in comparison with the same period of the previous year¹.

The potential impact of mergers and acquisitions on firms’ ability to achieve, sustain, or lose competitive advantage is important not just because of the sheer magnitude of the financial commitment, but also because such ventures have immediate

¹ Computations by Mergerstat.

consequences for the quality of resources and capabilities within the acquiring firm.

“With the stroke of a pen,” firms not only “add billions in size, get a front-page story, and create excitement in the markets” (Porter, 1987), but also redefine their endowments of resources and capabilities. Depending on the decisions made during, and the outcomes of, the integration process, firms can transfer, leverage, recombine, and even create strategically relevant resources. If poorly conceived or executed, however, the integration process can result in resources being depleted, damaged, or lost to the competition and in capabilities remaining underutilized or forgotten.

Despite the empirical relevance of M&A events, and the importance of the dynamics of resources and capabilities to the field of strategic management, surprisingly little effort has been made to explain how acquisition performance might be influenced by both the characteristics of the integration process and the acquiring firm’s capability to devise and implement cogent integration strategies. There are, however, a number of sensible explanations for this gap.

First, we currently have a limited understanding of whether and how organizations can develop capabilities from events that are relatively infrequent, typically unpredictable, and highly complex. Mergers and acquisitions, along with other organizational phenomena such as joint ventures and reorganizations, constitute a formidable challenge for organizational learning mechanisms as we know them today (March, Sproull & Tamuz, 1991, p.1).

Second, despite a solid tradition that has explained capabilities in the context of technological innovation and production activities (Schumpeter, 1934; Clark & Fujimoto,

1990; Henderson & Clark, 1990; Kogut & Zander, 1992), researchers have rarely examined the evolution of “softer” administrative practices, such as post-acquisition integration processes. One reason for the implicit prioritization of production and R&D activities over everything else that takes place inside a firm has to do with the well-known measurement problems connected with such phenomena. Another explanation might be that economics, which is the prevailing theoretical lens in strategic management, is still ill-equipped to analyze business activities that are not strictly identified or identifiable with a production function. Clearly, however, the rewards for progress in this area are every bit as great as the theoretical and methodological challenges before the researcher.

Third, the M&A literature has evolved during the last three decades in a highly segmented fashion, and only recently have scholars begun to consider the plausibility of an integrative view of the process, which is crucial for a capability-based explanation. The literature was created originally by contributions from scholars in the economics and corporate finance domains, who typically focused on explanations derived from the characteristics of the negotiation process. More recently, strategy scholars have emphasized the importance of the characteristics of the pre-acquisition resources controlled by the two firms that are merging. The possibility of explaining acquisition processes, as well as the outcomes of acquisitions, with a capability argument has surfaced only in the last few years, advanced by scholars rooted in the behavioral tradition. Even their efforts, however, have been hampered by the limited applicability of organizational learning mechanisms (see discussion above) and the lack of an integrative

framework combining the internal rigor of economic analysis with the descriptive power of behavioral models.

The objective of this dissertation is to combine some basic insights from evolutionary economics and organizational learning theories in an initial exploration of the mechanisms behind the creation of organizational capabilities in the context of infrequent, complex administrative processes. More specifically, the investigation covers the effects of both tacit and codified knowledge accumulation mechanisms on the development of a specialized capability in the management of post-acquisition integration processes. The US banking industry, the context of the study, is a good example of an extremely turbulent environment, as the tight coupling of deregulation, disintermediation, and technological evolution processes has generated an unprecedented wave of mergers, acquisitions, and internal reorganizations. That industry is therefore well suited for testing whether the evolution of a post-acquisition management capability can partially explain the characteristics and the outcomes of the integration process and, more broadly, whether and how an expert acquirer can extract and defend the rents from its own administrative wisdom.

After a review and critique of the relevant literature in Chapter 2, the presentation of the key theoretical arguments are set forth in Chapter 3 and the consequent modeling is presented in Chapter 4. Chapter 5 describes the research design and the measurement of the key constructs. The analysis is reported in Chapter 6. Chapter 7 discusses the results and their implications, as well as the study's limitations. Chapter 8 summarizes the findings and suggests possible extensions of the research.

2. LITERATURE REVIEW

This chapter summarizes the theoretical objectives of the dissertation and the empirical results of relevant streams of research. It also highlights the gaps in our current understanding, and explains the approach chosen for developing new, empirically testable, theory.

Three streams of scholarly work are addressed. First, the evolution of strategic management thinking is tracked from the original resource-based approaches to the more current refinement focusing on the dynamics of organizational knowledge. Then the voluminous literature on mergers and acquisitions is summarized to clarify the current understanding of the drivers of performance in the context of choice. Finally, the limited amount of theoretical and empirical work on the post-acquisition integration process is surveyed, as it constitutes the main support for both the theoretical framework introduced in Chapters 3 and 4 and the interpretation of the results of the analysis.

2.1 Resources, Capabilities, and the Knowledge-based View of the Firm

Heterogeneity in the distribution of organizational resources among a population of firms has long been considered a key prerequisite for firms' attainment of Ricardian rents (Penrose, 1959). However, resource heterogeneity is not sufficient to guarantee the permanence of those rents, as changes in the environmental contexts in which firms operate constantly affect the capacity of resources to generate rents. Managerial activity,

in the presence of sufficient resource slack, is viewed in Penrose's work as the fundamental mechanism by which firms are able to adjust their internal resource endowments to adapt to new environmental conditions, thereby securing their survival and growth.

During the last decade, renewed interest in the conditions under which heterogeneous resources can enable a firm to achieve and sustain competitive advantage has resulted in a set of fundamental contributions to the strategic management field (Wernerfelt, 1984; Rumelt, 1984; Barney, 1986). That body of work, labeled as the "resource-based view of the firm", shifted the attention of strategic management scholars from external, industry-level sources of competitive advantage to internal, firm-level ones. Dierickx and Cool (1989), in particular, contributed to the stream of research by viewing the interaction of organizational activities and resources as flows of the former constantly increasing or depleting the stock of the latter. Of particular interest is their notion of "time-compression diseconomies," which emphasizes that the development of such resources is constrained by temporal and, one might add, cognitive limitations. The latter are exemplified by the availability of managerial time and attention, slack resources in Penrose's terms, in which a firm must invest to develop new resources of strategic relevance. More generally, however, one might argue that cognitive limitations constrain the development of firm resources at every level of its organizational structure. The mechanism underlying the creation and destruction of firm resources, then, might be the execution and marginal fine-tuning of day-to-day activities.

Such activities, which appear to be essential if organizations are to build rent-generating resources and to achieve and sustain competitive advantage, have been studied

in several ways and from different theoretical angles. In the first formal exploration rooted in the non-neoclassical economics domain, Nelson and Winter (1982) spoke of organizational routines as stable, detailed, and predictable patterns of quasi-automatic behavior developed and constantly refined at the margin by firms in their ordinary productive activities. Routines therefore differ and should be distinguished from other types of organizational activities, such as group problem-solving and strategic decision-making, because of their limited cognitive content (i.e., the latter activities do not represent a quasi-automatic response to recognizable stimuli). They also differ from rules of thumb and heuristics because they are relatively complex and detail-oriented (Winter, 1995; Cohen, Burkhart, Dosi, Egidi, Marengo, Warglien and Winter, 1996).

Routines are a neutral but critical construct in that they can generate both organizational capabilities and “rigidities” (Leonard Barton, 1992), depending on the quality of the performance feedback and of the updating mechanisms in the particular part of the organization. Further, routines can be responsible for the development of organizational capabilities only to the extent that improvements are limited to the current process components and to the current overall structure of the production process. Such incremental typically is replaced by higher order types of learning, which have been labeled “modular” learning at the component level (Clark & Fujimoto, 1991; Sanchez & Mahoney, 1996) and “architectural” learning at the production process level (Henderson & Clark, 1990). When the improvements occur at both the component and the production process levels, we generally speak of radical or revolutionary reorientations (Tushman and Romanelli, 1986; Romanelli & Tushman, 1994).

The higher orders of learning activities are justified and defined on the basis of a common view of organizational capabilities as the product of recombinations of current, lower order activities. For example, modular learning recombines operational routines by adapting them to new product components, and architectural learning recombines new product components (and consequently the sets of routines attached to their production) in the redesign of production processes for new generations of final products. Consistent with this view is Kogut and Zander's (1992 p.392) statement that:

Knowledge advances by recombinations because a firm's capabilities cannot be separated from how it is currently organized.

Grant (1996) reconfirms that view of organizational capabilities as recombination, or (in his words) "integration," of existing knowledge. He views them as (p. 116):

...the outcome of knowledge integration: complex, team-based productive activities.... dependent upon the firm's ability to harness and integrate the knowledge of many individual specialists [underlining added].

Importantly, the emphasis in the "recombinatory" view of organizational capabilities is on the *integration or harnessing* of existing knowledge, as opposed to the creation of collective understanding of how things are or ought to be done. One could infer from Kogut and Zander's (1992) quotation that the rationale for such prioritization is based on our limited capacity to distinguish between the accumulation of knowledge and the organizational arrangements connected to the accumulation processes. Others' scholars, however, are more optimistic: Teece, Pisano, and Schuen (1997, p. 518), for example, clearly distinguish between "the coordination/integration (a static concept); learning (a dynamic process); and reconfiguration (a transformational concept)" notions of organizational capabilities, and join all three concepts in their definition of *dynamic*

capabilities. Coordinating, integrating, or “harnessing” current knowledge therefore is distinguishable and ought to be distinguished from the creation of new organizational knowledge, even though the individuals or the groups who are the repository of that knowledge are only partially aware of its existence, its magnitude, and its usefulness.

The current thinking in strategic management has evolved significantly from the seminal pieces on the role of internal resources. It has moved from a definitional discourse focused on the conditions necessary for internal resources to create defensible rents (Barney 1986, Dierickx & Cool, 1989; Barney, 1991) to a more sophisticated debate about the mechanisms responsible for the creation of those resources or of the rents connected to them (Winter, 1995; Teece et al. 1997). The refinements come primarily from theoretical arguments rooted in disciplines partially outside strategic management field, such as organizational learning and evolutionary economics. However, several issues are still open and must be addressed to further our understanding of organizational capabilities and their impact on competitive advantage:

- Much of the discourse comes from research that builds on Schumpeter’s pioneering work on technological innovation. Organizational knowledge has been considered primarily production-related², and the defined capabilities are either explicitly or implicitly “tailored” to the technological innovation process and the corresponding R&D/manufacturing functions. That is why we can talk of a recombination process as the basis of multiple levels of learning (from production routines, to component-

² This is in part due to a restrictive interpretation of Schumpeter’s work. His definition of “development”, in fact, includes non technical components, such as the identification of new markets and of new opportunities created by the formation or destruction of monopolies (Schumpeter, 1934)

based modules, to process architectures, and so on). To develop the dynamics of capabilities as drivers of competitive advantage, however, we must enlarge our scope of analysis to non-manufacturing, or administrative, types of knowledge.

Doing so will enable us to contemplate more opportune, perhaps more generalizable, mechanisms at the basis of their inception and evolution.

- Present understanding of organizational capabilities does not facilitate the empirical investigation of their origins. It is not immediately apparent how one could identify when a “combinative” capability might be present inside an organization, let alone measure it. Measuring process outcomes is not an option, for doing so creates the tautology of defining a capability as “the presence of superior performance.” The problem is compounded when, instead of trying to measure only a coordination/integration capability, one adds learning and a reconfiguration dimensions of the construct, as Teece et al. (1997) suggest.
- Not surprisingly given the difficulties, we still do not have a good understanding of how organizational capabilities are created. How does one organization learn to recombine the knowledge of individuals or groups more effectively than its competitors? A deeper understanding of the knowledge-based mechanisms underlying the evolution of capabilities is essential and needs to be refined, at least in the context of our interest: infrequent, heterogeneous, and highly complex tasks.

The various approaches to the study of organizational capabilities summarized above are based on the implicit assumption that the task to be mastered occurs in a reasonably frequent and homogeneous way. Unfortunately, as March, Sproull, and

Tamuz (1991) note, some of the most important events in the life of an organization do not happen with the frequency (and similarity) implicitly assumed in the current theories. Developing organizational capabilities from rare and heterogeneous events therefore represents an ongoing challenge for both scholars and practitioners.

2.2 Research on M&A Performance

Extensive research has been done on the performance implications of acquisitions. Research in economics and corporate finance has focused primarily on whether acquisitions create value *on average*. Scholars using event-study methodologies to proxy acquisition performance report some level of consensus that significant value is created for the target firm's shareholders, whereas the acquirer's shareholders experience no abnormal gains or losses (Jensen & Ruback, 1983; Weston & Chung, 1983; Jarrell, Brickley & Netter, 1988; Franks, Harris & Titman, 1991; Loderer & Martin, 1992). Other scholars, however, have reached less optimistic conclusions on the acquirer's ability to earn at least normal returns: Agrawal, Jaffe, and Mandelker (1992) computed an average 10% value deterioration over five years in a very large sample of acquisitions. Using accounting measures of performance of about 6,000 acquisitions in the 1960 and 1970, Ravenscraft and Scherer (1987) found that even acquired firms exhibit worsening performance, on average, after the acquisition.

The subset of literature specializing in bank mergers also has produced mixed results. In his review of 40 empirical studies, Rhoades (1994) found no evidence of either value creation or value destruction from bank mergers *on average*. Overall, a consensus is emerging that more thorough investigation of the conditions under such transactions create and destroy value is needed (Pilloff & Santomero, 1997). Possibly,

there are certain conditions under which acquirers are able to create value consistently. The quest is then better defined as a search for an explanation of the variance of acquisition performance rather than the assessment of the mean of the performance distribution.

Since the work of Rumelt (1974), the degree of resource relatedness between the divisions of a firm has been viewed by strategic management scholars as an important antecedent of firm performance. The same logic applied to the M&A context implies that acquirers should be able to generate higher value when there is a higher degree of relatedness between their resources and those of their targets. A substantial amount of empirical work has explored that perspective in the context of acquisitions (Chatterjee, 1986; Lubatkin, 1987; Singh and Montgomery, 1987; Shelton, 1988; Fowler & Schmidt, 1989). Later work refined and extended the earlier studies (Seth, 1990a and 1990b; Datta, 1991; Chatterjee et al, 1992; Healy, Palepu and Ruback, 1992). Unfortunately, the empirical evidence from that extensive body of work is not unambiguous. Although many researchers found that the degree of product/market relatedness (as a proxy for resource relatedness) had a positive effect on acquisition performance (Singh & Montgomery, 1987; Shelton, 1988; Fowler & Schmidt, 1989; Healy, Palepu & Ruback, 1992), others found the opposite (Chatterjee, 1986) or discerned no significant impact (Lubatkin, 1987; Seth, 1990b).

A more careful reading of the resource relatedness hypothesis, however, takes into account the fact that the degree of relatedness can be priced out during negotiations, consequently weakening its value-creation potential. Once that argument is factored into

the model, the condition under which value can be created from acquisitions becomes significantly more restrictive. In fact, value creation will arise only when the combination between the two firms that complete the transaction results in synergies superior to those created by the combination of the target with any of the other bidders. Acquirers therefore are “forced” to form a *uniquely* highly valued combination of their resources with those of the target firm to earn positive abnormal returns (Barney, 1988). On the basis of that argument, Barney (1988) expects that the bidders in most related acquisitions will not obtain higher abnormal returns than bidders in unrelated acquisitions. The argument can be extended from the resource relatedness hypothesis to other characteristics of the resources within the two firms. As long as they are known and quantifiable at the time of the negotiation, they are likely to be included in the pricing of the transaction. In more general terms, the power of performance explanations based on the pre-acquisition characteristics of the two firms is likely to be weaker than many would expect.

One possible source of value creation in acquisitions that might be less sensitive to the preceding argument is the degree to which the acquiring firm develops a specific ability to manage the post-acquisition integration process effectively. The rationale for that speculation is relatively straightforward. Given the tacit and complex nature of such administrative capability, it will be particularly difficult for the target firm (as well as the market) to identify its presence, articulate its characteristics, and assess the potential impact on the performance of the entire transaction. Organizational capabilities, particularly the “soft” type, are subject to a high degree of causal ambiguity (Lippman & Rumelt, 1982), in that the relationship between firm performance and their magnitude is

often obscure even to the firm itself (let alone the counterparts negotiating the acquisition agreement or the financial analysts assessing the potential for value creation from the transaction). To clarify the potential value of the causal ambiguity argument, the literature on post-acquisition management is reviewed to identify what is known about the complexities of post-acquisition integration processes. The two streams of literature then are merged to advance an explanation of post-acquisition integration decisions and of acquisition performance based on our understanding of the mechanisms for the creation and evolution of organizational capabilities.

2.3 Research on Post-Acquisition Management

The origins of the post-acquisition management literature can be found in the behavioral and HRM traditions, which generally emphasize the negative consequences of post-acquisition integration processes on the organizational conditions of the two firms (see Hogan & Overmyer-Day, 1994 or Shanley, 1998 for a good overview).

Contributions focus on the negative impact of cultural clashes (Nahavandi & Malekzadeh, 1988; Buono & Bowditch, 1989), top management conflict (Mirvis, 1985), top management turnover (Walsh, 1988; Walsh & Ellwood, 1991; Cannella & Hambrick, 1993), poor handling of communication processes (Schweiger & DeNisi, 1991), and the effects of post-acquisition integration processes on individual attitudes and behaviors (Astrachan, 1990; Joyce-Covin et al., 1996).

Those contributions shed significant light on the challenges firms face when they attempt to translate their initial objectives and their post-acquisition integration strategies into specific action steps while trying to minimize the negative consequences of

organizational disruption and psychological resistance to change. However, by focusing primarily on the negative implications of the post-acquisition integration phase, the work provides only a partial view of the M&A process, stopping short of considering the conditions that determine the potential for value creation in mergers and acquisitions. Are all integration processes inherently destructive, or do the various forms and degrees of organizational disruption depend on the characteristics of the transaction and on the two firms involved? If the latter is true, the negative consequences highlighted in these studies may be the “price” firms must pay to achieve economic benefits. In any case, studying only some aspects of the performance equation in isolation from the others leads to a partial and potentially biased understanding of acquisition processes.

The so-called “process view” of acquisitions (Jemison & Sitkin, 1986; Haspeslagh & Jemison, 1991; Haspeslagh & Farquhar, 1994; Pablo, 1994) attempts to bridge the gap between the two streams of literature by highlighting the need to include both value creation potential and implementation complexities in a sound theoretical treatment of acquisition processes. It thus affords a process perspective that analyzes the alternatives and challenges in the various steps of the process and provides particularly useful taxonomies of possible integration approaches, given pre-acquisition conditions in the two firms. Haspeslagh and Jemison (1991) suggest a taxonomy with two dimensions: the levels of strategic interdependence between the firms, and the levels of organizational autonomy given to the acquired firm. It considers the combinations created by varying levels of strategic interdependence with the varying levels of organizational autonomy needed to preserve the core capabilities embedded in the cultural environment of the acquired entity, and prescribes three possible integration approaches. From a modeling

point of view, the framework suggested can be condensed into one type of post-acquisition decision-making variable (the type of organizational integration) and two explanatory constructs based on the pre-acquisition characteristics of the two firms (degree of strategic fit and degree of organizational fit). Importantly, the framework includes the quality of the acquired firm's resources and the (absolute and relative) transaction size as relevant factors.

Large-scale empirical analyses of post-acquisition decisions are rare. Datta and Grant (1990) found a significant correlation between the degree of resource relatedness and the level of integration. They also found a partial moderating role of relatedness between integration and acquisition performance: in unrelated acquisitions, the level of integration hurt acquisition performance, but the impact was not statistically significant in related transactions. Pablo (1994) examined the contextual and organizational explanations of the decision about the level of integration between the firms involved in an acquisition. She used a set of scenarios that varied along the dimensions of strategic fit, organizational disruption potential, buyer's multiculturalism, goal conflicts, and power differentials, and evaluated their effect on the degree to which the acquiring firm would integrate the target. Also, Pablo, Sitkin, and Jemison (1996) advanced the notion of the acquirer's attitude toward risk to explain several types of acquisition-related decisions, including the level of post-acquisition integration.

The degree to which the two organizations involved in the acquisition process are integrated is only one of the dimensions of the post-acquisition management process that can be relevant in explaining the overall performance of the transaction. A high level of integration between the two firms can be achieved in several ways. For example, the

acquiring firm can decide to retain key resources of the acquired firm and try to align resource use across the two organizations through a consensus-building process.

Conversely, it can decide to substitute or dismiss part of the acquired firm's pre-existing resources (human or physical) to accomplish a faster, unambiguous, and eventually more effective level of integration.

One variable that has received some degree of attention in the literature as a way to approximate the use of consensus building is the degree of replacement of the top management team of the acquired firm. The "market for corporate control" theory, for example, suggests that inefficient management teams will be replaced by more competent ones in a market where teams compete for the control of productive assets (Manne, 1965; Singh, 1975; Jensen and Ruback, 1983). The strategic management literature often contrasts that view to one in which the top managers of the acquired entity might own firm-specific and uniquely valuable talents and skills; the disruption of those "managerial rents" (Castanias and Helfat, 1991) could significantly harm the performance of the acquisition process. Empirically, Cannella and Hambrick (1993) showed that the departure of managers from the target firm has a negative impact on acquisition performance, and that the co-optation of the target's managers in the acquirer's organization might help achieve better results. Krishnan, Miller and Judge (1997) reached similar conclusions, adding that the degree of complementarity between the two top management teams positively influences performance and should therefore be protected, when possible.

Although that the degree of substitution of the target firm's top management team appears to be important in our understanding of M&A performance, theoretical and

empirical work to explain the drivers of the substitution decision is still at an embryonic stage. In Cannella and Hambrick's (1993) study, for instance, the issue was not explicitly addressed: interestingly, however, neither the degree of resource relatedness nor the target's pre-acquisition performance (objectively measured as an ROE ratio) correlated with the degree of executive departure (p.147; Table 2). In the only studies specifically dedicated to explanation of the replacement decision, Walsh (1989) and Walsh and Ellwood (1991) found explanations of turnover based on characteristics of the negotiation process and, interestingly, on the pre-acquisition profitability of the *acquirer*, but none based on the target's pre-acquisition performance. That almost anecdotal evidence about the importance of the characteristics of the acquiring firm foreshadows some of the premises of the present work, which also focuses on the acquirer's attributes and how they influence the post-acquisition management process.

The notion of resource deployment, which is used in the most recent treatments of acquisitions by strategy scholars (Anand & Singh, 1997; Capron et al., 1997), is related to the resource substitution construct. Yet it is arguably less precise in that it is generally confounded with the decision about the level of integration. Resources can be deployed at low levels of integration, such as the transfer of key personnel in a LBO transaction completed by specialized financial acquirers. In contrast, they can be retained by both organizations in a higher level of integration mode whereby same resources are simply used in a similar and coordinated way.

Shanley (1994) provided the first empirical work in which the complexity of the post-acquisition decision-making process was examined in many of its numerous aspects. The study of 51 large acquisitions factor analyzed 16 types of decisions, reducing them to

four broad categories, and found that they had different antecedents and, most importantly, different performance consequences. Interestingly, the factor including the replacement of the CEO and the turnover of the top management team was related negatively to performance, whereas operational changes in the structure, control, and compensation systems of the acquired firm were associated with improved post-acquisition performance. Shanley (1994) also found a significant and positive performance effect of the acquirer's acquisition experience on performance. No elaboration was offered on the knowledge mechanisms underlying the learning process or on the type of acquisition experience accumulated, but the result is at least suggestive of the possibility of organizational learning effects even in the context of acquisitions.

3. THEORY BUILDING

This chapter proposes to provide a theoretical answer to some of the issues raised in the preceding discussion of the literature on organizational capabilities. The objective is first to offer some definitional support for the notion of organizational capabilities, then to introduce the knowledge-based mechanisms that might help explain the creation of those capabilities. Finally, the chapter explores how such mechanisms might operate in contexts where the task to be mastered occurs with low and generally unpredictable frequency and with high levels of interdependence between numerous simultaneous tasks.

3.1 The Object of Study: Organizational Capabilities

Scholars have conceptualized organizational capabilities (or competencies) in several ways (see section 2.1). The approach that views them as deriving from an act of recombination (Kogut & Zander, 1992; Grant, 1996) or of modular construction (Henderson & Clark, 1990, Clark & Fujimoto, 1991; Sanchez & Mahoney, 1996) of current knowledge is an important element of the theory of organizational capabilities. Other researchers have introduced additional elements inspired by search behaviors (March & Simon, 1958), such as the process by which firms fine-tune current routines by using knowledge accumulated from past experiences and feedback mechanisms (Winter,

1987; Cohen et al. 1996, i.e. “local search”), or the more radical reconfigurations of resources and routines (Tushman & Romanelli, 1985; Teece, Pisano & Schuen, 1997).

In an effort to balance the trade-off between simplicity and thoroughness, two elements can be singled out that seem essential for conceiving of the formation of organizational capabilities. Firms have to: (1) accumulate knowledge from direct experiences related to the task in question and (2) rationalize, or make sense, of the accumulated knowledge, thereby transforming the raw data into actionable information (“know-how”) or, at an even higher level of abstraction, into awareness of causal relationships (“know-why”). The following definition is therefore proposed:

Definition 1. *An organizational capability is the outcome of a process of accumulation and rationalization of knowledge derived from past experiences.*

Any reference to performance, either at the firm or at the task level, is purposely excluded from the definition to avoid the well-known tautology of defining a capability as an improvement in performance. The definition is centered on knowledge-based phenomena, which hypothetically correlate with improved quality in process and organizational outcomes, but that association is neither necessary to the definition nor required for theorizing on how firms build their stock of competencies. Several convincing arguments have been made about the possible negative performance consequences of capability building. They include superstitious (Levitt & March, 1988) and myopic (Levinthal & March, 1993) learning, as well as negative transfer effects of lessons learned in one context to a different one (Cormier & Hagman, 1987; Cohen & Bacdayan, 1994; Haleblian, 1997).

The definition also excludes any form of vicarious learning, be it imitative of competitors or acquired through external experts (consultants, etc.). Far from doubting the existence of mimetic behavior, however, the formulation is based on the observation that the complexity of an organizational capability cannot be accessed “as is” outside the organizational boundaries, but has to be nurtured and developed through direct experience. Although firms might try to copy the practices of competitors perceived as superior performers, the “import” of such ideas will not translate into an organizational capability unless it is supported by both direct experience and cognitive efforts directed toward the adaptation, integration, and fine-tuning of the new practice within the set of current routines.

With respect to Teece et al.’s (1997) definition, the focus is restricted to the learning (i.e., the “dynamic”) element, leaving the static and transformational elements out of the analysis and the scope of the study.

The notion of knowledge *accumulation* is derived from decades of research on learning curves and organizational learning processes; here, however, knowledge accumulation refers specifically to the tacit absorption of wisdom provided by the simple exposure to several relatively similar events. The relevance of the construct is based on Polanyi’s (1962, 1966) work, which shows how human beings know much more than they are able to articulate and explain.

... knowledge is deeply ingrained in patterns of behavior which are difficult to articulate (and therefore to teach or transfer) even by the people who are depository and habitual users of that knowledge [Polanyi, 1962].

Examples at the individual level abound. We cannot gain much skill in driving a car, touch-typing, or playing tennis by consulting manuals, books or experts’; direct

experience is essential. Similarly, an organization or group develops a high level of task comprehension and implementation deftness (McGrath, MacMillan, Venkataraman, 1995) without being aware of it or explicitly mentioning or codifying it.

The other key notion, *rationalization*, incorporates and builds on the tradition of sense-making (Weick, 1979) as a necessary (albeit not sufficient) prerequisite for the creation of competence. It is also somewhat related to the notion of a capability as a recombination of existing knowledge. Here, however, the scope of the construct is limited to the cognitive part; only explicit efforts to understand the causal mechanisms behind the correct or improved execution of a certain task are considered. Examples include a group of individuals tackling an unresolved issue, brainstorming on the complex performance outcome of a recently completed task, or drafting a new procedure to simplify the future executions of a certain task.

The primary goal of definition 1 is to disentangle the “semi-automatic” knowledge accumulation mechanism from the cognitive effort of reflecting on and analyzing accumulated experience to generate higher levels of understanding of a certain task or phenomenon. In that sense, organizational capabilities differ from routines because they contain the cognitive element, and differ from the standard notions of problem-solving or strategy-making activities because they can also be developed without an explicit cognitive effort. The extent to which the two elements of definition 1 vary in their relative impact on the creation of a new capability is the subject of the rest of this chapter.

One final point about definition 1 is worth noting. By defining a capability on the basis of simple knowledge accumulation and rationalization mechanisms, one can avoid

function-specific lingo (i.e., “modular” capabilities) and generalize from well-studied manufacturing or innovative processes to a more “holistic” concept of organizational capability, which includes both administrative and productive knowledge.

3.2 Knowledge Accumulation and Knowledge Codification

Definition 1 requires that we evaluate how knowledge accumulates in a firm, and how it is “rationalized” by the individuals or groups operating on a certain task. Note the fundamental difference between Arrow’s (1962b, 1974) notion of information as a costless, transferable, and usable public good and the type of organizational knowledge examined here, which emphasizes the understanding of how highly complex and heterogeneous organizational processes should be carried forward in a timely, cost-effective, and precise way. Such knowledge is difficult to observe and assess even for its holder (Polanyi, 1962; Rogers, 1980), is “sticky” (Szulanski, 1993 and 1997), is highly system-dependent (Winter, 1987), and is only partially codifiable (Kogut & Zander, 1992 and 1993; Zander & Kogut, 1995). Consequently, far from being a free good with no potential for value creation, organizational knowledge might be the cornerstone of firms’ ability to create and sustain competitive advantage.

Critical to our understanding of knowledge accumulation is the notion of “path dependence,” which describes the strength of the causal relationship between the state of a certain system at time t and the state of the same system at time $t - 1$. The relationship is much more complex in a real organizational environment, where the actions and decisions performed at any time are the result of a mix of several factors, such as: (1) the replication of stable patterns of behavior, (2) the development of new ones along a relatively well-known trajectory, and (3) the introduction of radically new elements or

patterns of action (internally driven or imported from the external environment) resulting from creative or problem-solving efforts. According to evolutionary economics, the last type of event is much more rare than generally assumed by management scholars.

The vast majority of what happens within an organization can be explained by either habitual execution of well-known routines or by routinized impulse reactions to recognized stimuli. The space of will-driven behavior, such as strategy-making or strategic reorientation, is much more limited than most management scholars tend to assume [Winter, 1987; p. 163].

The assumption that past activities and decisions have a great influence on present ones is at the foundation of the behavioral theory of the firm (March & Simon, 1958; Cyert & March, 1963). It is driven by the generally accepted conditions of bounded rationality on the part of decision-makers, which imply a primarily local character for organizational search behavior. Hence, organizational knowledge can be assumed to accumulate through relatively small, marginal additions to the current stock of knowledge, and is most likely to be produced along a determined evolutionary trajectory (Dosi, 1982). It is important to distinguish between the replication of known processes which establishes and maintains organizational routines (**process routinization**), and the patterns of local search along one trajectory (**path-dependent** or constrained evolution). The important characteristic that both have in common, however, is a relatively low level of cognitive effort; actors learn without realizing that they are doing so. The main prerequisites for tacit knowledge accumulation are continuity of use of the task and stability of the personnel who tacitly accumulate the expertise.

The following formal definition is proposed.

Definition 2. *Process routinization is the degree to which knowledge from previous experiences accumulates in tacit forms (i.e. in the minds of human actors) and results in quasi-automatic, uniform, response behavior to varied stimuli.*

According to definition 1, the other precursor of organizational capabilities is the explicit codification of the wisdom extracted from previous experiences into ad-hoc tools. Such tools can take the form of manuals, blueprints, computer models, guidelines, and other means of describing what to do in a certain situation (“know-what”). If sufficiently evolved, the tools might also provide a description of how to do it (“know-how”) and eventually of why it makes sense to do it that way (“know why,” Seely Brown & Duguid, 1991). Codified tools are generally available to multiple individuals and therefore facilitate the diffusion (and, in part, the imitation) of accumulated knowledge (Kogut & Zander 1992; Nonaka, 1994; Zander & Kogut, 1995).

For our purposes, the salient characteristics of codified knowledge are in the use and the diffusion of its outputs, but in the process through which the outputs are created, that is, the time and effort invested in analyzing the firm’s past experiences, abstracting to some stable causal relationships, and incorporating the new wisdom in newly created or updated tools. Thus, codification not only serves as a reference for learning, reviewing, and spot-checking the execution of a certain task, but also facilitates the creation of organizational capabilities, as the codification process itself increases the level of awareness of the cause-effect relationships, thereby promoting the emergence of solutions and the improvement of collective competence.

The following definition is proposed.

Definition 3. Knowledge codification is the degree to which the accumulated experience is analyzed, abstracted, and incorporated in check-lists, manuals, blueprints, computer programs, etc., that provide the content (“know-what”), the methodology (“know-how”), and eventually the rationale (“know-why”) for the execution of a certain task.

Process routinization and knowledge codification are clearly not orthogonal constructs, and some degree of correlation can be expected between the two. It is difficult to conceive of an organization in which only one of the two mechanisms is active. However, the two mechanisms are separable in their distinctive loci of accumulation of knowledge (human brain in one case, paper or electronic files in the other). Studying them on that basis seems to be correct from a theoretical point of view, and might be particularly useful for the normative aspects of the theory on the creation and evolution of organizational capabilities.

The well-known dichotomy of tacit versus explicit forms of knowledge can be used to theorize on the mechanisms that might underlie the accumulation of knowledge and the creation of specific capabilities inside an organization. Given a certain degree of tacitness or (vice-versa) of codifiability of the knowledge as the basis of a certain process, one should not expect the actual degree of codification applied by all the firms using the process to be uniform. Nor should one assume that all the firms will codify the process to the maximum extent allowed by the nature of the underlying knowledge. One possible contribution of the present work is the demonstration that the degree of actual codification of a process under study depends on both the intrinsic characteristics of the process (i.e., its “codifiability”) (Winter, 1987; Kogut & Zander, 1992) and the deliberate cognitive efforts of firms.

The preceding arguments can be viewed as an effort to expand the traditional evolutionary economics discourse by partially integrating the cognitive elements necessary for a more thorough understanding of how certain organizations become more

or less proficient than others at certain tasks. Gavetti and Levinthal's (1997) simulation work on cognition in rugged landscapes can be viewed as promoting a similar set of arguments if the cognitive effort to simplify the dimensional space of a complex (highly interdependent) multi-dimensional environment is interpreted in the creation and development of codified tools such as manuals, blueprints, and internal reports.

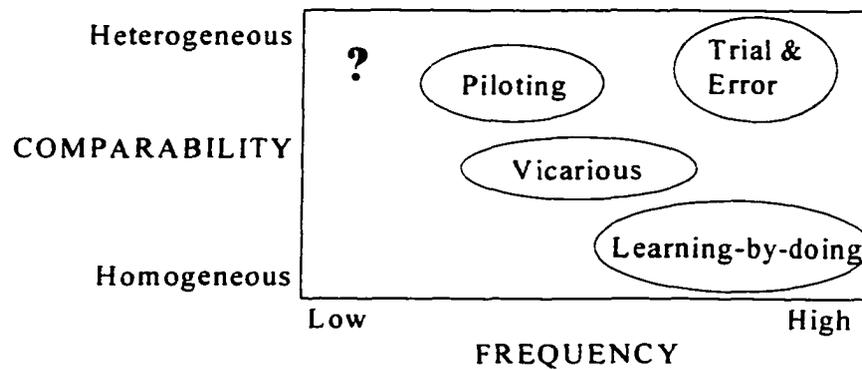
3.3 Organizational Learning Through Infrequent and Heterogeneous Events

Two fundamental and often implicit assumptions made in both the organizational learning and the evolutionary economics literature are that the task (1) can be experienced with sufficiently high frequency and (2) presents itself in sufficiently comparable ways that knowledge accumulated from previous experiences can be transferred to the present execution in a fairly easy and semi-automatic way. At the core of this work is the theorization of what might happen when those assumptions are relaxed.

Fig. 3.1 maps the most important organizational learning mechanisms onto the two dimensions of interest: task frequency and comparability.³

³ Frequency is defined conventionally as number of events within a unit of time (e.g., one year in contexts such as acquisitions). Comparability is defined as the degree of similarity with which the task presents itself each time; in exploratory tasks, comparability is by definition low.

Fig. 3.1 Organizational Learning Mechanisms



Different forms of vicarious learning are present in possibly every combination of task frequency and complexity levels. A firm can decide at any moment to solicit the help and advice of some specialized consulting agency or to imitate some type of best practice developed by a successful competitor. Until such action translates into first-hand experience that leads to the accumulation of internally generated (and embedded) knowledge, it will be difficult to assume that the organization has been able to develop any capability or internalize any best practice. As defined and assumed in definition 1, an organizational capability can be developed only through the accumulation and rationalization of direct experience.

Trial and error mechanisms typically are used in exploratory learning contexts where highly frequent events can be experienced at relatively low cost per event (e.g., search for new chemical compounds). Such learning mechanisms are not feasible, however, when the costs attached to the “errors” are particularly high (e.g., unsuccessful

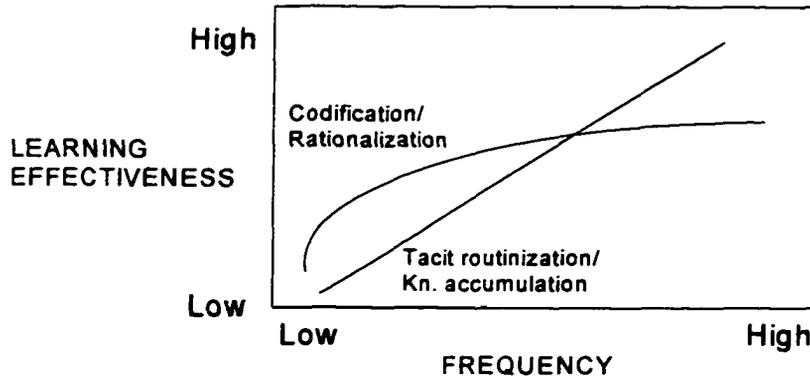
acquisitions, joint ventures, or reorganization processes) and the availability of the “trials” is low.

Learning by doing is probably the most highly studied mechanism in both theoretical and empirical work. However, it is also the mechanism that depends most on the two assumptions of high frequency and comparability of the experienced events. We currently do not know how it performs once the two assumptions are relaxed.

When an unfamiliar task is relatively complex and highly expensive, a more efficient way to accumulate knowledge is by execution of a pilot project or in-depth analysis of a prototypical event before (March, Sproull & Tamuz, 1991) the commitment is scaled up. Such arrangements seem to be able to combine the tacit knowledge accumulation component necessary in even such a rare (i.e., unique) experience, and the cognitive activity necessary to analyze and extract all possible experiential value from that one event.

The last mechanism seems to be the most likely candidate for explaining the mechanics of organizational learning in the context considered here. To build competencies under these “extreme” conditions, firms might have to rely more on the cognitive rationalization mechanism and less on tacit knowledge accumulation mechanisms. The difference in the effectiveness of the two knowledge-based mechanisms is a matter of degree, as both co-exist within the firm at any point in time. Fig. 3.2 illustrates the intuition:

Fig. 3.2 - Task Frequency and Learning Effectiveness



At high frequency levels, we witness the world Nelson and Winter (1982) described. In it, capabilities are created mainly through tacit knowledge accumulation mechanisms, and codified knowledge is either non-influential, because operators do not use the manuals or other codified supports and prefer to rely on their own experience, or counterproductive, as it might inhibit attempts to adapt the procedures to new requirements that have emerged through simple practice and performance feedback loops.

At low frequency levels, however, the relationship between the two mechanisms could be inverted with respect to their relative ability to facilitate learning and create organizational capabilities. The rationale for this advantage of codification processes over tacit knowledge accumulation can be argued on three grounds. First, tacit knowledge accumulation cannot account for the problem of transferring past experience to domains characterized by superficially similar but essentially different conditions; only

a deliberate cognitive effort to extract the generalizable causal relationships between conditions and performance can avoid that frequent mistake. Some very recent contributions (Haleblian, 1997; Haleblian & Finkelstein, 1997) show that negative transfer effects can significantly impact the performance of rare and heterogeneous events, such as corporate acquisitions. The second acquisition experience leads to a systematically worse performance than the first one if it is inherently different (e.g., a different degree of resource relatedness).

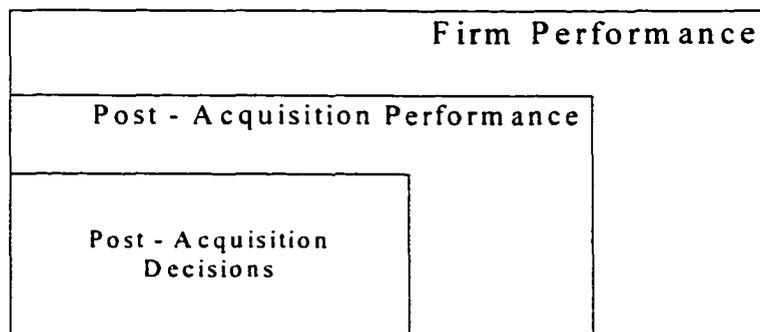
Second, many authors (Henderson & Clark, 1990; Christensen, 1993; Iansiti, 1995) have concluded that relying on tacit knowledge accumulation can be very risky in turbulent environments. When low frequency and high task heterogeneity create high barriers to knowledge accumulation, the context can be likened to a highly turbulent environment in which the usefulness of past experiences is significantly reduced. Again, an explicit effort directed toward in-depth analysis of the few available experiences, and the consequent appreciation of some of the action-performance relationships, might result in an improved way to handle the complexities of infrequent and diverse tasks.

Third, in the attention-based view of the firm (Ocasio, 1997) both strategic choice and competitive advantage are explained by the allocation of managerial attention among a large number of potential priorities. Knowledge codification can be a strategic variable, as it depends partially on the willingness of the firm to invest time and effort (i.e. attention) to extract the most valuable lessons from its previous experiences, and therefore can lead to higher process and organizational performance.

4. MODELS AND TESTABLE HYPOTHESES

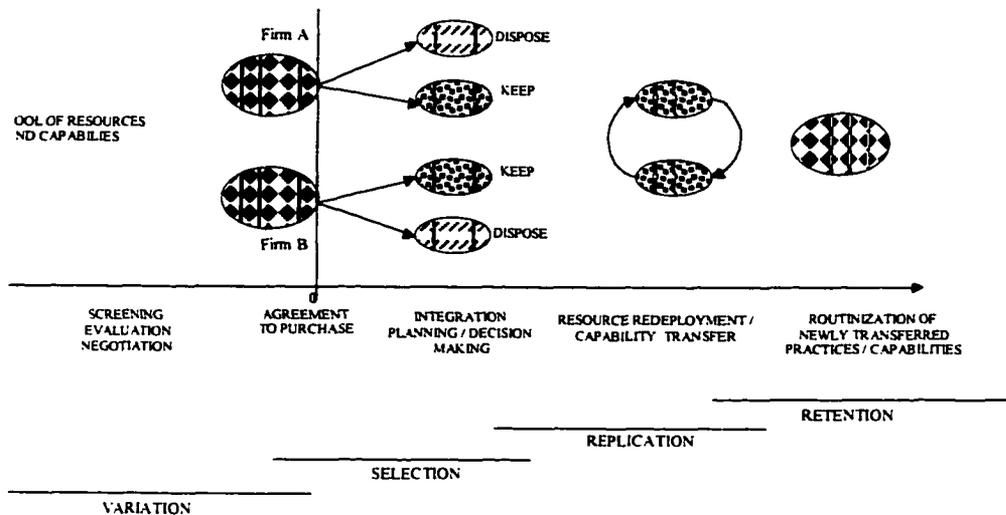
This chapter presents the formal treatment of the arguments advanced above, and the submission of testable hypotheses derived from the received literature and from the preceding theoretical. The structure of the chapter is based on the nested nature of the dependent variables analyzed. As Figure 4.1 shows, the factors that explain the key decisions being made in a post-acquisition integration scenario will be modeled and tested first. Then the factors explaining the decisions and the decisions themselves can be used to study the variation in the performance of the post-acquisition integration process and of the overall transaction. Finally, the analysis steps up from the process level to the firm level to determine what impact the factors studied have on the long-term performance of the acquiring firm.

Fig. 4.1 Structure of the Analysis



To introduce the theoretical perspective used and the characteristics of the empirical context to which it is applied, Figure 4.2 illustrates the post-acquisition integration process in terms of some fundamental evolutionary mechanisms.⁴

Fig. 4.2 - An Evolutionary View of the Post-Acquisition Integration Process



The core insight consists in applying evolutionary reasoning, traditionally developed to analyze changes at the industry or, at best, the firm level, to an intra-organizational dimension consisting of a specific process (see also Burgelman, 1991). Post-acquisition integration can be then viewed as a process initialized and shaped by a set of pre-acquisition activities (screening, evaluation, and negotiation, primarily). Those activities act as a variation mechanism to produce the two pools of resources and routines (“quasi-genetical traits” in Winter, 1995) that constitute the two firms signing the

⁴ Zollo (1996) provides a more detailed account of the theoretical underpinnings of this interpretation.

agreement to purchase or to merge. The two pools of organizational resources and routines are then subject to a selection process aimed at deciding which ones are to be kept within the future (integrated) organization and which are to be disposed of. A subset of the resources and routines retained by the selection mechanisms is then subject to replication mechanism that describes the transferred or shared across the two organizations in an effort to replicate them as precisely as possible in the recipient. Finally, the organizational traits that have been replicated across the old organizational boundaries are subject to a retention process which, if all goes well, allows them to be thoroughly absorbed into the new organizational context. Each evolutionary mechanism obviously is fraught with specific complexities and risks (see Szulanski, 1993 for a sound treatment of the retention problem, for example). The present study, which begins modeling part of this comprehensive framework, only considers a subset of them.

The following Section 4.1 will address the theoretical issues pertaining to two important elements of the selection mechanism described above. Section 4.2 takes then a broader perspective in addressing the performance of the entire process using, as explanatory variables, elements of the variation and selection mechanisms described above, in conjunction with the administrative capability to manage the replication and retention challenges.

4.1 *Modeling Post-acquisition Decisions*

The post-acquisition management literature shows the importance of decisions about both the level of integration and the degree of replacement of key resources (including, but not limited to, the top management team) for understanding acquisition

processes and performance. The study of the determinants of those decisions, however, remains at an embryonic stage. The focus here is therefore on those two dimensions of the decision-making process that takes place immediately after the completion of the transaction. Several other dimensions of the post-acquisition integration process, such as the timing of the implementation steps or the extent to which the target company is involved in the formulation of the integration plan, could be important elements in our understanding of that complex process. In addition to considerations of parsimonious modeling though, the two constructs have been chosen also because they are likely to correlate strongly with the excluded dimensions of the integration process. For example, a high-speed implementation approach might correlate with the decision to attain a high level of resource replacement, whereas high involvement of the acquired entity implies a low level of resource replacement. Focusing on the decisions about the degree of integration of the two firms and the replacement of current resources may capture at least part of the explanatory power of important non-included decisions.

The two variables studied are defined as follows.

Definition 4. *Level of integration is the degree to which processes are linked (connected in terms of logistics or information flows), aligned (changed to make them similar), or centralized across the two organizations.*

Definition 5. *Level of replacement is the degree to which pre-existing processes and resources in either one of the two organizations involved are maintained intact, rather than substituted or eliminated.*

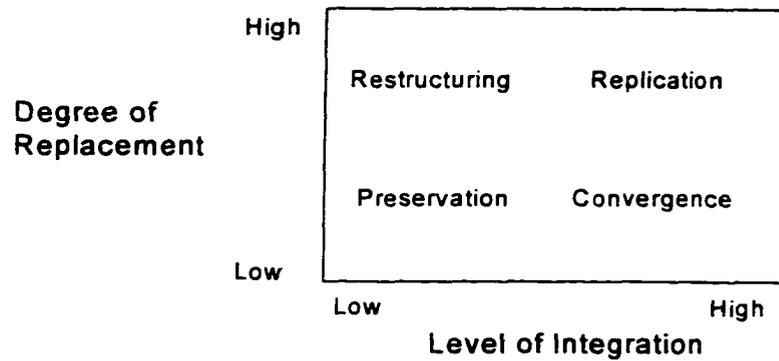
The definition integration level builds on Thompson's (1967) taxonomy of the mechanisms for achieving organizational integration, and argues for the existence of a continuum encompassing the three constructs of organizational linkage, alignment, and centralization. The degree to which each function of the two organizations is integrated

places the specific acquisition on the continuum between complete independence and centralization.

The degree of resource replacement follows a similar logic, but begs two questions: (1) Has that particular resource been substituted or disposed of? (2) Has that particular process or organizational routine been discontinued or replaced with another transferred from the other organization? Again, the combination of the replacement decisions in each function of the merging firms determines a general degree of replacement of current resources implemented in a specific acquisition.

Clearly, the two key decisions are not completely independent of each other. Process centralization, for example, which can be considered the highest form of integration, also implies a certain degree of resource substitution and disposition. Still, examples of acquisitions with both high levels of replacement and low levels of integration (e.g. restructuring-driven acquisitions of failed savings and loans associations) and high levels of integration with low levels of resource replacement (e.g. consensus-based integration approaches such as Banc One's) have been frequently observed. The two dimensions, therefore, seem to be good indicators of the type of post-acquisition integration strategy adopted by the acquiring firm. A post-acquisition integration strategy can be defined as a vector of decisions necessary to accomplish the value creation objectives during the integration process. Hence, a simple dichotomization of the two decisional dimensions generates a 2 x 2 matrix that identifies four strategic approaches to the integration process, as shown in Figure 4.3.

Fig. 4.3 - Post-Acquisition Decisions



The four labels used to describe the strategic approaches defined by the matrix synthesize the result of the combination of the two decisions. The “preservation” approach is characterized by a large degree of autonomy left to the acquired firm and by limited attempts to change the current set of resources and processes. The “restructuring” approach entails greater use of the replacement lever to achieve the value creation objectives. The restructuring strategy is exemplified by acquisitions completed by financial buyers (e.g. Hanson Plc.), or by acquisitions when the poor profitability of the acquired firm demands a heavy emphasis on the success of the turnaround process before the acquiring firm can consider any integration of the two organizations. At higher levels of integration, the acquirer has the choice of pursuing a consensus-based approach, labeled “convergence,” whereby the two pools of resources are substantially retained and guided toward an aligned use through similar processes across the two organizations. The alternative for the acquiring firm is to couple high integration with high replacement

through a “replication” strategy where, typically, its own processes are transferred and replicated within the acquired organization.

The preceding discussion simply describes a portfolio of integration approaches available for the acquirer. With respect to Haspeslagh and Jemison’s (1991) prescriptive framework, then, it does not imply any causal relationship between pre-acquisition resource conditions and post-acquisition decisions, or between decisions and performance. The objective is to show how, through the use of the two dimensions of choice, a set of integration scenarios can be generated that covers a good portion of the strategic options available to an acquiring firm.

Let us now turn to the formal modeling of the two post-acquisition decisions.

4.1.1 The Level of Integration

As observed in section 2.3, the degree of resource relatedness between the two organizations is expected to be positively associated with the level of integration. Value creation from economies of scale and scope can take place only under the condition that at least a certain level of integration between the two firms is achieved. For instance, staff functions have to be centralized, management information systems have to be converted, and the geographic location of facilities, salesforce, and distribution channels has to be rationalized.

Another characteristic of the pre-acquisition resource endowment of the two firms that might influence the level of integration pursued is the overall quality of the resources purchased with the transaction. Two opposing effects can be hypothesized. Resource-based arguments imply a positive impact of resource quality on the level of integration: the higher the quality of the acquired resources, the greater the incentive to integrate them

into the acquiring organization so that their value creation potential can be leveraged over the combined entity. However, the integration process is fraught with complexities that might actually endanger the persistence of those resources. Hence, the higher the quality, the lower the probability that the acquiring firm will risk a high-integration decision, opting instead for a relatively high degree of autonomy (Haspeslagh & Jemison, 1991). The theoretical perspective taken in this study favors the latter argument, as it assumes the acquirer recognizes the potential for the integration process to disrupt high-quality routines in the acquired organization.

These arguments can be expressed more formally with the following hypotheses.

- H1 Resource Relatedness: The higher the degree of relatedness between the acquirer and the target, the higher the level of integration.*
- H2 Resource Quality: The higher the quality of pre-acquisition resources in the acquired firm, the lower the level of integration*

In addition to the resource-based explanations, however, the capability approach advanced in Chapter 3 suggests a role for the degree of routinization and of knowledge codification achieved by the acquirer in the management of the integration process. The arguments in support to that claim follow.

High levels of integration (and of replacement) create correspondingly high disruption in the routines and structures of the organizations involved, and therefore should be associated with greater complexity in the post-acquisition phase (Amburgey, Kelly, and Barnett, 1993; Haveman, 1992 and 1993). Such type of complexity might be labeled “structural”, as it depends upon the existence and strength of barriers to changes in organizational structures.

High levels of integration also imply a large number of highly interdependent decision processes, as more parts and functions of the organizations become involved. Additional data must be gathered and processed to ensure informed decisions, and more frequent and time-consuming political interaction is necessary to arrive at the required set of decisions. Such complexity might be labeled “decisional”, as it depends upon the cognitive barriers to the effective completion of interdependent decision processes.

The structural and cognitive challenges to successful integration can be addressed through the creation of an organizational capability that specializes in the management of those types of processes. According to the theory developed in Chapter 3, such capability is created and evolves through two main mechanisms. One leverage the tacit accumulation of knowledge from past experiences, which translates into path-dependent and routinized decision-making behavior, and the other relies on the explicit rationalization of the possible cause-effect relationships between past actions and performance outcomes, and on the consequent codification of past experience into ad-hoc tools. The more routinized and codified the acquirer’s practice is, then, the more likely the acquirer will be to strive for higher levels of integration, as the degree of competence and of confidence in its own ability to manage and neutralize the negative consequence of higher integration levels, will be correspondingly high.

The preceding arguments can be expressed as formal hypotheses.

- H3 Knowledge Codification: The higher the degree of codification of the integration process, the higher the level of integration.*
- H4 Process Routinization: The higher the degree of routinization in the integration process, the higher the level of integration.*

4.1.2 The Level of Replacement of the Top Management Team

The decision about the level replacement of the top management team is hypothesized to be a function of the resource characteristics of the acquired organization and of the degree of development of a post-acquisition integration management capability at the acquiring organization. Specifically, the quality of the target's current resources and routines is suggested to be related inversely to the level of replacement implemented by the acquirer. The rationale for that conjecture is consistent with basic principles of rational choice: the worse the performance feedback, the higher the likelihood of an intervention that changes the elements on which the process operates (resources) and/or the process itself (routines). In the context of prior M&A research, the hypothesis captures the essence of the "market for corporate control" view of such events, whereby acquisitions are believed to be a policing mechanism that can resolve, or at least reduce, agency problems due to imperfect incentive alignments between management and ownership of the target firm.

Perhaps less obvious is the effect of resource relatedness on the decision to replace the top management team of the acquired firm. If we assume that the knowledge domain of an organization is bounded by the cognitive capabilities of its members, then the knowledge domains of the management teams in two highly related organizations are likely to be redundant. If the team of the acquiring firm is, or believes itself to be, equally knowledgeable of the products and markets of the acquired firm, it has a low incentive to retain the acquired team. The higher the degree of relatedness, then, the higher the probability of replacement of the top management team.

More formally, the preceding discussion results in the following hypotheses:

- H5 Resource Quality: The better the quality of pre-acquisition resources in the acquired organization, the lower the level of replacement.*
- H6 Resource Relatedness: The higher the degree of resource relatedness between the two organizations, the higher the level of replacement.*

In addition to those “baseline” resource-based explanations, other hypotheses for the impacts of knowledge-based mechanisms can be derived from arguments similar to those made for the level of integration. In this case, though, the rationale for the impact of knowledge accumulation mechanisms depends primarily on the increasing ability, provided by experiential learning, to manage the level of conflict resulting from disruptive change introduced in the organizations involved (structural complexity). The decisional complexity argument advanced for the level of integration model is somewhat weaker, and might actually work against the hypothesis (i.e. integration strategies might be simpler to implement through resource replacement than through consensus-building processes). In particular, that possibility might attenuate the ability of the codification mechanism to reduce the complexity of both the decision-making and the implementation phases: in essence, an organization might not need to write many manuals and computer models to more effectively lay off top managers. Comparatively speaking, then, one might expect the tacit knowledge accumulation component of the integration management capability to have a stronger impact than the explicit one.

These arguments lead to the following hypotheses.

- H7 Knowledge Codification: The higher the degree of knowledge codification, the higher the level of replacement.*
- H8 Process Routinization: The higher the degree of process routinization, the higher the level of replacement.*

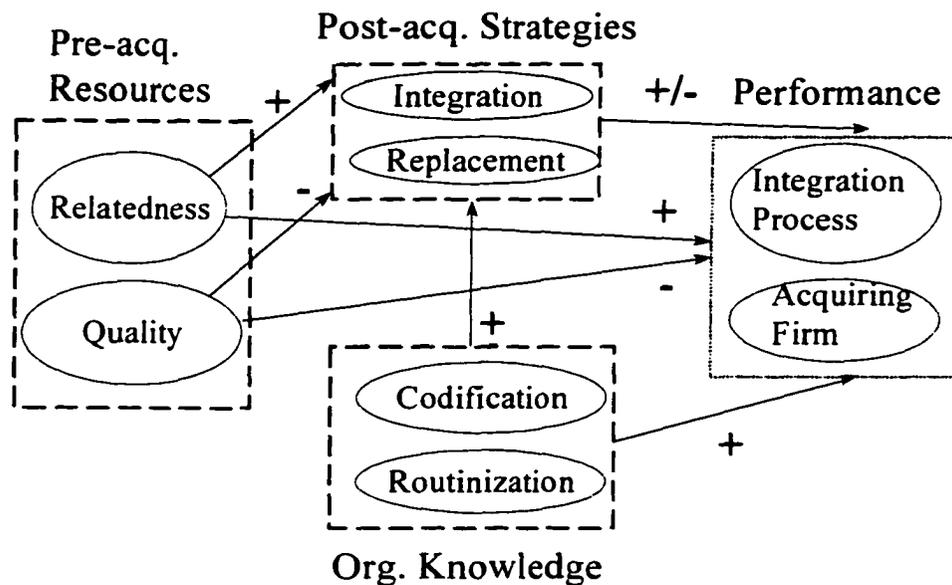
4.2 Modeling Acquisition Performance

Equipped with the notion that integration decisions are a function of both pre-acquisition resources and the degree of development of an integration capability within the acquiring firm, we can now expand the analysis to consider the performance of the post-acquisition integration process.

Fig. 4.4 provides a summary representation of the proposed theoretical framework. It comprises four classes of variables:

- 1) Pre-acquisition resource characteristics that influence both post-acquisition decisions and performance.
- 2) Post-acquisition decisions that are both endogenously determined, as described in section 4.1, and precursors of acquisition performance.
- 3) Knowledge accumulation mechanisms responsible for the creation of an integration capability that are exogenously modeled to affect both post-acquisition decisions and performance.
- 4) The performance of the post-acquisition integration process, as well as that of the acquiring firm, endogenously determined as a function of all of the three preceding factors.

Fig. 4.4 - The Theoretical Framework



The definition of acquisition performance is discussed at length in Chapter 5, which addresses methodological and operationalization issues. A working definition is based on the degree to which the post-acquisition integration process generates the expected levels of value creation in terms of cost rationalization and revenue enhancement for the combined entity.

4.2.1 Performance Effects of Pre-acquisition Resources

The strategy literature on corporate diversification and resource relatedness has been unequivocally clear on the expected sign of the impact of relatedness on acquisition performance. As reviewed in Chapter 2, the presence of exploitable economies of scale and scope implies stronger performance in highly related acquisitions. Therefore,

H9 Resource Relatedness: *The higher the degree of resource similarity between the acquired and the acquiring organizations, the higher the expected level of acquisition performance.*

The M&A literature has been significantly less clear about the performance implications of resource quality. Value can in fact be created, via different mechanisms, in instances of both high quality and low quality resources within the acquired firm. In the case of high quality resources, the combined entity benefits from the transfer of superior routines or the sharing of superior resources from within the acquired firm. That mechanism has been labeled “inverse learning” (Haspeslagh & Jemison, 1991), and is generally considered a strong challenge to the success of the integration process, as it requires a humble, realistic attitude on the part of the acquirer to appreciate the benefits of its learning from the target firm. In the case of low quality resources and routines within the acquired firm, the mechanism for creating value is the opposite, consisting of both the redeployment of internal resources and the replication of routines present in the acquiring organization within the acquired one. Recent work shows that the resource redeployment effect is expected to be superior to the “inverse learning” one (Capron, Dussauge, & Mitchell, 1997). Therefore:

H10 Resource Quality: *The higher the level of pre-acquisition performance of the acquired firm, relative to its competitors, the lower the expected level of acquisition performance.*

Both H9 and H10 indicate *potential* conditions for the creation of value from acquisitions in that they rely on mechanisms (economies of scale/scope and resource redeployment) that are not triggered automatically by the completion of the acquisition. The potential for value creation to materialize from resource relatedness and resource

quality is contingent upon a post-acquisition integration process that is (1) sufficiently precise in the selection of resources and routines to be acted on and (2) effective in the implementation of the transfer and replication processes. The former condition is based on the characteristics of the post-acquisition decision-making process (Jemison & Sitkin, 1986; Haspeslagh & Jemison, 1991), while the latter has to do with the development of the particular type of organizational capability studied here.

4.2.2 Performance Effects of Post-Acquisition Decisions

The effects of levels of integration and replacement on acquisition performance are also influenced by conflicting considerations. On the one hand, organizational *inertia* arguments (Amburgey, Kelly, and Barnett, 1993; Haveman, 1992, 1993) imply that if high levels of integration and/or replacement create high levels of short-term disruption in the routines and structures of the organizations involved, they should be associated with low acquisition performance. In addition, high levels of integration and replacement may result in high levels of complexity in the decision-making processes, as more parts and functions of the organizations become involved, additional data must be gathered and processed, and more political maneuvering is necessary to develop the required set of decisions. Finally, a high integration decision may necessitate high resource commitments (in financial and human terms) and high coordination costs during the implementation phase.

On the other hand, strong arguments support positive performance implications for both decisions. The level of integration is the main channel through which economies of scale and scope can be manifested. Without alignment or concentration of processes across the two organizations, cost structures cannot be rationalized and revenue

enhancement goals, such as cross-selling activities of the two merging sales forces and distribution networks, cannot materialize.

Similarly, the degree of replacement of the top management team of the acquired firm is considered, according to agency theory (Manne, 1965; Jensen & Ruback, 1983), to be a precondition for an acquisition event to deliver the expected performance. In an extreme version of the argument, acquisitions are defined and studied as a policing mechanism for replacing the target's top management team and for redesigning and realigning the incentive structure to reduce the impact of agency costs and to facilitate the pursuit of cost efficiencies. The conclusion is that the replacement of the top management team will facilitate the achievement of the acquisition goals, or at least that the team's retention might lower the likelihood that the acquiring firm can implement its integration plans with sufficient speed and effectiveness.

The preceding arguments suggest competing hypotheses:

H11a Level of Integration: Ceteris paribus, the higher the level of integration implemented, the lower the acquisition performance

H11b Level of Integration: Ceteris paribus, the higher the level of integration implemented, the higher the acquisition performance

H12a Degree of Replacement: Ceteris paribus, the higher the degree of replacement of the top management team, the lower the acquisition performance

H12b Degree of Replacement: Ceteris paribus, the higher the degree of replacement of the top management team, the higher the acquisition performance

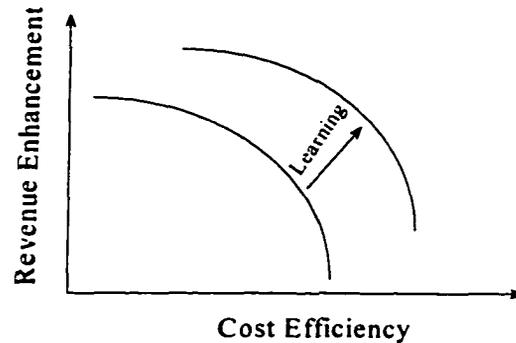
4.2.3 Performance Impact of Knowledge Mechanisms

The degree to which the acquiring firm has developed a post-acquisition integration capability should positively influence the performance outcome of the

acquisition process both directly and indirectly. The direct impact can be understood with the use of a simple microeconomic analysis that adapts a transformation curve model to the problem of maximizing overall acquisition performance through two value creation mechanisms: the achievement of cost efficiencies and the enhancement of revenue generation capacity. That stylized problem is assumed to be subject to the constraint of a capability building function (defined by the magnitude of tacit and codified experience accumulated by the acquiring firm) which determines the boundaries to the effectiveness of the two mechanisms, and the types of trade-off between them. The reason for expecting a trade-off between cost efficiency and revenue enhancement for a given level of integration is that during the downsizing process, the employees of the acquired firm will spend more time searching for new employment than they will generating new business. In contrast, an approach based on creating value by achieving strong sales growth (through cross-selling, new product generation, multiple distribution channels, etc.) will require correspondingly strong investments in training, incentives, morale building and other initiatives, which will hinder the achievement of cost efficiencies. One way to relax the constraint,⁵ and thus pursue a higher levels of both cost efficiency and revenue enhancement, is to develop a task-specific capability by accumulating and rationalizing past acquisition integration experiences. Fig. 4.5 provides a graphical representation of that organizational learning process.

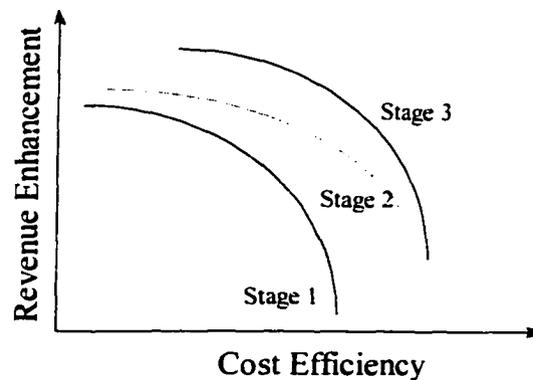
⁵ Under the stylized conditions defined above, organizational learning is actually the only way to relax the constraint imposed by the capability-building function.

Fig. 4.5 - Capability Building and Value Creation Mechanisms



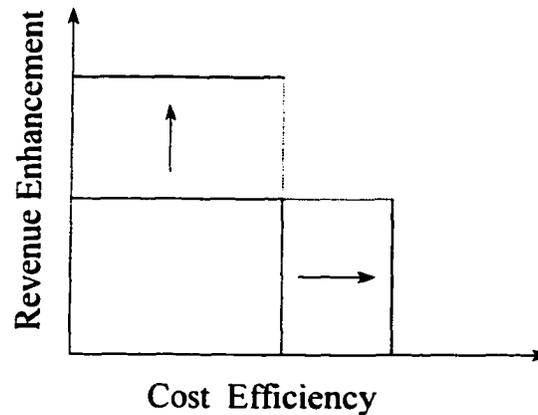
Further, the path-dependent nature of the evolution of organizational capabilities suggests that firms might tend to specialize in the pursuit of one of the two drivers for value creation. For instance, acquirers might see themselves as following a certain approach that prioritizes either cost efficiency or revenue enhancement as value creation mechanisms, and therefore might proceed for some time along a trajectory of capability building based on that mechanism. Recent experience suggests that it is much easier for firms to learn how to achieve cost efficiencies (through downsizing, re-engineering, etc.) than it is for them to develop new avenues of revenue growth. Hence, as confirmed by field observations (reported in section 6.1), firms would develop their integration capability through an evolutionary pattern that first relies on the achievement of cost efficiencies (the “low-hanging fruits”). Once the easier paths for value creation are fully exploited, the acquirer would develop its integration capability by prioritizing the creation of value through revenue enhancement (the “higher fruits”). Fig. 4.6 traces that evolutionary pattern.

Fig. 4.6 - Evolution of a Post-Acquisition Integration Capability



The extent to which acquiring firms are capable of developing a post-acquisition integration capability yielding value creation advantages based on both mechanisms, rather than just one, can be considered a function of the strength of the path dependence underlying the evolution of the organizational capability.⁶ When the tie between current and past decision-making activity is strong, acquirers are more likely to pursue improvements along the same type of value creation mechanisms, discounting the other tool as a lower priority or as an approach inconsistent with the firm's integration "policy". At the extreme, exceedingly strong path dependencies will not allow the firm to shift priorities and will impose the development of either a cost-efficiency- or a revenue-enhancement-driven integration capability. In such cases, one must consider two separate, mutually exclusive capabilities that organizations can develop through their knowledge accumulation and rationalization activities.

Fig. 4.7 - Capability Building under Strong Path Dependence Assumptions



So far, only the direct impact of knowledge accumulation and codification mechanisms on acquisition performance has been subject to theoretical scrutiny. Knowledge might also influence performance indirectly, however, by interacting with the types of post-acquisition integration decisions made by the acquiring firm. First, a more evolved integration capability, whether tacitly or explicitly accumulated, implies that the acquiring firm should be able to manage the integration process in a way that minimizes resistance to change (structural complexity) in both organizations. In addition, the degree of routinization of the post-acquisition integration process implies, almost by definition, a reduction in the level of complexity of the decision-making process (decisional complexity). At the extreme, routinization means the avoidance of detailed decision-making processes through the selection and execution of the appropriate routine. The

⁶ Atkinson & Stiglitz (1969) applied a similar theoretical argument to technical change that is highly

development of an integration capability, then, enhances the value creation potential of the integration decisions by reducing their negative effects (structural and decisional complexity) and by allowing the positive ones (economies of scale and scope, operational enhancements, etc.) to be fully exploited.

However, counter-arguments can be made about the capability-complexity effect on acquisition performance. First, acquirers with low levels of expertise and routinization can use several alternative mechanisms to avoid or reduce the negative consequences of high integration and replacement levels. They could rely on vicarious learning mechanisms, for example, by hiring management consultants, or they could increase the levels of control and reactivity to problematic situations by keeping senior managers involved throughout the implementation phase. In general, however, the degree of complexity and the heterogeneity of the task are so high that such mechanisms can hardly substitute for direct experience, especially if it is well documented and studied.

A second argument can be advanced against an entirely positive view of capability building at high process complexity levels. What happens when complexity levels are kept low by design? For example, what if post-acquisition integration is maintained at a low level while the acquirer develops its highly codified and routinized integration practice? At some point the integration process might become excessively codified and routinized, or “bureaucratic,” and the acquirer could incur diminishing returns to the further development of its integration practice.

localized around the current knowledge domain.

In terms of testable hypotheses, the preceding discussion can be reduced to the theorization of two groups of performance effects. One group incorporates the direct performance effect of the capability argument and leads to the following hypothesis:

- H13 ***Process Routinization***: *The higher the degree of routinization of the post-acquisition integration process, the higher the acquisition performance.*
- H14 ***Knowledge Codification***: *The higher the degree of codification of the post-acquisition integration process, the higher the acquisition performance.*

The other group can be represented by postulating an interaction effect between the capability-building process and the degree of complexity of the integration process. The following hypothesis reflects both the upside and the downside potential of the combination of explanatory factors.

- H15 ***Codification and Integration (interaction effect)***. *The higher the level of codification in the context of a high level of integration, the higher the economic performance of the acquisition. However, the higher the level of codification in the context of a low level of integration, the lower the economic performance of the acquisition.*

5. RESEARCH DESIGN AND MEASURES

This chapter describes the design used to test the models and hypotheses, the responses received from the institutions surveyed, the operationalization of the key constructs, and a set of analyses related to construct validity issues.

5.1 Research Design

The study of acquisitions in the commercial banking industry was carried out under the supervision of the Wharton Financial Institutions Center (WFIC) with the financial support of the Sloan Foundation. It was possibly the first large-scale analysis of post-acquisition integration practices in any industry. Consequently, little empirical literature was available to guide the measurement efforts. Further, our desire to gain a grounded understanding of the phenomenon under study produced a research design characterized by long fieldwork, which took about a year to complete and required the help of a group of nine banks (see Fig. 5.1 for the project timeline). Those institutions responded to an invitation made to 15 banks by the WFIC in July 1994. Their acquisition experience ranged from medium to very high, and their size ranged from \$4.5 to over 200 Billion. The nine banks were (in order of size): Chase/Chemical, Bank One, PNC Bank, Norwest, First Fidelity, First Bank Systems, First Empire State, Old National, and Associated Bancorp. In the case of Chemical and First Fidelity, the contact and meetings took place when the banks were still independent, and the data gathering was completed

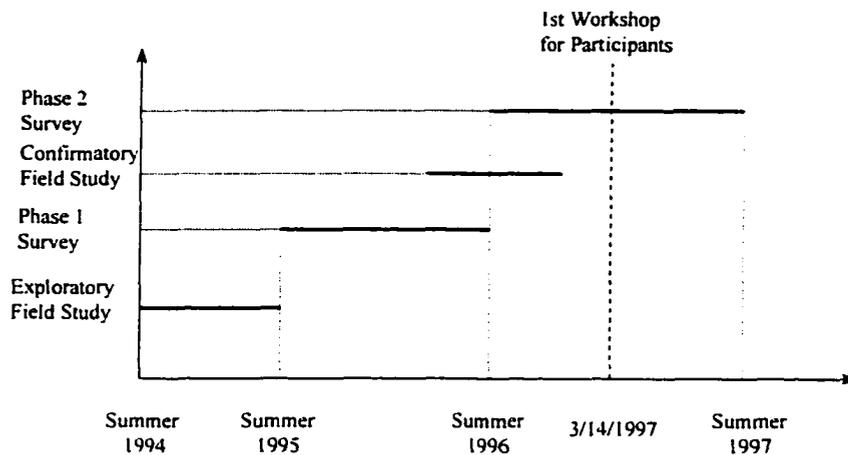
after their mergers. Additional fieldwork was done with the collaboration of Nationsbank, First Union, Southern National/BB&T, and CoreStates. It included participant observation of one systems conversion process at PNC Bank and of top management decision-making processes during the integration of a recent acquisition by Southern National/BB&T. Thirty-one semi-structured interviews were conducted with individuals involved in various phases of the acquisition process. The individuals responsible for coordinating the post-acquisition integration process were interviewed in all the cases when such function was created (6 out of 13 cases). When this responsibility was not explicitly allocated, the interviews were conducted with the key M&A executive (four cases), the CFO (two cases), or the CEO (one case). The additional interviews were conducted with staff and line representatives who were involved, either on a project or on a stable basis, in specific parts of the post-acquisition integration process. In four institutions, interviews were done with at least one representative in each of the key sub-processes: the integration of human resources, the conversion of information systems, and the restructuring of the retail-banking network.

The objective of the first part of the research was twofold:

- 1) To understand the mechanics of the post-acquisition integration of a bank, including the options available for each decision or implementation problem, the possible indicators of an organizational capability, and the performance metrics available.
- 2) To obtain expert assistance in the design, fine-tuning, and pre-testing of the survey instrument. Because of the novelty of the effects explored, most of the survey had to be designed ex novo. General guidelines were obtained from the few survey-based

studies reported in the post-acquisition literature (Datta & Grant, 1990; Datta, 1991, Shanley, 1994).

Fig. 5.1 - Project Timeline



The results of the fieldwork were in many ways surprising (see section 6.1 for a summary). The discussions proceeded from general conversations on value creation mechanisms and post-acquisition integration approaches, to in-depth probing of decision-making and implementation issues, to the analysis of the large number of codified tools that some of the acquirers produce and regularly update. At some point, however, the knowledge accumulated from the questioning became redundant and the interaction shifted toward the survey-building exercise. That activity involved much more frequent contacts by telephone and fax with a group of five highly committed banks among the original nine. After most of the Phase 1 data gathering (see below) was completed and preliminary results were elaborated, a round of visits to the other four highly experienced acquirers was initiated. The purpose of the second round was to validate the responses

received and cross check the interpretations of the preliminary analyses (the confirmatory fieldwork in Fig. 5.1).

Finally, a mini-conference for all the participating banks was held on March 14, 1997 to share the results of the bulk of the analyses and to receive feedback on the final rounds of Phase 1 results.

The large-scale data gathering part of the study consisted of the administration of a two-phase questionnaire survey of the 250 largest bank holding companies in the United States. As in any survey-based research, a key challenge was the management of the trade-off between breadth and depth of the observations gathered. It was not obvious how to build a data set that would have enough observations to ensure sufficient generalizability and statistical power, and would also provide the kind of measures needed to test the models. Out of the four classes of variables in the theoretical framework (pre-acquisition resources, post-acquisition decisions, knowledge accumulation mechanisms, and post-acquisition performance), only the first (resource relatedness and quality) could be measured somewhat accurately with either secondary data or relatively well known survey scales. All other constructs, particularly the knowledge-based ones, had seldom, if ever, been assessed through a survey instrument, and an extensive effort was necessary to generate a sufficient number of alternative approximations.

The compromise solution was to design a two-phase survey. The first phase provided breadth of observations by sacrificing depth in the measurement of the key constructs. The second phase focused on a subset of the observations recorded with the

first instrument, and provided a wealth of measures that could ensure a check of the reliability and robustness of the results obtained with the large-scale data set.

Phase 1 - (Level of Analysis: The Acquiring Bank)

Every participant bank was asked to complete the following instruments:

- One Acquisition History Profile, a spreadsheet-like list of all the bank acquisitions completed since foundation, with basic information on each of them. The information included asset size, transaction price, name of the coordinator of the post-acquisition integration process, degree of geographic overlap of the two branch networks⁷, quality of the acquired institution, levels of organizational integration and of replacement of the top management team, and qualitative assessments of the performance of the information systems conversion, the human resources affiliation, and the overall integration process (see Exhibit A).
- One Acquiring Bank Questionnaire describing the characteristics of the acquisition process put in place by the acquiring institution. The characteristics included the degree and quality of knowledge codification, the division of responsibilities for each stage of the process, the strategic priorities in implementing the integration, and some basic process and performance measures (see Exhibit B).

Phase 2 (Level of Analysis: The Acquisition)

A sample of the acquisitions completed by the responding banks was selected from those included in the Acquisition History Profile. The selection was done by the author, in consultation with the key contact at the responding bank, according to criteria of feasibility of measures and of representativeness of the entire Acquisition History Profile

⁷ Whether the acquisition is considered “in-market” or “out-market”, see also section 5.3.4

in terms of performance outcomes. In terms of feasibility, acquisitions that were either too old (subject to institutional memory decay) or too new (not enough performance data were available) were discarded. To avoid performance biases in the sample, special care was taken to include one or two of the best and one or two of the worst acquisition experiences, as well as some “average performance” ones, as indicated on the respondent’s performance assessment recorded in the History Profile.

For each acquisition, the following questionnaires were completed:

- One questionnaire (labeled “General Part”) to be completed by the coordinator of the post-acquisition phase (eight pages, see Exhibit C);
- Three Special Parts to be completed by one representative each from the retail banking division, the DP systems department, and the human resources department who was involved in the post-acquisition phase (five pages each)

The general structure of the questionnaires followed a logical progression. They started with a description of some ex-ante characteristics of the acquired bank (often measured in comparison with similar features of the acquirer) or characteristics specific to the transaction. They then gathered data about the type of actions executed by the acquirer (due diligence, planning, integration decisions, implementation, etc.), and ended with a set of performance measures, which included process-specific quantitative and qualitative data, as well as subjective performance assessments.

The data gathering process required that the key contact person (1) identify the best available respondents for each of the four questionnaires for each of the acquisitions analyzed, (2) distribute the questionnaires, explaining to each individual the objectives of

the exercise and the key criteria for its completion, and (3) solicit completion and return the completed questionnaires to the researcher.

Secondary data were also gathered and utilized for a variety of purposes. A database of financial performance measures (mainly ROA, ROE and efficiency ratios) was built for the largest 330 bank holding companies between 1985 and 1996. It was the result of search and cross-referencing work based on three different electronic databases (Compustat, Compact Disclosure, and Moody's), and provided an accurate benchmark for the measurement of relative performance data (see the section 5.3.1 on performance measurement). The database for the bank holding companies effectively represents the entire commercial banking industry; the remaining 700 institutions account for less than 3% of the industry assets and are not recorded in any of the above mentioned public databases.

Also, an electronic M&A database (Datastar), that includes all the deals announced in the United States since 1985 was used. It helped in reconstructing the acquisition history of non-respondents and of the entire industry. It was compared with several similar sources in both paper form (Mergerstat and M&A Handbook) and in electronic form (IDD database) and is considered to be the most reliable and thorough source of secondary data.

5.2 Sample Characteristics

Of the 250 bank holding companies invited, 70 did not have any acquisition experience after 1985 and 16 were acquired during the invitation period. Fifty-one of the 164 institutions that formed the relevant universe agreed to participate, for a 31.1%

response rate and coverage of 44.6% of the industry's assets. The asset size of the smallest invited institution was about \$400 million, which implies very rare acquisition activity and very small transaction sizes (usually one or two branches). Further extensions of the sample to smaller institutions were likely to have resulted in very few responses, because of the scarcity of acquisitive events, and in significant loss of comparability between the transactions analyzed.

The experience base of the banks participating in the study ranged from very low (5 of them have only one acquisition experience) to very high, with 10 of the 12 largest and most active acquirers in the industry represented in the sample. The total number of acquisitions completed by the 51 banks was 577, a sample large enough to ensure that routinization of the acquisition process was possible at least for a subset of the firms. In relation to the original population of the 250 largest institutions, the sample of respondents was biased with respect to their asset size (participants were significantly larger than non-participants, $p < .05$), but the differences in the means of ROA, ROE, and efficiency ratios are not statistically significant.

Great care was taken to single out the best available respondent in each participant organization, particularly for the Phase 1 survey. For the large banks, that was a difficult task, as roles and functions were often idiosyncratic to these firms' internal organizational arrangements. In some cases, the survey completed by one individual (responsible, for example, for the M&A group) was double-checked by a peer colleague who had been involved in post-acquisition integration processes. The problem was compounded by the fact that the search for the best respondent was typically brought to a senior executive who, though generally intrigued by the research project, had a long

list of priorities to which he/she had to allocate scarce available time and attention. Nonetheless, Phase 1 documents were completed by highly competent individuals. Typically, the coordinator of the post-acquisition integration processes (such a function was present in 14 of the firms surveyed) or the manager responsible for the corporate development unit or for the M&A group (26 cases) filled out the survey. In the smaller and less experienced organizations, the survey was completed by the CFO or controller (nine cases), or the CEO himself (three cases), who typically spearhead the M&A process when such events occur.

The price paid for the “tailored” survey approach, based on very frequent rounds of telephone contacts to check on both the status (pre-) and on the quality (post-) of survey completion was correspondingly high. It took one year, from summer 1995 to summer 1996, to complete Phase 1 and another year to complete Phase 2. Also, the response rate for Phase 2 was significantly lower than that for Phase 1, as only 30 institutions completed the much more intense and time-consuming exercise of gathering detailed data on several acquisitions from four different organizational functions. Another explanation for this drop in participation is the long time frame necessary both to gather reliable and detailed data and to return the expected benefits (i.e. valuable insights about the post-acquisition process) to the participant organizations.

Other causes include the bank being acquired or becoming involved in a merger of equals (three cases). In four other cases the Phase 1 contact left and there was no clear substitute who could coordinate the completion of Phase 2. Another four banks are still declaring an interest in completing Phase 2, but have not yet delivered on their commitment.

Table 5.1 summarizes the results of T-tests for differences in the means between the Phase 1 and Phase 2 samples computed on all the key variables. The analysis affords both a direct and an indirect test. First, it tests for the presence of biases between the two steps of the research process. In addition, it can be interpreted as an indirect test of the representativeness of the entire industry, as banks declining to participate in Phase 2 may have been less interested in the study and therefore may be similar in profile to non-respondents. As the table shows, the two samples are not statistically different on any of the dimensions.

Table 5.1 - Tests for mean differences among Phase 1 and Phase 2 samples

Variable	Phase 1 sample	Phase 2 Sample	T statistic (equal variance)	T statistic (non-equal variance)
ROA 1996	-.0098	-.0367	-.324	-.277
ROA change 87-96	.0675	-.0761	-.912	-.735
ROA average 85-96	.0378	-.0034	-.571	-.533
ROA ch. 2 yrs after acq vs. 1 yr before	-.0257	-.0570	-.321	-.294
ROA ch. 3 yrs after acq vs. 1 yr before	-.0137	-.0478	-.255	-.225
Resource quality	-.0642	-.1785	-.484	-.473
Resource relatedness	.5975	.6516	.523	.528
Integration	2.693	2.544	-.853	-.943
Replacement	2.147	2.143	-.016	-.017
Codification	7.000	5.931	-1.122	-1.126
Experience in good banks	8.471	7.222	-.456	-.443
Experience in bad banks	2.882	2.852	-.033	-.031
Experience in-mkt	7.471	6.321	-.492	-.468
Experience out-mkt	3.941	4.071	.077	.083
Size buyer yr-1 (\$ in billion)	26.41	13.42	-1.573	-1.431
Size of acquisition (% of buyer's assets)	8.120	8.891	.219	.226

5.3 Operationalization of Key Constructs

The theoretical framework presented in Chapter 4 highlights the relationships between pre-acquisition resource characteristics (relatedness and quality), post-acquisition decision-making (integration and replacement), knowledge accumulation

processes (routinization and codification), and performance outcomes, at both the level of the integration process and the firm level. These constructs were operationalized on the basis of the data gathered in the Phase 1 survey.

Table 5.2 - Descriptive statistics of phase 1 variables

Variable	Mean	Std. Dev.	Min	Max	N
Performance					
ROA ch. 2 yrs after acq vs. 1 yr before	.0045	.6683	-2.81	2.46	371
ROA ch. 3 yrs after acq vs. 1 yr before	.0028	.7255	-2.91	2.49	291
Conversion of information systems	.8307	.8777	-2.00	2.00	449
Integration of human resources	.8069	.9882	-2.00	2.00	435
Overall integration process	.6591	.9460	-2.00	2.00	443
Resource Characteristics					
Resource quality	-.0035	1.08	-2.00	2.00	466
Resource relatedness	.620	.48	.00	1.00	488
Post-acquisition Decisions					
Integration	2.639	.6974	.00	3.00	487
Replacement	1.77	1.27	.00	3.00	475
Integration Capability					
Codification	.6712	.4207	.00	1.00	516
General experience	11.20	10.17	.00	44.00	574
Experience in good banks	8.580	8.728	.00	35.00	493
Experience in bad banks	2.383	2.976	.00	11.00	493
Experience in-mkt	5.955	6.802	.00	34.00	512
Experience out-mkt	4.996	5.571	.00	25.00	506

5.3.1 Performance

Measuring the performance of acquisition processes is a very complex endeavor. The optimal measure probably would be based on a consistent set of pre- and post-acquisition accounting data for both firms. However, even if issues of confidentiality could be overcome, post-acquisition accounting data for the acquired entity are typically available only when they “matter” less (i.e. when the level of integration is so low that the acquired unit retains not only its autonomy, but also its identity from an accounting standpoint). When banks acquire other banks, the level of integration of the acquired unit

is typically quite high, and it becomes very difficult for the acquirer to keep track of the unit's performance, particularly after the conversion of the information systems.

A good second-best measure is the pre- versus post-acquisition change in accounting returns for the acquiring firm. It was obtained through the use of several archival sources (see above) and the computation of the two most important and widely used performance ratios in the banking industry: the return on (average) assets (ROA) and the efficiency ratio⁸. To control for both industry-level profitability and local competitive factors, a performance measure was constructed according to the following formula:

$$ROA_{i,t} = (ROA_{i,t+3} - ROA_{a,t+3}) - (ROA_{i,t-1} - ROA_{a,t-1})$$

where:

ROA_i is the return on average assets of the acquiring firm i

ROA_a is the average of the return on average assets of all the bank holding companies in the same geographic area as the acquiring bank, and

t is the year when the acquisition was announced

An identical formula was used to compute the performance measure based on the efficiency ratio. Seven geographic areas in United States (New England, North Atlantic, South Atlantic, Mid-west, South, Rocky Mountains, and Pacific) and one for Canada were used to benchmark the performance ratios. The selection of multi-state regions to benchmark the change in performance of responding banks was an attempt to strike a balance between a necessary level of detail (national averages might be too coarse) and

⁸ The efficiency ratio is similar to what a manufacturing firm would term the ratio between SG&A and sales. In banking, the numerator is "non-interest expenses" and the denominator is the sum of "net interest income" and "non-interest income".

the difficulty of constructing a reasonable benchmark for both local community and “super-regional” banks.

In addition to the accounting measures, the Phase 1 survey collected three assessments of the performance of the acquisition, in comparison with the performance of all other acquisitions completed by the same acquirer. The assessments pertained to the performance of (1) the information systems conversion process, (2) the human resources affiliation (or integration) process, and (3) the overall post-acquisition integration process, as measured by a Likert-type scale with the following anchors: “-2” (“Many problems”), “-1” (Some problems), “0” (“Average”), “+1” (“OK”), “+2” (“Great”).

5.3.2 Level of Integration

The first type of post-acquisition integration decision was measured by assessing the extent to which the information systems, the operating procedures, and the product lines of the two firms were aligned or centralized. The scale ranged from “0” (“few or no features were integrated”), to “3” (“all systems, procedures and products were completely integrated”). The frequency of observations loaded on the highest value, as 71.8% of the acquisitions were classified as complete integration. That result was expected given the focus on horizontal and market extension acquisitions chosen by design. However, the aggregation of the decision along longitudinal patterns reveals a more complex and somewhat unexpected evolutionary process (see section 6.1).

5.3.3 Level of Replacement

The other decision was measured by assessing of “the extent to which the executive leadership of the acquired bank has been changed after the acquisition”. The scale

ranged from “0” (“no substantial change”) to “3” (“virtually all the top management team was replaced”). The frequency distribution of this decision variable resembles a bimodal distribution where about 40% of the observations are loaded on each of the two extreme values, and very little density remained on the intermediate replacement levels.

5.3.4 Resource Relatedness

The research project was designed to limit the extent of variation along the resource relatedness dimension. The sample of acquisitions studied included either perfectly horizontal (i.e. buying a competitor located in the same geographic area) or market extension types of transactions, in which the variation is essentially provided by the degree of geographical overlap between the two branch networks. The banking industry has developed a clear and universally applied distinction between “in-market” (horizontal) and “out-market” (market extension) acquisitions, which the survey used by probing for the categorization of each transaction listed in the acquisition history profile into one of the two classes. The measure assesses the degree of *market* relatedness between the two firms. However, a broader interpretation of the concept of resources assigns a critical competitive role to the geographic location of the network of branches, in that it constitutes the firm-specific endowment of office locations and influences the coverage of the potential customer base. In commercial banking, as well as in all other retail industries, geographic location is considered a fundamental source of firm-specific advantage; consequently, the degree of geographic market relatedness can be interpreted as a possible proxy for the broader concept of resource relatedness.

That issue is discussed further in section 5.4, Exhibit D and section 7.4. Here, limited to the approximation made in the Phase 1 survey, the resource relatedness

construct was operationalized as the degree of overlap of the two networks of branch offices. It was coded as “1” if the acquisition was “in-market”, and as “0” if it was “out-market”. The frequency distribution is about two thirds “in-market” and one third “out-market” acquisitions.

5.3.5 Resource Quality

The pre-acquisition quality of the resource endowment of the acquired firm was measured by assessing the performance level of the target bank prior to the acquisition. As shown in Appendix A, the Acquisition History Profile asked the respondent to enter, under the column “Bank”, an assessment of the pre-acquisition profitability of the target. The scale anchors were: “-2” (the acquired institution was in a bankrupt situation), “-1” (it was a poor performer), “0” (it was an average performer), “+1” (it was a good performer) and “+2” (it was an outstanding performer). The observations distribute in a roughly normal way with a mean of -0.035 and a standard deviation of 1.08.

5.3.6 Process Routinization

The degree of process routinization was approximated by three sets of measures:

- *The level of general acquisition experience*, a simple count of the number of acquisitions completed by the same acquirer before the one considered, was the most superficial approximation of the routinization construct. The variable (probably) represents a necessary, but not sufficient, condition for the creation of a post-acquisition integration routine. In other words, the level of experience testifies only to the longitudinal accumulation of knowledge in the acquiring firms, but not necessarily to the persistence of practices (Helfat, 1994).

- *The specific type of acquisition experience* was a more refined concept, as it incorporated the specific evolutionary path followed by the bank in its acquisition trajectory. It measured the number of a specific type of acquisitions completed before the one considered. The criteria used were (1) degree of relatedness (number of “in-market” and “out-market” acquisitions) and (2) quality of resources of the target (number of “bad” and “good” institutions purchased). To construct the experience trajectories related to the quality of acquired assets, previous acquisitions were coded and counted as “bad asset quality banks” if they had a score of either “-2” or “-1”, and as “good asset quality banks” otherwise.
- *The same decision made three acquisitions before.* Whereas the first two measures approximated the routinization construct with a measure of experience accumulation, this variable attempted to get directly at the core concept of routinization (i.e., the replication of a certain type of decisions across time and under relatively different contextual conditions). Routinization is, in other words, a special case of path dependency in which current decisions are not only dependent on past ones, but are actually similar in kind. Using a decision made in a randomly selected previous acquisition affords a more precise approximation of the routinization effect.

5.3.7 Knowledge Codification

The degree of knowledge codification was measured by counting the number of manuals and models developed by the acquirer in the year of the acquisition and dividing it by the number available today. The measure approximates the stage in the codification of the integration practice reached by the acquiring bank in the year of the acquisition.

The documents for which data were gathered are listed in Table 6.1. The Acquiring Bank questionnaire provided the year in which the acquiring firm developed each tool. The list of the types of manuals and computer support tools developed in the banking industry can be considered essentially complete, as only one of the participants mentioned a non-listed tool under “other manuals and models”.

5.4 Construct Validity

Data from the Phase 2 survey of 57 acquisitions were used to provide a validity check on key constructs (resource relatedness and quality, integration, replacement, and performance assessments). The Phase 2 measures were derived from some of the questions in the General Part questionnaire aimed at measuring the same constructs with a larger array of related items (see Exhibit C). Construct validity was assessed through three types of analysis:

- 1) Cronbach’s alphas were used to assess whether the Phase 2 items were strongly inter-correlated and hence could be considered indicators of the same theoretical construct.
- 2) The correlation between the Phase 1 measure and an index of the Phase 2 items was provided by summing their standardized (z-scored) transformations (Nunnally, 1978).
- 3) The correlation was calculated between the Phase 1 measure and the main factor on which all the Phase 2 items consistently loaded, extracted with a linear regression method from a factor analysis of the Phase 2 items, without rotation.

Table 5.3 summarizes the results of the analyses. Details of the binary correlations and the factor loadings among the Phase 2 indicators are provided in Exhibit D. The first encouraging indication was that all the Phase 2 measures connected to a

given theoretical construct were highly correlated among themselves, as the Cronbach alpha levels were consistently high.⁹ That finding was confirmed by the fact that all the items loaded consistently on the main factor extracted with a principal component analysis without rotation (see tables in Exhibit D).

Further support for the Phase 1 items' representativeness of the multiple indicators measured in Phase 2 was found in the Pearson's correlation statistics with the two types of indexes constructed. All the correlations were statistically significant at the .01 level, with the notable exception of the resource relatedness construct. In the case of relatedness, the Phase 1 measure results were an indication mainly of the "external" elements of the two organizations (i.e., the geographic location and the type of customer segments served). The internal types of resources, though loading on the same main relatedness factor (eigenvalue = 3.46), did not correlate with the indication of whether the acquisition was considered "in-market" or "out-market". In fact, as reported in section 2 of Exhibit D, the distinction between internal and external resources created a second factor (eigenvalue = 1.29).

For the post-acquisition integration decisions, Phase 1 items for both the level of integration and replacement of the top management team correlated well with the indexes constructed on the basis of the Phase 2 indicators. The level of integration was probed in the Phase 2 questionnaire with two separate questions, one on the degree to which functions were centralized and one on the degree to which selected processes were aligned (see definition 3 in Chapter 4). The factor analysis showed, however, that the

⁹ The exception here was represented by the performance indicators of the systems conversion process; however, the correlational evidence with the Phase 2 indexes indicated that the Phase 1 item was a good representation of the performance construct.

Phase 1 proxy for the level of integration correlated better with the centralization construct than with the alignment one.

The three performance indicators collected during the Phase 1 survey also exhibited strong correlational ties with similar Phase 2 indicators. They correlated in a significant way both with the main factor extracted from related performance assessments in the Phase 2 survey, and with the sum of z-scores computed on the Phase 2 items (Table 5.3, 3rd and 7th column). The analysis identified five Phase 2 items corresponding to the performance of the information systems conversion process and eight items relating to the human resources affiliation process. The third Phase 1 measure, meant to capture the performance of the entire integration process, was correlated with the 24 Phase 2 performance indicators. The indicators include 13 benchmarks relative to pre-acquisition expectations for the transaction considered and 11 benchmarks comparing the current transaction with all other acquisition experiences of the acquiring firm (see the two questions on page 8 of Exhibit C and Tables D.5 and D.6 in Exhibit D).

Table 5.3 - Construct Validity of Phase 1 Measures

Phase 1 Measure	Cronbach Alpha of Phase 2 Items	Correlation with Sum of Ph. 2 Items' z-scores	# of Phase 2 Items	# of Factors Extracted	% of Variance of Main Factor	Correlation with Main Factor
Target's Resource Features						
Resource quality	.853	.463***	11	2	42.1	.482***
Relatedness/all Ph. 2 Items	.786	.116	8	2	43.2	.038
Relatedness/external factors	.631	.520***	2	1	73.4	.520***
Post-acquisition Decisions						
Replacement of TMT	.826	.606***	9	2	64.5	.549***
Integration as centralization	.931	.589***	7	1	74.3	.612***
Integration as alignment	.968	.382***	8	1	83.3	.377***
Level of integration overall	.950	.521***	15	3	61.8	.542***
Post-acq. Performance						
Conversion of D.P. systems	.516 (ns)	.406***	5	2	40.6	.455***
Affiliation of human resources	.739	.450***	8	3	40.1	.518***
Overall integration process	.857	.618***	24	8	29.0	.626***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

6. ANALYSIS AND RESULTS

This chapter describes the set of analyses performed to empirically test the hypotheses submitted in chapter 4. After an initial qualitative report on the major findings from the field study conducted with the help of a pilot group of acquirers, the study of post-acquisition integration decisions is discussed. The results of the analysis of the performance of post-acquisition integration processes are then reported, and the performance of the acquiring firm, in both the short-term (up to three years after the acquisition) and in the long-term is addressed in detail. The final section summarizes the key findings of the study.

6.1 Lessons from the Field: Post-acquisition Management in the Banking Industry

Several patterns were uncovered during the clinical study of post-acquisition integration practices. The most intriguing ones are described to facilitate the evaluation of both the theoretical intuition and the measurement aspects of the research.

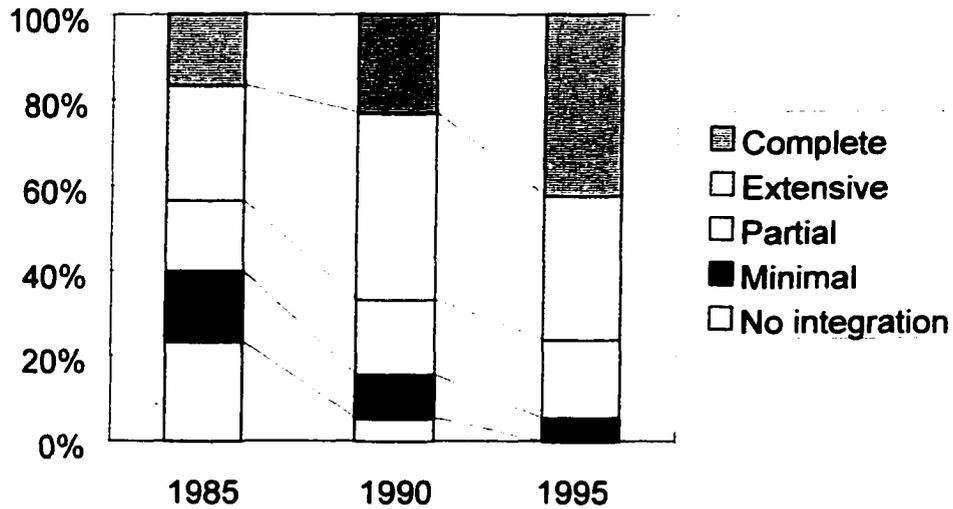
6.1.1 Evolution of Post-acquisition Decisions

The interviews revealed a clear and somewhat surprising pattern of evolution in the management of the post-acquisition integration process. Most acquisitions completed before 1989-1990 were managed in a *low replacement and low integration mode*.

Acquired banks typically were not integrated, information systems were not converted,

the top management team was rarely replaced, and product lines were not standardized. With the S&L crisis and the consequent spate of acquisitions of failed institutions from RTC- or FDIC-led auctions (1989-1992), a different acquisition management mode emerged. A *higher level of replacement* of target management was accompanied by a *low to medium level of integration* (at least in the first phases of the post-acquisition process). The *higher levels of integration*, along with *higher degrees of replacement*, which one would expect given the context (i.e. horizontal transactions), have become the norm only during the last few years. A senior executive in a highly acquisitive bank that was part of the pilot group lamented that when he was hired as a controller (in 1991), 32 different management information systems were used simultaneously in the various divisions and geographic areas controlled by the bank! The bank was at that time in the process of increasing the level of integration to address the incompatibility across previously acquired but scarcely integrated institutions. Other banks reported a similar, if less dramatic, situation at some point in time during their acquisition history. Apparently, the acquiring institutions in the industry went through a rapid change in their approach to the management of their acquisitions. Fig 6.1 shows the evolution of the decision about the degree to which the acquired bank would be integrated within the acquiring organization. It is based on answers to the question posed on page 4 of the Acquiring Bank questionnaire (Exhibit B).

Fig. 6.1 - Evolution of Integration Decisions



Respondents selected one of five scenarios describing the decisions characterizing the degrees of integration with which the acquisitions were managed at three points in time. The proportion of respondents managing bank acquisitions with either no or a minimal level of integration dropped from 40% to 5%, whereas the proportion of those integrating their acquisitions either extensively or completely increased from 42% to 78% of the sample.

6.1.2 Firm Effects.

In addition to the longitudinal effect, wide dispersion of the cross-sectional distribution of post-acquisition integration practices was evident from the interviews. There seemed to be a firm effect in the choice of post-acquisition management approaches. In other words, on a case basis, some banks clearly managed very

comparable transactions in very different ways. Some particularly striking examples of firms with comparable levels of acquisition expertise follow:

Banc One created a highly sophisticated, routinized, and codified integration process. Information systems were converted (but not centralized) and human resources were “affiliated” (extensively trained and socialized), but product lines were not standardized. In addition, a large degree of decisional autonomy was left to the top management team of the acquired entity, which was never replaced and was often “co-opted” to key roles at the corporate level of the acquiring organization. As of 1995, Banc One’s organization chart listed 81 CEOs, and the corporate-wide product line included about 400 different deposit products (20 is considered a reasonable number). Banc One’s process can be characterized as low replacement and medium-level integration.¹⁰

Norwest, in contrast, had an equally routinized and codified process that enabled it to achieve a higher level of integration, with the data processing systems centralized and the product line standardized. The top management team of the target was typically kept in place and actively contributed to the integration process, which was coordinated at the local level with limited supervision from the corporate development team. Norwest’s approach can be characterized as a high level of integration and a low to medium level of replacement of key resources.

NationsBank aimed at similarly high degrees of centralization of information systems and standardization of product lines, but was more aggressive in terms of substituting top managers and keeping a tight control of the integration process from the

¹⁰ Since 1995, Banc One has undertaken an extensive reorganization process to reach a much higher level of integration among all its affiliated banks, centralizing information systems and decision-making

corporate headquarters, with limited decision input from the target's managers. Also, a specialized post-acquisition integration group was permanently placed at corporate headquarters and endowed with high visibility and institutional power. It coordinates all the simultaneous and multi-divisional post-acquisition integration tasks. NationsBank implemented a post-acquisition integration decision characterized by high levels of both integration and replacement of current resources.

One possible explanation for the persistence of varied and idiosyncratic approaches to the management of integration processes lies in the presence of strong path dependencies, which force the routinized replication of decisions almost independently from the variation in contexts. Far from being associated with poor performance, however, routinized behavior is characteristic of the way acquirers with smooth, seemingly highly effective processes operate.

6.1.3 Codification of Post-acquisition Integration Practices

Coupled with strong longitudinal and cross-sectional variation in post-acquisition integration decisions was a similarly strong variation in the extent to which acquiring banks developed specific tools to facilitate the completion of the various simultaneous tasks making up the post-acquisition integration process. A strikingly high level of sophistication was achieved by some of the acquiring firms in their handling of complex tasks, such as the conversion of information systems, the standardization of product lines, and the training and socialization of the workforce. Equally striking, however, was the relatively limited diffusion of those tools even in cases of high acquisition experience.

authority while trying to maintain a strong market presence. The most recent acquisitions have been managed in a significantly different way, according to the new guidelines.

Many relatively experienced acquirers did not develop the most “advanced” manuals and models, and the ones that did develop them waited many years after the first acquisition experiences to do so, and invested heavily with time, money, and energy. One highly experienced participant bank created increasingly complex manuals and computerized tools, over the course of the three years of the study. From the first tools specific to the management of the information systems conversion phase, it developed specialized systems for the management of the human resources affiliation process (monitoring the fate of the acquired workforce on a daily basis). More recently the same acquirer was involved in an attempt to measure and consistently monitor the customer impact of the integration process. Table 6.1 summarizes the diffusion patterns of the acquisition tools in the sample studied with the Phase 1 survey.

Table 6.1 Evolution of the Acquisition Tools

ACQUISITION TOOL	Diffusion in Sample	Year of 1st Creation in Any Bank	Avg. Yrs from Creation of Fin. Evaluation Tool
<i>Selection/Negotiation Process</i>			
Financial evaluation spreadsheets	89.6%	1975	0.00
Due Diligence check-list	91.7%	1976	0.72
Due Diligence manual	39.6%	1986	0.85
<i>Conversion of Info. Systems</i>			
Info systems conversion manual	54.2%	1982	0.74
Info systems training manual	45.8%	1982	0.37
<i>Human Resources Integration</i>			
Affiliation/integration manual	41.7%	1986	1.53
Branch staffing models	50.0%	1985	2.05
Training/Self-training packages	41.7%	1985	2.29
<i>Sales/Product Integration</i>			
Products training manual	54.2%	1980	0.71
Product mapping models	52.1%	1982	1.27
<i>Project management packages</i>	50.0%	1976	2.00

The columns report the frequency of observation of the tools in the sample, the year in which each tool was created for the first time by a bank in the sample, and the average number of years between the creation of financial evaluation models (typically the most basic M&A tool) and the creation of each integration tool. Acquirers in the banking industry appear to have evolved their post-acquisition integration practices by developing increasingly complex tools. From simple due diligence check-lists, some acquirers created due diligence and post-acquisition integration manuals (for the conversion of information systems, the affiliation of human resources, and various training purposes). From basic evaluation spreadsheets, some acquirers developed entire information systems that enable them to make informed decisions on product standardization and branch staffing, and to closely monitor their implementation. Particularly striking is the difference in the diffusion rate of due diligence support tools: whereas 91.7% of acquirers developed due diligence check lists (codifying the “know-what”), only 39.6% evolved into a higher level of codification by developing due diligence manuals (incorporating the “know-how”).

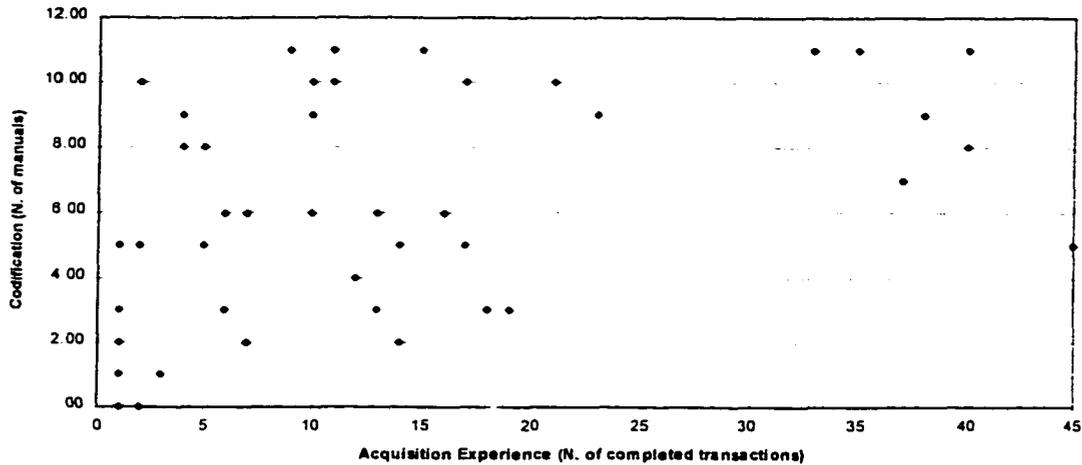
With respect to the evolutionary dynamics of the post-acquisition integration capability, section 4.2.3 advanced a model that calls for development of practices to achieve cost efficiency (the “low-hanging fruits”), and then practices to achieve revenue enhancement goals. Preliminary support for the hypothesized evolutionary pattern is shown in Table 6.1, where the sales/product integration tools and the human resources integration tools, which protect and enhance the generation of new business, are typically created *after* the systems conversion tools, which are chiefly intended to achieve cost

efficiencies by eliminating the data processing support structure and part of the back-office.

The preliminary observations suggest that explanations based on the characteristics of the transaction, such as the degree of relatedness between the two organizations and the quality of the resources of the acquired bank, cannot address the observed patterns. Managerial approaches to essentially the same type of task (integrating an acquired bank) varied widely across periods and seemed to maintain stable cross-sectional differences among acquirers. The deregulation process, so relevant in many aspects of the banking industry, cannot shed light on that phenomenon, as regulatory authorities limit their role to the authorization of the acquisitive event and do not have any say in post-acquisition management decisions. The liberalization of interstate banking and the greater relevance of “out-market” as opposed to “in-market” acquisitions might have led to lower rather than higher predicted levels of integration because of the lower degree of resource relatedness.

Another important observation is that the longitudinal process of codification was only partially related to the accumulation of tacit experiential knowledge. As shown in Figure 6.2, firms with comparable levels of acquisition experience reached significantly different degrees of codification, and some firms with only a few acquisition experiences produced manuals and other support tools comparable to those of firms with several times the number of experienced events. Though statistically significant (Pearson's correlation = .305, $p < 5\%$), the correlation between codification and accumulated acquisition experience is less strong than expected.

Fig. 6.2 - Codification & Acquisition Experience



6.2 Post-Acquisition Decisions

Hypotheses H1 through H8 were tested with two logistic regressions. The two dependent variables, level of replacement and degree of integration, have very skewed distributions. The former follows a bimodal distribution with more than 80% of the frequency on the extreme values (either complete or no replacement of the top management team). The latter loads heavily on the higher values as the target was either highly or completely integrated within the acquiring institution in 75% of the acquisitions recorded.

As a result of the skewness of the dependent variables, regressions could be run with the complete scale (acknowledging the possible effects of skewness) or the dependent variables could be dichotomized and logistic regressions run without a significant loss of information. The logistic regressions, which are appropriate when the dependent variable is dichotomous, are reported, although the substantive results do not change when the full scales for replacement and integration are used and OLS regressions

are run. The original four-category definition of the degree of replacement and of the level of integration was converted into a dummy variable where the value 1 was assigned “complete replacement” and “complete integration”, and the value 0 was assigned in all other cases.

The means, standard deviations, and binary correlations of the variables used in the logistic regression models are reported in Table 6.2. The controls used are relatively self-explanatory and the measures refer to the guidelines provided in Chapter 5.

A five-stage model is reported for each of the two equations. Whereas stage 1 presents the control variables forming a “baseline” explanation, stage 2 introduces the two resource-based variables. Stage 3 then adds the degree of codification of the integration process, and Stage 4 includes the generalized and the two specialized experience trajectories built from the count of out-market and “bad-bank” acquisitions completed by the same acquirer. Finally, Stage 5 introduces the more direct proxy for routinization of the decision process provided by the decision score (non-dichotomized) registered for the third acquisition preceding the one analyzed. The number of previous acquisitions considered in constructing the measure is random; analyses replicating this proxy that use the fifth and the first acquisitions before the current one yield no significant differences in the magnitude and sign of the coefficients reported. Values in parentheses are a measure of the explanatory power of the single covariate, whereas the reported chi-square test measures the statistical significance of the variation in fit obtained by adding the new group of factors to the preceding stage.

The logistic regression model for the level of integration (Table 6.3) provides evidence in favor of both the resource-based and the knowledge-based explanations.

Models 2, 3, 4, and 5 significantly improve the fit with respect to the block of control variables and the preceding nested models. In particular, the degree of resource relatedness is associated positively with the probability of high integration, as predicted in H1, whereas the quality of resources is tied significantly and negatively to the level of integration (H2). The higher the degree of relatedness and the lower the quality of the resource endowment of the target firm, the higher the probability that the acquiring firm will decide to integrate the acquisition completely.

The impact of the development of a codified practice (the level of knowledge codification, H3) on the decision to integrate the acquired firm is positive and statistically significant. In addition, the rough but explicit approximation of the degree of knowledge accumulation provides a significant improvement in the fit of the model with the data ($\chi^2 = 10.05$ with 1 d.f.) and an improvement in its predictive capacity (from 81.16% to 83.7% correct predictions).

The degree of tacit routinization of the integration practice seems to be at least as important as the resource characteristics and the codified knowledge accumulation mechanisms in explaining the variation in the decision to integrate. The generalized experience trajectory and one of the two specialized ones (the number of out-market acquisitions previously completed) significantly affect the level of integration, but the routinized replication of past decisions has the strongest explanatory power of all the predictors included in the model ($R = 0.27$, $p < .000$). Past experiences, therefore, matter not only because they change future behavior (i.e. more experienced banks integrate more, banks with more out-market acquisitions integrate less), but also because once a certain decisional approach is chosen, the same decision tends to be repeated even in

contexts reasonably different from the original one. H4 is therefore strongly supported both for the more general operationalization based on path-dependent roles of experience trajectories and for the more specific measurement based on the degree of replication of past decisions.

The logistic regression model for the degree of replacement of the top management team (Table 6.4) also shows very good fit with the data at every step of the analysis. The effect of the quality of pre-acquisition resources in the acquired organization is strongly significant and related negatively to the replacement decision, as expected (H5). Interestingly, the degree of relatedness is also strongly and positively correlated with the replacement of the top management team (H6). Consistent with Cannella and Hambrick's (1993) findings, top management teams in highly related acquisitions are replaced with higher probability. Both the resource relatedness and the resource quality effects hold true irrespective of the inclusion of knowledge-based explanations.

The effects of the knowledge-accumulation mechanisms, however, are remarkably strong and equally important. The introduction of those variables improves the fit with the data and the predictive power of the model (from 76.8% to 83.0% correct predictions). More specifically, the degree of codification plays an important role in predicting a higher probability of replacement, supporting H7. The tacit knowledge accumulation mechanisms, however, result in even greater explanatory power (H8). Interestingly, the replication effect cancels the impact of the experience trajectories, and is the single strongest predictor of the decision to replace the top management team ($R =$

.38). Its introduction in the logistic regression model not only increases the fit ($\chi^2 = 45.17, 1 \text{ d.f.}$), but also improves the predictive power of the model by four full percentage points (from 79.7% to 84.0%).

Thus, in both decisions analyzed, the magnitude and the type of knowledge accumulated from previous acquisition experiences appear to be important predictors of the post-acquisition integration strategy selected by the acquiring firm. In particular, the tacit knowledge accumulation patterns are related more to the replication of past decisions (routinization) than to the type of acquisition experiences of the acquiring firm (path-dependence).

Table 6.2 -CORRELATION MATRIX-

	VARIABLE S	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Level of integration	.718	.450														
2	Degree of replacement	.448	.498	.372 ***													
3	Rel. acq. size	3.96 E+2	4.49 E+3	.028	-.049												
4	Acquirer's size	2.16 E+4	4.07 E+5	.020	-.051	-.005											
5	Acquirer's ROA	.912	.374	-.211 ***	-.139 ***	.019	.046										
6	Acquirer's eff. Ratio	44.2	8.31	.202 ***	-.061	-.010	-.046	-.129 ***									
7	Post-deregulation	.671	.470	.229 ***	.096 **	.042	.026	.071	.423 ***								
8	Resource relatedness	.62	.48	.421 ***	.352 ***	-.014	.035	-.148 ***	.221 ***	.211 ***							
9	Resource quality	-3.5 E-2	1.08	-.253 ***	-.290 ***	-.042	.098 **	.351 ***	-.016	-.031	-.207 ***						
10	Knowledge codification	.671	.421	.183 ***	.096 **	.065	.035	.282 ***	.124 **	.671 ***	.049	.126 ***					
11	Total N of acquisitions	11.2	1.02 E+1	.135 ***	.053	-.017	.120 ***	.238 ***	.145 ***	.303 ***	.167 ***	.037	.391 ***				
12	N of out-market acq.	4.99	5.57	-.148 ***	.011	-.175 ***	-.021	.264 ***	-.065	.104 **	-.036	.050	.222 ***	.714 ***			
13	N of "Bad banks" acq.	2.38	2.97	.275 ***	.179 ***	-.032	-.033	.201 ***	.207 ***	.495 ***	.213 ***	-.074	.446 ***	.622 ***	.252 ***		
14	Integration 3 acq. Before	2.56	.84	.475 ***	.116 **	.026	.022	-.089 *	.235 ***	.174 ***	.201 ***	-.062	.216 ***	.103 **	-.196 ***	.240 ***	
15	Replacement 3 acq. Before	1.68	1.30	.258 ***	.258 ***	.011	.045	-.042	-.084 *	.202 ***	.152 ***	-.130 **	.181 ***	.017	-.142 ***	.291 ***	.319 ***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level.

Table 6.3 -LOGISTIC REGRESSION MODELS-

Dependent Variable: LEVEL OF INTEGRATION

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Relative acquisition size	-.06(-.09)**	-.05(.07)*	-.06(.08)*	-.11(-.24)***	-.11(-.24)***
Acquirer's size	4.36E-07	4.14E-07	4.00E-7	-9.9E-8	1.53E-8
Acquirer's ROA	-1.83(-.14)***	-1.28(-.09)**	-1.73(-.13)**	-1.63(-.1)**	-1.15
Acquirer's efficiency ratio	.12(.20)***	.09(.15)***	.09(.14)***	.03	.03
Post-deregulation year	.01	.05	-.63	-1.23(-.06)*	-.66
Degree of replacement	1.99(.29)***	1.30(.19)***	1.14(.16)***	.84(.08)*	1.25(.15)**
Resource-Based Factors					
Resource relatedness		1.20(.19)***	1.32(.21)***	1.08(.13)**	.96(.11)**
Resource quality		-.41(.11)*	-.51(-.15)***	-.56(-.16)***	-.62(-.18)***
Knowledge Codification			1.94(.19)***	2.13(.20)***	1.66(.14)**
Experience Trajectories					
Total N of acquisitions				.18(.18)***	.13(.11)**
N of Out-mkt acquisitions				-.33(-.27)***	-.25(-.19)***
N of "Bad banks" acq.				.19(.07)*	.18(.04)
Routinization					
Integration 3 acq. Before					1.04(.27)***
Chi-square Improvement	76.73***	15.96***	10.05***	39.15***	18.62***
% Correct	80.43	81.16	83.70	86.96	88.41
N	276	276	276	276	276

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Beta coefficients (R in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

Table 6.4 -LOGISTIC REGRESSION MODELS-

Dependent Variable: DEGREE OF REPLACEMENT

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Relative acquisition size	-.02	-.0005	-.0016	-.01	-.03
Acquirer's size	-9.9E-5	-8.5E-5	-9.6E-5	-.0001	-1.0E-6
Acquirer's ROA	-.23	.41	.18	-.19	-.35
Acquirer's efficiency ratio	-.13(-.24)***	-.16(-.31)***	-.17(-.33)***	-.15(-.25)***	-.15(-.22)***
Post-deregulation year	.85(.05)*	.87(.05)*	.42	-.06	-.43
Level of integration	2.25(.24)***	2.04(.22)***	1.9(.21)***	1.71(.20)***	1.91(.23)***
Resource-Based Factors					
Resource relatedness		1.59(.23)***	1.65(.25)***	1.59(.23)***	1.9(.26)***
Resource quality		-.46(-.15)***	-.60(-.19)***	-.54(-.17)***	-.65(-.18)***
Knowledge Codification			1.33(.11)**	1.24(.09)**	1.32(.08)**
Experience Trajectories					
Total N of acquisitions				-.04	-.0002
N of Out-mkt acquisitions				.11(.08)**	.07
N of "Failed" acquisitions				.15(.08)**	.03
Routinization					
Replacement 3 acq. Before					.99(.38)***
Chi-square Improvement	89.64***	30.25***	5.60**	9.22**	45.17***
% Correct	72.10	76.81	77.17	79.71	82.97
N	276	276	276	276	276

Beta coefficients (R in parentheses). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

6.3 Acquisition Performance

Having explored the effect of resource-based and knowledge-based explanations on the type of post-acquisition decision-making behavior exhibited by the acquiring firm in the sample studied, we can proceed with the analysis of the performance of acquisition processes. Table 6.5 summarizes the hypotheses from section 4.2 and the theoretical rationale behind each of them.

Table 6.5 - Hypotheses and Theoretical Arguments

EXPLANATIONS	THEORY	Hp.	Expected Sign
Resource-Based			
Resource relatedness	Related diversification	H9	+
Resource quality	Resource deployment	H10	+
Post-Acq. Decisions			
Integration	Structural inertia, complexity	H11a	-
	Cost efficiencies and revenue enhancements	H11b	+
Replacement of TMT	Structural inertia	H12a	-
	Agency theory	H12b	+
Knowledge-Based			
Knowledge Codification	Learning and cognition	H13	+
Tacit Experience Accumulation (local)	Tacit learning	H14	+
Codification x Integration	Learning and cognition with high structural complexity	H15	+

The set of analyses proposed was more complex than that performed for the integration decisions for several reasons.

- 1) The models estimated were inherently more complex in that they included the effect of the integration decisions as determinants of the performance level. Of particular interest was the appraisal of whether and how those decisions interact with the knowledge-based capability construct to influence the performance outcomes.

- 2) The dependent variable, acquisition performance, assumes different meanings and is subject to different measurements depending on what part of the acquisition process is considered. In the study, performance assessments of the post-acquisition integration phase were treated separately from the accounting measures that incorporated information on the entire scope of the acquisition process. The analysis of the former performance construct is described in section 6.3.1, the analysis of the latter is described in section 6.3.2.
- 3) The robustness of the results obtained had to be addressed by replicating the analysis under different conditions. The main variations, for which results are reported and discussed were:
 - a) Aggregation of multiple observations in the same year (section 6.3.2.2) to improve the consistency between the measurement of the explanatory variables, which vary for each acquisition, and the accounting measure of the dependent variable, which varies only for each year.
 - b) Aggregation of the observations to the firm level of analysis (section 6.4) to control for the firm effects observed in the field study. Consistency of results at different levels of analysis would be evidence that they are not driven by a systematic bias in the characteristic of the acquiring firm.
 - c) Adoption of a different time lag in the measurement of the dependent variable (change in ROA two years or three years after the acquisition vs. the year before) to provide additional support for the stability of the results.

The discussion of the results is therefore divided into several parts. The first addresses the performance of the post-acquisition integration process, subjectively assessed with

the use of three process indicators (section 6.3.1). Then, the performance of the entire acquisition process is examined by considering the change in the acquiring firm's accounting measures of performance (section 6.3.2). Finally, a set of variations around the basic analysis of acquisition performance is presented to address some of its quantitative weaknesses and to attempt to satisfy the demands for robustness (sections 6.3.2.2 and 6.4).

6.3.1 The Performance of the Post-acquisition Integration Process

The means, standard deviations, and Pearson's correlations of the variables used in analyzing the performance of the post-acquisition integration process and the overall acquisition are presented in Table 6.6. Tables 6.7 and 6.8 give the results of an OLS regression analysis of the performance of the post-acquisition integration process measured in two different ways. The first used a linear combination of the three performance indicators measured with the Phase 1 survey (for the performance of the human resources affiliation, the information systems conversion, and the overall integration process; see Exhibit A and section 5.3.1) extracted with a factor analysis. The second performance measure was simply the performance assessment of the overall integration process, which was one of the three indicators used in the factor analysis.

The three performance indicators load on a single factor, extracted with a linear regression method and no rotation (eigenvalue = 1.75, loadings varying from .72 to .79), accounting for 58.4% of the variance. As the performance indicators were measured by benchmarking the assessments with respect to all other acquisitions completed by the same acquirer, the quality of the assessment is only as good as the magnitude of

experience accumulated by the respondent. Observations by acquirers with fewer than four acquisition experiences therefore were not included in the analysis.

Five variations of the basic model are reported, in which the acquisition experience variable assumes the value of (1) generalized experience (total number of acquisitions completed before the one under consideration), (2) specialized experience in in-market (highly related, or horizontal) transactions, (3) specialized experience in out-market transactions, (4) specialized experience in good asset quality banks and (5) specialized experience in bad asset quality banks.

The baseline model, which includes the control variables, against which the results of the analyses should be judged, provides the following results.

VARIABLE	Performance = Factor score	Performance = Single indicator
Acquirer's size	.0014(.003)	.0020(.002)
Transaction size (% of buyer's assets)	.0095(.005)**	.0144(.004)***
# of M&As in year 0	-.0033(.025)	.0163(.018)
F-test	1.532	4.317***
Adjusted R-squared	.005	.027
d.f. residual	321	357

Beta coefficients (std dev in parenthesis). Significant at the 0.01 (***) and 0.05(**) level

The two models in Tables 6.7 and 6.8 improve the fit with respect to the control factors. The adjusted R^2 statistic rises to around 9% in the factor scores specification and to 6.4% in the single indicator model. In terms of the explanatory power of the individual variables, the two sets of analyses assign a primary explanatory role to the post-acquisition integration decisions adopted by the acquiring firm. In particular, the performance of the integration process measured with the linear combination of the three

indicators is associated positively with the level of integration and negatively with the degree of replacement of the top management team. The resource variables' effect on integration performance is much weaker; neither resource relatedness nor resource quality has statistically significant coefficients. The relative explanatory power of pre- and post-acquisition conditions partially changes with the single indicator specification of integration performance. The coefficient of the level of integration loses its statistical significance, whereas the degree of resource relatedness assumes a positive and significant role in determining the performance assessment of the overall integration process.

The knowledge variables have a positive impact in their codified version, particularly with the single indicator performance measure. The tacit accumulation of experience, however, does not seem to have any significant impact in any of its generalized and specialized specifications.

Those regression results are especially interesting when examined in light of the binomial correlation analysis in Table 6.6. The quality of pre-acquisition resources in the target company appears to be correlated with higher performance if we do not take into account the effect of post-acquisition replacement decisions. The reason higher quality targets might appear to turn into more profitable acquisitions is that they tend to be managed with a lower level of replacement of key resources. This is a good example of how deceiving our conclusions can be if we do not consider carefully the role of post-acquisition integration decisions.

Another important observation can be made by comparing the correlation coefficients between the post-acquisition integration performance measures and the

independent variables with those of the acquisition performance accounting measure, as shown in Table 6.6 (columns 1 to 4). First, the performance of the post-acquisition integration process seems to be correlated only weakly with the performance of the entire acquisition process. Of the three performance indicators, only the one related to the human resources affiliation process is correlated significantly with overall accounting performance ($p < .05$). In addition, the resource-based and knowledge-based explanatory factors show a much stronger association with overall performance than the one found with the analysis of post-acquisition integration performance. The quality of the target's resources, in particular, has an opposite (i.e. negative) and significant effect on overall performance.

The following points can be made from the analysis:

1. Subjective assessment of the performance of post-acquisition integration processes, though indicative of broad trends in the types of explanations offered (e.g. post-acquisition decisions vs. pre-acquisition resources), must be evaluated in the context of its inherent limitations:
 - a) It provides only a relative assessment of the performance of the integration process, as compared with all the other experiences of the same acquirer. Therefore, it should not be expected to correlate strongly with an absolute measure of performance, such as one based on accounting measures.
 - b) In particular, acquisition experience effects are weakened by the necessary exclusion of inexperienced acquirers and should be re-examined with an absolute performance measure, as reported in the next section.

- c) The analysis is highly dependent on the quality of the respondents' awareness of the consequence of their integration processes. The answers to the Acquiring Bank questionnaire (page 5, Exhibit B) suggest that the degree to which acquirers in the data set monitored the performance of their integration process, though probably higher than in most other industries, was lower than one might expect. The percentage of acquirers that consistently monitored process performance is around 35% and does not exceed 50% even for the most basic financial performance metrics.
2. The "soft" parts of the integration process, involving the integration of human resources and the management of eventual cultural clashes, are the most sensitive elements of the performance of the integration process, as shown by the magnitude of the correlation with the accounting measure. That finding contrasts with the weak association between the "harder" sub-processes of the post-acquisition integration phase, such as the conversion of information systems, and might be viewed as a relatively surprising result because of the emphasis given to the conversion of information systems by the acquirers in the banking industry.
3. Post-acquisition integration decisions are crucial to our understanding of the performance of post-acquisition integration processes. In particular, the potential for the exploitation of economies of scale and scope seems to be a stronger (positive) effect than the (negative) effects of structural inertia and decisional complexity, lending support to H11b as opposed to H11a. Conversely, structural inertia seems to be a stronger (negative) predictor of performance than arguments

derived from agency theory regarding the benefits of substituting the top management team would predict (supporting H12a, as opposed to H12b).

The analysis in the next session verifies those preliminary indications with the benefit of a performance measure that not only incorporates the effects of all phases of the acquisition process, but also provides an absolute criterion applicable to observations across different acquiring firms.

Table 6.6 - CORRELATION MATRIX -ACQUISITION PERFORMANCE-

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Acquisition Perf. Ch. In ROA (3 yrs)	.0284	.725														
2	Post-acq. Integrat Perf. (factor sc.)	0.000	1.00	.107*													
3	Performance of integration process	.659	.946	.050	.721***												
4	Performance of HR affiliation	.807	.988	.160**	.789***	.355***											
5	Perf. of systems conversion	.831	.878	-.023	.782***	.334***	.461***										
6	Res. Relatedness (In-market acq.)	.62	.48	.168***	-.015	.033	-.124**	.016									
7	Resource quality	-.0354	1.08	-.111*	.135***	.119**	.172***	.083*	-.207***								
8	Integration	2.639	.697	.238***	.019	.002	-.083*	.065	.398***	-.221***							
9	Replacement	1.77	1.27	-.229***	-.217***	-.119**	-.310***	-.018	.357***	-.318***	.415***						
10	Stage of manuals development	.671	.421	.139**	-.015	.026	-.052	.036	.049	.126***	.161***	.050					
11	General M&A experience	11.20	10.16	.036	.011	.093*	-.075	.050	.167***	.037	.116**	-.053	.391***				
12	Experience in in-mkt M&A	5.955	6.802	.453***	-.055	.054	-.118**	.024	.257***	-.021	.192***	.013	.401***	.811***			
13	Experience out-mkt M&A	4.996	5.571	-.097	.033	.056	-.046	.076	-.036	.050	-.074	-.114**	.222***	.714***	.321***		
14	Exp. in good asset quality banks	8.580	8.728	.158**	-.018	.069	-.088*	.053	.107**	.037	.050	-.151***	.319***	.888***	.744***	.813***	
15	Experience in bad asset quality banks	2.383	2.976	.315***	.015	.047	-.059	.040	.213***	-.074	.199***	.152***	.446***	.622***	.769***	.252***	.457***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

**Table 6.7 - OLS REGRESSION -
Dependent Variable: INTEGRATION PERFORMANCE (Factor Score)**

VARIABLE	GENERAL	Specialized By Geography		Specialized by Asset Quality	
	EXPERIENCE	In-Market	Out-Market	Good Quality	Bad Quality
	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Relative acquisition size	.13(.01)**	.13(.01)**	.13(.01)**	.12(.01)**	.12(.01)**
Acquirer's size	.05	.05	.05	.05	.05
# of M&As in year 0	-.11(.03)*	-.06(.03)	-.12(.03)*	-.10(.03)*	-.17(.03)**
Resource-Based Factors					
Resource relatedness	.06(.14)	.07(.14)	.06(.14)	.06(.14)	.06(.14)
Resource quality	.07(.05)	.08(.05)	.07(.05)	.07(.05)	.07(.05)
Post-acquisition Decisions					
Level of integration	.23(.12)***	.23(.12)***	.23(.12)***	.23(.12)***	.23(.12)***
Degree of Replacement	-.27(.06)***	-.26(.06)***	-.28(.06)***	-.27(.06)***	-.31(.06)***
Integration Capabilities					
Knowledge Codification	.11(.02)*	.12(.02)*	.1(.02)*	.12(.02)*	.08(.02)
Experience Trajectories	-.02(.01)	-.08(.01)	.02(.01)	-.04(.01)	.1(.02)
F test	3.986***	4.098***	3.986***	4.025***	4.180***
Adjusted R-squared	.087	.090	.087	.088	.092
d.f. residual	281	281	281	281	281

Beta coefficients (std dev in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

Table 6.8 - OLS REGRESSION -
Dependent Variable: INTEGRATION PERFORMANCE (single indicator)

VARIABLE	GENERAL	Specialized By Geography		Specialized by Asset Quality	
	EXPERIENCE	In-Market	Out-Market	Good Quality	Bad Quality
	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Relative acquisition size	.21(.01)***	.20(.01)***	.21(.01)***	.21(.01)***	.20(.01)***
Acquirer's size	.04	.05	.05	.05	.05
# of M&As in year 0	-.13(.02)*	-.06(.03)	-.10(.02)*	-.13(.02)*	-.11(.02)
Resource-Based Factors					
Resource relatedness	.13(.12)**	.13(.12)**	.13(.12)**	.13(.12)**	.13(.12)**
Resource quality	.01(.05)	.01(.05)	.01(.05)	.01(.05)	.01(.05)
Post-acquisition Decisions					
Level of integration	.09(.08)	.08(.08)	.09(.08)	.09(.09)	.08(.08)
Degree of Replacement	-.17(.05)***	-.16(.05)**	-.17(.05)***	-.17(.05)***	-.17(.05)**
Integration Capabilities					
Knowledge Codification	.16(.02)***	.18(.02)***	.16(.02)***	.017(.02)***	.17(.02)***
Experience Trajectories	.05(.01)	-.06(.01)	.04(.01)	.04(.01)	.01(.02)
F test	3.376***	3.369***	3.392***	3.373***	3.33***
Adjusted R-squared	.064	.064	.064	.064	.063
d.f. residual	314	314	314	314	314

Beta coefficients (std dev in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

6.3.2 Acquisition Performance

In this section the performance model was tested by considering the entire acquisition process, rather than the post-acquisition integration phase only. The main difference consists in adopting, as measure of performance, the change in ROA of the acquiring firm between the year before the acquisition and three years after the year of the acquisition. That four-year time span is normally considered to be large enough to incorporate all relevant effects of the post-acquisition phase, and small enough to avoid excessive dilution of the main effects by exogenous events. Performance variations of the entire acquiring firm offer also the advantage to incorporate eventual dilutive effects consequent to excessive deviations between the purchase price and the accounting value of the acquired assets. Finally, as described in Chapter 5, the measure of acquisition performance controlled for both industry-level and local-level variations in ROA.

The main analysis (section 6.3.2.1), performed at the transaction level of analysis, was replicated by aggregating the multiple observations from the same year (section 6.3.2.2) and then again aggregating all observations for the same acquiring firm (section 6.4). In the process, the robustness of the model was tested with different specifications of both the dependent variable and the explanatory ones.

6.3.2.1 Transaction Level of Analysis

A. Standard Model - Table 6.9 reports the results of an OLS regression analysis, which was analogous to the one done for the performance of the post-acquisition integration process. Again the five models differed in terms of the specification of the acquisition experience trajectory.

Table 6.9 - OLS REGRESSION - (Acquisition Level of Analysis)
Dependent Variable: CHANGE IN ROA (3 years post- vs. 1 year pre-acquisition)

VARIABLE	GENERAL	Specialized By Geography		Specialized by Asset Quality	
	EXPERIENCE	In-Market	Out-Market	Good Quality	Bad Quality
	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Relative acquisition size	.143(.004)***	.142(.004)***	.127(.004)**	.145(.004)***	.135(.004)**
Acquirer's size	-.236(.000)***	-.18(.000)***	-.179(.000)**	-.244(.000)***	-.206(.000)***
# of M&As in year 0	.465(.023)***	.371(.025)***	.487(.023)***	.465(.023)***	.473(.024)***
Resource-Based Factors					
Resource relatedness	.072(.095)	.053(.093)	.083(.095)	.070(.095)	.077(.095)
Resource quality	-.127(.037)**	-.108(.036)*	-.137(.037)**	-.130(.037)**	-.127(.038)**
Post-acquisition Decisions					
Level of integration	.20(.079)***	.198(.077)***	.181(.080)***	.203(.079)***	.192(.079)***
Degree of Replacement	-.295(.04)***	-.306(.039)***	-.279(.040)***	-.292(.04)***	-.291(.04)***
Integration Capability					
Knowledge Codification	.085(.014)	.035(.014)	.116(.013)*	.086(.013)	.094(.014)
Experience Trajectories	.076(.006)	.224(.011)***	-.066(.009)	.089(.006)	.035(.023)
F test	20.414***	22.256***	22.256***	20.521***	20.198***
Adjusted R-squared	.473	.497	.497	.474	.470
d.f. residual	195	194	194	195	195

Beta coefficients (std dev in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

In addition to using the overall magnitude of the adjusted R^2 and the F-test statistics, the model fits can be assessed by comparing them with a “baseline” model comprising only the control variables, which provides the following results.

CONTROL VARIABLE	OLS Regression of Change in ROA
Acquirer's size	.0031(.002)*
Transaction size (% of buyer's assets)	.0033(.004)
# of M&As in year 0	.139(.017)***
F-test	30.168***
Adjusted R-squared	26.1%
d.f. residual	245

Beta coefficients (std dev in parenthesis). Significant at the 0.01 (***) and 0.10(*) level

The F-statistics in Table 6.9 remain at highly significant levels, while the adjusted R^2 rises from 26% to values ranging from 47% to 49.7% for the complete models.

In terms of the impact of the individual variables on acquisition performance, the most striking similarity with the analysis of the post-acquisition integration process is in the coefficients of the integration decisions, which are replicated in both their sign and their (statistically significant) magnitude. The level of integration remains a positive factor in determining the performance of the overall acquisition process, whereas the degree to which the top management team is replaced is associated negatively with acquisition performance.

The effect of the pre-acquisition resources is somewhat stronger than that found in the previous analysis, but is still probably weaker than expected, particularly in comparison with the relevance of the post-acquisition decisions. The degree of resource relatedness, though showing the expected positive sign, is not associated significantly with performance, failing to support H9. The quality of the assets of the acquired bank is

associated negatively and significantly with performance, providing empirical support for the superiority of the resource deployment value creation mechanism as opposed to the “inverse learning” one (i.e., H10 is supported).

The effect of the knowledge-based measures approximating the integration capability construct is less straightforward. Knowledge codification, which was weakly but significantly correlated with the performance of the integration process, is now a non significant but still positive factor, failing to support H13. In contrast, experience trajectory specialized in highly related (horizontal) acquisitions shows a very strong positive effect on acquisition performance, supporting H14. Hence, acquirers seem to learn by tacitly accumulating the wisdom generated by being exposed to a large number of transactions, but only if those transactions are highly related to each other. Consistent with the work of Haleblan (1997; Haleblan & Flinkelstein, 1997), knowledge from previous acquisition experiences applied to unrelated domains is subject to strong transfer costs. Additional support for that point might be found in the negative (though non-significant), coefficient of the accumulation of out-market acquisition experience.

B. Interaction Effects - To probe these results further, the interaction effects between the integration decisions and the knowledge accumulation mechanisms were introduced into the standard model. The standardized proxies (z-scores) of the post-acquisition decisions and the knowledge measures were used to model the interaction effects so that multicollinearity problems could be avoided. With that adjustment, the variance inflation factor for all variables in the models was held below 3.5 (values up to 10 are typically

considered highly satisfactory). In addition, the tolerance factor was never below 30%, indicating that every variable entered into the model was non-redundant.

The results are reported in Tables 6.10, 6.11, and 6.12. The consequences of the refinement are surprisingly strong. The impact of the main effects, in terms of pre-acquisition resources, post-acquisition decisions, and knowledge accumulation, does not vary substantively from that in the standard model but the introduction of the interaction variables results in a better overall fit of the model with the data and a much more relevant and varied role for the knowledge accumulation mechanisms.

In terms of overall fit, the adjusted R^2 statistics rise above 50% (up to 58.5% in the case of in-market acquisition experience) with the introduction of the new set of explanatory variables. Because of the type and magnitude of their effects, the four interaction terms warrant closer scrutiny.

Table 6.10 - GENERAL ACQUISITION EXPERIENCE -
Dependent Variable: CHANGE IN ROA (3 years post- vs. 1 year pre-acquisition)

VARIABLE	Model 1	Model 2	Model 3
Controls			
Relative acquisition size	.143(.004)***	.004(.004)	.005(.004)
Acquirer's size	-.236(.000)***	-.001(.002)	-.002(.002)
# of M&As in year 0	.465(.023)***	.141(.025)***	.128(.026)***
Resource-Based Factors			
Resource relatedness	.072(.095)	.106(.094)	.101(.094)
Resource quality	-.127(.037)**	-.095(.036)***	-.101(.036)***
Post-acquisition Decisions			
Level of integration	.20(.079)***	.356(.080)***	.377(.083)***
Degree of Replacement	-.295(.04)***	-.133(.042)***	-.142(.042)***
Integration Capability			
Knowledge Codification	.085(.014)		.063(.103)
Acquisition Experience	.076(.006)		.007(.006)
Interaction Effects			
Codification X Integration		.200(.058)***	.207(.061)***
Codification X Replacement		-.126(.050)***	-.121(.050)**
Experience X Replacement		-.119(.057)**	-.141(.058)**
Experience X Integration		.111(.075)	.114(.078)
F test	20.414***	19.014***	16.319***
Adjusted R-squared	.473	.505	.507
d.f. residual	195	194	194

Beta coefficients (std. deviation in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

Table 6.11 - SPECIALIZED EXPERIENCE by Geographic Relatedness
Dependent Variable: CHANGE IN ROA (3 years post- vs. 1 year pre-acquisition)

VARIABLE	IN-MARKET ACQ. EXPERIENCE			OUT-MARKET ACQ. EXPERIENCE		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Controls						
Relative acquisition size	.142(.004)***	.003(.004)	.005(.004)	.127(.004)**	.006(.004)	.005(.004)
Acquirer's size	-.18(.000)***	.000(.002)	-.003(.002)	-.179(.000)**	-.001(.002)	-.000(.003)
# of M&As in year 0	.371(.025)***	.094(.028)***	.063(.028)**	.487(.023)***	.166(.025)***	.161(.025)***
Resource-Based Factors						
Resource relatedness	.053(.093)	.093(.089)	.050(.086)	.083(.095)	.071(.096)	.075(.096)
Resource quality	-.108(.036)*	-.091(.034)***	-.085(.033)***	-.137(.037)**	-.089(.036)**	-.093(.037)***
Post-acquisition Decisions						
Level of integration	.198(.077)***	.332(.079)***	.303(.076)***	.181(.080)***	.309(.083)***	.265(.088)***
Degree of Replacement	-.306(.039)***	-.172(.040)***	-.191(.039)***	-.279(.040)***	-.108(.014)***	-.111(.041)***
Integration Capability						
Knowledge Codification	.035(.014)		-.001(.095)	.116(.013)*		.089(.102)
Acquisition Experience	.224(.011)***		.043(.011)***	-.066(.009)		-.010(.007)
Interaction Effects						
Codification X Integration		.187(.058)***	.212(.057)***		.215(.053)***	.190(.056)***
Codification X Replacement		-.054(.050)	-.058(.049)		-.150(.049)***	-.144(.049)***
Experience X Replacement		-.298(.062)***	-.279(.060)***		.030(.049)	.026(.050)
Experience X Integration		.080(.091)	-.024(.093)		.007(.072)	.023(.074)
F test	22.256***	22.468***	21.917***	22.256***	18.237***	15.656***
Adjusted R-squared	.497	.576	.585	.497	.496	.497
d.f. residual	194	193	193	194	193	193

Beta coefficients (std. deviation in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

Table 6.12 - SPECIALIZED EXPERIENCE by Asset Quality of Targets
Dependent Variable: CHANGE IN ROA (3 years post- vs. 1 year pre-acquisition)

VARIABLE	GOOD ASSET QUALITY ACQ. EXP.			BAD ASSET QUALITY ACQ. EXPERIENCE		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Controls						
Relative acquisition size	.145(.004)***	.003(.004)	.004(.004)	.135(.004)**	.005(.004)	.005(.004)
Acquirer's size	-.244(.000)***	-.001(.002)	-.001(.002)	-.206(.000)***	.000(.002)	-.000(.002)
# of M&As in year 0	.465(.023)***	.137(.025)***	.128(.026)***	.473(.024)***	.133(.025)***	.109(.026)***
Resource-Based Factors						
Resource relatedness	.070(.095)	.093(.094)	.089(.094)	.077(.095)	.083(.091)	.050(.090)
Resource quality	-.130(.037)**	-.095(.036)***	-.102(.036)***	-.127(.038)**	-.105(.035)***	-.091(.035)***
Post-acquisition Decisions						
Level of integration	.203(.079)***	.335(.079)***	.345(.083)***	.192(.079)***	.301(.083)***	.250(.083)***
Degree of Replacement	-.292(.04)***	-.124(.040)***	-.129(.041)**	-.291(.04)***	-.157(.042)***	-.181(.042)***
Integration Capability						
Knowledge Codification	.086(.013)		.078(.101)	.094(.014)		.004(.098)
Acquisition Experience	.089(.006)		.004(.006)	.035(.023)		.072(.024)***
Interaction Effects						
Codification X Integration		.184(.055)***	.183(.058)***		.249(.056)***	.282(.057)***
Codification X Replacement		-.131(.049)***	-.125(.049)***		-.087(.051)*	-.088(.050)*
Experience X Replacement		-.121(.056)**	-.134(.058)**		-.202(.063)***	-.224(.063)***
Experience X Integration		.165(.076)**	.173(.078)**		-.081(.094)	-.212(.104)**
F test	20.521***	19.251***	16.366***	20.198***	20.657***	19.048***
Adjusted R-squared	.474	.509	.507	.47	.527	.547
d.f. residual	195	194	194	195	194	194

Beta coefficients (std. deviation in parenthesis). Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

The interaction between the degree of codification and the level of integration is probably the strongest, most unequivocal finding. Under all the specifications provided by the different experience trajectories, the effect is highly significant and related positively to the dependent variable. When coupled with high integration decisions, a cognitive effort aimed at extracting and codifying the knowledge tacitly accumulated is associated with a systematically improved ROA of the acquiring firm. However, if either of the two covariates assume lower values, acquisition performance declines.

The combination of a high level of integration with tacit knowledge accumulation is typically not relevant in its performance implications. The only exception is provided by the experience trajectory that is specialized in the “good asset quality” type of acquisition, which positively influences the performance outcome. In the case of the accumulation of acquisition experience in poor-quality targets, the interaction term is surprisingly negative and significant, but that finding must be evaluated on the margin of a positive and significant coefficient of the main effect of that experience trajectory.

The interaction terms pertaining to replacement of the top management team negatively affect acquisition performance in all the acquisition experience scenarios, independently of the type of knowledge mechanisms accompanying them. Routinizing and codifying those types of decisions appears to be hazardous in spite of the possible learning effects. The replacement of such a sensitive strategic resource as the leadership team is detrimental to performance, and the negative effects on performance are compounded when they are associated with a highly routinized and codified process.

In spite of the statistical significance of these results, some words of caution are in order. First, the discrepancies in the frequency of observation of the (accounting-based)

dependent variable and of the (transaction-based) explanatory variables are of concern. Acquisitions, particularly in the banking industry, are relatively frequent events, which often occur at various times within one year. All acquisitions completed in the same year, however, will have the same measure of the dependent variable (change in ROA). One way to reduce that problem is to aggregate the acquisitions announced by the same firm in the same year, so that both dependent and independent variables vary with the same “clock.” Far from being a perfect remedy, however, this “solution,” presented in section 6.3.2.2, merely shifts the issue to the explanatory side of the equation. In fact, one must register the loss of measurement precision caused by the averaging of the resource characteristics and the post-acquisition integration decisions across different acquisitions announced in the same year.

Second, unobserved heterogeneity and firm effects may be highly relevant. Another potential problem with the preceding analysis is the possibility that firm effects are influencing the results without being captured in the explanatory variables. For example, Banc One might have a distinctive trait that explains its success with acquisitions but is not captured in the firm-level variables introduced in the model (i.e., the capability proxies). That problem is serious because firm effects are at the core of our theoretical analysis of acquisition-specific organizational capabilities, and therefore cannot simply be “controlled for” with rough techniques such as firm-level dummies. The route chosen was to test the same set of hypotheses at the firm level of analysis, where any idiosyncratic feature of certain acquirers would be reduced in its magnitude (one observation) and in its possibility of systematically affecting the results. The replication of the results obtained at the transaction level with the data aggregated at the

firm level would provide, in addition to an obvious robustness test, partial protection from the presence of unobserved heterogeneity in the traits of the acquiring firms. See section 6.4 for a discussion of the results of the firm-level analysis performance.

Finally, robustness is a problem. The issues described above indirectly address robustness issues, at least in the proposed “remedies.” The baseline model was in fact replicated with two increasing degrees of aggregation of the data (sections 6.3.2.2 and 6.4). In addition, the analysis in this section implies several variations in the specification of the tacit knowledge accumulation measure and the crucial introduction of a set of interaction effects. One additional way of testing the robustness of the main results is by varying the specification of the dependent variable. For example, a three-year rather than a four-year lag could be considered in computing the change in ROA. Alternatively, the model was tested with two additional specifications of the firm-level accounting performance: the long-term (12-year) change in ROA and the current (1996) levels of the same measure.

6.3.2.2 Firm/Year Level of Analysis

An analysis was done which replicated the one described in the preceding section with a dataset that aggregated the observations at the firm/year level. All acquisitions completed by the same acquirer during the same year were collapsed into a single observation. The goal of that transformation was to enhance the consistency between the frequency of observation of the dependent variable (annual) and that of the set of independent variables, which typically vary for every transaction observed.

The two resource-based measures (relatedness and quality) were replaced with the percentage of assets acquired through in-market transactions and through the acquisition

of poor-quality banks, respectively, during the particular year. The post-acquisition decisions were averaged to yield an approximation of the integration and replacement approach followed by the acquiring bank in that year. In the controls, the relative acquisition size was the sum of the relative sizes of all the transactions completed in the same year.

The analysis incorporated the lessons learned in the preceding section and involved the four interaction terms between the post-acquisition decisions and the knowledge-based variables, as well as the same kind of model specifications along the five types of acquisition experience trajectories. A weighted least squares multiple regression method was used, where the weights were assigned by the number of transactions completed during a given year.

The results reported in Table 6.13 essentially confirm the findings obtained with the complete dataset¹¹. The fit with the data remains strong and actually improves for the general experience and for the good asset quality specialized experience by seven to eight percentage points to reach 57.5% and 58.6%, respectively. What explains the improvement in the fit of those two models is the stronger positive effect of the tacit knowledge accumulation mechanism, which was not significant in the previous specification. The interaction effects replicate the results described above, with a consistently significant and positive effect of the interaction term between knowledge codification and level of integration on performance, and a negative effect of the interaction term between tacit routinization and degree of replacement.

¹¹ Note that the sign of the coefficient for resource quality is positive and opposite to the one shown in all the previous analyses because of the inverse specification of the measure. The quality of the acquired assets hurts acquisition performance.

Along the same lines, the post-acquisition decisions preserve intact both the sign and the magnitude of their performance effects. The resource characteristics, in contrast, lose more explanatory power with respect to the previous results. Resource quality, generally significant in the previous models, is now only marginally relevant, whereas resource relatedness remains positive but non-significant in its performance implications.

Table 6.13 - WLS REGRESSIONS - Acquisition Performance (firm/year level of analysis)
Weight = N of acq. in the same year. Dep. Variable: CHANGE IN ROA (3 years post- vs. 1 year pre-acquisition)

VARIABLE	GENERAL	Specialized By Geography		Specialized by Asset Quality	
	EXPERIENCE	In-Market	Out-Market	Good Quality	Bad Quality
	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Controls					
Acquirer's size	-.411***	-.032	-.190	-.458***	.048
Relative acquisition size	.070	.054	.070	.062	.061
Resource-Based Factors					
% of assets in-mkt	.003	-.015	.069	.006	.024
% of assets in bad banks	.127	.120	.257	.150*	.156*
Post-acquisition Decisions					
Level of integration	.291***	.238**	.315***	.257***	.293***
Degree of Replacement	-.286***	-.258**	-.422***	-.198*	-.401***
Integration Capability					
Knowledge Codification	-.015	-.043	.072	-.001	-.015
Cumulative Acq Experience	.310***	.229**	.080	.305***	.181
Interaction Effects					
Codification X Integration	.282***	.221**	.309***	.270***	.284***
Codification X Replacement	-.150	-.053	-.242**	-.167*	-.028
Experience X Replacement	-.523***	-.336***	-.301	-.621***	-.318***
Experience X Integration	.200*	.108	.242	.270**	.017
F test	11.844***	12.375***	6.652***	12.319***	8.993***
Adjusted R-squared	.575	.590	.417	.586	.500
d.f. residual	96	95	95	96	96

Standardized beta coefficients. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

6.4 Organizational Performance

The claim was made in Chapters 3 and 4 that the creation of organizational capabilities can be studied by measuring both the way in which and the extent to which firms accumulate knowledge from previous experiences. If that were the case, we should expect organizational performance to improve in a stable way once those capabilities are developed and utilized.

The robustness of the findings obtained from the analysis of the acquisition performance models was then evaluated by testing a similar model with the data aggregated at the firm level. Such replication provided some protection against the possibility that strong firm-level effects undetected in the specification of the model may eventually influence the relationship between the dependent and the measured independent variables.

The approach adopted to aggregate the transaction-level measures to the firm level was identical to the one used in the firm/year-level analysis. However, the aggregation process was brought to the extreme end, where only one observation per acquiring bank was recorded.

Because of the scarcity of degrees of freedom, it was necessary to select a parsimonious model by eliminating some of the independent variables used in the previous versions. The first "cut" was made to the control variables (i.e., the size of the acquiring firm and the relative size of the transaction(s)). It was not likely to hurt the quality of the analysis because of the marginal relevance of the coefficients of those variables in the previous analyses (see Tables 6.10 through 6.13). The selection of the knowledge-based variables was more delicate. The criterion chosen was to select the

measures that best fit the data in the previous analyses: the accumulation of in-market acquisition experience for the tacit capability-building component, and the interaction between knowledge codification and the level of integration. Several other specifications of the model, with or without interaction terms and with different proxies of the knowledge codification construct, were performed with either similar or worse results. Notable among the results of the alternative specifications are the positive and significant correlation shown in Table 6.15 between the percentage of assets purchased with high degrees of codification (more than six of the 11 tools) and the short-term firm performance measures.

Table 6.14 reports the results of four OLS regression analyses of the “parsimonious” model defined above and Table 6.15 reports the means, standard deviations, and Pearson correlations of the variables used in the analysis, as well as some of the most important alternative covariates. The variation among the four models proposed is now provided by the definition of the dependent variable. The first two models used the average of the short-term change in ROA between the year before and years two and three after the acquisition. The other two models regressed a longer-term performance measure: the 10-year change in ROA (1987/96) and the most current performance levels (1996 ROA). The coefficients are reported in their standardized form to facilitate the comparison among different measurements of the dependent variable.

Table 6.14 - OLS REGRESSION - Organizational Performance
Dependent Variables: Short-term and long-term change of ROA

VARIABLE	ROA Ch. +3 vs. -1	ROA Ch. +2 vs. -1	ROA Ch 1987-96	ROA 1996
Resource-based Factors				
% of assets in bad banks	.316*	.243	.031	.010
% of assets in-mkt	.147	.059	.432***	.280*
Post-acq. Decisions				
Replacement	-.173	-.141	-.256	-.552***
Integration	.275	.304*	.424**	.747***
Integration Capability				
Acq. experience (local)	.421**	.414**	.327**	.192
Codification X integration	.040	.128	.489**	.501***
F test	2.992**	3.012**	4.216***	5.971***
Adjusted R-squared	.278	.280	.343	.460
d.f. residual	31	31	37	35

Standardized Beta coefficients. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

TABLE 6.15 - CORRELATION MATRIX - FIRM LEVEL VARIABLES

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	ROA change (+ 2 vs. -1 years)	-.0445	.2986														
2	ROA change (+3 vs. -1 years)	-.0347	.4027	.935 ***													
3	ROA 1996	-.026	.2662	.702 ***	.702 ***												
4	ROA change 87-96	-.0231	.5146	.668 ***	.724 ***	.693 ***											
5	% assets invested in "bad" banks acq	.315	.346	.324 *	.326 *	.080	.084										
6	% assets invested in in-market acq	.5969	.3349	- .010	.094	-.063	.252	-.004									
7	Replacement	2.1441	.8067	- .101	-.052	-.281 *	-.138	.206	.381 **								
8	Integration	2.600	.5669	.391 **	.350 **	.385 **	.163	-.153	.065	.123							
9	General acquisition experience	13.02	12.31	.206	.131	.245	.180	-.024	-.357 **	-.439 ***	.179						
10	Experience in in-market acq.	6.756	7.538	.529 ***	.470 ***	.464 ***	.493 ***	-.082	-.130	-.244	.197	.743 ***					
11	Experience in out-market acq.	4.022	5.408	.048	.006	-.013	-.114	-.133	-.535 ***	-.601 ***	-.133	.481 ***	.262				
12	Experience in "good" banks acq.	7.704	8.756	.369 **	.332 **	.322 **	.296 *	-.175	-.340 **	-.587 ***	.018	.746 ***	.784 ***	.758 ***			
13	Experience in "bad" banks acq.	2.863	2.977	.352 **	.246	.207	.194	.057	-.240	.012	.157	.550 ***	.723 ***	.245	.432 ***		
14	Codification (# of tools)	6.340	3.185	.014	.09	.001	.007	-.106	-.282 *	-.211	.104	.305 **	.275	.368 **	.389 ***	.281 *	
15	% of assets bought with > 6 tools	28.74	39.83	.229	.362 **	.163	.164	.067	-.398 **	-.285 *	.060	.353 **	.301	.296 *	.380 **	.213	.671 ***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

The results of each of the four regression models broadly confirm the signs of the performance effects obtained in the previous analysis. Their magnitude and statistical power, however, vary both with respect to the previous results and among the four models reported.

The short-term performance models confirm the primary role of localized, tacit knowledge accumulation mechanisms, whereas the codification process fails to affect organizational performance significantly even when interacting with the level of integration. The post-acquisition integration decisions maintain the sign of their performance effects, but their magnitude is only marginally significant for the level of integration (with the two-year ROA lag) and not significant for the degree of replacement. The degree of relatedness also is not statistically significant, but on performance of resource quality the negative influence is confirmed. One explanation for the weaker fit is the lack of degrees of freedom due to the aggregated data and missing data for some of the respondents. The impression is confirmed by the fact that the adjusted R^2 statistic is still around 28%, and that the addition of only six degrees of freedom to the long-term performance models significantly improves the statistical significance of the individual variables and the fit of the entire model.

The long-term performance models provide a much clearer picture of the relevance of the acquisition-based explanations for the success of the competitive interaction in this industry context. First, the overall model fits the data much better, with F-tests rising from around 3 to 4.2 and 6.0, and adjusted R^2 increasing to 34.3% for the 10-year change in performance and 46% for the 1996 performance. The individual variables also have generally stronger t-statistics, with the exception of resource quality

and, surprisingly, tacit acquisition experience. The latter remains significantly associated with the 10-year change in ROA, but does not influence current performance in a statistically significant way. In both long-term performance models, the knowledge-based measure that reflects the crucial role of capability building is the interaction between knowledge codification and level of integration. The standardized coefficient of that measure is the largest in the 10-year change in performance model (.489), and is even larger (.501) in the current performance model.

The two post-acquisition decisions have large, significant coefficients in the current performance model. The positive effects of the level of integration account for a change of .747 standard deviations from the mean of ROA in 1996, and the negative effect of the replacement of top managers decreases ROA .552 standard deviations, for an increase of 1 standard deviation in the explanatory variable. The influence of the resource-based factors on the long-term performance of the acquiring firm is somewhat surprising given the type of results obtained at the acquisition level of analysis. Resource quality becomes almost irrelevant, whereas the degree of relatedness turns out to be a significant explanation, particularly in the case of the 10-year change in ROA. Possibly the acquiring firms that concentrated on in-market acquisitions rather than market extension ones had the worst performance levels in the 1980s, but achieved the best performance improvements over time because of the superior learning dynamics afforded by that type of acquisition. Conversely, out-market acquisitions might have been completed more frequently by well-performing acquirers, and the potential for performance improvement over the years was therefore correspondingly lower.

Two main conclusions can be drawn from the results of the analysis. The first is that the key findings obtained at the acquisition level of analysis are essentially replicated, which demonstrates their robustness to changes in model specification and to the presence of unobserved heterogeneity. Second, the accumulation of wisdom from previous acquisition experiences seems to be a crucial element for both short-term and long-term performance in the banking industry. That observation supports the conjecture advanced in Chapter 3 that the accumulation of knowledge in both tacit and codified form can explain the creation and evolution of organizational capabilities. It also supports the claim that the study of those knowledge accumulation processes is crucial for gaining an improved understanding of the roots of competitive advantage.

6.5 Putting It All Together

A summary outline of the analyses performed and the key findings derived from them follows.

1. The explanation of the type of post-acquisition decisions adopted by acquiring firms supports the theoretical modeling:
 - 1.1. The degree of resource relatedness, proxied by the geographic overlap of the network of branches, positively influences the level of integration and the degree of replacement of the top management team.
 - 1.2. The quality of target's resources, proxied by its prior performance, negatively influences the same integration decisions.
 - 1.3. The codification of acquisition experience raises the probability of a high level of integration and of high replacement of top managers.

- 1.4. For the tacit knowledge accumulation mechanisms, a distinction was made between path-dependence and routinization effects:
 - 1.4.1. Path-dependence effects are relevant in explaining the level of integration. A high level of generalized acquisition experience positively affects integration, whereas a high level of experience in non-local (market expansion) acquisitions actually reduces the probability of a high integration decision, *ceteris paribus*.
 - 1.4.2. Routinization effects are the strongest predictors of both integration decisions. The decision taken in the context of an acquisition completed at any time before the current one strongly predicts the current one, *ceteris paribus*.
2. The type of post-acquisition decisions adopted by the acquiring firm chiefly determines the performance of the post-acquisition integration process, measured with ex-post qualitative assessments of different sub-processes:
 - 2.1. The degree to which the acquired firm is integrated with the acquirer's organization enhances performance.
 - 2.2. The replacement of the top management team of the acquired firm hinders performance.
 - 2.3. Pre-acquisition resource characteristics have no statistically significant effect on the linear combination of the three performance assessments, whereas the degree of relatedness positively influences the perception of performance of the overall integration process (single indicator).

- 2.4. Knowledge codification is associated positively but weakly with post-acquisition performance. No effect of tacit experience trajectories on qualitative performance assessments was detected in the data.
3. The subjective performance assessments, however, are weakly related to the performance of the overall acquisition process, as measured by the variation in accounting performance of the acquiring firm. Of the three assessments, only the performance of the human resources affiliation process has a statistically significant correlation with the accounting measure.
4. Once the performance of the entire acquisition process is taken into consideration through the use of accounting measures, results change substantially:
 - 4.1. The quality of resources is associated negatively with performance. The degree of relatedness maintains a positive but non-significant effect.
 - 4.2. The post-acquisition decisions confirm the strong influences identified above (see 2.1 and 2.2).
 - 4.3. Tacit knowledge accumulation positively affects acquisition and firm performance, but only if highly localized (i.e., experience in in-market acquisitions). Transferring tacit knowledge to unrelated domains implies the assumption of risks of incorrect generalization (transfer costs).
 - 4.4. Knowledge codification does not affect acquisition performance with the standard model specification (i.e., with only the main effects).
5. The introduction of interaction terms among integration decisions and knowledge accumulation mechanisms improves the fit of the model with the data and reveals several significant effects:

- 5.1. The interaction term between the degree of knowledge codification and the level of integration systematically improves acquisition performance under all the acquisition experience scenarios. The cognitive effort produced to make sense of the lessons learned in previous acquisition experiences and to incorporate them into ad-hoc tools seems to be associated with stronger performance, but only if the effort is associated with high integration decisions. When associated with a low integration approach, the codification effort might produce unnecessary levels of bureaucratization of the integration process in its decision-making and/or its implementation stages.
- 5.2. The interaction term between the replacement of the top management team and the accumulation of acquisition experience *negatively* influences performance. The routinization of that decision is therefore hazardous in spite of its potential for organizational learning effects, and might actually worsen performance levels, *ceteris paribus*.
6. The model seems to be robust to different specifications:
 - 6.1. Aggregating observations in the same year to gain consistency between the measures of the independent variable and the accounting numbers;
 - 6.2. Aggregating observations to the firm level of analysis to reduce the exposure to firm effects not included in the treatment of acquisition-specific organizational capabilities;

- 6.3. Adopting a different time lag in the measurement of the dependent variable (change in ROA two years or three years after the acquisition vs. the year before)
7. At the firm level of analysis, the long-term performance of the acquiring firm is strongly influenced by the type of integration decision adopted in its acquisition activity, and by the accumulation of acquisition experience in both tacit and explicit form. The limitations to the effectiveness of the two knowledge accumulation mechanisms (see 4.3 and 5.1) apply also to the explanation of long-term firm performance, both in its static (current level) and dynamic (10-year variation) specification.
8. The data analyzed, then, support the claim that knowledge accumulation mechanisms translate into the creation of organizational capabilities useful for the improvement of process outcomes and of short- and long-term firm performance.

7. DISCUSSION

What do the study findings mean for the underlying theories? How might they improve our theoretical understanding of the ways firms develop capabilities from heterogeneous and infrequent events? How might they advance the discourse on whether and how firms can create value through M&A activity? How could the results affect the way managers ought to think about undertaking such endeavors?

This chapter assesses the potential contributions of the study to the emerging “knowledge-based view” of the firm (Kogut & Zander, 1992; Grant 1996). It first highlights how the findings might further the debate on the underlying theories (evolutionary economics and organizational learning), then applies the newly derived wisdom to the issue of whether and how value is created from acquisition processes. Further, because of the relevance of the M&A phenomenon in the corporate world, some observations are made about the lessons practitioners might derive from the study results. The chapter concludes by providing some words of caution on the limitations inherent in the research design adopted and the results obtained.

7.1 Implications for the Knowledge-Based View of the Firm

This dissertation represents perhaps the first empirical test of Nelson and Winter’s ideas on process routinization to be performed at the process level of analysis. Further, the test was conducted in a context in which the theory is least likely to be applicable, where low task frequency and low task homogeneity heavily tax the power of routine-based explanations. In such extreme settings, the theory must be amended in some

important respects, but it proves to be a strong and robust explanation for both organizational decision-making and performance outcomes.

7.1.1 The Virtues of Codification

The first adjustment pertained to the role of knowledge codification in the development of organizational capabilities. Under “normal” circumstances, the creation of written tools embodying the collective understanding of what is supposed to be done under what conditions does not necessarily provide any material benefit to the performance outcomes of the process under analysis. A key finding of the study is that, under conditions of low frequency and homogeneity of the task, knowledge codification can actually be particularly helpful. It can help explain how firms make decisions and, most importantly, aid our attempts to explain the performance of those processes. In particular, the results on the performance implications of codification under the condition of high complexity, namely that codification does not affect performance directly but through its interaction with the level of integration, are inherently interesting. Higher levels of integration of acquired firms imply higher degrees of complexity in the implementation of post-acquisition processes, which would then enable the codification mechanisms to show their positive effects on performance through the development of an ad-hoc integration capability. As outlined in Chapter 3, the rationale for that result depends less on the protection codified tools provide against the decay of organizational memory than on the processes by which the codes are created. Those processes entail the production of a collective, coordinated cognitive effort, which constitutes a crucial element in our understanding of how organizational capabilities are created.

The introduction of the cognitive element into the standard evolutionary economics discourse, which has been built on tacit knowledge accumulation mechanisms, is itself an important refinement of the theory. Such emphasis is consistent with Gavetti and Levinthal's (1997) simulation work on cognition in rugged landscapes, which models the cognitive element as the reduction of the number of dimensions by decision-makers during a search process in complex (i.e., where firm attributes are highly interdependent) environments. In the context studied, the creation of a post-acquisition integration manual or a computer-based staffing model assumes a similar role: it simplifies the reality of a multidimensional decisional space and thereby facilitates the decision-making and eventually the implementation process. It is intriguing to observe that, far from swinging the agent away from the optimal decisional path, that process might actually enhance the probability of its success in search tasks, as well as in post-acquisition integration processes.

7.1.2 The Limits of Codification

The data analyzed in the study show some clear limitations to the effectiveness of the knowledge codification process. The degree of knowledge codification directly affects neither acquisition nor firm performance. Its influence on both dependent variables comes in two forms; (1) through the effect on the type of post-acquisition integration decisions selected by the acquiring firm and (2) through the performance implication of its interaction with the level of integration. The interpretation that could be given to those results is that the degree of knowledge codification translates into a positive force for task and organizational performance only under the condition of high levels of activity or use of the underlying knowledge. In other words, codifying an integration

process characterized by a low level of integration is not only futile, but can actually harm the performance of the process itself, perhaps because of the excessive bureaucratic load put on the acquiring organization. At low levels of integration, a group of expert but “non-codified” integration managers may well perform better than an equally expert group that invests in and relies on a large set of manuals and electronic support tools.

7.1.3 Limits to Tacit Knowledge Accumulation

As reported in Chapter 6 (Tables 6.9 through 6.12), acquiring firms appear to benefit from the tacit accumulation of knowledge from previous acquisition experiences. Two findings are particularly relevant for evaluating the limitations of tacit knowledge accumulation in the context studied:

- 1) Tacit knowledge accumulation is highly “local.” Experience from previous acquisitions completed in dissimilar contexts does not accumulate in an effective way (i.e., it does not contribute to the construction of an organizational capability). Only the accumulation of experience in homogeneous contexts, such as acquisitions in similar geographic areas, can enable the firm to improve on previous performance without the support of a full-blown cognitive effort and independently of how much the tacitly developed practices have been codified.
- 2) Tacit knowledge accumulation is detrimental to performance when applied to particularly sensitive decisions. The data show that in addition to having a negative main effect on performance, the replacement of the top management team is associated significantly with lower quality of outcomes when it occurs with high levels of tacit experience. Although the interaction effect between codification and replacement is also negative, its smaller magnitude (see Table 6.13) indicates that the

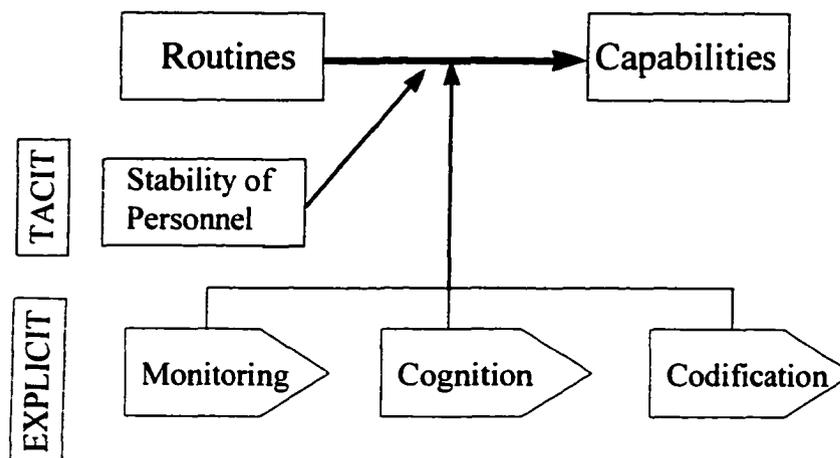
cognitive processes underlying the degree of codification afford some protection from the errors associated with applying routinized behaviors where deliberate cognition is necessary.

The last point introduces another important amendment to our current understanding of routinization and codification processes. There might be a set of decisions that ought to be considered *neither routinizable nor codifiable*. Many decisions, such as the degree of integration, must be supported by a high level of codification and routinization to overcome the inherently negative effects of structural and decisional complexity (see section 4.1.1). Other decisions, the replacement of the top management team might be an example in point, should be driven primarily by deliberate considerations based on the characteristics of pre-acquisition resources. When routinized, such decisions tend to have a negative effect on performance. The difference between the first and second types of decisions is not at all clear and is beyond the scope of the study but the finding shows the relevance of the question and highlights it as warranting further exploration.

7.1.4 Routines and Capabilities

As a partial consequence of that line of reasoning, one could use the empirical evidence uncovered in the study to speculate and attempt to pinpoint more firmly the relationship between organizational routines and organizational capabilities. In dynamic contexts, routines are to be seen as constituting both a positive and a negative determinant of the process of creating organizational capabilities in dynamic environments. The elements that determine which sign can be assigned to the causal relationship can be summarized with the following list of preconditions (Figure 7.1 is a diagram of the arguments):

Fig. 7.1 - From Routines to Capabilities



Stability of personnel. The first element pertains to facilitating the tacit accumulation of knowledge in the minds of the individuals involved. To the extent that the group of individuals operating the routine is relatively stable in its composition for a sufficient amount of time, experiences from past executions can accumulate in the individuals' memories and be shared with the other group members. The sharing fosters a common understanding and expertise in the execution of the routines.

Monitoring In the more explicit forms of knowledge accumulation, effective feedback mechanisms are the first prerequisite for the group of individuals operating the routine to become aware of either the absolute or relative (compared to relevant competitors) quality of their routine. The degree to which monitoring mechanisms are developed and consistently used within an organization is a second necessary (Sabel, 1994), albeit not

sufficient, condition for routinized behavior to turn into organizational capabilities, as it supports the correct functioning of the following two mechanisms.

Cognition. It consists of a collective effort to examine the performance feedback from past experiences and to generalize abstract causal mechanisms correlating decisions and implementation actions with the quality of the performance feedback. The aim is then to at least partially reduce the level of causal ambiguity (Lippman & Rumelt, 1982) and to facilitate the generalization from heterogeneous experiences by an in-depth study of the little empirical evidence available. It also identifies the necessary modifications to the current routines that are supposed to correct or improve the expected performance levels in future experiences. The cognitive activity is manifested, for example, in post-event debriefing sessions where the decisions made and the implementation steps taken are recalled, and the performance outcomes are identified and discussed. It is bounded by the natural limitations of human rationality and by the necessary degree of speculation and conjecture about the types and magnitudes of cause-effect relationships. However, the presence and the effectiveness of these collective learning mechanisms should afford a material advantage for organizations that are attempting to turn current routines into organizational capabilities, subject to the existence and effectiveness of performance monitoring systems.

Codification In many cases, the cognitive activity needs to be enhanced and supported by the explicit codification of the newly generated wisdom. That process entails the development of new manuals, blueprints, or specialized support systems, or the updating of current ones. In addition, to the extent that the post-event debriefing efforts described above generate written documentation of the decisions and performance implications of

the experience; one can consider that output a form of codified knowledge. Codification can facilitate the transformation of routines in capabilities as the process through which the codes are created and updated force the organization to make a fuller use of the performance monitoring systems and to produce a deeper cognitive effort to penetrate the causal ambiguity tying actions with performance during experienced events.

7.1.5 Codification and Codifiability

One final lesson from the data pertains to the relationship between process codification and knowledge codifiability. Given a certain degree of codifiability (Winter, 1987; Kogut & Zander, 1992) of the knowledge underlying a certain process, the study shows that firms typically do not codify their process to the full extent possible. Some firms codify more than others that have comparable levels of experience (see Table 6.1 and Figure 6.2) because they are willing to allocate more time and effort to the codification process. In the model on long-term organizational performance, the statistical significance of the interaction term between codification and integration assigns strategic relevance to the decision to invest time, effort, and resources to generate the desired level of codification. That strategic aspect of knowledge codification, and its likely consequences for the creation of organizational capabilities, might constitute one more crucial link between the organizational learning and strategic management literatures, and may provide fertile ground for future research. Further, it might indicate the existence of an “optimal” degree of codification of a certain practice, given a certain degree of codifiability of its underlying knowledge, where the location of the optimum is

influenced by task features such as its complexity (number and interdependence of its sub-tasks, causal ambiguity etc.).

7.2 Implications for the M&A Theory

The first question that anyone, scholar or practitioner, asks about mergers and acquisitions is whether firms consistently create value from them. The predominant evidence from studies of stock price reactions shows no creation of abnormal returns, *on average*, from the perspective of the acquiring company's shareholders (Jensen & Ruback, 1983; Franks, Harris & Titman, 1991; Loderer & Martin, 1992). Some studies actually show a systematic value destruction from acquisition activities, which Agrawal, Jaffe, and Mandelker (1992) quantify as 10% of the acquirer's market value over five years.

The data gathered in the study are not exceptions to that empirical regularity. Table 7.1 summarizes the means and the two-tailed t-tests of the various performance measures available at both the acquisition and the firm levels of analysis.

Table 7.1 – Tests for the deviation from 0 of the mean of performance distributions

MEASURE	Mean	Std Dev	N	t-statistic	p-value
Acquisition Level					
Ch. in ROA (3 yrs after)	.0284	.7255	291	.669	.504
Ch. in ROA (2 yrs after)	.0450	.6683	371	1.298	.195
Ch. in ROA (1 year after)	-.0175	.4300	448	-.861	.390
Firm Level					
Ch. in ROA (3 yrs after)	-.0347	.4027	39	-.538	.594
Ch. in ROA (2 yrs after)	-.0445	.2986	40	-.942	.352
Ch. in ROA (1 year after)	-.0545	.2361	44	-1.531	.133
Ch. in ROA 1987-1996	-.0231	.5146	46	-.304	.763
Avg. ROA 1991-1996	.0170	.1826	46	.630	.532
ROA 1996	-.0263	.2662	44	-.655	.516

Though the signs vary with the level of analysis and the particular time horizon adopted, none of the means shown is statistically distinguishable from zero. One observation of note involves the comparison of the means of the short-term changes in ROA (two and three years after the acquisition) at the two levels of analysis. The means for the acquisition level are positive in sign, whereas those at the firm level, resulting from the aggregation of all the observations per firm, are negative. The explanation is that the frequency of M&A experience, which is irrelevant in the aggregated case where every acquirer accounts for only one observation, improves the acquirer's ROA and therefore produces a higher (and positive) average at the acquisition level of analysis. The finding can be viewed as partial evidence that experience matters when firms conduct acquisition activity.

Another hint from the economics and finance literature comes from some of the most recent studies which have taken a longitudinal view of the problem of the location of the mean of the performance distribution. Schleifer and Vishny (1994), for example, found a significant difference in the value-creation record between mergers in the 1960s and those in the 1980s, with the latter seeming to outperform the former. Along similar lines, Loderer and Martin (1992) found that "negative performance in the second and third year after the acquisition is most prominent in the 1960s, and to a lesser extent in the 1970s, but not in the 1980s" (p. 70). The explanation for acquisition under-performance, then, may not be some inherent value-destruction quality of mergers and acquisitions, as implicitly suggested by the literature, but instead a general lack of capability to manage those activities, a capability that has been developing slowly at the population level over the decades.

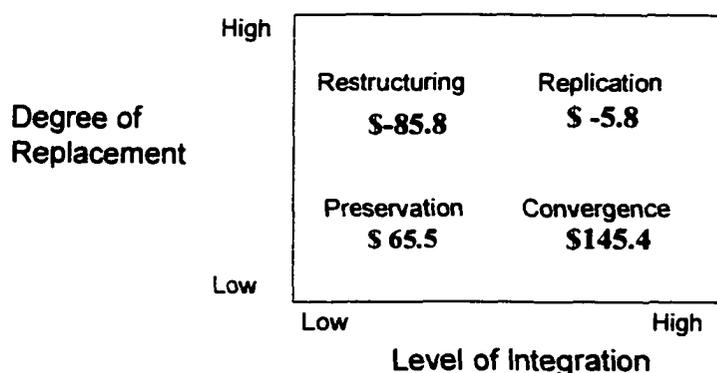
This study seems to provide initial support for that learning-based explanation of acquisitive behavior and performance. Shifting the attention from the *average* to the *variance* of the distribution of acquisition performance, it focuses first on explanatory variables related to the characteristics of the two firms involved in the acquisitions. The theoretical framework proposed in Chapter 4 (see Figure 4.3) then adds a second class of explanations, the types of decisions made by the acquiring firm after completion of the acquisition (Haspeslagh & Jemison, 1991; Shanley, 1994). The analyses show that certain types of integration decisions systematically outperform others. An integration strategy formed by the combination of a high level of integration and a low degree of replacement of the key resources of the target firm, or convergence (see Figures 4.2 and 7.2), should outperform all other approaches. One way to verify that effect in concrete terms is by using the coefficients of one of the models estimated and computing the variation of the dependent variable for the various permutations offered by the two post-acquisition integration decisions studied. Figure 7.2 reports the results of such computations in the case of the coefficients estimated with the model showing the best fit with the data, the one using the accumulation of in-market acquisition experience (Table 6.11; the other experience trajectories yield qualitatively similar results). The value codings for the explanatory variables follow.

- Integration was coded 3 (complete) for high and 2 (partial) for low.
- Replacement was coded 3 (complete) for high and 0 (all retained) for low.
- All the other variables were entered at their mean values

The dependent variable was measured in terms of the difference between the ROA three years after the acquisition and the ROA one year before. Also, the two values

were computed as the difference between the acquirer's ROA and the average ROA in its geographic area. The entries in the table are the acquirer's change in net earnings levels (the product of ROA with total assets) over four years, minus that of its key competitors.

Fig. 7.2 - Value Creation and Post-Acquisition Strategies



The use of a convergence strategy by the average bank in the sample, with \$26.4 billion in assets and managing the “average” acquisition (\$2.14 billion in assets, see Table 5.1), improves the bank’s net earnings by \$145.4 million more than its competitors. This translates into a creation of competitive value totaling 58.9% of the average purchase price of \$ 246.7 million over the three year period. At the opposite extreme, managing an acquisition by using a restructuring approach (total replacement and incomplete integration) results in a \$85.8 million loss, compared with the earnings variation of competitors.

Finally, as a third explanation for the variance of acquisition performance, the framework introduces the notion of a specific integration capability that the acquiring firm might develop. That proposal represents the core argument of the study, and appears

to be generally supported by the analysis of the data gathered. Acquiring firms seem able to fine-tune their integration practices progressively, thereby developing idiosyncratic (tacit) routines and codified support tools which, under the conditions specified above, generate systematically superior results. In a scenario analysis similar to the one described above, an average acquirer will lose an average \$40.7 million at its first attempt, whereas an acquirer with 10 in-market acquisitions already completed will earn \$73.5 million more than its competitors during the next three years, all other conditions being equal. Importantly, the selection of adequate strategies and the development of superior practices appear to afford both short-term and long-term performance benefits.

The issue of systematic value creation, however critical, is not the only one addressed in the research that ought to be of core interest to M&A and corporate strategy scholars in general. The data allowed a comparative assessment of the explanatory power of the three classes of exogenous variables identified in the performance framework. From the analyses reported in Chapter 6 (see section 6.5 for a summary of the main results), hypotheses involving the resource-based primitives of performance, which are frequently invoked by strategy scholars and are so far the only ones subject to large-scale empirical testing, generated only limited support. The leading role, in terms of the magnitude of the effect on performance, is taken instead by the two post-acquisition integration decisions in a strong and complex partnership with the measures approximating the two knowledge accumulation mechanisms.

Moving from classes of explanations to the specific effects of the individual variables, the analyses suggest the importance of the particular contribution of each of the

two resource-based and the two integration decision constructs introduced in the models. The degree of relatedness, even with all the methodological caveats necessary (see the discussion below in section 7.4), hardly ever shows significant magnitude. In contrast, the quality of the resources in the acquired unit shows relatively consistent and significant effects on performance, with a negative sign that might seem surprising. The negative influence of resource quality on performance essentially suggests that firms should not try to search for the best performers from which to eventually import and absorb best practices. Rather, the best way to create value in acquisitions is to deploy current resources and capabilities from the acquirer to the target (Capron, Doussage & Mitchell, 1997). There might be a capability explanation for that result, too, however, according to Haspeslagh and Jemison (1991). They suggest that the creation of value from inverse learning is much more complex, and presumably empirically rare, as it requires a complete revision of the typical conquering attitude that most acquirers have when approaching the integration process. Another explanation, equally plausible, is that pricing dynamics eliminate value creation potential to a greater extent in the case of high-quality targets, than in the case of low-quality ones. In that view, buyers consistently overpay for their acquisitions of high-quality targets, overestimating their ability to recuperate the high premia paid in the absence of sufficient room for generating synergies from cost efficiency and restructuring processes (Sirower, 1997).

The last result seems to lend empirical support to the “market for corporate control” view of M&As, whereby top management teams act as a policing device in their search for under-performing concerns by replacing the inept managers, realigning the incentive systems, and generating “quick” and copious value. That view, however, is not

consistent with the other core result of the analyses, the one concerning the negative performance implications of the replacement of the acquired unit top management team (confirming the result of Cannella & Hambrick, 1993). How does one reconcile the two contrasting results? One possibility is to move away from the market metaphor and consider mergers and acquisitions as essentially internal investment activities. In that view, the *potential* for value creation is given by the characteristics of the investment, including the price and the features of the assets purchased, but the concrete *realization* of the value potential is determined entirely by the acquirer's post-investment managerial decisions and implementation capabilities. Though the quality of the purchased assets is a key determinant of the value creation potential, the substitution of key resources within the target firm is part of the value capture process, which, according to the data analyzed, might end up disrupting more than the acquirer intends to fix. The challenge, then, seems to be to extract the value potential from the combination of the two organizations without yielding to the "superiority complex" that the market-for-corporate-control metaphor evokes.

The other "high intervention" post-acquisition decision, related to the level of integration, has diametrically opposite effects. Not only does it directly and positively influence performance, but it also further enhances the creation of value from acquisition processes when coupled with high levels of knowledge codification. The negative implications due to structural inertia and process complexity considerations are apparently compensated for by the benefits the acquiring firm derives from cost efficiencies and, eventually, revenue enhancement opportunities consequent to the achievement of higher degrees of integration. The finding lends support, then, to some

preliminary evidence unearthed in the strategic management literature (Datta & Grant, 1990; Shanley, 1994), and appears to redefine the negative performance implications discovered in the human resources and organizational behavior literature (Buono & Bowditch, 1989; Atrachan, 1990; Schweiger & DeNisi, 1991; Joyce-Covin et al. 1996) as necessary costs suffered on the way to the achievement of the benefits from organizational integration.

Overall, the analysis of the data gathered in the study points to the advantages of the simultaneous consideration of diverse classes of explanations corresponding to different phases of the process and to longitudinal evolutionary processes related to organizational learning mechanisms. The measurement challenges are proportionately large, however, and a thorough test of the theoretical framework will necessitate much more work.

7.3 *Managerial Implications*

Some of the conclusions obtained from the data analysis are relevant not only to scholarly debates in the field of management, but also to the evolution of the quality of decision-making and implementation processes among managers and management consultants. This section is a brief overview of some of the study's possible implications for the management of acquisition processes. The presentation is divided into three parts, following the groups of primitives considered in the performance framework (Figure 4.2): pre-acquisition characteristics of resources, post-acquisition integration decisions, and the creation of an integration capability.

7.3.1 Target Selection

One broad indication from the study results is that the issue of selecting the “right” target should receive a different type of emphasis. In terms of the magnitude of effect on acquisition performance, the characteristics of the target firm are less relevant than the type of integration decisions made after the completion of the transaction, and not as critical as the development of a capability specialized in the management of the transition phase. That is not to say the issue should not receive an adequate degree of managerial attention, but the attention should be distributed wisely among all three drivers of acquisition performance.

In terms of what characteristics to prioritize in the target selection process, another perhaps counterintuitive finding is that the quality of the resources might be a more relevant issue than the degree of similarity of the target’s resources to the acquirer’s. Relatedness, though an important antecedent of the potential for exploitation of economies of scale and scope, comes at a price that might have been underestimated in past treatments of the problem. It raises the stakes for the integration phase, as a large portion of the value creation potential might be paid out at the negotiation table, and the remaining part has to be “deserved” by the acquiring firm through superior performance in the integration process.

A more important screening criterion seems to be the room for improvement of the target’s current performance, as most of the gains acquirers typically are willing and able to achieve come from the pursuit of cost efficiencies within the acquired organization. The acquisition of superior performers requires the creation of value over and above the higher premium paid, which seems to be possible only through the

effective use of the opposite mechanism for value creation (i.e., the transfer of superior practices from the target to the acquirer, or “inverse learning”). According to the data gathered, however, that condition is rarely satisfied, as the acquisition of high-performing targets is associated with lower levels of performance after control for all the other conditions measured in the study.

The lesson, then, might be that acquiring firms systematically overestimate their own willingness and/or ability to leverage the resources and capabilities within the acquired organizations to create value from the improvement of their own performance. It also confirms some of the qualitative impressions from the field study: most of the acquirers interviewed would not consider changing their own systems or products or practices when they acquired a target with objectively superior features.

7.3.2 Post-acquisition Integration

Identifying the type of integration approach to follow after completion of the transaction is a crucial step toward achievement of performance objectives in both theoretical and managerial terms. The study provides additional empirical evidence for that argument. As reported in section 7.2, the selection of one particular combination of the two decisional dimensions studied can signify the difference between creating and destroying a substantial amount of wealth.

The approach that dominates the menu of integration strategies identified in section 4.1 is characterized by a high level of organizational integration and a low degree of replacement of the top management team. Figure 7.2 reports some quantifiable measures, based on the tested models, of the performance implications of that consensus-based approach.

From a managerial standpoint, however, the key challenge seems to be to combine the set of indications with the selection criteria summarized above. Managing the acquisition of a poor, or even average, performer without automatically taking the shortcut of replacing the top management team might not be a trivial feat. One possibility would be to avoid the conundrum and stick to a non-replacement approach, which could become part of a routinized integration practice. However, such approach might turn into a hazardous simplification because routinizing or codifying this particular type of decision compounds its negative impact on performance.

That dilemma offers a good example of how the three classes of explanation are interdependent: low quality targets should be managed with a high replacement approach, which does not, however, need to be routinized. There is no simple solution. A careful, deliberate assessment of the personal qualities of the top managers for each one of the acquisitions considered seems to be an unavoidable necessity.

7.3.3 Integration Capability

The most important piece of learning that the research offers for managers, however, stems from its core motivation. The goal of the study was to explore and possibly explain how firms can create and develop organizational capabilities specialized in the management of post-acquisition integration processes. That task is very complex from both theoretical and empirical standpoints, but accomplishing it is crucially important for managers and their advisers.

First, the analysis supports the claim that such capabilities can actually be constructed through the tacit accumulation of direct experience in the management of integration processes. Yet, it also suggests that such experience usually is not sufficient

and must be combined with a cognitive effort entailing the explicit rationalization and codification of the lessons learned from the (generally) few experiences. Firms can learn how to manage highly infrequent, complex, and heterogeneous tasks only by investing time, energy, and resources in their efforts to understand the scarce evidence. The creation of support tools in either paper or electronic form is also useful for the protection such tools provide against the loss of institutional memory and for the diffusion of the crystallized wisdom.

The second important lesson from the data is that, however useful for the construction of institutional capabilities, knowledge routinization and codification are double-edged swords that should be used with discretion by managers who are fully aware of their limitations. Certain decisions, for example, should not be made subject to routinization processes, as the benefits from easing the cognitive load might be outweighed by the detrimental effects of applying lessons tacitly absorbed in certain domains to inherently different contexts. Rationalizing and codifying on the basis of too small a sample or with insufficient managerial attention (Ocasio, 1997) entails the risk of accumulating “superstitious” learning (Levitt & March, 1988), risk that is compounded by the presence of strong path dependencies in those types of decisional processes.

One final normative indication from the results is that firms should develop a portfolio of integration routines from which the discriminating acquirer can select the most opportune one according to the specific characteristics of the M&A context considered. Some of the banks that participated in the survey were working toward a similar goal by developing, for example, distinct integration routines for smaller as opposed to larger bank acquisitions, and for non-bank versus bank targets. That approach

appears to combine the benefits of a routinized implementation process with those of a cognitive effort in the development of the codified routines, as well as the deliberate decision-making process influencing the selection of what routine to trigger, based on the specifics of the acquisition context.

7.4 Limitations of the Study

The study had two main limitations to the generalizability of its results. First, the research design restricted the types of events studied to either horizontal or market extension types of M&A, therefore allowing only a limited variation of the resource relatedness construct. Hence, the study did not incorporate the full explanatory power of the relatedness hypothesis. However, the dimension along which the construct operated in the study, essentially the geographic overlap of the network of facilities, provided sufficient variability for the underlying value creation mechanism (the exploitation of economies of scale) to operate. In-market acquisitions are driven, in theory as well as practice, by the opportunity to cut the cost structure of the acquired firm and thus realize the “synergies” that are supposed to justify the premiums paid. Out-market (market extension) acquisitions are forced to rely, at least in part, on other (i.e., “softer”) value creation mechanisms, typically considered more weakly correlated with performance. Therefore, the problem with the relatedness measure in the study is not so much lack of consideration of diversified acquisitions, but the limited degree of correlation with the other measures of similarity gathered through the Phase 2 survey. The degree of market relatedness, in terms of geographic overlap as well as customer segments served, does not correlate well with the internal measures of resource relatedness deduced from the degree of similarity in information systems, human resources practices, operating procedures,

etc. (see section D.2 in Exhibit D). That finding is not novel for researchers who study the varied dimensions of organizational relatedness, and supports the claim that the product market and the organizational dimensions of the construct should not be confounded and their association taken for granted (Haspeslagh & Jemison, 1991; Datta, 1991).

The second limitation is in the generalizability of the results to different industry contexts. Some of the observations from both the fieldwork and the statistical analysis of the survey data might be specific to the commercial banking industry, or at least to the service sector. For example, the primary role of information system conversion might be a consequence of the specific type of information-based products provided by the banking industry. Similarly, the strong predisposition to codify the integration procedures could be caused by an industry-based cultural bias favoring detailed codification (i.e., bureaucratization) of internal procedures. If this were the case, however, the hypothesis of positive performance implications of the degree of codification might be harder, not easier, to support in the industry context studied. Those issues can be resolved only through replications of the study in different industries; of particular interest would be the study of the theoretical framework in contexts characterized by high technological change (electronics or telecommunications, for example), or by different patterns of customer demand (e.g. consumer vs. industrial products). The fundamental patterns found in the study have been observed, however, in a number of case studies in very different contexts such as white goods (Electrolux), industrial products (Cooper Industries), and retailing (The Limited).

More worrisome than the generalizability problems are operational issues related to measuring the performance of the post-acquisition integration process and the limited number of degrees of freedom available for the analysis of short-term firm performance. Subjective performance assessment generally does not allow a good quality of inter-firm comparison, as what is considered satisfactory by a certain acquirer (e.g., a relatively inexperienced one) might not be by another. The ideal solution would be to gather either accounting or process performance data from the acquired entity standpoint but such data are usually very difficult to obtain because acquirers themselves do not collect them. However, the acquisition performance measures used, based on the acquirer's accounting data, are highly generalizable and "perform" very well in spite of the fact that the average acquisition is only a small fraction of the acquirer's assets.

Finally, the limited number of observations at the firm level of analysis was due to participant attrition between the first and the second rounds of the survey. Also, three of the respondent banks were privately held and only part of their financial data was obtainable. Other problems include missing data, particularly on the asset size of the completed acquisitions. That limitation works against the hypothesis-testing effort, however, as the low number of observations implies that the standard deviation of the estimated coefficient is typically overestimated with respect to the theoretical population. As both the stability and the magnitude of the coefficients are reduced, assessments of their statistical significance are overly conservative. In other words, for variables that are associated significantly with firm performance, the magnitude of the effect is likely to be maintained even with larger sample sizes. In contrast, it is not possible to determine

whether non-significant impacts occurred because of either the small sample size or an effective lack of explanatory power.

8. CONCLUSIONS

The objective of the study was to build on evolutionary economics and organizational learning theories to explore the effect of both tacit and codified knowledge accumulation mechanisms on the development of an administrative capability specialized in the management of post-acquisition integration processes. To assess the extent to which that objective was reached, it is useful to compare the types of results expected from the application of varied theoretical discourses with the outcomes of the set of statistical analyses reported here.

Figure 8.1 shows the extent to which the theoretical framework advanced in chapter 4 is supported empirically. The thickness of the arrows indicates the strength of the impacts. Table 8.1, then, summarizes the theoretical arguments made for the hypotheses tested and the extent to which they are supported empirically at the acquisition and the firm levels of analysis.

Fig. 8.1 - Research Results

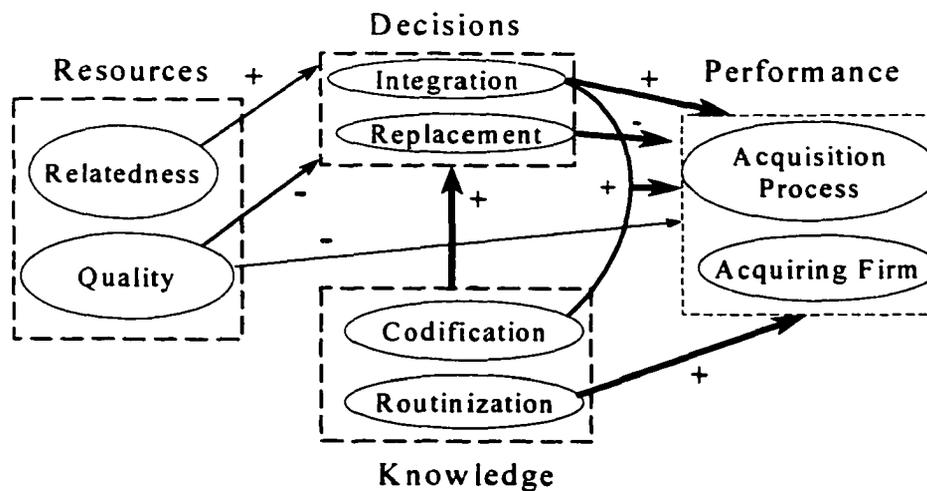


Table 8.1 - Expected Performance Impacts and Empirical Results

VARIABLES	THEORY	Hp.	Exp. Sign	Integration Process Perf.	Firm Perf.
Resource-Based					
Resource relatedness	Related diversification	H9	+	Ns	Ns
Resource quality	Resource deployment	H10	-	-	-
Post-Acq. Decisions					
Integration	Inertia and complexity	H11a	-	+	+
	Cost efficiencies and revenue enhancements	H11b	+		
Replacement of TMT	Structural inertia	H12a	-	-	-
	Agency theory	H12b	+		
Knowledge-Based					
Knowledge Codification	Learning and cognition	H13	+	Ns	Ns
Tacit Experience Accumulation (local)	Tacit learning	H14	+	+	+
Codification x Integration	Learning and cognition w/ structural complexity	H15	+	+	+

The study findings provide confirmation of the descriptive power of some theories, as well as some surprises.

- 1) Both the strengths and the limitations of knowledge accumulation and codification mechanisms in their ability to explain acquisition and firm performance were explored. Acquisition experience accumulates tacitly, affording significant gains in organizational performance after acquisitions, but only if the past experiences are localized into well-known domains and are therefore highly homogeneous. The codification of such experiences into specialized support tools can, in turn, materially affect the performance of acquisition processes and the long-term performance of the acquiring firm, but only if those tools are employed in acquisitions characterized by

high degrees of integration. Otherwise, the disadvantages of excessive bureaucratization might overcome the benefits of developing an integration capability.

- 2) A relatively surprising result is the difference in explanatory behavior shown by the structural inertia hypotheses in determining the performance effects of the two post-acquisition decisions. The results for level of integration are associated positively with the performance of the acquisition process, implying that, in the study context, the potential for exploitation of economies of scale and scope overcomes the necessary disruptions during the integration process. In contrast, the aggressive replacement of key resources within the acquired organization, particularly if embedded in human capital, negatively affects acquisition performance, lending credit to the concerns raised in the literature about the organizational and human resources impacts of acquisition processes. That finding supports some recent empirical results obtained by strategy scholars (Cannella & Hambrick, 1993; Shanley, 1994).
- 3) Finally, the lack of support for the relatedness hypothesis (H9) is also somewhat surprising; despite the limited scope determined by the research design, the juxtaposition of purely horizontal with market extension acquisitions should have shown significant performance implications. Acquirers in the banking industry affirm that in-market acquisitions allow the extraction of cost efficiencies of up to 70% of the target's pre-acquisition cost structure, versus a 20% to 30% range in the case of market extensions. Closer examination of the hypothesis suggests several explanations for the "nonresult." First, the benefits of relatedness are relatively

transparent to the seller and might be priced out during negotiations (Singh & Montgomery, 1987; Barney, 1988). Second, most of the organizational costs incurred to extract the benefits from highly related acquisitions are hidden within the ordinary cost structure of the acquiring firm, and therefore might not be given full account by acquirers. In addition, however relevant, relatedness provides only the *potential* for value creation; if the capability to realize such potential is not adequately developed, knowledge-based and process-based explanations might become more powerful primitives of performance than resource-based ones.

Overall, the data show that the combination of knowledge accumulation processes, both tacit and explicit, with the opportune set of integration decisions can explain a significant portion of the variability in the performance of both single acquisition processes and the entire acquiring firm.¹²

The study was an empirical exploration of the explanatory power of routinization and codification mechanisms at the process level of analysis. The findings provide only a preliminary indication of the importance of these knowledge-based explanations for our understanding of how organizations evolve and succeed. The many possible expansions of such line of research include:

- Replicating the study in different industry contexts. The banking industry might be a good approximation of the service sector, but is structurally different from sectors characterized by fast technological evolution, heavy commitments in production capacity, or fluctuating consumer behavior.

¹² See Tables 6.10 through 6.14

- Exploring the role of the relatedness hypothesis by extending the analysis to product diversification and, eventually, unrelated acquisitions. It would also be important to produce a more finely grained measurement of relatedness based on internal resource and organizational characteristics. Finally, the relatedness question should be extended to cultural issues with the study of cross-border acquisitions.
- Testing the descriptive power of evolutionary economics and organizational learning theories in empirical contexts different from acquisition processes. Other areas in which application of similar knowledge-based arguments might provide significant contributions include the performance of joint-ventures and strategic alliances, internal reorganization and restructuring processes, and new product development processes.

If confirmed in other settings, the evidence uncovered in the study could help the field of strategic management to understand better how organizational learning and decision-making processes interact to create sustainable rents through superior manipulation of internal resources. With the capability-based view of competitive advantage, strategic management researchers might undertake a set of new challenges. For instance, they could study the circumstances under which a certain decision or implementation process is profitably routinizable and codifiable, and research how firms can exploit the advantages of such cognitive simplifications. Retaining and focusing the power of deliberate analysis for only the contexts in which it is advisable to invest managerial attention (Ocasio, 1997) and cognitive power (Gavetti & Levinthal, 1997) appears to be a highly promising and relatively unexplored area of investigation in the quest for the roots of firms' competitive advantage.

9. EXHIBITS

9.1 EXHIBIT A - ACQUISITION HISTORY PROFILE

9.2 EXHIBIT B - ACQUIRING BANK QUESTIONNAIRE

1. INFORMATION ON THE ACQUIRING INSTITUTION

This first section requires you to provide some basic information about your bank, as of today.

Geographic Coverage.

Total number of branches	#	_____
Number of counties with at least one branch	#	_____
Number of regions in which the bank is organized	#	_____
Number of states with at least one branch	#	_____
Number of branches outside the original state	#	_____

Operational Sites. In how many sites are the following activities carried forward ?

	Today ?	In 1990 ?
Check processing	# _____	# _____
Data processing	# _____	# _____
Phone center	# _____	# _____

Loan Portfolio. Please, assess the relative "weight" of the following types of loans, according to their dollar size and their earning capacity (*enter percent, adding up to 100%*).

	Size	Earnings
Commercial/corporate lending	_____ %	_____ %
Consumer/retail lending	_____ %	_____ %
Mortgage/real estate	_____ %	_____ %
Other	_____ %	_____ %
TOTAL	100 %	100 %

M&A Importance. How is M&A activity currently reported in the corporate communication documents (annual reports etc.) of your bank ? (*check one*)

- The most important operating element for the realization of strategic objectives.
- Among the top three elements for the realization of the strategic objectives
- An important but not priority element
- An activity being considered only on an opportunistic basis
- Reported as an extraordinary event, with limited or no strategic emphasis

M&A Structure.

Which of the following structures are currently in place in order to deal with acquisition processes (*check as many as applicable*).

- M&A Department
- Corporate Development (M&A, planning etc.)
- Financial/administrative function (specialized group led by CFO or Controller)
- No structure, acquisitions are handled on a case-by-case basis
- Other (explain) _____

2. INFORMATION ON THE ACQUISITION PROCESS

Support Documents and Models. For each of the following document, manual or quantitative model, please check whether it is currently being used by your institution. If yes, please assess the year in which it was created and how frequently it has been *significantly* updated since then.

Documents/Manuals	No	Yes	When ?	Never	Rarely	Frequently	Always
Due Diligence check-list	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Due Diligence manual	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systems conversion manual	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Affiliation/integration manual ²³	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systems training manual ²⁴	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Products training manual ²⁵	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quantitative Models (computer-based)							
Financial evaluation	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staffing models	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product mapping ²⁶	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training/Self-training packages	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project management ²⁷	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	19 _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

At what level of detail are financial projections made, staffing needs assessed and product portfolio analyzed ? (check one for each column)

	Projections	Staffing	Portfolio
At the aggregate level (the whole bank)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At a large group level (lines of business, functions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At a small group level (loan types, departments)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At the individual level (single product, branch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

According to past acquisition experience...

Out of every 10 situations in which a contact or discussion is initiated, how many result in a nonbinding bid ? # _____

Out of every 10 nonbinding bids, how many result in a Due Diligence phase ? # _____

Out of every 10 due diligence phases, how many result in a closed transaction ? # _____

Bidding. Please divide the acquisitions completed to this date in the following categories.

	How Many ?
Private, one-to-one negotiation	_____
Semi-private negotiation, 2 or 3 competing bidders	_____
Auction process run by an investment bank or the seller itself	_____
Auction process run by a regulatory agency (FDIC, RTC, etc.)	_____
TOTAL (as in the acquisition history profile)	_____

²³ Manual describing all the procedures necessary to accomplish the desired level of integration between the two organizations. It usually covers issues such as human resources, accounting, audit, CRA etc..

²⁴ Manual describing how to train the D.P. users at the acquired company. A "train-the-trainer" tool

²⁵ Manual describing how to train the sales-force at the acquired company (platform people, product specialists etc.)

²⁶ Allows thorough comparison of the features of the acquired bank's products with those of the acquirer.

²⁷ Assigns tasks, requirements and deadlines, allowing careful planning and control of complex projects.

Action Planning Is a formal "process management" document with detailed tasks, responsibilities and deadlines usually produced? Yes No
 If yes, when is the action plan usually finalized, with respect to the time of the announcement?
 # _____ weeks ...before... *or* ... after... the announcement.
 To what extent does the acquired bank have any say in the formation of the action plan?
 None **Critical**

Consider now a "typical" type of bank recently acquired by your institution....
Who does what ?. For each of the acquisition process phases, please assess the type of responsibility, if any, held by each of the following individuals or functions. Enter "L", as in Leader, the one who coordinates and bears the main responsibility for the decisions/outcomes
 "A", as in Approver, the one who ratifies the Leader's actions and bears the ultimate responsibility
 "D", as in Doer, the one who actually executes the actions required by the process
 "H" as in Helper, the one who lends the necessary support or advice to the Doer

	Selec tion	Negotia tion	Due Dilig.	Planning	Transiti on
Board of Directors					
C.E.O.					
C.F.O. (or controller)					
Corporate Development Exec.					
Staff of M&A specialists					
Lines of Business Executives					
Staff Functions (HR, D.P., legal etc.)					
Sponsor/Champion of transaction					
Heads of Task Forces (if formed)					
Steering Committee (formed ad hoc)					
Regional Leader (CEO, controller)					
Regional Representatives					
How many people in total ? approx					

How many members of the transition team were also in the due diligence team? # _____
 How many members of the transition team had been in previous transition teams? # _____

Process Times. Please provide your best estimate of the times required for the following processes as of the first acquisition experiences had, as of the most recent ones, and what your objectives are for the future transactions.

	Past	Present	Future
Due Diligence (# of business days)	# _____	# _____	# _____
Planning for transition (# of weeks)	# _____	# _____	# _____
Evaluation/selection of human resources (# of weeks)	# _____	# _____	# _____
From announcement to start of systems conversion (weeks)	# _____	# _____	# _____
Systems conversion (start to conversion day, # of weeks)	# _____	# _____	# _____
From conversion day to complete normalization (weeks)	# _____	# _____	# _____

POST-ACQUISITION INTEGRATION STRATEGY.

Following you will find the description of several approaches which, according to our previous research, represent viable alternatives as general guidelines for post-acquisition management processes. Please select which one is the best description of the approach which your bank would follow in a "typical" acquisition, as of today, as of 5, and as of 10 years ago (enter the relevant number).

___ Today # ___ 1990 # ___ 1985

Scenarios:

- 1 The acquired bank maintains the organizational structure, systems, processes and leadership as it was before the acquisition. The acquiring bank limits its intervention to the coordination of high level strategies, and to periodical monitoring of performance.
- 2 The systems and processes of the acquired bank are restructured in order to ensure its long-term viability, but they are not necessarily integrated with the equivalent elements of the acquiring unit. The process is carried forward by the old management under the general supervision of the acquirer.
- 3 Most support functions (like systems, HR, accounting, legal etc.) are integrated or centralized with those of the acquiring bank. The leadership of the acquired bank is usually unchanged and will preserve substantial autonomy on business generation, pricing, product portfolios and so on.
- 4 The acquired bank is entirely integrated within the structure of the acquiring bank. The top management is substantially renewed and the organizational structure is significantly altered to accommodate the acquiring bank's requirements. No attempt is usually made to screen and eventually keep the best practices in the acquired organization.
- 5 The complete integration of the two organizations is achieved through a careful selection of at least some of the comparable resources (products, practices, HR etc.). For example, a thorough re-hiring process will include employees from both banks in overlapping geographical areas. The top management team is carefully evaluated and top performers are retained, motivated and eventually promoted to new positions within the acquiring organization.

Strategic Priorities. What do you care most when you manage acquisitions? Please **rank** the following objectives in order of importance. *Assign a number from 1 to 5, where 1 is the top priority.*

	Rank #
Enhance revenue generation of acquired unit	_____
Cut fixed costs and obtain quick efficiency gains	_____
Select and retain the highest possible quality of people	_____
Gain access to business intelligence (new clients, products, systems)	_____
Improve policies and procedures to enhance long-term efficiency	_____

Implementation Priorities. Similarly, **rank** the following criteria in order of importance for the successful execution of the acquisition plans. *Assign a number from 1 to 6.*

	Rank #
Ensure consensus with the top management of the acquired bank	_____
Closely monitor and minimize the error rates (misposted transactions etc.)	_____
Ensure consensus among all the employees of the acquired bank	_____
Minimize changes and disruptions during the transition phase	_____
Minimize the process times (to convert systems, select HR etc.)	_____
Closely monitor the quality of training programs	_____

3. INFORMATION ON THE PERFORMANCE OF ACQUISITIONS

How many years after the integration of the acquired bank is financial performance formally monitored? (enter "0" if not monitored) # _____
 Is there a formal process for the comparison of projections with actual performance? (Y/N) _____

Performance Evolution. This is perhaps the most important question in the entire survey. It is critical for us to understand the evolution of the performance levels at your institution. Please make your very best effort to answer thoroughly and carefully.

For each of the following performance measures of the post-acquisition process, please assess whether it is usually monitored. Also, enter your *best estimate* of the levels of each variable (even if not consistently monitored) after the first acquisition experiences, after the most recent ones, and what your target levels are for the future transactions. Enter "NI" if you have No Idea of these quantities.

	Monitored ?		Past	Present	Future
	No	Yes			
Financial Performance					
Shareholders' Dilution after 2 years	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
% of fixed costs cut after 2 years ²⁸	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
Variation of ROA 2 years after the acquisition	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
Actual vs. Budget difference of ROA (2 years after)	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
Process Cost Measures²⁹					
Systems conversion cost (\$ in '000)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	\$ _____	\$ _____
Training costs (\$ in '000)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	\$ _____	\$ _____
Total integration process cost (including all other items)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	\$ _____	\$ _____
Process Quality Measures					
Unexpected write-offs (% of loans in excess of plans)	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
Deposit run-offs (% of closings/month in excess of avg.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
% of misposted transactions 1 month after conversion	<input type="checkbox"/>	<input type="checkbox"/>	_____ %	_____ %	_____ %
# of troubleshooting calls/week 1 mo. after conversion	<input type="checkbox"/>	<input type="checkbox"/>	# _____	# _____	# _____
# of client complaints/week 1 month after conversion	<input type="checkbox"/>	<input type="checkbox"/>	# _____	# _____	# _____

Areas of Improvement. Following is a list of the most common problems experienced during bank acquisition processes. Please assess the degree of improvement in your institution's acquisition process, necessary to reach the best possible acquisition performance.

The need for improvement in our acquisition process is	None	Minimal	Fair	Major	Critical
Preventing deposits run-offs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessing portfolio quality to prevent unexpected write-offs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generating new business for the acquired entity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimizing mistakes while converting D.P. systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increasing gains from cuts to fixed costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving existing procedures (operations, control etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving customer satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving precision in evaluating the quality of HR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortening times of transition phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimizing costs of the transition phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retaining high quality managers and employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensuring cooperation from the target	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Importing superior practices/products from acquired unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

²⁸ Consider an in-market acquisition with average geographical overlap.

²⁹ Consider the average size of the banks purchased by your institution

9.3 EXHIBIT C - PHASE 2 QUESTIONNAIRE - GENERAL PART

A. INFORMATION ON THE ACQUIRED INSTITUTION

The purpose of this section is to gather information on some of the most important characteristics that the acquired unit had at the time of the acquisition.

Object. Which of the following more accurately describes the object of the transaction ?

- Merge the assets of two similar entities, defined as "merger of equals"
- Purchase of control of a multi-bank holding company
- Purchase of control of a commercial bank
- Purchase of control of an S&L or a credit union
- Purchase of selected assets (branches, deposits etc.)

Location. Where is the acquired unit headquartered ? *(check one of the following)*

- In the same county where the acquiring institution is headquartered
- In a county where the acquiring institution had a local presence
- In the same state, but in a county where the acquiring institution had *no* presence
- In a different state, where the acquiring institution had already a presence
- In a different state, where the acquiring institution had *no* presence

Operating Effectiveness. Please assess the effectiveness level of the following operating functions, *relative to those of the Acquiring Unit*, as of the time before the acquisition *(check the most appropriate box)*.

Operating Functions	Much Worse	Worse	Similar	Better	Much Better
Credit underwriting policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operations (back-office)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administration (accounting, audit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marketing & Advertising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer service (i.e. tellers, phone)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Quality of Resources. Similarly, assess the quality level of the following resources.

Resources	Much Worse	Worse	Similar	Better	Much Better
Commercial/corporate loan portfolio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consumer/retail loan portfolio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilities/location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information systems/D.P.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reputation/image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ownership Structure.

	Yes	No
Were the shares of the acquired institution publicly traded ?	<input type="checkbox"/>	<input type="checkbox"/>
If no, was it family-owned or controlled ?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, was the ownership of the acquired institution widely diffused ?	<input type="checkbox"/>	<input type="checkbox"/>
Was the top management of the acquired institution a significant shareholder ?	<input type="checkbox"/>	<input type="checkbox"/>
Had the acquired unit ever purchased or merged into other banks before ?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approximately how many acquisitions had it completed ?	#	_____

Similarity. What was the degree of *similarity* between the acquired and the acquiring unit before the acquisition, according to the following elements ?

	No Similarity			Almost the Same	
Products/services offered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geographic markets served (branch overlap)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer segments served	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Underwriting policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating procedures (back-office)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.P. systems (technology, telecom etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human resources practices (compensation etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Management style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Key Figures. Please provide the following information about the acquired unit, as of the time before the agreement to purchase (*\$ in Million, please consult your project file*).

Book Value	\$	_____
Market Value (if listed)	\$	_____
Price paid: \$_____ in cash + \$_____ in stock and other =	\$	_____
Net Interest Income (last 12 months before acquisition) ³⁰	\$	_____
Non-interest Income (same as above)	\$	_____
Non-interest expense (same as above)	\$	_____
Earnings before taxes and extraordinary items (same as above)	\$	_____
Number of Full Time Equivalents	#	_____
Total number of branches purchased	#	_____

Loan Portfolio. Please, assess the relative “weight” of the following types of loans, according to their dollar size and their earning capacity (*enter percent, adding up to 100%*).

	Size	Earnings
Commercial/corporate lending	_____ %	_____ %
Consumer/retail lending	_____ %	_____ %
Mortgage/real estate	_____ %	_____ %
Other	_____ %	_____ %
TOTAL	100 %	100 %

³⁰ If income statement numbers are not available for the last 12 months before acquisition, use last quarter or last year (please state which one you use). Make sure that they all have the same time basis.

B. INFORMATION ON THE ACQUISITION PROCESS

Idea Generation. Which of the following sources introduced the idea of purchasing the acquired institution? (check as many as applicable)

<i>INTERNAL</i>		<i>EXTERNAL</i>	
Holding Company Level		Consultants	
Board of Directors	<input type="checkbox"/>	Investment bank	<input type="checkbox"/>
Chief Executive Officer	<input type="checkbox"/>	Legal advisors	<input type="checkbox"/>
Other Senior Executives	<input type="checkbox"/>	Auditing/accounting firm	<input type="checkbox"/>
Strategic Planning Group.	<input type="checkbox"/>	Management consultant	<input type="checkbox"/>
M&A Group	<input type="checkbox"/>	Other	
Local/Regional Bank Level		Acquired company itself	<input type="checkbox"/>
Chief Executive Officer	<input type="checkbox"/>	Government agency	<input type="checkbox"/>
Other Senior Executives	<input type="checkbox"/>	Public knowledge	<input type="checkbox"/>
Staff functions	<input type="checkbox"/>	Other _____	<input type="checkbox"/>

Acquisition Motives. Check the degree of relevance of the following acquisition motives for the transaction considered. (check the most appropriate box)

	Irrelevant				Major Motive
Increase market presence in an attractive area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce costs or risks of entering a <i>new market</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achieve economies of scale in operations capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access market <i>experience</i> in a certain type of products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enhance revenue generation (cross-selling etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilize the <i>acquiring</i> unit's personnel, skills or technology to improve operations of the <i>acquired</i> unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilize the <i>acquired</i> unit's personnel, skills or technology to improve operations of the <i>acquiring</i> unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect existing customer base or market position from potential erosion due to competitors' aggressive actions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take advantage of opportunities offered by government agencies to reduce costs or risks of acquisition activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Restructure or divest</i> poor-performing elements of the otherwise undervalued acquired unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Previous Relationship. Which of the following describes the relationship between the two institutions *before the acquisition*? (check as many as applicable)

- No relationship
- Minority participation
- Seats on the board of directors
- Cooperation agreement (on specific products, markets etc.)
- Correspondent bank
- Shared operations (check processing, D.P. services, etc.)
- Personal relationships among top executives
- Other (specify) _____

Bidding. Which of the following more accurately describes the negotiation environment ?

- Private negotiation with the acquired unit, no other bidders
- Multiple bidder situation, but no formal auction.
- Auction process run by the Acquired Unit, or its agent (investment bank etc.)
- Auction process run by a government agency (FDIC, RTC etc.)
- Other (specify) _____

Negotiation

Which of the following was the key counterpart during the negotiation process ? (check 1)

- Key shareholder(s)
- Board
- CEO
- Top management team

How many weeks did the negotiation process last ? (approx.) # _____

Milestones. Please, provide the time of the following events in terms of number of weeks from the public announcement of the transaction.

How many weeks after the public announcement....

- did the due diligence process start ? # _____
- did the due diligence process end ? # _____
- was the definitive agreement to purchase signed ? # _____
- was the acquisition officially approved by regulators ? # _____
- did the systems conversion process start, if it did ? # _____
- were systems completely converted, if they were ? # _____
- did the identity of the acquired unit change, if it did ? # _____
- was the post-conversion/integration emergency period over ? # _____

C. DUE DILIGENCE

Disclosure. To what degree was a complete disclosure of data possible due to confidentiality issues or legal impediments on the part of the seller ?

No Problem

Very Difficult

Output. Which of the following best describes the type of output originated by the Due Diligence process ? (check as many as applicable)

- Verbal discussion of all the findings among the members of the Due Diligence team and with the top management of the Acquiring Unit
- Written reports submitted by all the key areas summarizing the findings
- Cost and revenue projections computed by all the key areas
- Mapping of the DP systems, including plans for conversion
- Mapping of products/markets, including suggestions for keep/change decisions
- Evaluation of HR quality, with preliminary staffing plan of each branch
- Complete business plan for the transition phase

Price Variation. What is the percent change applied to the offered purchasing price as a consequence of the completion of the Due Diligence process ? (specify + or -) _____%

Expectations about transition period as of the end of Due Diligence.

How many weeks after the announcement was final closing expected to happen ? # _____
 Were any expectation formed as to the systems conversion date ? Yes No
 If yes, how many weeks after the announcement was the planned conversion date ? # _____
 Was an approximate forecast of the integration costs made ? Yes No
 If yes, how much was the overall post-acquisition integration expected to cost ? (\$.000) \$ _____

D. AFTER THE DUE DILIGENCE PHASE

Leadership Change. Was the person in charge of the following functions at the acquired unit still in place after the acquisition ? If not, was (s)he laid off ? Was (s)he replaced with an officer from acquiring unit, from the acquired unit, with someone newly hired, or was the position simply canceled ?

	Same Person ?		Laid off ?		Replaced with someone from....			
	Yes	No	Yes	No	Buyer	Seller	New	No one
Chief Executive Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chief Operating Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chief Financial Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head of Retail Banking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chief Credit Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head of Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head of D.P./Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head of Corp. Development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head of Human Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Alignment of Products and Procedures. To what extent have the following elements of the acquired organization been aligned (i.e. changed towards similarity) with those of the acquiring unit ?

Products/Procedures	Not at all		Completely		
Features of deposits products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features of commercial loan products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features of consumer/retail loan products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lending policies and procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human resources policies (compensation etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating procedures (servicing, execution)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accounting/Audit systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.P./telecom systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Consolidation of Functions. To what extent have the following functions/departments of the acquired organization been consolidated within those of the acquiring unit ?

Functions/Departments	Not at all			Completely	
Credit lending department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operations department (back-office)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.P./technology department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marketing/Customer support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accounting/audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If all (or nearly all) the answers to the previous two questions have been "Not at all", please turn to the next section to assess the Acquisition Performance. Otherwise proceed with the following question.

Business Plan.

In case it was not done before, was a business plan produced in this phase ? Yes No
 If yes, at what level of detail were financial projections made, staffing needs assessed and product portfolio analyzed ? (check one for each column)

	Projections	Staffing	Portfolio
At the aggregate level (the whole bank)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At a large group level (lines of business, functions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At a small group level (loan types, departments)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At the individual level (single product, branch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After the Transition Phase. Were any of the following initiatives taken in order to summarize the lessons learned during the acquisition process ? (check as many as applicable)

- A formal brainstorming session on lessons learned was held
- Each of the business lines and support functions submitted a written report
- Each of the business lines and support functions verbally reported to top-executive
- A detailed document was written with input from all the relevant players
- Models and manuals were created and, if existing, significantly updated
- Other (explain) _____
- None of the above

Adoption/Transfer Back. To what extent have any of the following elements of the *acquired* institution been transferred and/or adopted within the *acquiring* institution ?

	Never Happened	Very Frequently
Products on the deposits side	<input type="checkbox"/>	<input type="checkbox"/>
Products on the commercial loans side	<input type="checkbox"/>	<input type="checkbox"/>
Products on the consumer loans side	<input type="checkbox"/>	<input type="checkbox"/>
Lending policies, evaluation practices	<input type="checkbox"/>	<input type="checkbox"/>
Operating procedures (back-office)	<input type="checkbox"/>	<input type="checkbox"/>
D.P./telecom systems or procedures	<input type="checkbox"/>	<input type="checkbox"/>
Managerial talent (people transferred to acquirer)	<input type="checkbox"/>	<input type="checkbox"/>

E. ACQUISITION PERFORMANCE

The following question is probably the single most important item of the questionnaire. This information is generally not available from call reports, and we must rely on your willingness to cooperate to the success of this research effort.

By all means, do consult the acquisition file with the projections made in the business plan or during the pre-closing phase. For the actuals, please make an effort to collect them. If impossible, please provide your best estimate and put an "E" after the number.

If you have an assistant gathering the numbers, please check their quality and their consistency with the projections. Thank you very much for your time and effort on this one.

Projected vs. Actual. Please provide the following information about the projections and the actual figures as of one and two years after the acquisition (\$ in million, except %).

	Projections		Actual	
	Year 1	Year 2	Year 1	Year 2
Total Assets	_____	_____	_____	_____
Total Deposits	_____	_____	_____	_____
Total Loans	_____	_____	_____	_____
Non-perf. Loans ³¹	_____	_____	_____	_____
Book Value	_____	_____	_____	_____
Net Interest Income	_____	_____	_____	_____
Charge-offs	_____	_____	_____	_____
Non-interest Income	_____	_____	_____	_____
Employment Expenses	_____	_____	_____	_____
Other non-interest Expenses	_____	_____	_____	_____
Net Earnings	_____	_____	_____	_____
# of Full-time Equivalents	_____	_____	_____	_____
# of Branches	_____	_____	_____	_____

Process Costs. What was the final cost of the following items of the post-acquisition process, and how much did they differ from the expectations/business plan ?. (\$ in thousands, except where %)

	Actual	(+ or -)	% Diff.
Branch conversion/closing/upgrading	\$ _____	_____	_____%
Systems conversion (excl. systems training)	\$ _____	_____	_____%
Human resources (excl. training)	\$ _____	_____	_____%
Training costs (incl. systems)	\$ _____	_____	_____%
Marketing initiatives	\$ _____	_____	_____%
Other costs (specify) _____	\$ _____	_____	_____%
TOTAL	\$ _____	_____	_____%

External Support. Please assess whether any of the following types of advisors or contractors have been used during the various phases of the process, and their approximate cost.

	Yes	No	(\$ in '000s)
Investment banking (selection, negotiation etc.)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
General consulting (management, marketing etc.)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
Accounting/auditing	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
Systems/technology specialists (conversion)	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
Training specialists	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____

Press. What was the general reaction of the local press to the human resources practices adopted during the post-acquisition integration phase, if any ?

No	Very					Enthusiastic
Reaction	Negative					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

³¹ 90 days, even if accruing

Unexpected Problems. Here are listed some of the most typical areas in which problems are experienced during the transition phase. Please assess the relevance of each of them to the acquisition considered, *with respect to the pre-acquisition expectations.*

Compared to expectations	Less/ Lower	In Line	More/ Higher
Quality of loan portfolio was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New business generation was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deposits run-offs were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of facilities was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of D.P. systems was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gains from cuts to fixed costs were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvements in procedures were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvements in control systems were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvements in customer satisfaction were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of human resources was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Willingness to cooperate was	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retained managers leaving were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retained employees leaving were	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your View. Please assess your level of agreement with the following statements, keeping as a benchmark all the acquisitions made by your bank until today.

Compared with the other acquisitions....	Strongly Disagree	Strongly Agree
The unit selected was the best possible target	<input type="checkbox"/>	<input type="checkbox"/>
Negotiated price/terms were the best possible	<input type="checkbox"/>	<input type="checkbox"/>
Negotiations were smooth and relaxed	<input type="checkbox"/>	<input type="checkbox"/>
Due diligence was as accurate as possible	<input type="checkbox"/>	<input type="checkbox"/>
Consensus among the two management teams was high	<input type="checkbox"/>	<input type="checkbox"/>
Middle management was extremely cooperative	<input type="checkbox"/>	<input type="checkbox"/>
The systems conversion was flawless	<input type="checkbox"/>	<input type="checkbox"/>
Human resources were effectively integrated	<input type="checkbox"/>	<input type="checkbox"/>
The impact on customers was positive	<input type="checkbox"/>	<input type="checkbox"/>
Performance improvements were satisfactory	<input type="checkbox"/>	<input type="checkbox"/>
Best resources/practices were transferred to acquirer	<input type="checkbox"/>	<input type="checkbox"/>
Overall, this acquisition was a success	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS. Please feel free to add any issue regarding activities and consequences of the acquisition process, that you deem important and that has not been addressed.

9.4 EXHIBIT D – CONSTRUCT VALIDITY

Exhibit D provides the details for the analysis of construct validity of the Phase 1 measures performed with the use of multiple indicators measured with the Phase 2 survey. See Chapter 5 for a description of the research design and Section 5.4 for a summary of the analyses presented below.

D.1 Resource Quality

The General Part questionnaire of the Phase 2 survey contains 11 indicators of the quality of the target's resources and practices, assessed in comparison with the quality of the corresponding features of the acquiring firm (see page 1 of the questionnaire in Exhibit C). A factor analysis of these indicators (principal components method, no rotation) results in the identification of two factors (Eigenvalues >1). The first factor loads on the relative quality of all the features of the acquired firm, and the other distinguishes the quality of the loan portfolio and the related underwriting practices from the quality of all the other organizational features probed. The factor loadings, the Eigenvalues, and the percentage of variance related to each factor are reported in the table below.

Furthermore, Table D.1 reports the bivariate correlations among the Phase 1 and the Phase 2 measures of resource quality. While the Phase 1 proxy of resource quality (target's pre-acquisition profitability) correlates significantly with only 8 of the 11 Phase 2 indicators, the remaining three (quality of the marketing function, of customer service, and of the location of facilities) are also weakly correlated with the rest of the measures.

These correlational patterns ensure a good centrality of the Phase 1 scale with respect to the assessment of the overall quality construct.

FACTOR LOADINGS -RESOURCE QUALITY-

Phase 2 Measures	Factors	
	Quality	Loan portfolio
Consumer loan portfolio	.373	.689
Commercial loan portfolio	.656	.461
Credit underwr. Policies	.613	.498
Administration / audit	.788	-.063
Human resources	.694	-.040
Information systems	.671	-.427
Marketing & advertising	.711	-.178
Location / facilities	.608	-.181
Operations (back-office)	.736	-.332
Reputation / image	.663	.215
Customer service	.531	-.306
Eigenvalues	4.637	1.438
% of Variance	42.1%	13.1%

Table D.1 - CORRELATION MATRIX -RESOURCE QUALITY (Phase 1 and 2)-

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9	10	11
1	Quality Phase 1	.0755	1.00											
2	Credit underwr. policies	2.111	.7181	.424 ***										
3	Human resources	2.717	.6006	.302 **	.252 *									
4	Information systems	2.491	.8463	.295 **	.284 **	.465 ***								
5	Marketing & advertising	2.537	.8176	.110	.282 **	.502 ***	.422 ***							
6	Location / facilities	2.815	.7542	.139	.248 *	.344 **	.287 **	.470 ***						
7	Consumer loan portfolio	2.38	.79	.263 *	.394 ***	.306 **	.015	.190	.121					
8	Commercial loan portfolio	2.17	.70	.530 ***	.606 ***	.349 **	.277 **	.275 **	.242 *	.369 ***				
9	Operations (back-office)	2.491	.6181	.302 **	.321 **	.347 **	.678 ***	.421 ***	.401 ***	.098	.354 ***			
10	Reputation / image	2.667	.6729	.367 ***	.390 ***	.421 ***	.263 *	.400 ***	.471 ***	.304 **	.404 ***	.378 ***		
11	Customer service	2.870	.5510	.199	.180	.347 **	.345 **	.325 **	.395 ***	.116	.207	.357 ***	.187	
12	Administration/ Audit	2.537	.7194	.363 ***	.430 ***	.541 ***	.480 ***	.463 ***	.326 **	.149	.541 ***	.606 ***	.416 ***	.369 ***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

D.2 Resource Relatedness

As mentioned in Section 5.3, the degree of variation in the resource relatedness construct has been kept low by design in order to allow for a better study of the creation of integration capabilities in relatively homogeneous acquisition contexts. The dimension chosen in response to the prevailing criterion used by the banking industry is not, however, a good representation of the complex construct of organizational relatedness. Both the factor and the correlation analyses (see Table D.2) show that the distinction between “in-market” and “out-market” acquisitions relates to the characteristics of the market served by the two firms. Yet, this relationship does not imply that the two firms are also similar in terms of internal features, such as systems, procedures, and management style. In a way, this result speaks to the significance of the distinction advanced by Haspeslagh and Jemison (1991) between product market and organizational relatedness. However, the following factor analysis of the eight Phase 2 indicators does show that all of these variables, including geographic overlap and similarity of customer segments served, load on the same main factor, which can be interpreted as the “relatedness” construct. The same analysis, then, highlights the difference of the two external resources (geographic location of the two branch networks and the similarity in customer segments served) with respect to the other internal measures of resource relatedness.

FACTOR LOADINGS -RESOURCE RELATEDNESS-

Phase 2 Measures	Factors	
	Relatedness	External vs. Internal factors
Geographic markets	.365	.727
Customer segments	.682	.507
D.P. systems (technology)	.773	-.379
Human resources practices	.639	-.279
Operating procedures	.692	-.493
Underwriting policies	.625	.046
Products / services offered	.798	.089
Management style	.592	.172
Eigenvalues	3.459	1.289
% of Variance	43.2%	16.1%

Table D.2 - CORRELATION MATRIX - RESOURCE RELATEDNESS-

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8
1	Relatedness Ph. 1	.470	.500								
2	Customer segments	3.000	1.079	.191							
3	D.P. systems (technology)	2.491	1.069	-.136	.248 *						
4	Geographic markets	2.179	1.295	.707 ***	.469 ***	.109					
5	Human resources practices	2.800	.7552	.049	.291 **	.422 ***	-.008				
6	Operating procedures	2.750	.9195	-.233 *	.220	.710 ***	.084	.430 ***			
7	Underwriting policies	2.400	.8735	-.001	.263 **	.400 ***	.245 *	.264 **	.372 ***		
8	Products / services offered	3.056	.8107	.099	.593 ***	.594 ***	.309 **	.395 ***	.467 ***	.356 ***	
9	Management style	2.339	.7453	-.118	.407 ***	.305 **	.124	.348 ***	.206	.363 ***	.371 ***

Pearson's correlation. Significant at the 0.01 (***) , 0.05(**) or 0.10 (*) level

D.3 Level of Integration

The level of integration construct has been measured in the second part of the survey with two different questions probing for an assessment of the degree to which the key features and procedures of the two firms have been aligned and centralized. The 15 items, which generally show a strong correlation with the Phase 1 measure (see Table D.3), consistently load on one main factor (Eigenvalue = 9.27). They can also be further broken down between the alignment and the centralization part of the definition of the level of integration (see Definition 3 in Chapter 4). The third factor is more difficult to interpret, but is of nominal importance, as the Eigenvalue is barely above 1 and the variance covered is minimal (6.7%). In terms of correlational evidence, 2 of the 8 alignment measures, those referring to HR policies and to the lending procedures, do not correlate with the Phase 1 measure, while all 7 centralization measures show strong correlational ties (see Table D.3).

FACTOR LOADINGS - LEVEL OF INTEGRATION -

Phase 2 Measures	Integration	Alignment vs. centralization	Factor 3
Alignment audit/ accounting	.778	.384	.163
Alignment consumer loans	.889	.234	-.267
Alignment D.P. systems	.895	.352	.131
Alignment HR policies	.556	.795	-.078
Alignment oper. procedures	.928	.290	.072
Alignment comm. loans	.885	.164	-.010
Alignment deposit products	.783	-.134	-.512
Alignment lending procedure	.596	.725	-.002
Centralization audit function	.829	-.344	.307
Centralization lending dept	.649	-.419	.265
Centralization D.P. dept	.833	-.430	-.257
Centralization HR function	.807	-.410	.310
Centralization legal dept	.680	-.100	.423
Centralization marketing dept	.767	-.432	-.202
Centralization operations	.807	-.443	-.266
Eigenvalues	9.271	2.651	1.006
% of Variance	61.8%	17.7%	6.7%

**Table D.3 - CORRELATION MATRIX
INTEGRATION (Ph. 1) vs. ALIGNMENT and CENTRALIZATION (Ph. 2)**

	Variables	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Phase 1. Level of integration	2.469	.8921															
2	Alignment HR policies	4.481	1.094	.067														
3	Align. oper. procedures	4.333	1.213	.368**	.772***													
4	Align loans commercial	4.333	1.000	.379***	.711***	.948***												
5	Align deposit products	4.111	1.423	.414***	.547***	.820***	.833***											
6	Alignment lending proced.	4.518	1.004	.169	.936***	.784***	.729***	.579***										
7	Align audit/accounting	4.509	.9927	.342**	.821***	.867***	.819***	.614***	.838***									
8	Align loans consumer	4.222	1.192	.416***	.755***	.926***	.907***	.886***	.768***	.764***								
9	Alignment D.P. systems	4.222	1.327	.441***	.795***	.902***	.854***	.686***	.846***	.881***	.863***							
10	Centralization audit function	4.667	.9316	.498***	.086	.501***	.442***	.455***	.108	.258*	.408***	.397***						
11	Centralization lending dept	3.963	1.554	.457***	.155	.567***	.571***	.557***	.254	.352***	.534***	.471***	.695***					
12	Centralization D.P. dept	4.648	1.067	.528***	.051	.369***	.343**	.499***	.068	.246*	.419***	.389***	.487***	.356***				
13	Centralization HR function	4.463	1.059	.511***	.178	.597***	.595***	.566***	.231*	.368***	.530***	.489***	.924***	.848***	.431***			
14	Centralization legal dept	4.67	.9500	.543***	.266*	.584***	.490***	.377**	.367**	.466***	.505***	.621***	.710***	.441***	.549***	.633***		
15	Centralization Marketing dept	4.259	1.216	.515***	.245*	.644***	.640***	.735***	.305**	.455***	.688***	.537***	.677***	.734***	.639***	.770***	.454***	
16	Centralization Operations	4.481	1.128	.539***	.114	.584***	.553***	.753***	.158	.317**	.634***	.494***	.658***	.581***	.770***	.663***	.532***	.829***

Pearson's correlation. Significant at the 0.01 (***) , 0.05(**) or 0.10 (*) level

D.4 Replacement of the Top Management Team

The correspondence between the Phase 1 and the Phase 2 measure of the replacement construct has to be assessed in a slightly different way, as the latter survey prompts for a list of binary measures related to the effective retention of 9 top management positions. The first index of the Phase 2 decisions was constructed by summing up the dummy variables, as this is the straightforward sense of the question asked in the Phase 1 survey (“the extent to which the executive leadership of the acquired bank has been replaced after the acquisition”). The results, however, are consistent with those described for the other constructs. As shown in the table below, all the measures load on the main factor, which represents 64.5% of the variance, and, once extracted, shows a significant correlation with the Phase 1 scale. The factor analysis also identifies a second factor that (weakly) discriminates between the top two functions and the other ones, in terms of their specific replacement patterns.

FACTOR LOADINGS -REPLACEMENT-

Position	Factors	
	Replacement	Top two positions
Chief Executive Officer	.738	.562
Chief Operating Officer	.720	.582
Head of Retail Banking	.816	.159
Chief Credit Officer	.702	.065
Chief Financial Officer	.901	-.056
Corporate Development	.841	-.327
D.P. / Technology	.856	-.228
Human Resources	.833	-.325
Head of Operations (back-office)	.800	-.272
Eigenvalues	5.809	1.026
% of Variance	64.5%	11.4%

Table D.4 - CORRELATION MATRIX -REPLACEMENTS-

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9
1	Replacement - PHASE I	1.75	1.30									
2	Chief Credit Officer	.28	.46	-.408 ***								
3	Chief Executive Officer	.44	.50	-.597 ***	.520 ***							
4	Chief Financial Officer	.30	.47	-.551 ***	.586 ***	.766 ***						
5	Chief Operating Officer	.39	.49	-.664 ***	.549 ***	.875 ***	.786 ***					
6	Corporate Development	.14	.36	-.370 **	.694 ***	.465 ***	.816 ***	.397 **				
7	D.P. / Technology	.24	.43	-.608 ***	.477 ***	.633 ***	.810 ***	.623 ***	.679 ***			
8	Human Resources	.28	.45	-.514 ***	.655 ***	.594 ***	.822 ***	.594 ***	.815 ***	.733 ***		
9	Operations	.33	.48	-.605 ***	.494 ***	.616 ***	.734 ***	.632 ***	.612 ***	.883 ***	.655 ***	
10	Head of Retail Banking	.45	.50	-.528 ***	.641 ***	.742 ***	.758 ***	.671 ***	.600 ***	.659 ***	.694 ***	.589 ***

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

D.5 Post-acquisition Integration Performance

The performance measures gathered with the Acquisition History Profile have been analyzed using two sets of assessments generated by the Phase 2 survey. The first set calls for a judgment on the performance of the various parts of the integration process, as compared with initial expectations, while the second benchmarks similar types of assessments with all the acquisitions experienced by the same acquirer. Bivariate correlations between the three Phase 1 measures and all the Phase 2 indicators are presented in Table D.5 and D.6.

The two measures of performance, which refer to specific sub-processes (i.e. the integration of the workforce and the conversion of the information systems), have been contrasted with a subset of these Phase 2 indicators that point towards similar constructs. Eight of them have been identified for the human resources integration, while five were identified for the systems conversion process. The results of the factor analyses support the representativeness of the Phase 1 scale. The HR affiliation process items load on three factors.

FACTOR LOADINGS -PERFORMANCE HR AFFILIATION-

Phase 2 Variables	Factors		
	Affiliation	Retention	Only HR
HR effectively integrated	.548	-.122	.569
HR quality	.684	.014	.513
Target's will to cooperate	.705	-.111	.203
Consensus among TMT	.849	.048	-.380
Cooperation of middle managers	.829	.087	-.172
Smooth negotiation	.731	-.009	-.472
Retention employees	.004	.913	-.018
Retention managers	.028	.909	.144
Eigenvalues	3.208	1.697	1.046
% of Variance	40.1%	21.2%	13.1%

The first one points towards the overall performance construct, the second one singles out the issue of retention of employees and managers, while the third one, which has a less clear interpretation, appears to emphasize the “core” HR affiliation issues with respect to conflict and retention issues.

The five Phase 2 items dealing with value creation mechanisms based on the pursuit of cost efficiencies load on two factors. The first one speaks directly to the performance issue, while the second one discriminates the benefits to be derived from the conversion of the information systems from the more general improvements in internal procedures and in the control systems. The Phase 1 performance assessment of the smoothness of the systems conversion process correlates in a significant way with the Phase 2 assessments regarding the degree to which improvements in operating procedures (Pearson’s index = .403) and in information systems (P = .373) and in customer satisfaction (.445) were better than expected. It also correlates well with respect to the comparisons with the performance of all the other completed transactions not just in terms of systems conversions process (Pearson’s correlation = .405) but also in terms of HR affiliation (.413), customer impact (.453) and overall performance improvements.

FACTOR LOADINGS - PERFORMANCE-COST EFFICIENCIES -

Phase 2 Variables	Factors	
	Cost efficiencies	D.P. conv. only
Smooth systems conversion	.511	.493
DP system quality	.257	.806
Cost efficiency	.527	-.366
Procedures improvements	.869	-.023
Improvement control Systems	.818	-.302
Eigenvalues	2.029	1.118
% of Variance	40.6%	22.4%

Table D.5 - CORRELATION MATRIX
-POST-ACQUISITION PERFORMANCE - Benchmark: pre-acquisition expectations

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Overall integration process (Ph. 1)	.6531	1.217															
2	HR affiliation (Ph. 1)	.5714	1.118	.639 ***														
3	D.P. systems conv. (Ph.1)	.7273	1.020	.715 ***	.586 ***													
4	Target willing to cooperate	3.075	1.071	.194	.280 *	.222												
5	Gains from cost efficiency	3.000	.6262	.229	.048	.225	.058											
6	Deposit run-offs	3.000	.9100	-.398 ***	-.297 **	-.238	-.078	-.270										
7	Quality of D.P. systems	2.961	.4411	.114	.115	-.050	-.038	.000	.144									
8	Quality of facilities	3.000	.3885	.164	.272 *	.184	.275 **	.079	-.053	.256 *								
9	Quality of human res.	2.852	.7113	.420 ***	.439 ***	.385 **	.548 ***	.043	-.233	.104	.068							
10	New business generation	2.813	.8704	.527 ***	.331 **	.313 **	.138	.212	-.595 ***	.031	.223	.442 ***						
11	Quality of loan portfolio	2.660	.8975	.317 **	.205	.020	.303 **	-.165	-.303 **	.034	.219	.068	.368 ***					
12	Improvement in procedures	3.019	.4996	.447 ***	.376 ***	.403 ***	.147	.310 **	-.293 **	.180	.098	.383 ***	.271 **	-.114				
13	Retention of employees	2.926	.8208	-.001	-.033	.016	.030	-.075	.050	.263 *	.118	-.084	-.125	.017	-.091			
14	Retention of managers	2.889	.8165	.029	-.119	.023	.078	.301 **	-.025	-.118	-.059	-.126	.162	.027	-.184	.635 ***		
15	Improvement customer satisf.	2.943	.7183	.320 **	.259	.445 ***	.258	.345 **	-.443 ***	-.010	.068	.356 ***	.353 ***	.029	.497 ***	-.201	-.238 *	
16	Improvement control systems	3.038	.4369	.449 ***	.284 *	.373 **	.212	.248 **	-.191	.004	.337 **	.264 *	.169	.030	.613 ***	.114	.118	.135

Pearson's correlation. Significant at the 0.01 (**), 0.05(**) or 0.10 (*) level

**Table D.6 - CORRELATION MATRIX
-POST-ACQUISITION PERFORMANCE - Benchmark: past experiences**

	VARIABLES	Avg	Std	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Overall integration process (Phase 1)	.6531	1.217													
2	Human resources affiliation (Phase 1)	.5714	1.118	.639 ***												
3	D.P. systems conversion (Ph. 1)	.7273	1.020	.715 ***	.586 ***											
4	Acquired firm was best possible target	3.641	1.058	.625 ***	.232	.400 ***										
5	Consensus among TMTs	3.358	1.002	.267	.434 ***	.145	.232									
6	Cooperation of middle management	3.207	.9478	.270 *	.414 ***	.075	.152	.690 ***								
7	Impact on customers	3.377	.9452	.285 *	.278 *	.453 ***	.196	.281 **	.319 **							
8	Accuracy of due diligence	3.774	.9332	.336 **	.375 ***	.204	.325 **	.459 ***	.272 **	.339 **						
9	Effectiveness of HR integration	3.396	.9269	.396 ***	.337 **	.413 ***	.344 **	.279 **	.320 **	.550 ***	.328 **					
10	Transfer of best resource/practices	3.040	1.049	.240	-.031	.193	.141	.026	.162	.426 ***	.264 *	.220				
11	Smoothness of negotiations	3.519	1.019	.257 *	.325 **	.058	.322 **	.738 ***	.549 ***	.306 **	.470 ***	.281 **	.116			
12	Performance improvements	3.528	.9924	.555 ***	.374 ***	.551 ***	.459 ***	.347 **	.351 ***	.603 ***	.505 ***	.583 ***	.398 ***	.336 **		
13	Best possible price and terms	3.577	1.126	.503 ***	.347 **	.396 **	.652 ***	.374 ***	.194	.330 **	.532 ***	.345 **	.378 ***	.520 ***	.572 ***	
14	Flawless systems conversion	2.960	1.124	.370 **	.231	.405 ***	.124	.314 **	.270 *	.571 ***	.256	.667 ***	.454 ***	.282 **	.547 ***	.256 *

Pearson's correlation. Significant at the 0.01 (***), 0.05(**) or 0.10 (*) level

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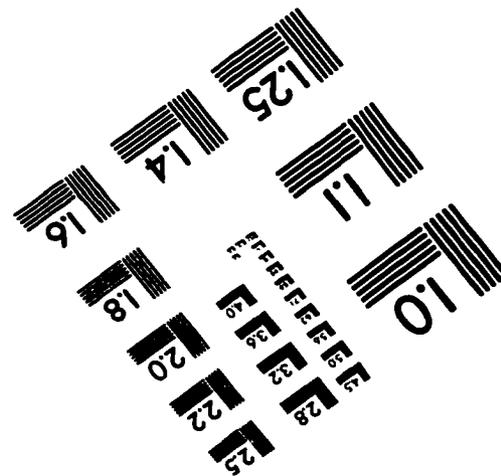
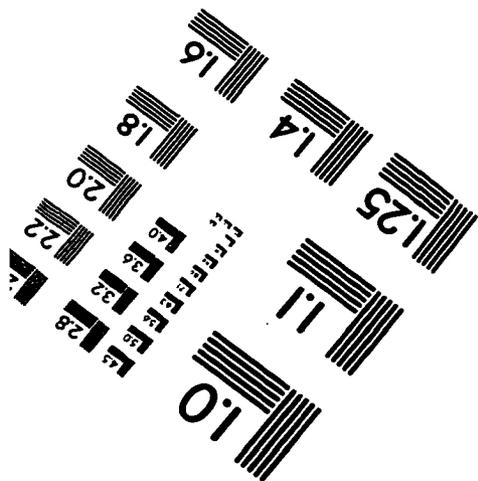
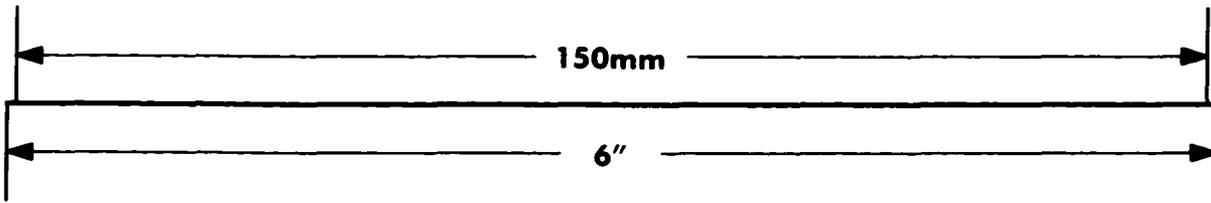
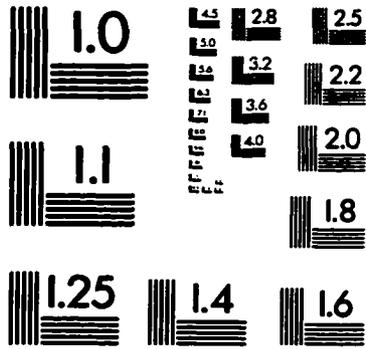
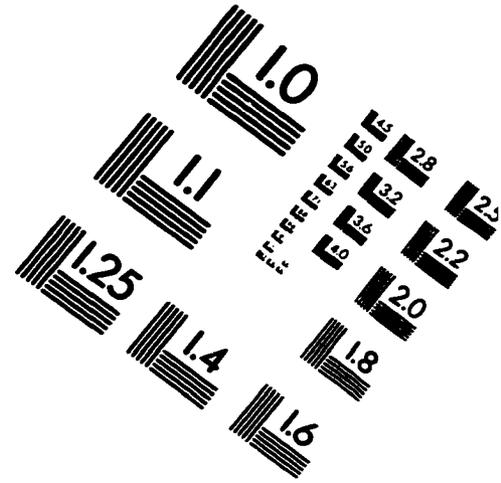
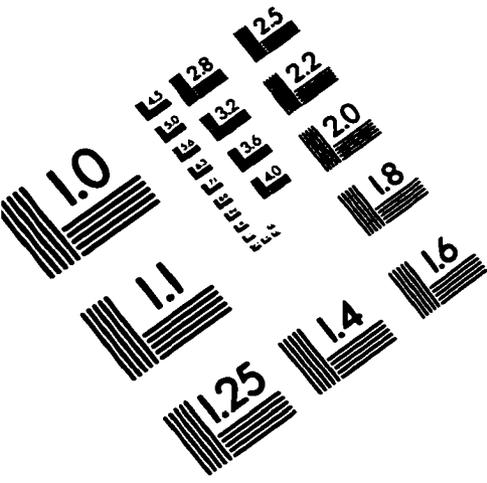
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IMAGE EVALUATION TEST TARGET (QA-3)



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