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**THE DETERMINANTS OF POST-ACQUISITION PROCESS IN HIGH
TECHNOLOGY FIRMS**

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Abstract

Merger and acquisition activity is a critical means by which technology firms obtain the resources needed to compete in global markets. Prior research highlighted that post-acquisition process is critical in order to get the value from acquisitions; in particular two choices seem to be critical: the choice of structural integration versus separation and the choice of target CEO retention versus dismissal.

In this study, arguing from previous literature, I propose three factors which seem to affect the probability of the above mentioned choices.

Based on that, five propositions are developed and tested in order to investigate the determinants of the choice of structural integration versus separation and the choice of target CEO retention versus dismissal. I also test if there is any interdependence existing between them.

This study is based on a sample made up of 427 acquisitions in five different high-technology sectors from Europe and U.S. . Data are collected from online databases and online press such as Lexis-Nexis, Zephyr, Thomson SDC and Amadeus and tested through a Bivariate Probit Model using the STATA computer program.

Four of five propositions are found supported and significant. Experience in conducting acquisitions in high technology sectors affects both the probability of structural integration and CEO retention, while the existence of prior alliance with target firm, as also the fact that acquired technology is a component to the acquiring firm's system, influence the probability of structural integration. I also find empirical evidence that these two dimensions are interdependent with a negative correlation, suggesting that, on average, acquiring firms implementing structural integration replace acquired top manager. Similarities, differences and the main contributions of the present work in respect to existent literature are then discussed.

Abstract (Italian)

Vari studi nell'ambito delle M&A sottolineano come il processo di post-acquisizione giochi un ruolo cruciale nell'ottenere il valore sperato da una acquisizione; in particolare due scelte appaiono critiche a tal fine: la scelta di integrare o meno l'impresa acquisita all'interno dell'impresa acquirente e quella di trattenere o meno all'interno dell'impresa acquirente il CEO dell'impresa acquisita.

In questo lavoro, attraverso lo studio e la ricerca in letteratura, sono stati individuati tre fattori che possono influenzare la probabilità che si verifichino determinate decisioni per quanto riguarda le due scelte sopracitate. Sulla base di questi fattori sono state proposte cinque ipotesi, dedotte anch'esse dalla letteratura esistente, con l'obiettivo di prevedere l'impatto dei fattori prima proposti sulla probabilità di integrazione e trattenimento del CEO dell'impresa acquisita. E' stata inoltre testata anche l'eventuale esistenza di una relazione di dipendenza tra tali decisioni.

Il campione di riferimento è formato da 427 acquisizioni effettuate sia in Europa che negli Stati Uniti, in cinque differenti settori ad alto contenuto tecnologico; i dati sono stati raccolti attraverso fonti secondarie come Lexis-Nexis, Zephyr, Thomson SDC e Amadeus ed in seguito testati attraverso un modello probit bivariato utilizzando il software STATA.

Dai risultati emerge come 4 delle 5 ipotesi testate risultino supportate e significative.

In particolare l'esperienza nel condurre acquisizioni nei settori ad alta tecnologia da parte dell'impresa acquirente influenza entrambe le decisioni, mentre l'esistenza di eventuali alleanze precedenti l'acquisizione ed acquisizioni motivate dal desiderio di impossessarsi di uno specifico componente sembrano influenzare la decisione di integrare o non integrare l'impresa acquisita.

E' stato inoltre dimostrato empiricamente che tali decisioni sono interdipendenti con una correlazione negativa, mostrando pertanto come la scelta di integrazione dell'impresa acquisita e trattenimento del CEO della stessa vengono viste dal management dell'azienda acquirente come alternative.

Sintesi

Nei primi nove mesi del 2011 si è assistito, specialmente nei settori ad alto contenuto tecnologico, ad un significativo aumento delle operazioni di fusione e acquisizione (M&A) rispetto ai precedenti anni della attuale crisi economica. Fortunatamente anche le previsioni per il 2012 (Bank of America Merrill Lynch, Ernst and Young, Mergermarket, Thomson Reuters) sembrano delineare un ambiente economico desideroso di rialzarsi dalla crisi, aumentando la propria competitività, grazie ad un massiccio ma oculato uso delle M&A.

Tali operazioni, infatti, rappresentano un'ottima strategia per le imprese in quanto permettono, seppur con i propri rischi, di crescere ed ottenere un miglioramento prestazionale tramite il raggiungimento di sinergie operative e finanziarie senza subire alcuni degli svantaggi di una crescita interna, in primis la lentezza. Tale strategia di crescita appare inoltre ancora più vantaggiosa nel macro-settore preso in considerazione all'interno di questo lavoro di tesi: i settori ad alto contenuto tecnologico.

La letteratura è infatti concorde nell'affermare che le acquisizioni di piccole imprese ad alta tecnologia appaiono decisamente appetibili agli occhi dei grandi *incumbent* in quanto vitali per poter competere o addirittura sopravvivere (Dierickx e Cool, 1989; Leonard-Barton, 1995; Steensma e Fairbank, 1999). L'acquisizione di queste realtà innovative permette infatti ai grandi player del settore di impossessarsi di innovazioni tecnologiche, conoscenze e competenze specializzate (Granstrand e Sjolander, 1990; Arora, Fosfuri e Gambardella, 2001; Ranft e Lord, 2002) che, altrimenti, un contesto caratterizzato da cambiamenti tecnologici rapidissimi renderebbe impossibile da sviluppare *ex-novo* internamente. Tali acquisizioni, inoltre, possono anche permettere all'acquirente di poter sfruttare singoli componenti spesso estremamente innovativi (Puranam, Singh e Chaudhuri, 2009), i quali, inglobati all'interno del prodotto dell'*incumbent*, e grazie alle sinergie derivanti dai suoi asset complementari (es. canali di distribuzione, brand, ecc.), possono permettere a quest'ultimo notevoli vantaggi dal punto di vista economico.

E' quindi chiaro perché, molte delle più grandi e famose imprese operanti in settori ad alta tecnologia, come Cisco Systems, Microsoft e Intel, ricorrono a questa strategia di crescita (Ranft e Lord, 2002).

La stessa letteratura che ne esalta i benefici, tuttavia, sottolinea anche come la gestione di un processo di acquisizione sia incredibilmente complessa (Chaudhuri e Tabrizi, 1999; Steensma e Corley, 2000; Hagedoorn e Duysters, 2002) tanto che la maggior parte delle operazioni di M&A fallisce non raggiungendo i risultati auspicati. Infatti, in queste piccole imprese ad alta tecnologia, il valore è molto spesso da ricercarsi all'interno di routine e conoscenze tacite possedute dai singoli individui, che, come diversi studi (Nelson e Winter, 1982; Winter, 1987; Kogut e Zander, 1992) dimostrano, appaiono estremamente difficili da individuare e soprattutto da trasferire nell'impresa *incumbent*. Quest'ultima, di conseguenza, riuscirà ad ottenere un vantaggio competitivo solo se sarà in grado di integrare tale conoscenza all'interno del proprio perimetro aziendale.

Si comprende pertanto come una operazione di acquisizione non può dirsi conclusa semplicemente all'atto della firma, in quanto la fase più difficile deve ancora essere affrontata: il processo di post-acquisizione.

Questa tesi si inserisce all'interno di questo problema, cercando di analizzare e comprendere più a fondo alcuni aspetti relativi al processo di post-acquisizione in imprese ad alto contenuto tecnologico in quanto, come sottolineato nel corso degli anni da vari interventi in letteratura (Haspeslagh e Jemison, 1991; Cannella e Hambrick, 1993; Pablo, 1994), tale processo appare cruciale per il successo dell'operazione stessa poiché rappresenta il momento nel quale il valore derivante da una acquisizione si può realizzare ma anche distruggere (Capron et al., 1998; Larsson e Finkelstein, 1999).

In particolare l'obiettivo di questo lavoro è duplice. Si vogliono, in primo luogo, individuare una serie di fattori che influenzano la probabilità di due scelte ritenute fondamentali all'interno del processo di post-acquisizione; si desidera poi verificare se tali scelte, sempre trattate in letteratura separatamente, ad eccezione di due soli studi (Zollo e Singh, 2004; Zaheer, Castaner e Souder, 2008), vengono prese in maniera indipendente oppure dipendente tra di loro.

Le scelte di cui sto parlando sono:

- la scelta di integrare o meno l'impresa acquisita all'interno dell'impresa acquirente
- la scelta di trattenere o meno all'interno dell'impresa acquirente il CEO (Chief Executive Officer, l'equivalente nella terminologia anglosassone dell'A.D.) dell'impresa acquisita.

L'integrazione, infatti, rappresenta uno strumento attraverso il quale è possibile raggiungere e sviluppare un maggior coordinamento con l'impresa acquisita facilitando la creazione di

obiettivi e modi di lavorare comuni (Colombo et al., 2010) che, di conseguenza, permetteranno anche un maggiore scambio informativo e di conoscenza fra le parti, indispensabile specie nelle imprese operanti in settori tecnologici (Pablo, 1994; Ranft e Lord, 2002; Schweitzer, 2005; Puranam et al., 2006; Puranam e Srinckanth, 2007; Puranam et al., 2009).

Tuttavia la scelta di integrarsi con l'impresa acquisita, anche se ritenuta necessaria per poter sfruttare al massimo i benefici che una acquisizione può generare (Datta and Grant, 1990; Haspeslagh e Jemison, 1991; Shanley, 1994; Capron, 1999) può portare anche a degli svantaggi non trascurabili. L'integrazione, infatti, può causare anche la distruzione delle routine e delle risorse che l'impresa acquisita possedeva nel caso in cui individui chiave, o gruppi all'interno di essa, siano soggetti ad una perdita di autonomia. Di conseguenza le competenze e le capacità dell'impresa, che in precedenza l'avevano resa interessante ed appetibile agli occhi dell'impresa acquirente, potrebbero andare distrutte causando così una diminuzione delle prestazioni dell'impresa nel suo complesso (Marks e Mirvis, 1985; Mirvis, 1985; Schweiger, Ivancevich e Power, 1987; Buono e Bowditch, 1989; Astrachan, 1990; Empson, 2001).

Le difficoltà di questa scelta sono intuibili anche dal fatto che, come diversi studi nel corso del tempo hanno sottolineato, non è stato ancora chiarito l'impatto del livello di integrazione sulle prestazioni dell'impresa (Marks e Mirvis, 1985; Mirvis, 1985; Schweiger, Ivancevich e Power, 1987; Buono e Bowditch, 1989; Astrachan, 1990; Datta e Grant, 1990; Shanley, 1994; Empson, 2001), portando quindi una parte della letteratura a concludere che il processo di integrazione post-acquisizione rappresenta la principale causa del successo o del fallimento di un'acquisizione (Jemison e Sitkin, 1986; Schweiger e Walsh, 1990; Haspeslagh e Jemison, 1991).

La letteratura sottolinea, inoltre, come cruciale sia anche la decisione di trattenere o meno il CEO dell'impresa acquisita, in quanto, quest'ultimo, è la persona che meglio di chiunque altra conosce l'impresa che ha guidato, e di conseguenza, può rivelarsi indispensabile sia per comprendere dove risiede il valore all'interno dell'impresa stessa, sia per coordinare l'eventuale processo di integrazione tra le due aziende (Graebner, 2004). Per questi motivi può risultare indispensabile trattenere il CEO dell'impresa acquisita.

Molto spesso infatti accade che il management dell'impresa che acquisisce sia troppo impegnato con alcuni aspetti del processo di acquisizione dimenticandosene di altri altrettanto cruciali, come l'allineamento della vision, degli obiettivi e delle routine. Secondo Graebner

(2004) in questi casi il ruolo del CEO dell'impresa acquisita è di fondamentale importanza nel ricoprire il ruolo di collante tra le due realtà in procinto di diventarne una.

Seguendo la visione di alcuni autori, quindi, il CEO dell'impresa acquisita dovrebbe essere visto come un asset di enorme valore, capace di generare notevoli vantaggi grazie alla esperienza e alle conoscenze sviluppate nel corso degli anni in quello specifico settore (Shleifer e Summers, 1988; Barney, 1991; Cannella e Hambrick, 1993; Graebner, 2004; Wulf e Singh, 2008). Altri autori, invece, ritengono che la scelta di non trattenere il CEO dell'impresa acquisita possa condurre a migliori risultati. Secondo questa linea di pensiero, infatti, la sostituzione del CEO è vista come un agente di cambiamento capace di rompere con il passato (Hambrick e Mason, 1984; Hambrick e Finkelstein, 1987; Fredrickson, Hambrick e Baumrin, 1988; Grinyer, Mayes e McKiernan, 1988; Greiner e Bhambri, 1989; Miller, 1990, 1991, 1993; Tushman et al., 1990; Hambrick e Fukutomi, 1991) e diminuendo di conseguenza la probabilità di cadere vittima della trappola delle competenze.

Si comprende pertanto come entrambe queste scelte, la decisione di integrare o meno l'impresa acquisita all'interno dell'impresa acquirente e la scelta di trattenere o meno il CEO dell'impresa acquisita, rivestono un ruolo fondamentale all'interno del processo di post-acquisizione e di conseguenza nel successo dell'acquisizione nel suo complesso.

Per raggiungere gli obiettivi prima citati, il presente lavoro si è articolato in tre distinte fasi.

Nella prima parte del lavoro è stato necessario studiare la letteratura inerente con l'obiettivo di comprendere in maniera più dettagliata possibile gli aspetti positivi e negativi relativi alle decisioni riguardo l'eventuale integrazione dell'impresa acquisita e il trattenimento del CEO di quest'ultima. Sempre attraverso lo studio e la ricerca in letteratura, sono stati individuati tre fattori che potrebbero influenzare la probabilità che si verificano determinate decisioni per quanto riguarda le due scelte cruciali sopracitate. In particolare i fattori proposti sono: l'esperienza nel condurre acquisizioni nei settori ad alta tecnologia, l'esistenza di eventuali alleanze precedenti all'acquisizione e se l'acquisizione viene realizzata con l'obiettivo principale di impossessarsi di uno specifico componente realizzato dalla impresa target o meno.

Partendo da questi sono state proposte cinque ipotesi, dedotte anch'esse dalla letteratura esistente, in cui si cerca di prevedere l'impatto dei fattori prima proposti sulla probabilità di integrazione e trattenimento del CEO dell'impresa acquisita.

In seguito per poter testare empiricamente tali proposizioni si è resa necessaria una fase di raccolta dati attraverso database e press release online come Zephyr, Lexis-Nexis, Thomson SDC e Amadeus.

Nella terza ed ultima fase, infine, attraverso il software statistico STATA ed utilizzando un modello probit bivariato, sono state testate le cinque ipotesi proposte e verificata anche l'eventuale esistenza di una relazione di dipendenza tra le scelte relative all'integrazione/non integrazione dell'impresa acquisita e trattenimento/non trattenimento del CEO di quest'ultima.

Dai risultati, provenienti da un campione formato da 427 acquisizioni effettuate sia in Europa che negli Stati Uniti in cinque distinti settori ad alto contenuto tecnologico, emerge come 4 delle 5 ipotesi testate risultino supportate e significative.

In particolare la probabilità di integrare o non integrare l'impresa acquisita è influenzata dall'esperienza nel condurre acquisizioni nei settori ad alta tecnologia da parte dell'impresa acquirente, dall'esistenza di eventuali alleanze precedenti l'acquisizione e nel caso di acquisizioni motivate dal desiderio di impossessarsi di un componente specifico.

La probabilità di trattenere o non trattenere il CEO dell'impresa acquisita sembra essere invece influenzata dalla sola esperienza nel condurre acquisizioni nei settori ad alta tecnologia da parte dell'impresa acquirente

Sono state inoltre trovate delle correlazioni interessanti anche nei confronti delle variabili di controllo utilizzate nel modello, che sono visibili in Appendice nella Table 4.

E' stato inoltre dimostrato empiricamente che le due scelte sono interdipendenti ed in particolare correlate negativamente, mostrando pertanto come la scelta di integrazione dell'impresa acquisita e trattenimento del CEO di quest'ultima vengono viste dal management dell'azienda acquirente come alternative. Pertanto, così come i risultati emersi dalle ipotesi testate, anche quest'ultimo risultato appare coerente con i ragionamenti e le intuizioni della letteratura precedente (Graebner, 2004).

In conclusione, agli occhi del lettore questa opera si presenta composta da sette capitoli seguiti da un'appendice nella quale, tramite tabelle, vengono riportati in dettaglio tutti i risultati emersi.

In particolare il primo capitolo introdurrà il lettore al concetto di merger and acquisition (M&A) fornendo prima definizioni e distinzioni basilari, ed esponendo poi quali sono le principali

motivazioni che spingono un'impresa ad effettuare tale operazione. In seguito verrà fornito un breve excursus storico dalla nascita delle M&A fino ad oggi, in cui verranno esplicitate analogie e differenze riscontrate nel corso del tempo nonché l'impatto che la attuale crisi ha avuto e sta tuttora avendo.

Nel secondo capitolo verrà presentata la review bibliografica dei due aspetti fondamentali del processo di post-acquisizione: la decisione riguardo l'eventuale integrazione dell'impresa acquisita e il trattenimento del CEO di quest'ultima.

Il terzo capitolo, invece, mostrerà al lettore il processo logico che, dallo studio della letteratura, ha portato a definire prima una serie di fattori che possono influenzare le probabilità riguardo l'eventuale integrazione dell'impresa acquisita ed il trattenimento del proprio CEO, e poi a delle precise ipotesi sull'effetto di tali fattori sulle prima citate probabilità.

Nel quarto capitolo vengono discussi il campione di riferimento, le fonti da cui è stato costruito, nonché la definizione delle variabili costituenti il modello empirico.

Nel quinto capitolo, invece, viene mostrata e discussa la metodologia statistica utilizzata per raggiungere gli obiettivi del presente studio.

Il sesto capitolo mostra i principali risultati emersi.

Nel settimo ed ultimo capitolo, infine, i principali risultati vengono discussi in maniera critica evidenziando analogie e discordanze con la letteratura attuale. In conclusione, dopo aver chiarito quelli che sono i principali apporti scientifici di questa tesi, vengono esposti in maniera cosciente i limiti dello studio così come anche alcuni suggerimenti pratici per poter migliorare auspicabili future ricerche sull'argomento.

Chapter 1

Introducing M&As

1.1 Introduction

The term M&A stands for merger and acquisition; generally speaking these two terms are often used as synonymous, even if they mean slightly different things. In fact, an acquisition occurs when a buyer acquires all or part of the assets or business of a selling entity; if the target company does not want to be acquired and tries to actively resist to the buyer, this is known as hostile takeover. In both cases, from a legal point of view, the target company ceases to exist, the buyer incorporates the acquired business and the buyer's stock continues to be traded.

A merger, instead, happens when two firms agree to combine into one entity and to go forward as a single new company rather than remain separately owned and operated: the acquiring company assumes the assets and liabilities of the merged company, both companies' stocks are surrendered and new company stock is issued in its place. When the firms involved are of about the same size, this kind of action is more precisely referred to as a "merger of equals", for example, in the 1998 merger of Chrysler and Daimler-Benz, both firms ceased to exist when they merged, and a new company, Daimler Chrysler, was created. In practice, however, actual mergers of equals don't happen very often because usually, one company will buy another and, as part of the deal's terms, simply allow the acquired firm to proclaim that the action is a merger of equals, even if it is technically an acquisition. This happens mainly because being bought often carries negative connotations and consequently, by describing the deal euphemistically as a merger, deal makers and top managers try to make the takeover more "palatable". An example of this would be the takeover of Mobil by Exxon in 1999 which was widely referred to as a merger at the time.

To be more precise it is possible to identify three basic ways to structure an acquisition:

- Stock purchase: which occurs when the outstanding stock of the target is sold to the buyer or to a subsidiary of the buyer by the shareholders of the target.
- Merger: it occurs when the target is merged with the buyer or merged with a subsidiary of the buyer that has been formed with the specific purpose of realizing the merger.
- Asset purchase: it takes place where all or a precise portion of the assets of the target are sold to the buyer or to a subsidiary of the buyer. In this case the buyer have also to assume

a portion of the possible liabilities and obligations of the target.

In each of these cases, the purchase price may be paid in cash, stock, other equity securities of the buyer, or any combination. Sometimes a part of the purchase price is paid on a deferred basis tied to the following performance of the acquired business: this technique is called an earnout. Other times, instead, the buyer buys only a majority of the target's stock while the remaining part continues to be held by management or other individuals which are involved in the business.

Mergers can also be distinguished in:

- Horizontal mergers: which take place when the two merging companies produce similar product in the same industry.
- Vertical mergers: occur when two companies, each working at different stages in the production of the good, combine.
- Conglomerate mergers: which take place between two firms operate in different industries.
- Concentric mergers: occur when the two merging firms are in the same general industry, without a mutual buyer/customer or supplier relationship.
- Market-extension mergers: which take place between two companies that sell the same products in different markets.
- Product-extension mergers: occur when two companies selling different but related products in the same market, combine.

I hope that the previous definitions and distinctions should be useful in order to comprehend what M&A means for who is approaching this argument for the first time.

1.2 Reasons for Mergers and Acquisitions

Global investment in mergers and acquisitions has reached exceptional levels in recent years (Barkema and Schijven, 2008). Paralleling this practical importance, in both monetary and strategic terms, acquisition activity has increasingly become a focus of study in several academic fields. Some scholars, for example, looked with great interest at whether acquisitions added value to the firm, by focusing largely on assessing the relationship between acquisition activity and firm performance through changes in shareholder value (Carper, 1990).

Findings from these early studies suggested that acquisitions did not enhance acquiring firm value, as measured by either short-term (Dodd, 1980; Asquith, 1983; Malatesta, 1983; Jarrell and Poulsen, 1989) or long-term performance measures (Asquith, 1983; Agrawal, Jaffe and Mandelker, 1992; Loderer and Martin, 1992) but, on the contrary, acquisitions were often found to erode acquiring firm value (Chatterjee, 1992; Datta, Pinches and Narayanan, 1992; Seth, Song and Pettit, 2002; Moeller, Schlingemann and Stulz, 2003; King, Dalton, Daily and Covin, 2004) and produce highly volatile market returns (Langetieg, Haugen and Wichern, 1980; Pablo, Sitkin and Jemison, 1996). Although much of the early empirical attention centered on the performance of bidding firms, some researchers also assessed the returns accrued by target firms and results showed that target shareholders often experience significant positive returns (Asquith and Kim, 1982; Malatesta, 1983; Datta et al., 1992; Hansen and Lott, 1996).

In the light of these performance consequences for acquirers, more recent finance and strategic management works focused on antecedents of acquisitions, as scholars sought to uncover why firms acquired.

Plenty of rationales for M&As have been proposed thus far (Trautwein, 1990; Walter and Barney, 1990; Weston et al., 2001; Weston and Weaver, 2001; Brealey and Myers, 2002; Bruner, 2004); for instance, M&As have become the primary means by which many companies attempt to grow revenues quickly in an environment characterized by globalization and economic or strategic barriers to organic growth. Largely because of these drivers, today's deals are fundamentally different from those that figured in previous waves of merger activity. According to Galpin and Herndon (2007) during the past decades, M&As tended to be primarily financial transactions aimed at gaining control of undervalued assets, which were then often resold or left to stand alone as independent entities. Moreover the target was usually from a

diverse industry, price premium were less common, and integration was not a primary value driver: as a result, there was more room for mistakes. The main risk involved taking enough cost out of the business to ensure sufficient cash flow for debt service. Today, instead, the typical merger or acquisition is quite strategic and operational in nature, even due to the recent economic downturn which force acquirers to be extremely rational in their offers.

There are several possible motives or reasons that firms might engage in M&As.

One of the most fundamental motives for M&As is growth: when internal growth initiatives do not materialize, or there are no other organic growth options, M&A transactions prove to be the only way to create growth. More general companies seeking to expand are faced with a choice between internal or organic growth and growth through M&As. Internal growth may be a slow and uncertain process while growth through M&As may be much more rapid, although it carries with its own uncertainties. Companies may grow within their own industry or they may expand outside their business category looking for a diversification strategy. If company seeks to expand within its own industry it may conclude that internal growth is not an acceptable means; this could happen for example, when a company has a window of opportunity that remains open for only a limited period of time: in this case slow internal growth may not be sufficient. As the company grows slowly through internal expansion, competitors may respond quickly and take market share and therefore the only solution may be to acquire another company that has established offices and facilities, management, and other resources, in place. Another example of using M&As to facilitate growth is when a company wants to expand to another geographic region. In many instances, it may be quicker and less risky to expand geographically through acquisitions than through internal development. This may be particularly true of international expansion, where, in order to be successful, companies need to know all of the nuances of the new market and to recruit new personnel and circumvent many other problems such as language and custom barrier; internal expansion, instead, may be much slower and difficult in such cases.

External pressure can also force managers to start additional M&A transactions. Slywotzky and Wise (2002) found that the demand for double-digit growth from analysts and investors becomes hard to satisfy. For listed companies the external pressure for higher growth can be so immense that it cannot be realized by organic growth through internal projects alone and consequently M&A transactions remain the only solution.

It is then interesting to note that sometimes M&As are not a choice but an obligation. It is the case when the industry is in a period of consolidation, and as other competitors consolidate and challenge a company's market position, the fear of being left behind spreads. Therefore the companies start to engage in M&As in order to survive (Van Wegberg, 1994; Schenk, 1996; Fauli-Oller, 2000).

Often companies through M&As try to achieve synergies that can lead them to benefits. Synergy, in this case, is defined as the increase in the merging firms' competitive strengths, resulting cash flow and shareholder value beyond which the two companies are expected to accomplish independently (Seth, 1990; Sirower, 1997). Drawing on Barney (1988) and Chatterjee (1986, 1992) mergers create value to the acquirer when competitor cannot duplicate the synergy and its resulting cash flows, which prevents the competitive bidding process from fully unfolding. This occurs when the acquirer controls some unique resources which can be leveraged into the target context, while, in contrast, when the sources of synergies reside within the target, the market is likely to allocate the full gains to the target because of competition between potential acquirers (Capron and Pistre, 2002).

The two main types of synergy are operating synergy and financial synergy. Operating synergy includes both economies of scale and economies of scope, which can be important determinants of shareholder wealth creation.

Operating synergy occurs in two ways: revenue enhancements and cost reductions. Revenue-enhancing operating synergy may be more difficult to achieve than cost reduction synergies. It may come from new opportunities that are presented as a result of the combination of the two merged companies. They may come from a sharing of marketing opportunities by cross-marketing each merger partner's products because with a broader product line, each company could sell more products and services to their product base. Cost reduction instead, may come as a result of economies of scale, which permit to reduce unit costs, or thanks to economies of scope.

Financial synergy, instead, refers to the impact of mergers and acquisitions on the cost of capital of the acquiring firm or newly formed firm resulting from a merger and acquisition. The cost of capital is the minimum return required by investors and lenders to induce them to buy a firm's stock or to lend to the firm. In theory, the cost of capital could be reduced if the merged firms have a solid and stable cash flows, realize financial economies of scale from lower securities issuance and transaction costs, or result in a better matching of investment opportunities with internally generated funds. Moreover, even combining a firm that has excess

cash flow with one whose internally generated cash flow is insufficient to fund its investment opportunities, may also result in a lower cost of borrowing. This is the typical case of a firm in mature industry which produces cash flow well in excess of available investment opportunities and another firm in a high-growth industry which may not have enough cash to realize its investment opportunities. Reflecting their different growth rates and risk levels, the firm in the mature industry may have a lower cost of capital than the one in the high-growth industry, and combining the two firms could lower the average cost of capital of the combined firms.

Another important motive for M&As is diversification. One reason management may opt for diversified expansion is its desire to enter industries that seem to be more profitable than the acquiring firm's current industry. This could happen when the parent company industry's has reached the mature stage or when the competitive pressure within that industry does not allow to raise prices in order to achieve extra normal profits. In such cases a firm may be able to accelerate growth by selling its current products into new markets that, however, are unfamiliar and, therefore, more risky. One problem that some firm may face in this case is the lack of assurance that those profit opportunities will persist for an extended time in the future: industries that are profitable now may not be as profitable in the future.

Diversification, in odds, may create financial synergy that reduces the cost of capital, or it may allow a firm to shift its core product lines or markets into ones that have higher growth prospects, even those that are unrelated to the firm's current product or markets. In this sense it worth noting that the extent to which diversification is unrelated to an acquirer's current lines of business can have significant implications for how effective management is in operating the combined firms.

Other motives for M&As are then suggested by the strategic realignment theory : according to this theory firms use M&As as ways of rapidly adjusting to changes in their external environments. Although change can come from many sources, only changes in the regulatory environment and technological innovation are considered, because during the last 20 years, these two factors have been the major forces in creating new opportunities for growth or threats to a firm's primary line of business, made obsolete by new technologies or changing regulations. Consistent with this, there is a significant empirical evidence that takeover activity is higher in deregulated industries than in regulated ones (Jensen, 1993; Mitchell and Mulherin, 1996; Mulherin and Boone, 2000). One explanation could be the fact that the advent of deregulation broke down artificial barriers stimulating competition, which have consequently pushed companies to achieve greater operating efficiency through mergers and acquisitions.

At the same time technological advances create new products and industries. Consequently as the pace of technological change accelerates, M&A often is viewed as a way of rapidly exploiting new products and industries made possible by the emergence of new technologies. In fact, large, more bureaucratic firms do not often own the creativity and the speed that smaller and more skilful players possess. Moreover, due to the shortening of product life cycles, firms often do not have the time or the resources needed to innovate on their own. Consequently, large companies look to M&As as a fast and sometimes less expensive way to acquire new technologies and proprietary know-how to fill gaps in their current product offer or to enter in entirely new businesses. In odds, acquiring technologies can also be used as a defensive strategy in order to avoid that important new technologies would be acquired by competitors.

Another possible explanation which we can find in literature is related to the misevaluation of the target. Shleifer and Vishny (2003) suggest that acquirers can periodically profit by buying undervalued targets for cash at a price below its actual value or by using equity as long as the target is less overvalued than the bidding firm's stock. The tendency of overvalued acquirers to use stock as long as it is more overvalued than the target's stock (including premium) is supported also by Ang and Cheng (2006).

All the motives I have discussed above have the main aim to improve financial performance, however, there are additional reasons for mergers and acquisitions that may not add shareholder value as shown in various works in literature.

Hubris is one of these motives. As a result of hubris, managers often believe that their own valuation of a given target firm is better and more precise than the market's valuation. Consequently, in some cases, due to the over-optimism in evaluating synergies and future returns (Malmendier and Tate, 2008), the purchase price of an acquisition could be well in excess of the actual economic value of that company, driving to value-destroying mergers.

Another important motive is a phenomenon which in literature is flagged as "empire-building"; this term refers to the fact that sometimes top managers try to achieve company's growth at every cost, even if this does not mean a parallel improvement of the stock price. In this case M&As may result from glory-seeking, as managers believe that bigger is better and seek to create a large firm quickly via acquisition, rather than through the generally slower process of organic growth. In odds in some firms, executives often receive bonuses in order to complete mergers and acquisitions and/or their compensation is linked to total profits rather than profit per share, creating an immense incentive to acquire or merge regardless of the resulting

impact on share price and consequently on the shareholder value. In this sense several evidence demonstrate that acquiring CEOs' post-acquisition compensation generally increases regardless of acquisition performance through equity-based compensation (Harford and Li, 2007), bonuses (Grinstein and Hribar, 2004), and other compensations (Bliss and Rosen, 2001). Additionally, managing larger firms generally also increase CEO discretion and power, which can further entrench managers and reduce their employment risk (Hambrick and Finkelstein, 1987; Halebian and Finkelstein, 1993; Gomez-Mejia and Wiseman, 1997).

Overall these researches suggest that, in general, acquisitions may appear overly attractive for CEOs, but however, vigilant governance may soften this effect; in this sense Kroll, Wright, Toombs and Leavell (1997) found that acquisitions led to higher size-based CEO compensation in manager-controlled firms, yet, in owner-controlled firms, acquiring CEOs' compensation was more closely tied to shareholder returns.

Consequently even "managerialism" could be seen as a motive for acquisitions; it asserts that managers make acquisition for selfish reason. Masulis, Wang and Xie (2007) hypothesize that managers sometimes are motivated to make acquisitions in order to increase their spheres of influence and parallel their compensations to the extent that such compensation depends on the size of the firms they manage. In this perspective Gorton, Kahl and Rosen (2007) argue that managers make "empire building" acquisitions as a means of defending their firms from being acquired. However these conclusions do not take into account another possible perspective: the pressure that managers of larger firms experience to sustain earnings growth in order to support their firms share price. In fact as the market value of a firm increases, senior managers are compelled to make ever larger investment best to sustain the increases in shareholder value, because small acquisition simply do not have sufficient impact on earnings growth to justify the effort required to complete them. Consequently, even though the resulting acquisitions may destroy value, the motive for making them may be stronger in order to support shareholder interests than to preserve management autonomy.

Connected to the "empire-building" in literature we can find a theory called Agency problem's theory (Ross, 1973; Jensen, 1976; Jones and Butler, 1992; Bebchuck, 2003) . Agency problem arises when there is a difference between the interest of incumbent managers and the firm's shareholder which could happen especially when management owns a small fraction of the outstanding shares of the firm. These managers, indeed, could be more inclined to focus their energy on maintaining job security and a sumptuous lifestyle than on maximizing shareholder

value. According to this theory, mergers take place in order to correct situations where there is a separation between what the managers want and what the owners require (Jensen and Ruback, 1983; Jensen, 1986); following this perspective the main purpose of an acquisition is to replace incompetent management of acquired firm with a more competent acquiring or external management which will probably lead to superior performance.

Consistent with this notion, researchers have found that CEOs of acquired firms are often dismissed after an acquisition has been completed (Martin and McConnell, 1991; Agrawal and Walkling, 1994;) and that target firm managers who were overcompensated prior to takeovers received reduced compensation after acquisition completion (Agrawal and Walkling, 1994).

1.3 History of Mergers and Acquisitions

In much of finance there is very little attention paid to the history of the field. Rather, the focus is usually on the latest developments and innovations. It is not surprising, then when we see that many of the mistakes and types of failed deals that occurred in earlier years tend to be repeated. The market seems to have a short memory even if many scholars have seen that a pattern of flawed mergers and acquisitions tends to reoccur (Town, 1992; Auster and Sirower, 2002; Lipton, 2006; Kummer and Steger, 2008; Park, 2010). It is for these reasons that we need to be aware of the history of the field that allows us to identify the type of deals that have been problematic in the past.

There have been many interesting trends in recent M&A history. These include the fact that M&A has become a worldwide phenomenon as opposed to being mainly centered in United States.

Six periods of high merger activity, often called merger waves, have taken place in U.S. history. These periods are characterized by cyclic activity: high levels of merger followed by periods of relatively fewer deals.

There are two competing theories that try to explain this phenomenon. The first, sometimes referred to as the "neoclassical hypothesis", argues that merger waves occur when firms in industries react to "shock" in their operating environments (Mitchell and Mulherin, 1996; Brealey and Myers, 2003; Martynova and Renneboog, 2008). Shocks comes in the form of economic shocks, regulatory shocks and technological shocks. Economic shocks can derive from an economic expansion that motivates companies to expand through M&A in order to

achieve the rapidly growing aggregate demand in the economy. Regulatory shocks, instead, are mainly caused by the elimination of regulatory barriers that might have prevented corporate combinations; lastly technological shocks refer to the different forms of technological change which can induce dramatic changes in existing industries or can even create new ones.

The size and length of the M&A wave depends largely on the number of industries affected and to the extent to which they are affected by such shocks. Following this theory firms within an industry tend to acquire either all or parts of other firms in response to such shocks,

The second theory, sometimes referred to as the "behavioural hypothesis", is based on the misevaluation hypothesis and suggests that managers use overvalued stock to buy the assets of undervalued firms (Scleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004).

In comparing these two theories, Harford (2005) finds greater support for the neoclassical or "shock" model, modified to include the effects of the availability of capital in causing and sustaining merger waves. In fact he points out that shocks alone, without sufficient liquidity to finance the transaction, are not able to start a wave of merger activity and that low-cost capital may cause a surge in M&A activity, even if industry shocks are absent. Therefore according to him the low cost of capital was a particularly important factor in the M&As boom.

The first US merger wave began at the end of the nineteenth century and lasted until 1904. It is generally thought to have been triggered by the combination of a rising stock market and the introduction of the Sherman Antitrust Act (1890) which was designed to ban any contract that would limit trade between different states and countries, but unfortunately it was not designed specifically to deal with the growing phenomenon of merger and acquisition activity because it made possible for companies to form near monopolies without any regulatory interference. Naturally, many companies took advantage of this situation and the first merger wave began as a result: 1800 firms disappeared and approximately 71 formerly competitive industries were converted into virtual monopolies during this period.

The consolidation pattern established in the first merger period continued also into the second one, where the U.S. economy continued to evolve primarily because of the post-World War I economic boom.

However George Stigler, contrasted the first and the second merger waves as "merging for monopoly" versus "merging for oligopoly". In fact during the second merger wave several industries were consolidated and therefore rather than monopolies, the result was an oligopolistic industry structure. A possible explanation of this change could be related to the

fact that the antitrust environment became stricter than before the first merger wave; for instance, by 1910, U.S. Congress had realized that the Sherman Act was not an effective deterrent to monopoly and, as a result, Congress passed the Clayton Act in 1914. This act was put in place specifically to remedy the weakness of the previous legislation and it actively encouraged companies to form oligopolies rather than monopolies. Clearly even in this case companies took advantage of this change and the second merger wave was the result. As with previous wave, the stock market was rising and consequently companies were able to issue equity as a way of financing mergers and acquisitions with relative ease. This wave ended with the advent of the Great Depression which caused the collapse of the U.S. stock market and brought to an end merger and acquisition activity.

Then the level of merger and acquisition fluctuated throughout the 1940s and 1950s without ever reach the levels that characterized a wave. But in 1959 the Celler-Kefauver Act was introduced; this act extended the previous Clayton Act prohibiting any merger or acquisition that was designed to give one firm a considerable degree of market power and, as a result, the number of horizontal deals was reduced to the minimum.

The third wave began at the end of the 1950s and lasted until the middle of the 1970s as the U.S. economy underwent a strong period and the stock market rose markedly again. Profitable companies found themselves with large cash flows which were unwilling to pay out to shareholder in the form of dividends and so they utilized these funds in order to acquire companies. During this period, most of the deals were friendly and the primary medium of exchange was companies' stock. The most notable feature of this merger wave was the prevalence of conglomerate deals by which companies attempted to expand into new markets and areas because the Celler-Kefauver Act had made horizontal mergers unpopular. Moreover this formation of conglomerated rather than vertical or horizontal mergers did not increase industrial concentration and, for this reason, the degree of competition in different industries did not significantly change despite the large number of mergers. Then the oil crisis of the 1973, which resulted in a sharp increase in inflation and in a world-wide economic downturn, marked the end of this merger wave.

The fourth merger wave took place in the 1980s and exceeded all of the proceeding waves in both the volume of transactions and in the size of the deals. This wave also displayed a higher degree of hostility because companies that were previously considered untouchable, due to their sheer size, became the targets of hostile takeovers which forced them to fight in order to defend themselves. The fourth merger period may also be distinguished from the other three

waves by the size of the M&A targets to the point that this wave was renamed as the wave of the megamerger. This was possible even thanks to the very aggressive use of debt.

One possible reason for this wave was that the U.S. government relaxed some of the restrictions on takeover activity that the earlier law had put in place. An alternative explanation might also be that it represented a return to specialization after the excessive diversification and expansion of the third wave.

In fact, many companies that were most active during the earlier merger wave found that there were incredible difficulties inherent in managing company spread over many different markets and countries: lots of conglomerates failed entirely or were forced to divest considerably in order to survive after the third merger wave and, as a consequence, the fourth wave saw the return of horizontal takeovers as firm decided to concentrate on areas in which they were most profitable and experienced. A more traditional approach to the fourth merger wave sustains that it was caused by the proliferation of managerial inefficiency. In fact, ineffective corporate governance mechanisms, coupled with equally poor management incentive schemes, allowed corporate mismanagement to prosper throughout the 1970s and into the 1980s. If stock markets were truly efficient, any company with an ineffective management team would be identified, the share price would drop and, ultimately the firm would go bankrupt. Stock markets are not, however, fully efficient and so the market for corporate control steps in to fill the gap. Companies with inefficient managers will be somewhat undervalued thus making them an appealing target for acquisition. After the purchase is complete, then, the ineffective managers will be removed and the overall efficiency of the market is improved (Manne, 1965; Jensen and Meckling, 1976; Fama, 1980; Jarrel and Bradley, 1980; Fama and Jensen, 1983; Lowenstein, 1983; Walsh and Ellwood, 1991).

The fourth merger wave ended in 1989 as the long economic expansion of the 1980s came to an end and the economy went into a brief and relatively mild recession in 1990.

By 1992, however, the number of M&As began again to increase. The fifth wave vastly exceeded all of the previous waves in both number of transactions and value and, at the same time, it was very different from its predecessor because this wave was almost entirely friendly with just 4% of deals being denoted as hostile (Andrade, Mitchell and Stafford, 2001). One potential explanation for this change in nature of deals from the 1980s to the 1990s is related to the improvements in corporate governance. During this period, indeed, the level and the efficacy of monitoring increase greatly, making more difficult for managers to enter into highly risky deals and also forcing them to consider more carefully whether to enter the market for

corporate control at all and, in case of positive decision, even how they would enter the market (Holmstrom and Kaplan, 2001).

In odds the fifth wave was truly an international merger wave; in Europe this wave really took hold starting in 1998 and by the 1999 the value of deals was almost as large as that of deals in the U.S. .

As with the four prior merger waves, the fifth wave came to an end when the economy turned down and entered in a brief eight-month recession in 2001. However the economy was sustained by the low interest rate established by the Federal Reserve and by the European Central Bank as a response to the 9/11 economic shock. The low interest rates also gave major boost to the private equity business and consequently leveraged acquisitions became less expensive for private equity buyers to do, as the bulk of the financing costs were relatively low interest rate debt. Therefore private equity are easily able to raise equity capital and equally to borrow money at extremely attractive rates. They used this equity and debt capital to buy companies or divisions of companies and then waited for the rising market to push the values of acquired entities up, at which point they sold them off at a profit. Thus we had a relatively short, but nonetheless intense M&A wave that came to a rapid end when the subprime crisis, which started in 2007, cut off the access these firms had to cheap debt and eager equity investor.

From history of merger waves we can therefore identify similarities and differences: Mergers tend to occur when there is a high rates of economic growth, when interest rates are low or declining and when the stock market is rising . At the same time all these waves are dissimilar from each other not only because they involved different types of transactions (e.g. horizontal, vertical, conglomerate, strategic) but also because for instance only some of them are caused by the emergence of a new technology (e.g. railroad, the Internet) or are focused in a specific industry.

In the table below the six historical merger waves are summarized and compared.

<i>Time period</i>	<i>Driving Force(s)</i>	<i>Type of M&A Activity</i>	<i>Key Impact</i>	<i>Factors contributing to End of Wave</i>
1897-1904	-Drive for efficiency -Lax antitrust law enforcement -Technological change	-Horizontal consolidation	-Increasing concentration	-Fraudulent financing 1904 stock market cash
1916-1929	-Entry into WWI -Post-WWI boom	-Largely horizontal consolidation	-Increased industry concentration	-1929 Great Depression
1958-1973	-Rising stock market -Sustained economic boom	-Growth of conglomerates	-Financial engineering and conglomeration	-Oil crisis
1981-1989	-Rising stock market -Economic boom -Underperformance of conglomerates -Relative weakness of U.S. dollar -Favorable regulatory environment	-Rise of hostile takeovers -High leverage transactions -Some takeover of U.S. firms by foreign buyers	-Break-up of conglomerates	- 90s recession
1992-2001	-Rising stock market -Improving corporate governance	-Friendly takeovers	- Rise of cross-border transaction	- 9/11
2003-2007	-Low interest rates -Rising stock market -Booming global economy	-Cross-border transactions -Horizontal megamergers -Strong influence of private equity	-Increasing synchronicity among world's economies	-Economic crisis -Loss of confidence in global capital markets

Table 1- A comparison between the six Merger Wave

1.4 The impact of Financial Crisis and the rise of the Seventh Wave?

The global financial and economic crisis has had a tremendous impact on mergers and acquisitions, in particular cross border ones were the most affected with a 66% decrease in 2009 as compared to 2008 (World Investment Report, 2010). According to Cristopher Ventresca (J.P. Morgan), only two industries had seen a sufficient merger activity in 2009: Health Care and Technology.

Fortunately in 2010 several deals have been announced and completed: in May SAP paid \$5.8 billion on database maker Sybase in the biggest tech deal of the year. IBM, acquired Cast Iron Systems to strengthen its position in Internet-based computing. Apple acquired Siri, maker of a voice-recognition application, and Intrinsity, a chip designer. Hewlett-Packard acquired Palm for \$1.2 billion and Salesforce.com acquired Jigsaw, maker of a Web-based business address book, for \$142 million. Even in the second half of 2010 M&A activity significantly increased, especially for large sized takeovers. Late July, the month of August, and September, were notable for heavy merger and acquisition activity like those between BHP Billiton and Potash Corp (\$ 40 billion) or between Sanofi-Aventis and Genzyme (\$ 18,5 billion). Takeovers have continued and also increased after September to the end of the year with no let down in activity (Thomson Reuters).

According to Thomson Reuters, global M&A by value for the year 2010 was up approximately 25 percent from 2009 levels (the lowest since 2004), though remaining well off the 2007 peaks. The year 2010 also saw the return of the private equity investor to M&A, in particular in the United States and the UK in the final four months of the year, driven, to a material extent, by the relative boom in the high yield market.

However the main motives that have driven this rebirth are not clear. One possible explanation could be that companies in regime of slow economic growth, saw mergers and acquisitions as a primary driver of value especially when the companies' share were still at relatively cheap prices. M&A, in fact, is an useful strategy for enterprises to maintain their growth rates and this, coupled with a market decline which create more attractively-priced acquisition targets, was probably driving acquisition activity.

As regards differences among industries, the following charts show the contribution of various sector in terms of volume and value in the first half of 2010. It is also possible to notice that high technology industries give the greatest contribution in terms of both volume and value (Global M&A Survey 2010-Intralinks).

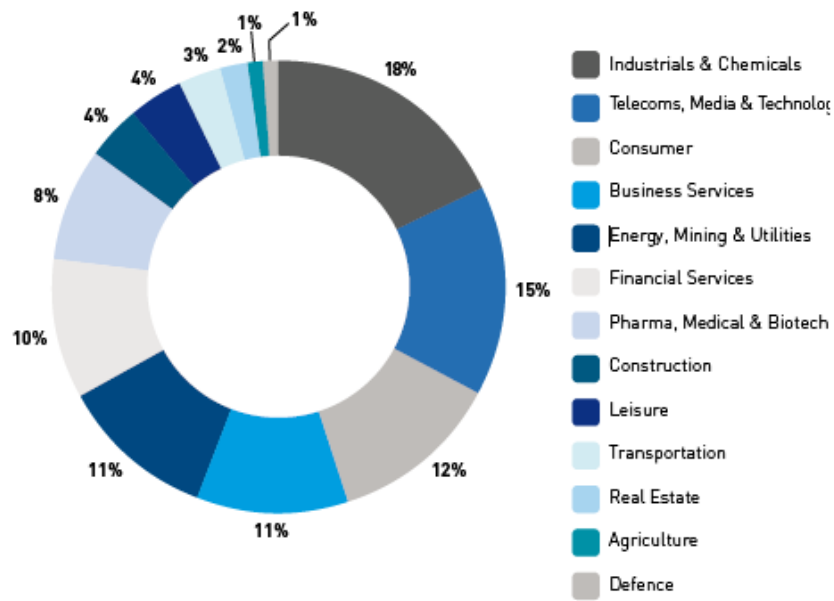


Figure 1- Volume of Global M&A Activity, First Half 2010. Source: Global M&A Survey

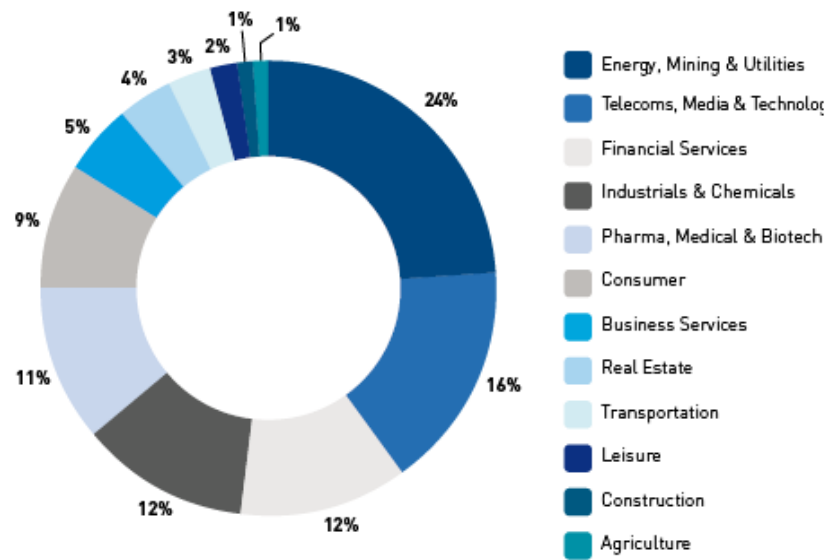


Figure 2- Value of Global M&A Activity, First Half 2010. Source: Global M&A Survey

The graphics below, instead, show the number of high technology acquisitions between 1977 and 2010, counted by acquiring or target firm US or Europe.

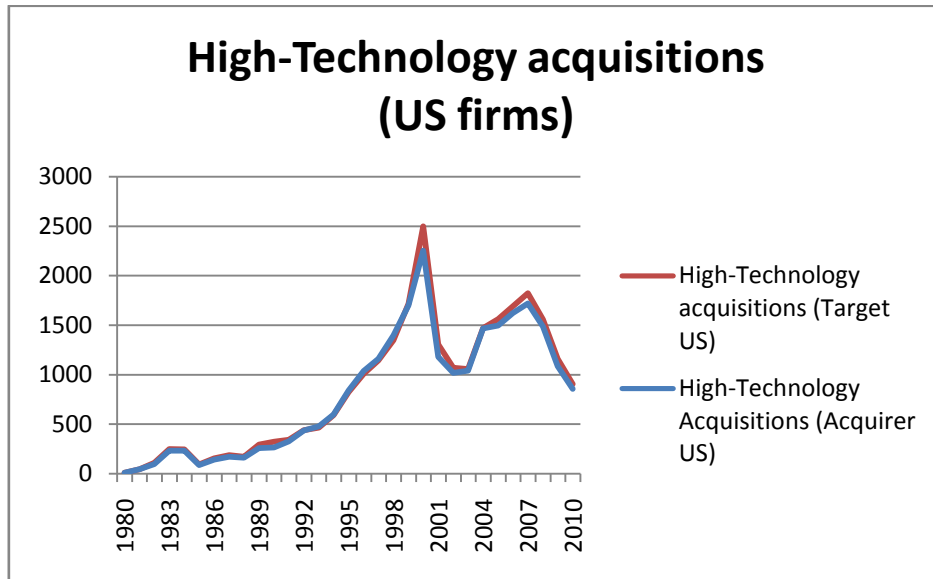


Figure 3- Number of U.S. High-Technology acquisitions (1977-2010). Source: Global M&A Survey

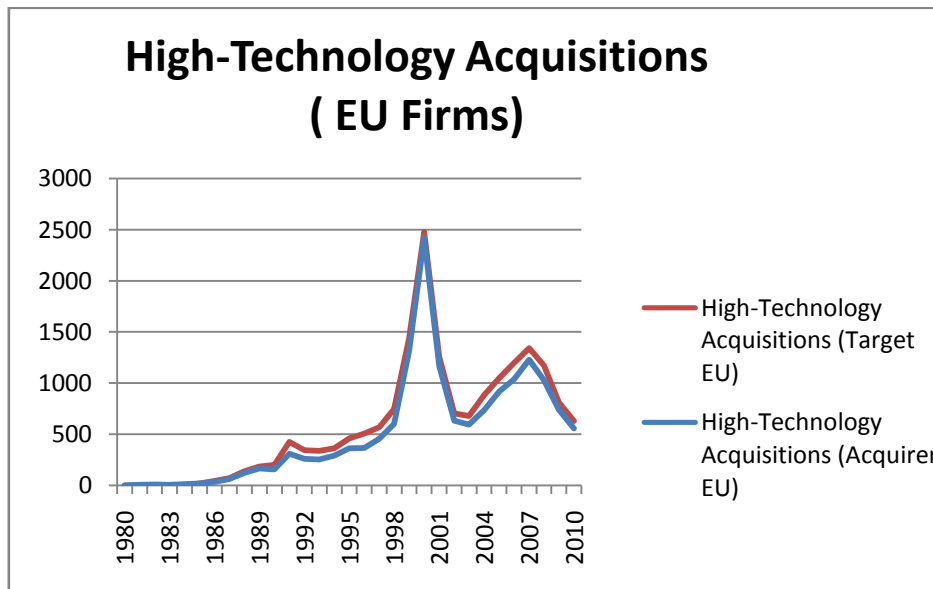


Figure 4- Number of E.U. High-Technology acquisitions (1977-2010). Source: Global M&A Survey

In 2010 and in the first quarter of 2011, a total of 5720 technology deals were executed (M&A International). In particular all four quarters last year shown a sequential improvement in the number of transactions especially thanks to the relatively low market valuation of target

companies that may have been hit hard during the recent downturn. However, these levels of activity are still below the levels reported from 2006 to 2008, but it represents a significant increase both in the number and value of deals compared to 2009.

Software companies have been the target of the most significant deal-making activity, garnering the highest valuations (with the exception of a couple of significant M&A transactions involving hardware businesses). In particular, internet software and service companies were the most popular targets for both financial and strategic acquirers, accounting for 22.3% of deals and 18.0% of total deal value. Google, for instance, has dominated the overall technology sector since the beginning of last year when it had acquired a total of 27 companies, in order to diversify its existing operations and expand its presence in areas that are related to its core business. In fact, according to the Technology M&A Outlook 2011 (M&A International), business diversification appears to be the primary motivation behind most deal activity in this sector .

Also the first few months of 2011 has seen a continuation of this momentum in M&A activity, validated by the statements and actions of Warren Buffet, who, in a February 2011 letter to Berkshire Hathaway's stockholders stated: "Our elephant gun has been reloaded, and my trigger finger is itchy." About a month later, Berkshire agreed to acquire the specialty chemical maker Lubrizol in a transaction valued at \$9.7 billion.

In fact, according to Thomson Reuters global M&A activity was up during the first nine months of the year, compared with the same period last year. Reports show that, during the first nine months of 2011 the value of worldwide M&A was up 21,7% from the first nine months of 2010. Thomson Reuters also says that in the same period M&A activity with U.S. involvement increased 48,1% and worldwide private equity-backed M&A activity was up 17% compared to the first nine months of 2010 . Moreover, even in first nine months of 2011, as in 2010, the information technology sector has shown the most significant deal-making activity, and within this sector, internet software and service companies were the most popular targets for both financial and strategic acquirers.

This recent risen of M&As has also been linked to the rise of the BRIC and South Africa in particular, where the volume of M&A activity has improved dramatically. It's no wonder Walmart has decided to establish a presence on the African continent by offering approximately \$2.32 billion for a 51% stake in Massmart Limited. At the same time the Japanese multinational NTT acquired Dimension Data for £2.1 billion in order to gain access to Africa's constantly growing market for new and upgraded IT infrastructure. "Africa has more

potential than India”, said Manoj Kohli Head of Bharti Airtel’s international operations which had spent a record-breaking US\$10.7 billion to acquire the African assets of Zain, the Kuwaiti telecoms provider and suggested a further US\$2.5 billion in investment over the next three years.

Can we consequently affirm that it is the beginning of the seventh wave? Can we say that the impact of the crisis on the M&As market is over?

The overall levels of activity reported in 2011 seem to reject this statement.

The 2011, indeed, has been a year which embodied two different and opposite trends. In fact the number of mergers and acquisitions being carried out in the third quarter of 2011 has dropped. Data from Thomson Reuters Deals Intelligence shows that there has been a 23% decline in M&A activity in the three-month period. This study also shows that this fall on M&A activity was mainly felt among the largest transactions (because volume of deals was only down 10 percent compared to the same period last year), which are heavily dependent on the financial markets. In fact the main causes of this slowdown seem to be the recent uncertainty and volatility of the stock market, the U.S. budget stalemate and the European debt crisis. Economic uncertainty, indeed, has reduced confidence in the sector, which in turn led to a reduction in the number of business negotiations being successfully concluded.

“The uncertain financial and economic environment is clearly dampening merger and acquisition activity globally, at least for the time being. Buyers are becoming more selective and cautious in their deals” said David Craig, president, Thomson Reuters Governance, Risk and Compliance.

Another causes could be found in the major regulatory changes happened in the third quarter including the UK Takeover Code coming into effect in September. The measure, wanted in order to increase protection for potential target companies as a response to Kraft’s hostile takeover of Cadbury in 2010, which triggered debate about the weak position of UK target companies, seems to come at a critical time for British takeovers, as UK M&A activity was down sharply in the third quarter.

Considering industry sectors, data show that real estate, manufacturing and technology deal volumes have remained mostly steady, while the telecommunications sector has shown a particularly slow quarter, down 49 percent compared to last year’s volumes. To be precise the financial services sector has shown the largest increase in activity, while the greatest declines were in the telecommunications and energy sectors, compared to the same quarter a year ago.

Globally, M&A volume activity has dropped in the U.S., India and Spain; Europe and Asia Pacific have been hit particularly hard, with deals in each region falling 34 percent from the previous quarter. In contrast, China, Japan, Canada and Russia saw their deal volume activity increase over the last four quarters.

To sum up we can summarize this year going to the conclusion by reporting Leon Saunders Calvert, head of global deals at Thomson Reuters: “2011 started well in terms of M&A activity, but the risk and investment banks are feeling the pinch. Signs of health still exist – private equity firms are continuing to invest and cross-border activity is up year-on-year. However, the market will need a sustained sense of stability moving into 2012 for confidence”.

Fortunately predictions for 2012 seem to be positive. For instance Steven Baronhoff, the head of global M&A at Bank of America Merrill Lynch, told to the UK’s Financial Times: “We’d describe it as more of a slowdown, rather than a halt.” Also Mergermarket Report shows that the outlooks look reasonably strong in Europe, where M&A activity is expected to rise by 54 per cent in the first half. Even Thomson Reuters paints a decidedly positive picture as concerns 2012. Moreover one of the latest Ernst and Young’s survey reveals that 41% of top international companies expect to make an acquisition in the next 12 months, despite the intense market turmoil during August when the survey was conducted. Pip McCrostie, Vice-Chair, Transaction Advisory Services, for the global Ernst and Young organization, said: “Based on the survey, we see a surprisingly favorable M&A environment with the majority of respondents positive about the number and quality of deal opportunities and the likelihood of closing them.”

Chapter 2

Literature Review: Post-Acquisition Implementation Process

2.1 Introduction

Over time various motives have driven M&As (Ravenscraft and Scherer, 1987; Bower, 2001): managerial motivations for acquisitions have included vertical and horizontal integration, market power gains, geographic expansion, efficiency gains, empire building, resource sharing, and diversification (Steiner, 1975; Trautwein, 1990). Moreover also the desire to obtain valuable resources, including know-how, technologies and capabilities possessed by target firms, has been a driver of M&A activities (Chaudhuri and Tabrizi, 1999; Ahuja and Katila, 2001). According to Bower (2001) "it seems that this last motive has increased in importance in the most recent wave of acquisition activity", especially in high-technology sectors such as telecommunications and biotechnology where the number of acquisitions during the 1990 rose dramatically (Inkpen, Sundaram and Rockwood, 2000; Goldman Sachs, 2001).

Mergers and acquisitions have been studied by academics from several disciplines and through various theoretical lenses (Schweizer, 2005). To be more precise and consistent with the categorization proposed by Haspeslagh and Jemison (1991), four different schools of thought can be identified.

I believe that a brief review of these bodies of research (which are also summarized in the table below) is useful in order to comprehend in which of them we can consider the present work.

<i>Research stream</i>	<i>Objective function</i>	<i>Theoretical underpinnings</i>	<i>Central propositions</i>
Financial economics	Wealth creation for shareholders and economy as a whole	Market for corporate control; efficient market hypothesis (Manne, 1965; Jensen, 1987)	Acquisitions improve the efficiency of the market for corporate control and consequently, result in wealth creation for shareholders
Strategic management	Performance of acquiring/acquired firms	Industrial organization economics (Lubatkin, 1983; Scherer and Ross, 1990)	Synergies have a positive impact on acquirer performance

		Resource based view of the firm (Barney, 1998)	Only unique synergies or unexpected synergies will have a positive impact on the acquirer performance
Organizational behaviour	Impact of acquisition on individuals and organization culture	Acculturation theory (Berry, 1984; Nahavandi and Malekzadeh, 1988)	The congruence between the cultures of the two merged organization will facilitate employee satisfaction and effective integration
Process perspective	Creation of value after acquisition	Behavioural theory of the firm (Cyert and March, 1963; Jemison and Sitkin, 1986)	The action taken by management and the process of integration, determines the extents to which the potential benefits of the acquisition are realized.

Table 2- A comparison between the acquisitions' research stream

The capital market school has been concerned with the impact of acquisition on wealth creation at a societal level (i.e. for shareholder). This body of research, based on theories of financial and organizational economics, has demonstrated that real positive gains accrue to the shareholder of the acquired, but not the acquiring, firm (Jensen and Ruback, 1983; Jarrell et al.,1988).

Also the strategic management school's focus has been on wealth creation in acquisition, but at the level of individual company (Kitching, 1967; Lubatkin, 1983; Kusewitt, 1985; Chatterjee, 1986,1992; Singh and Montgomery, 1987; Fowler and Schmidt, 1989). This body of research, based on industrial organization economics, studies how economies of scale, scope and market power can be realized through related acquisition, which will in turn lead to superior performance in the acquiring firm (Lubatkin, 1983; Chatterjee, 1986; Singh and Montgomery, 1987). However, as noted by Chatterjee (1992) the results of this research have been somewhat ambiguous and, as a consequence, many additional structural and organizational variables have been suggested as possible determinants of acquisition success. As noted by

the inherent literature (Kitching, 1967; Kusewitt, 1985; Fowler and Schmidt, 1989) these include market share, relative size, pre-acquisition experience, timing relative to the business cycle, and business relatedness.

The organizational behaviour school has focused its attention on the behavioural implications of acquisitions, as both the individual and organizational levels. The main theme of this research is that "the human side of mergers and acquisitions" (Buono and Bowditch, 1989) is frequently neglected by managers intent on doing the deal and realizing operational synergies. It is argued that long term success, can only be achieved through process management, effective communication and sensitivity to the concerns and expectations of individuals on both sides of acquisition (Sales and Mirvis, 1984; Blake and Mouton, 1985; Bastien, 1987; Buono and Bowditch, 1989; Mirvis and Marks, 1991; Cartwright and Cooper, 1993). Cultural compatibility also, plays a fundamental role because it reduces acculturative stress that results from forced interaction of two different organizational culture and thus smoothes the integration process (Sales and Mirvis, 1984; Nahavandi and Malekzadeh, 1988; Janson, 1994).

Lastly, the process perspective's focus has been on the actions taken by management in order to guide the acquisition process. According to Birkinshaw et al. (2000), this last perspective of acquisition studies can be divided into two other perspectives: the first perspective focuses upon the pre-acquisition attributes of the two firms such as strategic fit, market structure, and even methods of payment for the acquisition, while the second perspective examines the post-transaction aspects of an acquisition. More specifically this latter "sub-perspective" argues that strategic and organizational fits, offer the potential for synergies, but their realization depends greatly if not entirely on the ability of management to manage the post-acquisition process in an effective manner (Kitching, 1967; Lindgren, 1982; Jemison and Sitkin, 1986a, 1986b; Shrivastava, 1986; Haspeslagh and Jemison, 1989,1991; Hunt, 1990; Greenwood et al., 1994). Therefore one of the main arguments is that acquisition success is not simply the result of excellent target selection but effective integration is also critical. These studies, also, are roughly divisible between those focusing on socio-cultural features where acquisition failure has been associated with culture clashes (Nahavandi and Malekzadeh, 1988), lack of communication, and acquired firm employee resistance (Larsson and Finkelstein, 1999) and those emphasizing the fact that acquisition should be understood from a process perspective (Jemison and Sitkin, 1986).

This body of research, focusing on the post-acquisition process, is more used than the others discussed above and it seems to be extremely important because as noted by Haspeslagh and Jemison (1991) value creation takes place after acquisition, and in this sense, both integration design (Pablo, 1994) and senior management turnover (Cannella and Hambrick, 1993) have an important influence on the ultimate success or failure of an acquisition.

However, literature also shows that despite the growing number of studies analyzing the different challenges on post-acquisition process, such as speed (Kitching, 1967; Schweiger and Walsh, 1990), organizational fit (Datta, 1991; Chatterjee, Lubatkin, Schweiger and Weber, 1992), and top employee turnover during the acquisition transition (Walsh, 1988, 1989), this issue is still viewed as lacking sufficient rigorous empirical research (Larsson and Finkelstein, 1999; Inkpen et al., 2000; Bower, 2001; Javidan, Pablo, Singh, Hitt and Jemison, 2004). In this sense Sirower (1997) pointed out that the failure of most M&As can be seen as a proof of the absence of adequate empirical research especially on the existing integration approaches and typologies (Nahavandi and Malekzadeh, 1988; Buono and Bowditch, 1989; Napier, 1989; Haspeslagh and Jemison, 1991; Marks and Mirvis, 1998). Moreover, research on acquisition success, has yielded contradictory results: on one hand, some scholars found that acquirers frequently experienced insignificant or even negative returns (Ravenscraft and Scherer, 1989; Anand and Singh, 1997; Hayward and Hambrick, 1997), but on the other hand, others, as Jensen (1984), found positive returns. More recently Finkelstein (1999) concluded that there has been no consensus on the effect of firm performance and that thanks to this lack of agreement research has prompted the examination of a wide range of variables that might distinguish between success and failures.

The present work, focusing on the post-acquisition process, clearly follows this latest body of research. We can therefore argue from existing literature that acquisition success is heavily dependent on the post acquisition process (Haspeslagh and Jemison, 1991; Cannella and Hambrick, 1993; Pablo, 1994) which in turn is strongly influenced by two essential decision: the decision of structural integration or separation and the decision about target CEO retention or dismissal. However given the fact that research on acquisition success has yielded contradictory results we can consequently conclude that further research on the decision of structural integration or separation and the decision about target CEO retention or dismissal is necessary.

Therefore in the present review I will first explore what M&As mean and what are their motives in high-technology sectors. Then I will review the present literature about structural integration and CEO retention trying to argue from it what factors could be able to influence the probability that integration and retention occur. On the basis of all this literature some hypotheses will be therefore proposed and then they will be tested and discussed in the next chapters.

2.2 High-Technology acquisitions

According to Sikora (2000) acquisition activity rose noticeably in high-technology sectors such as telecommunications, networking, software, electronics, information services and biotechnology.

Small technology-based firms are attractive to acquirers as sources of technological inputs in regimes of rapid technological change (Granstrand and Sjolander, 1990; Arora, Fosfuri and Gambardella, 2001), because as Ranft and Lord (2002) argued in those "industries characterized by rapid innovation, technological complexity and reliance on highly specialized skills and expertise, the pace and magnitude of technological change, as well as the breadth and depth of knowledge-based resources required to compete, may not allow firms to internally develop all the technologies and capabilities they need to stay competitive". The acquisition of such firms, instead, allows acquirers to avoid the time-consuming, path dependent, and uncertain processes of internally developing and accumulating the intellectual property that underlie technologies (Dierickx and Cool, 1989; Leonard- Barton, 1995; Steensma and Fairbank, 1999). In addition, acquiring small technology-based firms may also provide acquirers with an opportunity to 'graft' the resulting innovation streams onto the organizational unit they have acquired their own organization (Huber, 1991; Puranam, 2001) and exploit the fruits of their efforts by linking them to their own complementary assets in manufacturing, marketing and distribution (Williamson, 1975, 1985; Teece, 1986; Doz, 1988). Consequently it is not a case that many companies have used this strategy, including such high-profile firms as Cisco Systems, Microsoft and Intel (Ranft and Lord, 2002).

Therefore acquisition literature highlights two different motives driving the acquisition of small high-technology firms: exploration and exploitation (March, 1991; Levinthal and March, 1993). Exploration is defined as "the experimentation with new alternatives, whose returns are often uncertain or even negative". Exploitation, instead, is described as "the refinement and

extension of existing competencies, technologies and paradigms whose returns are positive and predictable" (March, 1991; Rothaermel and Deeds, 2004).

In fact, according to knowledge-based views, firms are generators, repositories, and integrators of knowledge (Kogut and Zander, 1992; Hedlund, 1994; Grant, 1996). Following this view a firm's ability to create value is not mainly based on its physical or financial assets, but instead it is generated from its sets of intangible, knowledge-based resources (Itami, 1987). In fact, in knowledge-intensive and innovation-driven industries, highly skilled human capital may be one of the most important strategic resources (Ranft and Lord, 2000) because they hold the in-depth experience and skills and consequently, in such cases, acquiring firms are less likely to be interested in plant, equipment or real estate (Kozin and Young, 1994).

However the literature about the knowledge-based view of the firm highlights both how valuable, fragile and difficult to manage knowledge-based resources may be. On one hand technology acquisitions provide quick access to technologies and innovation streams, but on the other hand problems of implementation frequently beset them, and they are even prone to high failure rates (Chaudhuri and Tabrizi, 1999; Steensma and Corley, 2000; Hagedoorn and Duysters, 2002).

This is mainly due to the fact that, as noted by Ranft and Lord (2002), the main characteristics that give knowledge-based resources their greatest value is that attempting to gain such knowledge from other firms through acquisition is likely to result in as many problems as benefits. In fact, following knowledge-based view, companies are able to generate and sustain greater than normal profits if they possess value-creating organizational knowledge that is relatively rare or idiosyncratic that competitors cannot readily match (Reed and DeFilippi, 1990; Barney, 1991). Tacit knowledge, indeed, is difficult to articulate and codify, time consuming to teach and to learn (Winter, 1987; Kogut and Zander, 1992) and it is based on expertise, skills, and routines acquired by organizational members over time (Nelson and Winter, 1982; Winter 1987). Therefore according to Winter (1987) firm's technologies and capabilities derive from the fact that the underlying knowledge assets are difficult to imitate or transfer.

In this perspective Grant (1996:380) highlights one of the dilemmas that knowledge-based view presents for would-be acquirers of new technologies and capabilities when he notes that the "critical source of competitive advantage is knowledge integration rather than the knowledge itself". As a result it is not enough for an acquirer simply "to buy" a technology

because, in order to create value, it must even be nurtured and integrated throughout the process of acquisition implementation, long after the deal is done. A firm must therefore develop complex integrative capabilities to facilitate the combination and recombination of specialist knowledge held by individuals (Grant 1996) because as other researchers (Reed and DeFillippi, 1990; Badaracco, 1991; Brown and Duguid, 1992) note individuals also develop patterns of interaction and relationships which permit the integration of their specialized knowledge with complementary skills and expertise of other individuals. It is consequently clear how knowledge within an high-technology firm is socially complex to the degree that it resides in these interactions and relationships between individuals and among groups of individuals (Reed and DeFillippi, 1990; Brown and Duguid, 1992).

However, socially complex knowledge " can provide sources of competitive advantage because it depends on the unique interrelationships between people, routines, and technologies that are highly inimitable" (Lei et al., 1996). Also from this point of view we can consequently argue that, especially in high-technology sector, the management of the post-acquisition process and in particular the integration process and the process of retained key people, as for example the acquired CEO, are critical in order to achieve acquisition success.

I consequently believe that it is fundamental focusing on these two critical factors in order to throw light on the main problems and questions which are still unresolved in the related literature. Then, in the next chapter, I will review three factors that, from the point of view of this thesis are able to influence the probability of structural integration and/or CEO retention.

2.3 The management of the integration process

One of the pioneer works on the integration process was realized by Thompson (1967), which defined the level of integration as the extent to which the functions of the acquired unit are linked to, aligned with, or centralized in, the equivalent functions of the acquiring organization. Literature on acquisition and integration management clearly indicates that the integration is one of the most important and difficult aspects of acquisition management in general (Kitching, 1967; Haspeslagh and Jemison, 1991; Wesner, 2002) as over time many scholars have highlighted that the choice between structural integration and the preservation of autonomous organizational status is a critical initial decision that further shapes fine-grained integration actions (Haspeslagh and Jemison, 1991; Pablo, 1994; Ranft and Lord, 2002; Zollo and Singh, 2004). Therefore it is not a case that research on post-acquisition integration process builds on the premises that value creation takes place after acquisition (Haspeslagh and Jemison, 1991; Pablo, 1994).

Structural integration refers to the combination of formerly distinct organizational units into the same organizational unit following an acquisition (Haspeslagh and Jemison, 1991; Puranam et al., 2006; Puranam and Srikanth, 2007). The alternative to structural integration is structural separation, in which activities originating in the target and acquiring firms, although now in the same firm, may remain organizationally distinct (Puranam, Singh and Chaudhuri, 2009).

However, as noted by Schweizer (2005), despite the growing number of studies analyzing the different challenges on post-acquisition integration, such as speed (Kitching, 1967; Schweiger and Walsh, 1990), organizational fit (Datta, 1991; Chatterjee, Lubatkin, Schweiger and Weber, 1992), and top employee turnover during the acquisition transition (Walsh, 1988, 1989), the issue of post-acquisition integration is still viewed as lacking sufficient rigorous empirical research (Larsson and Finkelstein, 1999; Inkpen et al., 2000; Bower, 2001; Javidan, Pablo, Singh, Hitt and Jemison, 2004).

Early studies considered the post acquisition processes as a whole (Jemison and Sitkin, 1986; Haspeslagh and Jemison, 1991). Subsequent studies, instead, started to explore post-acquisition process by focusing on one decision at a time. For instance, Datta and Grant (1990) and Shanley (1994) tried to test the relationship between the level of integration and performance, finding some support for a positive influence on performance, whereas Pablo (1994) focused on the antecedents of the decision about the level of integration. More recently

Capron (1999) has provided additional evidence that achieving some degree of integration between the two organizations may lead to economic benefit: she found that the extent of resource redeployment and knowledge transfer between the two organizations is significantly related to superior performance.

In fact, one of the main motives that leads a firm to acquire another firm is the desire to provide synergistic benefits (Barney, 1988; Chatterjee, 1986,1992; Seth, 1990; Sirower, 1997). Integration in this sense enhances the use of existing capabilities; merging firms can reduce unit costs in production, inventory holding, marketing, advertising and distribution integrating similar departments and functions (Howell, 1970; Rappaport, 1987). Structural integration, also, is seen as a mechanism to achieve close coordination in order to support efficient knowledge flow between the two firms (Pablo, 1994; Ranft and Lord, 2002; Schweitzer, 2005; Puranam et al., 2006; Puranam and Srinckanth, 2007; Puranam et al., 2009). In particular, according to Puranam, Singh and Chaudhuri (2009) when large interdependencies between two organizations exist, structural integration can be seen as a beneficial coordination mechanism. Structural integration, indeed, typically leads acquiring and acquired employees to common goals, common procedures and common authority (Colombo et al., 2010) and, even if the imposition of these aspects on acquired employees can provoke some disruption effects, they can also improve reciprocal predictivity of actions (Puranam, Singh and Chaudhuri, 2009).

However in order to get all these benefits, managers should have be able to manage the target's integration effectively (Haspelsagh and Jemison, 1987; Datta, 1991) and, in this sense, one of the first crucial decisions is to determinate the overall integration approach with regard to the degree of autonomy provided by the acquiring firm to the management of the acquired firm.

Haspelsagh and Jemison's study (1991) is one of the earliest works trying to figure out what is the correct level of autonomy to give to the acquired firm. In this study the authors go beyond the traditional perspective of considering acquisitions as primarily a financial transaction: they focused on the process of developing and preserving capabilities and skills' transfer, examining in depth the organizational dynamics and interactions that either facilitate or impede value creation (Rosenzweig, 1993). Building on their capabilities-based perspective they suggested that firm's competitive advantage derives from the ability to develop new combinations of capabilities or to renew them; acquisitions are consequently considered as a part of corporate

strategy for renewing such capabilities. Based on that they developed a post-acquisition contingency framework which rests upon two dimensions:

- acquired company post-acquisition autonomy
- the extent to which resources are shared or transferred between the two businesses

By combining these two dimensions they created their well-known contingency matrix.

This matrix suggests that there are four distinct post-acquisition styles based upon the need (or lack of it) to create value through the sharing and the transfer of resources (strategic interdependence) and the need (or lack of it) to maintain the independence of the acquired company (autonomy). By not considering holding approach (low autonomy, low strategic interdependence), three clear choices regarding post-acquisition integration approaches are defined.

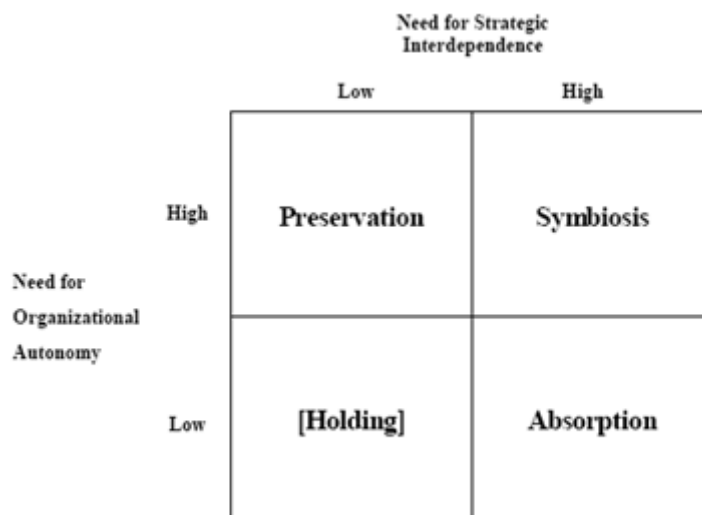


Figure 5- *Post-Acquisition contingency framework*. Source: Haspeslagh and Jemison (1991)

In the case of Preservation acquisitions, the acquired company is given high autonomy and there is low resource interaction in order to preserve its way of doing business. In this kind of acquisitions the primary task of management is to maintain the identity and the nature of the acquired company.

In the case of Absorption acquisitions, where the acquired company has low autonomy and there is considerable resource transfer, substantial organizational integration takes place. In

this context, according to the authors, it is fundamental to dissolve the boundaries between the firms in order to consolidate operations and culture.

Symbiotic acquisition, instead, reflects high interdependence and at the same time a high need for organizational autonomy. This situation is probably the most difficult to manage: according to the authors the main challenge is to find a viable through the need of preserving acquired company's culture, and at the same time, encouraging interdependence to fulfill acquisition purpose.

It is then interesting to note that although Haspeslagh and Jemison's (1991) typology is conceptual in nature, the distinctiveness of their acquisition types has received empirical support from Angwin (1998, 2000).

The "integration dilemma" was analyzed from another point of view by Datta (1991). He pointed out that organizational fit, which influences the ease with which two organizations can be assimilated after an acquisition, have received little attention in literature. Building on this argument he argued that organizational fit can be assessed along a number of dimensions, but two of them are considered particularly important: differences in management styles (Davis, 1968; Seed, 1974; Diven, 1984; Callahan, 1986;) and in the reward and evaluation system (Hayes, 1979; Diven, 1984; Magnet, 1984; Ferracone, 1987). He found that compatibility of management styles is important to superior performance, in acquisition characterized by both high and low levels of post-acquisition integration. These findings therefore are consistent with observations in case studies which indicate that different management style can result in conflicts, market share shrinkages and poor performance. Indeed as noted by the author most acquisitions are accompanied by significant changes in a short period of time resulting, as a consequence, in enhanced complexity and uncertainty which are aggravated by differences in management styles. Interestingly Datta (1991) also found that differences in management styles have a negative impact on acquisition performance even in acquisition characterized by low post-acquisition integration. According to the author this finding is not totally unexpected because while in theory management groups are effectively separated, in practice this does not happen so often. Differences in reward and evaluation systems, instead, are not found to have the same kind of negative impact on acquisition performance in either the high or the low integration subgroups. This can be explained by the fact that differences in reward and evaluation systems are more easily and quickly reconciled following an acquisition than differences in management style.

The level of autonomy given to the acquired firm is also seen linked to the similarity between acquirer and target firm. Datta and Grant (1990) found strong evidence that acquiring firms give greater autonomy to the acquired firm management in unrelated acquisitions than in related acquisition. These findings are consistent with other scholars (Howell, 1970; Dundas and Richardson, 1982; Leontiades, 1986) who previously suggested to test that proposition. The underlying idea refers to the fact that with very limited synergistic benefits, autonomy can help to keep alive the commitment, enthusiasm and creativeness among acquired firm managers, while, on the other hand, a low autonomy might be viewed as an interference, leading to poor morale and motivation.

Pablo (1994) tried to go deeper into the decision models that guide managers' judgments about integration design. Previous literature about post-acquisition integration suggested that in acquisition situations three main issues have to be considered and understood: the task objectives of acquisition (Kitching, 1967; Shrivastava, 1986; Haspeslagh and Jemison, 1991), organizational tolerance for cultural diversity (Sales and Mirvis, 1984; Nahavandi and Malekzadeh, 1988) and the potential for political action between the combining firm (Souder and Chakrabarti, 1984; Bastien and Van de Ven, 1986). Starting from this, Pablo (1994) examined how the task, cultural and political characteristics of acquisitions influence decisions about levels of integration and found that cultural and political factors accounted for a quarter of the explained variance in managers' decisions. This result suggests that it is necessary to integrate multiple theoretical lenses in order to explain and understand the integration decision.

More recently Birkinshaw, Bresman and Hakanson (2001) have made a further step by considering that integration is made up of two distinct but non independent processes: task integration and human integration. Moreover overall acquisition success is seen as contingent on the effective management of both sub-processes. In particular they argued that the two dimensions of the integration process do not necessarily occur to the same extent and that a relative emphasis on either task or human integration can potentially have a significant negative impact on the outcome of the acquisition. In fact an emphasis on task integration can lead to the achievement of synergies (Buono and Bowditch, 1989) but even to a decrease in employee motivation, while an emphasis on human integration may result in satisfied employees but no operational synergies (Haspeslagh and Jemison, 1991). As a consequence they concluded that the two processes which made up the post-acquisition process, have to

occur at different speed following the characteristic of each acquisition. The authors also pointed out that human integration is slow and difficult to manage effectively but, at the same time, it is even the most critical to the overall success of acquisition, because it appears to facilitate the effectiveness of task integration process. They consequently proposed that the two companies involved in the acquisition should keep their autonomy at the beginning with only a little amount of integration while concentrating on the human integration process. They also found that the relationship between the task integration processes and acquisition success is interceded by the current performance level of the individual operating unit. This finding is consistent with Haspeslagh and Jemison (1991), Ghoshal and Bartlett (1995).

In sum, this study highlighted that acquisition success is a function of both human and task integration, and that the achievement of one ahead of the other could lead to a suboptimal outcome. To conclude they also proposed three different trajectories of post-acquisition integration which lead to acquisition success; one trajectory is optimal in theory but, in practice the choice is affected also by manager's risk propensity .

Consistent with this view that integration process is made up of different and dependent processes is the work of Bannert and Tschirky (2004). Starting from a gap in literature they propose an integration planning model for technology intensive acquisition; this model consists of four phases, the first of which is the development of the acquisition strategy even before contacting the potential target. Overall this process is not linear but iterates with the decreasing information asymmetry during the acquisition process; its aim is to determine the integration strategy based on acquisition objectives and to define, assess and plan the individual integration projects in order to successfully internalize the external knowledge. The authors also highlight that the process needs to be headed by a fulltime transition manager who is responsible for the whole integration success and have to stay with the target for up two years, depending on the complexity of the deal.

Over the years other studies has focused on the relation between the level of integration and firm's performance (Marks and Mirvis, 1985; Mirvis, 1985; Schweiger, Ivancevich and Power, 1987; Buono and Bowditch, 1989; Astrachan, 1990; Datta and Grant, 1990; Shanley, 1994; Empson, 2001), trying to figure out a positive or negative relationship but unfortunately, as noted by Zollo and Singh (2004), prior empirical works have shown mixed results. For instance

Datta and Grant (1990) did not find statistically significant results, while, in contrast, Shanley (1994) found some evidence that the level of integration was related to positive performance. Lots of studies (Jemison and Sitkin, 1986; Schweiger and Walsh, 1990; Haspeslagh and Jemison, 1991) cited problems with post-acquisition integration as one of the main reasons for the failure of an acquisition. In fact, according to Barkema and Schijven (2008) the value of an acquisition could remain unrealized even if bringing the two firms together looked promising during pre-acquisition screening: the potential value of the acquisition is either realized or destroyed during the actual process of post-acquisition implementation (Capron et al., 1998; Larsson and Finkelstein, 1999).

Moreover a more extensive integration may lead to a greater disruption of the pre-existing resources and routines in both firms which in turn can result in decline performance of the combined entity (Marks and Mirvis, 1985; Mirvis, 1985; Schweiger, Ivancevich and Power, 1987; Buono and Bowditch, 1989; Astrachan, 1990; Empson, 2001).

Other problems may arise because of organizational "fit" issues. As Schweiger and Walsh (1990) note, effective human resource management is likely to be the key to M&A success during the post-acquisition integration process, because dissimilarities in organizational cultures, systems, and practices may lead to conflicts between the acquirer and the acquired firm (Jemison and Sitkin, 1986; Nahavandi and Malekzadeh, 1988; Chatterjee et al., 1992). According to Barkema and Schijven (2008) all these issues related to lack of organizational fit may result in a number of human resource and organizational dysfunctions, including diminished individual productivity, reduced organizational efficiency and an erosion of competitive position.

In odds, according to Occasio (1997) high integration levels translate into increasing explicit and hidden costs relative to the expenses (e.g., training, lay-offs, information systems conversion), to the time and to the degree of managerial attention. However, a higher level of integration between the two firms is necessary in order for the acquirer to realize the potential value of the transaction (Datta and Grant, 1990; Haspeslagh and Jemison, 1991; Shanley, 1994; Capron, 1999). In particular, the positive performance implications of the degree of resource relatedness (Rumelt, 1974, 1984; Chatterjee, 1986; Lubatkin, 1987; Singh and Montgomery, 1987; Chatterjee et al., 1992) imply that related acquisitions should be managed with at least a minimum level of organizational integration.

In this perspective of finding a trade-off some authors proposed the idea that acquirers have to quickly take control and integrate the target company, in order to avoid "post-merger drift" (Kitching, 1967; Bower, 2001). Post-merger drift is a decline in productivity both at organizational and individual level; indeed during the period following a merger or acquisition integration-related tasks may turn management attention away from the operations of the firm's business, important decisions and investments may be delayed and competitors may take advantage of these distractions and delays. Even at individual level, employees in the acquired firm may feel a sense of uncertainty about their future roles, which may erode their job satisfaction, commitment and motivation. Other authors, instead, have stressed the idea that rapid integration may be harmful because it can create dissatisfaction among the acquired firms' employees and blocking the parent firm's ability to learn about the acquired firm's operations (Haspeslagh and Jemison, 1991; Chaudhuri and Tabrizi, 1999).

Following Birkinshaw, Bresman and Hakanson (2001) I consider acquisition success contingent on the effective management of both task integration and human integration sub-processes. The human side of merger and acquisition is therefore seen critical during the post-acquisition process because it appears to facilitate the effectiveness of task integration process. I consequently explore this human perspective focusing on a specific issue: the retention of the target CEO that, as the next paragraph will show, has a great influence not only in post-acquisition process but also in the overall acquisition process.

2.4 The retention of target CEO

Corporate acquisitions are by their very nature disruptive events (Buchholtz, Ribbens and Houle, 2003). Moreover when the top executives of an acquired, or target, firm leave following an acquisition, disruption is even intensified. In fact a fundamental issue identified with acquisition implementation is that many top employees of the acquired firm depart during the acquisition transition (Walsh, 1988; Walsh and Ellwood, 1991; Hambrick and Cannella, 1993; Buchholtz et al., 2003) and this departure of the highest-ranked executives causes the greatest harm (Cannella and Hambrick, 1993) because CEO directly influences firm's behaviour and actions (Hambrick and Mason, 1984)

As noted by Walsh (1998) this relationship deserves serious concern because takeovers are generally followed by higher than normal rates of top manager turnover. Hayes and Hoag (1974), indeed, found that 58 percent of the acquired executives they studied left the acquired firms within five years; this result is close to Walsh's (1988,1989) findings that 61 percent of acquired executives departed within the first five years, compared to 33 percent in a control sample of nonacquired firms. However it is not clear why some CEO departs and others stay after a firm's acquisition (Lubatkin, Schweiger and Yaakov, 1999).

In literature three theoretical perspective have been used to explain CEO departure: market for corporate control (Manne, 1965; Jensen and Meckling, 1976; Fama, 1980; Jarrel and Bradley,1980; Fama and Jensen,1983; Walsh and Ellwood, 1991), relative standing (Frank, 1985; Haspeslagh and Jemison, 1991; Cannella, 1993; Very et al., 1997) and resource based-view (Shleifer and Summers, 1988; Barney, 1991; Datta, 2001; Buchholtz, Ribbens and Houle, 2003; Graebner, 2004; Wulf and Singh, 2008, 2010).

Building on Berle and Means's work (1932) the theory of the market for corporate control was suggested by Manne (1965) and then refined in a series of subsequent papers by Jensen and Meckling (1976), Fama (1980) and Fama and Jensen (1983). This theory argues that one of the main purposes of an acquisition is to replace incompetent management of acquired firm with a more competent acquiring or external management which will probably lead to superior performance. Consequently, as noted by Walsh and Ellwood (1991), executives who have performed poorly in the past are the executives who are most likely to depart. This is consistent with Ravenscraft (1987): he identified fifteen possible acquisition motives that ranged from tax

savings and monopoly power to empire-building and hubris, however the replacement of inefficient management topped his list.

Some years before Jarrel and Bradley (1980: 380) defined the market for corporate control as "the competition among management teams for the vote of shareholder" and Lowenstein (1983: 272) noted that the acquiring company's expected profit resides "almost entirely in the expectation that it will be able to root out deadwood inefficiencies and put a target assets to better use". Problems, indeed, could arise when managers try to pursue their own interest rather than the shareholder's interest (Walsh and Elwood, 1991). According to James and Smith (1985) the sources of potential conflict can be identified as three different choices regarding effort, risk exposure and time horizons.

First, while additional managerial effort would increase the value of the firm, managers might want to replace leisure or over-indulgence with company perquisites for that additional work effort (Jensen and Meckling, 1976). Second, as noted by Fama (1980), shareholder can diversify their risk through a portfolio of stock, while top managers are substantially tied to the success of their company. Consequently those managers could take fewer investment risks than would be optimal for shareholder, even if in this manner they are responsible for lowering the market value of the company (Coffee, 1988). Third, manager are likely to have shorter time horizons than shareholders (Furubotn and Pejovich, 1973; Jensen and Meckling, 1979). In fact if the firm lives on, its managers will not and ,as a consequence, they will be interested only in firm performance for the time period over which they are employed.

In general if top managers take on selfish behaviour, their company's performance should be lower than its maximum potential and clearly this underperformance is reflected in the value of the company's stock. In such cases the incumbent manager will be probably replace by another management teams which offer themselves to the shareholders promising better performance. The theory of the market for corporate control has gained great currency and acceptance but surprisingly only incomplete empirical evidence speaks to its veracity (Walsh and Ellwood, 1991). In fact, while there has been several studies that show that the pre-acquisition performance of acquired firms tend to be suboptimal (Hasbrouck, 1985; Bartley and Boardman, 1986) and that top management turnover following mergers and acquisitions is higher than normal (Walsh, 1988), only in 1991 a research conducted by Walsh and Ellwood linked these issues directly but the relationship found was not satisfactory.

Moreover, Cannella and Hambrick (1993) found that managerial turnover was harmful to acquisition performance contrasting the prediction of the market for corporate control perspective. Also Krishnan, Miller and Judge (1997) reached similar conclusions noting even that the impact increased in magnitude when more senior managers were replaced, and that the degree of complementarity between the two top management teams positively affects performance. As a consequence this degree of complementarity should be protected whenever is possible.

More recently, however, Levery and Qian (2010) found that the likelihood of target's CEO retention decreases with the efficiency difference between the acquirer and the acquired. As the authors explain this result suggests that good managers tend to replace bad managers in mergers and acquisitions: this finding, therefore, supports the theory of the market for corporate control.

Another possible explanation for post-acquisition departure is relative standing (Hambrick and Cannella, 1993). In their work they suggested this new investigative lens built on Frank's (1985) theory of relative standing which claimed that the status of the individuals is based on how they compare their status to others in a close social setting. According to Very et al. (1997) this theory is consistent with earlier relational model such as Festinger's (1954) theory of social comparison and Adam's (1965) theory of equity. Hambrick and Cannella (1993:736) highlighted that this model could correctly apply to acquisitions because "acquired executives are placed in a new social setting in which comparisons to their acquirers as well as comparisons to their prior situation are inevitable and salient". The acquired executives, therefore, may feel a strong sense of alienation, they may feel inferior in status to the acquiring top managers and/or unappreciated by them (Hambrick and Cannella, 1993; Very et al., 1997). "[S]ome acquisitions result in extremely low standing for acquired executives, they feel inferior, the acquirers see them as inferior and [see] themselves as superior, autonomy is removed, status is removed, and a climate of acrimony prevails" (Hambrick and Cannella, 1993:733). Moreover these feelings of diminished relative standing tend to have consequences: Hambrick and Cannella (1993) found that the greater these conditions are, the higher the rate of departure of acquired executives is. This situation is exacerbated by the tendency of many acquirers to adopt a superior or domineering attitude towards the acquired

firms (Jemison and Sitkin, 1986; Very et al., 1997). When the relative standing of acquired executives, instead, is higher, departure rate will not tend to be so high.

However diminished standing may also influences those remaining executives (Very et al., 1997) because it may reduces their commitment to the job, shirks their responsibilities and behave in belligerent ways. Acquired executives who feel inferior may quit before being fired because acquiring executives who see themselves as superior may create intolerable conditions for them (Hambrick and Cannella, 1993). In odds, as noted by Schein (1985) perceptions and attitude of top managers are expected to permeate the other organization's levels and consequently feelings of diminished relative standing among the acquired executives will affect the post-merger performance of the entire acquired firm.

According to Very et al. (1997) differences in relative standing may derive from two factors: cultural differences and removal of autonomy. Different top management culture, indeed, means different ways of running business over time which could make difficult for executives to live together, leading to culture clashes and conflicts. Cultural difference have been associated with lower commitment and cooperation of the acquired employees (Sales and Mirvis, 1984; Buono, Bowditch and Lewis, 1985), increased turnover of acquired executives (Hambrick and Cannella, 1993) and lower financial success (Datta, 1991; Chatterjee et al., 1992). Removal of autonomy, instead, is defined as the degree to which the strategy, systems and procedures associated with the management of the acquired firms are removed from their discretion (Hambrick and Cannella, 1993). In this perspective Data and Grant (1990), by studying the autonomy of acquired firm as the level of day-to-day freedom allowed to acquired firm's management in managing the business, found that acquirers allow greater autonomy to acquired management in unrelated acquisitions than in related ones. They also suggested that the extent of autonomy given to the acquired firm management had an important effect on the outcomes of acquisition; in particular autonomy was associated with superior performance in unrelated acquisitions, while in related acquisitions such relationship was not established.

However acquired firm rarely receives full autonomy from the buying firm (Very et. al., 1997) because the buyer usually believes that it can utilize the acquired firm's physical and human capital more efficiently than it was before. Executives of the acquired firm are consequently stressed to abandon their own familiar practices and conform to the management practice of the buyer (Schweiger and Weber, 1989; Haspeslagh and Jemison, 1991). Acquired executives

consequently will feel dominated by, and inferior to, the acquiring executives, and therefore clashes will be more likely.

The resource-based view provide another perspective in order to examine CEO retention.

While from a market for corporate control perspective, turnover may be desirable to remove inefficient or unproductive "managerial deadwood" (Walsh and Elwood, 1991), the resource based view argues that acquisition can build competitive advantage partially through retention of top managers with valuable firm-specific skills that may be necessary to run the business effectively (Wulf and Singh, 2008). In fact target CEOs can be seen as a valuable assets because they can lead the acquiring firm to a competitive advantage (Shleifer and Summers, 1988; Barney, 1991) thanks to their unique capabilities derived from firm-specific investment such as experience and expertise (Cannella and Hambrick, 1993; Graebner, 2004; Wulf and Singh, 2008); this perspective is also consistent with the notion that firms are made up of both physical and human capital (Harris and Helfat, 1997; Rajan and Zingales, 1998; Bailey and Helfat, 2003).

Therefore human capital is seen as critical to the firm competitive advantage (Datta, 2001; Wulf and Singh, 2008) and as consequence acquiring firm should seek to retain rent-generating CEOs of target firms. Moreover firm-specific skills are not transferable to others organization and so CEOs have the opportunity to appropriate rents from their specific investments (Wulf and Singh, 2008). This means that target CEOs will have a greater probability to stay with the acquiring firm when their human capital is protected and incentivized for continued investment by an adequate governance environment (Williamson, 1985; Rajan and Zingales, 1998). In this sense anti-takeover laws, golden parachutes and employment agreements allow firms to build firm-specific human capital and at the same time enabling CEOs to appropriate rents for their investments (Lambert and Larcker, 1985; Knoeber, 1986; Castanias and Helfat, 1991).

More recently also Wulf and Singh (2008) explored this perspective. By analyzing a sample of mergers in the 1990s, they found that better performing target CEOs are more likely to be retained and interestingly they also found that acquiring firm governance plays a crucial role in retention outcomes: better-performing target CEOs are more likely to stay on when acquiring firms have a concentrated ownership; this result is consistent with the argument that large shareholders are influential in protecting firm-specific human capital investments. Overall

these results are consistent with the human capital explanation, also called by Wulf and Singh (2008) managerial human capital explanation.

Focusing specifically on high technology acquisitions, human capital embedded in acquired top managers may be extremely important even for other reasons.

First of all, it is more difficult to observe the quality of knowledge-based assets rather than tangible ones. Acquirers are consequently uncertain about the value of the target because they cannot be sure of what will be transferred in acquisition due to tacit nature of knowledge involved and increased human capital turnover (Zander and Kogut, 1995; Coff, 1999).

Moreover in such uncertain technological environments acquiring firm managers are less likely to have clear idea about what the acquired personnel should be working on and where the acquired firm's knowledge is embedded. It is fundamental therefore to develop an ongoing working relationship between the two management teams (Coff, 1999) and retain and motivate acquired CEO. In fact, according to Graebner (2004) acquired CEOs can act as a leader of target innovation strategy, preserving their companies' momentum by performing mobilizing and mitigating actions; these leaders consequently enable their organizations to simultaneously experience two forms of change which are often in conflict: exploration and exploitation.

Secondly, high technology acquisitions often happen in turbulent external conditions which make more difficult for acquirer to dedicate enough attention, time and resources to the design of adequate actions which could lead to acquisition success (Graebner, 2004). In such an environment, the key to success was that rather than relying on the acquiring firm leaders, the acquired leaders took matters into their own hand, supporting the process of acquisition implementation and replacing the eventual lack of leadership from acquirer.

According to Wulf and Singh (2010) quite a lot of early empirical papers on M&A, show evidence consistent with the managerial human capital view. Cannella and Hambrick (1993), for example, found a positive relationship between retention of target management and post-acquisition performance while the departure of higher rank executives was found negative correlated to post-acquisition performance. They consequently argued that acquired leaders' retention may prevent and reduce the disruptive effects of extensive changes during acquisition implementation by acting as an agent of stability.

Moreover, they also found that promoting acquired executives in the newly combined firm led to superior performance because this status promotion leads management to a higher commitment and motivation towards making an acquisition successful.

Also Matsusaka (1993) found positive event returns when acquirers retain the top management team of the target firm and negative returns when acquirers replace target management. More recently, also Zollo and Singh's findings (2004) has suggested that replacing acquired top management negatively affects post-acquisition performance; they also showed that an important factor in determining post-merger performance is acquiring and acquired managers' capabilities.

To sum up all these empirical evidence suggests that :

- the lower the relative standing of acquired executives the greater is their departure
- executives' departure causes the loss of these executives' expertise and skills which in turn may lead to lower post-acquisition performance (Cannella and Hambrick, 1993; Ranft and Lord, 2000).

A very interesting study in the perspective of CEO retention was conducted by Virany, Tushman and Romanelli (1992). They explored executive succession as an important mechanism for organization learning, arguing that executive succession can fundamentally alter the knowledge, skill and interaction processes of the senior management team. In particular they distinguished between first and second-order learning.

According to the authors first-order learning consists on the updating of established knowledge and premises which consequently help to improve existing competencies and standard operating procedures (Lant and Mezias, 1992), but can also lead to social inertia. On the contrary, second-order learning involves unlearning prior premises and standard operating procedures and developing new interpretative schemes (Bartunek, 1984).

Consequently in a stable environment, first-order learning may lead organizations to positive performance but when the environment changes it may also reduce the probability that organization actors will perceive the need for new understandings and action. Second-order learning, by contrast, better fits when the environment is turbulent and it is fundamental to

break the organizational inertia (Levitt and March, 1988): in turbulent environment executive succession coupled with strategic reorientation should improve the organization's ability to adapt and thus also the organization's performance. The authors also argued that executive-team succession facilitates second-order learning, because team's competence base may change and it may even increase its heterogeneity of experience which shapes the basis for experimentation (Ancona, 1989; O'Reilly and Flatt, 1989).

In this work Virany, Tushman and Romanelli (1992) also showed that it is important to distinguish between CEO succession and executive-team change because they independently improve subsequent organization performance. This result suggests that new CEOs and/or new executive teams are able to provide, on their own, a diversity of expertise and a change in team-interaction processes sufficient to facilitate learning in turbulent environments.

The last finding of this study is that high-performing organizations tend to retained the incumbent CEO or promote a new CEO from within, but at the same time, they also tend to involve substantial changes in the composition of other members of executive teams. Consequently this result shows us that both the change and stability are fundamental in an uncertain and dynamic environment. Moreover these organizations initiate second order learning not in response to the performance decline, but either in anticipation of environmental change or as a response to elevated performance standards.

Other studies have researched the antecedents/determinants of the decision to replace the target's top management team, but as noted by Hambrick and Cannella (1993) the specific factors that influence departure rates are not well understood (Lubatkin, Schweiger and Yaakov, 1999; Zollo and Singh, 2004).

CEO's age is one of the most interesting determinants. Yet Hambrick and Cannella (1993) found that executive age is positively related to departure even if they did not find any significant relationship with relative size (the difference in size between acquirer and target firm).

Buchholtz, Ribbens and Houle (2009) found that the effect of CEO age on the rate of post-acquisition CEO departure can be plotted as a curvilinear slope. To be precise they found that the rate of CEO departure decreased until the age of 54, when it began to increase. These findings are also consistent with earlier work of Buchholtz and Ribbens (1994) but differ slightly from those of Hambrick and Cannella (1993) who found a positive and significant relationship.

A possible explanation why the youngest and the oldest CEO are the least likely to resist takeovers is offered by the human capital perspective. In fact according to D'Aveni and Kesner (1993) the youngest CEO are relatively unthreatened by potential job loss because their relatively low investments in firm-specific human capital. Even older CEOs are similarly unthreatened by takeovers because they had little to lose due to the few work years remaining. Hambrick and Cannella (1993) also found that the greater the relatedness between an acquiring and a target firm, the greater the rate of CEO departure after the acquisition. In fact they argued that the target CEO's value for the acquiring firm is embedded in his industry specific skills which assume different value related to the relative abundance of those skills within the acquiring firm. In fact when the acquiring firm is active in areas unrelated to that of an acquisitions, it does not have the specific human capital needed to manage the acquisition: as a consequence in such a case the firm needs and values the CEO's industry specific skills and expertise. In contrast when the acquiring firm's existing business is in related areas the CEO's skill set is more likely to be redundant with skill already available within the acquiring firm. This redundancy lessens the value the CEO's human capital holds for the firm and increases the likelihood the firm will initiate CEO departure.

Other findings also show that target company executives are more likely to depart when the firm is financially distressed, operates under bankruptcy protection or underperforms the market (Warner, Watts and Wruck, 1988; Weisbach, 1988; Walsh and Elwood, 1991; Walsh and Kosnik, 1993). Walsh and Elwood (1991) for example found that pre-acquisition profitability of the acquirer influences post-acquisition turnover, in particular the higher was the acquirer's pre-acquisition performance, the lower was the post-acquisition turnover of the acquired company's management. CEO turnover seems to be influenced also by firm's nationality: in this perspective Krug and Hegarty (1997,2001) found that executives are more likely to leave when their firm is acquired by a foreign multinational.

Krug and Hegarty (2001), building on Hambrick and Cannella's suggestion (1993) also examined how the CEO's perception influences their decision to stay or leave. According to them three events appear to be important: the merger announcement, interactions with acquiring company managers following the merger, and post-merger changes that determine the long-term effect of the merger. They found that when executives viewed the merger as friendly, had favorable impressions of the acquiring company's culture, they were less likely to leave. Good communications between merging, instead, are found to be less important in

determining whether top managers stay. This result stands in contrast to Schweiger and DeNisi's (1991) finding. Moreover executives are more likely to stay when they have a positive perceptions of the long-term effects of the merger and when they have challenging positions with greater status.

More recently Bargeron et al. (2009) found that the probability CEO is retained increases with a private bidder, with the performance of the target and with the fraction of target shares held by insiders.

Miller (1993), instead, focused on the impact that CEO succession might have on organization themselves. In fact in literature it has been argued that new CEOs can be catalysts for change (Hambrick and Mason, 1984; Hambrick and Finkelstein, 1987; Fredrickson, Hambrick and Baumrin, 1988; Grinyer, Mayes and McKiernan, 1988; Greiner and Bhambri, 1989; Miller, 1990,1991,1993; Tushman et al., 1990; Hambrick and Fukutomi, 1991) and in particular three changes are expected when a new leader has been appointed.

First long-tenured CEOs accumulate much power and legitimacy (Pfeffer, 1981; Mintzberg, 1983), they have the experience and the confidence to make decision unilaterally (Miller, 1993); most new CEOs, instead, do not have the experience and the reputation of their antecedents and so they have to build consensus. Consequently, according to Hambrick and Fukutomi (1991) they spread decision-making authority more broadly because they have to rely on other administrators for both political support and information; few years later, Miller (1993) effectively found that new CEOs are more likely than their predecessors to disperse power.

Second many established CEOs become increasingly confident and consequently they feel they do not need to spend a lot of time gathering and analyzing information about their operations and environment (Wells, 1962; Katz, 1982; Hambrick and Fukutomi, 1991; Miller, 1991). New CEOs, instead, know that they are not as familiar as their predecessors with the activities and the problems of their organizations, and, as a result, they take less for granted and tend to process more information in response to poor performance (Miller,1993).

Third, a change in leadership is often a necessary precondition to significant change (Hambrick and Fukutomi, 1991). In fact established experienced executives embrace the status quo because they attribute their success to existing policies and , as a result, they are reluctant to change (Staw, McKechnie and Puffer, 1983; Brockner and Rubin, 1985). They also tend to

blame negative results on external factors continuing to believe that internal change is unnecessary (Miller and Ross, 1975; Bettman and Weitz, 1983; Milliken and Lant, 1991).

CEO departure is therefore not always disruptive, it seems to break organizational momentum and it might have some benefit where there is over centralization, where there is a need to improve organizational intelligence, when organizations are experiencing dangerous strategic stagnation, when environments are changing and when performance is deteriorating (Miller, 1993).

However despite this huge literature it is not completely clear why some CEO departs and others stay after a firm's acquisition (Lubatkin, Schweiger and Yaakov, 1999) because the specific factors that influences departure rates are not well understood (Hambrick and Cannella, 1993; Lubatkin, Schweiger and Yaakov, 1999; Zollo and Singh, 2004).

Chapter 3

Theory and Propositions

3.1 Introduction

One of the two main aims of the present study is to develop and test a conceptual model in order to predict the likelihood of the two dependent variables Structural Integration and Target Top Management Retention. In order to achieve this result I have studied acquisition literature trying to understand what factors could influence these two probabilities.

Therefore in the next three paragraphs three "variables", which may affect the choice of structural integration versus structural separation and the choice of target CEO retention versus dismissal, will be review and discussed. Then on the basis of all this literature, hypotheses will be consequently proposed and then they will be tested and discussed in the next chapters.

3.2 Acquisition experience

Many researchers have studied determinants of acquisition performance and have found that the success of acquisition hinges on synergy realization (Haspeslagh and Jemison, 1991; Larsson and Finkelstein, 1999; Hitt and Ireland, 2001), which in turn depends on prudent target selection (Singh and Montgomery, 1987; Harrison, Hitt, Hoskisson and Ireland, 1991; Ramaswamy, 1997; Barney, 1998) and, in particular, on effective post-acquisition integration (Datta, 1991; Haspeslagh and Jemison, 1991; Chatterjee, Lubatkin, Schweiger and Weber, 1992; Larsson and Finkelstein, 1999). However much of the multidisciplinary literature (Datta, Pinches, and Narayanan, 1992; D.R. King, Dalton, Daily and Covin, 2004), suggests that most acquisitions fail. In this perspective D.R. King et al. (2004) argue that the majority of acquisitions continue to fail because many firms do not seem to know how to keep in practice all these insight which scholar have explored over the years. Scholars are increasingly realizing, therefore, that learning from prior experience may be crucial in attempting to enhance the performance of acquisitions and other strategic activities (Barkema and Schijven, 2008). General Electric, for instance, has managed to routinize its acquisition process to the point that it is able to effectively integrate most of its acquisitions within 100 days (Ashkenas, Demonaco and Francis, 1998). Similarly Cisco Systems, which has built its dominant market position through acquisitions, has developed a unique strategy that has been termed "acquisition and development" (A&D) (Mayer and Kenney, 2004).

However, according to Barkema and Schijven (2008), even if the acquisition literature is huge, only a relative small subset of it has focused on organizational learning, which is defined as the transfer of an organization's experience from one event to a subsequent one, and findings are decidedly mixed. Indeed, while some scholars have found a positive relationship between experience and performance (Fowler and Schmidt, 1989; Bruton, Oviatt and White, 1994; Barkema, Bell and Pennings, 1996) others, however, have found nonsignificant (Newbould, Stray and Wilson, 1976; Lubatkin, 1982; Bruton et al., 1994; Baum and Ginsberg, 1997; Kroll, Wright, Toombs and Leavell, 1997; Hayward, 2002; Wright, Koll, Lado and Van Ness, 2002; Zollo and Leshchinskii, 2004; Zollo and Singh, 2004) or U-Shaped relationships (Haleblian and Finkelstein, 1999; Porrini, 2004; Zollo and Reuer, 2006).

These results show how difficult is to learn to acquire successfully. The acquisition process, indeed, consists of many interdependent sub-activities, such as due diligence, negotiation, financing and integration, each of which is complex in itself (Hitt et al., 2001) and need to be customized to the specific deal at hand. Therefore, due to these high levels of heterogeneity it is difficult to disentangle "casual relationship between the decisions or actions taken and the performance outcomes obtained" (Zollo and Winter, 2002: 348) and, therefore, to learn.

As noted by Barkema and Schijven (2008) this suggests that important contingencies are at play and, thus, that research needs to dig deeper. This thesis tries to go on this direction, attempting to find a relationship between acquisition experience and two of the most important aspects of post-acquisition process, the choice of structural integration and the retention of the acquired CEO, which in turn determine a great part of acquisition success (Haspeslagh and Jeminson, 1991; Cannella and Hambrick, 1993; Pablo, 1994).

In this paragraph I will first analyze early research that adopted a traditional "learning curve" perspective in the context of acquisitions; then, I will examine three more recent research streams, each of which relaxes one of the simplistic assumptions of the traditional learning curve view and thus contributes to a better understanding of the impact of organization experience on acquisitions.

The simplistic assumptions that each of these recent research streams relaxes are the following:

- Research on negative experience transfer relaxes the assumption that experience is always positive; experience is consequently seen even as negative, allowing for a more detailed understanding of the link between experience accumulation and performance.
- Research on deliberate learning mechanisms argues that experience is often a necessary but insufficient condition in order to learn; this perspective permits to throw light on the mechanism of learning that operates between experience accumulation and performance.
- Research on imitation and vicarious learning relaxes the assumption that the firm only learns from its own experience; following this perspective firms can learn even from other firms.

Thanks to this "relaxation process" a more mature theoretical framework of organizational learning in strategic contexts has grown up, contributing to a better understanding of the impact of organization experience on acquisitions.

3.2.1 The traditional learning curve perspective and the different types of experience

The first strand of literature is based on the traditional learning curve prospective, according to which the results (such as productivity, unit costs and performance) improve with the increase of experience .

These early researches tend to draw on classic works that documented continuous improvement in input-output ratios resulting from a growing stock of experience to make some assumptions about the learning phenomenon (Barkema and Schijven, 2008). Arrow (1962), for instance, by starting from psychological and economic literature, tried to generalize the learning concept: in particular he proposed the hypothesis that technical learning is a result of experience, which is identified as the very activity of production which gives rise to problems for which favorable responses are selected over time.

However despite the simplicity of learning curve perspective, it has helped in gaining preliminary insight into the extent to which learning occurs in the context of acquisitions and other strategic activities (Kusewitt, 1985; Fowler and Schmidt, 1989; Hitt et al., 1998; Barkema and Schijven, 2008)

Researches in this period typically adopted an empirical approach, made by estimating models with variables that were believed to be fundamental in explaining acquisition performance and among these variables there was even acquisition experience. Kusewitt (1985), for instance, analyzed a database of 138 U.S. active acquiring firms which had accomplished about 3500 acquisitions (from 1967 to 1976) in order to investigate the relationship between seven common factors of acquisition strategy. He found that acquisition rate, relative size, industry commonality, timing relative to the business cycle, payment method and target profitability, significantly affected the financial performance of acquiring firms. To be precise he highlighted that there are six strategic acquisition factors which must be taken into consideration for an acquisition's successful implementation; industry commonality and acquired profitability were found to be positively related to performance, while the others five factors, which included acquisition rate, were found to be negatively related to performance. As noted by Fowler and Smithdt (1989:340) later research interpreted this negative effect of the acquisition rate variable as evidence of "a negative relationship between the number of previous acquisition and organizational performance, suggesting corporate indigestion and inefficient consolidation rather than the ability to learn to acquire and integrate effectively". Fowler and Smithdt (1989) also tried to extend previous researches by exploring the relationship between factors that are considered strategic for acquisitions and longtime performance of the acquirer. Contrary to previous studies they found a significant positive relationship between acquisition experience and market-based acquisition performance: in other words they found that, on average financial performance of the acquirer improved significantly for those organizations whose had previous acquisition experience. Moreover as suggested by Barkema and Schijven (2008) in this study a more plausible performance variable was used: the number of acquisitions in the four year preceding the focal acquisition, while previous works used the number of acquisition completed per year. This last mentioned variable seems, however, to capture acquisition speed rather than acquisition experience.

In general all these findings from Fowler and Smithdt (1989) are consistent with early (Kitching, 1967) and more recent studies (Ashkenas et al., 1998; Hitt, Harrison, Ireland and

Best, 1998) which suggest that firms with acquisition experience show better result at breaking inertia and changing their organizational structure, improving the effectiveness and efficiency of the integration process.

Years later Bruton, Oviatt and White (1994) focused on the same issues. In particular they looked at the effects of acquisition experience in a sample of distressed firms and , by arguing that experience acquirers know when to acquire and when not, know more than inexperienced acquirers about the key success factors, they found that distressed firms showed a positive relationship with experience and acquisition performance. Non distressed firms, instead, failed to show this positive relationship. They interpreted this as a signal that financially distressed targets will have few interested buyers, as it requires much effort to turn them around.

Even more recently the relationship between acquisition experience and integration has been studied theoretically and even practically. For instance, Ashkenas, DeMonaco and Francis (1998) presented a reference model, called "The wheel of fortune", that can help executives in learning how to manage integration of acquisitions as a replicable process and not as an only-time event. However, as noted by the same authors there are always some aspects of acquisition integration process that are new and unique and managers, consequently, have to improvise. This is consistent with other more recent publications: Barkema and Schijven (2008), indeed, found that acquisition should not be seen as a one-time event but rather as a more iterative process that requires efforts from the acquire firm as a whole in order to unlock the synergistic potential of a past acquisition.

Even related fields offer additional evidence as concerns the traditional learning curve perspective. This is the case of alliance literature where Anand and Khanna (2000) by examining alliances with at least one U.S. partner found positive effects of alliance experience, which was measured by the number of prior alliances. Similarly, Sampson (2005) found that alliance experience improved the innovative performance of following alliances in the telecom equipment industry as measured through citation-weighted patent counts. Finally, in the divestiture literature, a research conducted by Shimizu and Hitt (2005) suggested that these firms learned when to divest: they found that divestiture experience moderated the relationship between the performance of acquisition and the probability of their subsequent divestiture.

In the 1980s lots of study took a major step forward by distinguishing between different types of acquisitions in studying their performance, primarily based on industry relatedness (e.g.,

Lubatkin, 1982, 1987; Kusewitt, 1985; Singh and Montgomery, 1987; Fowler and Schmidt, 1989), but despite these insights these studies were still treated acquisition experience as a homogeneous construct. With the advent of the 1990s, however, many scholars started to examine the impact of a variety of more specific types of experience on performance in strategic settings.

What followed was a flurry of studies (Barkema and Schijven, 2008). Some of them analyzed the macro-level contingencies (Markides and Ittner, 1994; Li, 1995; Bakema et al., 1996; Caves, 1998; Hébert, Very and Beamish, 2005), while others, more recently, focused on contingencies at lower level of analysis, such as experience with a specific target or partner firm (Bruton et al., 1994; Porrini, 2004).

At macro-level contingencies researchers started to explore whether experience varied by industry. For instance Li (1995) demonstrated that experience produces different effects among industries: he found that experience in the computer industry decreased the likelihood of exit of later entries while no such learning effects were found for pharmaceutical industry. Hébert, Very, and Beamish (2005) also found that acquisition experience in a given industry did not necessarily increase acquisition performance in that same industry.

A second macro-level contingency was studied by International business scholars: the country or culture. Markides and Ittner (1994) studied international acquisition by U.S. firms and found that international acquisition experience significantly increased short-term abnormal stock returns when making another international acquisition. According to these findings Lee and Caves (1998) found that international acquisition experience decreased the volatility of the acquirer's post acquisition profits, particularly if the experience was from the same geographic region as the focal acquisition.

A completely new and fundamental idea in this field of study emerged from Bakema et al. (1996). They started from Cohen and Levinthal's (1990) general idea that firms only learn if new experience is related to what they already know and they found that the general international acquisition experience of Dutch firms did not affect the longevity of their subsequent international acquisition. This means that firms only learn if new experience is related to what they already know; in other words experience needs a certain level of similarity to ensure learning. Also evidence from the alliance literature supports the idea that experience needs to be sufficiently specific to enable learning (Barkema et al., 1997; Schendel, 2000): they found that international alliance experience preceded by either domestic alliance

experience have a higher probability of success. Following this strategy, indeed, firms are able to learn about alliances first without the complexity of operating abroad. Consequently these results support the idea of an incremental learning path.

In sum all these findings suggest that industry, or country specific experience fosters learning to a greater extent than more general experience and that the impact of experience seems to be particularly beneficial if it is both industry and country specific (Barkema and Schijven, 2008).

At meso-level contingencies instead, where researchers have begun to explore contingencies at lower level of analysis, such as experience with a specific target or partner firm, interesting findings come from Porrini (2004). She found that acquisition experience, had no significant effect on the acquirer's economic results, but acquisition performance benefits from having been in alliance with the focal target in the past. Also the research conducted by Bruton et al. (1994), that I have mentioned before is another example of contingency at a lower level of analysis.

All these findings, taken together show us that experience often matters and that it is important to distinguish between different types of experience (e.g., industry specific and country or culture specific), thus recognizing that experience needs to be sufficiently specific to be conducive to productive learning.

However, as noted by Barkema and Schijven (2008), this perspective shows some gaps that have been explored deeper in later researches. In particular this perspective assumes that experience effects are always positive, failing to recognize that experience may be detrimental when it is transferred to a setting where previous lessons do not apply. In odds, it considers experience equal to learning, although the former may not automatically imply the latter because more deliberate action may often be needed for learning to take place. Finally, through its emphasis on "learning by doing", this perspective focuses exclusively on the firm's own experience, thus largely disregarding the opportunities of firms to learn from the experience of other firms.

Consequently from the mid-1990s onward researchers have moved beyond the traditional learning curve perspective by drawing in related disciplines as psychology and sociology (Barkema and Schijven, 2008) and as a result organizational learning theory grew noticeably, even though the related literature has remained highly eclectic to this day (Fiol and Lyles,

1985; Huber, 1991; Dogson, 1993; Levitt and March, 1998; Crossan, Lane and White, 1999; Bapuji and Crossan, 2004; A.W. King, 2007).

3.2.2 The experience effects could be even negative

Haleblian and Finkelstein (1999) were the first who question themselves about the implicit assumption that experience is always positive. In fact, even if some previous studies argued that firms with previous acquisition experience showed better performance than those without such experience (Lubatkin, 1983) most of the acquisitions are often unsuccessful. Moreover these arguments seem to be extremely intuitive (Dutton, Thomas and Butler, 1984; Lieberman, 1987), but the empirical works on the relationship between acquisition experience and performance show mixed results (Lubatkin, 1982; Fowler and Schmidt, 1989; Hitt and al., 1993; Bruton, Oviatt and White, 1994).

One of the first analysis on this relationship was done by Lubatkin (1982). Contrary to his expectation he failed to find a significant relation between acquisition experience and performance. Consistent with this finding is the research conducted by Bruton, Oviatt and White (1994) in a sample of distressed firms. Contrary in a study by Hitt et al. (1993) experience was found to be positively related to acquisition performance, as even in Fowler and Schmidt's research (1989): they found that acquisition experience in the four year period preceding the year of the tender offer was positively associated with acquisition performance. Consequently, given these opposite results, we cannot easily conclude that experience leads to superior acquisition performance.

Recently Barkema and Schijven (2008) has proposed an interesting idea in order to interpret the findings discussed above: according to the authors these findings may have more sense if we consider them in the light of behavioural learning theory, which predicts an individual's behavioural outcomes by analyzing environmental influences. In particular it is possible to distinguish between present and past environmental influences on behaviour: as defined by Reynolds (1975) the present influences on behaviour are referred to as antecedents, while the past determinants of behaviour are referred to as consequences.

These studies on how consequences influence behaviour was triggered by Thorndike's early work (1898) in which he demonstrated two fundamental principles of the behavioural learning

theory: rewarded behaviour tend to persist and strengthen over time (e.g. Hobbes, 1651), while punished behaviour tend to weaken.

Substantial evidence assert that consequences do affect behaviour at the firm level (Barkema and Schijven, 2008). In fact good performance has been shown to lead to organizational inertia (Miller and Chen, 1994) and poor firm performance has been found to be related to many forms of organization change, as chief executive officer change (Warner, Watts and Wruck, 1988; Puffer and Weintrop, 1991) strategic change (Boeker, 1989; Lant, Milliken and Batra, 1992) and divestitures (Montgomery and Thomas, 1988; Kaplan and Weisbach, 1992;). The first relation is therefore consistent with rewarded behaviour, while the second is consistent with punished behaviour.

Researches have also shown that current antecedent conditions influence behaviour. According to Pinder (1984) when an antecedent condition is similar to a previous condition, the behaviour that has come to dominate in the previous situation will be probably generalized to the current situation. This process that enables the same behaviour in response to a variety of similar antecedent conditions, is called generalization (Nye, 1979). Research from the psychology literature has shown that the more similar events are to each other, the more likely it is that the generalization of past event experience will lead to positive outcomes (e.g. Hearst and Koresko, 1968; Kamin, 1969). However as noted by Mazur (1984) generalizing past experience when an antecedent condition is dissimilar to previous situation may lead to negative results. It consequently follows that, when antecedent conditions are similar to previous situations, firms should generalize, but when antecedent conditions are dissimilar to previous situations, firms should discriminate. Building in this idea ,and in order to understand better the specific effects of experience for firms, Haleblan and Finkelstein (1999) developed a model of organizational experience and its consequences under different conditions.

This model is represented as a matrix which is made up of four quadrants.

		Antecedent condition	
		<i>Similar Experience</i>	<i>Dissimilar Experience</i>
Organization Behaviour	<i>Generalization</i>	Appropriate Generalization [1]	Inappropriate Generalization [4]
	<i>Discrimination</i>	Inappropriate Discrimination [2]	Appropriate Discrimination [3]

Figure 6- The relation between organizational behaviour and antecedent condition. Source: Haleblan and Finkelstein (1999)

In quadrant 1, similar antecedent conditions are followed by appropriate generalization behaviour. Given significant similarity between two events, past event experience becomes relevant to the present event so that the generalization of this experience leads to positive consequences.

In quadrant 3, dissimilar antecedent conditions are followed by appropriate discrimination. New events are correctly perceived as unique, so that past event experience is not applied to, and consequently does not influence new event performance.

Both quadrant 1 and quadrant 3 represent a correct response following antecedent conditions. In quadrant 2, instead, similar antecedent conditions are followed by inappropriate discrimination. New events are incorrectly perceived as unique, so that past event experience is not applied, with neutral consequences.

In quadrant 4, dissimilar antecedent conditions are followed by inappropriate generalization; similar surface features are recognized while dissimilar structural features are not (Novick, 1988). In this situation as noted by Adams (1980) two dissimilar situations could be perceived as analogous and so past event experience is generalized to the present event leading, as a consequence, to negative outcomes. Thus, according to Novick (1988) past event experience may be irrelevant or even misleading .

Quadrants 2 and 4 describe inappropriate behaviours: antecedent events are misperceived when similar events are incorrectly represented as dissimilar (quadrant 2) and dissimilar events are incorrectly defined as similar (quadrant 4). Moreover as noted by Barkema and Schijven (2008) and consistent with Adelson (1984) it is more likely that novices rather than

experts respond inappropriately to antecedent conditions: it follows therefore that quadrants 2 and 4 describe inappropriate behaviours that are more common to firms which lack experience.

To sum up this matrix shows that the consequences of generalizing experience may vary from positive (quadrant 1) to negative (quadrant 4); at the same time it shows that experience is not generalized if the organization discriminates (quadrant 2 and 3), so prior experience has no effect on current situation. According to Mintzberg (1979) these processes of generalization and discrimination should take place at the strategic apex of organization especially during an acquisition in which senior managers and primarily the CEO have fundamental influence (Davi, Schoorman and Donaldson, 1997; Hayward and Hambrick, 1997).

In the same study Haleblian and Finkelstein (1999), building on transfer theory from cognitive psychology (Ellis, 1965; Cormier and Hagman, 1987), argue that transferring acquisition routines from one industry to another is the same as transferring old lessons to new settings. They consequently hypothesized that the second acquisition of a firm typically performs worse than its first. They also expected that this negative trend will continue even after the second acquisitions, but at some point, when firms will have developed the expertise needed to identify dissimilarities across acquisitions, enabling them to generalize prior experience only when it is applicable, firms will be able to reach superior performance. Haleblian and Finkelstein (1999), in line with their theory, effectively found a U-shaped relationship between acquisition experience and performance. Moreover, this study and a subsequent one (Finkelstein and Haleblian, 2002) showed that the negative effect is less significant if target firms in later acquisition are more similar in terms of the industries.

Building on Haleblian and Finkelstein's work, more recent studies started to investigate how the performance of the current acquisition is affected by the heterogeneity of the entire acquisition experience accumulated so far. Thanks to these studies literature was able to go beyond assessing only the similarity between the focal acquisition and the one preceding it. Consistent with this view Levitt and March (1988) defined organizational learning as an iterative, dynamic process in which firms engage in experience, draw inferences from them and store the inferred material for future experience.

One of the most important works in this perspective was made by Hayward (2002). In fact before this study there were contrasting findings on the heterogeneity effect over acquisition performance. Some studies, indeed, show that a higher experience in a precise field or task allows firms to reach superior performance (see Yelle, 1979 for a review; Argote, Beckman and

Epple, 1990), while according to Huber (1991) these effects may not materialize and learning can become forgotten or trapped. According to the latter Halebian and Finkelstein (1999) inferred that acquisition experience per se may be insufficient to ensure superior acquisition performance, because experience from prior acquisitions could be inapplicable to the current one. In this sense Hayward (2002) found evidence of an inverted U-relationship between the similarity of the industries in which prior acquisitions are embedded and the performance of the focal acquisition. He consequently argued that heterogeneous experience can make learning more difficult and can lead to high bureaucratic costs because the firm could be active in an incoherent group of business; however at the same time when prior acquisitions are highly similar to one another, exploration could prevent leading the acquirer from falling victim to a competency trap. These findings are also consistent with Levinthal and March (1993). To sum up these results suggest that the performance of the focal acquisition tends to benefit from acquisition experience that is neither too heterogeneous nor too homogeneous (Hayward, 2002).

More recently Schijven and Barkema (2007) has proposed an interesting dynamic approach. Building on transfer theory they argued that the firm requires different types of experience over time: the firm initially needs experience within the same industries in order to foster learning by avoiding too much casual ambiguity then, as the expertise increased, it serves as a springboard which enables the firm to learn from a more widely variety of acquisitions. Moreover alliance literature provides complementary insights: Reuer et al. (2002) found that firms learn from past experience if it is based on similar culture and skills, and at the same time that experience heterogeneity boosts creativity which in turn benefits even alliances in different industries.

Even findings from Porrini (2004) could be seen partly in line with these results. Her result will be reviewed in the next paragraph dedicated to the relationship between prior alliance with target firm and the choice of structural integration and target CEO retention.

Overall, this literature clarifies two fundamental aspects: first experience is not a universal remedy because it can also decrease performance; second it is extremely important to consider the different types of experience since they can lead to different outcomes.

3.2.3 Experience does not necessarily implies learning

An emerging stream of research on how firms can best learn from heterogeneity draws on Hayward's (2002) observation that heterogeneous experience can even make learning more difficult.

In essence, this new stream of research challenges the second simplistic assumption of the traditional learning curve perspective, namely, that experience automatically implies learning. In fact, research on deliberate learning mechanisms argues that experience is often a necessary but insufficient condition in order to learn and consequently it permits to throw light on the mechanism of learning that operates between experience accumulation and performance.

Therefore several authors moved beyond the traditional notion of routine-based, semi-automatic learning exploring more deliberate learning mechanisms.

Hébert et al. (2005), for instance, examined cross-border acquisitions by Japanese multinational corporations and they found that neither general acquisition experience nor industry experience, industry acquisition experience, host country experience or local acquisition experience have independent effects on acquisition performance. Apparently, experience only results in learning if it is used correctly, namely if there are mechanisms in place that actually transfer it to where it needs to be within the firm.

They consequently concluded that experience in itself is not sufficient in order to develop acquisition capability because it does not necessarily imply that the lessons will be in the right place at the right time.

Another angle of this idea of deliberate learning is offered by Zollo and Winter (2004). These authors argue that infrequently performed tasks with high level of heterogeneity and casual ambiguity require learning mechanism, such as experience articulation and codification, that are "aimed at uncovering the linkages between actions and performance outcomes". Zollo and Singh (2004) applied this argument to acquisitions. Their study, based on a survey data on acquisitions in the U.S. banking industry, showed a non significant relationship between acquisition experience and performance, but a significant positive effect of knowledge codification (i.e., the sum of all acquisition tools the acquirer had developed, such as due diligence and integration manuals). Moreover this positive effect was also found to increase

with the level of acquisition integration, suggesting that the benefits of deliberate learning mechanisms increase with the complexity of the task and the level of casual ambiguity.

Therefore all this literature clearly suggests that experience accumulation is a necessary but insufficient condition for the successful development of acquisition capability.

Following this perspective indeed, firms are able to develop collective competences by not only accumulating experience, but above all by investing time and effort in activities that require greater cognitive effort in order to produce superior awareness of action-performance linkages.

In fact, according to Zollo and Winter (2004) firms learn by articulating and codifying the lessons they learned from previous experiences, even if they might not be aware of positive learning spillovers from these activities.

3.2.4 Building experience by imitating other firms

Around the mid-1990s. a third implicit assumption of traditional learning curve started to be questioned. Based on sociological theory of imitation (DiMaggio and Powell, 1983) and psychological theory of vicarious learning (Bandura,1977) a new field of study was opened by arguing that firms not only learn from their own experience but they can also learn from other firms.

According to Miner and Haunschild (1995) thanks to vicarious learning a firm is able to explore lots of different ways of performing tasks without incurring any cost and risk associated with experimenting alternative action.

Several evidence in literature show that imitation is a widespread practice in strategic contexts. Networks, for example are seen as a great potential source of learning (Levitt and March, 1988; Powell, 1990; Uzzi, 1996) because they can facilitate skills transfer among firms (Hamel, 1991) and even the birth of novel syntheses from existing information (Doerr, 1996; Stuart and Podolny, 1997). One of the most important studies in this perspective is the one conducted by Haunschild (1993): she found that firms imitate the acquisition behaviour of other firms to which they are tied through board interlocks, at least in the case of horizontal acquisitions. In subsequent works she also found that firms rely on their interlock partners for information on how much to pay for target , (Haunschild , 1994) and even that they rely more on interlock partners which are similar to them (Haunschild and Beckman, 1998).

Interestingly, Westphal, Seidel and Stewart (2001) observed even that firms not only imitate their interlock partners but they also imitate their imitative behaviour ("second order imitation"). They also found that a greater similarity in acquisition behaviour between interlock partners and their competitors leads to a greater similarity in acquisition behaviour between the focal firm and its competitors.

Consistent with this, Haunschild (2002), by starting from institutional theory from sociology (DiMaggio and Powell, 1983) and social learning theory from psychology (Bandura, 1977), found that partners' heterogeneity in a network structure can positively affect decision quality because it provides firms with more diverse samples of experience from which to learn. Other studies, instead, such as Baum, Li and Usher (2000) and Yang and Hyland (2006), decided to focus on the imitation of competitors' acquisition and even in these cases several concrete evidence were found. As noted by Barkema and Schijven (2008) related literature offers even more evidence of strategic imitation. Gulati (1999), for instance, found that the greater the network of a firm the greater is the probability to enter new ones suggesting the idea that networks are a rich source of information for alliance opportunities. Guillén (2002), instead, by focusing on international business showed that firms imitate their competitors' behaviour and strategy especially when they enter in a new market or business: he consequently concluded that firms use imitation as a temporary substitute for experience.

In sum, literature brings out the fact that firms imitate the behaviour of others in the context of acquisitions and in other strategic settings and that they often rely on vicarious learning in an attempt to enhance their performance.

3.2.5 What have we learned?

Existing literature about acquisition experience shows us that this subject is more often studied focusing on the linkage between acquisition experience and acquisition performance. In fact only few studies (Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2009) have tried to make a further step by considering not only acquisition performance but two of the most important choices that might contribute to acquisition success: the choice of structural integration versus structural separation and the choice of target CEO retention versus dismissal.

In particular Puranam and Srikanth (2007) focused on high technology acquisitions highlighted that one of the main problems in such technology acquisitions is that post-merger integration can destroy those same innovative capabilities that made the acquired organization attractive in first place (Chaudhuri and Tabrizi, 1999; Birkinshaw et al., 2000; Ranft and Lord, 2002; Puranam et al., 2003; Graebner, 2004). According to Haspeslagh and Jemison (1991) this is due to the fact that the integration process can improve knowledge transfer and coordination between acquirer and acquired firm, but it can also significant disrupt organizational processes in the latter due to the reduction in organizational autonomy. Puranam and Srikanth (2007) found that acquirers with acquisition experience are able to avoid this trade-off between leveraging knowledge and leveraging capability by mitigating the adverse consequences of loss of autonomy resulting from structural integration.

We can therefore argue that experienced acquirer are more likely to integrate the target firm in order to avoid the disruptive effect discussed above. Also early studies are consistent with this view because they suggested that firms with acquisition experience show better result at breaking inertia and changing their organizational structure, improving the effectiveness and efficiency of the integration process (Kitching, 1967; Fowler and Smithdt, 1989; Ashkenas et al., 1998; Hitt, Harrison, Ireland and Best, 1998;)

Moreover according to Barkema and Schijven (2008) it is important to distinguish between different types of experience (e.g., industry specific and country or culture specific), because previous literature (Lubatkin, 1982, 1987; Kusewitt, 1985; Singh and Montgomery, 1987; Fowler and Schmidt, 1989; Li, 1995; Bakema et al., 1996; Hébert, Very, and Beamish, 2005) has recognized that experience needs to be sufficiently specific to be conducive to productive learning. As a consequence in the present study I consider a specific type of experience, namely the experience in conducting acquisitions in high-technology sectors. To be precise I consider also experience in non high technology sectors as a control variable (see chapter 4 for further details) in order to broaden Puranam and Srikanth 's findings (2007) and demonstrate that different types of experience have a different impact on the probability of structural integration and CEO retention. We can therefore argue that acquirers with a high level of experience in conducting high technology acquisitions are more likely to integrate the target firm in order to avoid the previously discussed detrimental effects.

However, Graebner (2004) also found another factor that is able to alleviate the disruptive effect resulting from structural integration. By focusing on the role played by leaders of the acquired firm in post-merger integration, she found that they can moderate the negative effects of integration on performance. In fact according to her, acquired leaders, thanks to their superior knowledge of and influence over the acquired organization, are either able to allow greater integration and coordination and mitigate the disruptive consequences resulting from loss of autonomy.

We can therefore argue that in high technology acquisitions, the retention of the acquired CEO may be seen as redundant because improved integration capability developed through the experience in conducting high technology acquisitions, already permits to mitigate the disruptive effect.

I consequently propose the following propositions:

P1a: When high level of experience in managing high technology acquisitions exists the probability of the structural integration choice increases.

P1b: When high level of experience in managing high technology acquisitions exists the probability of the acquired CEO retention choice decreases.

3.3 Pre-acquisition alliances

Several studies suggest a link between alliances and acquisition strategies (McGahan and Villalonga, 2003,2004; Zollo and Reuer, 2003).

In particular many previous studies argue that the existence of pre-acquisition alliance activity may enhance post-acquisition coordination (Reich and Mankin, 1984; Doz, Hamel and Prahalad, 1986; Haspeslagh and Jemison, 1991; Bleeke and Ernst, 1995; Hagedoorn and Sadowski, 1999) and consequently acquisition success (Porrini, 2004).

In fact, as noted by Porrini (2004) an acquirer's prior alliance with the target is a special case of organizational learning because allows firms to learn from each other, absorb information, skills and stores the inferred material and the knowledge gathered for future use (Levitt and March, 1988; Hamel, 1991; Khanna, Gulati and Nohria, 1998; Kale et al., 2000). According to her, alliance literature has found that alliances are able to create value because they facilitate organizational learning (Anand and Khanna, 2000) and organizational learning literature has emphasized that prior alliance experience can contribute to firm's future acquisitions (Wang and Zajac, 2007)

In her study Porrini (2004) by studying domestic acquisitions by U.S firms found a U-shaped relationship between alliance experience, and acquisition performance. Similarly, Nadolska and Barkema (2007) have found the same relationship between international joint ventures experience and the longevity of international acquisitions. Instead, building on transfer theory, Zollo and Reuer (2006) argued that alliance experience has always positive impact if acquirers integrated targets. In fact they believed that alliance experience is beneficial if the acquisition requires little integration, because contrary to Porrini (2004), they believed that alliances experience teaches acquirers little about integration.

Moreover in terms of prior resource interdependence, learning by doing arguments suggest positive effects of pre-acquisition alliances on acquisition coordination (Arrow, 1962; Argote, 1999). In this perspective the opportunity that the two firms have had to exploit the best use of each other's resources during the alliance phase can enhance post-acquisition coordination (Agarwal, Anand and Croson, 2005). Pre-acquisition alliance, in fact, may serve as an important screening mechanism for potential targets (Agarwal, Anand and Croson, 2005), as it is argued in the real option and related literatures (Kogut, 1991; Adner and Levinthal, 2004). Differences

in culture can damage acquisition performance so previous alliance, which permit knowledge of the target's internal strengths, weaknesses, and culture, can help the acquirer to select a target that has a good fit with its business practices and future strategic plans (Chatterjee, Lubatkin, Schweiger and Weber, 1992; Tsai and Ghoshal, 1998).

Pre-acquisition alliance may enhance post-acquisition coordination also because previous social contact can help to align goals and facilitate the development of trust and empathy (Allport, 1954; Gulati, 1995; Brewer and Brown, 1998). In this perspective Zollo et al. (2002) argued that firms in an alliance develop inter-organizational routines which in turn, in a stable environment, could have a positive effect on the performance of future interaction between these partners. However problems could rise if the routines formed in the alliance stage are inappropriate for the post-acquisition stage, yet sticky (Nelson and Winter, 1982; Zollo, Reuer and Singh, 2002): in this case prior resource interdependence can hamper post-acquisition coordination. This is mainly due to the fact that routines, which may be developed in the alliance phase among partners (Hamel, 1991; Das and Teng, 2000), if persist, they can have a detrimental effect on post-acquisition coordination. Consistent with these findings Halebian and Finkelstein (1999) showed that firms can over-generalize the applicability of what they have learnt in early experience in acquisition.

More recently Agarwal et al. (2006), found that prior social contact between firms has a positive effect on post-acquisition coordination since established communication allows for better mutual understanding. As a result partners will work better each other in future collaborations because they obtain very specific information about each other's potential compatibility (Doz, 1996; Arino and de la Torre, 1998). In this perspective Colombo et al. (2010) highlighted that prior collaborations enable a firm to become familiar with its partner's idiosyncrasies, especially in alliances involving joint R&D, where intensive communication and knowledge exchange between firms may have the potential to reduce information asymmetry, characteristic for technological acquisitions.

This idea that pre-acquisition social contact and communication promote coordination is consistent with the "contact hypothesis" in social psychology which helps to explain how contact reduces tension among social groups (Allport, 1954; Pettigrew, 1971; Brewer and Brown, 1998). This theory suggests that when group members depend on each other for the development of a common objective, they tend to develop friendlier relation among each other,

so the effect of this contact is further enhanced. The contact hypothesis is also consistent with the dissonance theory (Festinger, 1957) which predicts that when group members with competitive attitudes towards other groups find themselves in positive social contact with one another, they are like to change their attitudes to be more cooperative and friendly.

Therefore this literature shows that prior alliance between two firms enables social contact between them which permits to establish routines. Moreover thanks to these routines the likelihood of acquired top manager retention may decrease because the need for acquired CEO as link and stabilizing agent (Graebner, 2004) capable to generate greater coordination between the two firms, may decline.

Also, prior alliances make the two firms more familiar each other, coordination is easier because prior social contact between them allows for mutual understanding. We can therefore argue that the choice of structural integration, as a mechanism to achieve close coordination in order to support efficient knowledge flow between the two firms (Pablo, 1994; Ranft and Lord, 2002; Schweitzer, 2005; Puranam et al., 2006; Puranam and Srinanth, 2007; Puranam et al., 2009), could be seen as redundant because previous alliance permits to the acquiring firm to gain the same benefit that structural integration could give.

I therefore propose the following propositions:

P2a: When prior alliance with acquired firm exists the probability of the structural integration choice decreases.

P2b: When prior alliance with acquired firm exists the probability of the acquired CEO retention choice decreases.

3.4 Component technology

According to the literature (Chaudhuri and Tabrizi, 1999; Birkinshaw et al., 2000; Ranft and Lord, 2002; Puranam et al., 2003; Graebner, 2004; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2009) if we specifically focus on the integration process in high technology acquisitions an additional concern have to be considered.

Acquisition of small technology based firms are, in regimes of rapid technological change, a fundamental source of technological input (Leonard-Barton, 1995; Kale and Puranam, 2004; McEvily, Eisenhardt and Prescott, 2004) motivated by the need to bring product speedily to the market as well as develop future product pipeline (Steesma and Fairbank, 1999; Puranam, Singh and Zollo, 2003). However, the main problem in such technology acquisition is that post-merger integration can destroy those same innovative capabilities that made the acquired organization attractive in first place (Chaudhuri and Tabrizi, 1999; Birkinshaw et al., 2000; Ranft and Lord, 2002; Puranam et al., 2003; Graebner, 2004).

According to Haspeslagh and Jemison (1991) this is due to the fact that the integration process can improve knowledge transfer and coordination between acquirer and acquired firm, but it can also disrupt significantly organizational processes in the latter due to the reduction in organizational autonomy. In fact, the few existing large sample studies which have related integration mechanisms and performance in technology acquisitions report mixed results (Chakrabarti, Hauschildt and Suverkrup, 1994; Gerpott, 1995; Ranft, 1997), consistently with the observation that integration enhances coordination at the expense of autonomy. Also Ranft and Lord (2002) building on seven detailed case studies of technology acquisitions found evidence consistent with the notion of the "integration paradox".

As noted by Puranam, Singh and Chaudhuri (2009) this loss of autonomy effect can arise in two different ways. First, according to the agency theory it can lead to a lower motivation and productivity in the target firm because structural integration weakens the link between reward and effort. In this situation free riding increases (Baker, 2002) and consequently talented employees are often attracted to smaller organizations because of the high-power incentives they offer (Zenger, 1994). In sum both low motivation and the departure of talented employees can critically undermine the target firm's innovation capability. Second, structural integration creates a combined organizational unit in which the target firm has to become a part of such unit through a process of great changing . Change, however can cause disruption (Hannan and

Freeman, 1984; Amburgey et al., 1993), alters valuable organizational routines (Leonard-Barton, 1992; Ranft and Lord, 2002; Benner and Tushman, 2003) and as a consequence innovation capabilities in acquired firm can be permanently damaged (Parachuri et al., 2006; Puranam et al., 2006).

Building on these arguments Puranam, Singh and Chaudhuri (2009) argued that, despite all these negative effects structural integration is a fundamental mechanism to achieve coordination between acquirer and target especially in the case of significant level of interdependence between them. Interdependence can be defined as "the extent to which the elements upon which work is performed or the work processes themselves are interrelated so that changes in the state of one element affects the state of the others" (Scott, 1992).

In their study Puranam, Singh and Chaudhuri (2009) proposed that structural integration is more likely in technology acquisitions, when the acquisition is motivated by the desire to obtain a component technology rather than a standalone product. In fact when the target is acquired for a component technology, the product development teams of the target firm need to manage the interdependence between their own activities and those of the product development teams working on the remaining parts of the system. When the target technology represents a standalone product, instead, the situation is different. In fact, a standalone system is self-contained and it does not need as much coordination as a component element would (March and Simon, 1958; Galbraith, 1973) because it is effectively "autonomous". In this case the coordination effect generated by structural integration is less valuable and the disruption caused by the loss of autonomy still exists, therefore the net gain from integration is low (Puranam, Singh and Chaudhuri, 2009).

In order to test their hypothesis Puranam, Singh and Chaudhuri (2009) chose the sample of acquirers from the information technology hardware industry. The hypothesis were tested on a sample of acquisition events which were identified from COMPUSTAT with announcement dates in period from 1988 and 1998; acquirers had to have more than 1000 employees at every point of time in the study period, while the target could be even small firms (< 500 employees). The acquirers were all from the information technology hardware industries, while the target could have been also from other industries. Finally they relied on media coverage at the time of the acquisition to isolate acquisitions in which technology was reported as a key motivating factor for the transaction (Ahuja and Katila, 2001).

217 acquisitions by 49 acquirers met all these criteria, then data availability reduced these to 207 acquisitions for 49 acquirers.

In order to investigate if the acquired was integrated in the acquirer firm or not, they examined the CORPTECH (for further information see Puranam, Singh and Chaudhuri, 2009) database in the year after the acquisition and then in order to corroborate this measure they examined even press releases and articles. They were consequently able to know if, given a single acquisition, structural integration had occurred or had not been carried out. A dummy variable was then created to distinguish these two situations: the variable assumes the value of 1 in case of structural integration (Structural Integration=1) or the value of 0 in case integration does not occur (Structural Integration=0).

As regards the component technology, expert coders examined a wide variety of business press and trade publication articles in order to assess whether the target was acquired for a component technology or for a standalone product. Based on that, the authors constructed a dummy variable to distinguish the two alternatives (Component Technology=1 or Component Technology=0).

The overall result supported their arguments: Puranam, Singh and Chaudhuri (2009) found that structural integration is more likely in technology acquisitions which are motivated by the desire to obtain a component technology rather than a standalone product. In this case, indeed, even if structural integration causes loss of autonomy, and consequently the above discussed negative effect, it also generates a positive coordination effect which is fundamental in order to better manage the interdependence between the activities of both the product development teams working on the component and those working on remaining parts of the system.

I want to replicate Puranam, Singh and Chaudhuri's (2009) test as concerns component technology on a bigger sample and considering five different high-technology sectors instead of the only hardware industry (see Chapter 4 for further details).

The main idea here is that structural integration between acquiring and acquired firm could lead to a higher coordination, which in turn is particularly important in case of a high degree of interdependence as when target technology will be a component of acquirer's system. In fact, in such a case, technological capabilities of the two firms are independent and therefore

knowledge sharing, which is improved by integration, is essential in order to correctly integrate the component in the existing product and obtain related benefits.

Therefore I propose the following proposition:

P3: When target technology will be a component of acquirer's system the probability of the structural integration choice increases.

Chapter 4

Sample and Data

4.1 Sample and Data

According to prior literature, I define technology acquisition as the acquisition of small technology-based firm by large established firms to gain access to its technology and capabilities (Granstrand and Sjolander, 1990; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2009).

The present analysis is focused on acquisitions in high-technology industries and therefore acquirers have to be a firm which operates in a high-technology sector, while the acquirers could have been from other industries as well.

The hypotheses are tested on a sample of acquisition events which are identified from Zephyr and Thomson SDC databases with announcement dates in period from 01 January 2001 until 31 December 2005. The international sample is made up of acquired companies active in five high-tech industries : Drugs (sic code 283), Computer and office equipment (sic code 357), Electronic and other electrical equipment and components except computer equipment (sic code 36), Instruments (sic code 38) and Computer programming (sic code 737).

The definition of high tech industries conforms to the definition offered by OECD (1997) with the exclusion of aerospace and defense, which are excluded due to the fact that few firms in Europe operate in this industry.

In order to build the sample other selection criteria have been followed. Specifically acquirers must have more than 1000 employees in the study period, the headquarters of the acquirer and acquired firms have to be located in European Union or United States. Regarding target companies, instead, the selection criteria required them to have less than 1000 employees. Moreover acquisitions are restricted to completed deals after which acquiring firm owned more the 50% of target.

In this manner we initially sourced 660 deals from Zephyr and 375 deals from Thomson. Since the two databases are overlapping in 124 deals, our population represents 911 deals.

In the second step, we collected articles published on these acquisitions from Lexis-Nexis and online business press. Out of 911 deals, the data on the status of acquired firm in respect to structural integration and acquired CEO retention were available for 427 deals. Data on independent variables are collected from the secondary sources, notably Zephyr, Lexis-Nexis, Thomson SDC and Amadeus.

4.1.1 The variables used in the model

4.1.1.1 *Dependent variables*

Structural Integration. I classified integration approach by considering the two extreme alternatives in post-acquisition integration, either the target firm is organizationally absorbed into the acquirer and loses its distinctive entity as an administrative unit, or it is preserved as a distinct organizational entity within the merged firm. To record the structural integration decision, acquisition announcement articles in Lexis-Nexis and business press has been examined. A part of the announcement contains information about whether the target company will "merged into acquirer" (Structural Integration = 1) or will continue to operate as a "wholly owned subsidiary" (Structural Integration = 0).

In a second step, in order to corroborate this observations, we checked for the list of subsidiaries for each acquiring firm in Thomson Reuters Financial after the acquisition announcement. When acquired firm was specified to be a subsidiary, we conclude that there was no structural integration.

Target top manager retention. The definition adopted for acquired CEO retention is whether the acquired CEO was reported in any capacity (as an officer or director of the combined firm) in the year following the acquisition completion. For each acquired firm we identified the name of the individual occupying the position of CEO in the fiscal year prior to the acquisition announcement. Then we had to determine if the target's executive manager at the time of the acquisition has remained on that position or it has been removed or has voluntary left. In order to get these information we looked through Lexis-Nexis articles, SEC filings for U.S. acquired firms and business press online: we sourced valuable information because the formally announcement usually contains information if the "current management will continue to operate in the new company/ wholly owned subsidiary".

We were consequently able, thanks to these mentions, to recorded if the CEO was retained (Top Management Retention=1) or not (Top Management Retention=0).

4.1.1.2 Independent variables

Hi-tech experience. Hi-tech acquisition experience is measured as the number of acquisitions conducted by the acquirer in high-technology industries before the focal acquisition. According to the definition of high tech industries offered by OECD (1997) (with the exclusion of aerospace and defense, which are excluded due to the fact that few firms in Europe operate in this industry) in high-technology experience we only include acquisitions of targets in the following industries: Drugs (sic code 283), Computer and office equipment (sic code 357), Electronic and other electrical equipment and components except computer equipment (sic code 36), Instruments (sic code 38) and Computer programming (737).

Other experience. We measure the experience which is different from technological experience as the number of prior acquisitions conducted by the acquirer before the focal acquisition. In other experience we include only acquisitions of targets which are active in industries different from these used to define high technology acquisitions.

Alliance. We create a dummy variable for alliance equal to 1 when business press online reported that acquiring and acquired firms were in an alliance prior to the focal acquisition.

Component. According to Puranam, Singh and Chaudhuri (2009) in order to assess whether the acquired technology was a component to the acquiring firm's system, press releases about the acquisition were examined and a dummy variable has been constructed.

This variable is equal to 1 if in acquisition announcement article was mentioned that target technology is/will be incorporated in acquirer's technology/product system. Otherwise it is equal to 0.

For instance, when article reported: "...The Sequoia product, XML Portal Server, will become an important element of the Citrix solution...", the acquired technology was coded as component.

4.1.1.3 Control variables

LReIsize. We control for the relative size of acquisition calculated as a logarithm value of the number of acquired firm's employees divided by the number of acquiring firm's employees. Relative size may affect the selected degree of integration: size of acquired firm can affect how it is treated by acquiring firm in terms of its organizational autonomy (Puranam, Singh and Chaudhuri, 2009) and larger acquiring firm may be more inclined to conduct the structural integration of target.

Techmotive. We create a dummy variable which assumes the value 1 if the technology of target was mentioned in an acquisition announcement article as a motivation of acquisition (not necessary the exclusive motivation). It is equal to 0 if technology of target was not mentioned as a motivation of acquisition.

Target Patent. We create a dummy variable (TPatent=1) when the target firms had patent applications prior to acquisition. Otherwise TPatent=0.

Aget. Aget indicates the acquired firm's age in the year of acquisition. The age of acquired firm may be considered as a proxy for its maturity (Chaudhuri et al. 2005). Moreover age of targets can affect how they are treated by acquirers in terms of organizational autonomy (Puranam, Singh and Chaudhuri,2009).

Crossborder. We create a dummy variable (Crossborder=1) when the acquiring and acquired firms had headquarters located in different countries. Otherwise Crossborder=0

It is important to control this variable because the greater geographical and cultural distance may render the structural integration (Weston et al., 2001; Gaughan, 2002) less likely and acquired CEO retention (Very et al., 1997) more likely .

Product Relatedness. It refers to the relatedness between acquiring and acquired firms by the extent of overlap between the product codes assigned to acquiring and acquired firms. According to Puranam, Singh and Zollo (2006) and Puranam and Srikanth (2007) we calculated that relatedness as the number of the same 3 digit SIC codes that acquirer and

target share, divided by number of 3 digit codes assigned to target.

Then we also create a dummy variable for sectors, which is equal to 1 if the acquiring firm considered operates in this particular sector. More specifically:

Hardware. This dummy variable is equal to 1 if target firm had main SIC code in 357 (Computer and office equipment), otherwise it is equal to 0.

Pharma. This dummy variable is equal to 1 if target firm had main SIC code in 283 (Drugs), otherwise it is equal to 0.

El_equipment. This dummy variable is equal to 1 if target firm had main SIC code in 36 (Electronic and other electrical equipment and components, except computer), otherwise it is equal to 0.

Instruments. This dummy variable is equal to 1 if target firm had main SIC code in 38 (Measuring, analyzing and controlling instruments; photographic, medical) otherwise it is equal to 0.

Software. This dummy variable is equal to 1 if target firm had main SIC code in 737 (Computer programming, data processing and other computer related), otherwise it is equal to 0.

The main aim in controlling sectors is to investigate if there are substantial differences among them as regards the other variables which are under investigation. For example I could expect that the likelihood of CEO retention would be lower in the pharmaceutical sector rather than in other sectors because in this sector target firm's knowledge is often embedded and codified in patents. As a consequence in such a context, the role of acquired CEO to set goals for acquired firm and maintain organizational momentum following the acquisition (Graebner 2004) may be less important.

Chapter 5

Methodology

5.1 Methodology

To test the propositions and in order to examine inter-dependency between the two dependent variables Structural Integration and Target Top Manager Retention we have used the Bivariate Probit Model, one of the earliest regression models to handle two binary responses jointly.

The model consists of two equations which have errors that consist of two parts: a part (ε_i) that is unique to that equation, and a second part (η_i) that is common to both.

$$\mu_{1i} = \eta_i + \varepsilon_{1i}$$

$$\mu_{2i} = \eta_i + \varepsilon_{2i}$$

In this manner each μ_i depends, in part on the value of η_i , and consequently μ_{1i} and μ_{2i} will be interrelated.

In this work Bivariate Probit Model is applied with the following two dependent variables: Structural Integration (Integration=1) and Target Top Manager Retention (Retention=1).

The statistical estimation may be described with the following system of equations:

$$I_{ij} = \beta_0 + \beta'X_{ij} + \mu_{1i}$$

$$R_{ij} = \beta_0 + \beta'X_{ij} + \mu_{2i}$$

The first equation shows that structural integration (I) is chosen in the acquisition j of the firm i as a function of a vector of deal and firm specific characteristics (i.e. age and size of the target, size of the acquirer, etc.) and high-technology experience.

The second equation, similarly, shows that the choice of acquired CEO retention (R) is a function of a vector of deal, firm specific characteristics and high-technology experience.

In this model, acquirers are supposed to make decisions based upon an objective of utility maximization. Consequently, by defining the structural integration as “I” and management retention as “R” where I,R = 1 for structural integration and management retention, the underlying utility function which ranks the preference of the i^{th} decision to integrate and retain the management is a function of firm, deal specifics and experience attributes “X” (i.e. age and size of the target, size of acquirer, hi-tech experience, etc...) and a disturbance term having a zero mean:

$$\begin{aligned}
 U_{i1}(X) &= \beta_1 X_i + \mu_{i1} && \text{for Integration/CEO retention} \\
 U_{i0}(X) &= \beta_0 X_i + \mu_{i0} && \text{for non Integration/non CEO retention}
 \end{aligned}$$

As the utilities are random, the i^{th} firm will fall in Integration/CEO retention “decision” if and only if $U_{i1} > U_{i0}$.

Thus, for the firm i the probability of realize structural integration (or CEO retention) is given by:

$$p(1) = p(U_{i1} > U_{i0})$$

$$p(1) = p(\beta_1 X_i + \mu_{i1} > \beta_0 X_i + \mu_{i0})$$

$$p(1) = p(\mu_{i0} - \mu_{i1} < \beta_1 X_i - \beta_0 X_i)$$

$$p(1) = p(\mu_i < \beta X_i)$$

$$p(1) = \Phi(\beta X_i)$$

where Φ is the cumulative distribution function for μ .

The functional form for Φ will depend on the assumptions made about μ . A probit model arises from assuming the normal distribution for μ . Thus, for the firm “ i ”, the probability of structural integration and CEO retention, respectively, is given by:

$$\begin{aligned}
 \Phi_I(\beta X_i) &= \int_{-\infty}^{\beta X_i} \frac{1}{\sqrt{2\pi}} \exp\left(\frac{-t^2}{2}\right) dt && \text{for structural integration} \\
 \Phi_R(\beta X_i) &= \int_{-\infty}^{\beta X_i} \frac{1}{\sqrt{2\pi}} \exp\left(\frac{-t^2}{2}\right) dt && \text{for CEO retention}
 \end{aligned}$$

These two equations could be estimated consistently by individual single equation probit methods, but as noted by Greene (1993) this solution may reveal inefficient because it ignores the correlation between the disturbances μ_I and μ_R of the underlying stochastic utilities function associated with structural integration and top management retention, respectively.

Therefore I use the Bivariate Probit Model in order to circumvent inadequacies of the single Probit or Logit Model.

This model is based on the joint distribution of two normally distributed variables and is specified (Greene, 1993; Brorsen et al., 1996; Nkamleu and Adesina, 2000) as follows:

$$\phi(I, R) = \frac{1}{2\pi \sigma_I \sigma_R \sqrt{1 - \rho^2}} \exp \left[-\frac{1}{2} \left(\frac{\mu_I^2 + \mu_R^2 - 2\rho\mu_I\mu_R}{1 - \rho^2} \right) \right]$$

where ρ is a correlation parameter denoting the extent to which the two errors μ_i covariate. If $\rho=0$ the two errors are independent, while if $\rho \neq 0$ the two errors are correlated. So in the first case the two equations can be estimated separately, in the second, instead, the probability of one error will depend on the probability of the other: this means that the two equations are dependent and they consequently should have been estimated simultaneously. In extreme case, when $\rho=1$, the two variables are essentially the same, likewise when $\rho=-1$ the two are exactly negative correlated.

The most suitable technique of estimation when using this kind of model is full information maximum likelihood. In order to test the previous mentioned hypotheses and the possible relation between the choice of structural integration and the choice of target CEO retention through the Bivariate Probit Model we have used STATA econometrics computer program.

5.2 Estimations and the conceptual model

In order to test the hypothesis shown in Chapter 3, I have developed and tested two different estimations : Model 1 and Model 2.

Model 1 represents the basic model that includes control variables which refer to firms and acquisitions' characteristics. Model 2, instead, represents the full model, where apart from using control variables are also presented all the independent variables.

Model 1 contains the following variables:

- Target's age and the logarithm of relative size (**Aget, LRelsize**)
- Target's sector (**Software, Hardware, Pharma, EI_equipment, Instrument**)
- If the acquisition observed had cross border characteristics (**Crossborder**)
- The relatedness between the products commercialized by acquiring and acquired firms (**Prodrel**)
- If target firms had patent applications prior to acquisition (**Tpatent**)
- If acquisition observed was motivated by technological motivation (**Techmotiv**)

Model 2 contains the following variables:

- Target's age and the logarithm of relative size (**Aget, LRelsize**)
- Target's sector (**Software, Hardware, Pharma, EI_equipment, Instrument**)
- If the acquisition observed had cross border characteristics (**Crossborder**)
- The relatedness between the products commercialized by acquiring and acquired firms (**Prodrel**)
- If target firms had patent applications prior to acquisition (**Tpatent**)
- If acquisition observed was motivated by technological motivation (**Techmotiv**)
- Acquirer's experience (**Hitechexp, Otherexp**)
- The existence or not of a previous alliance with the target (**Alliance**)
- If target's product will be incorporated as a component in acquirer's product (**Component**)

The idea underlying these two models is to develop and test a conceptual model in order to predict the likelihood of the two dependent variables Structural Integration and Target Top Management Retention on the basis of some independent variables argued from literature. Secondly I want to examine inter-dependency between the two dependent variables which seems to affect greatly the post-acquisition process and consequently also the acquisition success and performance (Haspeslagh and Jeminson, 1991; Cannella and Hambrick, 1993; Pablo, 1994).

The conceptual idea is represented in the figure below:

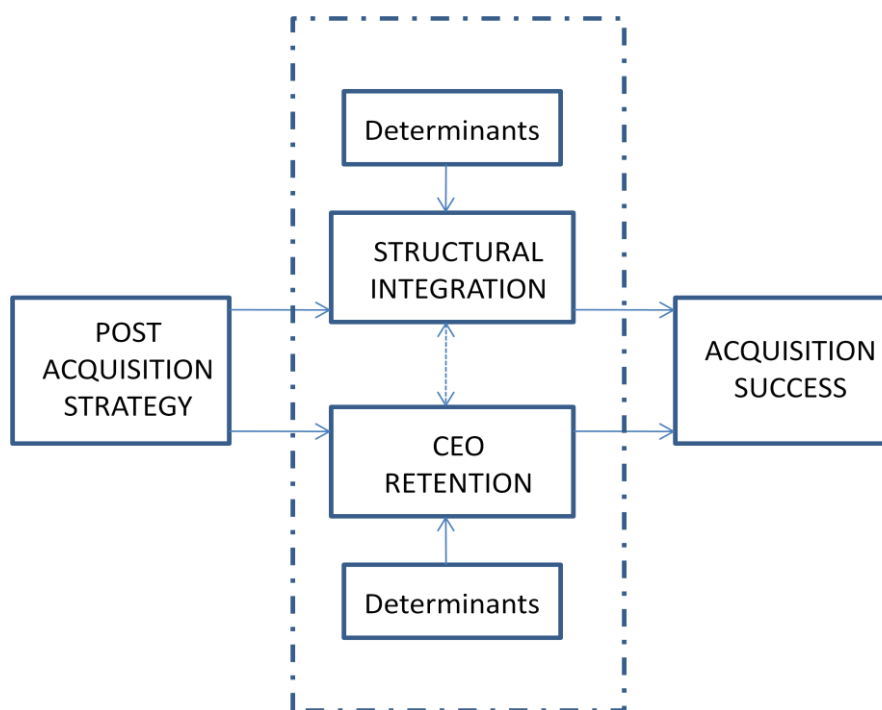


Figure 7- The conceptual model. Source : Self-elaboration

In fact literature on the post-acquisition process has focused mainly on analyzing the differences of structurally integrating acquired firm versus keeping it separated as a subsidiary (Paruchuri, Hambrick and Nerkar, 2006; Puranam, Singh and Zollo, 2006; Kapor and Lim, 2007; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2008) and on the impact of acquired top manager during acquisition implementation (Hambrick and Canella, 1993; Bergh, 2001; Ranft and Lord, 2002; Graebner, 2004). Instead only few studies (Zollo and Singh, 2004; Zaheer, Castaner and Souder, 2008), argue that it is important to consider these

two dimensions simultaneously, since there may exist important interdependencies. Moreover whether the two aspects of acquisition integration are complements or substitutes might be conditioned on the deal specific and firms' specific characteristics and therefore it is really important to consider these two aspects jointly to have better results in this field of study.

Chapter 6

Results

6.1 Results

Table 3 and Table 4 in the appendix respectively show the descriptive statistics and correlations for the variables used in the analysis.

The number of acquisitions in high technology sectors varied from 0 to 114, while considering acquisitions in other sectors this range goes from 0 to 31. In terms of structural integration, more than 26% of the target firms in the sample underwent integration after acquisition and more than 70% of the firms in the sample decided to retain target CEO.

According to the sectors we have considered, in the 76% of the cases acquisitions are motivated by technological motivation, and in particular in about the 18% of the cases target's product will be incorporated as a component in acquirer's product. Moreover on average 55% of the cases show some degree of relatedness between the products commercialized by acquiring and acquired firms and about half of the sample had filed at least a patent prior to being acquired.

We can also note that target firms were relatively young, on average 13 years old at time of acquisition and that, interestingly, in quite 30% of the cases acquirer and target's headquarter are in different countries.

The correlation table (Table 4) reveals that the highest correlation between two variables is 0.38, between high technology experience and other experience. The explanation may be that these acquirers have done lots of acquisitions both in high and non high technology sector and they consequently have both types of experiences. A correlation of -0.38 is found even between high-tech experience and the logarithm of relative size. A possible explanation could be that firms which have done lots of acquisitions in high technology sector believe that smaller firms are better target. The same kind of correlation, even if weaker, is also found between other experience and the logarithm of relative size. We can therefore conclude that firm experienced in conducting mergers and acquisitions believe that smaller firms are better target.

Table 4 also shows a correlation of 0.37 between the independent variables component and alliance. In fact existing alliance with a firm may permit to the partner to increase the awareness of its organizational routines, reduce information asymmetry characteristic for

technology acquisition and so increase the knowledge of partner firm's technology and component. Therefore through an alliance, a firm could realize that a component, which is realized from its partner, might be embedded in some of its existing products generating a huge improvement in term of revenue and value in general. As a consequence a firm may decide to acquire partner firm in order to gain such advantage.

Table 5 in the appendix shows the results of Bivariate Probit Model with the dependent variables Structural Integration (Integrated = 1) and Target CEO Retention (Retention =1).

More precisely Table 5 is divided into two blocks: the block of structural integration and the block of acquired top manager retention. Each block is then divided into two columns.

The first column shows Model 1 in which we consider all the control variables: target's age (Aget) and sector (Hardware, Pharma, El_equipment, Instruments) , logarithm of relative size (LRelsize), measure of the product relatedness of the two firms (Prodrel), dummy for acquisitions motivated by technological motivation (Techmotiv=1), dummy for crossborder acquisition (Crossborder=1) and dummy for target firm which had filed a patent prior to being acquired (Tpatent=1). Overall the Model 1 is fitted ($p < 0.001$).

The second column, instead, shows Model 2 which includes also the variables of propositions P1-P3 as antecedents of structural integration and top manager retention: acquiring firm's experience in conducting high technology acquisitions (Hitechexp) and experience in conducting other, non high technology acquisitions (Otherexp), dummy for the existence of the prior alliance between the two firms (Alliance=1) and dummy for acquisitions of component technology (Component=1). Overall also the Model 2 is fitted ($p < 0.001$).

In Model 1 there are several significant coefficients: Crossborder, LRelsize and Pharma as regards the block of structural integration , while Techmotiv, Tpatent, Crossborder, Pharma and El_equipment in the block of target's CEO retention.

Crossborder and the logarithm of relative size are negatively and significantly ($p < 0,1$ both) correlated to structural integration suggesting that the likelihood of structural integration decreases for greater relative size and in case of acquisition which involved firms whose headquarters are located in different countries. These two correlations are intuitive and in a certain way expected. In fact the integration process in large companies is expected to be more difficult than in small companies due to the vaster extent of coordination needed and, as a consequence, acquiring firms tend to avoid this solution; moreover as concerns crossborder

acquisition the present result is consistent to Very and Schweiger (2001): they argue that when a buyer acquires a foreign firm and especially when the acquisition is a first entry into a country, the buyer lacks local information and knowledge and consequently problems of information, negotiation and also integration are more likely to be problematic.

Also pharmaceutical sector is found to be negatively and significant ($p < 0,1$) correlated to structural integration. In the present study five high-technology sectors have been considered; these five sectors are orthogonal each other and consequently only four of them can be considered simultaneously during an iteration process. Moreover possible significant results at sector level have to be interpreted in respect to the sector which is not considered in the iteration. In this case we have not considered software sector and consequently the result which is found for pharmaceutical sector has to be interpreted in respect to the software sector.

Therefore it follows that the probability of structural integration in the pharmaceutical sector is lower than in the software sector. A possible explanation could derive from the fact that in pharmaceutical sector, knowledge is mainly codified in patents even because this form of protection works particularly well in this sector. Thus, this underlying knowledge is not so difficult to transfer and imitate and therefore structural integration is less necessary. Instead, in the software sector, knowledge is more tacit, difficult to articulate and codify, and it is more based on expertise, skills and routines acquired by organizational members over time. Therefore structural integration, as a mechanism to achieve close coordination in order to support efficient knowledge flow between the two firms, could be more necessary than in the pharmaceutical sector.

In the pharmaceuticals sector I also found a negative and significant ($p < 0,05$) relationship with target's CEO retention. This means that the probability of target top management retention in the pharmaceutical sector is lower than in the software sector. Instead the electrical equipment sector shows a positive and significant ($p < 0,1$) coefficient, displaying that the probability of target top management retention in the electrical equipment sector is higher than in the software sector.

In fact, according to Graebner (2004) acquired CEO can be seen as a soft coordination method because, by conducting specific “mobilizing and mitigating” actions, acquired CEO permits a close relationship and coordination between the two firms which also enable an efficient knowledge flow between them. However, as I have said above, in pharmaceutical sector

knowledge is mainly codified and not so difficult to transfer, skills and routines acquired by organizational members over time are less important than in other sectors and therefore this form of coordination is less necessary.

Techmotiv and Tpatent are negatively and significantly ($p < 0,1$ and $p < 0,05$ respectively) correlated to target's CEO retention suggesting that the likelihood of target top management retention decreases if acquisition is motivated by technological motivation and in case of acquisition involving firms which had filed a patent prior to being acquired. A possible explanation of this last correlation could be that target knowledge is mainly codified in its patents and as a consequence from the point of view of the acquirer the retention of target CEO in order to enable an efficient knowledge flow between the two firms is less necessary.

Instead, a positive and significant ($p < 0,01$) relationship between crossborder and target's CEO retention is found, suggesting that in case of an acquisition which involved firms whose headquarters are located in different countries the probability of target top manager retention increases. In fact when a buyer acquires a foreign firm and especially when the acquisition is a first entry into a country, the buyer lacks local information and knowledge, for example about the local culture, and consequently the integration process is more likely to be challenging (Very and Schweiger, 2001). In such a case acquired CEO permits a close relationship and coordination between the two firms which could also simplify the integration process. As a consequence the probability of retained target CEO is higher.

By considering the Model 2, in respect to the estimation results in the block of structural integration, propositions P1a, P2a and P3 are found supported.

In Hypothesis P1a I predicted a positive relationship between structural integration and experience in conducting high-technology acquisitions. From Model 2 in the first block of Table 5 we note that the coefficient for high-tech experience is positive and significant ($p < 0,05$).

Hence I find support for Hypothesis P1a.

In Hypothesis P2a I predicted a negative relationship between structural integration and the existence of prior alliance between acquiring and acquired firms. A negative and significant ($p < 0,05$) coefficient is found supporting Hypothesis P2a.

In Hypothesis P3 I predicted a positive relationship between structural integration and the fact that target's technology will be a component of acquirer's system. Model 2 in Table 5, shows a

positive and significant ($p < 0,01$) coefficient, supporting Hypothesis P3.

The results from the Model 2, in the block of acquired top manager retention, show support for the propositions P1b but not for P2b.

In Hypothesis P1b I predicted a negative relationship between acquired CEO retention and experience in conducting high-technology acquisitions. From Model 2 in the second block of Table 5 we note that the coefficient for high-tech experience is negative and significant ($p < 0,05$). Therefore Hypothesis P1b is supported.

In Hypothesis P2b I predicted a negative relationship between acquired CEO retention and the existence of prior alliance between acquiring and acquired firms. Model 2 in Table 5, shows that the coefficient of prior alliance existence is, in contrast to the proposition, positively correlated with the likelihood of target's CEO retention, but not significant. It is possible that prior alliance per se does not provides a sufficient form of coordination between the two firms and therefore in such a case target CEO retention as a coordination mechanism is seen as necessary (Graebner, 2004).

In estimating Bivariate Probit Model a correlation between the two dependent variables is found because the Wald test of null hypothesis is rejected ($p < 0.001$). This test, indeed, wants to verify if the two variables are dependent or independent each other. If $\rho = 0$ the variables are independent, while if $\rho \neq 0$ are dependent. In this case the test is rejected because $\rho \neq 0$ meaning that the two probit equations are dependent and they should be estimated simultaneously. This also means that the Bivariate Probit Model fits the data better than separate models. The correlation is negative, suggesting that, on average, acquiring firms implementing structural integration replace acquired top manager. Thus, the two choices of acquisition integration and acquired CEO retention are seen as substitutes.

Chapter 7

Discussion

7.1 Discussion

The purpose of the present study is twofold. First of all we want to test a conceptual model in order to predict the likelihood of the two dependent variables Structural Integration and Target Top Management Retention on the basis of some independent variables argued from literature. Then we want to consider these two dimensions simultaneously investigating whether they are dependent or not, because with few notable exceptions (Zollo and Singh, 2004; Zaheer, Castaner and Souder, 2008) literature has always treated and tested them separately.

In fact, literature on the post-acquisition process has focused mainly on analyzing the differences of structurally integrating acquired firm versus keeping it separated as a subsidiary (Paruchuri, Hambrick and Nerkar, 2006; Puranam, Singh and Zollo, 2006; Kapor and Lim, 2007; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2008) and on the impact of acquired top manager during acquisition implementation (Hambrick and Canella, 1993; Bergh, 2001; Ranft and Lord, 2002; Graebner, 2004).

In particular prior literature highlighted that both structural integration and CEO retention could act as a coordination mechanism that permits the two firms involved in a merger or acquisition to develop coordination and alignment between them.

For instance Puranam, Singh and Chaudhuri (2009) argued that structural integration is a fundamental mechanism to achieve coordination between acquirer and target which also supports an efficient knowledge flow between them and the alignment of goals and strategies. However at the same time the main problem in such technology acquisition is that post-merger integration can destroy those same innovative capabilities that made the acquired organization attractive in first place (Chaudhuri and Tabrizi, 1999; Birkinshaw et al., 2000; Ranft and Lord, 2002; Puranam et al., 2003; Graebner, 2004). According to Haspeslagh and Jemison (1991) this is due to the fact that the integration process can improve knowledge transfer and coordination between acquirer and acquired firm, but it can also significantly disrupt organizational processes and routines in the latter and capabilities of acquired employees due to the reduction in organizational autonomy. This results in a higher turnover and in the decline of acquired firm performance.

Also the role of acquired CEO is seen as a fundamental coordination mechanism during the post-acquisition process. In this perspective Graebner (2004) has focused on the role played by leaders of the acquired firm in post-merger integration and she found that they can moderate the negative effects of integration on performance. In fact, according to her, acquired leaders, thanks to their superior knowledge and influence over the acquired organization, are either able to allow greater integration and coordination and mitigate the disruptive consequences resulting from loss of autonomy. Following her, they can act as leaders of target innovation strategy, they took matters into their own hand, supporting the process of acquisition implementation and replacing the eventual lack of leadership from acquirer, preserving their companies' momentum by performing mobilizing and mitigating actions. These leaders consequently enable their organizations to simultaneously experience two often conflicting forms of change : exploration and exploitation.

These studies, taken together, show that the choice of structural integration and acquired CEO retention could be argued as substitutive strategies because both of them are seen as coordination methods which permit firm to mitigate the integration dilemma in high technology acquisitions. Starting from this idea, we test this relationship finding empirical evidence that these two dimensions are interdependent with a negative correlation, suggesting that on average acquiring firms implementing structural integration replaces acquired top manager. Thus, the two dimensions of acquisition integration and acquired CEO retention are substitutes: when structural integration is conducted, the role of acquired CEO as a “mitigator” of disruptive consequences of integration is less prominent (Graebner, 2004).

As concerns the propositions tested we find evidence for four of the five hypotheses proposed.

We find evidence for the proposition P1a, which predicts a positive relationship between structural integration and experience in conducting high-technology acquisitions, and also for P1b, which assumes a negative relationship between acquired CEO retention and experience in conducting high-technology acquisitions.

The result from proposition P1a is slightly different from Puranam and Srikanth's findings (2007). They found that total acquisition experience matters in building of integration capabilities, relevant in high technology acquisitions and, as a consequence, it has a positive impact on the likelihood of structural integration. In fact they showed that acquirers with

acquisition experience are able to avoid the trade-off between leveraging knowledge and leveraging capability, by mitigating the previously discussed adverse consequence of loss of autonomy resulting from structural integration.

However, in this study, we find that only experience in conducting acquisitions in high-technology sectors has a positive impact on the likelihood of structural integration, while acquisition experiences in other sectors do not matter in order to build structural integration capabilities, crucial for high technology acquisitions. This result is also consistent to Barkema and Schijven (2008) who highlighted that it is important to distinguish between different types of experience (e.g., industry specific and country or culture specific), because previous literature (Lubatkin, 1982, 1987; Kusewitt, 1985; Singh and Montgomery, 1987; Fowler and Schmidt, 1989; Li, 1995; Bakema et al., 1996; Hébert, Very and Beamish, 2005) has recognized that experience needs to be sufficiently specific to be conducive to productive learning.

Probably this difference arises from the fact that these studies have considered different sample; the present study, indeed, different from Puranam and Srikanth (2007), not only considers acquisitions of firms in hardware and pharmaceutical sectors but it also takes into account acquisitions from software, instruments and electrical equipment sectors.

The result from proposition P1b can be seen consistent with Graebner's (2004) idea that target CEO retention might act as a coordination method, which can enable greater integration and coordination, and mitigate the disruptive consequences resulting from loss of autonomy. Following this perspective, we can therefore conclude that in high technology acquisitions the retention of acquired CEO may be seen as redundant, because the improved integration capabilities, developed through the experience, already permit to mitigate disruptive effect.

As regards the relationship between the existence of prior alliance between target and acquirer and the likelihood of integration or CEO retention we found evidence for proposition P2a: the existence of prior alliance between acquiring and acquired firms decreases the likelihood of structural integration. This result supports the arguments of prior literature regarding the effects of past collaborations on post-acquisition coordination and consequently on the likelihood of integration. In particular many previous studies argue that the existence of pre-acquisition alliance activity may enhance post-acquisition coordination (Reich and Mankin,

1984; Doz, Hamel and Prahalad, 1986; Haspeslagh and Jemison, 1991; Bleeke and Ernst, 1995; Hagedoorn and Sadowski, 1999). In fact, as noted by Porrini (2004), an acquirer's prior alliance with the target allows firms to learn about how best use each other's resources during the alliance phase and consequently can enhance post-acquisition coordination. Moreover previous alliances permit knowledge of the target's internal strengths, weaknesses, and culture helping the acquirer to select a target that has a good fit with its business practices and future strategic plans (Chatterjee, Lubatkin, Schweiger and Weber, 1992; Tsai and Ghoshal, 1998). Pre-acquisition alliance may enhance post-acquisition coordination also because previous social contact can help to align goals and facilitate the development of trust and empathy (Allport, 1954; Gulati, 1995; Brewer and Brown, 1998). In this perspective Zollo et al. (2002) argued that firms in an alliance develop inter-organizational routines which in a stable environment could have a positive effect on the performance of future interaction between these partners. However problems could rise if the routines formed in the alliance stage are inappropriate for the post-acquisition stage, yet sticky (Nelson and Winter, 1982; Zollo, Reuer and Singh, 2002): in this case prior resource interdependence can obstruct post-acquisition coordination. This is mainly due to the fact that routines that may develop in the alliance phase among partners (Hamel, 1991; Das and Teng, 2000), if persist, can have a detrimental effect on post-acquisition coordination. Also Agarwal et al. (2006) found that prior social contact between firms has a positive effect on post-acquisition coordination, since established communication allows for better mutual understanding. As a result, partners will work better each other in future collaborations because they elicit very specific information about each other's potential compatibility (Doz, 1996; Arino and de la Torre, 1998).

Therefore this literature shows that prior alliance between two firms makes coordination between them easier to obtain, because it enables social contact between them, which allows firms for mutual understanding thanks to the establish routines, which make the two firms more familiar each other.

Our result is consistent with this literature because it shows effectively that in case of prior alliance between acquirer and target firm coordination is easier to obtain and consequently structural integration as a formal coordination mechanism is less necessary.

Also support for proposition P3 has been found: structural integration is more likely in technology acquisitions which are motivated by the desire to obtain a component technology

rather than a standalone product as also Puranam, Singh and Chaudhuri (2009) found. In fact when the target is acquired for a component technology, the product development teams of the target firm need to manage the interdependence between their own activities and those of the product development teams working on the remaining parts of the system. When the target's technology represents a standalone product, instead, the situation is different. In fact, a standalone system is self-contained and it does not need as much coordination as a component element would (March and Simon, 1958; Galbraith, 1973), because it is effectively "autonomous". In this case, while the disruption caused by the loss of autonomy still exists, the coordination effect generated by structural integration is less valuable and, therefore the net gain from integration is low (Puranam, Singh and Chaudhuri, 2009).

Our result, therefore, provides additional evidence on the idea that structural integration between acquiring and acquired firm could lead to a higher coordination, which in turn is particularly important in case of a high degree of interdependence as when target technology will be a component of acquirer's system. Indeed, in such a case, technological capabilities of the two firms are independent and therefore knowledge sharing, which is improved by integration, is essential in order to correctly integrate the component in the product and obtain related benefits.

The only hypothesis which are not supported in the present study is P2b which assumes a negative relationship between acquired CEO retention and the existence of prior alliance between acquiring and acquired firms. In fact, the coefficient of prior alliance existence is found to be positive although not significant. A possible explanation could be that existing alliance per se does not provide a sufficient form of coordination between the two firms and therefore, in such a case, target CEO retention as a coordination mechanism is seen as necessary (Graebner, 2004).

To conclude it can be argued that most of the findings of this study is consistent with findings of prior studies concerning the likelihood of structural integration (Coff, 1999; Agarwal et al., 2006; Puranam, Singh and Zollo, 2006; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2009) and CEO retention (Graebner 2004). However this study provides some valuable contributions in this field of study.

Specifically, the main contributions of this study are essentially three.

First of all, while literature highlights structural integration (Paruchuri, Hambrick and Nerkar, 2006; Puranam, Singh and Zollo, 2006; Kapor and Lim, 2007; Puranam and Srikanth, 2007; Puranam, Singh and Chaudhuri, 2008) and target CEO retention (Hambrick and Canella, 1993; Bergh, 2001; Ranft and Lord, 2002; Graebner, 2004) as the most important variables on the post-acquisition process but tests them separately, we simultaneously test them with the aim to empirically verify if these two dimensions are complementary or substitutive.

Moreover, in respect to the relationship between the likelihood of structural integration in component technology acquisitions, the present study provides two contributions related to the sample used which permits to broaden some previous findings. In particular different from Puranam, Singh and Chaudhuri (2009), we have used a bigger sample (427 acquisitions versus 207) considering not only acquisitions of firms in hardware sector but also in software, pharmaceuticals, instruments and electrical equipment sectors.

7.2 Limitations and suggestions for future research

The limitations of this study suggest some directions for future research.

First of all the present study focuses on high technology driven acquisitions and, as a consequence, the results cannot be generalized to other sectors. In fact, acquisition literature highlights that one of the main motives driving the acquisition of small high technology firms is not the value deriving from its physical or financial assets but, instead, it resides greatly in a set of intangible, knowledge-based resources (Itami, 1987; Kogut and Zander, 1992; Hedlund, 1994; Grant, 1996; Ranft and Lord, 2000). Moreover this knowledge is tacit and thus it is difficult to articulate, codify and time consuming to teach and to learn (Winter, 1987; Kogut and Zander, 1992), and consequently, as noted by Grant (1996), in such a context "the critical source of competitive advantage is knowledge integration rather than the knowledge itself". A firm must therefore develop complex integrative capabilities to facilitate the combination and recombination of specialist knowledge held by individuals. In this sense, therefore, in non high technology sector this need for coordination may be lower.

However, at the same time literature also shows that the main problem in technology acquisitions is that post-merger integration can destroy those same innovative capabilities that

made the acquired organization attractive in first place (Chaudhuri and Tabrizi, 1999; Birkinshaw et al., 2000; Ranft and Lord, 2002; Puranam et al., 2003; Graebner, 2004) even if, despite all these negative effects, structural integration is a fundamental mechanism to achieve coordination between acquirer and target (Puranam, Singh and Chaudhuri, 2009). Moreover according to Graebner (2004) acquired CEO can be seen as a soft coordination method because by conducting specific “mobilizing and mitigating” actions, acquired CEO permits a close relationship and coordination between the two firms which also enable an efficient knowledge flow between them, which is fundamental especially in technology acquisitions.

From all these results we can consequently argue that either the choices of structural integration and CEO retention may have different importance and above all different determinants in non high technology sectors.

Second, the present study focuses on acquisitions of small firms by large incumbents. In such contexts the role of acquired CEO during the acquisition implementation process might be more important rather than in the case of "mergers of equals". In contrast in this latter case, one of the main motives which drives the acquisition is the motivation to gain efficiency from economies of scale or scope, through combining complementary product lines or alignment of operations and, therefore, this type of merger might require greater integration efforts. Consequently results of this study cannot be generalized to other types of acquisitions.

Third, due to data limitations, in this study acquired top management retention variable is bound to acquired CEO retention. Consequently I propose to introduce a new variable in future researches: board of director/director retention. Thanks to this variable future studies will be able to test if the target CEO retention and the retention of the whole/ significant part of the board of director share the same determinants or not. Moreover, in future studies it would be interesting to track if acquired CEO was the founder of the target company and test whether this aspect would affect the likelihood of acquired CEO retention.

These information would contribute to the precision of the top management retention measure.

To conclude I want to propose two other suggestions for future research.

First, in order to reach a better understanding of the relationship between the existence of prior alliance between the firm involved in an acquisition and the likelihood of structural integration and CEO retention, I propose to consider not only the existence or not of previous alliance, but even the type of alliance. In fact Porrini (2004) argues that different types of alliances have different effects on performance. In particular, licensing alliances alone do not significantly affect acquisition performance, while alliances accounting for previous R&D, technology transfer, manufacturing and marketing efforts are those with the most beneficial effects on performance. Building on this, I consequently suggest to investigate if different types of alliances have a different impact on the probability of structural integration and CEO retention.

Then, because data provided in the press article and official announcement are often incomplete or not sufficiently clear, I propose the use of questionnaires for the future research programs. This would be extremely important in order to have a higher amount and more reliable data about target CEO retention. On the contrary measuring structural integration was much more certain due to the existence of various databases that offer more precise measure of this variable. In my opinion, questionnaires should be sent by e-mail, or conducted through a telephonic interview or, in case of firm close to Milan even through a face to face interview. This solution would be certainly more time and cost consuming but it also allows future research to obtain more reliable and precise information and, above all, maybe even some comments which could be extremely useful in order to open some new acquisitions' research questions.

Appendix

Descriptive Statistics

Variable	Observations	Mean	Std. Dev	Min	Max	Description
<i>Integration</i>	427	0.265	0.442	0	1	Coded =1 if acquired firm is structurally integrated, else=0
<i>Retention</i>	427	0.705	0.457	0	1	Coded =1 if acquired firm's CEO is retained as an officer in the year following the acquisition , else=0
<i>Hitechexp</i>	427	12.693	17.234	0	114	The number of acquisitions conducted by the acquirer in high-technology industries before the focal acquisition
<i>Otherexp</i>	427	2.443	3.989	0	31	The number of acquisitions conducted by the acquirer in non high-technology industries before the focal acquisition
<i>Component</i>	427	0.180	0.385	0	1	Coded =1 if acquiring firm's technology represents a component to acquiring firm's system, else=0
<i>Alliance</i>	427	0.209	0.407	0	1	Coded =1 if acquiring and acquired firm was in an alliance prior to the focal acquisition , else=0
<i>LRresize</i>	427	-4.289	1.801	-9.826	-0.732	The logarithm value of the number of acquired firm's employees divided by the number of acquiring firm's employees
<i>Techmotive</i>	427	0.761	0.427	0	1	Coded=1 if target's technology is mentioned in an acquisition announcement article as a motivation of acquisition, else=0
<i>TPatent</i>	427	0.520	0.500	0	1	Coded=1 if target firm had filed a patent prior to being acquired, else=0
<i>Aget</i>	427	13.197	10.175	1	82	The age of acquired firm in the year of acquisition
<i>Crossborder</i>	427	0.293	0.456	0	1	Coded=1 when the acquiring and acquired firms had headquarters located in different countries, else=0
<i>Product Relatedness</i>	427	0.555	0.381	0	1	The number of the same 3 digit SIC codes that acquirer and target share, divided by number of 3 digit codes assigned to target
<i>Hardware</i>	427	0.304	0.172	0	1	Coded=1 when the acquiring firm is active in the hardware sector, else=0
<i>Pharma</i>	427	0.094	0.292	0	1	Coded=1 when the acquiring firm is active in the pharmaceutical sector, else=0
<i>El_equipment</i>	427	0.124	0.330	0	1	Coded=1 when the acquiring firm is active in the electrical equipment sector, else=0
<i>Instruments</i>	427	0.131	0.338	0	1	Coded=1 when the acquiring firm is active in the instruments sector, else=0
<i>Software</i>	427	0.621	0.486	0	1	Coded=1 when the acquiring firm is active in the software sector, else=0

Table 3 - Descriptive Statistics

Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Integration	1																
2 Retention	-0.2055	1															
3 Hitcheckp	0.1577	-0.0667	1														
4 Otherexp	0.0240	0.0822	0.3796	1													
5 Component	0.2157	-0.0438	0.1902	0.0014	1												
6 Alliance	0.0189	-0.0093	0.2393	0.1340	0.3742	1											
7 Relsize	-0.0869	-0.0434	-0.3795	-0.3081	-0.1372	-0.2148	1										
8 Technotive	0.0497	-0.1337	0.1164	-0.0963	0.2342	0.0982	-0.1177	1									
9 TPatent	-0.0080	-0.1798	0.0820	-0.1191	0.1093	0.0546	0.0374	0.2862	1								
10 Aget	-0.0994	0.0267	-0.0729	0.0118	-0.1517	-0.0162	0.1029	-0.0129	0.0384	1							
11 Crossborder	-0.1176	0.1567	-0.0175	-0.0275	0.0195	-0.0514	-0.0166	-0.0500	-0.1029	0.1445	1						
12 Prodrel	0.1016	-0.0417	0.1164	-0.1196	-0.1471	-0.0468	0.0664	0.0421	0.0446	-0.1269	-0.1151	1					
13 Hardware	0.0173	-0.0348	-0.0246	-0.0539	-0.0477	-0.0238	0.0104	-0.0925	-0.0339	0.0033	-0.0541	-0.0422	1				
14 Pharma	-0.0653	-0.1621	-0.0778	-0.0760	0.0583	0.0329	-0.0532	0.1047	0.2124	-0.0371	-0.0302	0.0027	-0.0570	1			
15 EI equipment	-0.0809	0.1034	-0.0346	-0.0008	-0.1027	-0.1057	0.0484	-0.0443	0.1058	0.1262	0.1168	-0.1733	-0.0667	-0.1210	1		
16 Instruments	-0.0758	-0.0224	-0.0967	-0.0884	-0.1100	-0.0798	-0.0076	0.1038	0.1789	0.2935	0.1312	-0.0434	-0.0688	-0.1249	-0.1463	1	
17 Software	0.1408	0.0050	0.1462	0.1268	0.1282	0.1160	0.0007	-0.1324	-0.3359	-0.2689	-0.1334	0.1613	-0.2266	-0.4112	-0.4815	-0.4969	1

Table 4 - Correlations

Bivariate Probit Results

	Structural Integration=1		Target's CEO retention=1	
	Model 1	Model 2	Model 1	Model 2
<i>Hitechexp</i> <i>P1a & P1b</i>		0.011 (2.32)**		-0.010 (-2.15)**
<i>Alliance</i> <i>P2a & P2b</i>		-0.429 (-2.16)**		0.115 (0.62)
<i>Component</i> <i>P3</i>		0.761 (3.85)***		-0.042 (-0.22)
<i>Otherexp</i>		-0.014 (-0.70)		0.033 (1.46)
<i>LRresize</i>	-0.064 (-1.69)*	-0.033 (-0.77)	-0.046 (-1.22)	-0.060 (-1.39)
<i>Techmotive</i>	0.167 (0.99)	0.001 (0.01)	-0.341 (-1.96)*	-0.288 (1.61)
<i>TPatent</i>	0.038 (0.25)	-0.072 (-0.46)	-0.320 (-2.17)**	-0.262 (-1.72)*
<i>Aget</i>	-0.008 (-1.02)	-0.005 (-0.59)	0.002 (0.24)	0.001 (0.20)
<i>Crossborder</i>	-0.287 (-1.82)*	-0.392 (-2.40)**	0.417 (2.63)***	0.440 (2.75)***
<i>Product</i> <i>Relatedness</i>	0.249 (1.37)	0.040 (0.21)	0.036 (0.17)	0.136 (0.72)
<i>Hardware</i>	0.053 (0.14)	0.136 (0.36)	-0.250 (-0.66)	-0.229 (-0.59)
<i>Pharma</i>	-0.503 (-1.96)*	-0.430 (-1.61)	-0.494 (-2.15)**	-0.560 (-2.37)**
<i>El_equipment</i>	-0.343 (-1.47)	-0.303 (-1.25)	0.409 (1.76)*	0.417 (1.74)*
<i>Instruments</i>	-0.371 (-1.56)	-0.206 (-0.84)	-0.038 (-0.17)	-0.078 (-0.34)
<i>Observations</i>	427	427	427	427
<i>Wald Chi2</i>	56.81***	78.19***	56.81***	78.19***
<i>Log Likelihood</i>	-466.671	-454.213	-466.671	-454.213
<i>Wald rho</i>	17.606***	16.035***	17.606***	16.035***

*p<0.10 , **p<0.05 , ***p<0.01 (one tailed)

Table 5 - Bivariate Probit Model Results: Likelihood of Structural Integration and Target's CEO Retention

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