

Applying Stakeholder Theory to Analyse the Feasibility and Applicability of CSR in High-Tech Companies

Xiaocong Liu¹

I. INTRODUCTION

The critical role that technology companies have played in the rise of the digital age is widely recognised. In addition, the technology industry is constantly changing and being reinvented in numerous ways.² The high-tech enterprise is not only one of the fastest-growing industries, creating millions of jobs, but it is also a promoter of social development and innovation. For instance, the versatility offered by high technology and the fast speed of the Internet has permeated every part of our lives. As revealed in the Digital 2021 April Global Statshot Report, more than 60 per cent of the world's total population is now online.³ Arguably, this also means that the Internet has become one of the essential tools in our lives. The spread of Internet use, one of the main drivers of the globalisation process, has transcended all borders and boundaries, while the Internet has provided businesses with new ways to reach customers and increase efficiency.

In recent years, the business environment has been characterised by a severe economic crisis, which can be attributed to changes in the economic cycle and the absence of values and ethical principles in the functioning of organisations.⁴ Therefore, one way to address the crisis may be through social innovation⁵ and corporate social responsibility (CSR).

In 1984 Freeman proposed the stakeholder theory of organisational management and business ethics, which addresses morals and values in managing an organisation.⁶ In short, stakeholder theory argues that a firm should create value for all its stakeholders, not just its shareholders. In terms of corporate governance and corporate management, the stakeholder framework has proven useful in analysing the strategic and regulatory challenges facing organisations, and good stakeholder relationships are key to

¹ LL.M (Nottingham); Third-year PhD candidate, Nottingham Trent University, in particular CSR of Listed Companies; xiaocong.liu2018@my.ntu.ac.uk

² Wayne F. Cascio and Ramiro Montealegre, "How Technology Is Changing Work and Organizations" (2016) 3 Annual Review of Organizational Psychology and Organizational Behavior 349, 349-351.

³ Simon Kemp, "DIGITAL 2021 APRIL GLOBAL STATSHOT REPORT" (Hootsuite & We Are Social 2021)

⁴ Domènec Melé and others, "Facing the Crisis: Toward a New Humanistic Synthesis for Business" (2011) 99 Journal of Business Ethics 1, 1-2

⁵ Stephen Goldsmith and others, *The power of social innovation: how civic entrepreneurs ignite community networks for good* (Jossey-Bass 2010)

⁶ R. Edward Freeman, Jeffrey S. Harrison and Stelios Zyglidopoulos, 'Stakeholder Theory' [2018] Elements in Organization Theory <<https://www.cambridge.org/core/elements/abs/stakeholder-theory/1D970D2659D47C2FB7BCBAA7ADB61285>> accessed 1 June 2021.

organisational CSR developments.⁷ Specifically, the theory can be interpreted as the need to make sustainable business decisions considering all stakeholders' interests, including shareholders, employees, clients, suppliers, the community, the environment, and future generations.⁸ Moreover, the theory emphasises the importance of business ethics, which addresses morals and values in managing an organisation.

The traditional ultimate goal of an enterprise is to pursue benefits and maximise profits in the interests of its shareholders.⁹ Similarly, in the famous "CSR Pyramid", Carroll set up the economic responsibility of the company as the base and foundation,¹⁰ emphasising that the premise of the company should be profitable when implementing CSR.¹¹

In other words, there may be a correlation between the diversity and expansion of CSR activities and a company's profitability. In fact, companies that implement CSR activities to a greater extent have been found to be more profitable in economic terms.¹² Likewise, companies with a higher degree of profitability can undoubtedly explore more different aspects of CSR activities.

Stakeholder theory and high-tech companies

With valuable solutions such as AI-based tools, advanced web applications and third-party APIs all providing technology solutions for companies, these technological capabilities impact a company's competitive advantage.¹³ According to the technology website Forbes¹⁴, the successful integration of third-party technologies can generate better products faster, whether it's banking technology, payment automation or environmental, social and governance (ESG) management platforms. So to a certain extent, technological innovation is often an indispensable method for high-tech companies to enhance their market competitiveness, and the ability to innovate largely determines the viability of a high-tech company.

⁷ Nada K. Kakabadse and others, "Corporate social responsibility and stakeholder approach: a conceptual review" (2005) 1 *International Journal of Business Governance and Ethics* 277, 295-298

⁸ Mark Anthony Camilleri, "Corporate sustainability and responsibility: creating value for business, society and the environment" (2017) 2 *Asian Journal of Sustainability and Social Responsibility* 59, 59-60

⁹ Milton Friedman, "The Social Responsibility of Business Is to Increase Its Profits" [1970] *Corporate Ethics and Corporate Governance* 173, 173-174

¹⁰ AB Carroll, 'The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders.' (1991) 34 *Business Horizons* 39, 42.

¹¹ AB Carroll, 'Corporate Social Responsibility: Evolution of a Definitional Construct.' (1999) 38 *Business and Society* 268, 286.

¹² Camelia-Daniela Hategan and others, 'Doing Well or Doing Good: The Relationship between Corporate Social Responsibility and Profit in Romanian Companies' (2018) 10 *Sustainability* 1041, 1057-1058.

¹³ Valdir Antonio Vitorino Filho and Roberto Moori, "The role of technological capabilities in the competitive advantage of companies in the Campinas, SP Tech Hub" (2018) 15 *Innovation & Management Review* 247, 252, 257.

¹⁴ Sanjoy Malik, 'Council Post: Leveraging Innovative Technology To Gain A Competitive Advantage In Software Development' (*Forbes*, 2021)

<<https://www.forbes.com/sites/forbestechcouncil/2021/12/07/leveraging-innovative-technology-to-gain-a-competitive-advantage-in-software-development/?sh=427389716dad>> accessed 18 July 2022.

There was a trend in high-tech industries in the early twentieth century where companies began to outsource manufacturing completely to third-party contractors or joint venture partners.¹⁵ By doing this, companies can avoid the risk of investing in expensive manufacturing plants and concentrate on developing what they believe to be their natural source of competitive advantage: product research and technological innovation. Hence, the following will focus on the core competitiveness of high-tech companies in terms of their product research and technological innovation capabilities to analyse their internal and external stakeholders.

II. STAKEHOLDER ANALYSIS OF THE CORE COMPETENCIES OF HIGH TECHNOLOGY COMPANIES

➤ *Internal stakeholders:*

a) Shareholders

Shareholders and investors provide the most vital capital and financial support for high-tech companies in the listing, innovation and development stages. However, in recent years, several technology companies with a relatively large market value worldwide have experienced business scandals and operating scams (e.g. Apple¹⁶, Facebook¹⁷), resulting in the loss of hundreds of millions in investment capital from investors consortia and banks. Hence, shareholders and investors, both stakeholders who are relatively directly affected by a company's decisions, should receive significant attention and protection in high-tech companies.

Scholars¹⁸ point to governance factors as a key driver of CSR decisions and potential crucial determinants of the CSR–performance relationship. In a broad sense, corporate governance refers to the set of rules and structures (formal and informal) that shape management decisions and accountability.¹⁹ In this context, investigating the relationship between corporate governance and CSR is one of the necessary conditions for exploring the CSR activities of shareholders in high-tech companies. Indeed, corporate governance factors associated with strategic decisions may influence

¹⁵ Gary P. Pisano and Steven C. Wheelwright, “The new logic of high-tech R & D” (1995) 28 *Long Range Planning* 128, 128.

¹⁶ James Clayton, ‘Apple To Pay \$113M To Settle Iphone ’ Batterygate’ (*BBC News*, 2020) <<https://www.bbc.co.uk/news/technology-54996601>> accessed 12 May 2021.

¹⁷ Paul Lewis and Julia Carrie Wong, ‘Facebook Employs Psychologist Whose Firm Sold Data To Cambridge Analytica’ (*the Guardian*, 2018) <<https://www.theguardian.com/news/2018/mar/18/facebook-cambridge-analytica-joseph-chancellor-gsr>> accessed 12 May 2021.

¹⁸ L Dam and B Scholtens, ‘Ownership Concentration and CSR Policy of European Multinational Enterprises’ (2013) 118 *Journal of Business Ethics* 117, 123-125.; P Crifo, A Reberlioux and T Williamson, ‘The Link between Corporate Governance and CSR: The Role of Board of Directors’ (2013) 30 *IMS Luxembourg Report* 425.

¹⁹ Gérard Charreaux and Philippe Desbrières, ‘Corporate Governance: Stakeholder Value Versus Shareholder Value’ (2001) 5 *Journal of Management and Governance* 107, 120-125.

companies to make socially responsible decisions.²⁰ A fundamental assumption about corporate governance is that shareholders' preferences for social activities play an essential role in determining a company's strategy, including its CSR activities. As Herkstroter and Graaf²¹ argue, the form of governance is the starting point for understanding CSR. To implement CSR activities, a company must have a good insight into its environment. Therefore, as a fundamental element of corporate governance, ownership concentration may play a key role in CSR decisions.²²

Most high-tech companies worldwide that account for a large share of the market are applying the multiple classes share structure.²³ Generally speaking, shareholders' meetings for high-tech companies often include the core management of the company (e.g. chief executive officer, chief technology officer, etc.), institutional types of investment firms, and independent investors in the market. In different jurisdictions, Alphabet (Google's parent company) and Facebook in the U.S.²⁴ and Baidu²⁵ and JD²⁶ in China and Deliveroo²⁷ in the U.K. have adopted the Dual-Class Share Structure. A dual shareholding structure means that the company's shares are divided into two types of voting rights, superior and inferior. The superior voting shares tend to have more decision-making power and rights.²⁸

High-tech companies with multiple shareholding structures can be regarded as having a lower concentration of ownership structure. In fact, an overly concentrated ownership structure may have a negative impact on high-tech listed companies, potentially affecting the company's independent research and innovation capabilities and its ability to circulate internal information. For instance, because of the particular Chinese political environment and path dependence,²⁹ the proportion of state-owned

²⁰ Stephen Brammer and Andrew Millington, 'Corporate Reputation and Philanthropy: An Empirical Analysis' (2005) 61 *Journal of Business Ethics* 29.; Amir Barnea and Amir Rubin, 'Corporate Social Responsibility as a Conflict Between Shareholders' (2010) 97 *Journal of Business Ethics* 71.; Ruth V Aguilera and others, 'Putting the S Back in Corporate Social Responsibility: A Multilevel Theory of Social Change in Organizations' (2007) 32 *Academy of Management Review* 836.

²¹ Frank J. de Graaf and Cor A. J. Herkströter, "How Corporate Social Performance Is Institutionalised Within the Governance Structure" (2007) 74 *Journal of Business Ethics* 177, 179.

²² Lammertjan Dam and Bert Scholtens, "Ownership Concentration and CSR Policy of European Multinational Enterprises" (2012) 118 *Journal of Business Ethics* 117, 119, 122-125.

²³ Jerry Davis, 'The Simple Reason Tech Ceos Have So Much Power' (*Fast Company*, 2021) <<https://www.fastcompany.com/90620747/dual-class-voting-tech-ceo-power>> accessed 20 July 2022.

²⁴ Reinhardt Krauser, 'This Is How Mark Zuckerberg And Other Tech Ceos Stay In Power' (*Investors*, 2020) <<https://www.investors.com/news/technology/tech-companies-ipo-super-voting-rights/>> accessed 19 July 2022.

²⁵ Serena NgStaff, 'Baidu Plays Defense On Voting Rights' (*THE WALL STREET JOURNAL*, 2005) <<https://www.wsj.com/articles/SB112441153422917341>> accessed 21 July 2022.

²⁶ Lanxu Zhou, 'Experts Support Dual-Class Shares' (*Chinadaily*, 2018) <<https://www.chinadaily.com.cn/a/201809/28/WS5bad8944a310eff30327ff44.html>> accessed 18 July 2022.

²⁷ Attracta Mooney, 'Investors Hit Back At Dual-Class Reforms After Deliveroo IPO Flop' (*Financial Times*, 2021) <<https://www.ft.com/content/72de7a53-e7af-4c6b-af0f-cfd1f8fcbdf5>> accessed 20 July 2022.

²⁸ Aurelio Gurrea-Martínez, "Theory, Evidence, and Policy on Dual-Class Shares: A Country-Specific Response to a Global Debate" (2021) 22 *European Business Organization Law Review* 475, 476-477.

²⁹ Kun Liu and Hanmin Liu, 'Path Dependence And Path Breaking In Chinese State-Owned

enterprises in China is relatively high, which means that the ownership structure of most state-owned enterprises in China is correspondingly concentrated. But in China's traditional business environment, private companies are considered to be more suitable for technological development than state-owned enterprises.³⁰ Although a relatively concentrated ownership structure is able to guarantee the stable and long-term development of state-owned enterprises by giving up developing a series of risky innovation strategies. But equally, high-tech companies that adopt a conservative business strategy may undermine the decision-making as well as the diversity of the CSR activities undertaken. In summary, a lower concentration of ownership or share structure is more suitable for developing high-tech companies, which may help bring higher value to the firm to some extent.³¹

b) Board of directors and managers

The management team of a listed high-tech company includes the directors of different company departments, project leaders, senior managers etc. All these management staff may be regarded as the main stakeholders who decide on the strategies and direction of the company's development. In what follows, I will use two perspectives (i.e. strategic orientation and director's duties) to analyse the significant impact of the management team on high-tech companies and which management principles will be the most suitable for such a company's CSR development.

The strategic orientation of firms has attracted widespread attention from scholars in marketing, management and innovation studies.³² The general concept of strategic orientation may be interpreted as the principles that direct and influence a firm's activities, which generate the behaviours intended to ensure its viability and performance.³³

In short, the core of this concept is companies' identification, collection and analysis of intelligence to create new knowledge within the company. Therefore, strategic orientation may be considered a critical element of the innovation process in high-tech companies. A strategic-orientated management team will influence selecting the type of knowledge resources required for search and evaluation and the type of knowledge required for an investment to gain a competitive advantage from the general management perspective. In this sense, strategic orientation helps determine whether and how companies engage in intelligence-gathering activities to acquire information

Enterprise' [2013] Proceedings of the 2013 International Conference on the Modern Development of Humanities and Social Science.

³⁰ Colin Hawes, "Why is Huawei's ownership so strange? A case study of the Chinese corporate and socio-political ecosystem" (2020) 21 *Journal of Corporate Law Studies* 1, 1-2.

³¹ Irena Grosfeld, "Large shareholders and firm value: Are high-tech firms different?" (2009) 33 *Economic Systems* 259, 275.

³² Pamela Adams and others, "Strategic orientation, innovation performance and the moderating influence of marketing management" (2019) 97 *Journal of Business Research* 129, 129-130.

³³ Henri Hakala, "Strategic Orientations in Management Literature: Three Approaches to Understanding the Interaction between Market, Technology, Entrepreneurial and Learning Orientations" (2010) 13 *International Journal of Management Reviews* 199, 200-202

that may be used to improve internal decision-making.³⁴ Therefore, a strategic-orientated management team is likely suitable for the comprehensive development of high-tech companies.

In addition, the board of directors can be seen as the primary and key component of companies' management. It is recommended for practitioners (e.g. shareholders) to consider norms and strategic planning when selecting directors to combat irresponsible corporate governance from the perspective of CSR and favourable company governance.³⁵ Practical work shows the relevance of the board as an essential resource provider and adds a new role for the board: balancing the interests of stakeholders.³⁶ In short, the inclusion of the company's stakeholders on the board as board members ensures that their rights and legitimate expectations are respected. Besides, the board replicates the company's internal and external stakeholders, promotes their commitment to value creation, and ensures that the risks they assume will be adequately protected.

In terms of directors' duties, Article 21 of the Chinese Company Law explicitly states: 'Neither the controlling shareholder, nor the actual controller, nor any of the directors, supervisors or senior management of the company may injure the interests of the company by taking advantage of its connection relationship.'; In Section 172 of the U.K. Company Act 2006, a director "must act in the way he considers, in good faith, would be most likely to promote the company's success for the benefit of its members as a whole"; In Australia, Section 180, Clause 1 of the Australia Corporations Acts stipulated 'a director or other officer of the corporation must exercise their powers and discharge their duties with the degree of care and diligence that a reasonable person would exercise if they were a director of a corporation in the corporation's circumstances.' Consequently, directors who can effectively provide comprehensive and responsible insights into the challenges of company systems may improve the well-being of the organisation, society, and the environment.³⁷

In different jurisdictions, Company Law requires the directors of a company to give primary consideration to the company's interests as a whole. It provides a degree of flexibility in the duties of directors. Therefore, the main objective of company directors has gradually changed from exercising their duties in the best interests of shareholders and maximising wealth to considering and balancing the interests of the different stakeholders in the company or, more importantly, matters of CSR.

³⁴ L.A. Cacciolatti and A. Fearn, "Marketing intelligence in SMEs: implications for the industry and policy makers" (2013) 31 *Marketing Intelligence & Planning* 4, 8.

³⁵ Silvia Ayuso-Siart and Antonio Argandoña, "Responsible corporate governance: Towards a stakeholder board of directors?" (2009) 6 *Corporate Ownership and Control* 9, 14-15.

³⁶ KPMG, "The Board's role: Creating value and balancing stakeholder needs: the board's role", 2019, AICD-KPMG report

³⁷ Humphry Hung, "Directors' Roles in Corporate Social Responsibility: A Stakeholder Perspective" (2011) 103 *Journal of Business Ethics* 385, 397-398.

In this case, if a technology company wants to achieve long-term sustainable development, it needs to pay extra attention to the employment and training of the company's management to obtain an effective solution to the problem of balancing CSR development with the company's overall economic interests.

c) Employee

The employees of high-tech companies (especially those in research and development) are the main technological innovation source and play an important role.³⁸ The first thing that needs to be understood is the general transaction process between high-tech companies and customers to get the importance and irreplaceability of employees in such companies. The following will use the typical example to illustrate the importance of employees in the R&D department of a technology company.

First, companies must actively capture market information and maintain a stable cooperative relationship with customers. During the contract period, the R&D will communicate with customers on technical issues and ensure the effective implementation of the next phase of the task. During this period, the R&D department obtains information. It keeps learning by searching for related publications and literature issued by well-known foreign companies or academe, combining its efforts and creation and continuous attempts and modifications to finally complete product or service innovation. Then, the company's or cooperating production department will complete the technical innovation manufacture work according to the drawings and ideas provided by R&D. Obviously, in the process of technological innovation, employees are the main participants and implementers, especially the R&D department in high-tech companies. Hence, promoting the intensity of R&D can be considered, as a positive factor for conducting essential innovations in high-tech companies.³⁹ High-tech companies' development and technological innovation activities also involve different forms of interaction with various stakeholders (As shown in Figure 1.).

³⁸ Yanhong Liu and others, "The Dynamic Effect of High-Tech Industries' R&D Investment on Energy Consumption" (2019) 11 Sustainability 4090, 4110.

³⁹ Paulo Maçãs Nunes and others, "Is there a linear relationship between R&D intensity and growth? Empirical evidence of non-high-tech vs. high-tech SMEs" (2012) 41 Research Policy 36, 48.

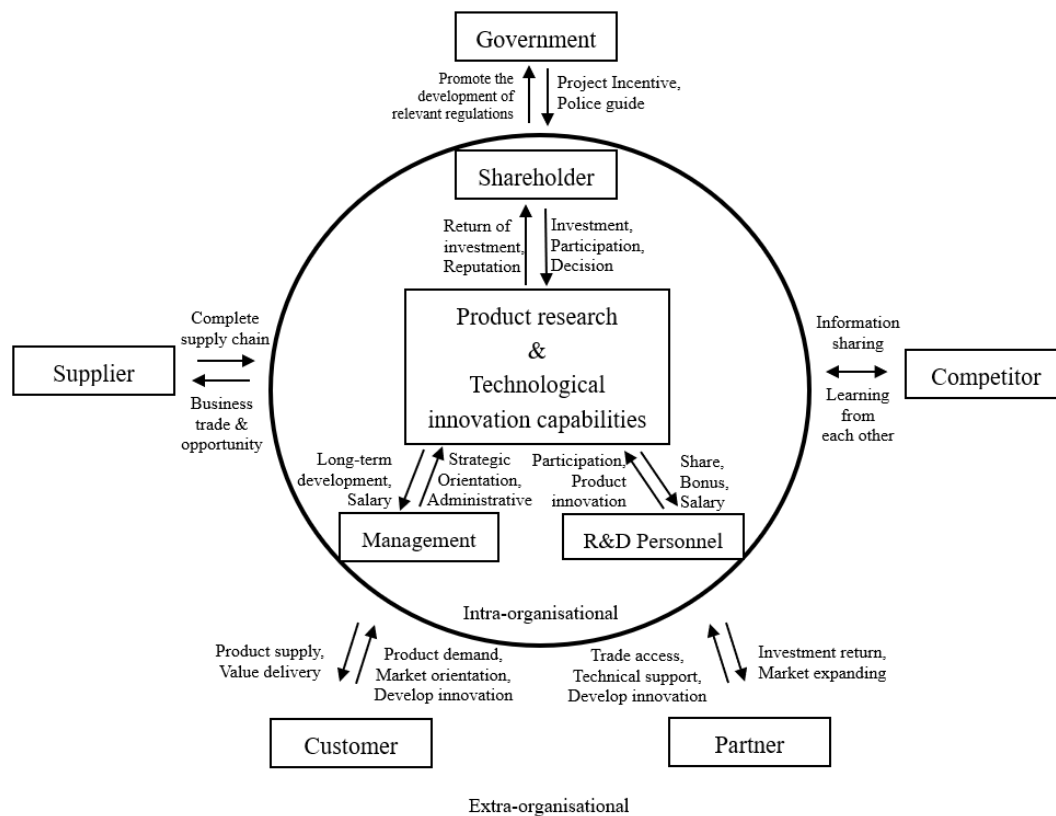


Figure 1 The interaction between stakeholders and technological innovation

In other words, the R&D department plays the leading role in high-tech companies because both the innovation efficiency and production efficiency of the R&D department have a series of effects on the company's subsequent development. Assuming that the market favours innovative products, the company will obtain economic returns and reinvest in new innovative research and development. Therefore, in this circle, the benefits and rights of R&D deserve more attention and promotion.

The favourable incentives associated with the R&D sector are well illustrated in listed or high-tech companies with a high market share. First of all, in these high-tech companies, the R&D departments or the company's chief engineers and other similar vital employees are likely to hold shares in the company. This is because high-tech companies need to pay attention to long-term training for engineers or designers, and they apply financial incentives such as the distribution of equity and bonus dividends to enhance the loyalty of employees (mostly engineers) to the company. Besides, the technical and skilled employees of technology companies are regarded as the core and key personnel of the company and are usually irreplaceable.⁴⁰ Since the profitability

⁴⁰ Helen McGuirk and others, "Measuring the impact of innovative human capital on small firms' propensity to innovate" (2015) 44 Research Policy 965, 965.; Josef Drabek and others, "Investing in Human Capital as a Key Factor for the Development of Enterprises" in Ladislav Mura (ed), *Issues of Human Resource Management* (IntechOpen 2017)

and performance of technology companies are typically related to the performance of these core employees, high-tech companies need to pay attention to the benefits and training offered to stakeholders such as their core and key employees.

However, core employees can also bring disadvantages to the company. Technical staff with high skills levels often represent promising employment prospects, implying that other companies might poach them. And although there are relative protections in place regarding trade secrets and contract theft,⁴¹ companies can still suffer a loss of technology and development resources. More importantly, core technology employees can lead a company's development direction to some extent. Spontaneous strikes by core employees or joint strikes by labour unions are also common and challenging problems for technology companies. For example, Google's global joint strike in 2018 was caused by that company's own employees who were seeking fair gender treatment,⁴² causing substantial economic losses to the company. In short, valuable human capital within high-tech companies can be regarded as one of their unique positive or negative features.

After a comparative understanding of the characteristics and nature of high-tech companies, one of the main issues that need to be discussed is how the R&D department can lead high-tech companies to make scientific research with CSR spirit and how to use its high-tech applications or technology to maintain and benefit the community.

For how R&D can lead companies to make a CSR contribution, one of the solutions or answers should be able to be considered Responsible Research and Innovation (RRI)⁴³. RRI is a term used in the E.U. Framework Plan to describe scientific research and technology development processes considering potential environmental and social impacts.⁴⁴ Although there have been various slightly different definitions of RRI, the academic community generally believes that social challenges should be the main focus of scientific research.⁴⁵ Specifically, RRI involves conducting research with high ethical standards, ensuring gender equality in the scientific community, and the responsibility of investment decision-makers to avoid the harmful effects of innovation, involve the communities affected by innovation and ensure they have the necessary knowledge to understand its impact.⁴⁶

⁴¹ Jinjin Liu, "A Brief Analysis on the Legal Issues of Trade Secret Protection in China's High-Tech Industry" (2021) 09 *Open Journal of Social Sciences* 488, 488.

⁴² Scott Shane and Daisuke Wakabayashi, "The Business Of War": Google Employees Protest Work For The Pentagon (Published 2018) (*Nytimes.com*, 2018) <<https://www.nytimes.com/2018/04/04/technology/google-letter-ceo-pentagon-project.html>> accessed 20 July 2022.

⁴³ Jeroen van den Hoven and Klaus Jacob, *Options for strengthening responsible research and innovation* (Publications Office of the European Union 2013)

⁴⁴ René von Schomberg, "A Vision of Responsible Research and Innovation" [2013] *Responsible Innovation* 51, 51.

⁴⁵ Melanie Smallman, "Citizen science and Responsible Research and Innovation" in Susanne Hecker and others (ed), *Citizen Science: Innovation in Open Science, Society and Policy* (UCL Press 2018)

⁴⁶ R. Owen and others, "Responsible research and innovation: From science in society to science for society, with society" (2012) 39 *Science and Public Policy* 751, 757.

To a certain extent, it can be said that RRI is a standard that high-tech listed companies can refer to and learn from. After all, the implementation of RRI in European and American countries has reached a very mature stage. Suppose a company can conduct scientific and technological research with high ethical standards and take into account the influence of the surrounding stakeholders. In that case, it will undoubtedly be able to push the CSR of high-tech companies to a new level.

➤ *External stakeholders:*

d) Suppliers

For high-tech companies, their suppliers can generally be divided into two types. One is a supplier of manufacturing hardware and equipment (e.g. Samsung supplies the screen and Toshiba supplies the semiconductor). The other provides technology and services (IBM provides consulting services for system architecture and web hosting, or Microsoft provides a series of professional office software). The critical components of the equipment of general high-tech companies mainly come from suppliers, which are also called strategic suppliers. And once these vital strategic suppliers are selected, they will sign long-term cooperation contracts, so replacement costs will be relatively high. When key suppliers are established and cooperate for a period of time, a fairly complete supply chain will be formed around the company. In addition, because the scale of the suppliers of high-tech companies is generally relatively large, the stakeholders involved will be relatively wide. Therefore, in a high-tech company's supply chain with various socially responsible issues (e.g. Whether there is a long-term and sustainable cooperative development relationship with the supplier) covering different stakeholders, it is necessary to study and promote its CSR.

In dealing with suppliers or supply chain issues, the practice and implementation of CSR can be split into two aspects for analysis and discussion. First, what social responsibilities the company should assume and undertake for suppliers, especially long-term suppliers, and how to protect their legitimate rights and interests. Secondly, suppliers should cooperate with high-tech companies and apply, for example, 'Sustainable Supply Chain'⁴⁷ to promote CSR development, maintain society better, and repay society.

There is no doubt that the supply chain in modern enterprises is increasingly facing risks.⁴⁸ These risks may directly increase the company's operating costs, and long-term unhealthy supply chain relationships will also bring massive losses to the company and damage the company's reputation. The type and severity of CSR-related risk exposure can vary widely by category or industry, both due to the business activity (e.g. labour

⁴⁷ Ting Chi, "Building a sustainable supply chain: an analysis of corporate social responsibility (CSR) practices in the Chinese textile and apparel industry" (2011) 102 *Journal of the Textile Institute* 837, 837-838.

⁴⁸ Li Zhao and others, 'The Impact of Supply Chain Risk on Supply Chain Integration and Company Performance: A Global Investigation' (2013) 18 *Supply Chain Management: An International Journal* 115, 115-117.

risks in manufacturing,⁴⁹ environmental risks in chemicals,⁵⁰ ethical risks in extraction industries⁵¹).

In addition to the above-mentioned direct CSR relationship with suppliers (i.e. long-term cooperative relationship with suppliers or sustainable supplier chain), companies' suppliers should be concerned about a series of indirect CSR issues caused by companies' suppliers should be concerned. In related investigations, an increasing number of suppliers (especially in countries with a cheap labour force) of high-tech companies have different unfair and unethical treatment of labour. For instance, Amazon's supplier Foxconn illegally uses dispatched workers and interns, and the working environment of its employees has not improved.⁵² What is more serious is that employees' overtime hours have increased, reducing their wages while forcing workers to work overtime. In the labour-employment relationship, in addition to giving employees unequal and unethical treatment, suppliers of high-tech companies also have another more serious problem: hiring child labour. For instance, in significant electronics and electric vehicle companies in the technology sector, child labour is severe. Industry giants including Apple, Samsung E, Dell, Microsoft, BMW, Renault and Tesla have been involved in the issue of child labour in the battery supply chain for their electronic vehicles.⁵³ Specifically, in cobalt mining, the raw material for automobile batteries in the Congo, suppliers employ child labour and expose them to adverse and toxic working conditions without providing effective work protection measures.

Hence, it is not enough for high-tech companies to adopt CSR codes of conduct. They must also ensure that their suppliers and supply chain conduct business socially responsibly. (i.e. Treat all employees legally and ethically, do not employ child labour, etc.) When selecting and deciding suppliers, high-tech companies also need to pay attention to whether the suppliers themselves have unethical behaviours and harmful activities. It is also necessary to guide suppliers to jointly make relevant CSR measures and practices, such as establishing a sustainable supply chain.

e) Customers

For high-tech companies, customers are the source of demand for goods and services

⁴⁹ Barbara J Fick, 'Corporate Social Responsibility for Enforcement of Labor Rights: Are There More Effective Alternatives?' [2015] SSRN Electronic Journal.

⁵⁰ Irina Lock and Peter Seele, 'Analyzing Sector-Specific CSR Reporting: Social and Environmental Disclosure to Investors in the Chemicals and Banking and Insurance Industry' (2015) 22 Corporate Social Responsibility and Environmental Management 113.

⁵¹ Gavin Hilson, "Corporate Social Responsibility in the extractive industries: Experiences from developing countries" (2012) 37 Resources Policy 131, 131-133.

⁵² China Labor Watch (中国劳工观察), "Amazon's Supplier Factory Foxconn Recruits Illegally: Interns Forced To Work Overtime", 2019 <http://www.chinalaborwatch.org/upfile/2019_08_07/Amazon%20English%20Report%2008.09.pdf> accessed 2 October 2020.

⁵³ 'Industry Giants Fail To Tackle Child Labour Allegations In Cobalt Battery Supply Chains' (Amnesty International, 2017) <<https://www.amnesty.org/en/latest/news/2017/11/industry-giants-fail-to-tackle-child-labour-allegations-in-cobalt-battery-supply-chains/>> accessed 17 May 2021.

and the role of market direction. When new high-tech products or devices with innovative technological features (such as smartphones and laptops) are launched, consumers tend to choose well-known brands they are familiar with.⁵⁴ In other words, most high-tech companies' customers are relatively stable, including organisational strategic customers with long-term cooperation with the company or individual customers with strong customer loyalty. More importantly, customer experience and relationships often have a relatively strong relationship with the company's reputation and loyalty.⁵⁵ Besides, what high-tech companies can give back to customers is not only their own products but also the delivery of companies' values and culture. At the same time, the steady stream of brand recognition and a stable customer base can promote the continuous progress and development of the innovative capabilities of high-tech companies. This innovative capability may include patented technology, difficult skills and accumulated institutional knowledge.⁵⁶ With this capability, the company is able to deliver products back to its customers through its manufacturing and production processes.⁵⁷ In other words, there is an interactive relationship between customers and innovation capabilities. Therefore, paying more attention to customers' interests can bring a series of different positive effects to the company, such as enhancing customers' understanding of company culture, brand loyalty, and company reputation.

From 2019 until now, the technological innovation of 5G has been a hot topic of controversy for some.⁵⁸ Consequently, in the context of the rapid development of 5G, obtaining more information also means that companies should assume greater responsibility for proper use of data, protection of customer privacy, and effective network security management. In other words, among the many risks of CSR in the current high-tech industry, "data and privacy protection" for customers should receive more attention from high-tech companies.⁵⁹

In addition to the development background in the new era of 5G, high-tech CSR considerations for customers can also refer to another efficient method: Customer Relationship Management (CRM)⁶⁰. CRM is one of many different methods that enable

⁵⁴ Yann Truong and others, "Branding strategies for high-technology products: The effects of consumer and product innovativeness" (2017) 70 *Journal of Business Research* 85, 85-86.

⁵⁵ Pantea Foroudi and others, "Influence of innovation capability and customer experience on reputation and loyalty" (2016) 69 *Journal of Business Research* 4882, 4888.

⁵⁶ Gary A Knight and S Tamar Cavusgil, "Innovation, organizational capabilities, and the born-global firm" (2004) 35 *Journal of International Business Studies* 124, 131.

⁵⁷ GuoXiang Tang and others, "Impact of Innovation Culture, Organization Size and Technological Capability on the Performance of SMEs: The Case of China" (2020) 12 *Sustainability* 1355, 1357-1358.

⁵⁸ Gauthier ROUSSILHE, '5G Controversies In European Cities' (Sciencespo 2021)

<<https://www.sciencespo.fr/cole-urbaine/sites/sciencespo.fr/cole-urbaine/files/Capstone%20-%205G%20controversies%20-%20Final%20report.pdf>> accessed 21 July 2022.

⁵⁹ Asunción Esteve, 'The Business of Personal Data: Google, Facebook, and Privacy Issues in the EU and the USA' (2017) 7 *International Data Privacy Law* 36, 46-47.

⁶⁰ Chengwu SUN, "The Research and Evaluation of Customer Relationship Management and Social Responsibility on Competitive Advantage" (2020) 69 *Revista de Cercetare si Interventie Sociala* 131,

companies to manage and analyse their interactions with past, current and potential customers. It applies data analysis about the company's customer history to improve business relationships with customers, focusing on customer retention and ultimately driving sales growth.⁶¹ More importantly, CSR and CRM have similar positive effects on customer attitudes. If CRM is used reasonably to analyse and manage companies, it has been found that CRM can compensate for negative CSR to a large extent in the market's causal relationship segmentation.⁶²

Based on the above discussion, high-tech companies need to pay more attention to protecting customer information and privacy to promote the better development of their own CSR. Furthermore, different market management methods, such as CRM, can be applied to find solutions that can adapt to the diverse needs of existing and future customers.

f) Government

For high-tech companies, it is essential to keep up to date with government policies and changes in relevant laws and regulations.⁶³ In the context of the innovation of 5G technology in the last two years, a good example is Chinese technology company Huawei's cooperation with governments (e.g. Including profit-sharing joint ventures with state-owned enterprises and officials to establish additional Communist Party branches within the company⁶⁴) and local companies in different countries. Huawei has reached a strategic partnership agreement with the British mobile network operator EE. In addition, as mentioned above, the practice of outsourcing product manufacture to service providers is common among fast-growing high-tech companies. Huawei outsources its major mobile phone manufacturing to large technology product manufacturing companies such as Foxconn. This approach can largely avoid unnecessary manufacturing risks and allow companies to pay more attention to developing their own R&D and innovation capabilities.

The government's influence (e.g. Tax incentives)⁶⁵ on Huawei's technological

133-135.

⁶¹ Diana Luck, "Customer Relationship Marketing and Corporate Social Responsibility: Not just ethical standpoints or business strategies" (2006) 2 *Social Responsibility Journal* 83, 83-84.

⁶² Sana-ur-Rehman Sheikh and Rian Beise-Zee, "Corporate social responsibility or cause-related marketing? The role of cause specificity of CSR" (2011) 28 *Journal of Consumer Marketing* 27, 35.

⁶³ An example here is DIDI because it was affected by the high entry barrier to the main board of the domestic Chinese stock exchange and followed by the compliance requirements of the Hong Kong Stock Exchange. Eventually it went ahead with the listing in the US despite warnings from the Chinese regulators. See Echo Wang, Anirban Sen and Scott Murdoch, 'China's Didi Raises \$4.4 Bln In Upsized U.S. IPO' (*Reuters*, 2021) <<https://www.reuters.com/business/chinas-didi-raises-4-billion-us-ipo-source-2021-06-29/>> accessed 17 July 2022.

⁶⁴ In this sense, Huawei's interests and those of the Chinese central government have merged, and there is no doubt that its business decisions are influenced by government priorities. See Colin Hawes, "Why is Huawei's ownership so strange? A case study of the Chinese corporate and socio-political ecosystem" (2020) 21 *Journal of Corporate Law Studies* 1, 1-3.

⁶⁵ Ying Zhang and Lingli Qing, "A study on the impact of income tax incentives on technological innovation in Huawei's technology enterprises (所得税优惠政策对华为科技企业技术创新影响研究)" (2022) 1 *China Township Enterprises Accounting (中国乡镇企业会计)* 30, 32.

innovation is slightly weaker than that of other stakeholders, but it cannot be ignored. In particular, supportive policies for emerging 5G technology and related import and export regulations have promoted and limited Huawei's overseas 5G business. Sometimes the government will even provide partial funding for Huawei's technological innovation. Therefore, the government has played a leading role in the development of Huawei.

For high-tech companies, cooperation between enterprises or with the government is crucial. In particular, the emerging 5G technology support policies and related import and export regulations have promoted and restricted the overseas 5G business of high-tech companies. Sometimes the government will even provide part of the funds for the technological innovation of SMEs.⁶⁶ In other words, the government has played a leading and guiding role in developing a series of high-tech companies, usually adopting policy guidance or incentive project to encourage their growth. The government also has a variety of policies to guide and promote high-tech start-ups. It aims to support the development of innovative enterprises and provides favourable conditions for start-ups regarding financial investment, tax incentives and talent attraction.

However, there are still significant differences between countries in terms of the regulatory environment for high-tech companies. Policymakers should consider opening up more economical regions while introducing competitive markets for small and medium-sized companies in addition to those with large market shares. At the same time, strengthen the protection of intellectual property rights and formulate coordinated policies, such as improving the credit reporting system of SMEs and listed companies, etc., to provide more legal protection for the high-tech industry.

g) Competitor

The analysis of the competitors among the stakeholders in the CSR direction can be roughly divided into two parts. One is the mutual influence of competitors on the company, and the other is the improvement that the company needs in the market competition. Competitors can generally be classified as companies with the same or similar businesses in the same industry. In typical high-tech companies, for example, Apple and Samsung, whether mobile phone or computer tablet products are in the state of competition in the market, and each has a certain market share. In the industry, high-tech companies with various competitive relationships are generally guided by market demand. They constantly innovate their own services and products and exhibit better product quality in market competition to achieve market competitiveness. And this innovative model may also be a motivation for the company's sustainable development

⁶⁶ For example, in the Netherlands, the government's *Startup in Residence programme* uses an innovation collaboration process and a €25,000 grant to help start-ups provide innovative solutions to public sector challenges. See Central Digital & Data Office, 'Government Technology Innovation Strategy' (Cabinet Office 2019) <<https://www.gov.uk/government/publications/the-government-technology-innovation-strategy/the-government-technology-innovation-strategy>> accessed 21 July 2022.

and can further promote the company's CSR development.⁶⁷

Under most circumstances, CSR practices bring a series of benefits to the company, such as a better working environment, friendlier and stronger relationships with stakeholders, closer ties with the community, and a more significant environmental commitment. These benefits can then be transformed into competitive advantages over other competitors. Especially, competitive advantages are based on more employee involvement and more confidence,⁶⁸ as more employees will reflect a larger scale of the workplace environment, and more participation will reflect the development of the community.

Specifically speaking, for individual high-tech companies, fair competition, the growth rate of the company's scale, and the innovation in products, technologies, and services are all social responsibilities for competitors in the same industry. In addition to improving the company's long-term healthy development (especially sustainable development), the above measures can also bring a fair and harmonious growth environment for high-tech industries to attract more capital investment.

III. CONCLUSION

Based on the above analysis of the various stakeholders in high-tech companies, it may be concluded that critical employees (such as technical engineers or product designers) are unique stakeholders in high-tech companies. Because they play a vital role in the company's long-term development, their performance and personal capacities are often linked to their company's business performance. Furthermore, because of the trend toward manufacturing outsourcing, high-tech companies should begin to consider their mutual supervision of partners or suppliers. In addition to avoiding manufacturing risks, it is also necessary to pay attention to the social problems and employee problems caused by their cooperating manufacturing corporations. They should take responsibility for their own industrial chains' long-term and sustainable development.

⁶⁷ Johan Graafland and Niels Noorderhaven, "Technological Competition, Innovation Motive and Corporate Social Responsibility: Evidence from Top Managers of European SMEs" (2019) 168 *De Economist* 1, 18-19.

⁶⁸ Juan Andres Bernal-Conesa and others, "CSR Strategy in Technology Companies: Its Influence on Performance, Competitiveness and Sustainability" (2017) 24 *Corporate Social Responsibility and Environmental Management* 96, 96-98.

