

The Nexus of ESG and Internet: A New Paradigm of Enterprise Operation in Informational Era

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Abstract. With the rapid development of the Internet, people's production and life have long been closely linked and inseparable from the Internet. With the increasing importance of sustainable development in China, Internet companies are no longer limited to becoming bigger and stronger, and the outside world is paying more attention to their green concept and development plan. The excellent practices of Internet giants such as Tencent and Alibaba in environmental protection, promoting social development and innovating corporate governance have set an example for other enterprises, but they still encounter major problems in the process of ESG practice. This paper aims at analyzing these problems including lack of data disclosure and governance practices, as well as finding solutions for them. By comparing the strengths and weaknesses of Internet company and traditional company, the author believed that initiatives aimed at reducing environmental footprints, promoting social responsibility, and enhancing governance structures are increasingly becoming central to the business models of Internet companies. Meanwhile, the relationship between ESG performance and the proportion of women in the workforce underscores the interconnectedness of corporate sustainability and employee equality.

Keywords: ESG, Internet enterprises, Sustainable development, Information disclosure, Percentage of female employees.

1. Introduction

In the current prevalence of the Internet, the position of platform enterprises is becoming more and more important, and the development of major Internet enterprises is not only related to the economic situation of today's society, but also related to people's production and life. In the 21st century, while enjoying the tremendous development achievements brought by modern production methods and technological progress, humanity also faces the increasing demand for energy and resources.

In recent years, a seismic shift has occurred in the world of finance, as investors increasingly recognize the importance of Environmental, Social, and Governance (ESG) factors in investment decisions. Long dismissed as secondary concerns, ESG considerations are now recognized as integral components of assessing a company's long-term sustainability and resilience. This essay delves into the evolving relationship between ESG criteria and Internet company performance, highlighting the profound implications for investors, corporations, and society.

2. The Background of ESG and Internet Companies

2.1. The Concept of ESG

ESG refers to a set of criteria used by investors to evaluate a company's performance and societal impact in three key areas: Environmental, Social, and Governance practices. Environmental factors encompass a company's impact on ecosystems, climate change, and resource usage. Social factors pertain to a company's relationships with stakeholders, including employees, customers, and local communities. Governance considerations focus on a company's leadership, transparency, and adherence to ethical standards. Not only does policies emphasize ESG score, attaching importance to ESG does benefit enterprises from a lot of perspectives. Firstly, a high ESG score can enhance a company's brand reputation. Companies that demonstrate a commitment to environmental stewardship, social responsibility, and ethical governance are more likely to earn the trust and loyalty

of customers, employees, and other stakeholders. Based on that, these companies may have easier access to capital and lower borrowing costs. Institutional investors, such as pension funds and asset managers, are increasingly integrating ESG considerations into their investment decisions, leading to greater demand for investments that meet ESG criteria [1]. Meanwhile, ESG considerations help identify and manage a wide range of risks that can impact businesses, including regulatory compliance, supply chain disruptions, reputation damage, and climate-related risks. By proactively addressing these risks, companies can minimize potential liabilities and protect shareholder value [2]. From a macro perspective, Incorporating ESG factors into business strategies and investment decisions helps promote long-term sustainability. By addressing ESG-relating managements, companies can mitigate risks, enhance resilience, and create value over time, which helps to maintain long-term sustainability.

In summary, the concept of ESG represents a holistic approach to evaluating a company's impact on the environment, society, and governance practices. By considering ESG factors alongside traditional financial metrics, companies and investors can make more informed decisions that drive positive outcomes for stakeholders and the planet.

2.2. Internet Companies

Internet companies are the backbone of the digital age, shaping how people communicate, work, shop, and entertain ourselves. These companies leverage the power of the internet to offer a wide array of services and products, catering to the diverse needs and preferences of users worldwide.

From e-commerce giants like Amazon and Alibaba to social media platforms such as Facebook and Twitter, internet companies have revolutionized the way people conduct business and interact with one another. These companies have created vast ecosystems where users can connect, share content, and engage in online communities, transcending geographical boundaries and bringing people closer together [3].

Internet companies play a crucial role in the global economy, driving job creation, fostering entrepreneurship, and fueling economic growth. The rise of online marketplaces has empowered small businesses and independent sellers to reach customers worldwide, leveling the playing field and democratizing commerce.

3. The Influence of ESG on the Development of Internet Companies

ESG considerations have become increasingly important for internet companies as they play a significant role in shaping the digital landscape and influencing societal behavior. These companies have a profound impact on the environment, society, and governance structures, and as such, they are increasingly expected to prioritize ESG factors in their operations and decision-making processes.

From table 1, it tells that Tencent has clearly cut their consumption of greenhouse gases and energy, especially the direct energy. While there were fluctuations in the metrics related to environmental impact and resource consumption, it is essential for the company to continue monitoring and managing these aspects to ensure sustainable practices and minimize adverse effects on the environment. Efforts to improve energy efficiency, reduce greenhouse gas emissions, and optimize resource usage should remain priorities for the company moving forward.

Table 1. Tencent basic environmental resources consumption between 2021 and 2022

		As of 31 Dec. 2021	As of 31 Dec. 2022
Greenhouse gases	Total GHG emissions(scopes1,2,3)(tCO ₂ e) ¹²	5,871,710.70	5,739,723.70
	Total GHG emissions per unit of revenue(tCO ₂ e/RMB million)	10.5	10.4
	Total energy consumption(MWh) ⁶	4,452,650.10	5,046,045.10
Energy	Total energy consumption per unit of revenue(MWh/RMB million) ⁶	7.9	9.1
	Direct energy consumption(MWh)	66,293.40	35,054.90
	Indirect energy consumption(MWh) ⁷	4,386,356.70	5,010,990.20
Resources	Water consumption(tonnes) ¹⁰	6,201,651.60	8,152,481.90
	Water consumption per unit of revenue(tonnes/RMB million) ¹⁰	11.10	14.70

3.1. Increasing Attention on Energy Consumption

3.1.1 Heavy electricity consumption in data center

Energy consumption is the biggest environmental crisis for Internet companies. Since the main business relies on the Internet, both the employee office and the enterprise output value are built on the huge power consumption. Digitalization has improved the operational efficiency of the physical industry, and at the same time, the problem of data center energy consumption has become increasingly apparent, according to the IEA research report, the global data center electricity consumption in 2021 accounted for about 0.9-1.3% of the global total electricity consumption. As a new product of the information age, Internet enterprises seem to have too many differences from real enterprises. It seems that the services established on the Internet do not need traditional raw material processing or pollution emission, as if there is no harm to the environment [4]. However, Internet businesses rely primarily on data centers and servers to support their operations, and these facilities require a lot of power to keep them running. With the growth of mobile Internet and cloud services, Internet traffic is now skyrocketing, with the journal Nature calculating in a paper that Internet traffic has grown from 2 terabytes in the whole of 1987 to 1.1 zettabytes now, 16,666 times the size of data traffic in 1997. Correspondingly, the average transfer of 1GB of data requires 13 KWh of electricity. The amount of energy used to run all the terminals combined has risen dramatically in the last decade. In 2017, the global Internet energy consumption was 2000 TWh (1 TWh is equal to 109 KWh, here 2000 TWh is equal to 2 trillion KWh), accounting for 7% of global energy consumption, which requires the power generation of 200 Three Gorges Dam to meet. The resulting CO₂ emissions are estimated to be almost as much as the global aviation industry, which consumes a lot of jet fuel. All Internet traffic, that is, data, is stored in data centers. Currently, global data centers consume about 200 TWh of electricity per year, more than the entire electricity consumption of some countries such as Iran, half of the global electricity consumption for transportation, and equivalent to 1% of the total global electricity demand. Data centers in the United States alone consumed 70 TWh of electricity in 2014, equivalent to 1.8% of the total annual energy consumption in the United States.

Since 2018, many leading Internet companies such as Tencent, Alibaba, Baidu, Mei tuan and Kuai shou have successively released ESG reports. However, in terms of information above, Internet enterprises are still in a backward stage compared with traditional enterprises. It is precisely because of the existence of the above views that Internet enterprises, including the public, generally pay little attention to the green information of Internet enterprises.

The "Green Cloud 2021" report released by the international environmental protection organization Greenpeace pointed out that the Internet technology industry's response speed and implementation of the national carbon neutral plan are insufficient, and the overall lag behind traditional industries such as electricity and steel.

In the report, Greenpeace released the "Renewable Energy Performance Ranking of Chinese Internet cloud Service Enterprises" for the New Year. Among the 22 Internet technology companies on the list this year, only Qin Huai Data and Tencent scored more than 60 points, while many well-known companies including Alibaba, Baidu, Huawei, Jing Dong, China Mobile, China Unicom, and China Telecom did not reach the pass line.

3.1.2 The data disclosure of ESG of Internet enterprises is not as good as that of traditional enterprises

There are several reasons:

Firstly, industry focus and perception. Traditional industries like electricity and steel have historically faced more scrutiny and regulation regarding their environmental and social impacts due to their tangible nature and visible footprints. As a result, they may have developed more robust ESG reporting practices over time. In contrast, the internet technology industry has been traditionally perceived as less tangible and with fewer direct environmental and social impacts, leading to less emphasis on ESG reporting [5].

As for the impact on society, the internet technology industry operates in a highly dynamic and complex environment characterized by rapidly evolving technologies, business models, and global operations. This complexity can make it challenging for internet technology companies to identify, measure, and report on their ESG impacts accurately, especially when compared to more traditional and linear industries [6].

Moreover, perception of ESG materiality differs. Internet technology companies may perceive certain ESG factors differently in terms of materiality and relevance to their business compared to traditional industries. For example, issues like data privacy, cybersecurity, and platform governance may be considered more critical ESG concerns for internet technology companies, but these factors may not always align with conventional ESG reporting frameworks [7].

Why would public pay attention to the disclosure of energy and environmental information of enterprises? Perfect energy and environmental information disclosure is not only a means for enterprises to show their climate governance level, but also reflects their long-term development planning and the ability to avoid climate risks, which is the common expectation of financial regulators and investors [8]. And the development of carbon markets means that greenhouse gas emissions data will increasingly affect the company's revenue.

3.1.3 Suggestion

Although compared with traditional enterprises, the information disclosure and carbon neutral planning of many Internet enterprises are slightly inferior, as the government, the public and investors pay more and more attention to ESG performance in the context of sustainable development, Internet technology enterprises will gradually improve their energy information disclosure [9]. More and more companies begin to disclose electricity consumption information and greenhouse gas emissions information, and release ESG reports. In the near future, Internet companies will also rank high in ESG scores such as MSCI and S&P.

3.2. Analysis of the Proportion of Female Employees

3.2.1 A newly-promoted measurement of governance

On March 8, 21st Century Business Herald will support the United Nations Global Compact Organization to hold a "Gender equality Goal" forum, and simultaneously launch a thematic plan of "ESG Women's Diversity in the Workplace". The person in charge of Jing Dong ESG told reporters in an interview with the 21st Century Economic Report that in recent years, Jing Dong has continued to promote the construction of the enterprise ESG system to create fair workplace opportunities and diversified development of workplace space for women. On January 31, 2023, Bloomberg released the 2023 Gender Equality Index (GEI), and Jing Dong Group was selected for the first time by virtue of the comprehensive score of various indicators, and became the only Chinese enterprise in the industry to be selected in the index.

At present, the attention of enterprises and media on ESG issues has gradually expanded from environmental issues such as "green and low-carbon" to issues such as "gender equality". According to the statistical monitoring report on the Program for the Development of Chinese Women (2021-2030) released by the National Bureau of Statistics in 2022, there will be 320 million female employees nationwide in 2022, accounting for 43.2 percent of all employed people. At present, gender equality practices and data related to female employees have become an important part of the disclosure of ESG reports of enterprises.

The promotion of gender equality in the workplace involves two main aspects. The first is to promote equal pay for equal work, and the second is to improve the representation of women in management.

3.2.2 The relationship between ESG and the proportion of women in the workforce

While ESG factors and gender diversity in the workforce are distinct concepts, they often intersect and influence each other in various ways:

First and foremost, they both relate to Social Responsibility and Diversity & Inclusion (D&I). ESG frameworks emphasize social responsibility, which includes promoting diversity and inclusion within organizations. Gender diversity is an important aspect of D&I initiatives. Companies that prioritize ESG principles are more likely to implement policies and practices that support gender diversity, such as equal employment opportunities, family-friendly benefits, and programs to support women's career advancement. Conversely, companies with higher levels of gender diversity are often seen as more socially responsible, as they reflect a commitment to creating inclusive workplaces that value diverse perspectives and talent [10].

Besides, the "G" in ESG focuses on governance, including the composition of corporate boards. Research suggests that companies with greater gender diversity on their boards tend to have better governance practices and financial performance. Efforts to increase board diversity, including gender diversity, can be driven by both regulatory requirements and ESG considerations. Companies with diverse boards may prioritize gender diversity in their workforce to align with broader governance principles.

There may be fewer women in the management ranks of traditional companies, especially in the traditional large manufacturing and industrial sectors. This may be due to the influence of historical occupational restrictions on women and social prejudices. In some Internet companies, due to the emphasis on diversity and inclusion, coupled with the high acceptance of youth culture in new companies, women's representation in management may be slightly higher.

Companies that prioritize ESG and gender diversity are often more attractive to job seekers, particularly women. A diverse and inclusive work environment is appealing to many individuals, leading to a larger pool of female candidates. Moreover, companies with strong ESG performance and a commitment to gender diversity are more likely to retain female talent by offering supportive work cultures, advancement opportunities, and equitable treatment.

3.2.3 Suggestion

Overall, the relationship between ESG and the share of women in the workforce is more complex than a simple cause-and-effect relationship. Although the problem of prejudice against women still exists in both traditional enterprises and Internet enterprises, it is obvious to see the advantages and importance of Internet companies in employee equality. A company's ESG performance often reflects its attitudes and values toward its employees and society, which may indirectly affect the percentage of female employees. At the same time, the participation and development of female employees can in turn affect a company's ESG performance. Therefore, increasing the proportion of women in the workforce and practicing good ESG principles can be mutually reinforcing and contribute to the sustainable development of enterprises.

4. Conclusion

As the world increasingly grapples with environmental challenges, societal inequalities, and governance issues, the role of ESG considerations in evaluating company performance has gained prominence. The essay underscores the significant influence of ESG criteria on the development trajectory of Internet companies. From addressing energy consumption challenges in data centers to promoting gender diversity in the workforce, Internet companies are navigating complex terrain where ESG factors play a pivotal role.

Looking ahead, although challenges persist, including the need for improved data disclosure and enhanced governance practices, there is a clear trend toward greater integration of ESG principles into the strategies and operations of Internet companies. As stakeholders continue to emphasize the importance of ESG considerations, Internet companies are poised to play a pivotal role in shaping a more sustainable and equitable future. By embracing ESG principles, these companies can not only mitigate risks and enhance resilience but also create long-term value for stakeholders and society as a whole.

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