Digital due diligence: a complementary perspective to the traditional approach

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Abstract

Mergers and acquisitions (M&A) represent one of the most common ways for firms to achieve non-organic growth, and one of the main stages in the typical M&A transaction is due diligence of the target company. The aim of this paper is to provide a guideline for conducting due diligence process in the digital environment. After a brief introduction on the nature, purpose and elements of the due diligence, the paper elaborates various risks, and psychological and contextual hazards often occurred during due diligence process. Special attention has been paid to the elaboration of the role and importance of the digital due diligence as a new concept in today's contemporary 'digital' economy. The outcome of this paper is to provide a comparison between 'traditional' and 'digital' due diligence, digital due diligence methodology, and easy understandable check list for conducting the process of digital due diligence.

Keywords: Due Diligence, Digital, Process, Risks, IT

JEL Classification: L21, L25, L26, G34, O33

1. Introduction

In the process of buying a stake in another company (merger and acquisition process), detailed insights about the target company's performance and operations will not be obtained by analyzing only the financial statements, because they only provide a summary of business processes and do not provide other significant information that is crucial for each aspect of company's operations, such as: performance and experience of the management, production capabilities, product or service quality, operational efficiencies, potential synergies, etc. Non-financial factors play a more significant role than the financial ones in terms of the future development of a company, and therefore need to be analyzed in detail before final investment decision would be made.

Digitalization has revolutionized business processes and spurred the development of new products and services. Without a solid digital business model, modern businesses lose competitiveness. Certain, traditional business models are becoming obsolete and entities that are not adapting quickly enough to the new business environment are being forced to leave the market. The development and implementation of digital technology and the emergence of new, digital business models, create the need for in-depth analysis of the same, given that their evaluation can significantly affect the value of the company. The combination of digital technologies and human resources further develop the area of in-depth analysis of mergers and acquisitions. Digital due diligence is a structured process for analyzing and evaluating digital business models, processes, and company's potential.

The analysis of digital companies differs from the analysis of 'traditional' ones. The reason for this mostly lies in the much higher value of intangible assets of these companies, ie the fact that their value is based mainly on their digital business models. Due to the different criteria and unique characteristics of the digital world compared to the offline world, digital due diligence, along with other types of due diligence, has gained in importance and can reveal many different aspects not covered by classical commercial due diligence. Therefore, in addition to the classic due diligence, digital due diligence requires careful examination and assessment of the digital potential of the company.

2. Due Diligence Process

In academic literature, due diligence as an area of research has been present since the 1980s and has primarily been associated with the process of mergers and acquisitions (Bhagwan et al, 2018; Tsao, 2009; Adolph, Gillies, and Krings, 2006). Due diligence is an analytical process of detailed examination of various aspects of a company's business, i.e., its assets, financial statements, business transactions, legal aspects, tax issues, operations, etc. (Recardo and Toterhi, 2014) It is important to note there are no standardized rules concerning due diligence process which could be applied to every single case, because each transaction has its own legal structure, value, time frame in which must be concluded, can be of domestic or international nature, etc. Therefore, each due diligence is carried out in a unique way dependent on the context in which the transaction is carried out. However, the underlaying characteristic of any due diligence process is involvement and engagement of financial and legal advisers, accountants, and other external experts depending on the type of business the target company is engaged in (Adolph, Gillies, and Krings, 2006). The process of due diligence is usually performed by a team whose members have complementary knowledge and skills depending on complexity of the analyzed business (Rhodes, Nelson, and Berman, 2003). These skills and expertise usually cover areas from technology, product development, engineering, production, marketing, sales, human resource management, up to legal, tax and R&D (De Cleyn and Braet, 2007; Adolph, Gillies, and Krings, 2006).

Table 1. Areas of due diligence (Bhagwan, V., Grobbelaar, S.S. & Bam, W.G. (2018: 226))

Due diligence area	**Description**
Financial	It consists of a thorough analysis and assessment of a company's books (historical income statements, balance sheets, and financial forecasts) in order clearly and reliably to present the company's current financial situation.
Legal	Legal due diligence must assess the condition of the target in four dimensions: corporate organization, ownership of assets and exposure to associated liabilities, actual and potential litigation, and regulation.
Tax	Investigations should focus on the target's compliance with tax laws and regulations. The primary concern of tax due diligence is to determine the buyer's exposure to the target's possible unpaid taxes and to tax fraud, and to identify any opportunities for tax reductions
Environmental	The aim of environmental due diligence is to issue an opinion of compliance with respect to environmental law, calculate the costs of detected environmental liabilities, and reduce the risks of legal litigations.
Operational	Operational due diligence is the process by which a potential buyer reviews the operational aspects of a target company. The approach to operational due diligence varies by industry. The process itself should be executed by specialists and professionals who understand the industry and have a background in it.
Market	Market due diligence should gain a thorough understanding of the target's market. The acquirer should also conduct market assessments across the market segments within which the target operates to uncover any opportunities within the market and potential synergies with the acquirer.
Human resources	The investigations should look into the following areas: adequacy of talent and leadership, exposure to workforce problems such as union issues, inefficiencies in compensation and benefits, exposure to benefit claims, and compatibility of organization and HR policies.
Cultural	Due diligence investigations of the target's culture should aim to assess resemblance on three levels: between actions and aspirations, between the cultures of buyer and target, and between the target's culture and its strategic threats and opportunities.
Strategic	Strategic due diligence explores whether the potential value and concern about buying the target at the right price is

	realistic. It tests the strategic rationale behind a proposed transaction with two broad questions: (a) Is the deal commercially attractive?, (b) Are we capable of realizing the targeted value?
Marketing	Marketing due diligence assists in the strategic fit between the target and acquirer. It employs an analytical methodology that assesses the target's sales and marketing strengths and weaknesses to ensure that the deal meets the financial, strategic, and operational objectives of the acquirer.
Intellectual property	IP due diligence should focus on the intellectual and intangible aspects that can be owned in the legal sense, such as: patents, copyrights, trademarks, trade secrets, software, and any other target IP.
Technology	Technology due diligence should focus primarily on IT issues of the target. The target's compatibility in terms of technology should be assessed in these investigations.
Research and design	R&D due diligence is often specific to certain types of deals and would only be carried out on specific targets.

In its core, due diligence can be viewed as the process of conducting research on the firm, and its role is to help the deal makers with valuation process, acquiring quality information for the negotiation, testing the accuracy of representations and warranties contained in the merger agreement, disclosing sensitive information, and acting as a foundation for the post-merger integration (Bhagwan et al, 2018; Bruner, 2004). Moreover, according to Mullins, Thornton and Adams (2007) purpose of due diligence is to also test for synergies and determine economic values of synergies, where synergistic benefits usually come either from cash inflows or revenue gains, or from reduced cash outflows. Cash inflow or revenue gains can result from various competitive advantage sources, however, the typical ones are: cross-selling of products or services, leveraging of sales channels and marketing programs, and ability to increase the sales prices, while on the other hand, reduced cash outflows usually result from larger or better focused business via economies od scales and scope, reduction in capital expenditures, production efficiencies, and elimination of duplication costs (Mullins, Thornton and Adams, 2007). Stated differently, the purpose of the due diligence is that acquirer gains satisfactory level of confidence in understanding the value and the risks associated with the target company (Angwin, 2001), which in turn significantly enhances the acquirer's position in the potential transaction (Mullins, Thornton and Adams, 2007). Table 1 provides the detailed overview of the main areas of due diligence identified in the literature, while table 2 to provides best practices associated with the successful execution of the due diligence process.

Table 2. Best practices for conducting successful due diligence (Bhagwan, V., Grobbelaar, S.S. & Bam, W.G. (2018: 229))

Concept	**Description**
Merger teams	It is important to have a dedicated merger team composed of a range of operational experts (both internal and external). The inclusion of line management in the search-and-selection builds understanding of, and buy-in to, the acquisition strategy among the people who will be running the acquired business.
Checklist for due diligence	Checklists should be living documents that are modified as regulations or issues become more complex. Review the checklist to assure that new issues haven't arisen that should be considered. Checklists ensure that all investigations have been carried out as they should be.
A vision for the combined organization	It is crucial that an acquirer has a strong and clear sense of purpose. This purpose comes from a guiding vision, a defining mission, and a deep understanding of the markets served, and the strategies, competencies, and so on that add granularity and distinctiveness to the vision and mission.
Trust, but verify	Sellers will often make promises that could make the buyer complacent. It is important not to take these assurances at face-value, but to carry out a thorough due diligence to ensure that integration can occur as smoothly as possible.
Have clarity about what the acquirer is looking for, and focus on what matters	Be clear about the criteria you are looking for in the acquisitions and the metrics by which the deals will be judged. Emphasize the areas that matter most in this deal.

3. Risks in Due Diligence Process

Mergers and acquisitions often produce disappointing results for their principals because due diligence process has not been carried out in a satisfactory manner which in turn leaves the acquirer with the unexpected costs after the acquisition process has been concluded (Harvey and Lusch, 1995). Therefore, to minimize the failure rate of the M&A process and try to eliminate the unexpected costs associated with the 'sloppy' due diligence process, both parties (disclosing and receiving party) should be aware of the certain risks associated with the due diligence process (De Cleyn and Braet, 2007). When looking at the risks seen by the disclosing party, we can broadly categorize four types of associated risks (De Cleyn and Braet, 2007):

- *Leaks to competitors* – sensitive information can easily be disclosed to third parties outside the organization which could jeopardize the future of the company.

- *Loss of time and money* – properly executing due diligence process requires substantial resources (manpower and means to organize it), and if the due diligence process produces negative results, it is simply waste of time and money.
- *Loss of business and loss of focus* – the burden of organizing due diligence often falls on the shoulders of the disclosing party's team draining companies' scarce resources from core business activities which in turn could lead to business losses and/or loss of focus.
- *Receiving party wants to steal information* – disclosing party should keep in mind that receiving party might only be interested in acquiring the sensitive business information and is not really interested in concluding the business transaction.

On the other hand, the risks as seen by the receiving party are the following (De Cleyn and Braet, 2007):

- *Losing the deal and the opportunity* – losing the deal it is interested in means a lost opportunity and may cause a significant draw back compared to competitors.
- *Loss of time and money* – receiving party usually heavily invests in the due diligence process, both in terms their own internal resources and by hiring expensive external consultants, therefore, in case due diligence does not produce satisfactory results, all these resources have been wasted.
- *The disclosing party is not disclosing everything* – there is a risk disclosing party will not disclose all required information, sometimes leaving out some type of liability which would like to get rid of.

Benoliel (2015) has identified various psychological and contextual hazards which deal makers must keep in mind while conducting due diligence process in order not to fall in them and be able to produce high quality due diligence information. Such biases and traps, as identified by Benoliel (2015), in essence refer to: (a) failing to collect quality information from primary and reliable sources, (b) tending to collect and rely on information which confirms pre-conceived beliefs, and (c) putting more importance on subjective information then on external information. As a remedy for these potential biases and traps, Benoliel (2015) believes deal makers should: (a) recognize importance of primary sources for gathering critical information, (b) implement devil's advocacy to challenge assumptions and preconceived beliefs, (c) restrain their hubris and appreciate humility. Table 3 provides more detailed overview of these biases and traps.

Table 3. Hazards to effective due diligence (Benoliel, M. (2015: 1-7))

Hazard type	Description
Information availability bias	Refers to limitation of data collection effort to secondary sources of information that are easily available, and in turn decisions are made based on a limited set of data/information.
Confirmation bias	Refers to tendency by deal makers to exclude non-confirming information and in turn 'fall in love' with the opportunity without conducting proper analysis, and by doing so they are susceptible to compromising the integrity of the due diligence process.
Overconfidence bias	Overconfidence is a cognitive bias that can influence decisions by underestimating resources that are required to embark successfully on strategic initiatives.
Time pressure	Selling parties sometimes tend to use time pressure tactics in order to limit information discovery and information analysis process.
Self-Interested agents	Due to the mergers and acquisitions complexities, parties are usually dependent on the services of external experts (agents) who often act in their own self-interest since they are typically compensated only if the deal gets done.
Deal fever	Deal fever (tendency to get deal done) is characteristic to internal merger and acquisition units, as well, since these units are also eager to close many deals to grow their operation regardless of the future consequences.
Narrow focus	Sometimes due diligence is narrowly focused on a few issues, such as: financial, legal, or operations, while ignoring other important areas.
Complexity	Due diligence in some cases is almost impossible to conduct due to asset complexities involved in the deal.

4. Digital Due Diligence

Classic due diligence usually encompasses the areas of finance, law, and markets. Also, special attention should be paid to the company's IT infrastructure and digital growth potential. The company's IT infrastructure includes hardware, software, networks, processes and other IT resources and addresses the risks of data leakage. IT due diligence used in recent times focuses on cost in the areas of information technology infrastructure, application values, and IT-supported business processes, including the overall IT environment and organization. However, the implementation of IT due diligence does not yet cover areas such as the implementation of the digitization strategy, the analysis of digital business models and the future sustainability of digital products and services. Digital due diligence focuses on various aspects of enterprise digitalization with a special emphasis on their future sustainability. For example, one of the assessments is the analysis of the digital business model of the company, ie whether it represents the model of tomorrow. Likewise, it is assessed whether the company has risen to the challenges of digital business transformation. Digital due diligence should examine the digital appearance of a company, its position in the digital infrastructure and whether a digitization strategy has been defined.

Digital due diligence helps investors decide whether to take over or merge a company given its digital potential. Due diligence of a digital company examines how sustainable the digital business model is in a turbulent competitive environment and how great the opportunities for growth are through its digital sales channels in the future, usually over the next three to five years. Also, any digital due diligence should analyze the strengths and weaknesses of a digital organization. As with traditional due diligence, digital due diligence makes sense to use standardized checklists and templates that have been validated on many projects. Such checklists help to examine all relevant areas of analysis. The differences between traditional and digital due diligence are shown in Table 3.

Table 4. Traditional and digital due diligence differences (BLOOM)

	'Traditional' commercial DD	**Digital DD**
Market & trends	• Often focuses on national markets • Looks at relatively stable and predictable markets	• Requires a more international perspective • Highly volatile markets – requires up to date knowledge of players and potential disruptors
Competitive landscape	• Relatively high barriers to entry • Looks at value chain dynamics	• Many players come and go • Traditional value chain dynamics don't always apply
Product & value proposition	• Mainly focuses on market segmentation and performance in terms of financials/market shares and consumer research	• Additionally looks at technical scalability, retention, UX, programming languages, network effects (direct & indirect)
Financial assessment	• Focuses on EBITDA, revenues, COGS, etc.	• Additionally focuses on traffic, conversion, CLV, CAC, etc.
Team	• Mainly focuses on leadership	• Focuses on leadership, product, marketing, and the technical team • Way of working in the team: adoption level of agile and continuous improvement

Sambol (2019) lists five points that should be included in the digital due diligence: 1. Market, 2. Competition, 3. Technical aspects, 4. Digital KPIs and 5. Customer behavior

1. Market. How big is the company's digital market and how is it evolving? How many markets like Amazon are present in the relevant product categories? How does the transition to network affect the overall industry? Who benefits from this change? What is the realistic level of internet penetration to assess?

It is necessary to assess the digital size of a particular market and its future potential development to assess the potential of doing business in this industry and what are the "real" opportunities for growth. Understanding market conditions is the only way for investors to see the company's potential in the relevant Internet sector, or to assess its growth potential. In doing so, the key elements of the analysis focus on how large the company's digital market is, what the growth rates are in the previous period and what the growth potential of that market is every year. It also studies how much traffic comes from your own e-commerce solutions (e.g. your own website with a web shop) and how much through third party service providers.

2. Competition. What competition exists online and how strong is it? Determining who are online competitors and how much market share they have is crucial to understanding market dynamics as a whole (which can vary drastically from offline business). Digital competitors can generally be divided into direct and indirect competitors. Direct competitors are companies that offer the same online services, while indirect ones may not have a similar operation, but compete for the same traffic as the traffic of the company being analyzed. Another important aspect is the extent to which updates to the Google search algorithm had targeted digital performance.

As part of digital due diligence, it is necessary to conduct an analysis of the digital competitive environment, and to identify the main direct and indirect competitors as well as to conduct a benchmark of the company in relation to these competitors. The analysis should establish the top 5 competitors, their market shares and examine the trend of their movement in the past period. Also, as part of the analysis, it is necessary to review barriers to entry, ie to assess the chances of new competitors entering the market.

3. Business overview and technical aspects. Given that digital business models are technology-based, technical aspects are an important factor in digital due diligence. They present an analysis of the IT infrastructure and software used, and an analysis of the security risks of data leakage. Also, it is necessary to determine whether and to what extent investments in the analyzed IT infrastructure are needed in the future.

Here, it is important to understand what IT setting the company has in terms of IT staff and IT plan, what software and technology use, and server and hosting configurations to understand what risks may exist, including any potential legal complications. IT analysis also includes the level of automation and use of customer data within CRM or ERP.

4. Digital KPI. What are the most important sources of traffic and how are they performed? It should be understood how the potential consumer comes to the company, what are the costs and performance of different channels (organic, paid, direct, referral, social, influential, etc.).

It is important to analyze different digital channels and assess their profitability, ie to assess the benefits and costs of digital channels. It is also important to identify the type of traffic and to determine how much of the traffic refers to organic and how much to paid traffic and how much of the traffic comes through social networks. One of the digital KPIs is the conversion rate, which shows how many users become customers at the same time.

5. Customer behavior. Analysis of customer behavior is necessary for proper digital assessment. It is important to classify customers into cohorts, determine how much each cohort generates sales, assess their profitability and growth rates, and determine how much the acquisition cost of each cohort was. It is crucial to correctly answer the question why customers buy in the observed company and not in competing companies. One of the adequate methods for the analysis of this area is direct customer survey.

Palladium (online) developed a Digital Due Diligence methodology that includes the assessment of the following areas:

1. Proposition and business model
    a. Analysis of digital market trends. Traditional market research complemented by specific digital data that can detect trends in different digital segments.
    b. Identification of technological threats and opportunities. Understanding innovations and technological trends that may disrupt traditional business models or create new opportunities in the future.
2. Entering the market
    a. Consumer experience. What is the user experience like on different digital channels, platforms and devices? Are these touchpoints truly integrated and effective, providing customers with the experience they demand?
    b. Online reputation and visibility. Digital benchmark for online reputation assessment. Digital brand analysis.

c. Demand generation. How well does a company generate, track and measure customer demand? How much enterprise growth is attributed to digital technology? What are the digital tools used for management and monitoring?

3. Operations

a. Excellence of operations

i. Data. The analysis will examine how data-driven business is in decision-making and whether data management platforms are used to gather and share insights across the business.

ii. Tools and technologies. How much is the business willing to capitalize on digital technologies? To what extent are basic functions digitized in the business? Do e-commerce stock systems connect to other channels and align with physical stores?

iii. Processes. How are digital processes developed, reported and implemented?

b. Drivers of digital and innovation

i. Team and leadership. Does the organization have a digital strategy clearly divided within the organization? Is it in line with operational initiatives? Is there a digital representative represented in management? Does the digital team have defined roles, responsibilities and reporting lines; how scalable is it and how do they work with other teams?

ii. Get started. Does the company have a culture of experimentation, repetition and collaboration? What is the process for approving and managing digital / innovation initiatives?

4. Comprehensive due diligence, which includes a digital component, includes an assessment of the company's business model, digital resources, including social networks, websites and digital channels, and evaluates the company's digital plans. The basic areas of digital due diligence include analysis of digital KPIs, analysis of the digital market, consumers and suppliers, analysis of digital competition, analysis of personnel structure, database quality and security, and integration of the digital area into corporate strategy. A review of the risks in the digital realm will be crucial in the future. Therefore, not only is the entire business world undergoing a digital transformation, but the digital transformation has embraced in due diligence itself.

5. Conclusion

Due to the unstoppable growth of the digital world, it is becoming increasingly important to fully understand the digital skills and effects of the digital realm on a company to identify business potential, identify risks, and estimate a company's value in the future. In the digital world, fast-growing companies are often paid higher premiums, although there is often more uncertainty in these markets and there is a greater possibility of increased business dynamics. Although a company's digital competence is becoming increasingly important for its position, strategy, and long-term profitability, the examination of digital aspects during due diligence analysis is still often overlooked. Digital business models, both for investors, are a challenge for appraisers themselves, but digital due diligence can reveal a lot that would remain obscured by traditional due diligence. Well-done due diligence will indicate "red flags" as well as potential opportunities that have not yet been realized, and today there is no investor who can ignore the digital component of the company.

The number of investments, mergers and acquisitions in the digital world has intensified and will increase further in the coming years. Given that different metrics are used in the digital world, elements of traditional enterprise in-depth survey are no longer sufficient to accurately assess the value and growth potential of a digital enterprise. Precisely for this reason, a modified version of due diligence that includes digital component is deeply needed.

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