

FUNDAÇÃO GETULIO VARGAS
ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO

THE EAGER FIGHT FOR SUPREMACY IN THE ONLINE SERVICE INDUSTRY
A comparative study of M&A activities: Case studies of Apple, Google and Microsoft

MARIUS RODER

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Knowledge Field: Gestão e Competitividade em Empresas Globais

Adviser: Prof. Dr. Sérgio Túlio Prado Júnior

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Approval Date

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SÃO PAULO
2015

PREFACE

The author of this thesis participates in a Double Degree Program jointly organized by the Escola de Administração de Empresas de São Paulo da Fundação Getulio Vargas (FGV/EAESP) in São Paulo, Brazil and the École des hautes études commerciales de Paris (HEC Paris). Therefore, this master thesis is to be considered by both of these institutions.

The supervisor of this thesis is Prof. Dr. Sérgio Túlio Prado Júnior of FGV/EAESP.

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The conclusion of a master's degree requires strong dedication and focus. It can only be accomplished with the kind words and presence of people you daily deal with. Such dedication of time and effort would not be possible without my family's, partner's, friends' and coworkers' comprehension.

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ABSTRACT

The Online Service Industry is characterized by high M&A activity in the time from 2005 to 2015. Especially the leading companies Apple, Google and Microsoft embed this way of inorganic growth in their corporate strategy. The thesis examines the M&A activities of these major players. Therefore, it addresses two different aspects: First, it intends to do a step towards closing a research gap in literature. This gap is constituted by a missing link in the current state of literature between the corporate strategy of these firms and the choice of their M&A targets. Second, it aims to give estimation about potential future developments in the sector. Through a qualitative content analysis of companies' publications, market research reports and other third party content, case studies are being developed.

Findings show the process of strategic positioning for Apple, Google and Microsoft within the Online Service Industry between 2005 and 2015. The ongoing M&As are being analyzed regarding the companies' corporate strategies and their strategic responsiveness regarding their direct competitors. Findings give evidence for aggressive M&A activities in the strategic groups the companies share with each other, especially in the market for mobile communication devices and communication services.

Keywords

Online Service Industry, Internet Industry, M&A, Inorganic Growth, Strategic Groups, Strategic Patterns, Tactics, Apple, Google, Microsoft

RESUMO

A indústria de serviços online é caracterizada por um volume alto de Fusões e Aquisições no período de 2005 a 2015. As líderes de mercado, Apple, Google e Microsoft, incorporaram essa forma de crescimento inorgânico em suas estratégias corporativas. Essa tese examina as atividades de Fusões e Aquisições dessas três empresas. Consequentemente, ela tem foco em dois aspectos principais. Primeiro, existe o objetivo de saciar uma escassez na literatura acadêmica, no que se diz respeito ao estabelecimento de uma conexão entre a estratégia corporativa dessas empresas e as decisões tomadas de Fusões e Aquisições. Segundo, há também o objetivo de estimar possíveis futuros desenvolvimentos no setor.

Através de uma análise de conteúdo qualitativa das publicações das empresas, relatórios de análise de mercado, e outros conteúdos de terceiros, estudos de caso foram desenvolvidos. Os resultados mostram o processo de posicionamento estratégico por parte da Apple, Google e Microsoft, dentro do mercado de serviços online, entre os anos de 2005 e 2015. As recorrentes fusões e aquisições são analisadas, no que se diz respeito as estratégias corporativas dessas empresas e a responsividade perante as atividades de seus competidores. Os resultados evidenciam atividades agressivas de Fusões e Aquisições em grupos estratégicos em comum entre as três empresas, especialmente no mercado de aparelhos de comunicação móvel e serviços de comunicação.

Palavras-chave

Indústria de Serviços Online, Internet, Fusões e Aquisições, Crescimento Inorgânico, Padrões Estratégicos, Táticas, Apple, Google, Microsoft

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LIST OF ACRONYMS

M&A	Mergers and Acquisitions
NFC	Near field Communication
OEM	Original Equipment Manufacturer
TFEU	Treaty on the Functioning of the European Union

1 INTRODUCTION

Strategy is “a pattern in a stream of decisions.”
(Mintzberg, 1978, p. 934)

The preceding quote of business strategy theorist Henry Mintzberg illustrates that one indispensable presupposition for the presence of a strategy is the identifiability of patterns in decision making. This consequently means, once the patterns are identified it is possible to draw conclusions about respective strategies.

That is exactly what the dissertation aims for, drawing conclusions about the strategies of the companies Apple, Google and Microsoft, which fight for supremacy in the internet sector. The internet or online service industry is a relatively young sector and the main players are fighting for supremacy by extensively using the strategic mean of Mergers and Acquisitions to strengthen their positions in specific strategic fields and to accelerate their growth. As M&A is a key element of the three major companies' growth process, the analysis of some of the patterns behind their strategies can help to better understand the industry and contribute to further developing the theoretical foundation of Mergers and Acquisitions strategies.

Therefore, the motivation of this research work is to shed light on the strategic mechanisms behind the Mergers and Acquisitions activities in the internet industry, an industry particularly interesting due to its growing influence on the daily life of millions. Today, life without the products and services of the main actors in this field, Apple, Google and Microsoft, is hardly imaginable. This importance is also represented by the respective stock market valuation of these companies, which makes them some of the most valuable companies in the world (PricewaterhouseCoopers, 2015). In relation to this great practical impact, the industry is still underrepresented in academic research.

On these grounds, the objective of this thesis is primarily to do a first step towards establishing the missing link in the current state of literature between the corporate strategy of Apple, Google and Microsoft and the choice of their M&A targets. In this context the thesis elaborates the strategic reasons behind the M&A activities and their fitting to the general strategies of the analyzed companies. Secondly, it aims to give estimation about potential future developments in the sector. As Apple, Google and Microsoft are leading companies in this industry, they are chosen as objects of study to reach highly representative results.

1.1 Research question and research goals

The research is guided by the following research question, which clearly defines the scope of the analysis:

What are the strategic reasons for the M&A activities of Apple, Google and Microsoft from 2005 until 2015?

The research question is characterized by four dimensions: The field of studies (strategic reasons), the limitation of the research scope (M&A activities), the analyzed case studies (Apple, Google and Microsoft) and the observed time-frame (2005 until 2015).

Subsequently, these dimensions are further specified:

- *Strategic reasons*: Concerning this dimension, the thesis elaborates what strategy the companies follow. What strategic patterns are identifiable and do the M&As make sense in the context of the general corporate strategy?
- *M&A activities*: This dimension defines the research object. Object of study are the acquisitions of formerly independent companies.
- *Apple, Google and Microsoft*: They are in the Online Service Industry in a leading position and are pioneers of the M&A strategy. Therefore, the research is narrowed down to these main players.
- *2005 until 2015*: The research is narrowed down to this timeframe because in these years, the M&A activity of the analyzed firms gained intensity. Besides this, the companies and the industry itself are relatively young and fast changing. A timescale reaching further into the past is therefore not applicable.

Central goal of the present research work is it to find the strategic foundations Apple, Google and Microsoft build their M&A decisions on. The thesis especially aims to show the fit of the M&A activities to the respective corporate strategies as well as to the behavior of the competitors. From this research it is conductible in what industry sectors the companies want to improve their strategic positioning and what companies act more aggressively with their

inorganic expansion strategy. We will also see in contrast which companies tend to be more reactive or defensive.

To get to the final results, following interim results are necessary: At first a complete list of the M&As from 2005 to 2015 is established. Another interim result is the categorization of the acquired companies to detect what strategic positioning the acquirers are seeking for. These interim results finally allow the interpretation of the M&A strategy regarding the general corporate strategy of the firms and the business practices of their direct competitors.

These results provide the basis for concluding a forecast of potential future developments in the Online Service Industry.

1.2 Relevance of the research work

The research of patterns in the Merger and Acquisitions activities of the main actors in the internet industry is of high relevance for the scientific community (chapter 1.2.1) as well as for practitioners (chapter 1.2.2), which justifies the research interest of the author.

1.2.1 Scientific relevance

As far as the scientific community is concerned, the underlying reasons for the M&A decisions of Apple, Google and Microsoft shall provide insights into the strategic decision making process of these companies and do a first step to fill the gap in literature. The insights can lead to a better understanding of corporate behavior and establish a link between the M&A strategy in the Online Service Industry and the respective corporate strategies.

1.2.2 Practical relevance

In terms of providing benefit to the practitioners' community, the results can be useful to prepare for future developments in the industry. The strategic objectives of the main players in this sector can be helpful for entrepreneurs to position their own companies as an attractive M&A target and develop business models in the industry sectors, which seem to be of outstanding importance in future.

1.3 Research process and outline of the dissertation

At the beginning of the dissertation (chapter 2) a detailed literature review sets the basis of the research. This literature review covers the topics strategy, M&A, internet industry, strategic groups as well as strategic patterns and tactics. In chapter 2 these concepts are defined and the current state of research in scientific literature is presented, always with a focus on the M&A activities in the internet industry. This literature review is conducted by systematic database queries and the analysis of companies' publications. The literature review presents the current state of research and its limitations. It justifies the present research and builds the theoretical foundation of the topic.

Chapter 3 describes and justifies the methodological decisions made to answer the research question. It also shows in detail the theoretical background of the individual research steps undertaken and demonstrates why a qualitative approach has to be applied (chapter 3.1). In a second step, the mode of data collection is elaborated. The basic data for generating the case studies is obtained by a qualitative content analysis (Mayring, 2010) due to the qualitative nature of the research. The data analysis which follows (chapter 3.3) applies the approach of Eisenhardt (1989), which describes an inductive way of generating theory from case study research.

Subsequently, in chapter 4, case studies of Apple, Google and Microsoft are developed. These case studies target on drawing a picture of the companies' backgrounds, their strategies and their respective M&A activities.

This chapter is followed by the analysis of these case studies. Chapter 5 interprets the corporate strategies in combination with the M&A activities and establishes a link in between.

Finally, in chapter 6 the findings are put together and an estimation of the future development in the internet industry and its M&A activities is given.

2 LITERATURE REVIEW

The literature review covers all the topics relevant for building up the theoretical background for the case studies and their analysis. Regarding Hart (1998) there is no such thing as a perfect review thus this literature review also has its limitations. Strategy and M&A are two vast fields of study and therefore just the aspects which are essential for the understanding of the specific context of the internet industry are discussed. Whenever possible the general strategy and M&A literature is linked to the internet industry context to make coherences clear. Besides providing the theoretical background of this thesis the review also aims to show the contribution of the research question towards filling the existing gap in scientific literature.

The literature search is conducted considering the following criteria depending on the context respectively depending on what to be demonstrated. This overview of the criteria used to conduct the literature search (Table XXX) aims to contribute to a higher level of transparency in the literature search process as it is demanded by vom Brocke et al., (n.d.):

Table 01: Literature selection

Context	Literature type
Historical Development of a research stream	Original sources; books and journal papers
Current state of a research stream	Journal papers with a focus mainly on relevancy and journal ranking; secondly on date of issue
Industry and company background	Companies' annual reports; reports and articles of news agencies, business agencies, market research institutes; internet resources

Source: Author

The start of the review is made by an introduction towards the current state of strategy research in general (2.1). After that the topic gets narrowed down to Mergers and Acquisitions (2.2), strategic groups (2.3) as well as strategic patterns and tactics (2.4) are discussed. Finally, the literature review covers the research done regarding the internet industry (2.5) focusing on the research made concerning mergers and acquisitions in this field.

2.1 Strategy

“What is strategy?” asks Michael Porter, in the title of his article published in the Harvard Business Review in 1996. It might seem surprising, that a distinguished strategy expert like Porter at this time still considers this a valid question to ask, but having a closer look on the history and the current state of strategy research makes it obvious that the definition of strategy is indeed not easy as in academic literature many different perspectives on strategy exist.

Having its linguistic origin in the language of the ancient Greek empire (stratos = army; agos = leader), strategy was primarily used in a military context. Just in the beginning of the 20th century US-American business schools integrated elements of strategic education in their coursework. The content though was mainly experience based and taught by analyzing practical business cases. The perception as a scientific discipline just started in the 1960ies and therefore it is a relatively young research direction. Important contributions at this initial stage of strategy research were provided by the authors Edith Penrose, Alfred Chandler, Kenneth Andrews and Igor Ansoff. (Müller-Stewens & Lechner, 2011)

Penrose (1959) postulates the theory, that differences between companies were based on the heterogeneity of their internal resources. This inside-out perspective of the firm constitutes a research stream focused on resources as an origin of competitive advantage. To be the basis of sustained competitive advantage the resources must fulfil the criteria of being valuable, rare, just imperfectly imitable and having a lack of substitutability (Barney, 1991). From a slightly different perspective, Collis & Montgomery (1995) define scarcity, appropriability and demand as the characteristics of competitively valuable resources. What both points of view have in common is the criterion of scarcity or rarity. Wernerfelt (1984) sees this non-marketable character of strategic resources as one of the reasons for M&A activities.

Another link to M&A is established by the advancement of this so-called resource-based view of the firm – the knowledge-based view of the firm. Knowledge can also be seen as one of the firm’s resources. It is not just initially given but also developable. Regarding this theory knowledge can be acquired, transferred and aggregated (Grant, 1996). The link to M&A theory is the effect of M&A experience, which is a type of knowledge, on M&A success (Haleblian & Finkelstein, 1999). Closely related to the resource- and knowledge-based view is the concept of dynamic capabilities. According to this theory competitive advantage is based on the company’s internal routines which result from processes and positions (Teece, Pisano, & Shuen, 1997).

It can be criticized that through M&A transactions nevertheless a market for technically non-marketable resources exists (Wernerfelt, 1984) and therefore consequently a homogeneity of resources could be assumed. The supporters of this approach argue, that competitive advantage results from choosing an attractive industry and reaching a favorable competitive position through adapting to the industry structure and given market conditions. This so called market-based view of the firm takes in contrast to the resource-based view of the firm an outside-in perspective. A popular representative of this perspective is Porter (1980, 1985, 1987, 2008) who provides with his five-forces model a concept to analyze industry attractiveness. This concept describes the attractiveness of a certain industry regarding the five dimensions Bargaining Power of Suppliers, Threat of New Entrants, Bargaining Power of Buyers, Threat of Substitute Products or Services and Rivalry Among Existing Competitors. These factors do not only define the attractiveness of an industry, they also are important triggers of M&A decisions. The higher the attractiveness of an industry, the more advantageous it would generally be to enter the industry through a Merger or Acquisition. Another example would be the fusion of competitors triggered by high rivalry. This example also demonstrates an existing effect in the opposite direction. Although the transaction might be triggered by the high intensity of competition, it comes with a backlash on the industry itself. As through M&A the industry structure changes, rivalry gets weaker and consequently the industry becomes more attractive again.

Another research stream is constituted by Alfred Chandler (1962) with his research work "Strategy and Structure", which elaborates the growth processes of the four companies General Motors, DuPont, Sears and Standard Oil. Chandler establishes with his findings a link between organizational structure and strategy. In particular, he states, that structure is a consequence of the chosen strategy. Clearly, this research stream is also connected with Mergers and Acquisitions. The direct impact of Mergers and Acquisitions on the companies' organizational structure becomes especially obvious when during the integration process the two former independent structures are put together to become one. Generally, inorganic growth through Mergers & Acquisitions causes higher organizational complexity. Penrose (1959) describes that the organizational structure of companies extensively growing by acquisitions can become "anomalous" and "amorphous". In contrast to that, when companies go the path of an organic growth process, disruptive changes in organizational structures are uncommon. Usually the

continuous development of the company causes continuous adjustment and a higher level of detail regarding company structure.

Based on the theories of Chandler, Kenneth Andrews added with his book *The Concept of Corporate Strategy* (1971) some other aspects: He defines a strategy process segmented in two phases, starting with the formulation followed by the implementation of the strategy.

The last pioneer of strategy research to be mentioned here is Igor Ansoff with his book *Corporate Strategy* from 1965. Ansoff characterized strategy as a technique which requires one to recognize the strategic problem and to resolve it effectively. To give support for this task, Ansoff introduced first simple concepts: The SWOT-Analysis and the product-market-matrix for example are his achievements. He also further developed the conceptualization of the strategy process. These concepts also can explain the reasoning behind a M&A transaction as companies can try to prevent external threats or compensate internal weaknesses by this way.

Since the introduction of these fundamental concepts and theories, strategy research experienced an impressive development, mainly fueled by publications in academic journals, books and conference contributions. These theoretical approaches are complemented by the more application oriented perspective of strategy consultancies, which contribute a lot with practice-oriented frameworks. Over time strategy developed towards a science with great overlaps with other academic directions: Strategic decisions depend for example on the political, macroeconomic, social, technical, ecological and legal environment, which shows already intersections with six other academic fields. Many popular strategy theories have their origin in related sciences. For example, Industrial Economics has its origin in the field of macroeconomics, game theory in microeconomics and behavioral theory in psychology. (Müller-Stewens & Lechner, 2011)

To conclude this review of strategy research focused on the strategic foundations of M&A theory, let us come back to Porter's initial question "What is strategy?" and finish with two definitions provided by himself:

"Competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value." (Porter, 1996, p. 64)

„Strategy is the act of aligning a company and its environment. That environment, as well as the firm’s own capabilities, are subject to change. Thus, the task of strategy is to maintain a dynamic, not static balance” (Porter, 1991, p. 97)

2.2 Mergers and Acquisitions

In line with these definitions and the current state of strategy research, Mergers and Acquisitions constitute an important and powerful mean to reach strategic goals. These strategic dimensions are the focus of the following section of the literature review.

The chapters 2.2.1 and 2.2.2 generate at first a general overview over M&A history and the current state of research. Chapter 2.2.3 focuses in more detail on M&A as a mean to implement specific strategies. The literature review concludes in chapter 2.2.4 with the limitations and risks of M&As.

2.2.1 Definition of M&A and a brief review of historic transaction waves

Firms have basically two different options to realize their expansion plans, organic growth and inorganic growth. Combinations of these two strategy types are also possible and common. In its pure form, organic growth is an entirely internal process and can for example already be constituted by higher sales activities or the launch of new products. Such an approach of growth is characterized by a slow but continuous process, incremental change and low risk. Mergers and acquisitions in contrast, which are a way of inorganic growth come with rapid execution, abrupt change and high risk. (Durmaz & Ilhan, 2015)

Mergers & Acquisitions stand for all acts concerning the transfer and mortgaging of property rights between companies including the formation of corporations, the restructuring of groups, the merger and transformation in a legal sense, the squeeze-out, the financing of an acquisition, the establishment of joint ventures and the acquisition of companies. A merger describes a combination of two companies to form a new entity. In contrast to this, an acquisition is the purchase of a company by a buyer company. In this case the buyer company integrates its target without constituting a new entity. Deals that take place with the approval and support of the target company are called friendly takeovers, non-consensual transactions are named hostile takeovers. (Mietzner, 2015)

M&As can look back on a century long history (Bauer & Matzler, 2014) and are therefore not just a recent phenomenon. Characteristic for Mergers & Acquisitions is the occurrence in form of waves. These waves are highly correlated with business cycles (Makaew, 2012). The classification of historical merger waves is not consensual in literature as hard criteria to define the begin and the end of the waves do not exist, hence the classification depends more on the personal interpretation of the researcher. Nevertheless, it is generally accepted to define up to six historical merger waves:

Table 02: Overview of historical M&A waves

	Time Period	Characteristics
First Wave	1893 – 1904	horizontal mergers
Second Wave	1919 – 1929	vertical mergers
Third Wave	1955 – 1969-73	creation of conglomerates; diversification
Fourth Wave	1974-80 – 1989	hostile take-overs; junk bond financing; LBOs
Fifth Wave	1993 – 2000	mega-deals; cross-border transactions
Sixth Wave	2002 – 2006	globalization; private equity; shareholder activism

Source: Author; based on Lipton (2006) and Dieudonne, Cretin, & Bouacha (2014)

As merger activity can be described by a concept of waves or cycles, Dieudonne et al., (2014) approach with their article the question where we currently stand in such a M&A cycle. Therefore, they consider the factors which typically define the beginning of a new merger round in order to find an answer: According to the article, economic upturn, booming capital markets, structural regulatory changes, industrial and technological innovations and the need for companies to adapt to economic changes are the prevailing characteristics. Although M&A waves have these aspects in common, they nevertheless differ regarding their nature, intensity and duration. This is the reason, why there does not exist one single definition of historical Merger waves but various slightly different approaches. Regarding Dieudonne et al., (2014), there are three main reasons which support the theory of currently being at the beginning of a

new Merger & Acquisition wave: Economic recovery combined with an increasing number of M&A transactions, the return of large transactions and the occurrence of bidding wars. In light of the revitalization of the M&A market there is a high chance of a new M&A wave to begin, but as M&A cycles generally last between 7 and 21 years, the existence of this new seventh M&A wave can just be confirmed with certainty after such a period passed by.

2.2.2 Current state of M&A research

Although the first M&A wave already happened in the 1890ies, research activity in this field just goes back about 40-50 years (Cartwright & Schoenberg, 2006; Das & Kapil, 2012). The focus of research hereby lies on M&A performance. As this performance is influenced by many factors coming from various subject areas, the M&A research field took several interconnected but separate directions:

As companies generally have a plenty of stakeholders, M&A performance can be seen from many different perspectives. Hence, before considering the different factors that affect M&A performance it is important to discuss ways and criteria to define and measure that performance. Zollo & Meier (2008) provide a comprehensive overview of the current state of academic literature, the proposed performance measures and their correlation with each other. The literature review shows, that 12 metrics of M&A performance are constantly recurring in the scientific discussion and can be associated with either a short or a long term time horizon and separated into subjective and objective measures. They also differ in the level of analysis which can approach the M&A task, the acquisition or the firm.

Table 03: Classification of measures of merger performance

	Time Horizon	
	Short-Term	Long-Term
Level of analysis		
Task	<ul style="list-style-type: none"> • Integration process performance • Knowledge transfer • Systems conversion 	<ul style="list-style-type: none"> • Customer retention • Employee retention
Acquisition	<ul style="list-style-type: none"> • Short-term financial performance (event study) 	<ul style="list-style-type: none"> • Overall acquisition performance • Acquisition survival
Firm		<ul style="list-style-type: none"> • Accounting performance • Long-term financial performance • Innovation performance • Variation in market share

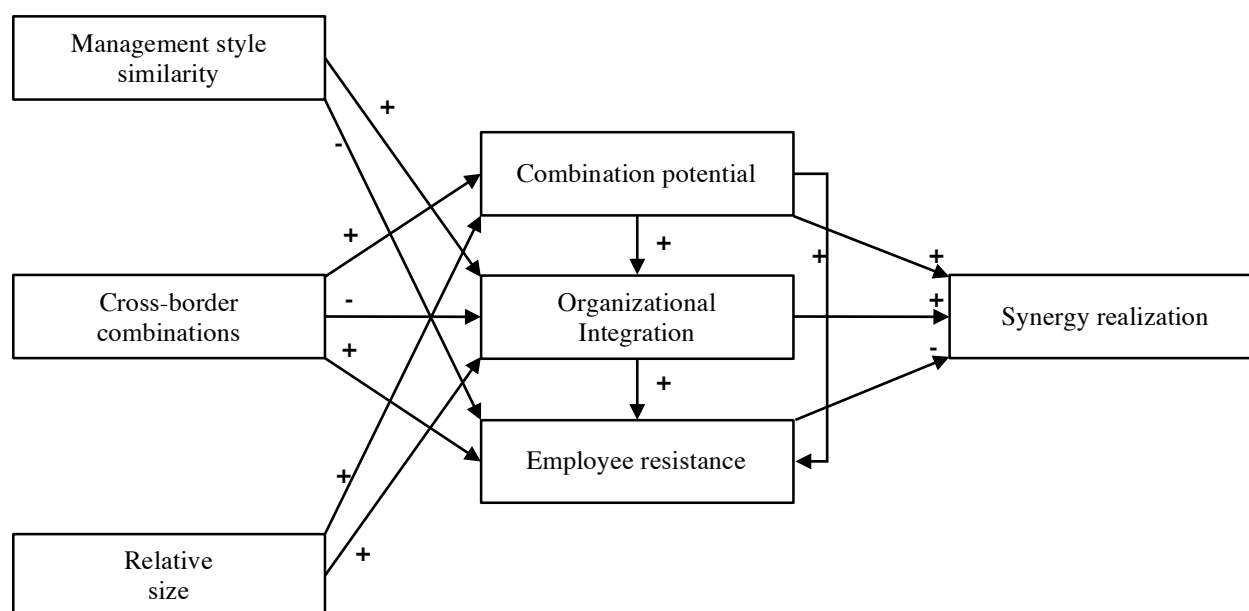
Source: Author; based on Zollo & Meier (2008)

Papadakis & Thanos (2010) classify the measures for M&A performance in three categories: Accounting-based measures, Stock-market-based measures and Managers' subjective assessments. Das & Kapil (2012) extend the categorization of Zollo & Meier (2008) and Papadakis & Thanos (2010) to the following four areas: accounting measures, financial market measures, mixed (market/accounting) and other objective and subjective measures.

Seth (1990) analyzes the sources of value creation in acquisitions. His research is separately conducted for related acquisitions (non-conglomerate: horizontal and vertical; conglomerate: product extension and market extension) and for unrelated acquisitions (conglomerate: others i.e. "pure" conglomerates). The findings are, that "there is a significant association between increased debt utilization and the extent of value creation for unrelated acquisitions." (p. 445). No other potential source of value creation showed a strong relation with

synergistic gains in case of unrelated acquisitions. According to Seth (1990), in contrast to the case of unrelated acquisitions, synergistic gains of related acquisitions are mainly linked to a large relative size of the target to the bidder. Larsson & Finkelstein (1999) contribute to the academic discussion about synergy realization and consequently M&A performance with their model considering Management style similarity, Cross-border combinations, Relative size, Combination potential, Organizational integration and Employee resistance. Their findings support an integrative perspective on mergers and acquisitions. Their central Model of M&A Performance shows the interrelations they found:

Figure 01: Model of M&A performance



Source: Author; based on Larsson & Finkelstein (1999)

To conclude this brief overview of historic and current research in the field of M&A it is appropriate to risk an estimation of probable future developments in this academic direction. Venema (2010) provides a general estimation about what to expect from the M&A market in the next years. He states that every industry has its big players and defines them as the likely buyers and protagonists on the M&A market. He sees much future activity in the technology sector and Google as a leading player with many future transactions. This projection of attorney and

merger-and-acquisition deal-maker Venema gives additional justification for the topic and research question choice of this thesis.

2.2.3 Motives & Strategic Approaches

Motivational aspects of M&A reach from strategic intentions to personal goals and to plain excess cash and debt capacity (Bruner, 1988). Ideally the motivation to conduct a M&A transaction is of strategic nature. Through the acquisition of another company, new markets and resources can be accessed and knowledge can be acquired in high speed. As mentioned before, resources are an extremely important factor for the competitiveness of firms and a merger can be a mean to access non-marketable resources (see resource-based view of the firm chapter 2.1). Especially in market entry scenarios speed is essential to occupy a favorable market position before competitors do the same. An acquisition can open the door for the buying company to new markets, new geographical areas and a broader customer base. This diversification idea is a popular topic in M&A research, especially due to the fact, that diversification is mainly pursued by mergers and acquisitions (Baysinger & Hoskisson, 1989).

Yip (1982) sees a central reason for a market entry through an acquisition instead of via internal development in the four classes of barriers to entry: economies of scale, product differentiation, absolute costs, and the capital required.

Rumelt (1982, p. 363) states that “the appropriate level of product diversity is that, which balances economies of scope with diseconomies of organizational scale.” Miller (2006) analyzes the effect of related diversification on firm performance. Applying his market-based measures of performance and controlling for the endogeneity of diversification and performance, he finds evidence for a positive dependency between relatedness and firm performance. Hitt, Hoskisson, & Kim (1997) provide with their study evidence of the importance of international diversification for competitive advantage but also consider the complexities of implementation to realize these advantages in product-diversified firms. Chatterjee & Wernerfelt (1991) investigate the link between resources and the type of diversification. Their findings suggest that the intangible and financial resources are the dominant factors in explaining if a company diversifies in a related (horizontal) or unrelated market. According to their findings these assets provide a competitive advantage for entering related markets, which confirms the conjecture of Bettis (1981). These findings can be particularly interesting for the internet industry as here intangible and financial assets prevail.

Another strategic idea of mergers & acquisitions that finds much attention in academic literature is the realization of synergies (e.g. Bradley, Desai, & Kim, 1988; Harrison, Hitt, Hoskisson, & Ireland, 1991; Huyghebaert & Luypaert, 2013; Larsson & Finkelstein, 1999). Generally spoken, synergies are efficiency gains companies can take profit of through merging. To classify the type of synergy it has to be distinguished between the following types of acquisitions:

- **Horizontal acquisitions:** This type of acquisition happens between two companies of the same industry, on the same stage of the value chain. Typical for this kind of acquisition is the realization of cost synergies for example through jointly used infrastructure, marketing or logistics. Another factor of this scenario is the increase of market power.
- **Vertical acquisitions:** This type in contrast happens also between two companies of the same industry, but between companies on different stages of the value chain. Companies generally decide for this type of acquisition to reach a higher control over the supply chain.
- **Sector-unrelated acquisitions:** These acquisitions happen between two companies from different industries usually with the goal of receiving a first mover advantage in a industry which can become of strategic importance in future. Such transactions sometimes also provide cross-selling opportunities.

However, acquisitions are frequently made for other than synergistic reasons, such as managerialism, sales growth, or risk reduction (Seth, Song, & Pettit, 2000).

2.2.4 Risks, Limits and Alternatives of M&A

As we have seen in the previous chapter, the acquisition of another company is a powerful strategic tool that proves a plenty of opportunities. Nevertheless, the application of this managerial measure requires a certain level of precaution as there are not just opportunities but also risks and limitations to be prepared for. According to Porter (1987) M&As have a surprisingly high failure rate of more than 50% and Sagner (2012) states that even 75% or more of all M&A transactions fail to meet the expectations of the companies involved.

Sagner (2012) sees one of the main causes for M&A failure in “incorrect or overly optimistic numbers” the acquisition target provides to the acquirer, especially regarding receivables and inventory. As a measure to avoid such issues Sagner recommends to thoroughly

conduct due diligence in form of physical examination of important assets and the review of operating procedures. Duchin & Schmidt (2013) also find bad monitoring as an important factor for failure, especially occurring during periods of high merger activity. Sherman (2006) proposes to focus on the transition and integration process and therefore to establish a post merger Task Force, representing both sides of the transaction to uncover, evaluate and resolve potential problems on an early stage. Souder & Chakrabarti (1984) state that “The great bulk of merger activity appears to have been absolutely wasted in terms of generating economic benefits for the stockholders.” They suggest four measures to improve the performance in the post acquisition period: Firstly, managers should elaborate the immediate benefits as well as the long term synergies the transaction can provide for the parties involved. Secondly, the buying company has to act with patience rather than just to focus on quick financial wins. Besides that, it is proposed to seek for creative combinations of the capabilities of both firms involved instead of just overtaking the acquired company and pushing the indigenous technology and culture in it.

The post merger integration procedure has also a big influence on the regularly recurring topic of CEO and generally of management departure. Canella & Hambrick (1993) propose to provide one or more executives with top management team status in the newly combined firm because this leads to better post acquisition performance. Lubatkin (1999) finds that the idea of relative standing and turnover introduced by Canella & Hambrick cannot only explain executive turnover in the post merger phase, but also may predict it. Krug & Hegarty (2001) come to the conclusion that managers’ perceptions of the merger announcement, interactions with the top management of the buying company, and the long-term perspective of the merger determine whether they stay or leave. Buchholtz, Ribbens, & Houle (2003) find that the probability of CEO departure is related to CEO age, with the probability of departure higher in the beginning and in the end of the management career. Managers between 50 and 60 show the lowest departure probability. CEO hubris is what Hayward & Hambrick (1997) identify as the source for paying high premiums for the shareholders of the acquired company and by this way as a source of high financial risk. Krishnan, Hitt, & Park (2007) see the payment of high premiums as a reason for post-merger workforce reduction and consequently of a lower post-merger performance. Bauer & Matzler (2014) ascribe special risk potential concerning employee resistance and cultural clashes to the post merger integration phase. “Differences in functional backgrounds (...) appear to have a positive impact on the postacquisition performance” (Krishnan, Miller, & Judge, 1997,

p. 370). Surprisingly cultural distance is no risk factor, on the contrary, Chakrabarti, Gupta-Mukherjee, & Jayaraman (2009) find, that acquisitions with the buying company and the acquisition target coming from countries which are culturally more disparate perform better in the long run.

Although cultural distance does not count for a risk-factor, cross-border takeovers nevertheless come with additional risks as companies have to deal with higher complexity than in plain national transactions. Weitzel & Berns (2006) identify in the cross-border context corruption, government effectiveness, political stability and legal origins as factors to be aware of. Evaluating these risks, companies must also consider the irreversibility of M&As.

In addition to the failure risks mentioned, companies also face various limitations for their M&A strategies. Certainly one of the most important limitations are monopoly laws. Earning monopoly rents is a common motive for M&A transactions (Teece et al., 1997), but because of national and international regulations just to a certain degree realizable. Google for example was object of formal antitrust investigations announced by the European Commission on November 30, 2010 because of suspicions of abusing its dominant position, which is prohibited by Article 102 TFEU (Treaty on the Functioning of the European Union) (Loon, 2012). Regarding Guest, Cosh, Hughes, & Conn (2004) successful acquisitions can encourage CEO hubris, which leads to lower performance in the long run. Laamanen & Keil (2008) also identify a high rate of acquisitions and a high variability of the rate as negatively related to performance. These findings give support for a self-limitation theory of M&As.

Companies can choose from a variety of alternatives to a real Merger or Acquisition, which come with their own particular opportunities and risk profiles. First alternative to mention is an expansion strategy through organic growth by establishing an own legal entity. According to Harzing (2002) the likelihood with which companies choose an acquisition or a greenfield investment to enter a market is related to their strategy. Multidomestic companies tend to use acquisitions to realize their expansion plans, whereas greenfield investments are more likely for global companies. Wang & Zajac (2007) find that firms with high resource similarity rather choose an acquisition to combine their resources than an alliance. In contrast to that, firms with a high resource complementarity tend to decide for alliances.

2.3 Internet Industry

The term Internet Industry in the context of this dissertation describes firms which have in their business model a strong focus on online services or services and products related to those. This high-technology industry has several hotspots with Silicon Valley in the US, Berlin in Germany, Hong Kong, and Toronto in Canada being amongst the most influential ones. This concentration of firms in locally limited clusters corresponds to the theory of Z. Wang, Liu, & Mao, (2012) which sees the probability for cluster building comparably higher in industries with many small companies. Their findings show also, that companies in the high tech sector have a higher tendency to cluster, as they generally have a low demand of land. Characteristic for the online industry is the coexistence of a few main players and innumerable small niche suppliers. Key players in this industry are for example Apple, Google and Microsoft whilst examples for typical niche players are entrepreneurs and small startup teams specialized in the development of smartphone applications or solutions for the Fintech sector, the industry sector specialized in inventing technical innovations for the financial sector. Today more and more products are sold in combination with online registrations, smart phone applications and other digital accessories. This makes it particularly hard to exactly define the limits of this industry as nowadays it is even for traditional firms common to enrich their offline products with digital content.

Although the technological industry sector in general and the online industry in particular seem to play an important role on the M&A market according to the current state of literature, the industry and its leading companies are not well represented in academic research.

The three leading companies Apple, Google and Microsoft are sometimes part of case studies for strategy education (Schimmer, Müller-Stewens, & Sponland, 2010) or topic of articles in newspapers, but research did not yet aim to elaborate their strategies and their M&A activities.

Uhlenbruck, Hitt and Semadeni (2006) analyzed the effects of acquisitions of internet firms on the market value. They found out in their research, that “acquisitions of online firms by online firms provide positive abnormal returns to the acquirer” (p. 907). In detail their results show a statistically significant, positive abnormal return of 1.12 percent for the acquisitions. Kohers & Kohers (2000) state that “acquirers of high-tech targets experience significantly positive abnormal returns, regardless of whether the merger is financed with cash or stock”. Zhao (2009) finds that acquisitions help to increase firms’ innovative abilities.

Important for understanding the M&A activities in the internet industry is also the research of Makri, Hitt, & Lane (2009). They state, that “complementary scientific knowledge and complementary technological knowledge both contribute to post-merger invention performance by stimulating higher quality and more novel inventions.” Based on this they suggest that complementarity regarding scientific and technological knowledge should be a selection criterion for high-technology companies seeking for fitting acquisition targets. These findings go in the same direction as Hagedoorn & Duysters (2002) who postulate the theory that M&As can contribute to a better technological performance of high-tech companies. Sears & Hoetker (2014) emphasize the importance of a technological overlap for the post merger performance. The new knowledge the buying company aims to access through the acquisition, can be leveraged by integrating it in the whole firm (Puranam & Srikanth, 2007).

2.4 Strategic Groups

To be able to survive in the competitive environment, companies must try to differentiate themselves through their strategic orientation from other firms and to strive for a unique strategic position. Even so, inside of an industry generally groups of companies with the same or at least a similar strategic orientation can be identified. These groups are called strategic groups. (Fiegenbaum & Howard, 1995)

The concept of strategic groups goes back to the doctoral thesis of Hunt (1972) elaborating competition in the major home appliance industry between 1960 and 1970. Porter (1979) further developed the concept and defined strategic groups as clusters of companies of an industry following the same strategies regarding key decision variables. Depending on the chosen variables used as criteria for demarcation such a strategic group consists of at least one company up to encompassing the whole industry.

As criteria for the definition of strategic groups mobility barriers or the characteristics of market segments can be used. Examples are the geographical area, the firms are operating in, the targeted market segments and the marketing and distribution channels used. (Müller-Stewens & Lechner, 2011)

For the companies of the same strategic group the activities and actions of the competitors with a similar strategic position like their own are of outstanding importance. On the one hand,

the members of the strategic group have to try to differentiate themselves from the others and have to find an individual, not or just hard imitable position and occupy it. On the other hand, changes in the positioning of their competitors can change the competitive environment and necessitate strategic reactions.

Apple, Google and Microsoft manage a portfolio of various different products and services, hence they participate in a variety of different strategic groups. Due to a big overlapping of their strategies and operations they compete in many of the strategic groups they belong to with each other.

2.5 Strategic Patterns and Tactics

Strategic reaction options are the potential answers of the company towards industry dynamics within the scope of their strategy work. Strategy as a reaction to developments of the corporate environment corresponds to the ideas of the Environmental School, one of Mintzberg's Ten Schools of Thought about Strategy Formation (Mintzberg & Lampel, 1999). This School of Thought sees strategies as reactive processes with changes of the environment as a key-driver. Related to Darwin's academic doctrine of biology, the Environmental School of thought about Strategy Formation defines adaptability and conformity of a company as the decisive survival factor.

A common approach is to distinguish between the macroenvironment and the immediate industry and competitive environment. The macroenvironment is characterized by the conditions and changes of political, economic, social, technological, legal and environmental influence factors. The immediate industry and competitive environment is typically analyzed by Porter's Five Forces, which consist of suppliers, substitute products, buyers, new entrants and rival firms (Thompson, Peteraf, Gamble, & Strickland, 2015). This dissertation focuses solely on the strategic patterns and tactics companies have in the internet industry. Namely Google, Apple and Microsoft are analyzed regarding their M&A strategies and their actions in response to each other.

Müller-Stewens & Lechner (2011, pp. 266) and (Thompson et al., 2015) define eight tactical alternatives companies can apply to act or react regarding their competitive environment. These tactics can be divided into offensive and defensive ones:

Offensive tactical options:

- Frontal attacks: This strategic alternative describes the approach to put a competitor in many points at the same time under pressure with the goal to provoke his retreat from some activities. This strategy usually requires an extensive use of resources.
- Flank attacks: Applying this strategic measure means to focus on market segments which are not vehemently defended by the competitor, where he has weaknesses or where he is not yet active in. This approach is often characterized by entering geographical markets before the competitor, realizing by this way a First-Mover-Advantage and continuing the attack from this position of strength into other markets.
- Bypass strategy: At first the direct confrontation with the competitor is avoided. Instead, the company strives for the early adoption of a new technology or distribution channel. Having the control over this technology or distribution channel, the company can attack the competitor in his core business.
- Hit-And-Run / Guerilla strategy: Especially applicable for small companies with geographically limited operations which do not have sufficient resources for an open attack. The guerilla strategy implies sequences of attacks and retreats to attack smaller market segments, the competitor does not defend by all means.

Opposite to these offensive strategic alternatives companies can make use of the following portfolio of defensive tactics:

- Fortress strategy: This strategic option is typically applied to defend and keep the current position. The idea is to make it unattractive for potential new competitors to enter the market. This can be reached by measures like occupying outstanding store locations, distribution channels or establishing exclusive supplier relationships.
- Flank protection: This means to prevent competitors from entering and attacking peripheral market segments. Especially in the high technology industry leading firms

regularly try to protect such endangered market segments by buying the competitor company.

- **Confrontation strategy:** In this strategic scenario the market segment is defended by attacking another market segment, to bind the resources of the competitor in the defense.
- **Retreat:** In case there is no reasonable chance to defend and keep the current position, a retreat can be considered to reinforce the firm's core business.

These strategic patterns can be impressively observed in the M&A behavior of companies, as M&A is a fast and effective way to realize the tactics mentioned above. Through an acquisition, companies can enter a new market and confront a competitor there, but they also can reinforce and defend their current position by this way. Kim, Halebian, & Finkelstein (2011) investigate with their research the effect of growth patterns and acquisition experience on acquisition premiums. Their findings support the theory, that managers desperately strive for acquisitions under the following two circumstances: The organic growth of the company slowed down to a level substantially below the level of the peer group or the own historical growth rate. The second scenario in which managers desperately strive for acquisitions and hence are willing to pay higher premiums is in case the company they lead has a high dependence on acquisitions or is lacking the ability to grow organically. The link to the M&A activities of the peers, that Kim et al. (2011) establish, gives another evidence for the tactical dimension of M&A.

2.6 A literature based framework

The intention of this chapter is to isolate the most important findings of the literature review and to convert them into a literature based framework which can be applied to answer the research question. Although the research question focusses on a specific industry respectively a certain selection of companies, the framework shall be also universally applicable for other industries.

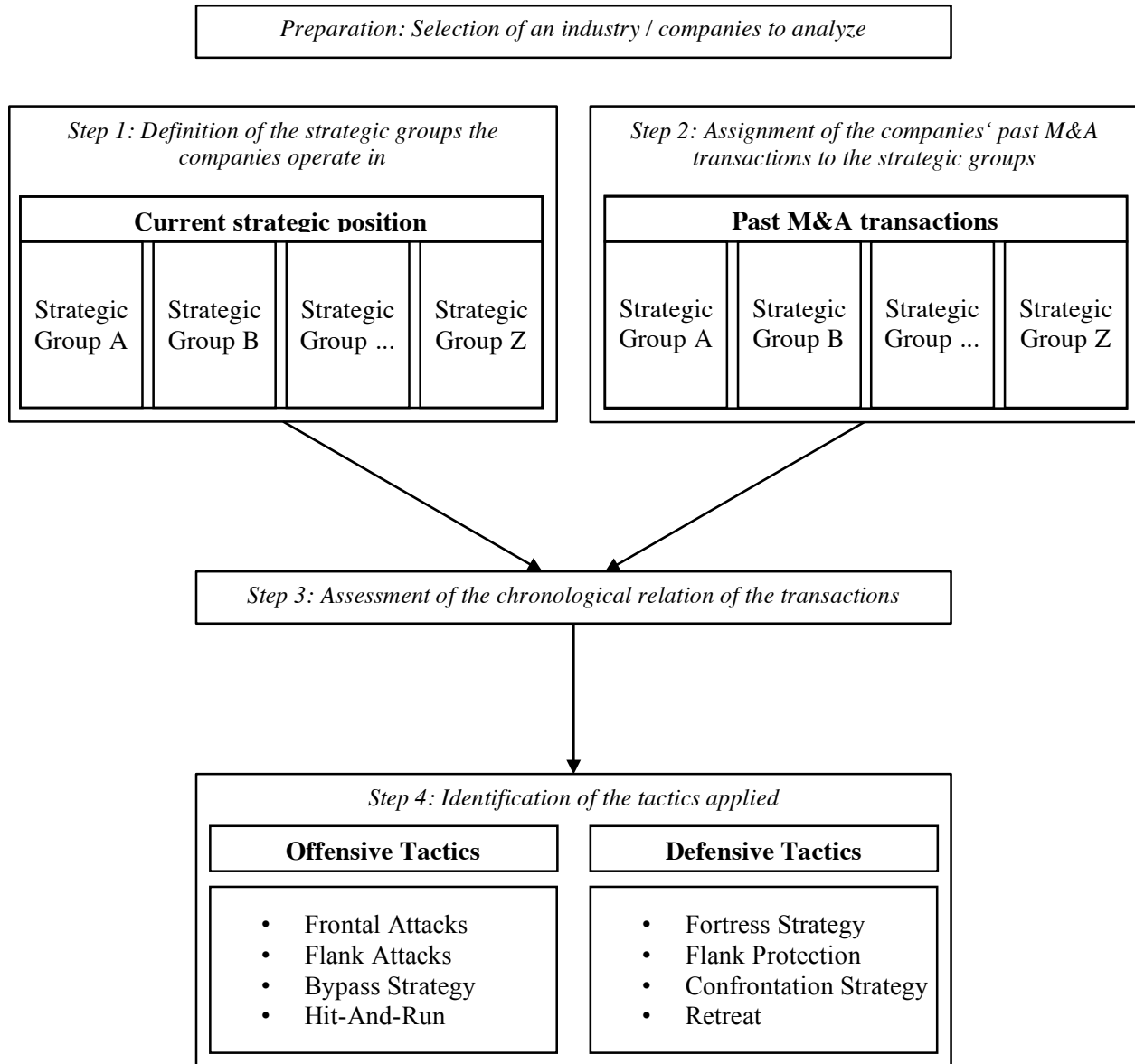
The findings of the literature review provide many potential starting points for a strategic analysis of an industry and its strategic groups. Subsequently a step-by-step approach for the identification of strategic patterns and M&A tactics is developed. The goal is to provide a structured approach to match M&A transactions with the eight tactical options proposed by

Müller-Stewens & Lechner (2011) and Thompson et al. (2015). The identification of the companies' strategic patterns shows which companies aggressively lead in the industry and which ones behave in more reactive manners. The strategic patterns can also provide an estimation of future M&A activities.

- Preparation: Before starting with the analysis, a selection of the industry respectively the companies to be analyzed has to be done. The research objects must operate in at least one identical strategic group and show relevant M&A activity.
- Step 1: Definition of the strategic groups
This thesis follows a strategic group perspective to analyze companies' M&A activities. Hence, at first the strategic group affiliation of the companies' operations has to be analyzed and defined. Müller-Stewens & Lechner (2011) suggest to use therefore at least two segmentation criteria like for example the market segment, target group, geographical area or the distribution channels used. The information necessary for this first step of the framework can basically be gathered by observing the companies' way of doing business and its clients. An easier and faster way is it to retrieve this information from the firms' annual reports, where usually product and service categories, market segments, target groups, etc. have to be mentioned.
- Step 2: Assignment of the M&A transactions to the respective strategic groups
In a second step, the M&A activities of a defined time frame have to be assigned to the strategic groups found in step 1.
- Step 3: Assessment of the chronological relation of the transactions
The transactions have to be put in a context with each other. Especially the chronological relation between the transactions of the company and the transactions of its peers give evidence for the identification of the tactics applied by the companies, which follows in the next step.
- Step 4: Identification of the tactics applied
Finally, the transactions can be analyzed regarding the strategic direction of the company. The chronological arrangement of step 3 shows for example if the company did an aggressive first step into a new market segment or if it just strived to strengthen its position as a reaction of a recent market entry of a competitor. For the classification of

the companies' approaches as offensive or defensive, indicators like the chronological sequence of actions can be used as criteria. This is why the assessment of the chronological relation of the transactions represents the core of the framework.

Figure 02: Literature based framework to identify strategic patterns



Source: Author

This framework is established to provide a systematic approach to analyze past M&A transactions and to classify the strategic behavior of companies or even whole industries. The

main recipient is therefore to find in academic research. The sequence of the analysis' steps follows the typical academic order of starting with the current situation respectively the collection and aggregation of the data of past events (steps 1 and 2). In the second part (step 3 and 4) this data is linked to a theory. In the case of the present framework the goal is to characterize M&A tactics, hence the theory decided for is the separation of the activities in offensive and defensive measures (Müller-Stewens & Lechner, 2011).

Besides being useful for scholars, with minor modifications the framework could also be adapted to serve as a guideline for operative strategic management. In this context just the order of the framework's steps had to be changed: After the initial analysis of the current strategic position in the relevant strategic groups, the manager could decide in a second step, if an offensive or defensive tactic should be applied to reach the strategic goals. In a third and last step, based on the implications of the tactical approach chosen, the strategy professional could decide for the strategic group in which the company should initiate M&A transactions.

3 METHODOLOGY

This chapter elaborates at first (chapter 3.1) why a qualitative research approach is chosen to work on the research question. After this, in chapter 3.2, the mode of data collection respectively the case selection is described. Finally followed, in chapter 3.3, by an outline of the data analyzing process.

3.1 Type of research

Generally, scientific problems can be approached in two different ways: In a quantitative or a qualitative way. The quantitative approach typically starts with a theory and a hypothesis based on it. In the further process of quantitative research, it is the goal to prove the hypothesis by quantitative methods. Starting with a hypothesis and testing its validity is a deductive way of achieving research results. The second possibility to approach a scientific problem is to conduct a qualitative research procedure. In contrast to the quantitative approach, qualitative research does not begin with a theory or a hypothesis. It starts by asking a research question with the goal to understand what, how and why phenomenon occur. This way of starting with a data collection or an observation, analyzing the information, and developing theory based on this is an inductive way of research. (Creswell, 2007)

The research question to answer has the analysis and interpretation of strategic patterns as core element. The goal is to understand

- What strategic patterns occur in the internet industry?
- How behave the observed companies in relation to each other?
- Why do they behave how they do?

Yin (2003) emphasizes, that the type of research question has to be matched with the possible research methodologies. Considering the type of the researched question elaborated by the present thesis, he recommends the application of a case study design. According to Eisenhardt (1989), the case study approach is a research design with a focus on the understanding of the underlying dynamics of the single settings studied.

This is why it is the chosen research method. First step of this methodology is to design the case study. The second step is to prepare for the data collection to conduct the case studies.

After this, evidence has to be conducted from the case studies and has to be analyzed (Yin, 2003).

According to Yin (2003), case study research although it is most commonly conducted in a qualitative way, can also include or even be limited to quantitative results. The central topic of the research question, patterns, is qualitative by nature and therefore not countable or quantifiable which makes a quantitative methodology as an alternative approach hardly applicable.

3.2 Case Selection and Data Collection

Eisenhardt (1989) identifies the selection of the cases as an important aspect of case study research, as all the results and limitations of the research depend on that initial selection of the investigation objects. However, a selective approach is necessary, as the quantity of information and material otherwise could become overwhelming for the researcher.

The cases selected for the present dissertation are Apple, Google and Microsoft. These firms are the key players in the Online Service Industry and exhibited high M&A activity in the years from 2005 to 2015. Selection criterion besides the industry affiliation and a leading role were the comparable product and service portfolios. All of these three companies operate in the hardware sector, sell their own operating systems, offer instant messaging and communication solutions and much more (see chapter 4). Other companies of the industry like Facebook, Amazon or Yahoo could also be interesting to analyze and compare, but cannot be considered in this research work due to a more focused product portfolio and therefore less overlapping with each other. Furthermore, the integration of these companies would lead to a broader scope and less focus of the analysis.

The data for the case studies is gathered from the companies' publications, market research reports and other third party content as well as through direct information from the companies.

3.3 Data Analysis

One common problem with case studies is that it can happen that “investigators start case studies without having the foggiest notion about how the evidence is to be analyzed.” (Yin, 2003, p. 109). To avoid such issues, the present thesis follows a clear concept: At first the collected

data about the M&A activities of the firms mentioned above is sorted into different categories. The categorization is proceeded regarding different strategic fields or positions within the industry. The acquired companies are sorted into these defined categories and constitute the collection of evidence. Additional evidence required is the strategic positioning before the acquisitions.

In a next step, these findings are interpreted. At first the respective M&A strategies are deduced from the collected evidence. These M&A strategies are linked to the general corporate strategies and to the strategies of the analyzed competitors in the next step. After this the strategic continuity is evaluated and strategic reasons for the M&A activity are deduced.

Finally, based on these results an estimation of the future development of the industry in general and the M&A activity in particular is given. By this way the research objective for the scientific community as well as for the practitioners' community is fulfilled. This approach of data analysis is conform to the recommendations of Eisenhardt (1989) and Yin (2003).

4 CASE STUDIES

In this chapter, case studies of Apple (4.1), Google (4.2) and Microsoft (4.3) are being developed. If not mentioned differently, the information for the company background section is gathered from the respective MarketLine company profile, Reuters and the companies' annual reports 2015, the chapter about corporate strategy is based on the information published by the company within the scope of its disclosure obligations in the annual reports 2015, and M&A history as well as deal details are obtained from the Reuters Thomson One deal database.

4.1 Apple

The case study starts with providing information about the company background, its history and its current operations (4.1.1). In the next subchapter (4.1.2) the corporate strategy is being explained. The case study closes with an overview of the Mergers and Acquisitions with the highest transaction volumes between the years 2005 and 2015 (4.1.3).

4.1.1 Company Background

Apple Inc. was founded in 1977 by Steven Wozniak and Steven P. Jobs. Already in 1976, the year before, they had developed the first Apple I computer. In the sequel, in 1980, Apple went public. During the following decade the company had to face several problems, as competition in the personal computer market became fiercer through market entries of new competitors like IBM and as the market launch of its own new Apple III computer in 1983 failed. The 1990ies were characterized by intense competition between Apple with its PowerPC chip architecture used in its Power Macs, running its own operating system on the one side, and Intel with its Pentium chip architecture, mainly running Microsoft Windows as operating system on the other side. In consequence Apple generated huge losses summing up to millions of US dollars. This disastrous economic situation led to Mr. Jobs returning to the company, focusing on Apple's core competences, divesting unprofitable parts of the product portfolio and establishing an agreement with the competitor Microsoft to offer a Mac version of its Office Suite. With the financial situation improving again, Apple started to develop new products and services by itself and also expanded into new, promising market segments through Mergers & Acquisitions.

In the decade after the year 2000, Apple continued to expand its product and service portfolio led by the following strategic decisions:

- Entering the market for digital music and media through the introduction of the first version of the portable music player Apple iPod in 2001 and the launch of iTunes, an online music store, in 2003. Outstanding feature of the iPod became Apple's collaboration with strategic partners in several other industries like car manufacturers and airlines. Audi, Honda, General Motors, and Volkswagen as examples implemented an iPod integration in their car multimedia systems. Air France, Delta and Emirates, just to mention a few out of many, integrated the iPod in their airplane flight entertainment systems.
- Leaving its special path in computer chip production in 2005 by switching from the own CPU production to the chips of Intel. This strategic move provided cost benefits, as the semiconductor industry relies highly on economies of scale. For a niche computer manufacturer, what Apple clearly still has been at this point in time, economies of scale are fairly limited.
- Introducing the innovative iPhone smartphone in 2007, the first cellphone of its kind which brought a touch screen and high usability together, gave Apple's growth another push. Leading in technology and design, especially in the first years the phones could be sold at extraordinary high margins, as competition had a technological gap.
- Continuing the path of offering high-end consumer electronics by launching the iPad in 2010, the tablet made for internet surfing, e-book reading, e-mail, gaming and multimedia content.
- Developing new technologies like the 2015 introduced Apple Watch, Apple's first smartwatch.
- With the iPhone 6 Apple launched in the USA and the UK its digital payment service Apple Pay.
- Providing content for the whole product family through the multimedia download store iTunes and the Apple App Store, which is the platform for application downloads. Content is also provided through a streaming service called iMusic and the iBook store.

In addition to developing innovative new products and to market them, Apple continuously improves its existing product lines and focuses in improving the customer experience. Therefore, Apple regularly updates its software packages containing the own operating system, and

multimedia as well as productivity tools. Apple also provides a cloud service named iCloud (former version known as MobileMe) in a basic version for free. This cloud service contains for example automatic synchronization of contacts and calendar events as well as an e-mail account functionality. Besides these main product categories mentioned, Apple also sells server solutions, hard- and software for professional graphics and video editing and multimedia solutions like Apple TV.

4.1.2 Corporate and Competitive Strategy

It is remarkable that Apple's business model focuses on hardware sales especially in the multimedia sector, supported by software offers that improve the customer experience and lead to a high interactivity and integration of all products and services.

Apple acts in highly competitive markets and has to face aggressive competition in all the sectors it is operating in. Especially in the sector of mobile communication and media devices, personal computers and other digital electronic devices Apple has to keep pace with competitors' frequent product introductions and rapid technological advances. Therefore, the company develops new technologies to improve its already existing products and to broaden its product portfolio. Besides own inventions, licensing of intellectual property and also acquisitions of third-party businesses and their technology play an important role.

A strategic challenge is the aggressive pricing of the competitors in the mobile device and PC sector. The intention of these price cuts is to gain or maintain market share. As a consequence of this competitive behavior the product margins of the whole industry decline. Apple defines the following as the principal competitive factors: price, product features (including security features), relative price and performance, product quality and reliability, design innovation, a strong third-party software and accessories ecosystem, marketing and distribution capability, service and support and corporate reputation.

Apple aims to grow further in the market for personal computers, mobile communication and media devices. As main risks in this field the company perceives that competitors could attempt to copy and adapt some of Apple's exclusive product and service features and offer these afterwards with an aggressive pricing strategy in combination with their products. As the rivaling companies are equipped with abundant financial resources, they would be able to continue this price-war strategy for an indefinite period of time and sell their products at very low or even negative margins.

In the digital content business Apple is also facing severe competition from other companies providing their own content in some cases even for free.

To withstand these competitive forces, Apple focuses on differentiation through further product and service innovations in the markets it is operating in. Another important aspect is the integration of its products and services to a seamless cross-platform ecosystem. The idea behind this is to provide the entire solution consisting of the hardware (iOS devices, Mac, Apple Watch and Apple TV), software (iOS, OS X, watchOS and tvOS), online services and distribution of digital content and applications (Internet Services).

To bind customers, Apple links its software inextricably to its hardware. OS X for example can generally not be run on PC hardware of other brands. As the users of its software consequently had to buy Apple hardware before, much of Apple's essential software like the operating system OS X is free for its users and contributes through free software updates to an improving customer experience over the time of use and hereby increases the probability of the customer buying Apple hardware once again at the end of the product lifecycle.

4.1.3 History of Mergers and Acquisitions

Between the years 2005 and 2015, regarding the Reuters Thomson One deal database Apple was involved in a total of 61 transactions classified as M&A deals (see Appendix 1). This chapter gives a brief overview of the biggest deals regarding transaction volume, taking the investment volume as a measure for financial effort and consequently for strategic importance.

Table 04: Historic M&As sorted by transaction volume- Apple

Deal Date	Target Name	Value (incl. Net Debt; in mil USD)
2014/05/28	Beats Electronics LLC	3,000.00
2012/07/27	AuthenTec Inc	370.80
2008/04/24	PA Semi Inc	268.00
2011/07/14	C3 Technologies AB	155.40
2008/12/18	Imagination Tech Grp PLC	4.51

Not considered in this overview are measures like share buyback programs, divestures and transactions of the other parties in multi-party deals.

4.2 Google

The case study starts with providing information about the company background, its history and its current operations (4.2.1). In the next subchapter (4.2.2) the corporate strategy is being explained. The case study closes with an overview of the Mergers and Acquisitions with the highest transaction volumes between the years 2005 and 2015 (4.2.3).

4.2.1 Company Background

Since October 2nd, 2015 Google Inc is integrated into Alphabet Inc, a holding structure owning Google and its former subsidiaries Calico (health), Nest (smart home), Fiber (gigabit internet), Google Ventures (investments), Google Capital (investments) and incubator projects such as Google X. Google Inc still holds the business for online search, ads, Google Maps, YouTube, Android including apps and cloud infrastructure. The Alphabet holding structure provides for the individual companies the opportunity to grow independently and follow their own strategies. The parent company also shows by this way the equal importance of the different subsidiaries and gives them “space” to grow.

Google’s begin dates back to the mid 90ies. At this time Google founders Sergey Brin and Larry Page collaborate on the development of a search engine which analyzes the links directing to a given website. After some years, in 1998 Google is founded by raising start capital of USD 1 million from private investors and venture capital firms. In the sequel, Google experiences exponential growth regarding its customer base and daily search queries. After time other companies choose Google as partner to provide web and site search services.

From the start Google expands its product and service portfolio from plain online search to:

- Internet based advertising services (e.g. AdWords, AdSense)
- Navigation solutions (e.g. Google Maps, Waze)
- Cloud Services (e.g. Gmail, Google Docs, Google Drive)
- Multimedia (e.g. YouTube, Picasa)
- Mobile communication devices and software (e.g. Android, Nexus One)

Besides expanding the product and service portfolio Google always focuses as well on expansion in a geographical sense to grow to the global company of today. The strategic importance of own product developments is getting obvious in form of Google Labs, Google's test zone for new inventions, or Google X Lab a research facility run by Google.

4.2.2 Corporate and Competitive Strategy

Google characterizes its business as being influenced by rapid change as well as new and disruptive technologies. Google faces competition in every aspect of its business, particularly from companies that seek to connect people through internet services, provide the with online information, and with relevant advertising.

Google's core business is it to sell online advertising to other companies. Most components of Google's product and service portfolio are therefore created to support this advertisement business in which the firm holds globally a leading position.

In the advertising business personal data of the relevant target groups is crucial. For this reason, Google is not only attempting to sell its advertising services to other companies, but also to gather as much data from the advertising-relevant target group. This is where the products and services designed for the end-consumer have their place in the strategy: Most services like the web search engine or Youtube are without any cost for the user. But on the one hand the user pays with his time, as for example in Youtube before a video starts a promotional clip has to be watched, and on the other hand he pays with his personal data, as Google collects the information about what he was watching and searching in Youtube to display tailored advertisement. So it can be stated that here the user and his data are the real product.

Herein lies one of the biggest risks of Google's strategy. Due to an increasing sensitivity for privacy, enforcement of privacy laws and the generally accepted use of Adblockers, the data collection and the advertisement business in general could become more difficult. Another potential problem is Google's exceptional market power which already led to legal problems concerning anti monopoly laws.

4.2.3 History of Mergers and Acquisitions

Between the years 2005 and 2015, regarding the Reuters Thomson One deal database Google was involved in a total of 209 transactions classified as M&A deals (see Appendix 2).

This chapter gives a brief overview of the biggest deals regarding transaction volume, taking the investment volume as a measure for financial effort and consequently for strategic importance.

Table 05: Historic M&As sorted by transaction volume - Google

Deal Date	Target Name	Value (incl. Net Debt; in mil USD)
2011/08/15	Motorola Mobility Holdings Inc	9,400.95
2014/01/13	Nest Labs Inc	3,200.00
2007/04/13	DoubleClick Inc	3,100.00
2010/12/14	111 Eighth Avenue	1,900.00
2006/10/09	YouTube Inc	1,650.00
2005/12/20	America Online Inc	1,000.00
2013/06/11	Waze Ltd	966.00
2009/11/09	AdMob Inc	750.00
2010/07/01	ITA Software Inc	700.00
2007/07/09	Postini Inc	625.00

Not considered in this overview are measures like share buyback programs, divestures and transactions of the other parties in multi-party deals.

4.3 Microsoft

The case study starts with providing information about the company background, its history and its current operations (4.3.1). In the next subchapter (4.3.2) the corporate strategy is being explained. The case study closes with an overview of the Mergers and Acquisitions with the highest transaction volumes between the years 2005 and 2015 (4.3.3).

4.3.1 Company Background

The Microsoft Corporation is founded by Bill Gates and Paul Allen in 1975. The first category of products is operating systems. Early Microsoft products of this type are Xenix, MS-DOS and PC-DOS in the early 1980ies. In 1985 Microsoft's blockbuster and still market standard operating system Windows is launched in its first version. In 1989 Microsoft Office, Microsoft's software bundle for text processing, spreadsheets and presentations is launched and with Visual Basic Microsoft introduces a developer software. In the following years, Microsoft is

further improving its existing software and regularly launching new versions like Windows 3.1, Windows 95 and Windows 95 plus. Besides this the office software has an addition to the family in form of Access, a database software and Microsoft's browser, the Internet Explorer is launched as well. With the Sidewinder 3D pro, the company also adds a type of hardware to its product portfolio. Perceiving the gaming market an attractive business segment, Microsoft also introduces its own video game console Xbox into the market in 2001. In 2009 Microsoft joins forces with Nokia to design, develop and market mobile productivity solutions. Also in 2009 Microsoft launched its new web search engine Bing. In 2011 Microsoft adds Skype, an online instant messenger and video chat service to its portfolio. In the same year its office suite is transformed into a cloud service possible to rent month by month. The suite's name changed to Office 365. Being a trend in the industry, many cooperative agreements and M&A transactions are done in the field of cloud computing and Microsoft further develops its operating system for mobile devices, Windows Mobile to Windows Phone. Demonstrating the importance of the mobile communications sector Microsoft even offers hardware products for this sector in form of its surface tablets for example.

4.3.2 Corporate and Competitive Strategy

The company mainly followed the strategic approach of being a software company and therefore offering products for private customers as well as professional solutions for companies. In past the business model was that of a software producer and software seller. Due to industry changes, that Microsoft overslept for a long time as well as software piracy issues, the company tries to change its strategic profile to a cloud service provider and with the launch of its own Surface Tablet to a hardware seller.

Consequently, in its annual report Microsoft defines the following five fields as its future opportunities:

- Productivity solutions, entertainment, communication, collaboration, learning, working, playing and interaction
- Higher integration to reach a seamless, cross-platform Windows ecosystem
- Cloud services
- New devices with intuitive ways of interaction
- Machine learning to make technology more intuitive

In all of these five fields, Microsoft strives to be in a leading position. Until now, Microsoft operates its business in these six segments:

- Devices and Consumer (D&C): D&C Licensing, Computing and Gaming Hardware, Phone Hardware and D&C Other
- Commercial: Commercial Licensing and Commercial Other

D&C Licensing contains the operating systems business, the Office Suite and all other software that is distributed via licensing. In the categories operating systems, productivity software and mobile communication Apple and Google are seen as the most important competitors.

Computing and Gaming Hardware describes Microsoft's Xbox business. In this strategic sector Microsoft competes primarily with Sony and Nintendo.

Phone Hardware is a strategic sector for Microsoft since it acquired Nokia in 2014. Competitors in this field are Apple, Samsung and many other.

D&C Other is about resale, Windows Store and Xbox marketplace, search advertising, display advertising, Office 365 Home and Personal to mention the most important ones. In most product and service groups of D&C Other Microsoft is confronted by competition in form of Google and Apple.

Commercial Licensing is about Microsoft's enterprise solutions namely volume licensing and server products for example. The competition in this sector comes mainly from business to business specialists like IBM, Oracle or SAP.

Commercial Other includes a variety of services like the Commercial Cloud, other online offerings as well as Microsoft Consulting Services. As the products and services are quite diverse, so are the competitors.

4.3.3 History of Mergers and Acquisitions

Between the years 2005 and 2015, regarding the Reuters Thomson One deal database Microsoft was involved in a total of 199 transactions classified as M&A deals (see Appendix 3). This chapter gives a brief overview of the biggest deals regarding transaction volume, taking the investment volume as a measure for financial effort and consequently for strategic importance.

Table 06: Historic M&As sorted by transaction volume - Microsoft

Deal Date	Target Name	Value (incl. Net Debt; in mil USD)
2008/02/01	Yahoo! Inc	41,860.12
2011/05/10	Skype Global Sarl	9,124.19
2007/05/18	aQuantive Inc	6,116.41
2013/09/03	Nokia-Devices & Services Bus	4,992.10
2014/09/15	Mojang AB	2,500.00
2012/06/25	Yammer Inc	1,200.00
2008/01/08	Fast Search & Transfer ASA	1,065.13
2008/02/11	Danger Inc	500.00
2012/04/30	Nook Media LLC	300.00
2007/06/29	Savvis Inc-Data Centers(2)	200.00

Not considered in this overview are measures like share buyback programs, divestures and transactions of the other parties in multi-party deals. The biggest deal mentioned in this overview is the attempt to take over Yahoo!. Although this transaction finally has not been executed, it anyways gives evidence of Microsoft's strategic intention.

5 MULTIPLE CASE STUDY ANALYSIS

In this chapter the case study data from chapter 4 is analyzed by applying the literature based framework from chapter 2.6. The preparation concerning the choice of the companies Apple, Google and Microsoft, as the research objects has already been justified before, so the analysis can start with the first step of the framework, the definition of the strategic groups the companies are operating in (5.1). Basis for this classification is the case study information about the products and services offered by the company (see chapter 4). In chapter 5.3 the transactions are put in relation to each other regarding the two dimensions, execution date of the transaction and strategic group concerned. After this, in chapter 5.4 the M&A transactions are analyzed regarding their offensive or defensive nature.

5.1 Definition of the strategic groups

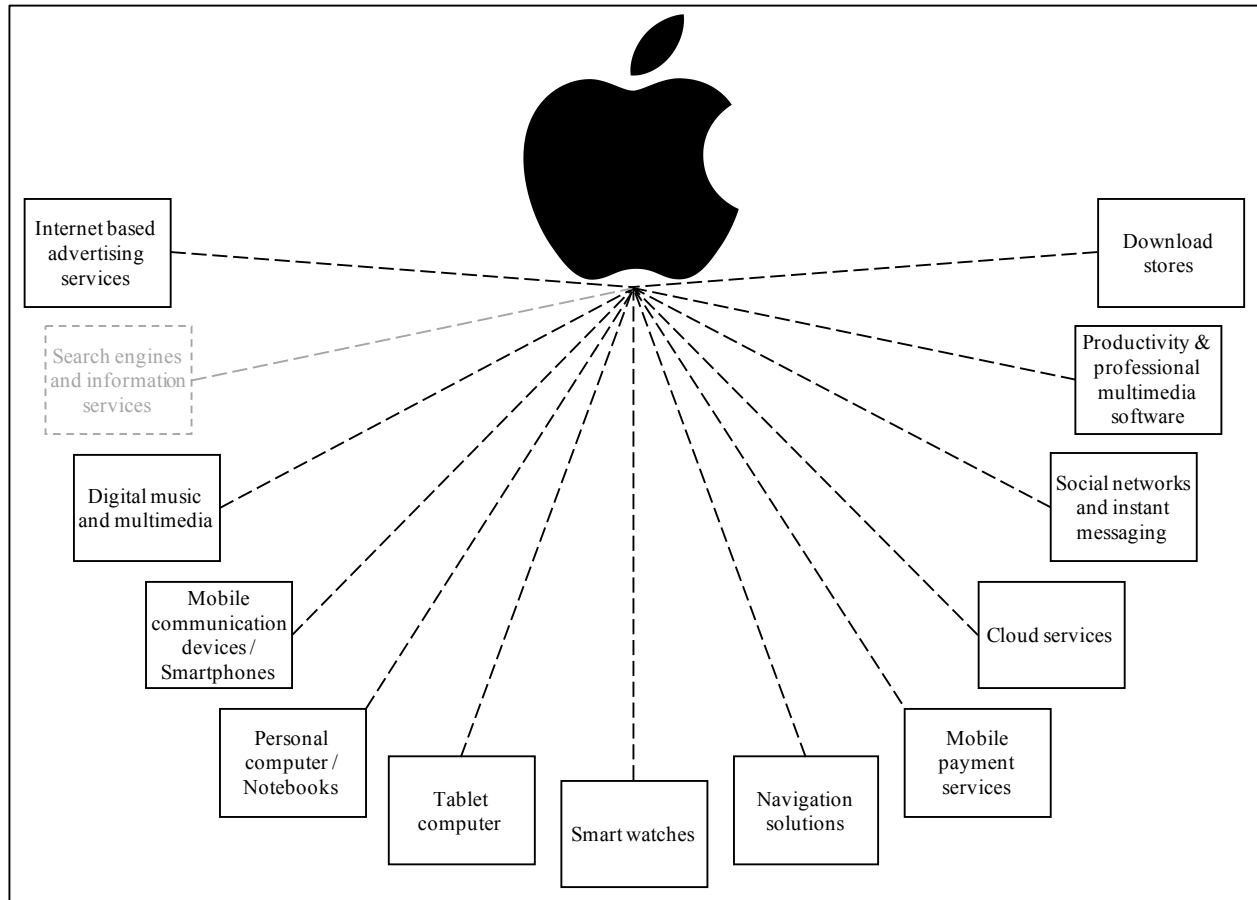
The current strategic positioning and consequently the strategic groups Apple, Google and Microsoft belong to can be derived from the respective company background and corporate strategy chapters. For the identification of the strategic groups, in which they compete with each other, at least two dimensions have to be defined. A dimension often used to characterize strategic groups is the geographic scope of operations. As one key feature of the internet service industry is its global scope and the independence in terms of place and time, a geographic distinction between the companies does not seem expedient. Another common characteristic which is regularly used for strategic group definition is the pricing of the products. In the case of the internet service industry many products and services are available for free for the end-user and due to the vast product range the three companies offer, the price as distinctive feature seems not applicable as well.

This wide product range though can offer another starting point. The categorization of the products and services offered can reveal matches between the analyzed firms. A second dimension to define the strategic group can be the type of customer targeted. In this context it can for example be differentiated between business clients and consumers. The subsequent definition and analysis of the strategic groups is therefore made by using the type of product or service as a first criterion and the targeted kind of customer as a second dimension to ensure that the companies compete in the same market for the same customers.

5.1.1 Apple

Apple's products and services can be segmented into the following strategic groups:

Figure 03: Strategic groups - Apple



Source: Author

- **Internet based advertising services:** With its mobile advertising platform iAd offers Apple a solution for application developers to directly integrate advertisements in their software. Apple creates income by charging a commission fee based on the transaction volume.
- **Search engines and information services:** Until today, Apple has no significant operations in this field. The digital personal assistant of iOS, Siri, works together with the major players of the search engine business. The same is the case with Apple's Spotlight search technology, which until now is rather a search interface than a search engine.

- **Digital music and multimedia:** For this market Apple offers various products in form of hardware, software and digital content. These products individually could justify their own strategic groups, but as they are highly integrated with each other and constituting together an own ecosystem they are jointly analyzed.

Products to classify in the hardware section are the digital music players iPod as playback devices for music and multimedia content. The iPhones which have similar music and multimedia functions are mentioned in the separate strategic group mobile communication devices as their scope and principal use goes far beyond plain music and multimedia functions. Another Apple hardware product to add to this category is Apple TV, a set-top-box to receive multimedia content from a variety of sources and to stream it to a compatible TV. Other hardware products in this segment are accessories like the Beats by Dr. Dre headphones, which are an Apple brand in the meantime.

On the software side Apple provides its software music player iTunes which at the same time also acts as an interface between the individual hardware devices and the online music store iTunes, that is one of the content offers of Apple. In addition to this Apple recently launched its music streaming service Apple Music, which lets users listen to music online charging a fixed monthly rate instead of buying single tracks individually.

- **Mobile communication devices / Smartphones:** Apple's product offer in this segment is its iPhone series. Having turned the market upside down with the introduction of the iPhone in the year 2007, Apple is still one of the leaders in this business segment. The iPhones include all the multimedia functions of the iPods, but also come with full telephone and messenger capabilities. Like all the other Apple hardware devices, the iPhone is embedded in the company's accessories, software and digital content environment.
- **Personal computer / notebooks:** In this category Apple offers its Macbook, Macbook Pro, and Macbook Air series as well as its iMac and Mac Pro. Whilst the Macbooks are laptop computers, the iMac and Mac Pro are desktop computers. The iMac hereby targets personal and office users, the Mac Pro professional users with special performance requirements. What all the hardware devices have in common is the operating system MacOS X which just runs on Apple hardware and therefore constitutes another unique

selling proposition. To round up the product offer in this segment, Apple also offers own accessories like for example its own keyboard solutions, mice and separate touch pads.

- **Tablet computer:** Apple's tablet offer is the iPad, which comes mainly with the same features as an iPod Touch but with a by far bigger display and advanced hardware specifications to increase the range of applications, makes e-mailing, web surfing and video consumption more comfortable and also can be used for basic office work like text processing and note taking.
- **Smart watches:** Smart watches are a recent phenomenon and therefore constitute a relatively new market segment. Apple competes in this market with its Apple Watch. In the current state of development smart watches generally just can unfold their full functionality in combination with a compatible smartphone, which is another evidence of the high level of integration in Apple's product portfolio.
- **Navigation Solutions:** In this segment Apple does not offer hardware, but a navigation application already integrated into its current versions of MacOS X and iOS.
- **Mobile payment services:** Until now, the mobile payment service Apple Pay is just available in the UK and the US and recently, in the end of November 2015 was launched as well in Canada and Australia, with more countries to come after. Apple pay is a contactless payment method, that works through the Near Field Communication (NFC) technology integrated in the new generations of Apple's mobile devices including the Apple Watch. Apple partners for this service with several credit card companies, banks and retailers, who have compatible payment terminals in use.
- **Cloud services:** The cloud service iCloud (successor of MobileMe, Apple's first cloud service offer) is another factor of the high level of device interaction and integration within Apple's product portfolio. The cloud service is the central interface for wireless data synchronization between the different types of Apple hardware. Besides this it offers among others an email functionality, diverse backup functions for applications and data and a device localization feature to backtrace lost or stolen devices.
- **Social Networks and Instant Messaging:** Apple does not offer a social network, but in form of iMessage an alternative to traditional short message services and instant messengers. It also integrates a video chat solution Facetime seamless into its different types of devices.

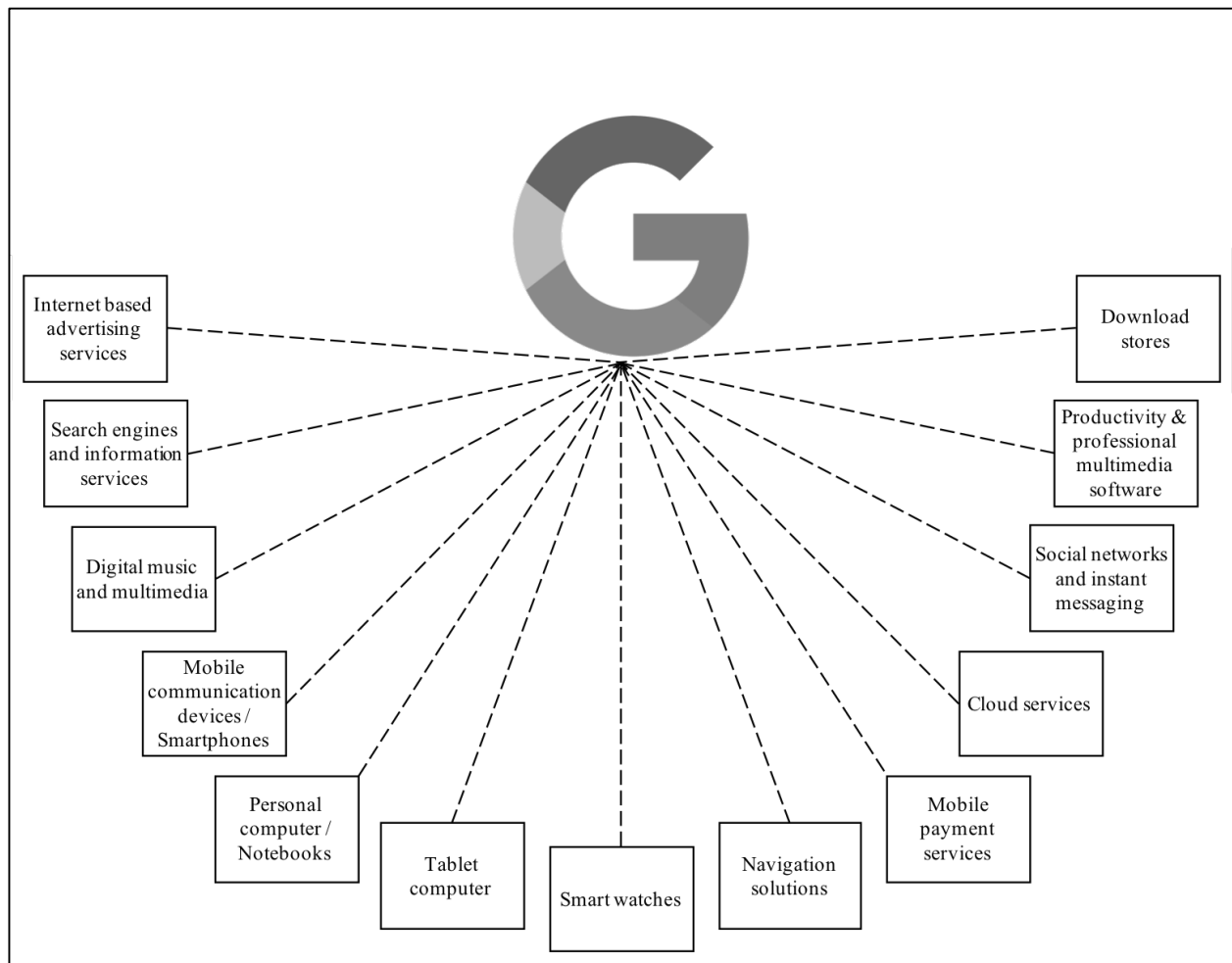
- **Productivity and professional multimedia software:** Besides offering the operation systems MacOS X (also available as a version for servers) and iOS for its hardware devices, Apple offers as well productivity tools like the iWork suite, multimedia applications like iMovie and GarageBand, and also software for professional video and audio edit like Final Cut Pro and Logic Pro X.
- **Download stores:** As mentioned before, Apple is not just a hardware producer, but also a provider of digital content. The online download stores of Apple serve various categories of digital content: Namely the iTunes Store for digital music, video, books and podcasts and the Apple App Store for applications for the mobile devices iPod, iPad and iPhone and the computers.

Targeted customer segments of Apple are private consumers as well as companies. The product/price strategy follows in general the approach high quality, special design and high price.

5.1.2 Google

The following strategic groups are derived from Google's product and service portfolio and correspond with the categories the company itself defines in its annual report for the fiscal year 2015:

Figure 04: Strategic groups - Google



Source: Author

- **Internet based advertising services:** The online advertising services are the core of Google's business model and the main income stream. All the other services and products are designed to support this core business. General customers are other companies that want to have their brand, products or services advertised online. Through its other services Google possess access to a big group of targeted consumers. While using

Google's services, user data is collected and compressed into user profiles. These profiles allow Google to sell targeted advertisement to its business clients. This tailored approach leads to higher success rates and consequently to higher prices Google can charge. The advertisement is not just shown in its own services, but also in external websites which get a compensation from Google for providing advertising space on their online presence. Google brands in the advertising sector are Google AdSense and Google AdWords.

- **Search engines and information services:** The center of Google's supportive service offer is its web search. The search is made for general purposes, but allows also targeted search in the categories products (Froogle), news (Google News), academic articles (Google Scholar), books (Google Books), and flights (Google Flights). The results of the general search can also be filtered for pictures and videos. Google sees itself competing in this field with other search engines like Yahoo and Microsoft's Bing for example. Competitors are also specialized search engines for jobs, flights or products, just to mention a few of the categories. Besides this competition comes from social networks like Facebook, other advertising platforms and traditional offline advertising.
- **Digital Music and Multimedia:** Google offers in this segment the Nexus player, which is a digital media player in form of a set-top-box to stream digital content on televisions. Google also offers the TV dongles Chromecast and Chromebit in this market segment. In addition, Google offers an online video streaming platform, Youtube.
- **Mobile communication devices / Smartphones:** In this strategic group Google mainly acts with its operating system Android and its browser Google Chrome. Android has in the meantime the biggest market share among the operating systems of smartphones (<http://www.idc.com/prodserv/smartphone-os-market-share.jsp>). This popularity is based on its open source approach and therefore free availability combined with low costs of implementation for other hardware producers. Google until now has not yet shown its aspiration of producing smartphone hardware by itself, but nevertheless offers an own line of smartphones under its brand, the Nexus series, which is produced in cooperation with hardware producers like LG, Huawei and HTC and sold co-branded. Google is responsible for the design, but generally not involved in the production process.
- **Personal computer / notebooks:** In this market Google follows a similar approach and mainly just offers the operating system ChromeOS. Laptops running ChromeOS are

labeled as Chromebooks, but like the smartphones not produced by Google itself but by real hardware producers like Acer or Samsung and sold under their brands. In the desktop computer segment Google applies as well this type of strategy and just delivers the operating system, while the so called Chromebox is sold under the brand of others.

- **Tablet computer:** With its Nexus series (Nexus 7, 9, 10) Google does not just cover the smartphone market, but also the tablet market. The strategic approach is the same as it is in the smartphone and laptop market. Google provides the operating system Android, original equipment manufacturers (OEM) produce the hardware and the final product is sold co-branded.
- **Smart watches:** For this type of gadget Google Android is used as operating system, but Google itself is not offering an own smart watch series. The watches running Android as operating system are marketed as Android Wear but produced by other companies sold under their own brands.
- **Navigation solutions:** In the field of navigation and cartography Google is with several solutions in the market: From Google Maps for route planning and navigation, Google Streetview for real-life visualizations of cities and villages and Google Earth for satellite perspective views to Waze, which is a social navigation application considering user inputs regarding the traffic situation.
- **Mobile payment services:** Google's mobile payment solution is Google Wallet, working as an online payment service as well as at retailers with NFC compatible terminals.
- **Cloud services:** The cloud service is the central interface for wireless data synchronization between the different types of Android hardware. Besides this it offers among others an email functionality, diverse backup functions for applications and the online storage Google Drive.
- **Social networks and instant messaging:** Google is operating a platform for online discussion Google Groups and as well its own social network Google+. For direct online communication Google provides Google Hangouts a communication platform combining video chat and instant messaging functionality.
- **Productivity and professional multimedia software:** Google provides the cloud based productivity suite Google Docs. This software bundle is completely run in the cloud and

provides standard text processing, spreadsheet and presentation functionality. Besides this with Google Picasa users can organize, archive and present their photos online.

- **Download stores:** The official store to download applications for Android devices is Google Play. This store has the sections music, books, newsstand, movies & TV and games.

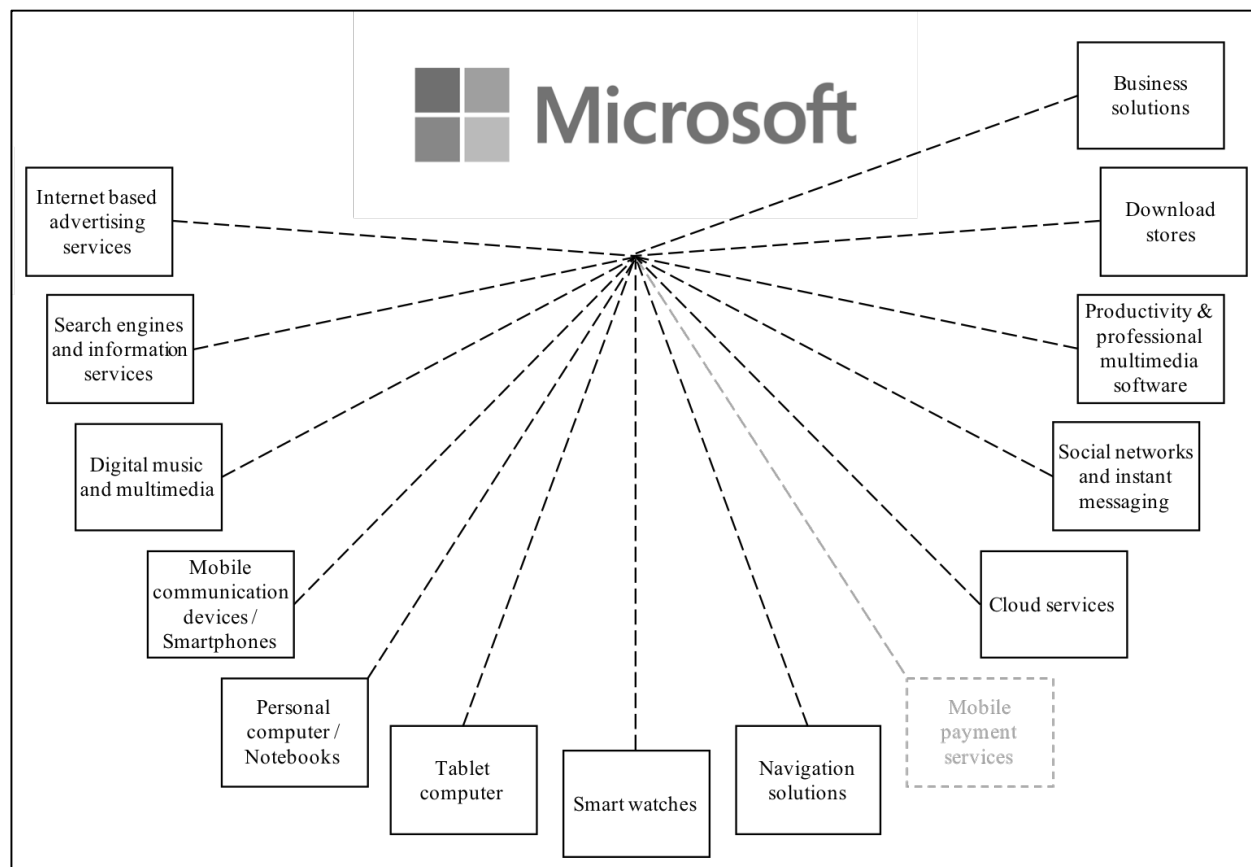
The Android operating system is characterized by a high flexibility and therefore adaptations for cars (Android Auto), televisions (Android TV) and other consumer electronics exist.

Google targets with its products and services private consumers as well as companies. Although Google tries to offer functionality similar or even better than Apple or Microsoft, it provides many of its services and products for free.

5.1.3 Microsoft

Analyzing Microsoft's product and service portfolio as well as its corporate strategy, activities in the following strategic groups can be found:

Figure 05: Strategic groups - Microsoft



Source: Author

- **Internet based advertising services:** Microsoft's activities in this field concentrate mainly on its search engine and information services business (see below) and are concentrated in the Advertiser and Publisher Solutions (APS) Group.
- **Search engines and information services:** Microsoft is in this market with its search engine Bing. Besides this, in form of msn.com the company offers an internet news platform.
- **Digital Music and Multimedia:** In this strategic group Microsoft tried to compete with its hardware music and media players Zune. As the Zune series did not gain significant market share, the company decided in 2011 to discontinue the Zune hardware and

promote Windows phones instead as multimedia devices. The Microsoft store online has offers of Music, Movie and TV downloads and streaming. Further home entertainment hardware sold by Microsoft is the Xbox gaming console. For this console Microsoft also operates an individual download store.

- **Mobile communication devices / Smartphones:** In past Microsoft only offered its operating system Windows Mobile / Windows Phone for original equipment manufacturers (OEM) to integrate it in their hardware. But with the acquisition of Nokia Microsoft started its own smartphone line Lumia, which is now the flagship series of Windows Mobile products.
- **Personal computer / notebooks:** In this market segment Microsoft is a leader with its operating system Windows. Traditionally Microsoft was not involved in the hardware business. In the end of 2015 though Microsoft unveiled its first own device marketed as a laptop, the Surface Book.
- **Tablet computer:** For tablets Microsoft offers the mobile version of its operating system Windows and has as well an own hardware line, the Surface and Surface Pro series.
- **Smart watches:** The smart watch of Microsoft has the name Microsoft Band and is compatible with smartphones using the operating systems of Microsoft, Google or Apple.
- **Navigation Solutions:** Microsoft's Streets & Trips has been discontinued but the company still offers the map and route planning service Bing Maps, which is accessible through a browser or through the application.
- **Mobile payment services:** In this field Microsoft does not yet show significant activities.
- **Social Networks and Instant Messaging:** Microsoft has a long history in instant messaging with its MSN respectively Live! Messenger. Since the acquisition of Skype all the messenger operations are bundled. Skype functions as a video chat and messenger application on multiple devices and is compatible with most of the common operating systems.
- **Productivity and professional multimedia software:** Microsoft Office is a complete productivity bundle consisting of Outlook (e-mailing), Word (text processing), Excel (spreadsheets), Powerpoint (presentations) and many more.
- **Cloud services:** Microsoft offers its Office suite also in a cloud based version which comes in addition with the online storage called Microsoft OneDrive.

- **Download stores:** Two download stores are operated by Microsoft. The Microsoft store for software downloads and music, movie and TV streaming, The Xbox store for Xbox games and applications.

Microsoft's products aim on two target groups: Private consumers as well as business clients. Especially the business clients play an import role due to volume licensing of Microsoft's software. Microsoft serves its business clients as well with special product categories like the Surface Hub a digital whiteboard solution, a commercial cloud and consulting services.

5.1.4 Summary

The three companies are active in various different strategic groups. Characteristic is that the business activities are largely overlapping. Exceptions to mention are the following three fields:

- **Business solutions:** Out of the three companies, just Microsoft focuses on this field and offers a large variety of specialized products and services. Some products of Apple and Google aim as well on Business Client, but the clear focus of these both are private end-users.
- **Mobile payment services:** While Apple and Google are aiming on fast gaining market share in this strategic group, Microsoft does not yet offer a relevant product or service.
- **Search engines and information services:** In this strategic group, Apple does not yet offer own solutions. Current search functionality is based on third party services.

5.2 Assignment of the M&A transactions to the strategic groups

The preceding chapter (5.1) defines the strategic groups in which regarding their current strategies Apple, Google and Microsoft compete with each other. In the following an analysis of the M&A transactions is done, assigning the transactions to the strategic groups identified.

5.2.1 Apple

According to the Reuters Thomson One deal database, Apple conducted five major transactions in the analyzed timeframe. The table below shows what products or services were the core business of the acquisition targets and assigns hereby the target companies to the respective strategic groups. It is remarkable, that three out of the five transactions happened in the field of mobile communication.

Table 07: Assignment of historic M&As to strategic groups - Apple

Deal Date	Target Name	Products / Industry	Strategic Group
2014/05/28	Beats Electronics LLC	Audio products	Digital Music and Multimedia
2012/07/27	AuthenTec Inc	Biometrics sensor technology	Mobile communication devices / Smartphones
2008/04/24	PA Semi Inc	Processor Architecture	Mobile communication devices / Smartphones
2011/07/14	C3 Technologies AB	3D mapping solutions	Navigation Solutions
2008/12/18	Imagination Tech Grp PLC	Graphics processors	Mobile communication devices / Smartphones, Tablet computer, smart watches

Overview over the strategic assets of interest for Apple:

- *Beats Electronics LLC*: Beats provides Apple access to own headphone technology, know-how in design and a music streaming service.
- *AuthenTec Inc*: This deals makes sense because of the biometrics sensor technology which Apple uses in its mobile devices. Current Apple devices for example are equipped with finger print sensors for quick and easy user authentication. Another point is the NFC know-how of AuthenTec. This is the hardware technology behind Apple Pay.
- *PA Semi Inc*: The asset which made this deal attractive for Apple is the processor architecture know-how of the PA Semi's engineers.

- *C3 Technologies AB*: This acquisition provides the knowledge and technology for Apple's own navigation service Apple Maps.
- *Imagination Tech Grp PLC*: Of this company Apple just acquired significant shares to get easier access to the companies' graphic processors' technology used in Apple's mobile devices.

5.2.2 Google

According to the Reuters Thomson One deal database, Google conducted many big transactions in the analyzed timeframe, of which for scope reasons the ten largest have been chosen for further analysis. The table below shows what products or services were the core business of the acquisition targets and assigns hereby the target companies to the respective strategic groups. It is remarkable, that the transactions are quite distributed over several strategic groups.

Table 08: Assignment of historic M&As to strategic groups - Google

Deal Date	Target Name	Products / Industry	Strategic Group
2011/08/15	Motorola Mobility Holdings Inc	Mobile phones, set-top boxes	Mobile communication devices / Smartphones, Digital Music and Multimedia
2014/01/13	Nest Labs Inc	Smart Home	Smart Home (Nest Labs belongs to Alphabet and is therefore no product of Google anymore)
2007/04/13	DoubleClick Inc	Ad serving	Internet based advertising services
2010/12/14	111 Eighth Avenue	Office buildings	Office buildings (111 Eighth Avenue) is a office building in which Google rent space before buying it)
2006/10/09	YouTube Inc	Online video platform	Digital Music and Multimedia
2005/12/20	America Online Inc	Digital Media	Search engines and information services
2013/06/11	Waze Ltd	Social Navigation	Navigation Solutions
2009/11/09	AdMob Inc	Mobile Advertisement	Internet based advertising

			services
2010/07/01	ITA Software Inc	Travel search engine	Search engines and information services
2007/07/09	Postini Inc	E-mail service	Cloud services

Overview over the strategic assets of interest for Google:

- *Motorola Mobility Holdings Inc:* This deal gives Google access to Motorola's patent portfolio. The rationale behind aiming on this was to protect other smartphone producers, using Android as operating system, from lawsuits. Besides this Motorola's hardware knowledge regarding smartphones and set-top boxes fits to Google's existing product portfolio.
- *Nest Labs Inc:* This acquisition gives Google access to smart home technology, which complements its offers in the smartphone and internet business. In the meantime, the smart home field is an organizationally independent part of the Alphabet Holding and therefore not anymore directly integrated in Google.
- *DoubleClick Inc:* The assets of interest in this case were DoubleClick's advertising products and services as well as the client base and know-how.
- *111 Eighth Avenue:* This deal is about an immobile investment. 111 Eighth Avenue is an office building in which Google rent office space before buying it.
- *YouTube Inc:* Strategic assets of interest in mobile streaming platforms is mainly the base of regular users. For Google this is of great value, as it can use YouTube as a channel for its advertising business. For Google the rationale behind the deal is to provide the infrastructure, users provide the content and consumer watch videos while generating views and clicks for Google's advertising business.
- *America Online Inc:* The America Online Deal was supposed to strengthen Google's position regarding search engines and information services. The transaction was limited to holding significant shares. After some time, as America Online share prices dropped, Google decided to divest to cut losses.
- *Waze:* The acquisition of this provider of social navigation came with a strategic fit to Google's Maps service. Especially by buying and transferring the user base which provides realtime traffic information is a valuable strategic asset which improves the navigation quality and gives Google a competitive edge over its competitors.

- *AdMob Inc:* This company offers advertising solutions for diverse mobile platforms. The solutions are either integrated into the mobile applications or mobile websites. Google acquired AdMob by bidding out Apple which was interested as well.
- *ITA Software Inc:* This deal gave Google access to search technology specialized on flights. As Google feels competition from specialized search engine providers the transaction fits to the strategy to maintain and improve the positioning in the search engine business.
- *Postini Inc:* Having started its own email service Gmail in 2004, the acquisition of Postini, due to its expertise in the field could help to accelerate the growth of the Gmail and cloud service in general.

5.2.3 Microsoft

According to the Thomson Reuters One Deal Database, Microsoft conducted many big transactions in the analyzed timeframe, of which for scope reasons the ten largest have been chosen for further analysis. The table below shows what products or services were the core business of the acquisition targets and assigns hereby the target companies to the respective strategic groups. It is remarkable, that with Danger Inc and Nokia-Devices & Services Bus even two cellphone hardware companies were bought by Microsoft. Besides this Microsoft also tried to buy Yahoo, one of its big competitors in the search engine and information services business.

Table 09: Assignment of historic M&As to strategic groups - Microsoft

Deal Date	Target Name	Products / Industry	Strategic Group
2008/02/01	Yahoo! Inc	Online news, search and advertising services	Search engines and information services, Internet based advertising services
2011/05/10	Skype Global Sarl	Video chat	Social Networks and Instant Messaging
2007/05/18	aQuantive Inc	Online marketing	Internet based advertising services
2013/09/03	Nokia-Devices & Services Bus	Mobile phones (hardware)	Mobile communication devices / Smartphones
2014/09/15	Mojang AB	Video gaming	Digital Music and Multimedia
2012/06/25	Yammer Inc	Social Networking for	Social Networks and Instant

		enterprises	Messaging
2008/01/08	Fast Search & Transfer ASA	Data search technologies	Search engines and information services
2008/02/11	Danger Inc	Mobile phones	Mobile communication devices / Smartphones
2012/04/30	Nook Media LLC	e-reading solutions	Digital Music and Multimedia
2007/06/29	Savvis Inc-Data Centers	Web hosting, Cloud services	Cloud services

Overview over the strategic assets of interest for Microsoft:

- *Yahoo! Inc:* Joining forces with Yahoo! had given both companies the opportunity to create synergies with their search engines, information services and internet based advertising services to narrow the gap to Google. Yahoo refused the offer of Microsoft as too low.
- *Skype Global Sarl:* At the time of the acquisition Skype was a fast way for Microsoft to gain technology and a customer base to compete with Apple's FaceTime and Google's Hangouts.
- *aQuantive Inc:* Brings digital marketing expertise to boost Microsoft's advertisement section.
- *Nokia-Devices & Services Bus:* This deal gives Microsoft access to Nokia's hardware knowledge regarding smartphones and in sequence the opportunity to offer own hardware.
- *Mojang AB:* This company brings specific know-how of video games programming into Microsoft's portfolio. This adds well to Microsoft's hardware devices Xbox and its mobile devices.
- *Yammer Inc:* The strategic asset of this company is its expertise in providing social networks exclusively for enterprises. As the market for social networks for private end-users is already occupied by many rivals it makes sense for Microsoft to add Yammer to its portfolio especially as Microsoft itself has the B2B business as an important focus.
- *Fast Search & Transfer ASA:* Assets of this company are its search engine technology and the know-how of the staff.

- *Danger Inc:* Danger was a pioneer in the smartphone business with its sidekick models and the acquisition could enable the buyer a rapid entry into the market.
- *Nook Media LLC:* This company has as core assets knowledge and technology about e-reading solutions.
- *Savvis Inc-Data Centers:* Has strategic assets in the field of webhosting and cloud-services which could accelerate Microsoft's development in this area.

5.3 Assessment of the chronological relation

It is most practicable to conduct the assessment of the chronological relation between the M&A transactions separately for the individual strategic groups:

Table 10: Overview of Transactions – Digital music and multimedia

Deal Date	Buyer	Acquired	Products / Industry
2014/09/15	Microsoft	Mojang AB	Video gaming
2014/05/28	Apple	Beats Electronics LLC	Audio products
2012/04/30	Microsoft	Nook Media LLC	e-reading solutions
2011/08/15	Google	Motorola Mobility Holdings Inc	Mobile phones, set-top boxes
2006/10/09	Google	YouTube Inc	Online video platform

In this strategic group a concentration of M&A activity in the recent years 2011 – 2014 is characteristic.

Table 11: Overview of Transactions – Mobile communication devices / smartphones

Deal Date	Buyer	Acquired	Products / Industry
2013/09/03	Microsoft	Nokia-Devices & Services Bus	Mobile phones (hardware)
2012/07/27	Apple	AuthenTec Inc	Biometrics sensor technology
2011/08/15	Google	Motorola Mobility Holdings Inc	Mobile phones, set-top boxes
2008/12/18	Apple	Imagination Tech Grp PLC	Graphics processors
2008/04/24	Apple	PA Semi Inc	Processor Architecture
2008/02/11	Microsoft	Danger Inc	Mobile phones

In the strategic group of Mobile communication devices, a concentration of M&A activity in 2008 is remarkable.

Table 12: Overview of Transactions – Navigation Solutions

Deal Date	Buyer	Acquired	Products / Industry
2013/06/11	Google	Waze Ltd	Social Navigation
2011/07/14	Apple	C3 Technologies AB	3D mapping solutions

The M&A transactions in the strategic group of Navigation Solutions does not show a specific pattern regarding chronological relations with each other.

Table 13: Overview of Transactions – Search engines and information services

Deal Date	Buyer	Acquired	Products / Industry
2010/07/01	Google	ITA Software Inc	Travel search engine
2008/02/01	Microsoft	Yahoo! Inc	Online news, search and advertising services
2008/01/08	Microsoft	Fast Search & Transfer ASA	Data search technologies
2005/12/20	Google	America Online Inc	Digital Media

In 2008 there is a timely focused M&A initiative of Microsoft noticeable.

Table 14: Overview of Transactions – Internet based advertising services

Deal Date	Buyer	Acquired	Products / Industry
2009/11/09	Google	AdMob Inc	Mobile Advertisement
2008/02/01	Microsoft	Yahoo! Inc	Online news, search and advertising services
2007/05/18	Microsoft	aQuantive Inc	Online marketing
2007/04/13	Google	DoubleClick Inc	Ad serving

The M&A activities concerning internet based advertising services is concentrated in the years 2007 – 2009.

Table 15: Overview of Transactions – Cloud services

Deal Date	Buyer	Acquired	Products / Industry
2007/07/09	Google	Postini Inc	E-mail service
2007/06/29	Microsoft	Savvis Inc-Data Centers(2)	Web hosting, Cloud services

The two transactions of Google and Microsoft stand in a clear temporal context with each other.

Table 16: Overview of Transactions – Social networks and instant messaging

Deal Date	Buyer	Acquired	Products / Industry
2012/06/25	Microsoft	Yammer Inc	Social Networking for enterprises
2011/05/10	Microsoft	Skype Global Sarl	Video chat

5.4 Identification of the tactics applied

In this chapter the strategic tactics behind the M&A transactions in the strategic groups in common are analyzed.

5.4.1 Digital music and multimedia

In this strategic group is a high diversity of the M&A transactions identifiable. Although all the acquired companies belong to the entertainment sector, they do not directly compete with each other. Microsoft for example acquired a video game company while Apple bought Beats, a producer of headphones. These patterns in the strategic group Digital Music and Multimedia can be interpreted in various ways. One way to explain the behavior could be the size of the sector. As the digital music, multimedia and entertainment sector is a broad field, the companies can act without causing too much competitive pressure in the strategic group. Another interpretation is to see the M&A activities as an offensive act in form of a bypass strategy. What happens in this strategic group can describe a bypass tactic: Initially the direct confrontation with the competitor is avoided due to a different specialization. Having the control over a particular technology or a distribution channel offers the chance to attack from this position the competitor's core business in future. In our example with Microsoft and Apple this would mean, that Microsoft focuses at first on the success of its Xbox before it starts an attack from this position into the audio sector Apple is focusing on.

5.4.2 Mobile communication devices / smartphones

In this market segment, Apple pioneered in 2007 with its iPhone. Quickly Apple became a leader in the smartphone business consequently the acquisition of Danger Inc by Microsoft is a first aggressive move, trying to close the technology gap between the companies. The transaction can therefore be characterized as a frontal attack. Other examples for frontal attacks are the acquisitions of Motorola by Google and Nokia by Microsoft. Motorola and Nokia were both independent cellphone hardware producers. Google and Microsoft attack Apple frontally by combining the patents and knowhow of their acquisition targets with their own knowhow and their financial and marketing resources. Patents are often an issue in the mobile communication devices / smartphone segment. In the analyzed timeframe many patent related lawsuits took place, especially between Apple and Google. Suing the competitor can interfere with his growth

and help to bind his resources. When a company acquires patents of a key-technology a strategic advantage can result as competitors can be hindered to offer the same technology.

With its acquisitions of PA Semi Inc, a company known for its processor architecture, Imagination Tech Grp PLC, a firm producing graphics processors and AuthenTec Inc, providing biometrics sensor technology, Apple tries to keep a technological distance. The three transactions are done to maintain the leading position in the strategic group. This behavior is clearly defensive and is a good example for a fortress strategy.

5.4.3 Navigation solutions

The navigation solutions are for all three analyzed companies of a rather supportive character as the service is offered for free and especially for Microsoft and Apple it does not belong to the core business. This makes it even more remarkable, that Apple abandoned the cooperation with Google in this field in 2012 and introduced an own map service, Apple Maps, in the same time. This strategic move probably was not going so much into the direction of winning more for Apple, but more into the direction make Google loose something. Indeed, Google lost from one day to the other a big part of the iOS users and on iOS devices Apple Maps today has 3.5 times more users than Google Maps.

Although it is not Apple's core business the acquisition of C3 Technologies AB, a company for 3D mapping solutions fits in the company's strategy. The strategy is to compete with Google in general. Taking suddenly away a multi million user base can be a useful element of such an offensive strategy in form of a frontal attack.

Google's acquisition of Waze afterwards can therefore be classified as a defensive fortress strategy, as by this transaction Google improved its navigation solutions with the user contribution of Waze's social navigation service. For Google navigation solutions are already part of the core business as it combines it tightly with its advertising services.

5.4.4 Search engines and information services

In 2008 Microsoft tried a big frontal attack in the search engines business. Directly after acquiring Fast Search & Transfer ASA, Microsoft wanted to extend its attack with the proposed acquisition of Yahoo. The offer was rejected by Yahoo because of price reasons.

Google on the other side, to protect its position bought ITA Software Inc, a travel search engine company as part of a fortress tactic.

5.4.5 Internet based advertising services

Microsoft buying aQuantive Inc in 2007 and approaching Yahoo in 2008 can be seen due to the quantity and quality of its actions as conducting a frontal attack campaign against Google. In 2009 Google itself buys AdMob a mobile advertising company, to strengthen its position in the field of mobile advertising services.

5.4.6 Cloud services

The three companies also compete in the field of cloud services. In 2007 when the companies enforced their offers in the cloud, Microsoft and Google acquired almost at the same time other companies of this sector. The tactics behind these transactions are hard to evaluate. On the one hand both transactions could be classified as a frontal attack against each other and against Apple. On the other hand, it could be a defensive strategy like a flank protection not to get surprised by fast growing specialized competitors.

5.4.7 Social Networks and Instant Messaging

In this strategic group Apple offers its fully cross platform integrated Facetime and iMessage, Google its online platform Google + and its video chat software Google Hangouts. Microsoft attacks the both competitors with two acquisitions: First transaction to mention is the acquisition of Skype which increased Microsoft's customer base and came with state of the art technology and know-how. Secondly with the acquisition of Yammer Inc Microsoft is conducting a flank attack, taking the competition to the field of enterprise communication.

5.4.8 Interpretation

The analysis of the tactics applied showed a high intensity of competition in some strategic groups. Especially in the fields of mobile communication devices / smartphones Apple, Google and Microsoft conducted many transactions with high order volumes. As the competition is

tough, M&A is a common measure to acquire quickly the required resources, close the gap to the competitors and attack them.

Prevalent tactics of the analyzed companies regarding M&As are frontal attacks. This can be explained with the great financial resources the analyzed companies have due to their other fields of business and the rapid changing nature of the industry. Especially Microsoft which profits from a continuous cash inflow from its blockbusters Windows and Office is very active regarding M&A. Acquisitions were necessary for keeping up with competition as the company missed some trends in the industry. Although Apple's product portfolio encompasses as well many innovations, the quantity of M&As conducted by far lower compared to Google and Microsoft (Quantity of transactions between 2005 and 2015 regarding Reuters Thomson One deal database: Apple: 61, Google: 209, Microsoft: 199). This gives evidence, that innovation can also be reached through internal processes.

Table 17: Matrix of M&A tactics applied

Strategic groups	Apple	Google	Microsoft
Digital music and multimedia	Offensive	Offensive	Offensive
Mobile communication devices / smartphones	Defensive	Offensive	Offensive
Navigation solutions	Offensive	Defensive	No M&A activity
Search engines	No M&A activity	Defensive	Offensive
Internet based advertising services	No M&A activity	Defensive	Offensive
Cloud services	No M&A activity	Offensive	Offensive
Social networks and instant messaging	No M&A activity	No M&A activity	Offensive

6 FINDINGS AND OUTLOOK

This final chapter gives at first an overview of the findings and the limitations of the research (6.1). In chapter 6.2 further research is proposed and an estimation of further developments provided.

6.1 Findings and Limitations

The objective of this study is to identify strategic patterns in the M&A behavior of the three companies Apple, Google and Microsoft in the time from 2005 to 2015. The results should contribute to reduce a gap in academic literature and to give insights into the M&A mechanisms of the analyzed companies, to draw conclusions about future developments.

In order to reach these objectives, a 4-step framework has been derived from literature and a qualitative multiple case analysis methodology applied. The theoretical approach starts with clustering the operations of the analyzed companies into strategic groups. In a second step, the M&A activities are assigned to these identified groups. After that, the transactions are put into a temporal context with each other to provide a basis for interpreting the tactics applied.

The analysis defines 13 strategic groups in which the companies compete with each other. The intensity of M&A activity and the strategic approaches of the three companies depend on the respective strategic groups. Analyzing a selection of the up to 10 largest transactions per company in terms of transaction value between 2005 and 2015, just 7 of the 13 groups show relevant activities. Among these 7 groups, a large number of acquisitions with high volumes in recent years are especially found in the “mobile communication devices / smartphones” and “digital music and multimedia” sectors. These two fields are consequently the strategic groups in which, continuing the strategic patterns of the recent past, in the near future ongoing M&A activity can be expected. This corresponds to Venema (2010) who also predicts a large number of future transactions in the technology sector, namely mentioning Google as a leading player.

However, interpreting the results of this research its limitations have to be considered. First, it is generally not just the three analyzed companies alone that constitute the strategic groups defined. In the same groups other competitors are doing business and therefore the M&A transactions of Apple, Google and Microsoft could also be reactions towards the actions of other competitors. Another limiting aspect is the limitation to a part of the total amount of transactions. Among the 449 transactions conducted in the timeframe of the analysis due to the scope of the

research work just 25 of the biggest deals could be approached. Although the size of the transaction might be a good indicator of its strategic importance, among the minor transactions could be other deals of importance. Another necessary limitation is the restriction of the period of time to 10 years.

Despite these limitations, the analysis of the most recent ten years, and the top transactions of each of the three big players of the industry constitutes a remarkable step towards closing the existing gap in literature.

6.2 Further Research Opportunities and Outlook

Due to the limitations mentioned in the preceding chapter, further research could be conducted by integrating other competitors like for example Yahoo, Amazon, and Facebook into the scope of the analysis. Another approach could be to increase the number of transactions analyzed and extend the research for minor deals. This could help to gather more evidence for the strategic patterns and to better understand the strategic behavior. Another contribution could be to conduct research for the years before 2005 to reveal changes of strategic patterns in the M&A activities of the observed companies over time.

The companies fighting for supremacy in the online service industry are likely to continue with implementing M&A transactions in their growth strategies. This is due to the dynamics of this industry and of a “the winner takes it all” nature of several segments. An example for such a segment is the search engine business, in which Google as a leader receives the high income from the advertisement connected with its search engine. This income can be used to further improve the search engine technology and increase the distance to the competitors even further. Another example is Microsoft’s Office Suite. Accepted as a standard, alternative offers have difficulties to attract a critical mass of users to be profitable.

Another aspect is that the industry is fast changing. This can cause that business models which are successful today will suffer in the near future. Companies with advertisement as main income stream will experience pressure to adapt their strategy to a further acceptance and improvement of ad-blockers, which can threaten their income. Another point is regulatory issues as further consolidation driven by M&As can cause conflicts with monopoly laws.

Taking the stock price development of the observed companies as a measure of value creation the strategic reasons can also be supported from a financial perspective. Especially

Google and Apple could rapidly grow their valuation at the stock exchange and the analyzed timeframe and became some of the most expensive companies in the world. An explanation for the great success rate that can be assumed because of the stock price development is that the companies developed through this high amount of transactions the necessary managerial capabilities to improve the success rate. Especially as the acquisition targets are often young companies, they are more flexible and can better be integrated.

Considering the future challenges of the industry and the speed of innovation in the technology sector, a merger wave driven by the internet industry seems to be a realistic vision for the future, as M&As are a powerful measure to adapt rapidly to a changing competitive environment.

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APPENDIX

Appendix 1: Apple Deal List 2005 – 10/2015



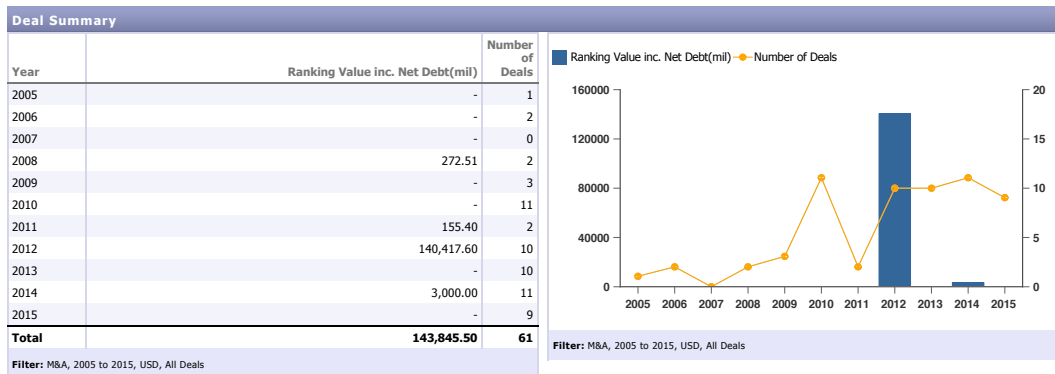
Apple Inc.

Thomson Reuters Deals

Note: Deal List is limited to 1000 deals.

Date: 10/20/15 02:39 GMT

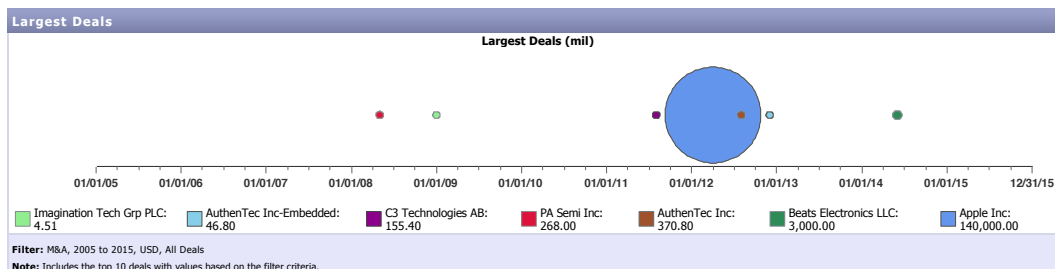
Product M&A	Time Period From: 2005 To: 2015	Currency USD	Deals Included All Deals
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Banking Relationships

Rank	Financial Advisors	Ranking Value inc. Net Debt(mil)	Number of Deals
1	Lazard	-	1
Total		143,845.50	61

Filter: M&A, 2005 to 2015, USD, All Deals



Deal Statistics

Deal Sizes(mil)	Top Countries			Top Industries		
	By Value	By #	By Value	By #		
Largest Deal	140,000.00	100%	66%	1 Technology	98%	
Smallest Deal	4.51	2 Sweden	5%	2 Cyclical Consumer Goods & Services	2%	
Average Deal	20,549.36	3 United Kingdom	8%	3 Industrials	11%	
Median Deal	268.00					

Filter: M&A, 2005 to 2015, USD, All Deals
Note: Analysis is based on the target and excludes unknown and zero value deal sizes.



Source: Thomson Reuters
Note: Data is continuously updated and is therefore subject to change.
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THOMSON REUTERS

Apple Inc.

Deal List					
Items - 61					
Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
03/19/12	Apple Inc	Apple Inc	140,000.00	-	-
05/28/14	Beats Electronics LLC	Apple Inc	3,000.00	-	-
07/27/12	AuthenTec Inc	Apple Inc	370.80	Piper Jaffray Cos (Advisory, Fairness Opinion)	-
04/24/08	PA Semi Inc	Apple Inc	268.00	-	-
07/14/11	C3 Technologies AB	Apple Inc	155.40	-	-
11/19/12	AuthenTec Inc-Embedded	Inside Secure SA	46.80	-	-
12/18/08	Imagination Tech Grp PLC	Apple Inc	4.51	-	-
02/23/05	TiVo Inc	Apple Computer Inc	-	-	-
05/25/06	PowerSchool Inc	Pearson PLC	-	Lazard (Advisory)	-
10/16/06	Silicon Color Inc	Apple Computer Inc	-	-	-
05/06/09	Twitter Inc	Apple Inc	-	-	-
12/04/09	la la Media Inc	Apple Inc	-	-	-
01/05/10	Quattro Wireless Inc	Apple Inc	-	-	-
04/22/10	ARM Holdings PLC	Apple Inc	-	-	-
04/21/10	Agnilux Inc	Google Inc	-	-	-
04/28/10	Intrinsity Inc	Apple Inc	-	-	-
04/28/10	SIRI Inc	Apple Inc	-	-	-
07/14/10	Poly9 Inc	Apple Inc	-	-	-
10/31/09	Placebase	Apple Inc	-	-	-
08/06/10	Handseeing Info Tech Co Ltd	Apple Inc	-	-	-
09/20/10	Polar Rose AB	Apple Inc	-	-	-
10/26/10	Sony Corp	Apple Inc	-	-	-
10/26/10	Sony Corp-Game Operations	Apple Inc	-	-	-
10/26/10	Walt Disney Co-Game Operations	Apple Inc	-	-	-
07/28/11	Barnes & Noble Inc	Apple Inc	-	-	-
01/06/12	Anobit Technologies Ltd	Apple Inc	-	-	-
02/23/12	Chomp Inc	Apple Inc	-	-	-
05/28/12	Redmatica Srl-Business Branch	Apple Inc	-	-	-
08/06/12	Thing Daemon Inc	Apple Inc	-	-	-
10/17/12	Particle LLC	Apple Inc	-	-	-
10/26/12	Apple Inc-Apple Store	Amancio Ortega	-	-	-
10/18/12	Color Labs Inc	Apple Inc	-	-	-
03/24/13	WiFiSLAM	Apple Inc	-	-	-
11/25/13	PrimeSense Ltd	Apple Inc	-	-	Lazard (Advisory)
07/19/13	Locationary Inc	Apple Inc	-	-	-
07/20/13	Hopstop.com Inc	Apple Inc	-	-	-
08/01/13	Passif Semiconductor Corp	Apple Inc	-	-	-
08/14/13	Matcha Inc	Apple Inc	-	-	-
08/22/13	Embarq Inc	Apple Inc	-	-	-
08/28/13	AlgoTrim AB	Apple Inc	-	-	-
10/02/13	Cue	Apple Inc	-	-	-
12/02/13	Topsy Labs Inc	Apple Inc	-	-	-
01/04/14	SnappyLabs	Apple Inc	-	-	-
02/16/14	Tesla Motors Inc	Apple Inc	-	-	-
02/21/14	Burstly Inc	Apple Inc	-	-	-
04/03/14	Novauris Technologies Ltd	Apple Inc	-	-	-
05/03/14	LuxVue Technology Corp	Apple Inc	-	-	-
06/06/14	Simple Rules Inc	Apple Inc	-	-	-
07/27/14	Concept.io Inc	Apple Inc	-	-	-
09/10/14	Path Inc	Apple Inc	-	-	-
07/13/14	Apple-Mnfg Equip of Kameyama	Sharp Corp	-	-	-
09/23/14	Prss	Apple Inc	-	-	-
01/21/15	Semetric Ltd	Apple Inc	-	-	-
03/25/15	FoundationDB Inc	Apple Inc	-	-	-
04/08/15	Dryft	Apple Inc	-	-	-
04/14/15	Linx Imaging	Apple Inc	-	-	-
05/17/15	Coherent Navigation Inc	Apple Inc	-	-	-
05/28/15	Metaio GmbH	Apple Inc	-	-	-

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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**Apple Inc.**

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
09/16/15	Mapsense Inc	Apple Inc	-	-	-
10/05/15	VocalIQ Ltd	Apple Inc	-	-	-
10/05/15	Perceptio Inc	Apple Inc	-	-	-

Filter: M&A, 2005 to 2015, USD, All Deals

Note: Default sort is based on rank value.

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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Appendix 2: Google (Alphabet) Deal List 2005 – 10/2015



Alphabet Inc.

Thomson Reuters Deals

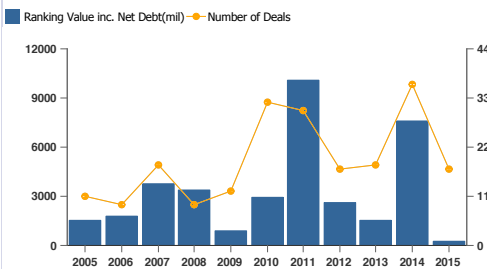
Note: Deal List is limited to 1000 deals.

Date: 10/19/15 02:41 GMT

Product M&A	Time Period From: 2005 To: 2015	Currency USD	Deals Included All Deals
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Deal Summary

Year	Ranking Value inc. Net Debt(mil)	Number of Deals
2005	1,524.29	11
2006	1,752.00	9
2007	3,732.00	18
2008	3,393.00	9
2009	884.31	12
2010	2,915.84	32
2011	10,070.96	30
2012	2,627.23	17
2013	1,526.50	18
2014	7,561.80	36
2015	207.24	17
Total	36,195.16	209

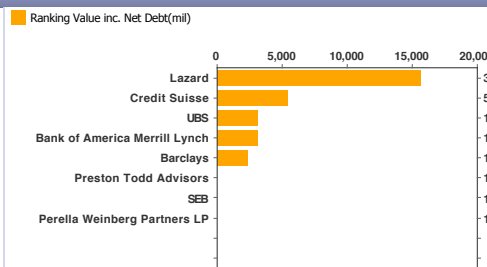


Filter: M&A, 2005 to 2015, USD, All Deals

Filter: M&A, 2005 to 2015, USD, All Deals

Banking Relationships

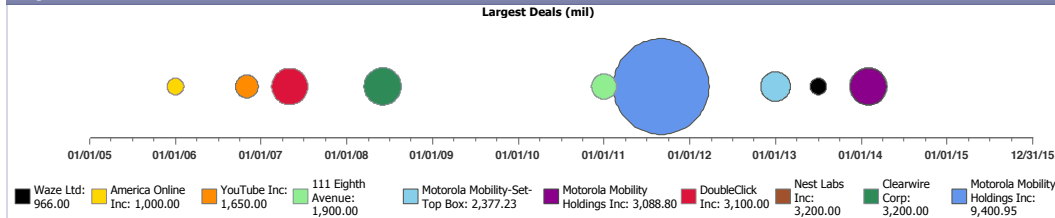
Rank	Financial Advisors	Ranking Value inc. Net Debt(mil)	Number of Deals
1	Lazard	15,689.74	3
2	Credit Suisse	5,461.59	5
3	UBS	3,200.00	1
3	Bank of America Merrill Lynch	3,200.00	1
4	Barclays	2,377.23	1
5	Preston Todd Advisors	60.00	1
6	SEB	58.84	1
7	Perella Weinberg Partners LP	-	1
Total		36,195.16	209



Filter: M&A, 2005 to 2015, USD, All Deals

Filter: M&A, 2005 to 2015, USD, All Deals
Note: Number of deals is shown on right axis.

Largest Deals



Filter: M&A, 2005 to 2015, USD, All Deals

Note: Includes the top 10 deals with values based on the filter criteria.

Deal Statistics

Deal Sizes(mil)	Top Countries	By Value	By #	Top Industries	By Value	By #
Largest Deal	1 United States	95%	76%	1 Technology	77%	77%
Smallest Deal	2 Israel	3%	2%	2 Industrials	10%	10%
Average Deal	3 France	1%	2%	3 Financials	7%	3%
Median Deal						

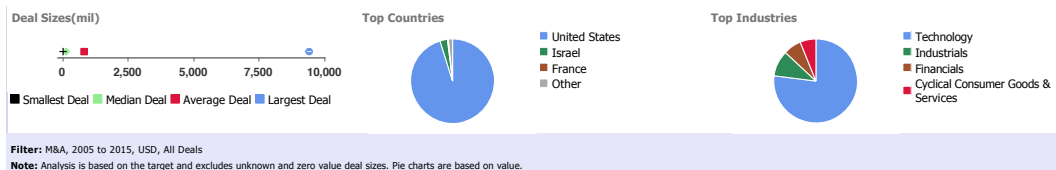
Filter: M&A, 2005 to 2015, USD, All Deals

Note: Analysis is based on the target and excludes unknown and zero value deal sizes.

Source: Thomson Reuters
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Alphabet Inc.



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Alphabet Inc.

Deal List

Items - 209

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
08/15/11	Motorola Mobility Holdings Inc	Google Inc	9,400.95	Barclays (Advisory); Centerview Partners LLC (Advisory, Fairness Opinion); Qatalyst Partners (Advisory, Fairness Opinion)	Lazard (Advisory)
05/07/08	Clearwire Corp	Investor Group	3,200.00	Merrill Lynch & Co Inc (Advisory); UBS Investment Bank (Advisory)	Citi (Advisory); JP Morgan & Co Inc (Advisory); Lehman Brothers (Advisory); Morgan Stanley (Advisory, Fairness Opinion)
01/13/14	Nest Labs Inc	Google Inc	3,200.00	-	Lazard (Advisory)
04/13/07	DoubleClick Inc	Google Inc	3,100.00	Credit Suisse Group (Advisory)	Bear Stearns & Co Inc (Advisory); Morgan Stanley (Advisory)
01/29/14	Motorola Mobility Holdings Inc	Lenovo Group Ltd	3,088.80	Lazard (Advisory)	Credit Suisse Group (Advisory)
12/19/12	Motorola Mobility-Set-Top Box	ARRIS Group Inc	2,377.23	Bank of America Merrill Lynch (Advisory); Evercore Partners (Advisory)	Barclays PLC (Advisory)
12/14/10	111 Eighth Avenue	Google Inc	1,900.00	-	-
10/09/06	YouTube Inc	Google Inc	1,650.00	Credit Suisse Group (Advisory)	-
12/20/05	America Online Inc	Google Inc	1,000.00	Bear Stearns & Co Inc (Advisory); Goldman Sachs & Co (Advisory)	-
06/11/13	Waze Ltd	Google Inc	966.00	-	-
11/09/09	AdMob Inc	Google Inc	750.00	Morgan Stanley (Advisory)	-
07/01/10	ITA Software Inc	Google Inc	700.00	-	Jefferies & Co Inc (Advisory, Fairness Opinion)
07/09/07	Postini Inc	Google Inc	625.00	Merrill Lynch & Co Inc (Advisory)	-
06/20/14	Dropcam Inc	Nest Labs Inc	555.00	-	Qatalyst Partners (Advisory)
06/01/05	Shopping.com Ltd	eBay Inc	524.29	Credit Suisse First Boston Corp (Advisory, Fairness Opinion)	Bank of America Securities LLC (Advisory); Goldman Sachs & Co (Advisory)
06/10/14	Skybox Imaging Inc	Google Inc	500.00	-	Morgan Stanley (Advisory)
07/31/12	Wildfire Interactive Inc	Google Inc	250.00	Goldman Sachs & Co (Advisory)	-
09/24/13	Building Portfolio(6)	Google Inc	235.50	-	-
05/16/11	AXA France Iard-Building	Google Inc	212.37	-	-
01/10/13	EDF-Spinning Spur Project	Google Inc	200.00	-	-
08/04/10	Slide Inc	Google Inc	182.00	-	-
09/08/11	Zagat Survey LLC	Google Inc	151.00	-	-
07/18/08	Begun	Google Inc	140.00	ING (Advisory)	-
02/17/11	Real Estate-Montevetro	Google Inc	135.55	-	-
08/05/09	On2 Technologies Inc	Google Inc	134.31	Covington Associates (Advisory, Fairness Opinion); Duff & Phelps Inc. (Fairness Opinion, Represented Board)	Credit Suisse Group (Advisory)
02/06/13	Channel Intelligence Inc	Google Inc	125.00	-	-
06/30/14	MapR Technologies Inc	Investor Group	110.00	-	-
01/16/06	dMarc Broadcasting Inc	Google Inc	102.00	-	-
10/24/11	Landmark at Shoreline	Google Inc	100.00	-	-
07/13/15	Crowdstrike Inc	Investor Group	100.00	-	-
03/07/11	BeatThatQuote.com Ltd	Google Inc	61.09	Ariadne Capital Ltd (Advisory)	-
02/27/15	Kobalt Music Group Ltd	Investor Group	60.00	Preston Todd Advisors (Advisory)	-
05/18/10	Global IP Solutions (GIPS)	Google Acquisition Hldgs Inc	58.84	ABG Sundal Collier (Advisory)	SEB (Advisory)
08/07/08	DoubleClick Performics	Publicis Groupe SA	53.00	-	Credit Suisse Group (Advisory)
03/05/14	Auction.com	Google Capital	50.00	-	-
01/25/10	DoubleClick JP-DART Business	Investor Group	45.00	-	-
06/10/15	Duolingo	Google Capital	45.00	-	-
02/19/14	Renaissance Learning Inc	Google Capital	40.00	-	-
04/28/10	LabPixies	Google Inc	25.00	-	-
03/10/14	Machinima Inc	Investor Group	18.00	-	-
01/25/11	fflick Inc	YouTube Inc	10.00	-	-
06/01/07	Panoramio	Google Inc	7.00	-	-
03/01/10	Picnik.com	Google Inc	5.00	-	-
06/25/15	Reputation VIP SAS	Investor Group	2.24	-	-
03/28/05	Urchin Software Corp	Google Inc	-	Viant Capital LLC (Advisory)	-
05/11/05	Dodgeball.com	Google Inc	-	-	-
07/31/05	Android Inc	Google Inc	-	-	-
09/15/05	Transformic Inc	Google Inc	-	-	-
07/19/05	Akwan	Google Brasil Internet Ltda	-	-	-

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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Alphabet Inc.

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
03/09/06	Upstartle LLC	Google Inc	-	-	-
03/15/06	@Last Software	Google Inc	-	-	-
08/15/06	Neven Vision Inc	Google Inc	-	-	Montgomery & Co (Advisory)
10/30/06	JotSpot Inc	Google Inc	-	-	-
12/18/06	Endoxon AG-European Mapping	Google Inc	-	-	-
01/04/07	Shenzhen Xunlei Network	Google Inc	-	-	-
01/20/07	Adscape Media Inc	Google Inc	-	-	-
02/01/07	Maxthon International Ltd	Google Inc	-	-	-
06/02/07	FeedBurner Inc	Google Inc	-	-	-
04/18/07	Tonic Systems Inc	Google Inc	-	-	-
05/30/07	GreenBorder Technologies Inc	Google Inc	-	-	-
06/06/07	PeakStream	Google Inc	-	-	-
06/19/07	Zenter	Google Inc	-	-	-
05/01/07	Marratech AB	Google Sweden AB	-	-	-
07/02/07	GrandCentral Communications	Google Inc	-	-	-
07/24/07	ImageAmerica	Google Inc	-	-	-
08/21/07	Tianya.cn	Google Inc	-	-	-
08/21/07	Baidu.com Inc	Google Inc	-	-	-
09/27/07	Zingku-Cert Asts	Google Inc	-	-	-
10/10/07	Jaiku Ltd	Google Inc	-	-	-
01/01/05	PhatBits	Google Inc	-	-	-
06/06/05	2Web Technologies	Google Inc	-	-	-
02/20/06	Measure Map	Google Inc	-	-	-
03/31/05	Zipdash Inc	Google Inc	-	-	-
11/01/05	Skia	Google Inc	-	-	-
01/06/06	Reqwireless Inc	Google Inc	-	-	-
06/04/08	Salesforce.com Inc	Google Inc	-	-	-
07/22/08	Digg	Google Inc	-	-	-
07/28/08	Seznam.cz AS	Google Inc	-	-	-
09/12/08	Tatter & Co	Google Inc	-	-	-
07/30/08	Omnisio Inc	Google Inc	-	-	-
02/12/09	Google Inc-Radio Automation Bu	WideOrbit Inc	-	-	-
04/01/08	Expedia Inc	Google Inc	-	-	-
04/03/09	Twitter Inc	Google Inc	-	-	-
05/11/09	The New York Times Co	Google Inc	-	-	-
09/16/09	reCAPTCHA	Google Inc	-	AGC Partners (Advisory)	-
10/15/09	Akamai Technologies Inc	Google Inc	-	-	-
11/09/09	Gizmo5	Google Inc	-	-	-
11/23/09	Teracent Corp	Google Inc	-	-	-
12/04/09	AppJet Inc	Google Inc	-	-	-
12/18/09	Yelp Inc	Google Inc	-	-	-
12/21/09	Socbay.com	Google Inc	-	-	-
03/05/10	DocVerse Inc	Google Inc	-	-	-
02/11/10	Mechanical Zoo Inc	Google Inc	-	-	-
02/17/10	reMail	Google Inc	-	-	-
03/05/10	Nuance Communications Inc	Google Inc	-	-	-
04/02/10	Episodic Inc	Google Inc	-	-	-
04/12/10	Plink Search Ltd	Google Inc	-	-	-
04/21/10	Agnitux Inc	Google Inc	-	-	-
05/02/10	BumpTop	Google Inc	-	-	-
05/21/10	Simplify Media Inc	Google Inc	-	-	-
05/21/10	Ruba Inc	Google Inc	-	-	-
06/02/10	Invite Media Inc	Google Inc	-	-	GCA Savvian Group Corp (Advisory)
07/16/10	Metaweb Technologies Inc	Google Inc	-	-	-
08/09/10	Jambool Inc	Google Inc	-	-	-
08/20/10	Like.com	Google Inc	-	-	-
08/26/10	Angstro Inc	Google Inc	-	-	-
08/30/10	SocialDeck Inc	Google Inc	-	-	-
09/13/10	MentorWave Technologies Ltd	Google Inc	-	-	-
10/01/10	BlindType Inc	Google Inc	-	-	-
10/08/10	Everything Is The Best LLC	Google Inc	-	-	-
11/19/10	Groupon Inc	Google Inc	-	-	-

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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Alphabet Inc.

Rank Date	Target Name	Acquiror Name	Ranking Value Inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
12/03/10	Widvine Technologies Inc	Google Inc	-	-	-
12/03/10	Phonetic Arts Ltd	Google Inc	-	-	-
12/14/10	Zetawire Inc	Google Inc	-	-	-
12/16/10	Next New Networks	YouTube Inc	-	-	-
10/29/10	HomeAway Inc	Google Ventures	-	-	-
01/12/11	eBook Technologies Inc	Google Inc	-	-	-
01/25/11	SayNow Inc	Google Inc	-	-	-
02/10/11	Twitter Inc	Google Inc	-	-	-
03/01/11	Zynamics GmbH	Google Inc	-	-	-
03/15/11	Green Parrot Pictures	YouTube Inc	-	-	-
04/07/11	Capital Stage-Solar Brandenbur	Google Inc	-	-	-
04/11/11	PushLife Inc	Google Inc	-	-	-
04/01/11	TalkBin	Google Inc	-	-	-
05/05/11	Skype Sarl	Google Inc	-	-	-
06/13/11	Admeld Inc	Google Inc	-	-	-
06/03/11	PostRank Inc	Google Inc	-	-	-
06/20/11	SageTV LLC	Google Inc	-	-	-
07/11/11	Punchd Labs Inc	Google Inc	-	-	-
07/21/11	Fridge	Google Inc	-	-	-
07/24/11	PittPatt	Google Inc	-	-	-
08/01/11	The Dealmap	Google Inc	-	-	GCA Savvian Group Corp (Advisory)
05/23/11	Sparkbuy Inc	Google Inc	-	-	-
09/02/11	Zave Networks Inc	Google Inc	-	-	-
09/19/11	DailyDeal GmbH	Google Inc	-	Corporate Finance Partners (Advisory)	-
11/10/11	Apture Inc	Google Inc	-	-	-
11/10/11	Katango Inc	Google Inc	-	-	-
12/09/11	RightsFlow Inc	YouTube Inc	-	-	-
12/13/11	Clever Sense Inc	Google Inc	-	-	-
08/13/12	John Wiley & Sons Inc-Consumer	Google Inc	-	-	Allen & Co Inc (Advisory)
04/03/12	TxVia Inc	Google Inc	-	-	-
04/26/12	SketchUp	Trimble Navigation Ltd	-	Lazard (Advisory)	-
04/12/12	Google Inc	Google Inc	-	-	Perella Weinberg Partners LP (Advisory)
06/04/12	Meebo.com Inc	Google Inc	-	-	-
07/03/13	Vevo LLC	Google Inc	-	-	-
06/05/12	Quickoffice Inc	Google Inc	-	-	-
07/20/12	Sparrow SAS	Google Inc	-	-	-
09/07/12	VirusTotal.com	Google Inc	-	-	-
09/17/12	Nik Software GmbH	Google Inc	-	-	-
10/04/12	Viewdle Inc	Motorola Mobility Holdings Inc	-	-	Mooreland Partners LLC (Advisory)
11/26/12	ICOA Inc	Google Inc	-	-	-
11/28/12	Incentive Targeting Inc	Google Inc	-	-	-
11/30/12	BufferBox Inc	Google Inc	-	-	-
12/10/12	Motorola Mobility-Home Bus	Pace PLC	-	-	-
12/12/12	Motorola-Tianjin Mnfr Op	Flextronics International Ltd	-	-	-
01/26/13	Motorola Mobility-Assets	Intel Corp	-	-	-
04/08/13	WhatsApp Inc	Google Inc	-	-	-
04/26/13	Wavii Inc	Google Inc	-	-	-
05/02/13	LendingClub Corp	Google Inc	-	-	-
05/22/13	Makani Power	Google Inc	-	-	-
08/30/13	WIMM Labs Inc	Google Inc	-	-	-
09/16/13	Bump Technologies Inc	Google Inc	-	-	-
10/02/13	Flutter Inc	Google Inc	-	-	-
10/22/13	FlexyCore	Google Inc	-	-	-
12/06/13	SCHAFT Inc	Google Inc	-	-	-
12/14/13	Boston Dynamics Inc	Google Inc	-	-	-
10/02/13	Bot Square Inc	Google Inc	-	-	-
01/15/14	Imperium Corp	Google Inc	-	-	-
01/27/14	Deepmind Technologies Ltd	Google Inc	-	Goldman Sachs & Co (Advisory)	-
02/21/14	Spider.io	Google Inc	-	-	-
03/12/14	Green Throttle Games	Google Inc	-	-	-
02/17/14	SlickLogin	Google Inc	-	-	-

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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Alphabet Inc.

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
04/14/14	Titan Aerospace	Google Inc	-	-	-
05/05/14	Rangespan	Google Inc	-	-	-
05/06/14	Adometry Inc	Google Inc	-	-	-
05/07/14	Appetas Inc	Google Inc	-	-	-
05/07/14	Stackdriver Inc	Google Inc	-	Pacific Crest Securities Inc (Advisory)	-
05/16/14	Quest Visual Inc	Google Inc	-	-	-
05/20/14	Enterproid Inc	Google Inc	-	-	-
06/19/14	mDialog Corp	Google Inc	-	-	-
06/23/14	Baarzo	Google Inc	-	-	-
06/25/14	Appurify Inc	Google Inc	-	-	-
07/01/14	Songza Inc	Google Inc	-	-	-
07/23/14	drawElements Oy	Google Inc	-	-	-
08/06/14	Tinker Square Inc	Google Inc	-	-	-
08/06/14	Directr Inc	YouTube Inc	-	-	-
08/15/14	Jetpac Inc	Google Inc	-	-	-
08/22/14	Gecko Design Inc	Google Inc	-	-	-
08/26/14	Zync Inc	Google Inc	-	-	-
09/10/14	Lynx Design Inc	Google Inc	-	-	-
09/11/14	Input Factory Inc	Google Inc	-	-	-
10/21/14	Firebase Inc	Google Inc	-	-	-
10/24/14	Revolv Inc	Nest Labs Inc	-	-	-
11/19/14	Relative Wave LLC	Google Inc	-	-	-
12/18/14	Vidmaker Inc	YouTube Inc	-	-	-
04/29/15	Softcard	Google Inc	-	-	Greenhill & Co, LLC (Advisory)
01/19/15	Space Exploration Tech Corp	Google Inc	-	-	-
02/05/15	Launchpad Toys Inc	Google Inc	-	-	-
02/24/15	Red Hot Labs Inc	Google Inc	-	-	-
02/26/15	AliphCom Inc	Google Inc	-	-	-
03/11/15	InMobi Pte Ltd	Google Inc	-	-	-
02/23/15	Athena Wireless Commun Inc	Google Inc	-	-	-
05/04/15	Timeful Inc	Google Inc	-	-	-
06/02/15	Lumedyne Technologies Inc	Google Inc	-	-	-
12/04/13	Meka Robotics LLC	Google Inc	-	-	-
06/23/15	Titan Outdoor LLC	Sidewalk Labs	-	-	-
07/21/15	Pixate Inc	Google Inc	-	-	-
09/30/15	Jibe Mobile Inc	Google Inc	-	-	-
10/13/15	Divshot Inc	Google Inc	-	-	-

Filter: M&A, 2005 to 2015, USD, All Deals
Note: Default sort is based on rank value.

Source: Thomson Reuters

Note: Data is continuously updated and is therefore subject to change.

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Appendix 3: Microsoft Deal List 2005 – 10/2015



Microsoft Corporation

Thomson Reuters Deals

Note: Deal List is limited to 1000 deals.

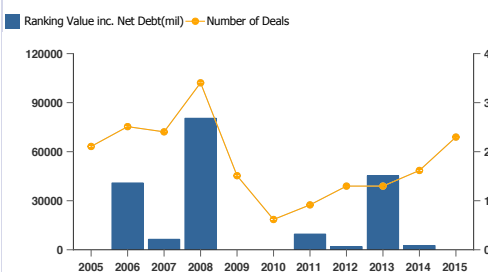
Date: 10/20/15 02:44 GMT

Product M&A	Time Period From: 2005	To: 2015	Currency USD	Deals Included All Deals
-----------------------	----------------------------------	----------	------------------------	------------------------------------

Deal Summary

Year	Ranking Value inc. Net Debt(mil)	Number of Deals
2005	79.01	21
2006	40,338.11	25
2007	6,362.41	24
2008	80,339.89	34
2009	585.00	15
2010	10.80	6
2011	9,135.96	9
2012	1,510.51	13
2013	44,992.10	13
2014	2,533.88	16
2015	-	23
Total	185,887.66	199

Filter: M&A, 2005 to 2015, USD, All Deals

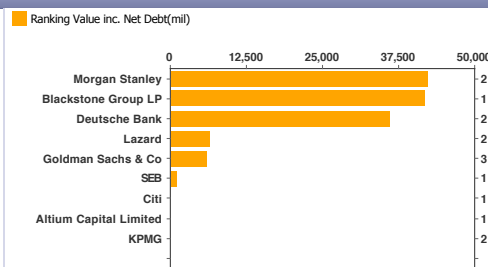


Filter: M&A, 2005 to 2015, USD, All Deals

Banking Relationships

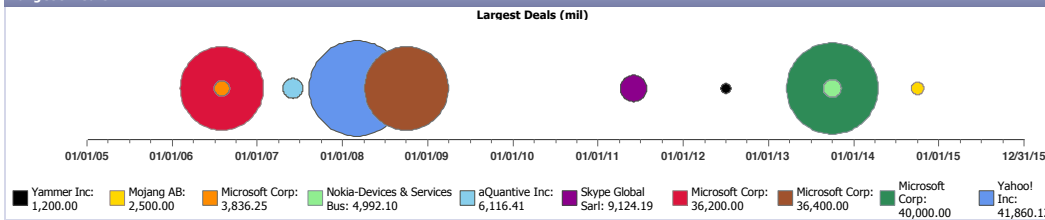
Rank	Financial Advisors	Ranking Value inc. Net Debt(mil)	Number of Deals
1	Morgan Stanley	42,390.12	2
2	Blackstone Group LP	41,860.12	1
3	Deutsche Bank	36,200.00	2
4	Lazard	6,530.30	2
5	Goldman Sachs & Co	6,057.23	3
6	SEB	1,065.13	1
7	Citi	-	1
7	Altium Capital Limited	-	1
7	KPMG	-	2
Total		185,887.66	199

Filter: M&A, 2005 to 2015, USD, All Deals



Filter: M&A, 2005 to 2015, USD, All Deals
Note: Number of deals is shown on right axis.

Largest Deals



Filter: M&A, 2005 to 2015, USD, All Deals

Note: Includes the top 10 deals with values based on the filter criteria.

Deal Statistics

Deal Sizes(mil)	Top Countries	By Value	By #	Top Industries	By Value	By #
Largest Deal	1 United States	90%	56%	1 Technology	97%	80%
Smallest Deal	2 Luxembourg	5%	1%	2 Cyclical Consumer Goods & Services	3%	10%
Average Deal	3 Finland	3%	2%	3 Industrials	0%	7%
Median Deal						

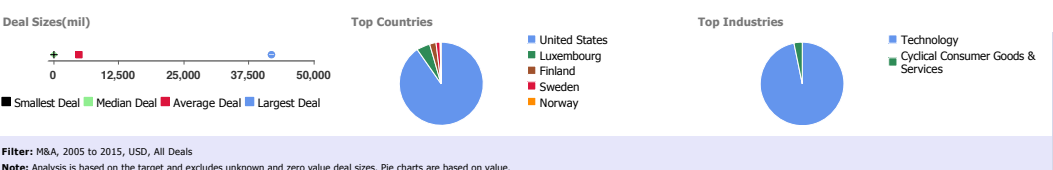
Filter: M&A, 2005 to 2015, USD, All Deals

Note: Analysis is based on the target and excludes unknown and zero value deal sizes.

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Microsoft Corporation



Source: Thomson Reuters
 Note: Data is continuously updated and is therefore subject to change.
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Microsoft Corporation

Deal List					
Items - 199					
Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
02/01/08	Yahoo! Inc	Microsoft Corp	41,860.12	Goldman Sachs & Co (Advisory); Lehman Brothers (Advisory); Moelis & Co (Advisory)	Blackstone Group LP (Advisory); Morgan Stanley (Advisory)
09/17/13	Microsoft Corp	Microsoft Corp	40,000.00	-	-
09/22/08	Microsoft Corp	Microsoft Corp	36,400.00	-	-
07/20/06	Microsoft Corp	Microsoft Corp	36,200.00	Deutsche Bank (Advisory)	-
05/10/11	Skype Global Sarl	Microsoft Corp	9,124.19	Goldman Sachs & Co (Advisory); JP Morgan & Co Inc (Advisory); Lazard (Advisory)	-
05/18/07	aQuantive Inc	Microsoft Corp	6,116.41	Lazard (Advisory)	Morgan Stanley (Fairness Opinion)
09/03/13	Nokia-Devices & Services Bus	Microsoft Corp	4,992.10	JP Morgan & Co Inc (Advisory)	Goldman Sachs & Co (Advisory)
07/20/06	Microsoft Corp	Microsoft Corp	3,836.25	Deutsche Bank (Dealer Manager); Goldman Sachs & Co (Dealer Manager)	-
09/15/14	Mojang AB	Microsoft Corp	2,500.00	JP Morgan & Co Inc (Advisory)	-
06/25/12	Yammer Inc	Microsoft Corp	1,200.00	-	Qatalyst Partners (Advisory)
01/08/08	Fast Search & Transfer ASA	Microsoft Corp	1,065.13	Merrill Lynch & Co Inc (Advisory)	Goldman Sachs & Co (Advisory); SEB (Advisory)
08/09/09	Avenue A Razorfish	Publicis Groupe SA	530.00	Blackstone Group LP (Advisory)	Morgan Stanley (Advisory)
02/11/08	Danger Inc	Microsoft Corp	500.00	Deutsche Bank (Advisory)	-
08/29/08	Greenfield Online Inc	Crisp Acquisition Corp	413.90	Lazard (Dealer Manager, Advisory)	Deutsche Bank (Advisory, Fairness Opinion)
04/30/12	Nook Media LLC	Microsoft Corp	300.00	Morgan Stanley (Advisory)	-
08/01/06	CareerBuilder Inc	Investor Group	284.00	-	Credit Suisse Group (Advisory)
06/29/07	Savvis Inc-Data Centers(2)	Microsoft Corp	200.00	-	-
04/14/08	Farecast Inc	Microsoft Corp	75.00	-	-
11/15/07	Musiwave	Microsoft Corp	46.00	Merrill Lynch & Co Inc (Advisory)	-
06/26/09	Greenfield Online Inc-Cert Ast	ToLuna PLC	40.00	Rothschild (Advisory)	-
06/30/05	Lang Chao International Ltd	Microsoft Corp	25.00	-	-
09/26/05	ChinaSoft International Ltd	Investor Group	20.00	-	-
02/13/06	MotionBridge SA	Microsoft Corp	17.86	Invest Securities (Advisory)	-
05/11/05	Tsinghua-Shenxun-Cert Asts	Microsoft Corp	15.00	-	IFIC Inc (Advisory)
06/01/09	Rosetta Biosoftware-Cert Asts	Microsoft Corp	15.00	-	-
02/04/14	Foursquare Labs Inc	Microsoft Corp	15.00	-	-
09/28/08	Wicresoft Co Ltd	Insignia Technology Co Ltd	14.81	-	-
04/07/11	Toyota Media Service Corp	Microsoft Corp	11.77	-	-
04/20/10	Dalian Hi-Think Computer Tech	Beijing Ultrapower Software Co	10.80	-	-
07/11/12	5th Finger	Merkle Inc	10.51	-	-
11/14/14	Wicresoft Co Ltd	Shanghai East-China Computer	9.48	-	-
12/16/14	Wicresoft Co Ltd	Shanghai Junwei Entrp Mgmt	9.39	-	-
12/22/05	HWW Ltd	ninemsn Pty Ltd	8.86	Grant Thornton UK LLP (1 Expert Report); Pitt Capital Partners (Advisory)	-
05/11/05	MessageCast Inc	MSN	7.00	-	-
03/19/08	Komoku Inc	Microsoft Corp	5.00	-	-
11/17/05	5th Finger	ninemsn Pty Ltd	3.15	-	-
03/11/08	OKWave	Microsoft Corp	2.52	-	-
08/27/08	Japan Intl Broadcasting Inc	Investor Group	1.73	-	-
06/12/08	myhome.com.au Ltd	Shane Dale	1.68	-	-
02/08/05	Sybari Software Inc	Microsoft Corp	-	-	Societe Generale SA (Advisory)
02/28/05	Microsoft Game-Sports Games	Ubisoft Entertainment SA	-	-	-
03/02/05	en'tegrate	Avanade Inc	-	-	-
03/07/05	StarBand Communications Inc	Spacenet Inc	-	-	-
03/10/05	Groove Networks Inc	Microsoft Corp	-	-	-
07/20/05	FrontBridge Technologies Inc	Microsoft Corp	-	Goldman Sachs & Co (Advisory)	-
06/30/05	Dalian Hi-Think Computer Tech	Microsoft Corp	-	-	-
07/15/05	Creative Technology Ltd	Microsoft Corp	-	-	-
08/29/05	Teleo Inc	Microsoft Corp	-	-	Viant Capital LLC (Advisory)
09/19/05	Alacris Inc	Microsoft Corp	-	TripleTree LLC (Advisory)	-
11/03/05	media-streams.com AG	Microsoft Corp	-	-	-
11/03/05	ByteTaxi Inc	Microsoft Corp	-	-	-
12/16/05	UMT-Software and IP Assets	Microsoft Corp	-	-	WR Hambrecht & Co LLC (Represented Seller)
12/23/05	MSNBC	NBC Universal Inc	-	-	-

Source: Thomson Reuters

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Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
12/23/05	MSNBC	NBC Universal Inc	-	-	-
01/28/06	Seadragon Software	Microsoft Corp	-	-	-
03/07/06	Apptimum Inc	Microsoft Corp	-	-	-
03/07/06	Onfolio Inc	Microsoft Corp	-	-	-
03/20/06	Vexcel Corp	Microsoft Corp	-	-	-
04/03/06	ProClarity Corp	Microsoft Corp	-	JMP Securities LLC (Advisory)	-
04/06/06	Lionhead Studios	Microsoft Game Studios	-	-	UBS Investment Bank (Advisory)
04/22/06	Microsoft Corp	eBay Inc	-	-	-
04/26/06	Massive Inc	Microsoft Corp	-	-	Goldman Sachs & Co (Advisory)
05/18/06	Whale Communications Ltd	Microsoft Corp	-	-	-
05/22/06	Softtricity Inc	Microsoft Corp	-	-	-
04/26/06	AssetMetrix Corp	Microsoft Corp	-	-	-
05/15/06	DeepMetrix Corp	Microsoft Corp	-	-	-
07/18/06	Winternals Software LP	Microsoft Corp	-	Evercore Partners (Advisory)	-
07/26/06	Azyxi Software	Microsoft Corp	-	-	Revolution Partners LLC (Advisory)
07/31/06	Sacom ApS	NetPartner AS	-	-	-
06/27/06	iView Multimedia Ltd	Microsoft Corp	-	-	-
09/26/06	Gteko Ltd	Microsoft Corp	-	-	-
10/02/06	DesktopStandard Corp	Microsoft Corp	-	-	WR Hambrecht & Co LLC (Advisory)
10/12/06	Colloquis Inc	Microsoft Corp	-	-	-
10/16/06	ninemsn Pty Ltd	Seeking Buyer	-	-	-
11/23/06	Tata Info Tech(Shanghai)Co Ltd	Microsoft Corp	-	-	-
02/23/07	Medstory Inc	Microsoft Corp	-	-	-
03/13/07	3P Learning Ltd	Investor Group	-	-	-
03/14/07	Tellme Networks Inc	Microsoft Corp	-	-	Morgan Stanley (Advisory)
03/26/07	devBiz Business Solutions LLC	Microsoft Corp	-	-	-
05/03/07	ScreenTonic SA	Microsoft Corp	-	-	Jefferies & Co Inc (Advisory)
05/11/07	Vexcel Canada Inc	MacDonald Dettwiler & Assoc	-	-	-
06/04/07	Engyro Corp	Microsoft Corp	-	-	-
06/07/07	Stratature Inc	Microsoft Corp	-	-	-
06/11/07	Dow Jones & Co Inc	Investor Group	-	-	-
07/26/07	AdeCN Inc	Microsoft Corp	-	-	-
08/29/07	Parlano Inc	Microsoft Corp	-	-	Revolution Partners LLC (Advisory)
09/04/07	Shanghai MSN Network Commu	Seeking Buyer	-	-	-
09/25/07	Facebook Inc	Microsoft Corp	-	-	-
10/02/07	Jellyfish.com Inc	Microsoft Corp	-	-	-
10/05/07	Newsvine Inc	MSNBC	-	-	-
10/29/07	Global Care Solutions-Assets	Microsoft Corp	-	-	-
11/01/07	HOB Business Solutions A/S	Avanade Inc	-	-	-
12/06/07	Comtech Global Engineering &	Microsoft Co Ltd	-	-	-
12/12/07	Multi Media Mapping Ltd	Microsoft Corp	-	KPMG Corporate Finance (Advisory)	-
01/22/08	Calista Technologies Inc	Microsoft Corp	-	-	-
05/04/07	Yahoo! Inc	Microsoft Corp	-	-	-
01/10/08	Logitech International SA	Microsoft Corp	-	-	-
03/12/08	Kidaro	Microsoft Corp	-	-	-
03/14/08	Rapt Inc	Microsoft Corp	-	Goldman Sachs & Co (Advisory)	-
03/18/08	Aspect Software Inc	Microsoft Corp	-	-	-
03/31/08	1-day	Microsoft Corp	-	-	-
04/28/08	Seznam.cz AS	Microsoft Corp	-	-	-
06/12/08	Zignals	Microsoft Corp	-	-	-
06/18/08	Navic Networks	Microsoft Corp	-	-	Jefferies & Co Inc (Advisory)
02/27/08	YaData Ltd	Microsoft Corp	-	-	-
06/26/08	MobiComp	Microsoft Corp	-	-	-
06/26/08	Powerset Inc	Microsoft Corp	-	-	-
06/04/08	Quadreon NV	Avanade Belgium Sprl	-	-	-
07/07/08	MSN Israel Ltd	Microsoft Corp	-	-	-
07/24/08	DATALlegro Inc	Microsoft Corp	-	-	Goldman Sachs & Co (Advisory)
03/31/08	90 Degree Software	Microsoft Corp	-	JMP Securities LLC (Advisory)	-
07/14/08	Zoomix Data Mastering Ltd	Microsoft Corp	-	-	-
10/10/08	Surpassing Tech Inc-Core	Microsoft Corp	-	-	-
11/01/08	Wysivwyg SL	Avenue A Razorfish	-	-	-
11/06/08	Yahoo! Inc	Microsoft Corp	-	-	-

Source: Thomson Reuters

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Microsoft Corporation

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
11/30/08	Yahoo! Inc-Online Search Bus	Microsoft Corp	-	-	-
02/11/09	Affle Pte Ltd	Microsoft Corp(I)Pvt Ltd	-	-	-
05/07/09	BigPark Inc	Microsoft Corp	-	-	-
12/04/09	Yahoo! Inc-Internet Search	Microsoft Corp-Internet Search	-	-	-
08/17/09	EveryBlock	MSNBC	-	-	-
09/23/09	Electronic Arts Inc	Microsoft Corp	-	-	-
09/24/09	Autonomy Corp PLC	Microsoft Corp	-	-	-
09/22/09	Interactive Supercomputing	Microsoft Corp	-	-	-
12/11/09	Opalis Software Inc	Microsoft Corp	-	-	-
11/09/09	SourceGear LLC-Teamprise Asts	Microsoft Corp	-	-	-
12/02/09	Microsoft Corp-Folio & NXT	Rocket Software Inc	-	-	-
12/10/09	Sentillion Inc	Microsoft Corp	-	-	-
02/11/10	CrowdStar	Microsoft Corp	-	-	-
10/31/08	WicreBiz Co Ltd	Wicresoft Co Ltd	-	-	-
10/31/08	Ziromid	Wicresoft Co Ltd	-	-	-
01/31/09	MobileXP Tech Co Ltd	Wicresoft Co Ltd	-	-	-
04/23/10	Ascentium-US Microsoft CRM Bus	Avanade Inc	-	-	-
10/07/10	Adobe Systems Inc	Microsoft Corp	-	-	-
10/06/10	AVicode Inc	Microsoft Corp	-	-	Pacific Crest Securities Inc (Advisory)
10/29/10	Canesta Inc	Microsoft Corp	-	-	-
01/05/07	Secured Dimensions	Microsoft Corp	-	-	-
05/17/11	Nokia Oyj-Handset Div	Microsoft Corp	-	-	-
08/15/11	Cudo Pty Ltd	Seeking Buyer	-	-	-
10/05/11	eCONNEX AG	Avanade Inc	-	-	-
10/12/11	Twisted Pixel Games LLC	Microsoft Corp	-	-	-
10/16/11	Microsoft-HIS Software Asts	Orion Health Asia Pacific	-	-	-
11/22/11	VideoSurf Inc	Microsoft Corp	-	-	-
12/20/11	Gao GmbH	LeGuide.com SA	-	-	Bryan Garnier & Co (Advisory)
02/07/12	24/7 Customer Inc	Microsoft Corp	-	-	-
06/06/12	Press Play Aps	Microsoft Corp	-	-	-
07/03/12	aQuantive Inc	Seeking Buyer	-	-	-
07/09/12	Perceptive Pixel Inc	Microsoft Corp	-	-	-
07/13/12	MSNBC	NBCUniversal Media LLC	-	-	-
10/04/12	PhoneFactor Inc	Microsoft Corp	-	-	-
10/16/12	StorSimple Inc	Microsoft Corp	-	-	-
10/17/12	MarketingPilot Software LLC	Microsoft Corp	-	-	-
11/13/12	Azaleos Corp	Avanade Inc	-	-	-
03/01/13	Atlas Advertiser Suite	Facebook Inc	-	Citi (Advisory)	-
06/05/12	Cybercom Grp Europe AB-Chinese	Wicresoft Co Ltd	-	-	-
01/02/13	iQ8 Group R2 Studios Inc	Microsoft Corp	-	-	-
02/07/13	Opstera Inc	Avanade Inc	-	-	-
03/19/13	Netbreeze GmbH	Microsoft Corp	-	Cartagena Capital GmbH (Rep. Shareholders)	-
04/08/13	Microsoft Corp-Mediaram Bus	Telefonaktiebolaget LM	-	-	-
05/09/13	Nook Media LLC-Digital Assets	Microsoft Corp	-	-	-
06/03/13	InCycle Software Inc-InRelease	Microsoft Corp	-	-	-
06/19/13	Nokia Oyj-Production Facility	Microsoft Corp	-	-	-
06/30/13	Cudo Pty Ltd	Deals.com.au Pty Ltd	-	-	-
10/14/13	ninemsn Pty Ltd	Consolidated Media Hldg Ltd	-	-	-
10/24/13	Apiphany Inc	Microsoft Corp	-	-	-
01/07/14	Parature Inc	Microsoft Corp	-	Canaccord Genuity (Advisory)	-
05/01/14	GreenButton	Microsoft Corp	-	-	-
05/28/14	CAPTAIN SAS	Microsoft Corp	-	-	-
07/02/14	Syntaxtree SARL	Microsoft Corp	-	-	-
07/11/14	InMage Systems Inc	Microsoft Corp	-	-	-
07/15/14	Aorato Ltd	Microsoft Corp	-	-	-
08/14/14	Xbox Entertainment Studios	Warner Bros Inc	-	-	-
01/20/15	Equivio Ltd	Microsoft Corp	-	-	-
12/01/14	Acomplil Inc	Microsoft Corp	-	-	-
12/11/14	BR Stadium GmbH	Microsoft Corp	-	-	-
12/18/14	Microsoft Corp-MixRadio	LINE Corp	-	-	-

Source: Thomson Reuters

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Microsoft Corporation

Rank Date	Target Name	Acquiror Name	Ranking Value inc. Net Debt(mil)	Target Advisors	Acquiror Advisors
12/15/14	Codenaunts GmbH	Microsoft Corp	-	-	-
01/23/15	Revolution Analytics Inc	Microsoft Corp	-	-	-
12/18/14	MixRadio	Line Corp	-	-	-
02/11/15	Sunrise Atelier Inc	Microsoft Corp	-	-	-
05/01/15	N Trig Ltd	Microsoft Corp	-	-	Needham & Co LLC (Advisory)
03/02/15	Woven Inc	Microsoft Corp	-	-	-
03/28/15	LiveLoop Inc	Microsoft Corp	-	-	-
04/14/15	Datazen Software Inc	Microsoft Corp	-	-	-
04/21/15	Caradigm USA LLC	Seeking Buyer	-	-	-
04/28/15	KCS net Holding AG	Avanade Inc	-	Mummert & Company (Advisory)	Altium Capital Limited (Advisory); KPMG (Advisory)
05/01/15	N Trig-Advanced Digital Pen	Microsoft Corp	-	-	Needham & Co LLC (Advisory)
06/02/15	6 Wunderkinder GmbH	Microsoft Corp	-	-	-
06/10/15	BlueStripe Software Inc	Microsoft Corp	-	-	KeyBanc Capital Markets Inc (Advisory)
06/29/15	Microsoft Corp-mapping Bus	Uber Technologies Inc	-	-	-
09/08/15	Adallom Inc	Microsoft Corp	-	-	Morgan Stanley (Advisory)
07/16/15	FieldOne Systems LLC	Microsoft Corp	-	Signal Hill Capital Group LLC (Advisory)	-
08/03/15	Incent Games Inc	Microsoft Corp	-	-	-
08/03/15	Cloud Talent Ltd	Avanade Inc	-	-	-
08/18/15	Mesosphere Inc	Microsoft Corp	-	-	-
09/03/15	VoloMetrix Inc	Microsoft Corp	-	-	-
09/11/15	Double Labs Inc	Microsoft Corp	-	-	-
09/28/15	Adxstudio Inc	Microsoft Corp	-	-	-
10/02/15	Telekinesys Research Ltd	Microsoft Corp	-	-	-
10/05/15	Microsoft Corp-Manaus Factory	Flextronics International Ltd	-	-	-

Filter: M&A, 2005 to 2015, USD, All Deals
Note: Default sort is based on rank value.