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# Big Data and Corporate Law: Analyzing the Due Diligence Implications

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**Abstract:**

Data economy advances has complimented data-driven business models and corporate competitiveness, whereas, business combinations thriving on business and customer data, proprietary rights on data ownership, have promoted economies of scale. However, essential data when cannot be stored and analysed through conventional software and databases, garners the nomenclature 'big data', indicating necessity for advanced technologies for analysis. Due diligence by law firms precedes corporate transactions wherein background checks are performed to safeguard against adverse legal implications ex post. Corporate transactional work has conventionally necessitated data analysis through paper trail and limited technology, complex volumes of business data like client and vendor lists, revenue projections, sales, intellectual property, among others, unable to be stored through databases or software can raise issues like access through technology like artificial intelligence, information asymmetry and analysis from due diligence perspective. The present paper attempts to introspect big data applications by analysing linkages with corporate transactions and data economy. The second part explores concept and kinds of due diligence and facets of integrating big data. The third part introspects issues like lack of standardization, technology-law conundrum and ethical concerns. Consequently, the fourth part provides suitable suggestions.

***Keywords:*** *business combinations, data economy, economies of scale, information asymmetry*

## I. INTRODUCTION: BACKGROUND, MOTIVATION AND OBJECTIVES

Businesses, whether small or large, contribute to the economy when they create value for different stakeholders such as customers, employees, regulators and the society in general when innovative and qualitative products and services are offered. This in turn, gives credence to battles for corporate competitiveness, ultimately raising the bar for quality services and creating monopolies, duopolies and oligopolies. *International competition law jurisprudence recognizes two broad kinds of competition: static and dynamic.* The former encourages plain market competition among traditional industries with minimal or no incentive for innovation, thereby perpetuating equilibrium and saturation. The latter encourages competition that is engendered by both product and process innovation [1]. Such competition emphasizes on enterprise level capabilities backed by Research and Development (R&D) thereby attributing market predominance and economies of scale to technological capabilities.

It is the author's contention that the proliferation of data driven business models by virtue of technological advances through product and process innovation, should be viewed from the prism of dynamic competition. The fourth industrial revolution has led to aggressive integration of incumbent technologies with newer ones such as artificial intelligence, big data and block chain. Corporations have unearthed the hidden potential of data such as client and vendor lists, sales and revenue projections, intellectual property which are increasingly being stored on databases and software. However, exponential volumes of data cannot always be stored

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on such platforms, giving rise to big data. *Big Data thus refers to a massive volume of both structured and unstructured data that is so large that it is difficult to process*

*using traditional database and software techniques* [2].

Because of the inherent diversity and the kinds of data that can be collated on account of the proliferation of the digital economy, big data, despite not being a technological development per se, has certain innate characteristics which are key to understanding a corporation's long-term sustainability. For instance, a food delivery service provider running its business through mobile applications can retrieve customer data at the time of credit or debit card payments, or, a social networking company can rely on user data, advertisement sources and revenues, kinds of intellectual property of the target company for due diligence before proceeding with an acquisition as a strategic investment. This is indicative of the ubiquity, volume and velocity of the data generated and its importance when harnessed with adequate technological prowess. However, this is also indicative of the inherently disorganized nature of such data and lends credence to the fact that maximizing value from big data will require the right talent, policies, and organizational processes and management [3].

This is where big data gets integrated within the framework of corporate law, more specifically corporate transactional work. To illustrate, all big-ticket mergers and acquisitions having data as an indispensable component, such as the Microsoft-Linkedin merger, Facebook acquisition of Whatsapp, or more recently Zomato's acquisition of UberEats India business, are preceded by voluminous transactional work termed as due diligence, performed by corporate law firms or in house legal teams of the aforesaid companies culminating in the final merger or an acquisition, elaborated upon in the second part of the paper. However, it is imperative to first understand the meaning and nature of corporate law in order to understand the former meaningfully.

Theoretically speaking, corporate law encompasses business vehicles as companies possessing characteristics like artificial legal personality, limited liability, transferable shares, board management facilitating centralized structure and ownership by equity capital contributors. By making this form widely available and user friendly, corporate law enables business participants to transact easily through the medium of the corporate entity, and thus lowers the costs of conducting business [4]. The business conducted by such enterprises generates mainly *three kinds of work in corporate law: corporate transaction, corporate litigation and corporate advisory.* The first category focuses on work such as research and drafting of commercial contracts, due diligence performed by 'transaction lawyers' who ensure the final transaction is implemented without any adverse legal consequences ex post the transaction. The second category of work is self-explanatory as litigation resulting from contractual disputes gets allocated to corporate litigators arguing before a court of law. The third category is often clubbed into the first category, as law firms who perform background checks before legitimizing corporate transactions offer advisory services to their corporate clients on potential legal points of concern and general business advisory such as structure, taxes and investments. *The focus of the present paper is on the big data implications on the first category, namely due diligence.*

As explained above, big data gets integrated into due diligence work of corporate law on account of right policies and organizational processes. However, another major reason why such integration is possible is because of the emergence of technology law as part of the corporate law practice. Technology has altered modes of doing businesses and some of the corporate giants of today are in technology-based industries, not to mention the technology-based startups which provide opportunity to do a range of work from big data, artificial intelligence to smart contracts. Technology giants such as Facebook, Amazon, Apple, Netflix and Google, hereinafter (FAANG) and technology-based startups have made giant strides and consequently opened up new opportunities for legal professionals. Thus, such professionals also need to be aware of such developments as technology businesses easily enter new jurisdictions sometimes without undergoing formal office registration requirements. *With the technology advancement, laws and contracts have become more complicated* [5].

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Technology law practice encompasses delving into *among other things artificial intelligence, crypto currencies, intellectual property licensing, smart contracts, drone licensing, net neutrality and cloud-based businesses*. As more and more startups emerge in these sectors and incumbent businesses in the industry engage in strategic investments like mergers and acquisitions, the volume of data that is generated cannot be contained within the existing infrastructure like software and databases, even if it needs to be analyzed from a due diligence perspective, thus necessitating the importance of 'transaction lawyers' to be well versed with big data and due diligence implications because with their help such companies can enter into a range of contracts such as software license and assignment agreements, content licensing agreements, cloud services agreement, among others. Besides, such emerging areas are also creating ripples so far as law and policy within the regulatory framework are concerned.

## II. METHODS

In the proposed research I seek to examine the due diligence implications of usages of big data in corporate transactions. Hence, the research methodology is primarily doctrinal in nature given the literature on the area which is available from juristic writings on the same issue. Hence a research undertaking of this nature must inevitably entail a substantial doctrinal component.

For my sources I depend mainly on secondary material, specifically juristic writings. This is because debates and analyses are still evolving on one of the areas, namely big data. Secondary sources I intend to resort to include books, articles, journals and magazines.

The material thus collected I seek to examine descriptively only. Descriptively in the sense that I attempt to piece together a narrative of the concept of implications of big data and corporate due diligence, also taking into account some of the most recent trends which have played a role in the manner of the development of the present discourse. A uniform system of referencing has been followed throughout. The method of data collection is primarily doctrinal in nature and secondary sources such as books, journals, websites, magazines have been relied on as extensive literature.

## III. RESULTS, DISCUSSIONS AND CONCLUSION

### A. *Due Diligence: Concept and kinds*

Simply put, due diligence is the process of undertaking a thorough and objective background check on a party before any legal relationship is created so that no adverse legal consequences flow ex post the transaction. *Such checks gather more significance in case of high value transactions such as mergers, acquisitions, joint ventures, private equity and venture capital investment, capital markets or project finance*, or any other high value contracts between two or more corporate entities. To illustrate, a company in the digital payments sector seeking to acquire another such company, will want to be wary of issues pertaining to labor rights issues of employees, intellectual property issues, third party contracts, tax and debt liabilities and any other legal encumbrances which can hinder business and create legal hurdles thereby damaging business reputation. Hence, companies exercise utmost care before entering into such high value transactions. More specifically, due diligence is a mandatory condition precedent before enforceability of any high value contract.

It is pertinent to note that such background checks are inevitable not just for mergers and acquisitions *(strategic investment owing to their long term sustainability)*, but also for transactions such as venture capital and private equity investments into startups *(financial investment, owing to their short investment for three to four years till the business achieves scalability)*. This coupled with the diverse nature of businesses in the digital economy, makes due diligence a detailed one (exhaustive due diligence), or a shortened one (limited due diligence).

The former applies to strategic investments like mergers and acquisitions which are engaged into keeping in mind business synergies, reduction in operational costs, reduction of competition along with profit motives. The acquisition of WhatsApp by Facebook is one of the best examples of this. In such scenario, due diligence is undertaken from every legal and compliance standpoint. Limited due diligence on the contrary, applies to financial investments such as those by venture capitalists or private equity investors who fund early and late stage technology startups respectively with only the return on investment as the principal factor. As quid

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pro quo, the startup parts away with certain stake in favor of the investor and achieves scalability to thrive in the market. For instance, PayPal founder Peter Thiel invested in Facebook in its early stages and helped it scale to a considerable extent. Similarly, Softbank has funded many early stage startups simultaneously. Besides the above, transaction specific due diligence also tends to be limited in nature. For instance, financial due diligence comprises of review of annual reports, financial disclosures, loan liabilities. Similarly, technology due diligence comprises of review of licensing agreements, intellectual property registrations and potential points of litigation, among others.

There are a series of steps and conditions before a due diligence is carried out. For a financial investment, a potential investor is approached by the startup and a pitch of the business model is made, pursuant to which if the investor is satisfied, a non-binding term sheet is executed outlining the most important terms of the proposed investment. It is at this stage; an investor asks for documents and records from the investee company by following certain steps. A questionnaire is prepared and basic documentation is asked for. Based on the reply to the questionnaire, a requisition list is prepared seeking more documentation to verify responses in the questionnaire and consequently, a due diligence report is prepared which outlines all potential red flags before the investment transaction is consummated. This acts as a condition precedent to the transaction. If the investee company clears all such red flags, then the investment is done pursuant to a shareholder's agreement. In case of a strategic investment, though some of aforesaid steps are common, certain other conditions must be complied with.

For instance, in an acquisition of one company by the other, the acquirer must identify its areas of growth such as expansion into new business verticals or geographical areas, and accordingly identify its potential targets. Next, the acquirer approaches a potential target and if the target responds favorably, then a preliminary due diligence is conducted to develop a rapport with the target, to determine future price for the transaction and to assess interest of the target. Based on the diligence, a letter of intent outlining the important terms of the acquisition is executed culminating in the final investment documentation.

As more and more companies become technologically savvy, the potential for storage and generation of data increases manifold, especially for companies in the FAANG category. Hence, from a due diligence perspective, if one of such companies wants to merge with or acquire another, review and analysis of data pertaining to its client and vendor lists, marketing strategies, intellectual property, pending litigations, other extant legal encumbrances will be key. However, such access of data would require employing further technologies such as Artificial Intelligence, hereinafter (AI) thereby giving some companies opportunity to misuse data in an anti-competitive manner due to information asymmetry, or, violation of intellectual property in the data, among other such issues. The next part will delve into specific examples where big data and due diligence have a nexus as aforesaid.

### *B. Big Data and Due Diligence Linkages*

As explained above, data analytics, big data, block chain and artificial intelligence are commensurate with the term 'fourth industrial revolution' which symbolizes higher information exchange due to digitalization of the economy and the consequent data generation. And also, in the fourth industrial revolution age, there have been difficulties of understanding an issue and making decisions due to the presence of too much information [6]. *Recent mergers and acquisitions such as Microsoft-Linkedin merger, Facebook acquisition of WhatsApp, Zomato's acquisition of UberEats India business, Salesforce's acquisition of data analytics platform Tableau, Uber's acquisition of Careem and the acquisition by Google of business intelligence platform Looker, are indicative of a paradigm shift towards massive data generation that needs to be harnessed through systemic due diligence processes.* This is so because, traditionally due diligence has focused on the target company's assets, contracts, environment compliances, labour rights violations, financials, tax and legal impediments. Emergence of big data has introduced in this fold areas such as data protection, privacy and security. This part shall specifically analyze potential linkages that can emanate when big data is reviewed and analyzed as part of due diligence with respect to the aforesaid case studies. However, it must be noted that the

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future risks shall be predicated on the information available through public domain about the nature of the transaction and the parties, the kind of due diligence that has been employed and the long term benefits to the parties involved, keeping in mind that the records reviewed under due diligence are always kept confidential and therefore beyond the scope of this paper.

To begin with, Zomato, an Indian food delivery startup, which runs its business through mobile applications by receiving customer orders through the applications and employs delivery personnel to collect orders from restaurants, has established a strong foothold in India. Its strongest competitor, Swiggy runs a similar business model. Zomato embarked on a strategic investment by acquiring the India business of UberEats, the loss-making food delivery arm of Uber, the ride hailing app. The acquisition was timely as Zomato seized the opportunity to widen the gap between itself and its competitor as the acquisition ensured that it got access to UberEats's delivery partners, restaurant tie-ups and security infrastructure thereby enabling itself to be a market leader. Considering the nature of the transaction, Zomato must have had access to UberEats delivery partners, restaurant tie-ups and intellectual property ownership data stored on its databases and otherwise, apart from basic due diligence such as documents related to company incorporation, contracts, and labour law compliances, which can be part of the diligence questionnaire. Such data when analyzed by employing tools like AI, can help Zomato acquire monopoly status quickly. This should not be a surprise given that Zomato uses AI to collate and analyze data pertaining to customer preferences, delivery partners and restaurants [7].

The Microsoft-Linkedin acquisition also shows the importance of data for both the companies. Linkedin, the world's largest professional networking site, got acquired by Microsoft as there were synergies. For instance, Microsoft benefiting from Linkedin's vast network of professionals to provide Software as a Service (SaaS), its strong enterprise relationships and sales channels for its future clients, in order to maintain its predominance in the said market. Similarly, Linkedin benefited as at the time it was struggling with losses and diminished investor value. From a due diligence perspective, Microsoft's access to data pertaining to revenues, user memberships, advertisements and other business information stored on databases to make the decision was the key, for instance, the Linkedin member profile database [8]. However, owing to the volume of data, and Microsoft being a major technology company, usage of AI to sift through such data cannot be ruled out because the AI program can help in classifying different kinds of data from databases and help interpret complex terms in different agreements [9].

Similarly, in the Salesforce acquisition of data analytics firm Tableau, technology due diligence had to have played a critical part as the former is a cloud-based customer relationship management company that interacts with different sets of customers in areas like marketing and sales. The latter's self-service analytics platform helps different stakeholders to work with the data generated. Both parties benefited as there was overlap of each other's clients and mutual collaboration of resources. Hence, the due diligence ought to have involved review of data sets pertaining to client lists and relevant cyber security infrastructure, again indicative of usage of specialized tools like AI for such diligence. Similar due diligence was imperative when Facebook acquired WhatsApp and Google acquired Looker and questions about user data, data protection infrastructure business model, revenue generation, ought to have been part of the due diligence questionnaire and the relevant data analyzed pursuant to a requisition list. In other words, questions such as an inventory of data assets, quantum of sensitive data and cloud-based infrastructure are an important part of the due diligence exercise.

The importance of data, more importantly, big data, is evidently clear for business synergies and growth. However, the access to data obtained through due diligence processes, can raise concerns about the standardization of the processes itself including potential legal violations post the diligence, and ethical concerns due to emerging usage of technology and the inability of the legal infrastructure to cope with the same, for the transaction. The present part seeks to address these areas of concern from the perspective of the aforesaid examples.

*Concerns about standardization of processes* implies lack of quality about the mode of due diligence conducted which in turn can lead to adverse legal consequences for parties post the transaction,

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which is what due diligence seeks to prevent in the first place. For instance, recent surveys indicate that as the volume of data increases, questions pertaining to underuse of technology, inadequate data alignment and output, inefficient processes and knowledge of technological requirements among corporate leadership go up proportionally [10].

This can in turn lead to post diligence negative outcomes. Technology firms reliant on data can fall on the wrong side of a competition law scrutiny, if for instance, the massive volumes of data are used to manipulate market predominance and generate abuse of dominance. It has been documented that firms do not compete to collect more data than their rivals in the way they compete for revenue. *Data is an input and is readily obtained. They compete on their ability to process and analyze that data* [11]. Thus, companies like the case studies discussed above which sustain on data acquisition can formulate anti-competitive strategies such as using market power to give access to select licensees to their intellectual property and thereby create strategic entry barriers and charge higher royalties. Effective investing in big data, machine learning, and artificial intelligence can create competitive distance between rivals [12]. Here, the acquiring of a dominant position will not be per se anti-competitive but corporate strategies based on such acquiring can lead to anti-competitive conduct. Whether or not such a conduct will actually happen is a matter of future debate, but such debates cannot be merely labeled as academic.

For instance, in the aforesaid Zomato case study, the data on customer profiles and preferences collated and analyzed from the UberEats India business acquisition can easily be used to craft discounts and incentives to attract more customers, and more consequent revenues, only to ensure its only competitor, Swiggy is thrown out of competition. In other words, the company can engage in selective price cutting that is similar to the contemporary concept of predatory pricing [13]. Subsequently, prices can be raised and recouped once the competitor loses ground to such practice. Similarly, the company can hinder competition in the downstream market by entering into exclusive contracts with restaurants using the data obtained by due diligence on restaurants.

Likewise, in the Microsoft-Linkedin case study, the data gathered on professionals, including corporate using the professional networking platform, can be used to offer Software as a Service to corporate clients, with whom restrictive contracts can be entered into, thereby leading to a strategic entry barrier for potential entrants into the area. In fact, Microsoft has landed into antitrust scrutiny in the past on account of restrictive practices pertaining to exclusionary arrangements with computer manufacturers, Internet service providers, and content providers attempting to thwart the distribution of Netscape's browser [14].

The author's contention is that such practices can be engaged in and perpetrated on account of inefficient due diligence practices as aforesaid which can ignore such dangers because there is lack of unanimity on standards of diligence to be maintained when big data is involved. Consequently, red flags pertaining to future anti-competitive conduct like questions on specific data which has market value, can get ignored. However, antitrust concerns may not be the only grey area. Scholars have commented on how usage of big data can bring in debates on intellectual property rights [15].

Big data, as explained above, is not a technological development per se, but it comprises of massive volumes of disorganized data which may not be enough to be stored on conventional methods like databases. Thus, new technological advances are imperative to analyze such data such as AI in case of due diligence. In pursuit of this objective, technology companies may come up with innovative tools and technologies to analyze the big data they have in their possession. This is where a potential area of concern may arise. Scholars have commented on how licensors and licensees keep investing in monetizing their big data assets, yet relying upon a traditional license agreement to govern the licensing of big data [16]. The disadvantage of such an agreement is that it focuses on traditional licensing activities and restrictions on commercial usage of limited data. However, owing to big data's complexity, licensees can always rely on complicated data analytics to decipher the true commercial value of the big data licensed, but violating the intellectual property rights of the licensor inadvertently.

For instance, the Salesforce acquisition of Tableau,

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can bring this out into the limelight. The former being a cloud-based customer relationship management company having different clients in marketing and sales has repository of their varied kinds of data on the cloud. There is high probability that post the acquisition, Tableau, the self-analytics platform, can put to use its data analytics to analyze cloud data generated by Salesforce, but violating Salesforce's copyright in the process, as the licensing agreement between both parties has barely any provisions governing such exploitation by the licensee. Understandably, such issues must be addressed at the due diligence level for a smooth integration post the acquisition. As the digital economy keeps expanding leading to exponential generation of big data, such issues need to be kept in mind when due diligence on such deals is being performed. However, the legal professionals and the market players alike are only waking up to such potential abuses considering the fact that law has traditionally been slow to keep pace with technological developments, even though many corporate law firms have employed AI tools for their due diligence practices, such as the iManage Mergers and Acquisitions due diligence tool.

This brings us to our next area of concern namely, the *technology law conundrum,* or the fact that legal developments have always lagged behind crucial technological developments which can have important legal implications. Research has shown that conventionally the legal industry to adopt technological innovations. For instance, scholars have commented on how even the most sophisticated systems in use, however, depend on extensive human intervention to achieve useful results [17]. Such sophisticated systems mainly comprise of legal technologies such as those which can help law firms with practice management, big data, analytics, and document storage, all of which can greatly enhance the due diligence process. However, law firms have been slow to adapt on account of lack of experimentation in adoption of legal technologies [18].

This again has ethical issues embedded within it as time and again such issues can arise and can blur the distinctions between legitimate and illegitimate business conduct. For instance, companies in their quest to achieve and sustain dominance, can employ analytical tools to engage in potential legal violations and can get away easily with such violations in the absence of proper regulatory framework to deal with such developments. For instance, usage of AI has generated claims of such technology being developed enough to guarantee responsibility, transparency, auditability, incorruptibility and predictability [19]. However, legal policy discourse must gather steam in order for the consequent ethical areas to be looked upon from a legal standpoint. For instance, if during due diligence, if the AI program used by a law firm or the in house legal team for due diligence intervenes with data pertaining to a kind of intellectual property and in the process of analysis, a modified version of such intellectual property stands to be created, the legal question can be with whom the ownership of such property lie with, as the technology itself can simulate human intelligence.

## CONCLUSION

It can be safely concluded that with the rise of the data economy and its consequent impact upon the different industries, legal work focused on such industries will see integrations with technologies like data analytics, artificial intelligence and block chain, which in turn can open up new avenues for businesses to generate revenue and new avenues for legal professionals to embrace technology and churn out efficiency in their work, more particularly pertaining to corporate transactional work. If, however, a rigid attitude is adopted, legal industry can be left lagging behind and the questions as discussed above will keep taking complex legal dimensions. Therefore, even if the adoption of legal technology has been slow, it is a positive indication of openness and innovation not just in the digital economy but also in the legal industry.

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