Target Selection and Evaluation Practices in Innovation-Driven Big Tech M&As

Case Studies from Google and IBM

Master's Thesis

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Abstract:

This research investigated the target selection and evaluation practices of Big Tech companies for M&A in the context of acquiring innovation. Using Eisenhardt’s case study method, the case studies of Google's acquisition of Motorola and IBM's acquisition of Red Hat were analyzed and compared through two key perspectives – overall corporate and specific strategic perspective. The study combined primary data collected through semi-structured interviews with M&A specialists from Google and IBM and publicly available secondary data.

The study found that for successful target selection, in the early-stage evaluation, an acquirer needs to consider balancing proactive and reactive strategies, evaluate the target from overall corporate and specific strategic perspectives, and balance an outward-looking approach to identifying high-value targets with an inward-looking assessment of specific internal business needs to efficiently mitigate risks. By employing these practices, acquirers are likely to increase their chances of making successful M&A decisions that contribute to long-term value creation.

Keywords: M&A, target selection, target evaluation, innovation, big tech

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1 Introduction

Innovation plays a crucial role in the survival and growth of organizations, especially in the context of Big Tech companies who have become the epitome of innovation (Ip, 2023). PDMA glossary provides a definition that describes innovation as "A new idea, method, or device. The act of creating a new product or process. The act includes invention as well as the work required to bring an idea or concept into final form" (PDMA Glossary, 2023). Big Tech, also known as the Tech Giants, is a term used to refer to the biggest and most powerful companies in the IT industry, such as Meta (formerly Facebook), Apple, Google, Microsoft, and Amazon (Academic Accelerator, 2023). While these five companies have commonly been synonymous with Big Tech, the term is not exclusive to them, and it is used more broadly, referring also to other technology companies that dominate the industry in their respective fields. (Academic Accelerator, 2023; Emeritus, 2023) Within this sector, mergers and acquisitions (M&A) have emerged as a prominent strategy to foster innovation, leverage synergies, and harness the transformative potential of emerging technologies (Rossi et al., 2012). As defined by Grau and Wallisch (2020, p. 75), M&A is "activity of purchasing or combining companies".

It is hard to imagine today's world without technology, which is defined as "the application of scientific inventions for the practical improvement of human life" (Britannica, 2023). Since technology serves as the foundation for the majority of functions in the modern world and relies on innovation, companies across all sectors recognized long ago that to keep pace with ever-evolving market needs and demands, and to remain relevant to their consumers, they must embrace a continuous process of innovation (Janjic & Radjenovic, 2019). This entails implementing digital transformation and relying on data-driven decisions, being adaptable and responsive to market

behavior, and making necessary adjustments to business structures and procedures (Verhoef et al., 2021). The Big Tech companies particularly, have introduced inventions that have revolutionized the world that we know today (Ezrachi & Stucke, 2022).

The significance of technological innovation in creating competitive advantage for companies, the overall value for consumers, society and shareholders has led to its integration as a crucial element in corporate strategies (Dhingra et al., 2018). While the approach to technological innovation varies from company to company, sometimes occurring spontaneously and other times being deliberately planned, one goal remains common, and it is to effectively manage it in order to maximize growth and profitability. Choosing the right strategies for the maintenance of technological innovation is of great importance because these strategies are significantly different from the management of other business aspects as it requires continuous testing and development of new theories and concepts. (Dogan, 2017)

Big Tech companies have profoundly influenced our daily routines, shaping the way we communicate, work, travel, shop, and even think. Their presence can be felt in almost every aspect of our lives. But how did these companies become so big that the magnitude of their impact is felt so strongly? They simply didn't do it all by themselves (Cabral, 2023). Throughout the years, they have strategically acquired numerous innovative businesses, propelling them to become some of the most powerful companies in our time (Glick & Ruetschlin, 2019). Observing the trajectory of these tech giants reveals a unique pattern in their expansion strategies. Initially, they all made a strong entrance into the market by introducing something truly groundbreaking. Google revolutionized information access with its Search engine, Amazon popularized online shopping and catalyzed the growth of e-commerce, and Apple redefined communication technology with the emergence of the iPhone (Alcantra et al., 2023).

Despite rapidly achieving success and popularity, these companies recognized that sustaining a viable business and ensuring long-term success required a carefully designed strategy focused on the future. They understood the importance of ongoing innovation to maintain revenue streams and outpace competitors. However, keeping up with innovation and market trends requires resources, research, and expertise often beyond their immediate reach (Roberts, 1988; Dezi et al., 2018). Consequently, they tapped into the vast potential of M&As, enabling them to achieve exponential growth (Dezi et al., 2018). At the same time, the challenging process of selecting and evaluating target companies to find the right fit becomes particularly pronounced in innovation-driven M&As. Determining whether a target company is truly innovative can be difficult, as many companies may exaggerate their capabilities or overestimate their market potential. Another significant challenge arises from the lack of transparency and communication between acquirers and targets. (Celik et al., 2022) Celik et al. (2022) found that acquirers' due diligence captures only 30% of the private information held by targets, and addressing these information frictions can boost M&A gains by 59%, making it a topic well worth researching.

The existing literature has primarily focused on operational factors in M&A, such as financial, legal, and cultural considerations, which are integral to the regular due diligence process once target selection and initial evaluations have been completed (Chelimsky, 1994; Jackson, 2001; Hassan, 2014). However, there is limited information on how companies execute target selection and evaluation from a strategic perspective, especially in the early stages. Given their substantial size, market influence, and involvement in M&A activities, exploring the approach of Big Tech companies becomes significant for both practitioners and scholars. Therefore, this research aims to delve into understanding the target selection and early-stage evaluation processes employed by Big Tech companies, particularly in the context of acquiring innovation. The core question the study

aims to answer is how Big Tech companies select and initially evaluate M&A targets to foster innovation and sustain market dominance. For this purpose, Eisenhardt's case study method was used to analyze and compare two case studies: Google's acquisition of Motorola and IBM's acquisition of Red Hat. As defined by Eisenhardt (1989, p. 534), "the case study is a research strategy that focuses on understanding the dynamics present within single settings".

The data was collected through interviews with M&A experts from Google and IBM as the primary source and publicly available secondary sources. By incorporating both primary and secondary data, this approach allows for building a foundational understanding of the cases using secondary data and then delving deeper by incorporating insights from specialists directly working at the acquiring companies, who are familiar with their strategies and processes.

The framework introduced by Park et al. (2013) was used to analyze specific aspects within the cases because it facilitates the selection and assessment of target companies in the context of M&A, with a focus on acquiring technological innovation. The framework specifically enables the identification of target companies closely aligned with the strategic goals of the M&A for enhancing technological capabilities. By considering both the overall corporate perspective and specific strategic perspectives, the proposed method aims to yield more robust and meaningful results compared to single-perspective approaches. The framework's efficiency was demonstrated through an empirical study using patent data related to flexible display technology (Park et al., 2013).

Following the framework, the cases were analyzed from two perspectives: overall corporate and specific strategic perspectives. The overall corporate perspective allows for uncovering the overall acquisition strategies of the acquirers. The focus is on understanding the motivations that preceded the acquisitions and shedding light on the associated risks, as well as whether effective risk

mitigation strategies were employed and how. Analyzing the selection and evaluation process from the specific strategic perspective offers insights into the specific types of innovation and desired outcomes sought by the acquirers. It also delves into the preliminary due diligence process, specifically focusing on the dimensions against which the targets were selected and the practices that the acquirers implemented in this regard.

2 Theoretic background

In this chapter, the objective is to present the fundamental theories and terminology that form the basis of this thesis's subject matter. It begins by defining the term 'Mergers and Acquisitions,' exploring its significance, purpose, and strategies involved in target companies' selection and evaluation processes. Subsequently, the term 'Innovation' is defined, shedding light on its general meaning and its application in the context of technology. Furthermore, the concept of 'Big Tech' is explained, clarifying its connotations and references.

2.1 Mergers and acquisitions

Throughout history, companies have commonly engaged in M&A. Even before the industrial era, smaller companies would come together to strengthen their market power or avoid financial crises (Meynerts-Stiller, 2019). M&As, therefore, represent strategic initiatives undertaken to achieve various objectives that can have a profound impact on the involved firms and the broader business landscape (Malik et al., 2014). They usually involve one company buying another, or its assets, which is known as acquisition, or combining forces to generate more value for all parties involved, which is known as merger. Generally, combining assets like this is expected to bring more value than acting individually, resulting in increased benefits known as synergy gains. (Ahern & Weston, 2007)

By combining resources, expertise, and market presence, companies involved in M&A aim to enhance their overall capabilities and profitability. M&As generally lead to improved operational efficiency, increased economies of scale, and broader access to resources and technologies. Moreover, M&A can facilitate diversification into new markets or product lines, reducing risk and

enhancing business resilience. (Gomes et al., 2021) However, the process of merging and/or acquiring is complex and risky, and requires careful planning and execution. It involves numerous considerations, such as legal and regulatory compliance, financial evaluations, cultural integration, and stakeholder management. (Marks & Mirvis, 2001) They require approval from regulatory bodies and shareholders, as well as the drafting of detailed agreements and contracts to ensure a smooth transition of ownership and operations. Successful M&As, therefore, have to rely on effective communication, collaboration, and the ability to align organizational structures and strategies. (Malik et al., 2014)

2.1.1 Definitions

While often used interchangeably, mergers and acquisitions are terms that refer to two different things. Nevertheless, they often go hand in hand and serve as a tool for achieving the same goals, such as expanding market share, gaining competitive advantages, or fostering synergies. (Malik et al., 2014) There are several definitions of mergers, as presented in Table 1, and acquisitions, as presented in Table 2.

Author	Definition
Letaifa (2017)	Mergers are two or more companies coming together and forming a unity where they join assets to gain more benefits, such as financial, strategic, and managerial.
Alao (2010)	Merging is the process of two or more organizations coming together to form one.
Horne & John (2004)	It is an initiative of merging two or more firms that results in the survival of only one firm as a legal entity.
Georgios (2011)	In a merger, multiple firms come together and transform into a unified entity.

Khan (2011)	Merger occurs when two or more firms come together and either form a single firm or establish one or more new firms, emphasizing multiple possibilities that can arise from a merger.

Table 1. Definitions of mergers by different authors

Author	Definition
Uludag (2013)	An acquisition is the purchase of one company by another.
Soundarya et al. (2018)	An acquisition is a strategic business transaction that occurs when one company acquires a significant controlling ownership interest in another or obtains ownership of its legally distinct subsidiary.
Baker & Kiymaz (2011)	In an acquisition, one company takes controlling ownership interest in another firm, typically buying the selected assets or shares of the target company.
Reed et.al. (2007)	An acquisition is the activity of transferring share ownership in a company to another company

Table 2. Definitions of acquisitions by different authors

While the authors mentioned in Table 1 somewhat differ in their definitions of mergers, they all agree that it involves the unity of two or multiple legal entities establishing a single organizational structure. In certain situations, a merger is a business integration where two or more companies unite to establish an entirely new company, causing the previous entities to disappear. This process is referred to as consolidation, which emphasizes the emergence of a completely new, integrated business entity distinct from its predecessor companies. (Baker & Kiymaz, 2011). Baker & Kiymaz (2011) further elaborate that a merger leads to the survival of one company, with the merged entity or entities ceasing to exist. Depamphilis (2018) extends this perspective, pointing out the legal ramifications by noting that once companies merge, they are no longer legally permitted to operate as separate entities.

Acquisitions, on the other hand, are entities formed when one company purchases another. For example, a larger company may decide to acquire a smaller one to boost innovation and remain competitive (Letaifa, 2017). Additionally, an acquisition can also involve the purchase of specific assets, such as a manufacturing facility to expand the acquiring company's operations. In other words, an acquisition is a process through which one company buys valuable assets from another company to expand or improve its own business. These assets can vary in scale and scope, ranging from acquiring individual components like a plant or division to acquiring an entire company. By acquiring these assets, the company gains control and ownership over them, allowing it to leverage its resources, expertise, and market presence to achieve various strategic goals. (Soundarya et al., 2018)

The main difference between mergers and acquisitions is that in mergers two or more entities form a single new entity, while in the acquisition one entity becomes an owner of another, either completely or some parts of it. According to Piesse et al. (2012), in an acquisition, the acquiring firm usually holds over 50% of the target's equity, while in a merger, a minimum of two firms come together to establish a new legal entity. The biggest similarities, however, are the goals that are meant to be achieved by both settings. These goals involve benefiting from the transaction in some way. For example, through getting access to knowledge and new technologies, entering new markets, expanding product portfolio, acquiring patents, sharing costs, etc. (Gomes et al., 2021)

2.1.2 Types of M&A

The types of M&As are divided into several categories, including those based on the relationships between the involved companies (horizontal, vertical, conglomerate, etc.), the nature of the

transaction (friendly or hostile), their presence on the stock market (private or public), the method of financing (cash or stock), and their geographical location (domestic or international) (Piesse, 2012). However, in the discourse on M&A types, authors typically refer to relationship types that explain the intent behind the M&A. This is particularly relevant in the context of this research, as comprehending the selection and evaluation process of Big Tech companies concerning the strategic fit of target companies with their objectives requires an understanding of the dynamics of these relationships and their motives. Therefore, when referring to M&A types in this research, I am specifically referring to the types based on relationships.

There are four main M&A types: horizontal, vertical, conglomerate, and congeneric (Majumdar et al., 2020; Kumar, 2018; Cox, 2006). Some authors recognize additional types, such as market extension, product extension, and reverse M&As (Kumar, 2018). In this section, explanations for all seven types are provided to convey a better understanding of their applications and contexts. For clarity, they are presented in Table 3.

Type	Explanation
Horizontal	Horizontal M&As occur when two companies operating in the same industry and at the same level of the production chain combine their operations. (Majumdar et al., 2020; Kumar, 2018) In other words, they may be in a direct competition with each other. The primary objective of a horizontal M&A is often to enhance market power, achieve economies of scale, or eliminate competition by consolidating similar businesses. By joining forces, they can reduce costs, increase market share, and leverage their combined expertise to gain a competitive advantage. (Kumar, 2018; Cox 2006)
Vertical	Vertical M&As involve the combination of companies operating at different stages of the production process or supply chain. In a vertical merger, a company integrates with either a supplier or a customer to streamline operations, reduce costs, or gain control over the supply chain. This type of M&A enables enhanced coordination, improved efficiency, and potentially greater market power through vertical integration. (Majumdar et al., 2020; Kumar, 2018; Cox 2006)

Conglomerate	Conglomerate M&As occur when companies operating in unrelated industries or with diverse business activities merge together. Conglomerate M&As are often driven by the desire to diversify business portfolios, enter new markets, or achieve synergistic benefits by leveraging different capabilities and resources (Kumar, 2018; Matsusaka, 1993).
Market Extension	Market extension M&As involve the consolidation of companies that sell the same products or services in different geographic markets. By combining their operations, companies can expand their market reach, gain access to new customer bases, and capitalize on economies of scale and synergies. Market extension M&As facilitate accelerated growth and can provide companies with a competitive advantage in untapped regions. (Kumar, 2018)
Product Extension	Product extension M&As occur when companies selling related, but not identical products or services merge together. Through such M&As, the combined entity can broaden its product or service offerings and appeal to diverse customer needs, and potentially increase market share or competitive advantage. Product extension M&As often leverage complementary resources, technologies, or distribution channels to enhance the overall value proposition. (Kumar, 2018)
Congeneric	Congeneric M&As involve the combination of companies operating in the same general industry but offering different products or services that are related or complementary to each other. These M&As allow companies to leverage their industry expertise, share resources, and expand their product or service portfolios to serve a broader customer base. Congeneric mergers can lead to increased market penetration, economies of scope, and synergistic benefits. (Majumdar et al., 2020; Kumar, 2018)
Reverse	Reverse M&As, also known as reverse takeovers or backdoor listings, involve a private company acquiring a publicly traded company. This strategic move allows the private company to bypass the traditional initial public offering (IPO) process and gain access to public markets. Reverse M&As can expedite the path to public listing, offering enhanced liquidity, increased visibility, and potential growth opportunities for the private company. (Kumar, 2018)

Table 3. M&A types

2.1.3 Theories behind M&A motives

Several authors have emphasized the importance of determining motives and objectives behind M&As in the target selection process (Agrawal et al., 1992; Magenheim & Mueller, 1988). This helps in understanding the factors contributing to the success or failure of target company selection and, more broadly, M&A outcomes (Seth et al., 2002). This section, therefore, presents existing theories that explain the reasons why companies decide to engage in M&A as a strategic solution.

Reasons and motives behind M&A endeavors have been extensively discussed by different authors, but no single theory comprehensively explains all M&A endeavors. However, achieving synergies emerged as one of the main reasons (Porter, 1985). Synergy is a term used to explain the ability of companies to benefit more from joining forces with other companies than working independently (Carpenter & Sanders, 2007). Other common motives include market trends and demands. Nguyen et al. (2012) conducted research, examining a sample of 3,520 acquisitions in the United States, and found that the most common motives are related to market timing, signifying changes in the market. Among the numerous explanations found in the existing literature, Piesse et al. (2012) consolidated eight theories behind the most common motives driving M&A initiatives, which are explained in this section.

1. **Efficiency theory**

Efficiency theory in the context of M&As, is about optimizing resource allocation and achieving common goals. The focus here is on creating synergies through combining and coordinating strengths while eliminating redundancies (Berkovitch & Narayanan, 1993; Ross et al., 2002).

This theory discusses differential efficiency and inefficiency management theories as two approaches to understanding M&As' motives (Piesse et al., 2012). The differential efficiency

theory applies to horizontal M&As, suggests that a more efficient company can improve the efficiency of another. In other words, a stronger company can help a weaker one become more effective. The inefficiency management theory is more common among conglomerates (unrelated industries) and proposes that if public knowledge reveals inefficiencies in a target company, any controlling group from different industries can use M&A to enhance its efficiency. The term 'controlling group' in this context refers to a group of entities, or shareholders that have significant influence or control over a target company, for example, through owning a substantial portion of the company's shares, having voting power, or holding key positions in the company's management. (Copeland and Weston, 1988)

2. Agency theory

Jensen and Meckling (1976) introduced agency theory, focusing on the conflict of interests between company owners (principals) and managers (agents) in M&A situations. The theory addresses the challenge of "moral hazard" in monitoring management efficiency due to the separation of ownership and control within organizations. One solution to this involves aligning management's interests with shareholders through contractual commitments and incentive schemes. Compensation plans tied to long-term performance can encourage managers to maximize the firm's market value, as evidenced by positive stock market reactions to takeover announcements by firms with such plans. However, effective management supervision is costly and challenging due to managers' specialized knowledge and potential manipulation of information. (Jensen & Meckling, 1976)

M&As can be a solution to inefficient management, but they also pose agency problems. Over-optimistic evaluations by acquirer management may lead to higher bid premiums, motivating managers to prioritize company expansion at the expense of shareholders. However, efficient

markets can distinguish between good and bad M&As, making M&A activity a mechanism for addressing managerial inefficiency (Jensen & Meckling, 1976).

3. Free Cash Flow

The free cash flow theory, linked to agency theory, involves excess cash not needed for profitable projects. Management may withhold it to maintain control and use it for M&As aligning with remuneration schemes benefiting their personal interests (Jensen, 1987; Rozeff, 1982). Retaining free cash flow enables investment flexibility but risks inefficiency (Mann & Sicherman, 1991) and makes monitoring managers difficult, as indicated in agency theory (Jensen, 1987). Therefore, holding onto free cash flow for an extended period may not be optimal.

Companies with substantial free cash flow are attractive targets for M&As, as acquiring companies prefer targets with strong cash positions to minimize the financial burden of debt. This means management may choose to use up free cash flow for M&A transactions rather than keeping it within the company (Jensen, 1986). The concern is that management decisions may not always be in the best interest of shareholders, and conflicts of interest may lead to suboptimal allocation of resources and decisions that benefit management more than the shareholders. Strategies, such as empowering outside directors or market forces through M&As can help mitigate these agency problems. (Gibbs, 1993; Jensen, 1987).

4. Market Power

Market power refers to a company's ability to control aspects like product quality, pricing, and supply due to its scale of operations. M&As are seen as a strategy for companies to expand their control and influence over a broader geographical area, thus increasing their market power. This

theory explains both horizontal and vertical M&As, which aim to achieve higher profits and remove barriers to entry. (Leigh and North, 1978; Stigler 1950)

During the 1960s, there was a significant increase in industrial concentration and horizontal M&As, driven by the pursuit of market power (Hart & Clarke, 1980). In the 1980s, many countries introduced antitrust laws to prevent too much power in one place and keep competition healthy. These laws were meant to stop big companies from working together to control the market and use resources unfairly. However, even with these laws, there were still a lot of cases where companies broke the rules. This made authorities carefully look at M&As that might harm competition. Antitrust authorities also scrutinize vertical and conglomerate takeovers, as a company's ability to control prices might not just depend on its size in one market but also on its overall size and financial strength. (Utton, 1982)

5. Diversification

The diversification theory explains conglomerate takeovers, which involve companies expanding into different industries to reduce risk and stabilize income (Stallworthy & Kharbanda, 1988). For example, in the UK, a significant number of takeovers between 1949 and 1973 involved conglomerates in the manufacturing and distribution sectors. Conglomerate takeovers have since become a common strategy for corporate growth. (Weston and Brigham, 1990)

The coinsurance hypothesis, proposed by Lewellen (1971), provides a theoretical basis for corporate diversification. It suggests that the value of a conglomerate is greater than the sum of its individual firms due to decreased risk and increased debt capacity. Diversification lowers the likelihood of corporate failure, making it easier for conglomerates to raise funds and increase market value. Moreover, corporate diversification enhances a firm's competitive ability. Large,

diversified firms can use their financial and operational competence to deter rivals through tactics like predatory pricing and cross subsidization, creating barriers to entry and driving smaller competitors out of the market. (Lewellen, 1971) However, game theory models (McCardle & Viswanathan, 1994) suggest that corporate diversification may not always increase market value for the company involved in M&A transaction, which contradicts the coinsurance hypothesis and weakens the argument that diversification is a motive for M&A. Overall, conglomerate M&A aim to reduce risk, stabilize income, and enhance competitive advantage, but their impact on market value is subject to further analysis and may not always be favorable.

6. Information

The information theory suggests that when companies make specific financial decisions or announcements, they are trying to share new information that not everyone knows yet (Jensen & Ruback, 1983). If the markets are working efficiently, this information can cause a change in the company's value. This same idea applies to mergers and acquisitions (M&A). When companies talk about merging or acquiring each other, the information they share can make the market see their stocks differently and give them more value, especially if they were undervalued before. (Jensen & Ruback, 1983)

According to Bradley et al. (1983), the information theory comes in two forms: the "kick-in-the-pants", where share prices change because the buyer’s management accepts higher-valued offer, and the "sitting-on-a-gold-mine", suggesting buyer’s management has valuable information about the seller, which justifies higher price. Both imply undisclosed information favoring the transaction. However, this theory relies on market efficiency and doesn't account for management manipulating share prices for personal gain (Ross, 1977).

7. Bankruptcy avoidance

The early economic literature did not pay much attention to bankruptcy avoidance as a motive for M&A due to the fact that it rarely occurred. However, some researchers suggest a potential link between M&A and bankruptcy (Altman, 1971). For some companies M&As are a strategic move to avoid bankruptcy (Shrieves & Stevens, 1979). On the other hand, financially unhealthy companies may not seem attractive to potential acquirers, but there are a few perspectives to consider in this regard. Acquirers see advantages in distressed targets, such as discounted prices, less competition, and potential synergies. For target shareholders, M&A is preferred over bankruptcy, since in this case they at least receive stock, which is better than ending up with nothing. However, the agency problem should be considered, as managers of distressed firms may reject buyers' offers to retain control. (Walker, 1992)

8. Accounting and Tax Rates

Tax rates can be a reason behind M&As. A company with a high tax rate may acquire an unsuccessful company to lower its overall tax payment. (Copeland and Weston, 1988) This extends to cross-border M&As, where companies registered in low-tax countries can benefit from reduced tax liability when transferring assets. The globalization of business has increased the opportunity for such transactions, which not only involves tax considerations but also have long-term strategic implications. (Ross et al., 2002)

There are two methods that are used in this regard, and they are pooling of interests and purchase arrangements. In pooling, the financial statements of merging firms are simply combined, while in an acquisition, the acquiring company adds the assets of the acquired company to its balance sheet, including goodwill. (Copeland and Weston, 1988) Goodwill represents the difference between the

purchase price and the book value of the acquired company's assets and is amortized over a period of up to 40 years (Hargave, 2023). These accounting treatments have shown different effects on post-M&A performance. The pooling method results in greater reported earnings and lower net assets, while the purchase method has the opposite effect. (Robinson & Shane, 1990) The pooling method was prohibited in the United States in 2001 (Moehrle, 2001) and therefore accounting is eliminated as a reason for the M&As in the United States.

2.1.4 Due diligence

Despite being perceived as opportunities for companies to grow and enhance their overall synergies, research has consistently shown that M&A transactions often fail to achieve their intended objectives (Cartwright & Cooper, 1995; Krug and Aguilera, 2005; Paumen, 2023). Simultaneously, multiple studies have highlighted that adequate target selection and initial evaluation are critical determinants for M&A success, both of which are integral steps in the preliminary phase of due diligence (Savovic & Pokrajcic, 2013; Angwin, 2020). Therefore, this section presents the definition and principles of due diligence.

Arslan (2009) defined due diligence as a thorough investigative process involving the collection and analysis of data prior to decision-making. This process involves gathering and evaluating data to make informed decisions, understanding the potential risks, benefits, strengths, and weaknesses associated with an asset or a company. Internal teams and external consultants play a crucial role in providing insights into the asset's strengths, weaknesses, strategic value, and competitive positioning within the industry (Angwin, 2001). Weiner (2010) describes due diligence as a

proactive activity, surpassing traditional audits. Its objective is to assess the latest data to mitigate risks and optimize value for investors engaged in M&A activities.

Patel (2018) further explains that due diligence extends beyond the realm of auditing, focusing primarily on accounting and legal compliance. He emphasizes the high importance of meticulous and comprehensive examination during the process, involving other factors such as company culture, corporate strategies, technology, skills, etc. Wangerin (2012; 2016) contributes an alternate definition, referring to due diligence as an investigative process undertaken by the buyers to determine whether acquiring a target company or an asset is viable. It also entails employing specific methodologies to ensure the acquisition value. According to Snow (2011), due diligence fosters confidence among buyers, driving them towards successful transactional outcomes. Furthermore, due diligence serves the purpose of eliminating misinterpretations and ensuring that the acquisition value proposed by the seller aligns with fair market standards (Mikesell & Wood, 2016; Shahatha et al., 2021). Overall, all authors agree that the due diligence stage holds significant importance within the M&A process, as it empowers the acquiring company to effectively manage associated risks and accomplish the acquisition objectives.

Savovic & Pokrajcic (2013) suggest that the best time to start the due diligence process is before the transaction preparation phase, as it allows for the utilization of publicly accessible information. They further define three main stages of due diligence, of which the first stage is relevant to the scope of this research: (a) preliminary due diligence, (b) due diligence review and (c) transactional due diligence.

In the preliminary due diligence phase, the acquiring company carefully selects the target company and conducts a valuation of both the company and the potential advantages of the acquisition. It

assesses publicly available information related to the target company, involving a thorough review of various data, such as its human resources, culture, intellectual property, financial statements, and other pertinent information—particularly for publicly listed firms. It's worth noting that the insights gained by the acquiring company during this stage are usually not much more profound compared to those available to other market participants who have access to publicly accessible information. (Savovic & Pokrajcic, 2013)

After the selection and valuation of the target company in the preliminary phase, the due diligence review begins with the signing of a confidentiality agreement and negotiations. The objective during this stage is to secure and assess confidential information about the target company. This information plays a crucial role in determining whether to proceed with the acquisition and, if so, in negotiating the specific terms of the transaction. The acquiring company, driven by concerns about potential litigation risks, seeks private data from the target company, while the target company is expected to transparently disclose it to reach a mutually beneficial agreement. (Savovic & Pokrajcic, 2013) However, to maximize the purchase price, a target company may sometimes decide to withhold critical information (Celik et al., 2022).

In the transactional due diligence phase, the acquiring company continues to collect private information and performs verification procedures to ensure the accuracy of the previously gathered data. Acquisition agreements are structured to support this verification process through statements and guarantees. This phase provides the acquiring company with crucial and precise information, facilitating an assessment of the fair value of the target’s net assets. The transaction phase serves as the last chance for the acquirer to comprehensively evaluate the purchase prior to assuming the risks associated with ownership. Upon the conclusion of transactional due diligence, the company takes ownership and assumes control of the target company. (Savovic & Pokrajcic, 2013)

2.1.5 Target selection and initial evaluation

Scriven (1991) defines evaluation as a trans-discipline involving processes such as collecting, analyzing, and standardizing data as the initial step, followed by the application of values or standards. According to Chelimsky (1997), the main purposes of evaluation are accountability, development, and knowledge functions.

Many studies have shown that M&As more often fail than succeed (Christensen et al., 2011; Park et al., 2013; Angwin, 2020). While the reasons for this vary, they often involve misevaluation of the target company (Pereiro, 2015). Therefore, selecting the right target that aligns with the strategic goals of the M&A has been recognized as fundamental in the target evaluation process (Christensen et al., 2011; Kengelbach & Roos, 2011). However, as Kaplan & Weisbach (1992) suggest, identifying the motives for initial strategy formulation precedes target selection. Therefore, while the primary focus in this study remains on the target evaluation during the selection phase, this research also considers the initial strategy formulation stage and its motives, as defined in section 2.1.3, to enhance comprehension of the selection decisions.

2.1.5.1 Target company selection

Selecting the right target is crucial in M&As to ensure success. Managers often focus on strategy and integration, but target selection is equally vital. The process involves creating a target profile aligned with the buyer's strategy, identifying potential targets, and assessing their fit with the profile (Venzin et al., 2018). However, the first step is usually defining M&A objectives and motives (Hassan, 2014). Based on those, in the evaluation phase, various factors are taken into consideration, such as the level of shareholding (Gaughan, 2010), innovation capabilities, cultural fit, geographic location (Chari & Chang, 2009; Dalton et al., 2003), expected restructuring (Faccio

& Masulis, 2005), settlement mode (cash, stock, or a combination of both), and the transaction (Branch & Yang, 2006; Sherman & Hart).

Since M&A deals are complex and uncertain, Venzin et al. (2018) suggest that building and maintaining a portfolio of potential targets over time is essential. This approach allows firms to gather more information, reducing risk and increasing the chances of success. Once the portfolio of potential targets is built, Venzin et al. (2018) further propose several criteria for their evaluation, as follows: degree of consistency with the overall strategy, presence of material requirements, organizational compatibility, financial feasibility, chance of contact, and identification of objectives of the seller. By following these criteria, the goal is to identify several potential candidates for comparison and ranking, rather than evaluating a single candidate. If the target is in the same or related sectors, the acquirer's management can make the selection. For more different markets or diversification, Venzin et al. (2018) advise using external advisors with relevant experience to avoid overlooking good but unknown companies. External advisors can leverage their network, relationships with stakeholders, and international research capabilities to assist the acquiring firm in this phase.

Yeon (2018) conducted research on the characteristics of Google's target companies, involving a sample of 178 companies acquired by Google between 2001 and 2017. The purpose of the study was to understand the factors influencing the selection of certain targets over others. Yeon (2018) identified that the selection process starts with the acquirer's motivation. The study revealed that the largest group of acquired companies, accounting for 38.9%, comprised young startups. The primary rationale behind this trend was that these acquisitions enabled Google to rapidly diversify its offerings, thereby maintaining market dominance. The key criterion identified for this selection was the technological compatibility between the target and the acquirer.

2.1.5.2 Evaluation frameworks

The literature presents several frameworks for the initial evaluation process of target firms. Hassan (2014) focuses exclusively on the pre-M&A evaluation and suggests two steps: the selection of a target firm and its valuation. Kaplan & Weisbach (1992) extend this perspective by examining post-M&A integration as well. They outline the evaluation of a target firm through four key steps: motives and initial strategy formulation, selecting a target firm, valuing it, determining M&A costs and budget, and ensuring predefined objectives are met post-M&A. Park et al. (2013) proposed a pre-M&A evaluation framework focused specifically on acquiring new technologies. Since the cases examined in this research, Google's acquisition of Motorola and IBM's acquisition of Red Hat, involve technology acquisitions, this framework is seen as the most appropriate for the empirical part of this study. Therefore, this framework receives greater emphasis in this section.

Park et al. (2013) suggest that in the selection phase, target companies need evaluation from two perspectives: overall corporate and specific strategic perspective. They propose a model of four categories, as illustrated in Figure 1, emphasizing that companies not assessed from both angles should automatically be deemed inappropriate targets. One reason for this is that companies with high overall ratings that don't align well with the acquirer's strategies or the M&A goals may not be suitable. Even if they appear attractive, failure to fulfill the strategic purpose could result in losses from the deal. For example, if the target company is significantly large, acquiring it poses risks. Therefore, from the corporate perspective, this target may be considered an unfavorable investment. However, in such cases, acquiring some parts of it may be a beneficial option from a specific strategic perspective.

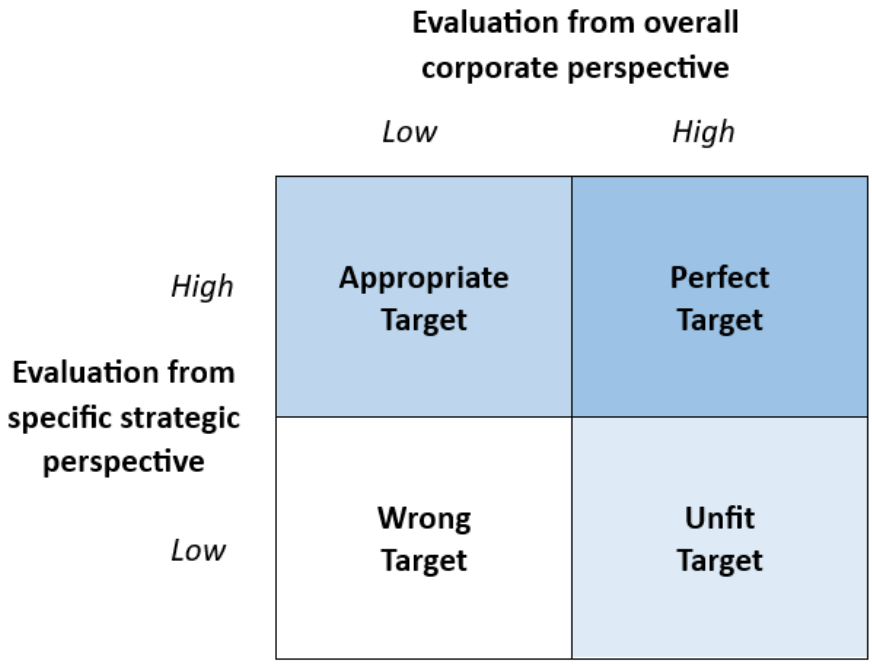

Figure 1. Categorization of potential M&A targets;

Adopted from: Park et al. (2013), Identification and evaluation of corporations for merger and acquisition strategies using patent information and text mining

2.2 Innovation

So far, the theory has covered the definition, types, and motives of M&As, as well as what is needed during the target selection process, which includes due diligence and the evaluation of the target company as part of the due diligence process. Since this research centers on M&As in the context of innovation, this section will focus on explaining innovation concepts. First, the general definition and theory of innovation will be provided, followed by innovation in the technology context.

Albury (2005) defines innovation as the development and execution of new procedures, offerings, and delivery approaches leading to significantly better results in terms of quality and productivity. Eveleens (2010) expands on this, stating that innovation is crucial for an organization's survival, but its specific definition varies across different research fields, indicating that managing innovation in the corporate environment is a complex process that requires tailored approaches depending on the industry and application area. Eveleens further identifies five dimensions of innovation within the corporate context. The first two dimensions describe the characteristics of the innovation, namely its type and its degree. The next two dimensions focus on the organizational context in which the innovation occurs, including the type and size of the organization. The fifth dimension looks at the big picture and describes the industry or the sector in which the innovation takes place.

2.2.1 Types of Innovation

Various authors have identified different types of innovation (Kennedy et al., 2020; Bower & Christensen, 1995; Keely, 2013). Given that the focus of this study is on the selection and evaluation of target firms, as well as assessing their innovation and market potential in the context of technology, this section will provide a brief overview of theories that address technological innovation and its associated market impact.

Kennedy et al. (2020) explain that two factors define the type of innovation: market and technology. Regarding the market factor, the question is whether the innovation aims to introduce a new market or bring improvements/changes to the existing market. As for technology, the question is whether innovation relies on new or existing technology. Based on this, four types of innovation have been

identified: Incremental Innovation, Disruptive Innovation, Architectural Innovation, and Radical Innovation. Figure 2 illustrates the four types of innovation.

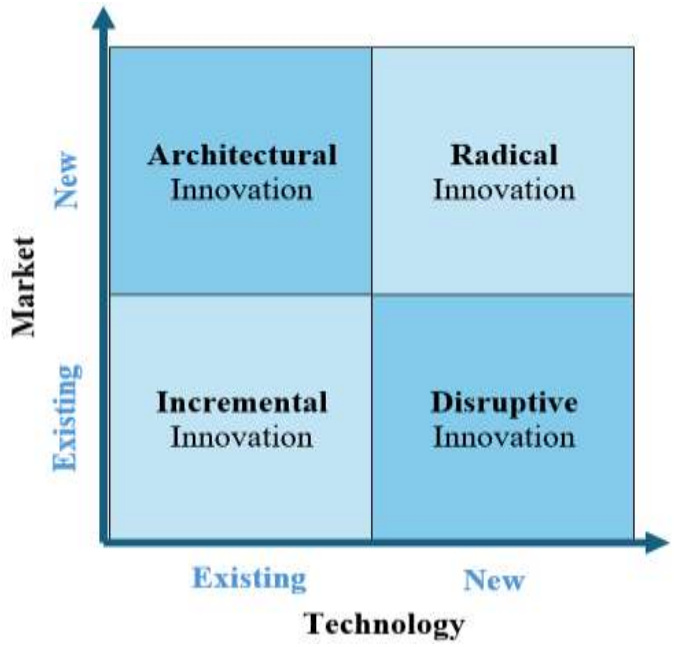

Figure 2. Four types of innovation;

Adapted from: Kennedy (2020), Strategic Management

Incremental innovation is one of the most common forms of innovation (Kennedy et al. 2020). This type involves utilizing existing technologies within an established market to enhance an existing offering. The primary objective is to improve the product or service by incorporating new features, making design changes, and implementing other incremental advancements. (Tushman & Anderson, 1986; Rubin & Abramsom, 2018) By continuously refining and iterating upon existing offerings, incremental innovation enables companies to stay competitive, meet customer expectations, and maintain their position in the market (Tushman & Anderson, 1986). For example, in the automobile industry, improvements to the latest car models are made annually. Rather than

introducing entirely new markets, the focus is on leveraging existing technology to make the cars better. (Kennedy et al. 2020)

Disruptive innovation is a concept first introduced by Christensen (1995). Christensen et al. (2015) indicate that disruptive innovation happens either in low-end or new-market footholds because incumbents often miss these opportunities. In low-end footholds incumbents prioritize their most profitable and demanding customers, often neglecting less-demanding ones. This creates an opportunity for disruptors to enter the market by offering a "good enough" product to the overlooked customers. On the other hand, new-market footholds occur when disruptors create a completely new market. In simple terms, they find a way to turn people who were not consumers into consumers. (Christensen et al., 2015) Disruptive innovations introduce new technology into an existing market and have the power to reshape industries, redefine user expectations, and create new market opportunities. They often introduce a product or a service that’s significantly different and improved compared to the previous one, driving companies to push boundaries and embrace change to remain competitive. (Kennedy et al. 2020)

Architectural innovation, as introduced by Henderson & Clark (1990), is a process where companies use and adapt existing technologies to create new products or services, capturing new markets and consumers. Defined by Henderson & Clark (1990, p. 12) as "the reconfiguration of an established system to link together existing components in a new way," this process involves reimagining the product's architecture. Through this approach, companies can introduce groundbreaking offerings that appeal to a broader customer base and address emerging market needs. This innovative process is typically triggered by a change in a previously used component, such as size or design, in the manufacturing of a product or service. This modification leads to an exploration of other components, while the fundamental design idea for each component, along

with the related scientific and engineering knowledge, remains unchanged. (Henderson & Clark, 1990)

Radical innovation, according to O'Connor (1998), involves introducing something entirely new in terms of performance or making significant improvements. It is the type of innovation where new technologies are leveraged to target previously untapped consumer segments. Companies that achieve success through radical innovation with a new product or service often first adopt an incremental innovation strategy to continuously enhance their offering and drive increased sales. By combining the power of radical innovation to capture new consumer segments with continuous improvements, companies can establish themselves as industry leaders and drive long-term growth. Radical innovations have the power to transform existing markets and industries and often lead to the creation of entirely new ones. (O'Connor, 1998) At the same time, Radical Innovations require a lot of resources and can be risky, leading to a continuous process of testing, failing and breakthroughs (Rice et al., 1998).

2.2.2 Technological innovation

Coccia (2021) suggests that in technology, out of all industries, innovation plays the most crucial role. In order to differentiate from the competition, technological innovation not only looks to improve already existing offerings, but also to revolutionize it. When the new upgrades are released onto the market, they are seen as advancements that will at the same time benefit the company, the consumers, and often society in general. For leaders in the tech industry, such as product managers, developers, engineers, UX designers, embracing innovation is not a choice, it is necessity (Chesbrough, 2010; Wang et al. 2005).

Schumpeter (1939) was one of the first to propose a theory on technological innovation. According to him technological innovation follows a cyclical pattern, with each innovation following a similar trajectory. Nevertheless, the duration of these trajectories may vary across cycles. Moreover, these cycles do not exist in isolation but instead form an intricate network, wherein one technological breakthrough can exert influence over others. Expanding on this, Abernathy and Utterback (1975) found that the innovation trajectories are jointly shaped by the interplay between the firm and its surrounding environment. This is because different environments have a need for specific capabilities, creating a reciprocal relationship between the two.

Technological progress is an evolving process characterized by intermittent leaps. Breakthroughs in products or processes are rare but have a profound impact. These disruptions initiate a period of technological discontinuities, marked by intense competition among alternative product forms. This further leads to a period of technological ferment marked by experimentation. (Tushman & Anderson, 1986) This period persists until a dominant design emerges, consolidating standards within the product class and signaling the end of the tumultuous period. Alternative designs are gradually marginalized, and further development focuses on refining the widely accepted design. Incremental improvements become the driving force behind technological progress once a dominant design is established. This incremental progress arises from the collaboration of multiple organizations, usually motivated by growth and profit. The shift from incremental to transformative change occurs when a major advance disrupts the established order, rendering older technologies obsolete. (Tushman & Anderson, 1990)

The periods of technological progress, as described by Tushman & Anderson (1986; 1990) can be more concisely presented through the S-curve theory. First described by Roger (1962) the theory of the S-curve in technological innovation explains that the adoption and growth of a particular

technology over time follows a pattern resembling the shape of the letter "S." This pattern represents the relationship between the cumulative investment or effort invested in the development of a technology and its corresponding performance improvement or market penetration.

The S-curve theory recognizes three distinct phases in the life cycle of a technology: introduction, growth and maturity (Utterback 1978, 1994), as demonstrated in Figure 3. The introduction phase, known as the slow growth phase, is characterized by limited awareness, high costs, and relatively modest performance compared to existing alternatives. During this phase, technology faces numerous challenges and uncertainties, resulting in gradual progress and minimal market impact. As the technology improves and gains momentum, it transitions into the growth phase. In this stage, the technology experiences accelerated adoption and growth as its performance reaches a tipping point, becoming increasingly attractive to a wider market. The technology's growth rate steepens as more users embrace it, leading to exponential increases in market share or performance. Eventually, the technology reaches a saturation phase, marking the third phase of the S-curve, called maturity. At this stage, the technology approaches its maximum potential, and the market becomes saturated with users who have already adopted it. Growth rates start to decline as technology becomes widely accepted and its performance improvement reaches a plateau. Further incremental advancements may yield diminishing returns and fail to generate significant market impact. (Sood & Tellis, 2005)

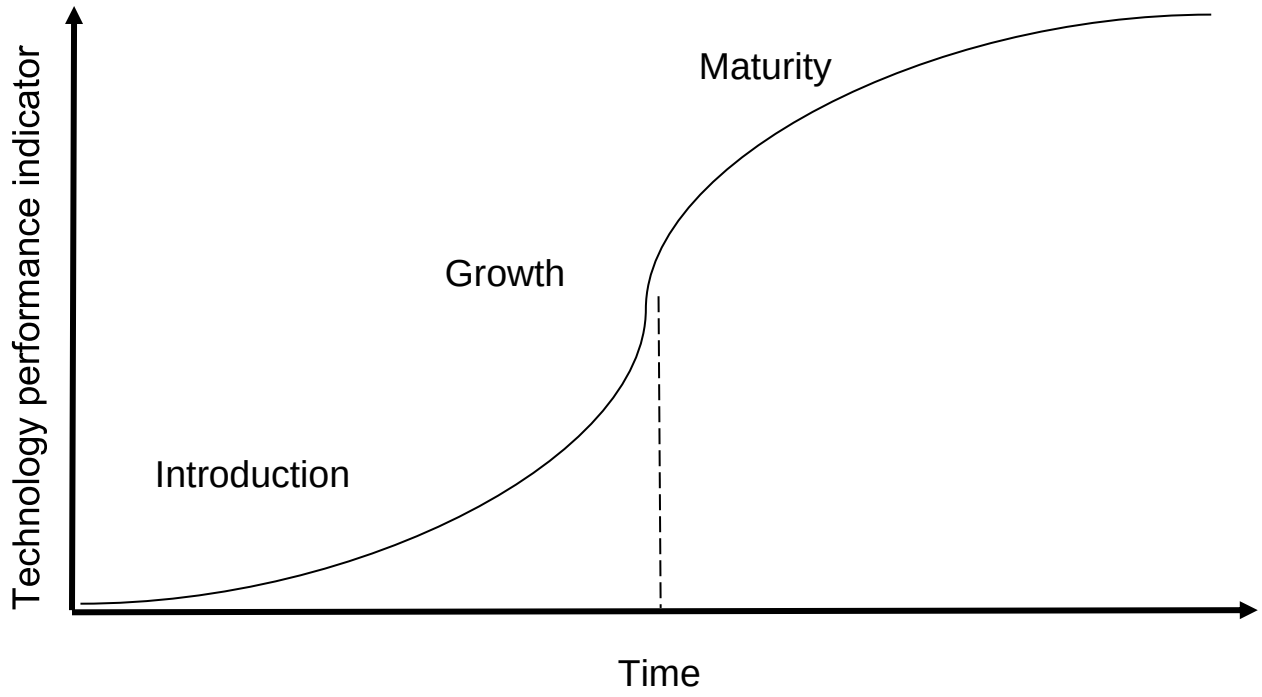

Figure 3. Technological development S-curve;

Adapted from: Priestley et al. (2019)

Tushman & Anderson (1986; 1990) further explain that the significant technological shifts can be categorized as competence-destroying or competence-enhancing, as they have the power to either undermine or boost the capabilities of established companies in an industry. A competence-destroying discontinuity has the ability to either introduce an entirely new product category or replace an existing one. It marks a significant shift in the way a specific product is manufactured. On the other hand, competence-enhancing discontinuities initiate remarkable advancements in price and performance by harnessing the existing knowledge within a product domain. These breakthroughs act as viable alternatives to outdated technologies without considering the capabilities required for mastering the old methods obsolete. These disruptions represent a considerable development in performance compared to preceding products while capitalizing on the foundations of existing expertise.

2.5 Innovation through M&As in the tech industry with a focus on Big Tech

This section provides a brief literature review concerning innovation through M&As in the tech industry, with a particular focus on Big Tech companies. It will start by explaining the concept of Big Tech and then proceed to discuss what is currently known about innovation-driven tech M&As. To effectively analyze the target company's selection and evaluation procedures, it is necessary to first gain a comprehensive understanding of the broader context. The review examines the underlying motivations behind these M&As, the advantages they confer upon acquirers, and the associated risks and challenges.

2.5.1 What is Big Tech?

The term "Big Tech" refers to large technology corporations that have dominated the sector for decades due to their immense size, influence, and remarkable financial success. Arguably, they include some of the world's best known technology names headquartered in the United States, like Amazon, Apple, Facebook (Meta), Google (Alphabet), and Microsoft. However, this list is not exhaustive, and it also refers to other major global players, such as Tencent, Alibaba, IBM, or Tesla. (Birch & Bronson, 2022).

They have transformed the world we live in, shaping our interactions, driving economic growth, and influencing the direction of technological progress, with their products and services utilized by billions of users and customers worldwide. They stand as pioneers in the latest groundbreaking technologies such as Artificial Intelligence (AI), cloud computing, 3D printing and the Internet of Things (IoT) (Rosencrance, 2021). Because of this, they have set themselves apart as powerful forces in the global landscape, and their continued innovation promises to further reshape the world

in the years to come. At the same time, they frequently spark discussions regarding their disproportionate impact on the economy and society at large, as they are known for leveraging vast volumes of data. This often results in increased regulatory scrutiny driven by concerns over their power and influence. (Birch & Bronson, 2022)

2.5.2 The beginnings

Using M&As to gain an innovation advantage among competitors has a long-standing history among companies, particularly in the tech industry. Finding sustainable ways to innovate in big corporations is a complex process that requires a combination of a constant influx of fresh ideas, competence, skills, and resources (Gantumur & Stephan, 2011). This is how the strategy of innovation through M&As was born. As a way to diversify their portfolio, Big Tech companies started funding and acquiring other innovative enterprises and startups, which eventually became a part of a big brand's name (Alcantara et al., 2021).

Since 1990, there has been a significant increase in M&A activity within the high-tech industries. Initially they revolved around the acquisitions of small companies and startups. (Rossi & Tarba, 2013) For example, in 2000 IBM introduced Emerging Business Opportunities (EBOs), a management program intended to find, support, and fund high-potential startups. Within this program, IBM first incubated seven startups, and soon after that over twenty, while integrating their products and innovations into its own portfolio. The outcomes of this initiative were impressive as the EBOs generated significantly higher revenues than the company's entire portfolio before that. (Binns et al., 2022) While at the time the target companies often used to be underfunded, small

companies (Benou & Madura, 2005), nowadays they also involve well established firms of all sizes (Alcantara et al., 2021).

Big Tech companies often buy competitors or companies that represent a potential threat in some way (Rinehart, 2023), indicating that besides innovating, the purpose is often to boost profitability and market share. In 2021 tech giants like Apple, Meta (Facebook), Google, Amazon, and Microsoft went on a buying spree after the White House regulators and members of Congress accused them of restricting competition and harming consumers. They bought up smaller competitors at a record rate, which resulted in a huge number of acquisitions. The Financial Times analysis of Refinitiv data showed that since the beginning of 2021, IT giants have spent at least $264 billion on potential competitors with a value of less than $1 billion, breaking the previous record set in 2000 during the "dotcom boom". (Stacey et al., 2021) "Dotcom boom", also known as "dotcom bubble" is a name used for the late 1990s investments in Internet-based companies, which led to a rapid increase in the valuations of U.S. technology stock shares (Hayes, 2019).

2.5.3 Reasons and motivations

The primary motivation driving M&As in Big Tech has been gaining access to fresh ideas, expertise, technical know-how, and advanced technologies, which is expected to persist as a long-lasting and important aspect of corporate innovation strategies (Rossi & Tarba, 2013). Similarly, Chaudhuri (2004) observed in his research that in acquisitions focused on innovation, such as Big Tech, the primary goal of the acquiring company is typically to obtain patents and innovative products. These products may already be finalized and ready for market, or they could still be in the developmental stage. Another common motive is gaining access to new technologies and

associated knowledge that can be utilized for designing and launching new products. Regardless, the objective is generally long-term and involves financial, market, and competency advantages.

In their study, Puranam & Srikanth (2007) investigated how acquirer companies utilize technology acquisitions. They discovered two distinct ways in which acquirers benefit from these acquisitions. The first approach involves acquirers leveraging the acquired company's knowledge to enhance their own innovation processes, in other words using what the acquired company “knows”. Essentially, they tap into the existing knowledge of the acquired company. The second approach occurs when acquirers rely on the acquired company to independently provide ongoing innovation, utilizing what the acquired company actively “does”. The researchers further argue that post-merger integration plays a crucial role in enabling acquirers to capitalize on the acquired company's knowledge. This integration process facilitates coordination between the acquirer and the target. However, there is a challenge in harnessing what the target actively does due to disruptions caused by reduced autonomy within the acquired organization.

2.5.4 The impact of M&As on the acquirer’s innovation performance

Hagedoorn and Duyisters (2000) conducted research in the high-tech sector to investigate the impact of acquisitions on companies' technological performance, as reflected by the number of patents. They suggest that the complexity of technological advancements surpasses the capabilities of most individual firms. Consequently, the firms need to rely on external sources for innovative ideas and expertise, making strategic alliances appear as a potential solution to this challenge. In this context, improved performance implies that integration through M&As should support continuous enhancements in new technological competencies, given the environment's emphasis

on intensive R&D activities. Thus, they hypothesized that successful M&As would provide the acquiring company with ongoing learning and development opportunities, ultimately elevating its innovation capacity and establishing its position as a market pioneer. Their research revealed that while M&As had a positive effect on product innovation, one of the main challenges was the differences between the participating companies. They further conclude that organizational and strategic compatibility between the entities involved is crucial for M&As to stimulate innovation activity in the long run.

Hitt et al. (1996) highlight the significance of international diversification in attaining a competitive advantage, while also emphasizing the complexities associated with its implementation. They examined innovative performance within the context of international diversification of technology M&As and found that acquisitions do not always result in favorable firm performance. The results they got showed that some acquirers experienced challenges on both R&D intensity and patent intensity. As defined in the Eurostat's glossary, R&D intensity represents the percentage of revenue that a company invests in research and development (R&D) activities. It is used as one of the key performance indicators to measure how much a company innovates. Patent intensity refers to a company's level of patent activity, or the extent to which a company engages in the creation and acquisition of patents. It represents the concentration or density of patents held by a company relative to its size or industry. (Eurostat glossary, 2022) Patent intensity can be quantified by various metrics, such as the number of patents granted, patent applications filed, or the ratio of patents to revenue. It serves as an indicator of a company's innovation and intellectual property strength, reflecting its commitment to R&D. (Hu & Png, 2013)

Expanding their analysis to the performance evaluation of internationally operating M&As, Hitt et al. (1996) came to the following conclusions:

- International diversification through M&As demonstrates a negative correlation with performance in firms lacking diversification, a positive correlation in firms with high product diversification, and a curvilinear relationship in firms with moderate product diversification. In other words, the higher the level of product diversification in a firm, the higher the performance when merging with another firm internationally.

- International diversification through M&As has a positive correlation with R&D intensity, but when combined with product diversification, it leads to negative outcomes. This means that companies which expand internationally through M&As tend to experience improved results in their R&D efforts. However, if the purpose of this international expansion is to diversify their product range, it leads to negative outcomes.

Cummings and Teng (2003) argue that the degree of success of the post-merger integration process is dependent on the degree of the knowledge transfer success between acquirer and an acquisition. A comprehensive examination across over 15 industries, three distinct governance structures, and involving collaborations between domestic and international R&D partners revealed factors associated with successful knowledge transfer. These factors include:

- Adequate comprehension of the R&D units where the desired knowledge originates, within the source entity.

- The degree to which the involved parties possess similar knowledge foundations.

- The level of interaction between the source and the recipient, facilitating knowledge transfer and engaging in an articulation process that enables accessibility of the source's knowledge by the recipient.

2.5.5 Risks and challenges

Big Tech companies pursuing M&As as part of their innovation and growth strategies face multiple risks that need to be carefully addressed to ensure a successful outcome. Regulatory hurdles, cultural integration, technological challenges, financial considerations, and human resources management are a few among the critical areas that require meticulous attention. By recognizing and proactively managing these risks, Big Tech companies can enhance their chances of creating value and achieving long-term success through M&As while mitigating potential downsides. Effective risk assessment, strategic planning, and robust execution are essential for navigating the complex landscape of M&As in the dynamic world of technology.

Hitt et. al (2019) suggest that one of the most prominent risks in M&As for Big Tech companies lies in the regulatory and legal challenges. Given their size and influence, these companies often face scrutiny from antitrust authorities and regulatory bodies. Merging with or acquiring another company may result in intense regulatory scrutiny, resulting in lengthy approval processes, potential fines, or even the prohibition of the merger altogether. Compliance with various laws and regulations, such as data privacy and consumer protection, becomes even more complex when integrating operations with another entity. (Hitt et. Al, 2019)

Successfully merging or acquiring another company requires aligning diverse organizational cultures and managing the integration process effectively. Big Tech companies often have distinct work environments, values, and management styles, which can create significant challenges during the integration phase. Cultural clashes, resistance to change, and communication gaps can hamper employee morale, disrupt workflows, and impede the realization of expected synergies. Therefore,

cultural and organizational integration present another challenge that the companies involved in M&A have to navigate. (Cartwright & Cooper, 2014)

Acquiring a company often involves integrating disparate technological systems, infrastructure, and software platforms. Incompatibility issues, data migration challenges, and integration complexities can lead to delays, cost overruns, and diminished operational efficiency. Realizing the expected synergies and leveraging the acquired company's technological assets to their full potential require meticulous planning, effective project management, and seamless integration of IT systems. (Anand & Khanna, 2000)

M&As involve significant financial investments, and miscalculations or overvaluation of target companies can lead to substantial financial risks for Big Tech firms. If the integration process fails to yield expected synergies, the anticipated return on investment may not materialize, impacting shareholder value. Additionally, market conditions, economic downturns, or unforeseen industry disruptions can affect the financial performance of merged entities, increasing financial vulnerability. (Loughran & Vijh, 1997)

Retaining key talent from the acquired company is crucial to ensure the continuity of expertise and knowledge. Cultural disparities, changes in reporting structures, and the fear of layoffs can lead to employee disengagement and voluntary attrition. Losing critical employees with valuable skills and institutional knowledge can hinder innovation and disrupt ongoing operations, thereby undermining the potential benefits of the M&A. (Cartwright & Schoenberg, 2006) Ernst and Vitt (2000) specifically examined the behavior of key inventors, who contribute significantly to their companies' high-quality patents. Their analysis of 43 acquisitions revealed that a considerable number of key inventors either leave the company or experience a significant decline in patenting

performance post-acquisition. The behavior of these inventors is influenced by factors such as the size of the acquired firm, cultural differences between the R&D departments of the acquiring and acquired firms, and technological compatibility.

2.6 Theoretical framework

As seen in section 2.5, the relationship between M&A and innovation performance in the technology sector has been extensively researched. The studies have shown that M&As can have both positive and negative impacts on innovation, depending on the factors involved, such as the strategic fit between the two companies, the integration process, and the management of cultural differences. However, the whole process starts with due diligence, involving the right target company selection and its evaluation which are identified as the predeterminants for a successful M&A transaction, as explained in sections 2.1.4 and 2.1.5.

After grasping key terms like M&A, Innovation, and Big Tech in sections 2.1, 2.2, and 2.3, respectively, and understanding M&As as a strategic tool in tech companies for enhancing innovation capabilities as discussed in section 2.5, along with the explanation of the term Due Diligence in section 2.1.4 covering target selection and initial evaluation processes during the preliminary phase, a solid foundation is established for data analysis and theory building from the case studies in section 5. For this purpose, as mentioned in section 1 and further explained in section 2.1.5.2, the framework by Park et al. (2013) was chosen. This framework, tested for evaluating high-tech target companies in the acquisition of new technologies, was identified as the most suitable for this study because it aligns with the focus of the acquisitions in the Google and IBM

case studies. It allows an understanding of the acquirers' target selection processes from two perspectives: overall corporate and specific strategic perspectives.

More precisely, in the Google and IBM cases from the overall corporate perspective, the framework helps to identify the strategic motivations and goals behind each acquisition, reveal the acquirers' initial strategy formulation, and provide clues as to why and how the targets were selected. It also helps examine how the acquirers identified potential risks during the target selection, what methods they used, and how reliable the methods were, as well as what could have been done differently. The analysis from the specific strategic perspective uncovers what types of innovation the acquirers were aiming for, what specific goals they hoped to achieve, and how they ensured that the targets are a good fit in this context. This perspective also helps in understanding the acquirers' perceived potential for innovation enhancement after the transaction. Additionally, it facilitated the analysis of the preliminary due diligence procedures, providing insights into the overall target assessment and selection, including the dimensions against which they were selected, the channels they were sourced from, and the steps that this process involved. Table 4 illustrates the data analysis framework.

Target selection and initial evaluation	
Perspective	Factors
Overall corporate	Motivations and goals: ● Identify corporate motivations and goals ● Uncover initial strategy formulation ● Clues for target selection
	Risks: ● How did acquirers identify potential risks ● Assess reliability of methods used ● Consider alternative approaches

Specific strategic	Innovation: ● Understand the acquirers' innovation goals ● Criteria for target evaluation ● Perceived potential for innovation
	Preliminary due diligence procedures: ● Acquirers’ acquisition strategies in the context of innovation ● Identify the steps followed in the preliminary due diligence procedure ● Identify the dimensions against which the targets were selected

Table 4. Data analysis framework

3 Methodology

The study is conducted using a case study approach. Two cases are analyzed, Google's acquisition of Motorola and IBM's acquisition of Red Hat, using Eisenhardt's Method of within-case and cross-case analysis (Eisenhardt, 1989). The Eisenhardt method has been identified as the most appropriate for this study because it allows the examination of real-life events, building the theory and answering questions, including multiple cases. It also provides a structured approach to data analysis, making it more comprehensive when working with cases. The data were collected through interviews with specialists from Google and IBM who were closely familiar or directly involved with the cases. This chapter covers the theory behind the chosen method and how this method was implemented in the empirical part of the study, including the data description, collection technique, and analysis process.

3.1 The Case Study approach

Cambridge Dictionary (2024) provides a definition of a case that explains it as "a particular situation or example of something". Merriam-Webster Dictionary (2024) provides several definitions, depending on the context as follows: (1) "a set of circumstances or conditions", (2) "the object of investigation or consideration", (3) "an instance that directs attention to a situation or exhibits it in action".

According to Yin (2009, p. 3) the case study method is "an empirical investigation that delves into a contemporary phenomenon within its authentic real-life context" and it is an appropriate choice when the goal of a research is to investigate real-life events. In other words, it explores situations

where the boundaries between the phenomenon and its context are not clearly defined, employing multiple sources of evidence to gain comprehensive insights. Ultimately, each case represents independent research that can be replicated in different contexts. (Yin, 2009)

Case studies serve various purposes, such as addressing questions, testing theories, or developing new concepts. Data collection typically employs various methods, including literature reviews, interviews, surveys, and observations. The data can be qualitative, quantitative, or a combination of both. (Eisenhardt, 1989) Although some critics argue that case study research serves primarily as an exploratory tool or a means to formulate hypotheses, and that it lacks scientific rigor (Sekaran & Bougie, 2016), they have been a proven tool for learning from real-life examples (Langley, 1999). Validity, in this context, refers to the degree to which research findings accurately reflect the collected data (internal validity) and can be applied or transferred to different contexts or settings (external validity) (Sekaran & Bougie, 2016), which Langley & Abdallah (2011) identified as the biggest challenge in qualitative research.

Qualitative research can be messy, and at times, it is challenging to make sense of the data and categorize it properly to address the research questions. Nevertheless, according to Langley & Abdallah (2011), two methods have stood out as tested and successfully employed templates by researchers- the Eisenhardt method and the Gioia method. The Eisenhardt method is primarily associated with case study research, emphasizing the importance of a clear and predefined research design, involving multiple iterations of data collection and analysis. The Gioia method is known for its application in narrative analysis, and it focuses on capturing and interpreting the stories within the data, often with a more flexible research design compared to the Eisenhardt method. (Langley & Abdallah, 2011)

Earlier scholars argued that single case studies yield better results (Gouldner, 1954, Lipset, Trow, & Coleman (1956); Dalton (1959); Kanter, 1977). However, more recent scholars generally agree that a multi-case study approach is more efficient and provides more authentic results (Eisenhardt, 1989; Yin, 2009; Eisenhardt and Graebner, 2007). In her study, Eisenhardt (1991) emphasizes that methodological rigor and multiple-case comparison are necessary for gaining insights and building theories from the cases.

Eisenhardt (1989) proposes that case analysis should be conducted in two stages which can be done in different ways, and it is up to the researcher how to structure and code the data. In the first stage, each case study is analyzed separately to understand its specificities. The purpose is to thoroughly understand each case individually before attempting to generalize across cases. This stage lays the foundation for facilitating cross-case comparisons in the second stage. The purpose of the second, cross-case analysis stage is to go beyond initial impressions by comparing the within-case findings. It aims to capture new information and develop theories. Eisenhardt (1989) proposed several possible approaches to this, such as identifying common dimensions and comparing the cases against those, looking specifically for similarities and differences across the cases, or dividing and analyzing data based on the data source.

Following Eisenhardt's Method, in this research, each of the two cases are first analyzed separately and then compared to identify common patterns and differences. It starts with an overview of the backgrounds of all the four involved companies and presenting the contexts of the cases in section 4. It continues to examine each case separately and eventually compare outcomes of both cases based on the dimensions outlined in the framework in Table 4, section 2.6 to provide conclusions.

3.2 Data description and collection methods

The study relies on qualitative data collected from primary and secondary sources from November '22 to January '24. Primary data were collected through interviews with M&A specialists from Google and IBM and the secondary data was collected from publicly available sources.

An interview is a dialogue aimed at gathering information, involving a researcher posing questions and an interviewee providing answers when the aim of research is to achieve a comprehensive understanding of individuals' opinions, thoughts, experiences, or emotions (Easwaramoorthy & Zarinpoush, 2006). Interviews can be conducted as one-on-one or group conversations to gather information and insights related to a research topic. They can be structured, following a predetermined set of questions, or semi-structured and unstructured, allowing for open-ended discussions to explore complex topics and capture nuanced data (Bhat, 2023). Semi-structured interviews, a method used in this study, is commonly employed in qualitative research. It typically follows a predetermined plan and set of questions, yet it adopts an open form, enabling a researcher to explore and modify it as the conversation with participants unfolds. (Magaldi & Berler, 2018).

The interviews in this study were conducted on a one-on-one basis in a semi-structured manner, either face-to-face or via online video calls and their durations ranged from 20 to 60 minutes. The conversations were guided by pre-determined questions that were sent to the participants ahead of the interview but remained flexible. They were also supported by follow-up questions, probes, and comments during the interview. The table with predetermined questions that were sent to the participants ahead of the interview are presented in Appendix 1, along with the additional questions during the interviews. Altogether, 23 specialists participated in the interview, of whom 13 from Google and 10 from IBM. The interviewees' profiles included regional managers responsible for

tracking megatrends and suggesting innovations, heads and vice presidents of M&A and corporate development departments actively involved in strategy development and M&A execution activities, as well as engineers and technical staff responsible for technology evaluations of the target companies. Their tenure at the company ranged from 4 to 24 years. The selection of participants was based on three criteria: (a) level of involvement and experience in setting and executing the corporate strategies in the context of innovation, (b) level of involvement and experience in selecting and evaluating target companies for M&A, and (c) familiarity with the cases in question.

I initially created a pipeline of potential participants, consisting of a total of 45 individuals— 27 from Google and 18 from IBM of whom 23 were ultimately available for the interview. While 5 participants, 3 from Google and 2 from IBM, were directly engaged in the acquisition processes, the majority were not. Consequently, the interview data is generally treated as valuable insights from informed observers rather than firsthand participants. Tables 5 and 6 respectively summarize the profiles of participants from Google and IBM, including their roles, tenure at the company, interview details (length and mode), and whether they were directly involved in the acquisitions or not.

While the main focus in this study is on the primary data that delivers a deeper understanding of the cases, the secondary data provides a comprehensive foundation for the primary data analysis. The primary data provides authentic insights from the acquirers' internal perspective, while the secondary data offers an overview of the participating companies' backgrounds, financial health, operating markets, corporate strategies, and relevant industry trends at the time of the acquisitions. It serves a pivotal role in introducing the case studies, presenting essential background information, and contextualizing the events. Most of the secondary data is presented in Section 4, which provides the background of the involved companies and the case studies. Some of it is also included in the

analysis part in section 5 to supplement the statements from the interviews. Secondary data were collected from various sources such as academic articles, industry reports, annual reports, press releases, newspapers, journals, and the internet in general. A total of 112 secondary sources were reviewed.

Google				
Role	**Tenure in years**	**Mode of interview (in person/online)**	**Length of interview in min**	**Directly involved in the acquisition (yes/no)**
Emerging technologies engineer-M&A	5	online	60	no
Lead technology analyst - M&A	8	online	45	no
Innovation strategist	5	in person	55	no
Digital strategy lead	6	in person	30	no
APAC regional product lead for Android	11	online	35	no
Android product manager for Switzerland	4	online	45	no
Director of strategy and M&A-Generative AI	5	online	30	no
Vice President, Strategy & M&A integration	7	online	40	no
President, Google customer solutions	21	online	30	no
Innovation managing director-R&D	17	online	30	no
Corporate development director	19	online	25	yes
Lead Risk Analyst- M&A	14	online	30	yes
Global managing director for Android	16	online	30	yes

Table 5. Google interview participants

IBM				
Role	**Tenure in years**	**Mode of interview (in person/online)**	**Length of interview in min**	**Directly involved in the case (yes/no)**
Red Hat director for EMEA	13	in person	40	yes

Vice President, global software businesses	24	online	20	yes
Head of strategy for EMEA - cloud consulting	16	in person	45	no
Strategic planning and analysis director	20	online	30	no
Data and technology innovation director	18	online	30	no
Vice President digital development for EMEA	12	in person	45	no
General manager- M&A strategy and development	22	online	30	no
Innovation architect	7	online	30	no
Innovation architect	4	online	30	no
Patent analyst- M&A	5	online	30	no

Table 6. IBM interview participants

3.3 Data analysis process

Following the Eisenhardt method, as presented in section 3.1, I started the analysis process with within-case analysis. Firstly, I identified patterns among the data. Once all data were collected, both primary and secondary, I synthesized and structured it coherently, guided by the analysis framework presented in Table 4, section 2.6. This involved grouping the data according to specific categories in the framework for each case separately. Initially, I divided it into two categories: one falling under the overall corporate perspective category and another under the specific strategic perspective category. I further divided it into subcategories such as motivations and goals, as well as risks, within the overall corporate perspective category, and innovation and preliminary due diligence within the specific strategic perspective category. Eventually, within each category and

subcategory, I identified the relevant data and structured it into meaningful units that address the research question.

I analyzed interview transcripts using the Thematic Analysis (TA) technique, as introduced by Holton (1973). TA is a flexible method for identifying and interpreting patterns of meaning, known as 'themes' within qualitative data. Unlike other qualitative analytic approaches, TA is adaptable to various theoretical frameworks and research paradigms. It is particularly applicable in analyzing interview transcripts because it allows for capturing nuanced data (Clarke & Braun, 2016). Simultaneously, I analyzed the secondary data utilizing a Literature Review (LR) technique by reviewing and identifying relevant insights among various secondary sources, including academic papers, books, industry reports, news articles, and journals. LR is a technique used to critically examine information from publicly available written sources and communicate the findings that have been established on the researched topic (Snyder, 2019).

I further triangulated the data from primary and secondary sources, a method introduced by Denzin (1978), which refers to merging data from multiple sources to address a research question. Upon reviewing and categorizing the data, I compared different perspectives and drew connections between the sources. I did this by intertwining primary data findings with relevant secondary insights to gain a comprehensive understanding of events and factors. My goal was to enrich publicly available data with insights from interviews, thus extending beyond existing knowledge. Furthermore, I aimed to identify any gaps or inconsistencies in the information and propose explanations for those.

Subsequently, after completing the within-case analysis, I conducted cross-case analysis by comparing the findings from both cases. This involved examining similarities and differences in

identified practices among the acquiring companies and eventually drawing conclusions. Although I initially examined secondary data to establish a foundational understanding of the cases, as detailed in section 4, my primary focus was on presenting primary data findings collected from interviews.

It is important to note also that the semi-structured approach to interviews allowed me to capture intriguing data that extended beyond the questions related to the studied cases but were nonetheless relevant to answering the research question. Recognizing the value of this additional data, which is very much on-topic and complements the research, I included it in the data analysis report as well.

4 Case studies

This section provides an overview of the case companies' backgrounds, both the acquiring and target companies, as well as the contexts of the analyzed cases.

4.1 The companies

4.1.1 The acquirers

Google and IBM are two very different companies. They operate in mostly distinct markets, however, in some areas such as cloud computing, they are direct competitors. IBM was a pioneer in hardware production, a legacy it continues to uphold to this day, and it is considerably older compared to Google. On the other hand, Google leads in digital marketing and information access. Despite their differences, both companies share a common strategy of enhancing innovation through M&As.

4.1.1.1 Google

Google's story began in 1995 as a research project by two Stanford Ph.D. students, Larry Page and Sergey Brin. Their search engine, initially named "Backrub," aimed to analyze links to determine website importance. It quickly gained traction and was officially launched as Google in 1998 with a mission “to organize the world’s information and make it universally accessible and useful”. (Google website, 2023) Only six years later, in 2004, the company went public with a valuation of $23 billion (The Economic Times, 2023).

In 2015, Google underwent a significant corporate restructuring, which resulted in forming the conglomerate Alphabet Inc. This was driven by Google's expansive acquisition activity, which diversified into various technological fields beyond its core business of internet search and online advertising. To address shareholder concerns about excessive spending on unrelated acquisitions, Google became a subsidiary of Alphabet, allowing Alphabet to keep its main business while fostering future innovation through subsidiaries like X, CapitalG, and GV. (Yeon, 2018) Today, Alphabet’s subsidiary, Google, is a leading global high-tech company headquartered in Mountain View, California. The search engine remains its strongest product and continues to generate the most revenue (Hall & Hosch, 2023). According to the latest statistics, Google dominates the search engine market with 83% share, while other players in the space, such as Bing, Yahoo, and Baidu, trail far behind (Statista, 2023). In addition to Search, Google now offers a much broader portfolio of products. The second-largest revenue generator is Google Cloud, but the company also provides other products such as Android, Gmail, Maps, etc. In recent years, Google has increased its focus on artificial intelligence and machine learning (Google website, 2023).

Since its beginnings, Google has been actively investing in acquisitions to drive innovation and venture into new markets (Wikiwand, 2023). Back in 2003, the company invested $102 million to acquire Applied Semantics, the creator of AdSense, a service that allows website owners to display ads on their web pages. Later, in 2006, Google purchased dMarc Broadcasting, also for $102 million and in the same year invested $1.65 billion in stock in another major acquisition- YouTube. Only a year later, in 2007, Google marked yet another milestone with the acquisition of DoubleClick, a prominent online advertising firm, for a substantial $3.1 billion. (Chowdhry, 2008) Recognizing the tremendous growth in the mobile applications market, the company responded with a strategic move in 2009, acquiring the mobile advertising network AdMob for $750 million. (Hall & Hosch,

2023) These are just a few examples of Google’s M&A activities over time. As of 2023, Google has acquired approximately 256 companies across various industries, including social platforms, advertising, cybersecurity, fintech, etc. for a total of roughly $20.89 billion (Cattlin, 2023). Thanks to this, Google is not only prepared to react quickly to the market's demands but also to constantly be at the forefront of innovation and remain relevant to a wide spectrum of users. (Alcantara et al., 2021)

These acquisitions were all part of Google's broader strategy to extend its reach beyond the search engine domain and make a strong entry into the advertising industry. By integrating the R&D efforts and databases of these acquired companies, Google managed not only to revolutionize advertising by personalizing ads according to consumer preferences, but also to expand its offer way beyond Google ads and be in the forefront of innovation. (Şekerli & Akcetin, 2018)

4.1.1.2 IBM

More than a century old, an iconic American company headquartered in New York, IBM was founded in 1911 under the name Computing-Tabulating-Recording Company (CTR). Interesting fact is that IBM actually started as the merger of three companies whose primary focus was on manufacturing and selling tabulating machines, punch cards, and time clocks. (Britannica, 2023) Thomas J. Watson Sr. joined CTR in 1914 and became its CEO in 1924, renaming the company International Business Machines (IBM) to reflect its global expansion and diversification into various business machines and data processing equipment. (IBM website, 2023)

IBM has over time developed many of the core technologies that the world is using today. Before the invention of the microprocessor, it produced the functioning vacuum tube computer that laid the foundation for all computers after that. IBM 650 was, in fact, the first mass-produced computer.

(IBM website, 2023) IBM also played a pivotal role in the development of the hard drive, leading to the creation of the first computer with spinning platters for data storage and a magnetic arm for data retrieval. This innovation culminated in the development of the IBM 7090, which became the first powerful scientific computer. Additionally, IBM invented the first coding language, Fortran (Reed, 2020). In the 1980s, however, the rise of personal computers (PCs) challenged IBM's mainframe dominance. IBM launched its own PC line (IBM website), but later on struggled to compete with the agile players like Apple and Microsoft (Lynch, 2021). This is when the company recognized the need to shift its focus to services, software, and consulting, while still maintaining a presence in hardware. To do that IBM had to come up with a new strategy that involved more R&D investment and collaborating with other companies, in other words M&As, to expand its portfolio of products. (Abbas, 2023) Today, IBM has been investing in areas like artificial intelligence, cloud computing, and blockchain technology (IBM website, 2023).

Historically, IBM has pursued strategic acquisitions to enhance its capabilities, expand its product portfolio, and enter new markets, including sectors such as software development, microelectronics, and, more recently, AI. This approach has transformed IBM into a diversified global technology company, with a focus on innovation and alignment with emerging technologies. By acquiring companies with unique technologies or domain expertise, IBM aims to strengthen its position in key growth areas. To date, IBM has acquired more than 200 companies (Arangarajan, 2022).

Some of the most significant acquisitions include the purchase of Science Research Associates (SRA) in 1964, which brought educational content and expertise, helping IBM establish itself in the educational technology market (Crunchbase, 2023). In 1984, the acquisition of the telecom company Rolm Corporation allowed IBM to enter the growing telecommunications market (Schrage 1984; Sanger, 1984). In the past decade, IBM has made some of its largest acquisitions.

The acquisition of Trusteer in 2013, a cybersecurity firm, expanded IBM's security portfolio in the face of evolving cyber threats (Burnham, 2013). The purchase of The Weather Company in 2016 aimed to leverage weather data insights for cognitive computing initiatives like AI-powered agriculture (PM Newswire, 2016). Red Hat, acquired in 2019, stands as IBM's largest acquisition to date, bringing open-source expertise and strengthening its cloud computing offerings (IBM website, 2019).

4.1.2 The targets

4.1.2.1 Motorola

Motorola, Inc. was an American multinational telecommunications company that played a significant role in the development of communication technologies for several decades. Motorola was founded in 1928, in Chicago, Illinois, by Paul Galvin and his brother Joseph Galvin as the "Galvin Manufacturing Corporation." (Hall, 2023; Motorola Solutions, 2023)

The company initially manufactured battery eliminators, which allowed battery-powered radios to be plugged into household electrical outlets. In 1930, the company changed its name to "Motorola" when its first major breakthrough came in introducing car radios, popularizing in-car entertainment and transforming the automotive industry. (Hall, 2023) In the following decades, Motorola expanded its product offerings, producing consumer electronics, televisions, and early mobile communication devices. It was one of the pioneers in mobile communication technologies, developing the first commercial mobile phone in 1983. Further innovations solidified Motorola's position as a major player in the mobile phone market during the 1990s. (Motorola Solutions, 2023)

In 2011, due to financial challenges and increasing competition, Motorola, Inc. decided to split into two separate publicly traded companies- Motorola Solutions and Motorola Mobility. Motorola Solutions focused on business and government communication solutions, while Motorola Mobility focused on consumer products, primarily mobile phones and related devices. (Hall, 2023) After Google bought Motorola Mobility in 2012, the company went through several transformations, including launching new products, changing owners, and trying hard to stay in the tough smartphone market. Even with difficulties, people still liked Moto phones because they had a simple Android system and special features like Moto Mods. (Sottek, 2014) Motorola Solutions, on the other hand, continued working and expanding its portfolio of products and services, organically and through acquisitions. Today it serves customers in over 100 countries worldwide across various sectors such as law enforcement, emergency medical services, utilities, transportation, manufacturing, and education. (The Business Anecdote, 2023)

4.1.2.2 Red Hat

Red Hat, Inc. is an American software company known for open-source software development and distribution. Open-source software refers to the "software developed and maintained through open collaboration. It is made available for anyone to use, examine, alter and redistribute however they like, typically at no cost." (IBM website, 2024). Red Hat was founded in 1993 by Bob Young and Marc Ewing in North Carolina. The name "Red Hat" was inspired by the red cap that Ewing's grandfather used to wear, which he later wore while attending Carnegie Mellon University. (Red Hat website, 2023)

In its early years, Red Hat's primary focus was on developing and distributing Linux based on the open-source operating system. Linux is a Unix-like operating system kernel that is open-source,

meaning its source code is freely available, allowing developers to modify and distribute it. During the late 1990s and early 2000s, Red Hat expanded its offerings and became a significant player in the open-source software market. (Red Hat website, 2023) It introduced various software products and services aimed at enterprise-level customers. Red Hat's growth and success led the company to go public with an initial public offering (IPO) in 1999 and in 2012 it gained the status of a unicorn. (White, 2023)

As the open-source software market continued to grow, Red Hat made several strategic acquisitions to broaden its product and service offerings. Notable acquisitions included JBoss, an open-source Java-based middleware company, in 2006, and Qumranet, the developers of the Kernel-based Virtual Machine (KVM) virtualization technology, in 2008. However, one of the most significant milestones in Red Hat's history came in 2019 when it was acquired by IBM. However, even after the acquisition, Red Hat continues to operate as an independent entity, maintaining its open-source principles and commitment to its community. (Red Hat website, 2023)

4.2 Google’s acquisition of Motorola

In 2011 Google announced that it is acquiring Motorola Mobility, which was finalized in the following year, 2012. Google bought Motorola for approximately $12.5 billion, which was $40 per share, in cash. (Tech Crunch, 2011)

The market landscape at the time of the acquisition was very much in favor of mobile phones over PCs. The trends indicated that more people will surf the internet on their smartphones, and with Apple already leading the way with the launch of the iPhone, Google wanted to capture that opportunity too and secure the spot in the mobile phone space. This is why it acquired Android in

2007, the mobile software firm. (Kenney & Pon, 2011) Providing Android to many phone manufacturers, Google already had gained extensive knowledge of operating software systems. However, making the devices was not its primary objective, which is where Motorola came into the picture. (Brachmann, 2014)

Motorola's phones seemed like a perfect match for Google's Android, enabling Google to synergize with its main lines of business—internet services and digital marketing to compete more effectively in the mobile advertising space. At the time, there were roughly 500 million Android users globally, indicating that the acquisition would significantly expand Google's commercial prospects, attracting more companies to advertise on Google Search (Molla, 2017). Motorola also owned approximately 24,500 patents that would benefit Google (Google website, 2011). Many analysts speculated that this was one of the major reasons for the acquisition, a point openly admitted by Google's leadership as well. However, they also emphasized that the objective extended beyond patents and was primarily aimed at entering the smartphone market, and ultimately strengthening the position in mobile advertising. Namely, Google wanted to start developing its own hardware which would complete the offering along with Android (Kopytoff, 2014). On Google's website, it was stated that there were two major reasons for the acquisition: "For one, innovation. This acquisition will bring Motorola Mobility's hardware expertise closer to our software expertise, accelerating innovation. The second reason is to protect the Android ecosystem" (Google website, 2011).

While patent deals were common among Big Tech at the time (Dignan, 2013), Google's acquisition of Motorola stirred controversy. Many analysts saw it as a defensive measure against potential lawsuits from competitors (Mims, 2014; Efrati, 2012). On August 15th, 2011, Larry Page, Google's CEO at the time, stated in his announcement, "Our acquisition of Motorola will increase

competition by strengthening Google's patent portfolio, enabling us to better protect Android from anti-competitive threats from Microsoft, Apple, and other companies" (Google Official Blog, 2011). Some also considered the acquisition to be Google's backup plan in case Samsung, one of its major hardware partners, chose to create devices based on a modified version of Android. This scenario would mean that the integration of Google's services on Samsung devices could be prevented. Motorola was viewed as a perfect solution if this were to happen, allowing Google to explore a more integrated software-hardware approach (Efrati, 2012).

Eventually, Motorola became unprofitable. Initially, it employed a large workforce, but after the acquisition this number shrunk to approximately only a quarter of its original size. This decline occurred partially due to significant layoffs, as Google laid off about 20% of Motorola employees right after the acquisition. (Efrati, 2012) Despite the launch of two new products- the Moto X and Moto G, the company continued to lose hundreds of millions of dollars each quarter. (Rushe, 2014) The mobile phone sector was known for having tight profit margins, which meant that phone manufacturers needed to sell a lot of phones to make a profit. In the end, Google decided to offload its subsidiary's unprofitable business and sold it to Chinese PC maker Lenovo for only $2.9 billion after less than 2 years. This was a huge loss as Google initially paid 12.5 billion for this acquisition. After Lenovo acquired Motorola Mobility, Motorola's journey saw a mix of innovation, changes in ownership, and efforts to survive in the competitive smartphone market. (Linge, 2016) Despite the loss, some analysts believed that Google also benefited from the acquisition because it retained the patents it purchased and had the opportunity to experiment with building its own hardware, potentially improving its Android products in the long run (Branscombe, 2014).

4.3 IBM's acquisition of Red Hat

Preceding the Red Hat acquisition, IBM identified data analytics, artificial intelligence (AI), and cloud computing as the primary drivers of its growth (IBM Annual Report 2018; IBM Annual Report 2019). These factors were post-acquisition narrowed down to hybrid cloud and AI (IBM Annual Report, 2021), proving the acquisition was the right choice. However, despite its impressive historical success, when cloud computing emerged as a crucial tool for most businesses today, IBM began to lag behind dominant forces in the market, such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). The company struggled to keep pace with these major players in the cloud space, making it imperative to find a solution to maintain its market position and continue innovating and expanding (Gall, 2018).

As the cloud became a necessity, companies began transitioning, with the majority being at least 20% into the process of migrating to the cloud in 2019. The Covid-19 pandemic additionally accelerated this process, given that the world had gone into full remote working and living mode. Even though the economic recession was about to begin, spending on cloud solutions increased by more than 40% in 2020. Given the new circumstances, digital transformation was a fundamental and urgent need for all organizations. (Deloitte, 2022) The initial phase of this process included starting on the cloud journey, which helped many companies lower costs, increase efficiency, and revive their customer relationships. The next phase included moving all the operations to the cloud, including supply chains, data storage, and core systems in general. Businesses started managing their entire IT infrastructure, both on and off-premises, in the cloud, which was why the demand for hybrid cloud solutions became immense. This stressed the importance of relying on digitization more than ever and represented a huge opportunity for cloud providers. (Murray, 2019)

IBM and Red Hat were both at turning points, where further expansion required changes and additional sources. IBM had already struggled with revenue declines for several consecutive years (Salinas, 2018), while Red Hat, facing challenges in customer acquisition, recognized IBM's influence and customer base as an opportunity (Miller, 2022). In July 2019, both companies announced that the $34 billion acquisition of Red Hat by IBM was closed (IBM website, 2019; Red Hat website, 2019). This represented the biggest IBM acquisition and deal to date, as well as one of the biggest tech acquisitions ever. Uniting the open hybrid cloud technologies from Red Hat with IBM's excellent sector expertise and sales leadership across more than 175 countries opened new opportunities for both companies. IBM and Red Hat joined forces to collaborate and provide a cutting-edge hybrid multicloud platform based on open-source technologies like Linux and Kubernetes. This service was meant to enable companies to securely deploy, operate, and manage data and applications both on-premises and across various private and public clouds. IBM and Red Hat made this decision on the grounds of speeding up innovation and creating more powerful offerings for their customers while growing and remaining strong in the cloud space. (IBM website, 2019; Feiner, 2019)

After the acquisition, Red Hat became the main division of IBM’s Hybrid Cloud, but it continued to operate independently and retained its name (Red Hat website, 2019). In 2020, immediately following the acquisition, Red Hat’s CEO James Whitehurst was elected as IBM’s president, alongside Arvind Krishna as the CEO (IBM website, 2020). However, Whitehurst soon after the election stepped down from the role and eventually resigned from IBM. Some critics suggested he had personal motives behind this, with some even labeling him as 'power-hungry,' as it appeared that he was disappointed not to be elected as IBM’s CEO, a position filled by Krishna, an insider

at IBM. Whitehurst's personal explanation was that he only intended to stay at IBM long enough to ensure the successful completion of the Red Hat integration. (Vaughan-Nichols, 2021)

Despite some analysts calling this transaction a “desperate deal” due to IBM being late in the cloud offerings (Colville, 2018), the acquisition proved to be beneficial for both companies involved. In the fiscal year 2020 alone, IBM saw a 20% increase in total cloud revenue, directly driven by Red Hat's hybrid cloud. Simultaneously, Red Hat’s revenue rose by 18% thanks to IBM’s customer reach (IBM Annual Report, 2020). In 2022, Krishna stated in a press roundtable that Red Hat plays a vital role in IBM's corporate strategy, extending beyond the hybrid cloud aspect (Miller, 2020). According to the Q2 2023 IBM earnings call, Red Hat's OpenShift platform is also boosting IBM’s AI business. Additionally, OpenShift doubled its revenue each year since the acquisition (Q2 2023 IBM earnings call transcript, 2023).

5 Analysis

What follows in this section is the analysis of the collected data, primarily from interviews, occasionally complemented by insights derived from secondary data. The analysis is structured according to the data analysis framework outlined in Table 4, section 2.6, and analyzed using Eisenhardt's method as indicated in section 3.1.

5.1 Within case analysis

5.1.1 Google's acquisition of Motorola

5.1.1.1 Overall corporate perspective

Motivations and goals

> *"Motorola Mobility's total commitment to Android has created a natural fit for our two companies. Together, we will create amazing user experiences that supercharge the entire Android ecosystem for the benefit of consumers, partners and developers. I look forward to welcoming Motorolans to our family of Googlers."* – Larry Page, Google's founder and CEO (Joint Press Release, 2011)

In 2011, Google's CEO at the time publicly welcomed Motorolans to the family of Googlers and expressed enthusiasm about future collaboration in the Android space. Since his statement, there have been quite a few twists and turns on the road for both Motorola and Google. This section explores what the internal experts had to say about this acquisition.

When it comes to the motivation and goals for this acquisition, the answers of the interview participants aligned with the secondary data presented in section 3.2. They both state that Google's acquisition of Motorola Mobility was strategically motivated by two key factors- entering the mobile phone market and securing dominance in search and advertising space.

Google intended to leverage hardware integration and enter the mobile phone market by relying on Motorola's manufacturing expertise and brand recognition. The goal was to create innovative Android devices that could compete directly with industry leaders such as Apple and Samsung. By controlling both hardware and software, Google aimed to enhance its influence over the user experience and potentially offer more competitive pricing for Android phones, as well as expand its influence in the mobile advertising space.

> *“Motorola had a well-established reputation for innovation in the mobile devices space. This acquisition was poised to elevate the Android ecosystem. It was expected to delight both- end-users and manufacturers”*– Product lead for Android

While some interview participants mentioned other anticipated benefits, such as streamlining software development and distribution, the most mentioned objectives were boosting overall Android device market share, increasing sales of Motorola-branded Android devices, developing specific innovative Android devices, and potentially reducing hardware fragmentation within the Android ecosystem. However, the ultimate corporate goal was focused on dominating search and advertising space. The Motorola acquisition seemingly aligned with these goals, aiming to strengthen the Android ecosystem and explore hardware integration in line with Google's broader long-term vision. However, while Google gained valuable patents, the competitive smartphone market proved challenging, leading to Google's decision to eventually sell Motorola.

> *"Most of Google's revenue was, and still is, coming from advertising. Getting advertising on mobile phones was a no-brainer, it was a must. All the competitors already had it integrated. That's why Google wanted to have Android on as many phones as possible."*– Digital Strategy Lead

When asked about the specific criteria and the process of assessing Motorola Mobility to ensure it aligned with the Google's corporate goals, one of the executives said that Google starts this process by looking into future trends before deciding to invest in M&A deals, particularly the expensive ones:

> *"In general, long before making significant investments we start by looking at the megatrends. However, our approach goes beyond this initial step. We project our vision 10 to 20 years into the future, contemplating how something created today can serve and transform the world tomorrow. We consider the evolving needs of the world, comparing what will be essential in the future to what is relevant now. Our focus is on creating solutions that contribute to making the world a better place— something that benefits people, the planet, and creates long-lasting positive change. We actively seek innovations that not only emerge but also stay, not just as short-term conveniences. Motorola promised a shift towards mobile phone advertising, which stood out as the decisive trend."* – Corporate development director

Based on the findings, The Market Power Theory, which aims to increase the acquirer's market advantage, effectively explains Google's motivation for acquiring Motorola. This also aligns with Katz's (2021) claim that Big Tech acquisitions are often driven by a desire to "kill the competition".

Aiming to integrate hardware and software also suggests elements of the Efficiency Theory, which focuses on optimizing resource allocation and achieving common goals through synergies.

Risks

Despite the thorough analysis, some challenges seem to have been overlooked. According to the interviews, Google discovered some unfavorable information about Motorola Mobility during the initial due diligence phase and was well aware of the risks. Despite this awareness, it decided that the benefits outweighed the risks and proceeded with the acquisition.

The interview participants indicated that the issues mainly revolved around Motorola's market decline, patent portfolio, and high operating costs. Motorola was losing market share to Apple and Samsung, raising questions about its long-term viability and the value of its phone business. Regarding the patent portfolio, it seemed that its relevance might have been questionable due to focusing on easily challenged patents in terms of complexity and cost. Following the sales decline and market share shrinkage, operating costs rose. Some secondary sources suggest that the sales decline was attributed to the high prices of products. Motorola attempted to sell a 4G smartphone exclusively through its main carrier, AT&T. Their first flagship phone for the carrier featured a unique laptop dock that attracted some customers. However, the high combined price of $199 for the phone and $499 for the dock, or $599 bundled together, deterred potential buyers. A similar pricing mistake occurred with the Xoom tablet, initially priced at $799 compared to Apple's iPad 2, which was an alternative sold for $499 with less memory (Cheng, 2011).

While the interviewees were unable, due to privacy concerns, to share explicit information regarding specific risk assessment methods or frameworks utilized by Google during the acquisition

of Motorola, they did suggest a couple of points where Google could have adopted a different approach to mitigate risks. One suggestion was negotiating a lower price. Considering Motorola's diminishing market share, Google might have successfully negotiated a reduced acquisition price to reduce the financial burden. An alternative approach that Google could have considered was concentrating solely on acquiring Motorola's patent portfolio. This strategy might have been more cost-effective, offering the desired protection for Android without the complexities of managing a struggling hardware business. The eventual sale of Motorola's hardware division at a loss also supports the notion that a more concentrated focus on patents might have been a more efficient strategy.

> *"Safer option could have been acquiring just the patent portfolio, instead of the entire hardware division."* - Emerging technologies engineer

In terms of how did interview respondents see the outcome of the acquisition, some believed Google had absolutely no benefits from the acquisition, saying *"Google never made any money from this acquisition"*, while the others argued that *"it wasn't all that bad in the end"*. Many agreed that Google benefitted from the Motorola acquisition in several ways. Initially, the acquisition granted Google access to Motorola's patents, which enabled it to protect the manufacturers using its Android software against patent lawsuits. Furthermore, it allowed the company to experiment with manufacturing smartphones under the Moto name. As indicated by Winkler & Ante for Wall Street Journal (2014), the Google's sale of Motorola to Lenovo facilitated the creation of another Android handset maker, potentially responding to Samsung's dominance. Lenovo's expertise in hardware manufacturing and its extensive supply chain positioned it well to introduce low-cost Android devices to the market, expanding Android's reach globally and potentially even challenging Apple's market share.

The additional information I've gathered through interviews was about how Google's target selection and evaluation processes have evolved since the Motorola acquisition, particularly how they've been adapted to avoid risks. Initially, Google focused on investing in larger companies with strong innovation and growth potential, as exemplified by the Motorola acquisition. However, as Google's Search dominance grew, the company shifted its focus towards acquisition programmes. This approach prioritizes acquiring smaller startups with rapid growth potential that align with Google's strategic goals, minimizing the risks associated with larger acquisitions like Motorola. Rehm et al. (2012) defined programmatic M&A as a strategic approach to managing a series of M&As as part of a larger, coordinated program. Unlike individual, large transactions, in programmatic M&A an acquirer pursues multiple smaller deals, usually with a specific strategic objective and established timeframe. (Rudnicki et al., 2021)

> *“We first build a pipeline of potential targets. The data is collected and inserted into the database. AI is essentially used to analyze the data and suggest the best potential targets out of hundreds or even thousands of names. It also identifies the risks and benefits associated with the targets. Then we have the team that manually goes through the AI selected targets’ data to verify it. If all is fine, the due diligence and negotiations teams take it from there.”* – Director of strategy and M&A-Generative AI

The interviewees' preference for acquiring just the patent portfolio aligns with Park et al.'s (2013) theory, which suggests that it can be more beneficial and less risky for an acquirer to target specific parts of a business or an asset, such as a patent portfolio, rather than buying the entire company. This approach highlights the importance of considering both the overall corporate and specific

strategic perspectives when selecting a target. However, the information regarding Google's current M&A strategy indicates that the company has evolved from its past mistakes.

5.1.1.2 Specific strategic perspective

Innovation

All interview participants agreed that Google highly values innovative technologies in potential acquisition targets. Targets that offer market disruptive technologies or potential to improve Google's offering are especially appealing. Strong and unique IP portfolios, however, top the list of requirements according to the interview respondents. These can be in the form of trademarks, copyrights, or patents, etc. that have a strong potential to give Google an advantage over the competition. According to this, it's no surprise Google went for Motorola Mobility provided the company was in possession of a high number of mobile technology patents.

> *"Strong and unique IP is a major factor. It gives a leg up on the competition by protecting Google's inventions and brand identity, and generally speaking, it accelerates Google's efforts. The type of IP we prioritize may vary depending on our current strategic goals."*- Lead technology analyst

The interviewees were asked about the specific innovation goals Google aimed for with this acquisition and three main points emerged- focus on Android ecosystem, patent portfolio, and hardware expertise. While the acquisition might have involved some elements of creating entirely new phone models, the primary focus seems to have been on improving the existing Android ecosystem through hardware integration, which is why Google needed Motorola's IP, more precisely its patents. Firstly, Google aimed to protect the Android ecosystem, a rapidly growing

mobile operating system that faced patent challenges from competitors like Apple. Motorola possessed a substantial patent portfolio, and Google believed acquiring it would strengthen Android's position in the mobile market, preventing potential patent lawsuits that could impede its growth.

> *“Google needed Motorola's patent portfolio to protect Android from patent lawsuits from competitors and strengthen its market position.”*- Lead technology analyst

Secondly, Google aimed to leverage Motorola's established hardware manufacturing expertise to potentially create better Android phones, even though some interview participants argued that Google only wanted Motorola for its patents, and not the manufacturing. At the same time, as one interviewee stated, Google *"wanted to own both hardware and software”.* The objective behind this was to improve the user experience, appeal to a broader customer base, and enter the mobile phone market to compete directly with industry leaders. Google wasn't necessarily aiming to create an entirely new product or service, but rather reconfiguring the existing Android ecosystem by bringing hardware and software under its control.

> *“Acquiring Motorola's manufacturing knowledge could help create better Android phones, although the main goal wasn't necessarily a brand new product but bringing hardware and software under one roof to enhance the Android experience.”*- Regional product lead for Android

In the pursuit of ensuring Motorola is a good fit for Google's innovation goals, Google conducted a comprehensive assessment across several critical dimensions. The most mentioned dimensions by the interview participants were as following:

Patent Portfolio: This dimension was identified as central to Google’s assessment. Specifically, factors such as the strength of patents, their thematic focus, and their alignment with Google's vision for Android's development were taken into consideration. The key technological domains that Google evaluated patents within included mobile processors, display technologies, and communication protocols. This evaluation held significance, as a robust patent portfolio was also expected to function as a defense mechanism against potential patent infringement lawsuits, thereby protecting the ecosystem from legal challenges that could stifle innovation.

Hardware Manufacturing Expertise: Google aimed to assess the potential integration of Motorola's well-established manufacturing expertise with Google's software development efforts. To achieve this, it meticulously evaluated Motorola's manufacturing capabilities and production processes. The goal was to leverage Motorola's knowledge to foster innovation in hardware design and enhance production efficiency. The envisioned closer integration between hardware and software was poised to pave the way for improved Android devices with new features and functionalities.

Market and Brand: One of the important aspects of Google's assessment involved an analysis of Motorola's brand recognition and market position. This analysis helped in understanding the potential impact on user adoption and market competitiveness of jointly developed Android devices. The emphasis on a strong brand with established customer loyalty, particularly in strategically targeted markets, was key in shaping the success of future joint work between the two companies.

Technical Expertise: In the pursuit of innovation alignment, Google conducted a thorough evaluation of Motorola's engineering teams and technical expertise. This evaluation centered

around scrutinizing their capabilities and potential for synergistic collaboration with Google's software engineers in crafting advanced Android devices. Motorola’s robust technical team, possessing expertise in critical domains like hardware engineering, user interface design, and software development, emerged as a key determinant for their significant contribution to the combined innovation efforts.

Additionally, in conversations with the interview participants, we discussed Google's current strategies. Presently, Google directs its acquisition efforts toward two main domains: artificial intelligence (AI) and providers of cloud computing infrastructure. This is not surprising as many companies are investing in these sectors to maintain a competitive edge and given the significance of AI in today's technological landscape. In 2017, Google’s CEO Sundar Pichai announced that AI was the next big step for Google, stating, "In an AI-first world, we are rethinking all our products and applying machine learning and AI to solve user problems" (Davenport & Mittal, 2023, p. 1). At the same time, cloud computing providers have become crucial facilitators of business operations and data storage. The synergies between AI and cloud computing are just starting and promise to bring many more innovations in the upcoming years (Xue et al., 2021; Alsaroah et al., 2023)

> *“AI and cloud computing are key growth areas now. Startups with disruptive AI or cloud technologies edge strongly align with Google’s growth strategy. DeepMind* (AI) *and Apigee* (API management for cloud) *are great recent examples.”*- President, Google customer solutions

As indicated by the findings, Google appears to have pursued two types of innovation through the Motorola acquisition: incremental and architectural. They utilized Motorola's expertise to integrate

hardware with their existing software, reflecting incremental innovation, which emphasizes improving existing offerings. Additionally, Google aimed to reshape the Android ecosystem by consolidating control over both hardware and software, aligning with architectural innovation, which involves making significant changes to a system's underlying structure to create new products or services and capture new market realms. While Google may have had aspirations to potentially introduce new phone devices, leaning towards radical innovation, this was not the primary focus.

Preliminary due diligence procedures

Overall, the participants' answers regarding the question related to the criteria Google used to initially assess Motorola and ensure alignment with its strategic goals can be summarized in three elements: strategic fit, team skills, and minimal risks.

Strategic fit: The target had to align with Google’s long-term vision. One of the key criteria was a specific technology focus, such as mobile hardware development, to address the needs of emerging markets where Motorola had established expertise. This ensured the target company could respond effectively to Google's needs. Ideally, the acquisition was expected to address a critical technology gap in a more efficient, cost-effective, and timely manner than internal development. Ultimately, the goal was to increase Google's revenue. As one interview respondent put it:

> *“We identified the gap between our capabilities and the goal. M&As are often a tool to close that gap. They have ready knowledge and skills that we can tap into instead of wasting resources trying to figure it out ourselves. If they are financially*

> *healthy and have already established a significant user base, that's what we are looking for."* – Global managing director for Android

Team skills: Motorola's team was evaluated to ensure they possessed the required skills and expertise. In particular, the development and engineering teams were assessed. They needed to bring in skills that would complement Google's existing capabilities. Additionally, they had to be culturally compatible, meaning they had to demonstrate the ability to collaborate efficiently with Google's teams.

> *"Knowledge and skills are great assets, but if we can't work together in a harmonious manner, the results will be inconsistent."*- Innovation managing director- R&D

Minimal risks: The transaction needed to be free from complications and issues as much as possible, particularly when IP was concerned. This is why Google specifically emphasized the scrutiny of IP ownership to ensure there are no potential infringements on third-party IP that the target company's technology might be using. Another criterion was the assessment of how the target company's IP portfolio would integrate with Google's existing IP and whether there are any potential conflicts or redundancies.

Despite the target being scrutinized for complications and risks concerning IP, when asked about the challenges during the preliminary due diligence, the interview respondents most often mentioned complexity. Motorola possessed a vast and intricate IP portfolio including various technologies. Separating strategic patents from less valuable ones was difficult and required a thorough audit with specialized firms. This process involved reviewing patent applications, registrations, licenses, and potential infringement issues. Another challenge mentioned by some

respondents was a lack of transparency from Motorola's side. Specifically, there was speculation about hidden liabilities at Motorola. Some participants believed that Motorola might have been involved in ongoing patent infringement lawsuits that weren't readily apparent during the initial evaluation because they were not transparently communicated by the Motorola teams.

As the interview conversations unfolded, I found that Google's initial selection and evaluation strategy goes beyond merely identifying innovative companies. Even though this information is not directly related to the Motorola acquisition case, I found it relevant for understanding Google's preliminary due diligence procedures and early evaluation process, and therefore, I included it in this analysis.

Google actively fosters an environment that cultivates and nurtures innovation, allowing it to identify and acquire high-potential companies early in their journeys. This approach is characterized by two key pillars: fostering innovation and supporting startups while gaining early access to innovation.

> *"At Google, our duty is to promote innovation. This is why we build ecosystems that encourage and support exceptional startups to actively innovate. Many of our acquisitions come from partners who already work with us in some way. If they have been benefiting from us all along, why not merge the powers? We aim to be a part of their journey early on and long before the acquisition takes place."* – Corporate development director

Firstly, Google fosters innovation and builds relationships with the startup community through its extensive open-source approach. By providing free access to powerful and reliable tools and platforms, Google empowers startups to build and grow, while simultaneously allowing the

company to identify promising targets within the open-source ecosystem. Google strives to be an appealing acquirer by offering startups its wide pool of resources, helping them to reduce development costs and allowing them to focus on core areas such as product development and marketing. During the Motorola acquisition, Google aimed to enter the smartphone market and actively sought targets involved in Android development to invest in.

Secondly, Google's 'Google for Startups' program directly supports innovative and growing businesses. Through this program, high-potential startups receive support in the form of mentorship, training, funding, and networking opportunities, promoting their growth. This program not only enables startups to benefit from Google's resources but also grants Google early access to sources of innovation, allowing them to identify and potentially acquire these high-potential companies at an early stage. By fostering a collaborative ecosystem, Google for Startups not only contributes to the success of emerging businesses but also plays a pivotal role in shaping the future landscape of technology and entrepreneurship.

Besides implementing this dual approach, Google prioritizes data-based decision-making in assessing targets. AI tools are increasingly used in this case due to the fact that Google often acquires through acquisition programmes, which require quick, efficient, but also precise processing of huge amounts of data.

> *“We heavily rely on data, and lately, AI is becoming a major tool for this. Especially with acquisition programs, it is not feasible to process huge amounts of data in any other way. The latest trends and shifts all point towards AI and machine learning, and that's the direction we are heading as well. However, we have a greater responsibility as the shapers of these changes. We are expected by default to deliver*

better and more advanced results than everyone else." – Director of strategy and M&A- Generative AI

Table 7 summarizes the findings of Google's acquisition of Motorola.

Google's acquisition of Motorola	
Perspective	Factors
Overall corporate	Motivations and goals: ● Enter mobile phone market ● Establish dominance in search and advertising
	Risks: ● Motorola's market decline ● Motorola's patent portfolio relevance ● Motorola's high operating costs Suggested mitigation approach: ● Negotiating a lower deal price ● Focusing solely on patent acquisition
Specific strategic	Innovation: Goals: ● Expanding IP portfolio ● Securing Android ecosystem through hardware integration Assessed dimensions: ● Patent portfolio strength ● Manufacturing expertise ● Market and brand analysis ● Technical expertise evaluation
	Preliminary due diligence: Assessed Dimensions: ● Strategic fit ● Team skills ● Risks Challenges:

	● Complex IP scrutiny ● Lack of transparency

Table 7. Google's acquisition of Motorola

5.1.2 IBM's acquisition of Red Hat

5.1.2.1 Overall corporate perspective

Motivations and goals

When asked about the motivations for the Red Hat acquisition, a Senior Vice President for Global Software Businesses at IBM responded:

> *"We understand our customers' needs, yet we may not always have the capacity to develop everything on our own and do it fast enough. Therefore, we rely on partners to assist us. In return, we support these companies in accelerating their growth and establishing entirely new ecosystems, allowing us to consistently serve our customers."*

This statement gave a great introduction to what the rest of the interview participants said. Although the interviews didn't provide much additional information beyond what is already known and publicly shared, I was able to capture some details that can contribute to the secondary data presented in section 3.3.

At a high level, the statement from the Head of Strategy for Cloud Consulting in EMEA, describes IBM's acquisition strategy:

> *"We always look for the right time for everything. We look ahead where the market goes, even though this can be hard to predict. This is why our primary focus is to align with our overall strategies that are focused on software and consulting. We look for valuations that are attractive and financial models that align with what we want to do."*

The main motive, as indicated by the interviewees, was the ability to compete in the cloud market, which was quite tactical with a concrete goal in mind. IBM, traditionally known for its hardware and enterprise software, was facing increasing competition in the cloud market. Red Hat, on the other hand, was a leader in open-source cloud solutions and had a reputation for flexibility and innovation. Acquiring Red Hat allowed IBM to instantly gain a significant foothold in the cloud space. As organizations were increasingly adopting hybrid cloud models, combining public and private cloud infrastructure, Red Hat's solutions perfectly complemented IBM's existing hardware and software portfolio, enabling them to offer a comprehensive hybrid cloud platform together.

> *"Since the Red Hat acquisition, IBM has been on a fast track to becoming the leader in Hybrid Cloud, and the results speak for themselves."* – General manager- M&A strategy and development

As we touched upon the specific key performance indicators during the conversations, the interviewees mainly mentioned revenue growth and customer base growth and retention. Red Hat's subscription-based model offered a recurring revenue stream, which was highly attractive to IBM's long-term financial goals. Overall, the strategic move sought to cultivate a more agile and

collaborative environment, fostering accelerated development cycles and the creation of cutting-edge solutions. In addition, the acquisition aimed to enhance customer satisfaction and loyalty by offering a more comprehensive cloud platform. This way, IBM hoped to strengthen its position in the competitive market and serve a wider range of customers.

Similar to Google's motivation for the Motorola acquisition, IBM also aimed to increase its market power. Acquiring Red Hat positioned IBM as a one-stop shop for businesses dealing with the complexities of hybrid cloud environments, aligning with both Market Power Theory, which seeks to gain market share and influence, and Efficiency Theory, which pursues operational efficiencies through complementary offerings. There were also indications of motivations described by the Free Cash Flow Theory, as IBM's goals included revenue and customer base growth.

Risks

Throughout the interviews, there was one concern mentioned by multiple participants that, according to them, presented a risk for this acquisition. This concern was successfully merging the open-source culture of Red Hat with IBM’s more rigid corporate culture. Before the acquisition, many sources stated that this would be a problem because Red Hat allows its engineers to freely work on open-source projects that don’t necessarily benefit Red Hat, while IBM had a more traditional approach in this regard (Taft, 2018). Another concern that came up in the interview conversations, but was considered less threatening, was the fact that Red Hat’s partners were direct competitors of IBM in the cloud space, such as Microsoft, AWS, and Google. This meant that the acquisition was expected to cause change in the dynamics in these partnerships, which, eventually was not the case.

To mitigate the risk of cultural clash and ensure a smooth transition, IBM decided to allow Red Hat to continue operating independently. Interviewees emphasized the paramount importance of preserving Red Hat's entrepreneurial environment and maintaining an unstifled level of innovation. In particular, IBM wanted Red Hat to keep the focus on open-source technology intact. Consequently, this entailed establishing separate reporting structures while fostering open communication channels between the two entities to maintain transparency and collaboration. Some also feared that functioning separately might be complex due to the additional bureaucracy.

> *"We committed to upholding Red Hat's dedication to open-source principles and we engaged in numerous conversations with Red Hat officials and the developer community to reassure them of this commitment."* –Vice President of Global Software Businesses

In 2018, Jim Whitehurst, Red Hat's CEO and President at the time said: *"Joining forces with IBM will provide us with a greater level of scale, resources and capabilities to accelerate the impact of open source as the basis for digital transformation and bring Red Hat to an even wider audience – all while preserving our unique culture and unwavering commitment to open source innovation."* (Red Hat website, 2018)

In response to the question of whether IBM used any particular framework or method to identify the risks during the due diligence and how reliable they were, the General Manager of Strategy responded that there was no specific framework because each M&A case is different.

> "*There is not really one single framework that we use, the process differs from case to case. Overall, we would use usual VC metrics, meaning we look at sales, customer acquisition costs, year on year growth, sales churn rates etc. They might be already*

> *serving our customers successfully, we want to know how to join and serve the customers together."* – GM Strategy and Development

5.1.2.2 Specific strategic perspective

Innovation

IBM acquired Red Hat's open-source software that was rapidly gaining traction and combined it with their own hardware and software offerings. The interview participants said that the ultimate goal was to create a new comprehensive hybrid cloud platform, which allowed IBM to address the growing demand for hybrid cloud solutions. They all agreed that by acquiring Red Hat's open-source expertise and big developer community, IBM wanted to enhance its own cloud offerings. This upgrade was meant to allow the company to stay competitive in the market and meet ever-evolving customer expectations. However, they knew that this alone was not enough to secure success in the long run. IBM needed to continuously enhance its cloud offerings to maintain a competitive edge.

> *"Getting access to Red Hat's knowledge base was just the initial step. We needed their expertise to keep the momentum"* – Red Hat director for EMEA

> *"By leveraging Red Hat's expertise and developer base, we could continue expanding our own portfolio of offerings."* - Innovation Architect

In regard to the measures that IBM used to evaluate Red Hat's alignment with its innovation goals, one of the interviewees said, *"In general, what we look for is the worth of the assets that we want. It could be patents, data, skills, and how much growth this acquisition could potentially bring to our portfolio."* Overall, based on the interviews, four dimensions stood out that IBM recognized as

crucial for leveraging Red Hat's strengths to drive innovation in the hybrid cloud offerings. The dimensions are described below.

Cloud Architecture: This involved a comprehensive analysis of Red Hat's core technologies, particularly their containerization platform (Red Hat OpenShift) and cloud management solutions. Understanding the cloud architecture was crucial for integrating Red Hat's technology into IBM's existing cloud infrastructure effectively. This evaluation helped identify synergies between the two platforms and opportunities for innovation.

Open-Source Compatibility: Given IBM's proprietary software ecosystem and Red Hat's focus on open-source technologies, assessing compatibility was critical. IBM had to ensure that Red Hat's open-source solutions can seamlessly integrate with its proprietary offerings without causing conflicts or disruptions. This assessment helped IBM leverage the benefits of open-source innovation while maintaining compatibility with its existing technology stack.

Interoperability: Interoperability is essential for a hybrid cloud platform, allowing seamless connectivity between different cloud environments. IBM evaluated how Red Hat's solutions enable interoperability between on-premises infrastructure and various public cloud providers. This evaluation helped IBM create a joint hybrid cloud platform that offers flexibility and scalability to customers while driving incremental innovation in cloud computing.

Talent Retention Strategy: Ensuring that Red Hat had an efficient retention strategy in place was a crucial factor for long-term success after the acquisition because Red Hat's engineering talent and developer community were the sources driving innovation. IBM also ensured to develop a strategy from its side to retain key personnel and leverage their expertise in open-source development methodologies post-acquisition.

> *"We rely on Red Hat. Our partnership has stood the test of time, and IBM couldn't risk losing any of its superstars. We had to make sure they continue the journey with us."* – Data and technology innovation director

As observed in the findings, when IBM acquired Red Hat, its goal wasn't solely focused on a single type of innovation, but rather on a strategic combination of architectural and incremental innovation. The primary driver behind the acquisition was to leverage existing technologies, aligning with the definition of architectural innovation. Additionally, IBM aimed to create a new cloud platform while maintaining its competitive edge. In this regard, incremental innovation, referring to the strategy of making small, gradual improvements to existing products, services, or processes, also played a significant role.

Preliminary due diligence procedures

The initial due diligence procedure was driven by IBM's strategic investment focus and a commitment to building a cohesive ecosystem. The emphasis on strategic alignment, engagement with internal and external stakeholders, and a systematic evaluation process contributed to a comprehensive understanding of Red Hat's potential fit within IBM's ecosystem. By involving various contributors and leveraging both internal and external resources, IBM aimed to ensure that the acquisition would not only be innovative but also strategically valuable to their long-term goals that rely on acquisition programmes.

> *"We are strategic investors first, focused on building the ecosystem. Therefore, the target needs to align with our acquisition programme. It is not enough to only be innovative and demonstrate a high potential for profitability."* – Executive Vice President of Corporate Development

The following three dimensions outline the steps involved in the evaluation of Red Hat during the preliminary due diligence phase, as most commonly mentioned by the interviewees:

Strategic Fit: This involved evaluating how well Red Hat's offerings and capabilities complemented IBM's existing portfolio and strategic goals, as well as considering cultural fit. EMEA Head of Strategy indicated "*As we were in the process of transforming our portfolio of services, we knew that Hybrid Cloud and AI were the focus. Red Hat was a perfect fit for that strategy.*" However, one of the concerns was how Red Hat's agile startup culture would integrate with IBM's potentially more hierarchical structure.

Internal Recognition and Mapping: IBM's internal teams played a crucial role in identifying Red Hat as a good fit. As for most IBM's acquisitions, this process typically starts when some of IBM's top executives recognize a need or a trend for a certain innovation. They then bring these ideas to the forefront, leading to board discussions and mapping suitable targets to assess the feasibility and alignment of the target. If the target seems promising, the engagement and negotiations follow. IBM usually opts for targets among its existing partners, because trust and the relationship already exist. Indeed, IBM and Red Hat already had about two decades of collaboration before the acquisition negotiations started. IBM has been a longstanding advocate of Linux, building an early partnership with Red Hat to foster the development and expansion of enterprise-grade Linux. Just before the acquisition, their alliance extended to the joint efforts in delivering enterprise Kubernetes and hybrid cloud solutions. (Red Hat website, 2018)

> *"We like to engage employees in the process. Each investment usually starts internally, where some of the IBMers recognize a need or a trend for a certain innovation. Everyone can contribute with their ideas. However, it is usually the*

> *executives that bring that idea to the front. The board discusses it, and the mapping starts. This is not the only way we prospect high-potential targets; they often come to us directly. The process is actually pretty easy, they can simply contact us through our website or by contacting a person in charge directly. If the prospect is promising, the evaluation can start right there and then."*

Strategic Sessions with Red Hat Executives: IBM conducted exhaustive strategic planning sessions with Red Hat decision-makers, clearly defining the characteristics of the desired joint goals and objectives. Before the negotiations started, IBM had a clear picture of the acquisition KPIs that were measurable in time and space. The target expectations and goals were clearly set well before the due diligence phase. These discussions served primarily two purposes: sharing expectations with Red Hat's executives and ensuring alignment between both companies and brainstorming new ideas and objectives that could be achieved after joining forces.

In more general terms, I found through the interview discussions that a part of IBM's acquisition strategy is to maintain an open prospecting approach. Besides actively engaging its employees and subcontractors in the process of searching for potential targets, as mentioned earlier, IBM also welcomes recommendations and introductions from third parties, such as venture capitalists and investment banking networks. This involvement leverages the business acumen contributing to the evaluation of the targets.

> *"Our network also plays a significant role in identifying potential high-value targets. Whether it's from venture capitalists, investment bank partners, or consulting firms, we welcome suggestions that can contribute to the selection and evaluation process."*– Data and technology innovation director

To the question of whether there have been any challenges or unexpected findings in the due diligence process, the interview participants mentioned a few. However, there was no clear indication of how these challenges were addressed. As they explained, traditionally, IBM relied on selling proprietary software licenses and associated services. This generated high upfront costs for customers but locked them into IBM's ecosystem. Red Hat, on the other hand, thrived on an open-source model which made it tricky for IBM to value Red Hat. Below are the reasons why, according to the interview participants:

Intangible Value: A large part of Red Hat's worth was derived from open-source software, which IBM traditionally hadn't fully embraced. Accurately valuing a company built on a subscription model for open-source software, with ongoing development from a big, decentralized community, was difficult to quantify with IBM’s traditional financial metrics. Unlike a proprietary product with a clear price tag, Red Hat's value came from its ability to attract developers, build a strong ecosystem, and continuously improve its open-source offerings.

Uncertain Development Costs: Open-source software development relies heavily on community contributions. To predict the ongoing costs required to maintain and enhance Red Hat's open-source products was challenging for IBM, which was used to controlling its development processes.

Table 8 represents a summary of the IBM’s acquisition of Red Hat analysis.

IBM's acquisition of Red Hat	
Perspective	Factors
Overall corporate	Motivations and goals: ● Compete in the cloud market KPIs: ● Revenue growth ● Customer base growth and retention
	Risks: ● Cultural clash ● Red Hat's partner dynamics change Mitigation strategy: ● IBM allowed Red Hat to operate independently to avoid cultural clash
Specific strategic	Innovation: Goals: ● Enhance cloud offerings ● Acquire open-source expertise ● Gain hybrid cloud advantage Assessed dimensions: ● Cloud architecture review ● Open-source compatibility assessment ● Interoperability evaluation ● Talent retention strategy
	Preliminary due diligence: Assessment dimensions: ● Strategic fit ● Internal recognition ● Sessions with Red Hat executives Challenges: ● Intangible Value ● Uncertain Development Costs

Table 8. IBM's acquisition of Red Hat

5.2 Cross-case analysis

5.2.1 Overall corporate perspective

Motivation goals

Both acquirers strategically used acquisitions to address challenges and pursue growth opportunities. However, their specific motivations, underlying corporate strategies, and desired outcomes differed based on their technological landscapes and long-term visions.

Both Google and IBM aimed to gain market power in their respective target markets, which corresponds with the Market Power Theory. Google wanted to strengthen its position in the digital advertisement space through entering the mobile phone market. IBM sought to establish itself as a leader in the cloud computing market and respond to the competitors like Amazon Web Services (AWS) and Microsoft Azure. There was also an element of Efficiency Theory in their motivations as Google hoped to integrate Motorola's hardware expertise for more efficient development of Android devices and IBM sought to leverage Red Hat's open-source software and developer community to enhance its own cloud offerings.

Even though initially similar, their core motivations differed. Google lacked the hardware expertise to fully compete in the mobile phone market, while IBM was facing challenges in keeping up with the fast-paced cloud market. However, Google's primary concern was protecting the Android ecosystem and its dominance in search and advertising, while the smartphone market itself was a secondary goal. Its long-term vision was to establish itself as a leading technology platform, and the Motorola acquisition was one piece of that puzzle. IBM, on the other hand, was primarily focused on strengthening its position in cloud space and competing with established players, with Red Hat being a key element in achieving that goal. This indicates that Google had a rather proactive

approach, focused on future trends and potential market disruption to the point where they were even ready to make risky moves. On the other hand, IBM took a more reactive approach to the acquisition, seeking a partner to complement its offerings and remain competitive.

The types of acquisitions were also different. Google's acquisition of Motorola can be classified as a congeneric, which was defined in Table 3, section 2.1.2. Google (Android operating system) and Motorola (smartphone manufacturer) belonged to the same general industry, which was mobile technology. Their products were not exactly the same (software vs. hardware) but were related and complementary. Google aimed to leverage this synergy by integrating Motorola's hardware expertise with Android to create mobile devices and potentially increase market share. IBM's acquisition of Red Hat can be categorized as a horizontal with some aspects of a vertical, defined in Table 3, section 2.1.2. It was a horizontal integration because both IBM, known for established enterprise software, and Red Hat, known for open-source cloud solutions, were major players in the software industry, although they offered different types of software. To some degree, however, they competed with each other. By acquiring Red Hat, IBM gained a foothold in the fast-growing cloud computing market, where Red Hat was already established. This suggests some vertical integration strategy, where IBM aimed to expand its software offerings upstream into the cloud space. Overall, Google's acquisition aimed for synergy within the mobile technology industry (congeneric), while IBM's acquisition involved both gaining a competitive edge in the software industry (horizontal) and expanding into the cloud market (vertical).

The outcomes differed as well. Google's acquisition of Motorola was not entirely successful. While they gained patents, they struggled in the competitive smartphone market and eventually sold Motorola. IBM's acquisition of Red Hat is still unfolding, but it has positioned IBM as a strong player in the hybrid cloud market.

Risks

When it came to identifying and mitigating potential risks, it seemed that the proactive and reactive roles here took turns. While IBM took a proactive approach to risk management, Google had a rather reactive response.

Despite becoming aware of several challenges during the due diligence process, such as Motorola's declining market share, the scrutiny surrounding the relevance and strength of its patent portfolio, and the rising operating costs amid declining sales, Google concluded that the benefits outweighed the risks and proceeded with the acquisition. The rationale behind this decision centered on securing Motorola's patent portfolio as soon as possible and proceeding with pursuing its long-term goals. However, it appeared that Google underestimated the difficulties associated with managing a struggling hardware business, as the acquisition ultimately yielded unfavorable results.

In contrast, IBM adopted a proactive stance towards risk mitigation. Recognizing early on the potential for a clash of corporate cultures, IBM identified this as a significant risk and took steps to address it. To mitigate this concern, IBM allowed Red Hat to maintain its independence. This involved establishing separate reporting structures and fostering open communication channels to maintain transparency and collaboration, all while preserving Red Hat’s entrepreneurial spirit and expertise in open-source technology. IBM viewed this approach as essential for the success of the hybrid cloud platform they envisioned.

Overall, while both companies identified potential risks during the target evaluation, Google only acknowledged them after the initial analysis and proceeded with the acquisition regardless. Conversely, IBM identified the risks and implemented a mitigation strategy to preserve Red Hat's value proposition.

As seen in the interviews analysis in section 5.1.2.2 under the Risks section, Google acknowledged that their acquisition approach has evolved over time, with a current focus on acquisition programmes involving smaller startups in clusters, a strategy that carries less risk compared to acquiring larger entities like Motorola. IBM, however, did not mention specific risk assessment frameworks, indicating a case-by-case approach that takes into account traditional VC metrics such as sales growth and customer acquisition costs.

In conclusion, it seems that Google's risk assessment approach in the Motorola acquisition was not fully accurate. It emphasized potential benefits, but missed to recognize the magnitude of the identified risks. Nonetheless, the company learned from its mistakes and adjusted its approach for improved outcomes in the future. On the other hand, IBM's proactive risk mitigation strategy ensured successful integration and collaboration between the two companies, while at the same time maintained a more conventional approach to target evaluations, which appears to have been yielding positive results for them.

5.2.2 Specific strategic perspective

Innovation

It was evident that both Google and IBM aimed to gain innovation through the acquisitions. However, their innovation goals and target evaluations differed considerably. Google's approach appears more opportunistic, driven by the need to protect the Android ecosystem through patents and enter the competitive mobile phone market. IBM's approach seemed more strategic. They identified a growing market need (hybrid cloud) and targeted a specific company (Red Hat) with

complementary expertise to create a new offering. The focus on open-source compatibility and talent retention suggested a long-term commitment to this acquisition.

Google's innovation goals for the Motorola acquisition seemed less specific compared to IBM's. Google aimed to integrate software and hardware and potentially create new phone models, but the concrete plan remained unclear. IBM, on the other hand, had a clear vision of creating a new hybrid cloud platform.

Google's strategy revolved around evaluating Motorola’s patents, viewing them as critical assets of this acquisition. This emphasis on intellectual property (IP) was driven by the desire to secure a competitive edge and potentially deter competitors through legal means. Additionally, Google sought to harness Motorola's manufacturing capabilities to optimize hardware design and production processes. Moreover, considerations regarding brand recognition and market positioning were carefully weighed, with the consideration of driving user adoption of jointly developed products. Throughout this process, Google prioritized the alignment of its acquisition targets with long-term vision and strategic goals, leveraging patents as a cornerstone of its innovation strategy.

IBM’s focus extended beyond IP and involved broader evaluations of Red Hat’s technologies and other business aspects to ensure the compatibility and long-term collaboration. IBM's innovation goals revolved around the creation of a comprehensive hybrid cloud platform, leveraging Red Hat's open-source expertise to drive this endeavor. At the same time, IBM recognized the importance of continuous improvement, seeking to enhance its existing cloud offerings through the integration of Red Hat's technologies and talent pool, which would eventually reposition IBM favorably in a

rapidly evolving market landscape. In doing so, IBM sought to strike a balance between innovation and collaboration, leveraging the strengths of both organizations to drive collective success.

Overall, both acquisitions involved reconfiguring existing technologies and business models to create new value propositions, indicating the architectural innovation approach. While this was the primary focus for both, they also demonstrated the incremental innovation approach to some extent. Google potentially aimed to improve existing Android devices through hardware integration. IBM looked to enhance its own cloud offerings by leveraging Red Hat's expertise.

Preliminary due diligence

Google's due diligence prioritized long-term vision and the identification of companies that aligned with their future trajectory. They actively sought targets that addressed critical technology gaps and held the potential to boost revenue streams. Future trends and the target's innovation potential were central to their evaluation process. This visionary approach highlights their focus on opportunity-driven acquisitions that could propel them ahead of the curve. On the other hand, IBM's due diligence emphasized strategic alignment within their existing ecosystem and long-term goals, heavily influenced by their established acquisition programmes. They looked for targets that complemented their current offerings and fostered a cohesive ecosystem. This strategic alignment ensured the acquisition wouldn't disrupt their existing landscape but rather strengthen it.

These different strategic priorities were manifested in the design of their due diligence processes. Google prioritized a visionary, outward approach, actively seeking innovative targets and remaining agile to sudden opportunities. Its use of AI-powered data analysis and its cultivation of an external innovation ecosystem set it apart. Furthermore, Google actively relies on data-driven decision-making processes. With the support of AI tools, the company efficiently processes large

amounts of data during the due diligence process which enhances the accuracy and efficiency of their evaluations, ultimately ensuring informed decision-making.

While Google appears to initiate the target search process outwardly, beginning with a focus on long-term vision and megatrends, and subsequently seeking available opportunities to bridge the gap towards achieving that vision, IBM takes an inward approach. IBM begins by identifying internally the aspects that could enhance their productivity and market position before proceeding to seek targets that align with these identified goals. By relying on its teams to recognize emerging needs and trends, IBM fosters a culture of innovation and alignment with current business objectives. Existing partnerships are also prioritized, capitalizing on established trust and relationships to facilitate smoother integration and collaboration. Open and transparent communication in strategic sessions with the target’s team plays a crucial role in IBM's approach, allowing for in-depth discussions with target company executives to define joint goals and key performance indicators (KPIs). By establishing a clear understanding of expected outcomes early on, IBM ensures alignment throughout the negotiation process. Beyond internal channels, IBM embraces open prospecting, actively seeking suggestions from employees, subcontractors, and external partners such as venture capitalists. This broadens the acquisition funnel, potentially uncovering hidden opportunities and fostering a diverse portfolio of targets.

While both companies conducted thorough evaluations considering strategic fit, team skills, and potential risks, their core strategies were different. Google prioritized a visionary approach, actively seeking innovative targets that aligned with their long-term vision. IBM, on the other hand, focused on building a strong ecosystem through strategic acquisitions that complemented their existing offerings. Additionally, Google embraced AI for data-driven decision-making, while this aspect was not emphasized in IBM’s due diligence process.

5.2.3 Key findings

The cross-case analysis, conducted from two perspectives, overall corporate and specific strategic, suggests that target selection and early-stage evaluation practices significantly influenced the contrasting outcomes of Google's Motorola acquisition, which was a failure, and IBM's Red Hat acquisition, which has been successful. This section presents a breakdown of how these practices played a role.

From an overall corporate perspective, both companies were essentially motivated by the same goals - gaining market power and increasing efficiencies. However, they took completely different approaches to achieving these goals.

Google sought to strengthen its position in the market it was already strong in (digital advertisement) by entering a new market (smartphone). For IBM, the acquisition was a source of expertise as a key to achieving its goal, which was establishing itself in a space it was not previously strong in (cloud). The types of acquisitions chosen by each company also reflected their strategic priorities. Google's acquisition of Motorola, a congeneric acquisition, aimed to create synergies, while IBM's acquisition displayed characteristics of horizontal integration aimed at positioning itself in the new market and vertical integration aimed at accelerating growth in the same. The outcomes of these acquisitions further highlight the contrasting approaches to risk evaluation. While Google overlooked the potential pitfalls, IBM's rather traditional but proactive approach secured successful integration.

When it comes to target selection, Google appeared to take a more proactive, visionary approach, aiming to disrupt the market and protect their Android ecosystem by entering the hardware space. However, this proactive strategy might have led them to overlook the immediate risks and

challenges. They might have underestimated the complexities of managing a declining hardware business and integrating a different corporate culture, which indicates that evaluating the target from the specific strategic perspective might have been omitted by Google. IBM, on the other hand, took a reactive, rather tactical approach, seeking to catch up with established cloud players by acquiring Red Hat. While reactive, their focus on a well-established player in the growing market provided more sustainable results. IBM clearly identified the risk of cultural clashes with Red Hat and took steps to mitigate it, which suggests a more comprehensive evaluation process on IBM's part, taking both overall corporate and specific strategic perspectives into account.

Looking at the specific strategic perspective, both acquisitions aimed for architectural innovation, which involved reconfiguring existing technologies and business models to create new value propositions, as well as incremental innovation aimed at continuous development. However, the level of specificity in their innovation goals differed. Google's goals for the Motorola acquisition seemed less concrete, while IBM, on the other hand, had a well-defined goal of diversifying the portfolio and establishing a new offering.

In regard to the strategic fit evaluation, Google prioritized potential future benefits over immediate strategic fit. Integrating hardware expertise might have seemed strategically sound in the long run, but it wasn't necessarily the most pressing need for Google at that time. Considering their ultimate goal of maintaining leadership in the digital advertising space, which included establishing a foothold in mobile advertising, there might have been more efficient ways to achieve it. As the interview respondents mentioned, acquiring just patents instead of the entire company might have been a solution. IBM's evaluation of Red Hat, which was already an established player in the growing cloud market, offered a more immediate strategic fit, directly addressing their competitive gap in the cloud space. This again indicates that IBM likely evaluated the target from both

perspectives (overall corporate and specific strategic), as they considered long-term goals while efficiently responding to current business needs.

In the preliminary due diligence process, one of the main differences between the acquirers lies in their approaches to recruiting and selecting targets. Google tends to cultivate a diverse pool of potential targets and uses AI for large-scale evaluations. Essentially, Google begins by assessing what's available and then proceeds to select promising targets from this pool according to identified megatrends and long-term vision. In the Motorola acquisition, Google's approach might have helped in identifying a target that aligns with its long-term vision, but with this approach, an in-depth analysis of the target's current state might have been neglected. Conversely, IBM takes a more targeted approach, starting by defining the current business needs and then selecting targets that align with these criteria. IBM does this by leveraging internal teams to identify business needs and seeking targets among its established partners that can fill those gaps, suggesting a more grounded evaluation process that considers the current market landscape. Ultimately, it appears that Google starts the selection process by evaluating targets from the overall corporate perspective and IBM starts this process by evaluating the targets from a specific strategic perspective. Despite the differences, both companies begin by examining their existing network of partners and companies they have previously collaborated with. However, they remain receptive to opportunities from other sources, keeping their options open for engaging with entities that suit their objectives.

Table 9 summarizes the similarities and differences of Google’s and IBM’s approaches.

Factor	Google (Motorola)	IBM (Red Hat)
Overall corporate perspective		
Motivations and goals	• Gain market power, improve efficiency • Proactive, focused on future disruption • Visionary, future benefits over immediate strategic fit	• Gain market power, improve efficiency • Reactive, addressed competitive gap in the market • Tactical, focus on immediate strategic fit
Risks	Underestimated risks during evaluation	Proactively identified and mitigated risks
Acquisition type	Congeneric	Horizontal and vertical
Specific strategic perspective		
Innovation	Opportunistic, exploring new realms	Strategic, enhancing current offerings
Preliminary due diligence	Outward-looking, opportunities from the outside	Inward-looking, consulting employees and partners
Outcome		
	Unsuccessful	Successful

Table 9. Cross-case analysis summary

6 Discussion

As indicated by multiple authors in sections 2.1.4 and 2.1.5, M&As are a risky business for companies seeking growth and innovation (Cartwright & Cooper, 1995; Krug and Aguilera, 2005; Paumen, 2023; Christensen et al., 2011; Park et al., 2013; Angwin, 2020), which was also confirmed by the findings from Google and IBM case studies. While they offer the potential to expand market share, acquire valuable resources, and enhance technological advancements, a misstep in target selection and early-stage evaluation can lead to costly failures (Savovic & Pokrajcic, 2013; Celik et al., 2022; Pereiro, 2015).

This comparative analysis of Google's acquisition of Motorola and IBM's acquisition of Red Hat revealed valuable insights into how these critical processes can significantly influence the outcome of an M&A endeavor. While current literature provides a rather general approach to target selection and evaluation, as indicated, for example, by Savovic and Pokrajcic (2013) during the preliminary due diligence phase (see section 2.1.4) and several other authors (see section 2.1.5), this study provides missing steps in this process which are particularly adjusted to the needs of technology companies acquiring innovation. Most authors in the evaluation stage propose a rather rushed jump from the target selection to due diligence (Savovic & Pokrajcic, 2013; Hassan, 2014; Kaplan & Weisbach, 1992), indicating that the selection almost by default leads to the start of negotiations and legal and auditing valuations, disregarding the strategic aspect. However, it was seen in Google’s and IBM’s cases that in practice this process is much more nuanced and requires more attention to the initial evaluation phase which occurs before the decision has been made.

This study provides several key findings about the role of target selection and evaluation practices in acquiring innovation and enhancing the success of M&A deals. These findings are balancing between proactive and reactive strategies, evaluation from overall corporate and specific strategic

perspectives, and balancing an outward-looking approach to identifying high value targets based on the vision with an inward-looking assessment of specific internal needs of the acquirer.

6.1 Balancing proactive and reactive strategies

As observed in the case studies, different approaches to target selection highlight the importance of finding a balance between proactive and reactive strategies.

Google’s proactive approach is focused on actively seeking innovation and opportunities. Its forward-thinking vision can act as a catalyst for innovation, aiming to identify and address future trends, which can secure a competitive edge in the long run. Venzin et al. (2018) proposed that acquirers should start the selection process by building a portfolio of potential targets (see section 2.1.5). Google takes this approach further by cultivating the entire ecosystem of potential targets. Leveraging AI, its "Google for Startups" program facilitates a scalable model where the pool of potential targets expands and maintains itself. While this approach seems to be very efficient, it shouldn't come at the expense of neglecting immediate business needs and challenges. In its pursuit of potential future benefits through market disruption and Android ecosystem protection via the Motorola acquisition, Google may have overlooked the very real difficulties of managing a struggling hardware business in a fiercely competitive market. IBM, in contrast, adopted a more reactive approach, aiming to catch up with established cloud players through the Red Hat acquisition. While reactive strategies may appear less innovative, IBM's focus on a well-established player in a high-growth market provided a clearer and more stable path to securing immediate strategic gains.

Efficiency Theory, introduced by Copeland & Weston (1988) as discussed in section 2.1.3, suggests that successful M&As rely on one of two scenarios: either a more efficient company improves the less efficient company’s efficiency, or the acquirer takes responsibility for improving the target's leadership where inefficiencies are identified. In the case of the Red Hat acquisition, IBM appeared to be the less efficient partner seeking to gain knowledge and expertise from the target. This indicates that IBM in its target selection and evaluation prioritized not only future trends and opportunities but also made calculated decisions to achieve immediate results. Conversely, in Google's acquisition of Motorola, Motorola was the target company exhibiting inefficiencies. However, there's no evidence suggesting Google attempted to improve Motorola's leadership to ensure the acquisition's long-term benefits.

The findings, overall, suggest that combining proactive and reactive approaches leads to more sustainable results in M&As. While perpetual innovation process is essential for tech companies to stay ahead, responding to immediate market and business needs is equally important. Therefore, these aspects shouldn't be overlooked during target selection.

6.2 Evaluation from overall corporate and specific strategic perspectives

The Google example shows that evaluating risks only from one perspective, with a sole focus on a long-term vision, might lead to overlooking the complexities of integrating different corporate operations and cultures. However, much of the current literature treats risk evaluation as a linear process, where one step follows another. For instance, Savovic and Pokrajcic (2023) break down due diligence into three stages: preliminary, review, and transactional (see section 2.1.4). Similarly, Hassan (2014) and Kaplan & Weisbach (1992) propose linear evaluation steps where valuation

follows target selection (see section 2.1.5.2). While their points are valid, these frameworks don't capture the iterative nature of information gathering and analysis that occurs between the selection and the decision. As seen in the examples of Google and IBM, early-stage evaluation is rather a matrix process that involves juggling information coming from multiple directions. Since the acquirer hasn't made a final decision yet, this stage is foundational and requires testing and iteration. To ensure no important information is missed, Park et al. constructed the evaluation approach from two perspectives: overall corporate and specific strategic.

As Park et al. (2013) argue, a target's overall valuation and rating are meaningless unless they align with the specific M&A goals. Focusing solely on long-term goals, as demonstrated in Google's acquisition of Motorola, can lead to losses. Evaluating the target from both a corporate and strategic perspective is crucial. One perspective focuses on the long-term gain of the M&A, achieved through an overall corporate evaluation. The other, a specific strategic evaluation, ensures a strategic and cultural fit between the acquirer and the target. This involves determining if the target addresses immediate strategic needs, complements the acquirer's existing business model, and promises sustainable innovation and long-term success. Failing to do so increases the risk of overlooking critical information about the target's current state and its ability to integrate seamlessly.

Cultural integration (Cartwright & Cooper, 2014) and retaining key talent (Cartwright & Schoenberg, 2006) were identified as key risks in M&As (see section 2.5.5). IBM's proactive identification of potential cultural clashes with Red Hat demonstrates successful risk mitigation. Conversely, Google's post-acquisition layoffs at Motorola suggest a different approach. Their exact evaluation process in this regard remains unclear, but the outcome points towards a focus on technology and future benefits, potentially at the expense of cultural considerations. Based on this,

it appears some technology companies focused on producing groundbreaking innovations might prioritize technological evaluations over cultural fit, which can lead to unfavorable results.

Alignment of future vision with immediate strategic needs ensures that the acquisition delivers tangible value while still contributing to long-term goals. This suggests that besides considering the big picture in the evaluation process, it is also crucial to examine each specific aspect thoroughly, such as cultural fit, potential integration challenges, and develop plans to avoid the identified issues.

6.3 Balancing an outward and inward approaches

The analysis highlighted the importance of balancing an outward approach to identifying high-value targets that can meet future trends with an inward assessment of specific internal needs. Google's focus on megatrends and reliance on robust data analysis likely helped them identify a promising target (Motorola), which was expected to accelerate their innovation process and secure a leading position in the market. However, the in-depth analysis of their current business needs and the target's ability to respond to them might have been lacking. In contrast, IBM's approach leveraged internal teams to identify strategic gaps and sought targets that filled those gaps through trusted networks of employees and partners. This demonstrated the effectiveness of a more grounded evaluation process that considers both future potential and present realities.

Hagedoorn and Duyisters (2000) found that organizational and strategic compatibility between the companies involved in M&A is critical for sustaining innovation capabilities. At the same time, incompatibility is one of the biggest risks and therefore requires careful consideration during the early-stage evaluations. (see section 2.5.4)

From the case analysis, it was seen that Google starts the target selection process by looking for factors outside of the company (outward approach), such as megatrends, highly innovative companies, market demands, and other influencing factors. Based on those factors, Google shapes its strategy. IBM, on the other hand, starts by identifying the business needs first and creating the target profile, as well as consulting the internal decision makers and partners (inward approach) before proceeding to seek the targets that would meet their requirements.

While both of these approaches have their advantages, they also carry disadvantages.

An outward approach can be quicker to identify opportunities arising from external trends and market shifts. By prioritizing external factors, acquirers might be more likely to target highly innovative companies that can boost their own capabilities. At the same time, focusing solely on external factors can be highly risky as it may lead to overlooking important information on potential cultural clashes or operational issues with the target organization. This further may lead to a complex integration process.

The inward approach, on the other hand, is beneficial in the process of finding targets that directly address the acquirer's strategic gaps and integrate smoothly. Consulting internal stakeholders also allows for a more comprehensive understanding of how the target company will fit within the existing structure. However, this approach might lead to missed opportunities. In other words, focusing solely on internal needs can result in overlooking promising targets that offer unexpected strategic benefits. Lengthy internal discussions may also slow down the acquisition process.

Overall, an outward approach helps in identifying innovative targets but may cause integration challenges due to potential cultural or operational misalignment. An inward approach may source highly compatible targets but result in missed opportunities for disruptive innovation. Combining

these two approaches would likely ensure a well-rounded evaluation process, rather than exclusively pursuing one or the other.

7 Conclusion

This research investigated how Big Tech companies select and evaluate target companies for mergers and acquisitions (M&A) when their primary goal is to acquire innovation. By analyzing the cases of Google's acquisition of Motorola and IBM's acquisition of Red Hat through two key perspectives, overall corporate and specific strategic, the study revealed the approaches and procedures employed by these tech giants. On a broader level, it provided insights into how these practices can contribute to the outcome of an M&A deal.

Analyzing the interplay between the two aforementioned perspectives, the study identified three distinct approaches to target selection and evaluation processes that can enhance the outcome of an M&A. These approaches are balancing proactive and reactive strategies, evaluation from overall corporate and specific strategic perspective, and balancing an outward and inward approaches.

7.1 Managerial implications

The empirical part of the study contributes to the knowledge of M&A target evaluation practices and offers valuable insights for high-tech companies considering M&A as a tool for growth and innovation. By applying these insights, companies can enhance their chances of making more informed decisions that benefit their overall innovation goals. However, it's important to remember that successful M&A is a complex process. While target selection and evaluation are crucial first steps, successful integration and post-merger management are also essential for achieving desired outcomes and long-term value.

7.2 Limitations and future research

As in every study, there are a few limitations in this study as well.

Firstly, this study only explores the target selection and initial evaluation phases of the acquisitions, and there might have been other factors contributing to the success or failure of these acquisitions as well. Nonetheless, the findings highlight the critical role of target selection and early-stage evaluation in determining the ultimate success of an M&A endeavor. Secondly, the data relies on interview data, which could be biased. Thirdly, the study examined only two case studies. For more comprehensive results, further research that examines and cross-compares additional case studies would be needed.

Additionally, as this study focused only on the acquirers' perspectives, a future research suggestion could involve exploring the perspectives of target companies on this topic, as well as the post-acquisition implications on the innovation capabilities in M&A.

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APPENDIX

Appendix 1. Interview questions

Target selection and initial evaluation	
Perspective	Factors and interview questions
Overall corporate	Motivations and goals: ● What were the overall strategic motivations and goals that drove Google/IBM to pursue the acquisition of Motorola/Red Hat? ● Can you elaborate on the specific objectives Google/IBM aimed to achieve through this acquisition?
	Risks: ● How were the potential risks identified during the selection process? ● Were there specific risk assessment methods or frameworks used, and how reliable were they? ● Looking back, is there anything that could have been done differently to mitigate or address the identified risks more effectively?
Specific strategic	Innovation: ● What type of innovation was Google/IBM aiming for with this acquisition? ● What measures were taken to ensure that the target was a suitable fit for the innovation goals? ● Can you provide insights into the expected outcomes of the acquisition and the advantage that Google/IBM was hoping to get?
	Preliminary due diligence procedures: ● What were the key steps during the initial due diligence procedure in the case of Motorola/Red Hat acquisition? ● Can you outline the dimensions against which the target was evaluated during the preliminary due diligence phase? ● Were there any challenges or unexpected findings during the process and

	how were they addressed?

Table 1. Interview question sent to the participants ahead of the interview

Additional interview questions:

- Could you introduce yourself and tell a bit more about your role?
- To what extent are you familiar with the process of the Motorola/ Red Hat acquisition?
- What is your stand on it? How did it benefit the company overall?
- How was the acquisition expected to contribute to the company's growth and brand positioning?
- How did it contribute to the innovation goals? If the acquisition didn't happen, how would Google's/IBM's offerings portfolio look today? Would there be any alternatives, if so, what?
- How do you think the decision-making process was done? What methodologies were used, if any? What was the crucial piece of information that triggered the decision?
- What were the biggest challenges?
- How did the cultures and the management merge?
- From your perspective, what could have been done differently?