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MAPPING MEANINGFULNESS: STAKEHOLDER ENGAGEMENT MODELS IN NORDIC LARGE-CAP TECHNOLOGY FIRMS

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ABSTRACT

This article examines how stakeholder engagement is structured and practiced in corporate sustainability disclosures of Nordic large cap technology firms listed on Nasdaq Nordic Stock Exchange and assesses the extent to which such engagement enables meaningful stakeholder influence. It develops a typology of stakeholder engagement models and evaluates their implications for corporate governance and accountability.

The study is based on qualitative document analysis of 2024 sustainability and annual reports of large cap technology firms listed on the Nasdaq Nordic Stock Exchange as of 20 January 2026. Using an interpretive coding approach, stakeholder engagement practices were analysed in terms of the locus of responsibility, organisational design of engagement processes, and the degree of stakeholder influence on decision-making. This analysis led to the identification of four stakeholder engagement models.

Four models are conceptualised: centralised, decentralised, ecosystem-driven, and participatory (co-governance), ordered according to increasing levels of stakeholder influence. While the first three models are empirically observable, the participatory model is absent and functions as a normative benchmark. Overall, engagement practices remain predominantly consultative and compliance-oriented, with limited evidence of direct stakeholder influence on strategic decision-making.

The study relies on self-reported corporate disclosures and does not capture informal practices or internal decision dynamics. The typology nonetheless provides an analytical framework for organisations and regulators to assess whether stakeholder engagement moves beyond consultation toward meaningful influence in sustainability governance.

KEYWORDS

Stakeholder Engagement, Corporate Sustainability, Stakeholder Engagement Governance Models, Stakeholder Influence, Legal Design.

INTRODUCTION

Meaningful stakeholder engagement has become a core expectation of sustainability governance and responsible business conduct[1]. International standards[2] increasingly frame engagement not merely as communication, but as a process that must be ongoing, dialogical, conducted in good faith, and responsive to stakeholder input[3]. Engagement is therefore positioned as a governance mechanism through which corporate accountability and legitimacy are constructed.

However, engagement cannot be considered meaningful merely because dialogue occurs. It becomes meaningful only to the extent that stakeholders are able to influence[4] corporate decisions that affect them[5]. Without mechanisms that connect stakeholder input to decision-making authority, engagement risks remaining procedural and symbolic rather than governance transformative[6].

While international standards—such as the UN Guiding Principles on Business and Human Rights[7], the OECD Due Diligence Guidance for Responsible Business Conduct[8], ISO 26000[9], and the Global Reporting Initiative Standards[10]—increasingly emphasise stakeholder engagement, their guidance on how such influence should be institutionalised within corporate governance structures remain less developed.

In academic literature, stakeholder engagement is increasingly understood as a governance-oriented concept that goes beyond consultation and disclosure[11]. Early stakeholder theory[12] focused on the firm's need to manage relationships with groups that affect or are affected by organisational objectives[13]. Over time, this perspective

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1 Organisation for Economic Co-operation and Development (OECD), *OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector* (Paris: OECD Publishing, 2017), 18.

2 United Nations Human Rights Office of the High Commissioner, *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework* (New York and Geneva: United Nations, 2011), 1–42.

3 Karin Buhmann, Alex Fonseca, Nathan Andrews and Giulia Amatulli, "Meaningful Stakeholder Engagement: The Concept, Practice and Governance," *The Routledge Handbook on Meaningful Stakeholder Engagement* 8 (London: Routledge, 2024).

4 Jeff Frooman, "Stakeholder Influence Strategies," *Academy of Management Review* 24, 2 (1999): 191–193.

5 Julian Fares, "A Multi-Level Typology for Stakeholder Influence: A Systematic Literature Review Using the Structural Approach," *European Management Journal* 42 (2024): 462.

6 *Ibid*., 472.

7 United Nations Human Rights Office of the High Commissioner, *supra* nota 2, 1–42.

8 Organisation for Economic Co-operation and Development (OECD), *OECD Due Diligence Guidance for Responsible Business Conduct* (Paris: OECD Publishing, 2018), 49.

9 International Organization for Standardization, *ISO 26000: Guidance on Social Responsibility*, 2010 (accessed 15 February 2026) // https://www.iso.org/standard/42546.html

10 Global Reporting Initiative, *GRI 2: General Disclosures 2021* (accessed 15 February 2026) // https://www.globalreporting.org/standards/

11 Karin Buhmann, Alex Fonseca, Nathan Andrews and Giulia Amatulli, *supra* note 3, 3–40.

12 R. Edward Freeman, Robert Phillips and Rajendra Sisodia, "Tensions in Stakeholder Theory," *Business & Society* 59(2) (2020): 214–217.

13 R. Edward Freeman, *Strategic management: A stakeholder approach* (Cambridge university press, 2010), 1.

evolved from a managerial and instrumental view toward a relational understanding of firms as embedded in networks of value-creating stakeholder relationships[14]. Recent scholarship highlights that stakeholder engagement plays a crucial role in enabling inclusive decision-making, strengthening legitimacy, and addressing power asymmetries between corporations and affected groups[15]. Meaningful stakeholder engagement is thus increasingly linked to concepts such as participation, equity, and influence over corporate decision-making processes.

At the same time, the literature acknowledges that stakeholder engagement remains conceptually fragmented and inconsistently operationalised[16]. In addition to this, stakeholder engagement encompasses moral, strategic, and pragmatic dimensions, reflecting a spectrum that ranges from normative aspirations to more instrumental corporate objectives[17]. This diversity of perspectives highlights that stakeholder engagement is understood and applied in multiple ways, depending on whether the emphasis is placed on ethical principles, strategic management, or organisational practice.

Policy and guidance documents attempt to bridge this gap by setting out detailed expectations for what makes engagement "meaningful." According to the OECD, meaningful stakeholder engagement must be two-way, ongoing, and responsive, and should include feedback loops that allow stakeholders to observe how their input influences decisions[18]. Engagement should not be limited to information provision but must allow stakeholders to question, contest, and shape corporate actions. Similarly, guidance on stakeholder engagement in due diligence stresses that disclosure must be understandable, accessible, and capable of supporting stakeholder participation, rather than serving purely compliance-oriented reporting functions[19]. Similarly, practical guidance frameworks stress that engagement must be embedded throughout organisational processes, include systematic follow-up[20], and address power imbalances[21] between companies and stakeholders. Without such mechanisms, engagement risks becoming symbolic, procedural, or primarily reputational.

These concerns are particularly relevant in the technology sector. Technology companies exert large-scale societal influence through digital infrastructures, artificial intelligence systems, and platform-based business models. Their products and services affect privacy, labour relations, democratic processes, and human rights in ways that are often diffuse, transnational, and difficult for stakeholders to contest. While multi-stakeholder governance[22] is increasingly recognised as essential for responsible technological development, empirical research suggests that engagement practices in the technology sector[23] remain fragmented and predominantly compliance-driven.

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[14] Johanna Kujala, Sybille Sachs, Hanna Leinonen, Anniina Heikkinen and Daniel Laude, "Stakeholder Engagement: Past, Present, and Future," *Business & Society* 61, 5 (2022): 1136–1178, 1171.
[15] Karin Buhmann, Alex Fonseca, Nathan Andrews and Giulia Amatulli, *supra* note 3, 3–40.
[16] Johanna Kujala, Sybille Sachs, Hanna Leinonen, Anniina Heikkinen and Daniel Laude, *supra* note 14, 1137.
[17] *Ibid*., 1140.
[18] OECD (2017), *Due Diligence Guidance for Meaningful Stakeholder Engagement*, 17.
[19] OECD (2023), *Due Diligence Guidance for Responsible Business Conduct*, 20.
[20] SEC, *Meaningful Stakeholder Dialogue in 9 Steps,* 6.
[21] STITCH, *The Framework on Meaningful Stakeholder Engagement,* 26.
[22] Carolina Richard-Carvajal, *Setting Higher Standards: How Governments Can Regulate Corporate Human Rights Performance* (New York: NYU Stern Center for Business and Human Rights, 2024), 3 // https://bhr.stern.nyu.edu/wp-content/uploads/2024/10/10_20_2024-NYU-CBHR-Setting-Higher-Standards-Final-Version.pdf
[23] Lucy Andersen and Donna Allison-Hope, *Effective Stakeholder Engagement for Technology Companies* (San Francisco: BSR, 2024), 3–43.

Stakeholders frequently face information asymmetries that limit their ability to meaningfully participate in decision-making processes affecting them.

Despite the growing importance of meaningful stakeholder engagement in sustainability regulation and business ethics, empirical research on how such engagement is structured and operationalised in the technology sector remains scarce. Existing frameworks for meaningful stakeholder engagement have largely been developed in sectors such as extractives, agriculture, and manufacturing, where impacts are geographically bounded and stakeholder groups are relatively identifiable[24]. These frameworks are difficult to transfer directly to digital environments characterised by dispersed stakeholders, fast innovation cycles, and scalable risks. As a result, there is a need of further research in understanding of how engagement models function in technology companies and whether they enable genuine stakeholder influence which refers to the potential ability of a stakeholder to affect the decisions, behaviour, strategies, or outcomes of an organization or other stakeholders[25].

This research gap is particularly significant in the European context, where regulatory pressure is expanding through sustainability reporting and corporate governance reforms. Large-cap companies are increasingly expected to demonstrate structured stakeholder engagement practices that go beyond formal consultation and contribute to accountable decision-making. Yet it remains unclear how these regulatory expectations are translated into organisational structures and engagement models in practice, especially within high-impact technology firms.

Against this background, this article examines stakeholder engagement practices among large-cap technology companies listed on the Nasdaq Nordic Stock Exchange. These firms operate in advanced regulatory environments, are subject to extensive sustainability disclosure obligations, and play a significant role in shaping digital and technological governance. However, little is known about how they conceptualise stakeholder engagement, where responsibility for engagement is located within the organisation, and to what extent stakeholders are able to influence corporate decisions through disclosed engagement practices.

The research problem addressed in this study is therefore the lack of systematic empirical knowledge on how meaningful stakeholder engagement is structured in Nordic technology firms and whether current engagement models enable stakeholder influence or primarily serve compliance, risk management, and legitimacy purposes.

Accordingly, the research question guiding this article is: What meaningful stakeholder engagement models currently exist among Nasdaq Nordic–listed large-cap technology firms?

The aim of the article is to identify, classify, and analyse stakeholder engagement models based on corporate disclosure practices, with particular attention to governance structures, organisational responsibility, and decision-making authority. By adopting a qualitative, document-based research design, the study contributes to stakeholder engagement theory by shifting the focus from the presence of engagement activities to the distribution of power and influence within engagement arrangements.

The novelty of the article lies in its sector-specific focus on technology firms and its influence-based typology of stakeholder engagement models, distinguishing between centralised, decentralised, ecosystem-driven, and participatory (co-governance)

24 Karin Buhmann, Alex Fonseca, Nathan Andrews and Giulia Amatulli, *supra* note 3, 3–40.
25 Julian Fares, "A multi-level typology for stakeholder influence: A systematic literature review using the structural approach," *European Management Journal* 42, 4 (2024): 463.

forms of engagement. While participatory models are widely discussed in normative literature, their absence in corporate practice constitutes an important empirical finding that highlights the limits of current engagement approaches.

This typology rests on an explicit normative premise, derived from international standards on meaningful stakeholder engagement, the UN Guiding Principles, the OECD Due Diligence Guidance, ISO 26000, and the GRI Standards, that engagement becomes more meaningful as stakeholders gain greater influence over decisions that affect them. The models are therefore ordered by increasing stakeholder influence, and the participatory (co-governance) model is positioned as the normative benchmark against which observed practices are assessed. This is a normative ordering grounded in those standards, not a claim that greater stakeholder influence necessarily produces superior firm performance; whether it does is an empirical question beyond this study's scope.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1. Stakeholder Theory and the Evolution of Stakeholder Engagement

Stakeholder theory originates from the idea that firms are embedded in networks of relationships with groups and individuals that affect or are affected by organisational activities[26]. The classical distinction between "narrow" and "wide" definitions of stakeholders reflects two complementary foundations of the theory: one grounded in ethical obligations toward those on whom the firm depends for survival, and another grounded in pragmatic considerations of influence and impact[27][28]. Early stakeholder theory thus combined moral and strategic logics, emphasising that managers must pay attention to stakeholder relationships rather than treating firms as isolated economic actors[29].

Early stakeholder theory was primarily managerial[30] in orientation. Stakeholder theory was conceptualised as a strategic tool[31] for identifying relevant actors, managing expectations, and mitigating risks that could threaten organisational performance and legitimacy. In this framing, firms remained the central decision-makers, while stakeholders were positioned as external parties whose claims had to be balanced, negotiated, or contained. Engagement therefore functioned mainly as a mechanism of control and environmental stabilisation rather than as a form of shared governance as firms sought to balance stakeholder pressures and manage increasingly complex firm–environment relationships[32].

Over time, stakeholder theory evolved toward a more relational and normative understanding of the firm. Organisations came to be viewed as systems of joint value creation in which multiple stakeholders participate in producing economic and social outcomes[33]. Engagement was no longer seen merely as instrumental, but as constitutive of

26 R. Edward Freeman, *supra* note 13, 1.
27 R. Edward Freeman and David L. Reed, "Stockholders and Stakeholders: A New Perspective on Corporate Governance," *California Management Review* 25, 3 (1983): 91.
28 Samantha Miles, "Stakeholder Theory Classification: A Theoretical and Empirical Evaluation of Definitions," *Journal of Business Ethics* 142, 3 (2017): 437.
29 R. Edward Freeman and Sergiy Dmytriyev, "Corporate social responsibility and stakeholder theory: Learning from each other," *Symphonya. Emerging Issues in Management* 1 (2017): 7–15.
30 R. Edward Freeman, Robert Phillips and Rajendra Sisodia, "Tensions in stakeholder theory," *Business & society* 59, 2 (2020): 214–215.
31 *Ibid*., 215.
32 Silvio M. Brondoni and Fabrizio Mosca, "Ouverture de Integrated Corporate Social Responsibility," *Symphonya. Emerging Issues in Management* 1 (2017): 1–6.
33 R. Edward Freeman, Robert Phillips and Rajendra Sisodia, *supra* note 30, 215–219.

organisational legitimacy and responsibility. This shift linked stakeholder engagement to broader concepts of participation, fairness, transparency, and accountability[34].

More recent scholarship has further emphasised that stakeholder engagement must be assessed in terms of power and influence. Without mechanisms that enable stakeholders to affect organisational decisions, engagement risks remaining managerial and symbolic rather than governance-transformative[35]. Critical contributions highlight that traditional stakeholder approaches have often neglected power asymmetries and the position of marginalised or affected groups[36][37]. From this perspective, meaningful stakeholder engagement cannot be reduced to dialogue or consultation alone; it must be evaluated by whether it alters decision-making authority and redistributes power within corporate governance arrangements.

2.2. Meaningful Stakeholder Engagement as a Concept

2.2.1 Defining Meaningful Stakeholder Engagement

Meaningful stakeholder engagement (MSE) emerged as a response to dissatisfaction with procedural and symbolic forms of engagement in sustainability and human rights governance. Across international standards and guidance previously mentioned in this article, MSE is consistently defined as an interactive, two-way, and good-faith process in which stakeholders are enabled not only to express views but to influence decisions that affect them. Engagement must therefore go beyond information provision and consultation to include responsiveness, feedback loops, and demonstrable consideration of stakeholder input.

These frameworks emphasise three core principles: First, engagement must be dialogical rather than one-directional, requiring companies to create spaces for questioning and contestation. Second, engagement must be responsive, meaning that companies should show how stakeholder input is taken into account in decisions. Third, special attention must be paid to vulnerable and marginalised groups, whose ability to participate is often structurally constrained. Without these elements, engagement risks becoming symbolic, reputational, or purely compliance-oriented.

Despite strong normative clarity, both academic and grey literature note that engagement in practice frequently remains transactional and dominated by corporate priorities, with limited evidence that stakeholder perspectives shape organisational decisions.

2.2.2. Stakeholder Influence, Power, and Participation

A defining dimension of meaningful stakeholder engagement is the extent to which stakeholders can influence organisational decisions. In stakeholder theory, influence has long been understood as the capacity of stakeholders to affect organisational behaviour, priorities, and outcomes, rather than merely to express views or provide information[38]. Influence is therefore not equivalent to participation in dialogue; it refers to the ability to shape decisions through control over resources, relationships, or legitimacy.

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[34] Johanna Kujala, Sybille Sachs, Hanna Leinonen, Anniina Heikkinen and Daniel Laude, *supra* note 14, 1140, 1156–1157.

[35] Julian Fares, *supra* note 25, 462–464.

[36] Johanna Kujala, Sybille Sachs, Hanna Leinonen, Anniina Heikkinen and Daniel Laude, *supra* note 14, 1148.

[37] Kim Goodwin and Andreas Pekarek, "Beyond the Audience: Rethinking Stakeholder Engagement in the Arts and Cultural Sector," *The Journal of Arts Management, Law, and Society* 55 (2025): 5.

[38] Jeff Frooman, "Stakeholder influence strategies," *Academy of management review* 24, 2 (1999): 191.

Research on stakeholder influence shows that power is relational and structurally embedded. Frooman (1999) demonstrates that stakeholders exert influence through strategies based on resource dependence, either by withholding critical resources or by forming alliances that constrain organisational choices[39]. Later work emphasises that influence cannot be reduced to individual stakeholder attributes but must be understood in terms of networked relationships and interdependencies between firms and stakeholders[40]. From this perspective, influence emerges from the position stakeholders occupy within organisational and institutional structures, rather than from formal consultation mechanisms alone.

Empirical studies underline the persistence of an "influence gap" between formal engagement structures and actual decision-making power. Fares (2024) shows that most organisational approaches to stakeholder influence remain concentrated at the meso-level, where engagement affects operational adjustments but rarely extends to strategic or governance-level authority[41]. Similarly, studies on regulatory legitimacy further demonstrate how engagement can function symbolically. Buhmann et al (2019) show that engagement practices may serve to legitimise organisational or regulatory decisions without redistributing power or authority to affected stakeholders[42]. Similarly, Braun and Busuioc (2020) caution that stakeholder engagement is not inherently legitimising; unless carefully designed, it may reinforce technocratic control while projecting an appearance of inclusiveness[43]. Engagement can therefore simultaneously operate as a source of legitimacy and as a mechanism that stabilises existing power asymmetries.

In business and human rights context, this gap becomes particularly visible. World Benchmarking Alliance Annual Report (2023) show that while companies increasingly report engagement activities, stakeholders are rarely involved in designing or evaluating core accountability mechanisms, such as grievance systems or due diligence processes[44]. Engagement structures thus exist without creating enforceable channels through which stakeholder perspectives shape corporate governance.

Accordingly, recent scholarship conceptualises stakeholder engagement not primarily as a managerial practice, but as a site where power, legitimacy, and accountability are negotiated[45]. Influence becomes the analytical bridge between engagement and governance: without demonstrable stakeholder influence on decisions, engagement remains consultative and procedural rather than meaningful. This understanding directly informs the analytical framework of this study, which evaluates engagement models according to where authority is located, how responsibility is organised, and whether stakeholder input can be traced to organisational decision-making outcomes.

2.2.3. Institutionalisation of Meaningful Stakeholder Engagement

Meaningful stakeholder engagement has become institutionalised within sustainability governance and human rights due diligence frameworks. It is explicitly embedded in

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39 *Ibid*., 196–198.
40 Julian Fares, *supra* note 25, 462–463.
41 *Ibid*., 470.
42 Karin Buhmann, Jonas Jonsson and Mette Fisker, "Do No Harm and Do More Good Too: Connecting the SDGs with Business and Human Rights and Political CSR Theory," *Corporate Governance: The International Journal of Business in Society* 19 (2019): 6–7.
43 Caelesta Braun and Madalina Busuioc, "Stakeholder Engagement as a Conduit for Regulatory Legitimacy?" *Journal of European Public Policy* 27 (2020): 1600.
44 World Benchmarking Alliance, *Annual Report 2023* (Amsterdam: World Benchmarking Alliance, 2023), 24, 36–37.
45 Johanna Kujala, Sybille Sachs, Hanna Leinonen, Anniina Heikkinen and Daniel Laude, *supra* note 14, 1144–1146.

the UNGPs, the OECD Guidelines, EU level legislation such as Corporate Sustainability Due Diligence Directive (CSDDD) and national due diligence legislations, which rely on engagement to identify risks, assess impacts, design remedies, and track corporate performance[46].

In the European context, the CSDDD and related sustainability reforms formally embed engagement into corporate governance obligations. Although recent legislative revisions, including the European Commission's Sustainability Omnibus simplification package[47], have adjusted scope and timelines, engagement remains a central procedural requirement. However, regulatory frameworks focus primarily on the existence of engagement processes rather than on whether these processes redistribute decision-making authority[48]. While stakeholder engagement remains formally required under the revised framework, the narrowing of scope and simplification of duties potentially limit the extent and depth of engagement activities expected from businesses, particularly for smaller entities that have been excluded from the directive's ambitions[49].

Despite recent regulatory adjustments, sustainability governance continues to treat stakeholder engagement as a core requirement of responsible corporate conduct. Legal frameworks still expect companies to carry out risk-based engagement aligned with international standards, even where practical obligations have been modified. Whether these requirements enable meaningful stakeholder influence will depend on how they are implemented in national law and organisational practice.

However, empirical evidence[50] points to persistent implementation gaps. Most companies disclose engagement activities without showing how stakeholders influence grievance mechanisms or remediation processes, indicating that engagement is often institutionalised procedurally rather than participatorily.

2.3. Challenges of Meaningful Stakeholder Engagement in Technology Firms

Realising meaningful stakeholder engagement is particularly difficult in the technology sector due to the scale, complexity, and dispersion of corporate impacts. Technology firms shape digital infrastructures, artificial intelligence systems, and platform-based environments that affect large and often undefined groups of stakeholders across national boundaries. Industry analyses emphasise that identifying affected stakeholders and maintaining continuous engagement relationships is especially challenging in digital and platform-based business models[51][52].

Stakeholder participation is further limited by significant information asymmetries. The technical complexity of products and systems, combined with confidentiality and intellectual property concerns, limits stakeholders' ability to fully understand, contest,

[46] UN Global Compact Network Germany, *What Makes Stakeholder Engagement Meaningful? 5 Insights from Practice*, Insights Series (Berlin: UN Global Compact Network Germany, 2022).

[47] *Directive (EU) 2026/470 of the European Parliament and of the Council of 24 February 2026 amending Directives 2006/43/EC, 2013/34/EU, (EU) 2022/2464 and (EU) 2024/1760 as regards certain corporate sustainability reporting requirements and certain corporate sustainability due diligence requirements*, OJ L 470, 26 February 2026.

[48] European Commission, *Corporate Sustainability Due Diligence*, last modified 2025 (accessed January 23, 2026) // https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en

[49] Deloitte, "Omnibus Legislative Developments and Updates to Sustainability Reporting and Due Diligence," *Heads Up* (2026).

[50] Malcolm Rogge, "Understanding unilateral, bilateral, and multilateral approaches to meaningful stakeholder engagement in the design and implementation of operational grievance mechanisms," *The Routledge Handbook on Meaningful Stakeholder Engagement* (Routledge, 2024), 205, 208–209.

[51] BSR, *Conducting Stakeholder Engagement: Guide 5 of the Responsible AI Practitioner Guides* (San Francisco: BSR, 2025), 1–14.

[52] Lucy Andersen and Donna Allison-Hope, *supra* note 23, 3–43.

or influence corporate decisions. BSR (2023) highlights that engagement in technology companies often takes place under conditions of unequal access to information and expertise, reinforcing existing power imbalances between firms and affected groups[53].

In addition, the pace of technological innovation restricts opportunities for deliberative engagement. Decision-making processes are frequently centralised and time-sensitive, leaving limited space for stakeholder input to shape strategic or design-level choices. As a result, engagement tends to occur after key decisions have already been made, reducing its potential influence.

Empirical research indicates that stakeholder engagement practices in the technology sector remain fragmented[54] and largely compliance-driven[55]. Consistent with this, BSR (2023) observes that while companies increasingly disclose engagement activities, they rarely demonstrate how stakeholder perspectives shape governance structures or decision-making authority[56]. Engagement therefore risks functioning primarily as a reporting and legitimacy mechanism rather than as a channel for meaningful stakeholder influence.

2.4. Identification of the Research Gap

The literature reveals a striking tension, on the one hand, international standards and scholarly frameworks articulate a demanding vision of meaningful stakeholder engagement as dialogical, responsive, and influence-bearing. On the other hand, empirical evidence consistently shows that corporate engagement practices remain superficial, consultative, and weakly connected to decision-making authority.

Moreover, while stakeholder engagement has been widely studied in sectors such as extractives, agriculture, and infrastructure, systematic empirical research on engagement models in the technology sector remains scarce. Existing guidance acknowledges that technology firms face distinctive challenges, yet few studies examine how engagement is actually structured within corporate governance systems and whether it enables stakeholder influence beyond compliance functions[57].

Finally, much of the engagement literature focuses on processes, tools, and best practices, while comparatively little attention is paid to how authority, responsibility, and power are distributed through engagement arrangements. As a result, we lack empirical typologies that classify stakeholder engagement models according to degrees of stakeholder influence.

This study addresses these gaps by developing an influence-based typology of stakeholder engagement models in large-cap Nordic technology firms, analysing how governance responsibility, organisational embedding, and decision-making authority are configured in practice.

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53 BSR, *supra* note 51, 6.

54 Lucy Andersen and Donna Allison-Hope, *supra* note 23*,* 27.

55 Carolina Richard-Carvajal, *Setting Higher Standards: How Governments Can Regulate Corporate Human Rights Performance* (New York: NYU Stern Center for Business and Human Rights, 2024).

56 BSR, *supra* note 51, 1–14.

57 BSR, *Effective Engagement with Technology Companies: A Guide for Civil Society* (San Francisco: BSR, 2024), 1–42.

3. METHODOLOGY

3.1. Research Design

This study adopts a qualitative, document-based empirical research design to analyse how large-cap Nordic technology companies disclose and structure stakeholder engagement practices. A qualitative approach is used because the research aims to interpret how stakeholder engagement is conceptualised, governed, and operationalised, rather than to measure predefined variables or test causal relationships. The focus is on understanding meanings, assumptions, and power relations embedded in corporate disclosures, and on identifying patterns in how engagement is organised and justified.

Corporate documents are treated as expressions of organisational priorities and governance structures. Although disclosures do not fully capture internal practices, they provide authoritative representations of how companies publicly define their responsibilities, engagement processes, and accountability mechanisms. This makes them particularly suitable for analysing stakeholder engagement as a governance practice.

3.2. Sample Selection

The empirical sample consists of large-cap technology firms listed on the Nasdaq Nordic Main Market. Companies were selected based on three criteria: (i) classification in the technology sector, (ii) listing in the Large Cap segment of Nasdaq Nordic and (iii) availability of complete corporate documentation for the 2024 reporting year.

The final sample comprises 11 companies that were active during the 2024 reporting period and had comprehensive annual and sustainability-related disclosures available as of 20 January 2026. This sample provides a focused empirical context in which companies are subject to advanced regulatory expectations regarding sustainability reporting and stakeholder engagement.

Table 1. Sample of analysed companies (final sample after exclusions)

Company	Country (HQ)	Main technological profile	ESG disclosures	Explicit reference to stakeholder engagement	Supplier Code of Conduct
Addnode Group	Sweden	Software and digital solutions for design, construction, and product data	Yes	Yes – continuous dialogue with key stakeholders	Yes
Hacksaw*	Sweden	iGaming platform and game development	No (not yet)	No	No
Hexagon	Sweden	Digital reality, measurement technology, industrial software	Yes	Yes – stakeholder mapping and structured engagement processes	Yes
Lagercrantz Group	Sweden	Electronics, electrification, and communication solutions	Yes	Yes – stakeholder analysis in sustainability reporting	Yes
Mycronic	Sweden	Electronics production and semiconductor manufacturing equipment	Yes	Limited / indirect	Yes

Company	Country (HQ)	Main technological profile	ESG disclosures	Explicit reference to stakeholder engagement	Supplier Code of Conduct
Netcompany Group	Denmark	Public and private sector IT systems and platforms	Yes	Yes – detailed stakeholder dialogue description	Yes
Qt Group	Finland	Software development tools and cross-platform frameworks	Yes	Yes – embedded in partial HRDD process	Yes
Sinch	Sweden	Cloud communications platforms	Yes	Yes – stakeholder mapping and dialogue linked to materiality	Yes
TietoEVRY	Finland	Digital services, cloud platforms, AI and data solutions	Yes	Yes – dedicated MSE page and HRDD alignment	Yes
Truecaller	Sweden	Communication verification and safety platform	Yes	Yes – double materiality and stakeholder dialogue	Yes
Vitec Software Group	Sweden	Vertical market software solutions	Yes	Yes – stakeholder dialogue section	Yes
Yubico	Sweden	Cybersecurity and authentication technology	Yes	Indirect – ethics and responsibility pillar	Not explicitly separate

Source: Author, 2025.

3.3. Data Collection

Data were collected manually from corporate websites. Only publicly available, organisation-level documents were used. The dataset includes:

annual reports, which reflect strategic priorities and governance structures;

- sustainability and ESG reports, which articulate engagement practices, risk management, and regulatory compliance;
- corporate governance documents, such as governance statements and committee charters;
- policies and codes of conduct, including human rights policies, supplier codes of conduct, ethics policies, and digital responsibility frameworks;
- stakeholder-related disclosures, such as stakeholder maps, engagement summaries, consultation descriptions, and grievance mechanism descriptions.

Together, these documents provide a comprehensive picture of how stakeholder engagement is framed across strategic, operational, and compliance-oriented dimensions. No personal data or confidential information were processed. As all data are publicly available, no ethics approval was required.

3.4. Data-Source Triangulation

To enhance analytical robustness, the study applies data-source triangulation, understood as the use of multiple data sources to develop a comprehensive and credible understanding of a phenomenon. Data-source triangulation also serves to strengthen validity by examining the convergence and divergence of information across different sources[58].

[58] Nancy Carter, "The use of triangulation in qualitative research," *Number 5/September 2014* 41, 5 (2014): 545–547.

In this study, triangulation is operationalised through the systematic comparison of different types of corporate documents that represent distinct governance functions within the organisation. Annual reports articulate strategic priorities and governance structures; sustainability and ESG reports frame regulatory compliance and risk management; and policies and codes of conduct define normative commitments and behavioural expectations.

Analysing these documents together enables the identification of consistencies, discrepancies, and silences in how stakeholder engagement is constructed and institutionalised. Consistencies indicate coherent embedding of engagement across governance layers; discrepancies reveal tensions between rhetoric and governance structures; and silences expose the absence of stakeholder influence in strategic or decision-oriented documents.

This comparative use of multiple data sources[59] enhances the trustworthiness of the analysis by reducing reliance on any single corporate narrative and by revealing how different organisational voices represent stakeholder engagement. Triangulation therefore supports an assessment of whether engagement operates primarily as a reporting and compliance mechanism or whether it is embedded in organisational structures that enable stakeholder influence over decision-making.

3.5. Interpretive Coding Approach

The analysis follows an interpretive coding approach. Interpretive coding views coding as an inherently interpretive act in which the researcher constructs meaning by identifying what is significant in the data, rather than uncovering objective or pre-existing categories[60]. Rather than applying a fixed coding scheme, documents were read qualitatively to identify recurring patterns, meanings, and assumptions in how stakeholder engagement is described. Interpretive coding focuses on understanding how companies construct engagement through language, structure, and governance arrangements, and what these constructions imply about authority, responsibility, and power.

Table 2. Interpretive coding approach

Aspect	What was done	Why it matters
Coding style	Qualitative and interpretive reading of documents	Allows meanings to emerge from the data instead of using fixed categories
Focus of analysis	Language, structure, and governance arrangements	Shows how companies construct stakeholder engagement
Main questions	Who is responsible? How is engagement organised? How much influence do stakeholders have?	Connects engagement to authority, responsibility, and power
Analytical logic	Inductive	Engagement models are derived from the data, not imposed beforehand
Outcome	Identification of recurring patterns	Forms the basis for the engagement models
Research purpose	Typology building	Supports the development of ideal-typical stakeholder engagement models

Source: Author, 2025.

[59] *Ibid*.
[60] Elliot P. Douglas, "Beyond the interpretive: Finding meaning in qualitative data," *2017 ASEE Annual Conference & Exposition*.

This approach allows stakeholder engagement models to emerge inductively from the data rather than being imposed in advance. It is particularly suited to typology-building research, where the aim is to identify ideal-typical configurations of organisational practices.

3.6. Analytical Framework and Triangulation

The analysis was guided by three interrelated analytical lenses that conceptualise stakeholder engagement as a governance phenomenon. First, *governance structure* captures where formal authority over engagement is located, distinguishing between engagement governed at the board or group level and engagement decentralised to subsidiaries or project teams. Second, *organisational responsibility* examines where engagement is operationalised in practice, such as within ESG functions, business units, supply chains, partnerships, or innovation ecosystems. Third, *decision-making authority* captures the degree of stakeholder influence, ranging from engagement that merely informs reporting and risk assessment to engagement that shapes operational decisions, innovation processes, or strategic priorities. This third dimension is central for assessing whether engagement can be considered meaningful in terms of power and influence. This centrality reflects the normative premise stated above: because the international standards frame meaningfulness in terms of stakeholder influence over decisions, decision-making authority is treated as the dimension that ultimately determines where a model falls on the influence hierarchy.

Analytical triangulation was achieved by combining qualitative content analysis with cross-case comparison. First, documents were analysed qualitatively to interpret how stakeholder engagement is defined, justified, and embedded in governance structures and organisational practices. Second, findings were compared across companies to identify recurring configurations of governance structure, organisational responsibility, and decision-making authority. This combination of in-depth interpretation and systematic comparison made it possible to develop ideal-typical stakeholder engagement models and to evaluate their relative levels of stakeholder influence.

3.7. Development of Stakeholder Engagement Models

By combining data-source triangulation, interpretive coding, and analytical triangulation, the study identifies four ideal-typical stakeholder engagement models:

- a **centralised model**, where engagement is governed at the corporate level and stakeholder influence is primarily consultative;
- a **decentralised model**, where engagement is operationally distributed across business units and projects;
- an **ecosystem-driven model**, where engagement takes place within innovation and collaboration networks and enables co-creation;
- and a **participatory (co-governance) model**, defined theoretically as a model in which stakeholders share formal decision-making authority, although this model was not observed empirically.

These models provide an influence-based typology that captures how responsibility, organisation, and power are configured in corporate stakeholder engagement practices.

Table 3. Stakeholder engagement models identified in the study

Model	Governance location	How engagement is organised	Level of stakeholder influence	Empirical status
Centralised model	Corporate level (board, group management, ESG functions)	Managed through formal governance and reporting structures	Consultative and informational	Observed
Decentralised model	Distributed across subsidiaries, business units, and projects	Embedded in operational practices and local interactions	Operational and contextual	Observed
Ecosystem-driven model	Shared across organisational boundaries within networks and partnerships	Organised through innovation platforms, collaborations, and co-creation processes	Innovative and co-creative	Observed
Participatory (co-governance) model	Shared between the company and stakeholders	Institutionalised through formal power-sharing mechanisms	Strategic and authoritative	Not observed (normative benchmark)

Source: Author, 2025.

4. RESULTS

4.1. General Patterns in Stakeholder Engagement Disclosures

Across the analysed companies, stakeholder engagement is consistently framed as an essential component of sustainability governance and corporate responsibility. Engagement is typically associated with transparency, accountability, and responsiveness and is most frequently embedded in processes related to double materiality assessments, risk identification, and sustainability reporting. In this sense, engagement is positioned primarily as an input into internal governance and compliance structures rather than as a mechanism of shared decision-making.

Most companies describe stakeholder engagement as an ongoing dialogue with key stakeholder groups such as employees, customers, suppliers, investors, and, in some cases, civil society organisations and end-users. Common engagement methods include surveys, workshops, meetings, consultations, and feedback mechanisms. However, while these practices suggest interaction, disclosures rarely specify how stakeholder input is translated into binding decisions or how disagreements are resolved. The dominant pattern is therefore one of consultation rather than participation.

Stakeholder engagement is frequently linked to regulatory preparedness, particularly in relation to Corporate Sustainability Reporting Directive[61] (CSRD) and European Sustainability Reporting Standards (ESRS)[62] requirements. Companies explicitly

[61] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, *Official Journal of the European Union* L 322 (16 December 2022).

[62] Commission Delegated Regulation (EU) 2023/2772 of 31 July 2023 supplementing Directive 2013/34/EU as regards sustainability reporting standards, *Official Journal of the European Union* L 2023/2772 (22 December 2023).

state that stakeholder input informs materiality analyses and sustainability priorities, but they seldom provide traceable feedback loops demonstrating how stakeholder perspectives alter corporate strategies, governance structures, or resource allocation. As a result, engagement appears to function primarily as a procedural and legitimacy-enhancing mechanism.

4.2. Centralised Stakeholder Engagement Model

In the centralised model, stakeholder engagement is designed, coordinated, and evaluated at the corporate level and is closely integrated into sustainability governance and reporting processes. Engagement functions primarily as an instrument for materiality assessment, regulatory compliance, and reputational management. Authority over engagement remains with corporate management and board-level structures, and stakeholder influence is largely consultative.

Hexagon provides a clear illustration of this model. In its 2024 annual report[63] and sustainability disclosures, stakeholder engagement is explicitly linked to the double materiality assessment[64]. The company explains that engagement methods and stakeholder importance are reviewed across divisions, but the overall process is consolidated centrally to inform sustainability priorities and reporting. Engagement therefore supports corporate-level risk assessment and disclosure rather than shared decision-making. Stakeholders contribute information, yet there is no indication that they participate in governance structures or strategic authority.

A similar pattern is visible in Sinch[65]. The company states that stakeholder engagement is a "top priority"[66] and occurs at both strategic and operational levels, but it also clarifies that stakeholder dialogues were primarily used to inform the double materiality assessment and sustainability reporting. This positions engagement as an input into internal governance processes, rather than as a mechanism through which stakeholders can shape strategic choices.

Addnode Group[67] also reflects the centralised model through its framing of "continuous dialogue"[68] with investors, employees, and customers. While the language emphasises responsiveness and openness, engagement is presented as a means to understand expectations and improve corporate performance, not as a process that redistributes authority or requires justification of managerial decisions.

These examples show that in the centralised model, engagement is formalised and institutionally embedded, yet stakeholder influence remains indirect and mediated. Engagement strengthens corporate legitimacy and reporting quality but does not challenge managerial control.

4.3. Decentralised Stakeholder Engagement Model

The decentralised model distributes responsibility for stakeholder engagement across business units, subsidiaries, and operational roles, while central governance functions retain oversight and reporting responsibility. Engagement is embedded in everyday organisational practices rather than being confined to corporate sustainability functions.

[63] Hexagon AB, *Annual and Sustainability Report 2024* // https://bynder.hexagon.com/m/3f5532e06b-4faf41/original/Hexagon-Annual-and-Sustainability-Report-2024.pdf#
[64] *Ibid*., 81.
[65] Sinch AB, *Annual Report 2024* // https://investors.sinch.com/reports-and-presentations
[66] *Ibid*., 58.
[67] Addnode Group, *Annual Report 2024* // https://www.addnodegroup.com/report/ar-2024/
[68] *Ibid*., 38.

Vitec Software Group[69] explicitly adopts this logic. It states that they have an agile and decentralized organization, in which every business unit is responsible for its own market and customers[70]. Thus, stakeholder engagement is carried out where it is most relevant in the organisation and that responsibility rests with individuals and business units. Group-level coordination exists, but engagement itself is operationally situated. This indicates a model in which stakeholder interaction is closely tied to business activities, customer relations, and sector-specific contexts.

TietoEVRY[71] similarly describes stakeholder relations as being managed throughout the organisation. While some functions, such as investor relations, are centrally coordinated, most engagement[72] occurs in business units and service lines that interact directly with customers, partners, and public-sector clients. This decentralised structure allows engagement to influence operational practices and service delivery, although it does not extend to formal governance authority.

Netcompany[73] also reflects a decentralised approach. It emphasises engagement through both formal structures and informal interactions across organisational levels and stakeholder groups. Engagement[74] is described as informing daily operations and strategic reflection, but responsibility is dispersed rather than concentrated in a single central sustainability unit.

In this model, stakeholder influence is stronger than in the centralised model because engagement is embedded in operational contexts. However, influence remains fragmented and localised. There is little evidence that decentralised engagement systematically feeds into corporate-level governance reform or strategic decision-making.

4.4. Ecosystem-Driven Stakeholder Engagement Model

The ecosystem-driven model situates stakeholder engagement within innovation networks, technical communities, and standard-setting environments. Engagement takes place beyond organisational boundaries and is structured around collaboration and co-creation.

Yubico[75] exemplifies this model through its role in global authentication standards. As a core contributor to several standards, Yubico engages in continuous dialogue[76] with technology companies, platform providers, and security experts. In this context, stakeholder influence is exercised through technical consensus and interoperability requirements. External actors shape product compatibility and security architecture, even though corporate governance authority remains internal.

Qt Group[77] provides another strong example. Its software ecosystem is grounded in open-source principles and developer community participation[78]. External contributors engage in testing, development, and feedback processes that influence product quality and functionality. Stakeholders[79] therefore exercise co-creative influence over

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[69] Vitec Software Group, *Annual Report 2024* // https://www.vitecsoftware.com/en/investors-press/reports/
[70] *Ibid*. 24.
[71] Tietoevry, *Annual and Sustainability Report 2024* // https://ar2024.tietoevry.com/en/
[72] *Ibid*., 86.
[73] Netcompany, *Annual Report 2024* // https://netcompany.com/wp-content/uploads/2025/01/Netcompany_Annual-Report_2024.pdf
[74] *Ibid*., 74.
[75] Yubico, *Annual Report 2024* // https://investors.yubico.com/en/wp-content/uploads/sites/2/2021/10/yubico-annual-report-2024-250415.pdf
[76] *Ibid*., 8, 28.
[77] Qt Group, *Annual Report 2024* // https://www.qt.io/hubfs/_website/QtV2/QtV2%20Investors/2025/AGM/Qt-AnnualReport-2024-ENG.pdf?hsLang=en
[78] *Ibid*., 11.
[79] *Ibid*., 23.

technical development, although decisions about corporate strategy, market positioning, and resource allocation remain the company's prerogative.

In both cases, stakeholder engagement is not primarily compliance-oriented but innovation-oriented. It enables substantive influence over technical trajectories and standards, yet it does not translate into shared authority over corporate governance.

4.5. Absence of the Participatory (Co-Governance) Model

Despite extensive use of participatory language, none of the analysed companies disclose governance structures that would qualify as participatory or co-governance arrangements.

Even in companies with advanced engagement practices, such as TietoEVRY or Sinch, stakeholders are described as contributors to materiality assessments, risk identification, or innovation processes, not as co-decision-makers. Similarly, in ecosystem-driven cases such as Yubico and Qt Group, stakeholders influence technical outcomes but do not hold formal authority over organisational governance.

This demonstrates that participation is interpreted as consultation, collaboration, or co-creation in limited domains, rather than as shared governance. The participatory model therefore remains a normative benchmark rather than an empirically observed practice.

4.6. Hierarchy of Stakeholder Influence

When the empirical examples are mapped onto the influence hierarchy, a clear progression emerges:

Table 4. Hierarchy of stakeholder influence with company placement

Level of influence	Stakeholder engagement model	Type of stakeholder influence	Companies in this category
1 (Lowest)	Centralised	Informational and consultative. Engagement mainly supports materiality assessments, reporting, compliance, and legitimacy. Decision-making authority remains fully internal.	Addnode Group, Hexagon, Lagercrantz Group[80], Mycronic[81], NCAB Group[82]
2	Decentralised	Operational and contextual. Engagement is embedded in business units, projects, and daily practices, influencing implementation but not corporate strategy.	Vitec Software Group, TietoEVRY, Netcompany Group
3	Ecosystem-driven	Innovative and co-creative. Stakeholders shape products, standards, or technical development through networks and collaboration ecosystems.	Qt Group, Yubico, Truecaller[83]

80 Lagercrantz Group, *Annual Report 2024* // https://www.lagercrantz.com/sites/lagercrantz/files/files/Lagercrantz_Group_2425_ENG.pdf
81 Mycronic, *Annual and Sustainability Report 2024* // https://storage.mfn.se/a/mycronic/9886c5d7-0cee-4544-bb56-c531ef7da1bc/annual-and-sustainability-report-2024.pdf
82 NCAB Group, *Annual and Sustainability Report 2024* // https://www.ncabgroup.com/wp-content/uploads/2025/04/NCAB_Annual_and_sustainability_report_2024.pdf
83 Truecaller, *Annual and Sustainability Report 2024* // https://mb.cision.com/Main/20429/4141957/3415436.pdf

Level of influence	Stakeholder engagement model	Type of stakeholder influence	Companies in this category
4 (Highest – normative benchmark)	Participatory (co-governance)	Strategic and authoritative. Stakeholders share formal decision-making power through institutionalised governance mechanisms.	None observed

Source: Author, 2025.

This hierarchy demonstrates that even in technologically advanced and sustainability-oriented firms, stakeholder engagement remains structurally constrained. Influence increases as engagement moves closer to operational practice and innovation ecosystems, but it stops short of challenging corporate sovereignty over strategic governance.

5. DISCUSSION

5.1. Interpretation of Findings in Light of Stakeholder Theory

The findings can be interpreted as a contemporary empirical illustration of the enduring tension within stakeholder theory between managerial control and stakeholder participation. Classical stakeholder theory recognises that firms are embedded in networks of relationships with actors who affect or are affected by corporate activities. However, in practice, engagement has often been conceptualised as a managerial instrument for managing expectations, risks, and legitimacy rather than as a governance mechanism that redistributes authority.

The predominance of the centralised and decentralised models in the sample reflects this managerial orientation. In both models, stakeholder engagement is acknowledged as important, yet ultimate decision-making authority remains firmly within corporate management structures. Even where engagement is operationally embedded or innovation-oriented, stakeholders are positioned as contributors to corporate processes rather than as co-governors of those processes.

The ecosystem-driven model aligns more closely with relational and value-creation perspectives in stakeholder theory, where stakeholders are understood as partners in co-creation rather than as external audiences. However, even here, influence is confined to technical and innovation-related domains. Corporate sovereignty over strategic priorities and governance remains intact.

These findings support critical interpretations of stakeholder theory that emphasise the persistence of power asymmetries between firms and stakeholders. While engagement language has evolved, organisational structures continue to reflect a fundamentally hierarchical governance logic.

5.2. Comparison with Previous Research

The results are consistent with prior studies that document a gap between normative expectations of meaningful stakeholder engagement and empirical corporate practices. Previous research in sustainability governance and business and human rights has shown that engagement often remains procedural, symbolic, or compliance-oriented, even when it is framed in participatory language.

Studies on meaningful stakeholder engagement in human rights due diligence similarly highlight that stakeholder consultation is frequently reduced to information gathering for risk assessment rather than being integrated into decision-making authority. Benchmarking exercises have demonstrated that companies rarely involve stakeholders in the design, evaluation, or governance of grievance mechanisms, reinforcing the consultative character of engagement.

The present study extends this literature by providing a structured, influence-based typology of engagement models and by situating the analysis in the technology sector, which remains underexplored in stakeholder engagement research. It demonstrates that the patterns identified in extractive, manufacturing, and supply-chain-intensive sectors also apply to digitally oriented firms, despite their distinctive stakeholder landscapes and innovation dynamics.

5.3. Implications of the Models for Meaningful Stakeholder Engagement

The typology shows that meaningfulness in stakeholder engagement cannot be assessed solely by the presence of dialogue, consultation, or collaboration. Rather, it depends on whether engagement is capable of altering power relations and redistributing authority.

In the centralised model, engagement is meaningful primarily in an informational sense. Stakeholders contribute knowledge and perspectives, but they do not shape outcomes. In the decentralised model, engagement becomes more meaningful operationally, as stakeholders influence how activities are implemented and adapted to local contexts. In the ecosystem-driven model, engagement is meaningful in innovation terms, enabling co-creation and technical influence.

However, none of these models fully satisfy the normative criteria of meaningful engagement articulated in international standards, which emphasise responsiveness, accountability, and stakeholder influence over decisions that affect them. The absence of participatory governance structures suggests that engagement remains functionally bounded by corporate control, regardless of how dialogical or collaborative it appears.

5.4. Why Participatory (Co-Governance) Models Are Absent

Several structural and organisational factors help explain the absence of participatory models. First, corporate governance frameworks are built on shareholder primacy and managerial accountability, making formal power-sharing with non-shareholder stakeholders legally and institutionally complex.

Second, participatory governance introduces uncertainty and potential constraints on managerial discretion. Sharing authority over strategy, resource allocation, or governance priorities challenges established hierarchies and may be perceived as incompatible with competitive business environments.

Third, the technology sector is characterised by fast innovation cycles, confidentiality constraints, and high levels of technical complexity. These features make it difficult to design participatory mechanisms that are both inclusive and operationally feasible.

Finally, regulatory frameworks, including sustainability reporting regimes, encourage engagement but do not mandate power-sharing. As a result, companies can comply with regulatory expectations through consultation and disclosure without restructuring governance arrangements. Participatory governance remains the normative benchmark reflected in international standards, but current institutional and legal arrangements provide limited support for its implementation.

5.5. Limitations of the Study

This study is subject to several limitations. First, it relies exclusively on publicly available corporate disclosures, which represent curated narratives rather than comprehensive accounts of internal practices. Actual engagement dynamics and power relations may differ from those presented in reports and websites.

Second, the study focuses on large-cap technology firms listed on Nasdaq Nordic. While this provides a coherent and policy-relevant sample, the findings cannot be generalised to smaller firms or to other sectors without caution. In addition, the sample is by design confined to firms that already produce sustainability-related disclosures, and the analysis does not compare these against firms with minimal or absent engagement. A comparative design incorporating low-engagement cases would allow the typology to be tested against a fuller range of corporate behaviour and would sharpen the contrast between meaningful and merely symbolic engagement.

Third, the analysis is qualitative and interpretive, which strengthens conceptual insight but does not allow for statistical generalisation. The typology is analytically robust but should be tested and refined in future empirical studies.

Finally, the study captures engagement practices at a specific point in time. Stakeholder engagement is a dynamic process that evolves alongside regulatory change and organisational learning. Longitudinal research would be necessary to assess whether engagement models shift toward more participatory forms over time.

CONCLUSIONS

This article examined how meaningful stakeholder engagement is structured and operationalised in large-cap technology firms listed on the Nasdaq Nordic Main Market. By analysing corporate sustainability disclosures through an interpretive and triangulated qualitative approach, the study identified four ideal-typical stakeholder engagement models: centralised, decentralised, ecosystem-driven, and participatory (co-governance).

The empirical findings show that stakeholder engagement in the analysed companies is predominantly consultative and compliance-oriented. Most firms operate within a centralised model, where engagement is governed at the corporate level and primarily serves materiality assessments, sustainability reporting, and regulatory preparedness. A smaller group of firms exhibits a decentralised model in which engagement is embedded in operational practices and distributed across business units. Only a limited number of companies demonstrate an ecosystem-driven model that enables co-creative influence in innovation and standard-setting processes. Crucially, none of the companies disclose governance arrangements that would correspond to a participatory or co-governance model in which stakeholders share formal decision-making authority.

From a theoretical perspective, the article contributes to stakeholder theory by shifting the analytical focus from the presence of engagement activities to the distribution of power and authority within engagement arrangements. The proposed typology demonstrates that stakeholder engagement varies not only in form and intensity but also in its governance implications. By conceptualising engagement models along a hierarchy of stakeholder influence, the study offers a framework that bridges normative theories of meaningful engagement with empirically observable corporate practices. It shows that meaningfulness is structurally conditioned by whether engagement alters governance relationships, rather than merely by how interactive or dialogical engagement appears. The proposed typology is intended as an analytical framework that can be refined, tested, and extended in future qualitative and quantitative research.

The findings also have important practical and policy implications. For corporations, the typology provides a diagnostic tool to assess whether engagement practices merely support reporting and compliance or whether they create pathways for substantive stakeholder influence. Organisations seeking to strengthen the meaningfulness of engagement must move beyond consultation toward institutional mechanisms that make stakeholder input traceable, consequential, and accountable.

While this study conceptualises meaningfulness in governance and institutional terms, future research could explore how stakeholders themselves experience meaningfulness as an existential or normative phenomenon, connecting legal design, participation, and subjective perceptions of value and responsibility.

For policymakers and regulators, the results highlight the limitations of disclosure-based sustainability governance. While frameworks such as CSRD and ESRS encourage stakeholder engagement, they do not require companies to integrate stakeholders into decision-making structures. As a result, engagement can remain procedural without redistributing authority. Strengthening meaningful engagement may therefore require regulatory approaches that link engagement more explicitly to governance responsibilities and corporate accountability mechanisms.

Finally, the study opens several directions for future research. Empirical work could combine document analysis with interviews, case studies, or participatory observation to examine how engagement functions beyond formal disclosures. Comparative studies across sectors could test whether similar engagement hierarchies exist in industries such as finance, manufacturing, or extractives. Building on the influence-based typology, future studies could also test whether the engagement model a firm adopts correlates with firm-level outcomes such as financial performance, share price, employee satisfaction and retention, or human rights indicators, thereby moving from classification toward explanation. Future research could also examine whether different stakeholder engagement models are associated with organisational outcomes such as innovation, financial performance, employee retention, legitimacy, or human rights performance. Longitudinal research could investigate whether regulatory developments lead to shifts toward more participatory engagement models over time. Further theoretical work could also explore how legal design and organisational design principles might be used to operationalise participatory governance in corporate contexts.

APPENDIXES

Appendix A. Coding framework

The coding framework was developed inductively using an interpretive coding approach. Instead of relying on predefined categories, codes emerged from repeated readings of the documents and focused on how stakeholder engagement was constructed through language, organisational structures, and governance arrangements. Three core analytical lenses guided the coding:

Table 5. Coding Framework

Analytical lens	Coding focus	Guiding questions
Governance structure	Location of authority and formal responsibility	Who is responsible for stakeholder engagement? Is it the board, management, ESG function, or business units? Is engagement centralised or distributed?
Organisational responsibility	Where engagement is operationalised	In which parts of the organisation does engagement take place? Is it embedded in reporting, operations, partnerships, or innovation ecosystems?
Decision-making authority	Degree of stakeholder influence	Does stakeholder input merely inform reporting? Does it shape operational decisions? Does it influence strategy or governance?

Source: Author, 2025)

These codes were then synthesised into the four engagement models used in the analysis.

Appendix B. Examples of coded excerpts

Table 6. Examples of coded excerpts

Company	Engagement Model	Example excerpt (shortened)	What it shows
Hexagon	Centralised	"The Board of Directors has the ultimate responsibility for Hexagon's sustainability strategy and ESG governance… approves major changes to Hexagon's sustainability framework."[84]	Stakeholder engagement and sustainability governance are controlled at board level; authority is centralised.
Hexagon	Centralised	"Surveys, workshops, and interviews… involved internal and external stakeholders including shareholders, employees, suppliers, customers, subject matter experts, investors, and community groups."[85]	Stakeholder engagement is used mainly for materiality assessment and reporting.
Hexagon	Centralised	"The stakeholder engagement process included a review of engagement methods… conducted by all Hexagon divisions."[86]	Engagement feeds into a consolidated corporate process rather than shared governance.

[84] Hexagon AB, *supra* note 63, 76.
[85] *Ibid*., 82.
[86] *Ibid*.

Company	Engagement Model	Example excerpt (shortened)	What it shows
Sinch	Centralised	"During the year, stakeholder dialogues were influenced by the upcoming requirements for sustainability reporting. Key stakeholder insights, gathered through meetings, workshops, and existing materials, were incorporated into the double materiality assessment."[87]	Engagement functions as regulatory and reporting input.
Sinch	Centralised	"Regular engagement surveys and roundtable discussions… ongoing dialogue."[88]	Consultation without evidence of decision-sharing.
Vitec Software Group	Decentralised	"The sustainability group prepares the materiality assessment… management discusses… finally decided by the Board."[89]	Multi-level involvement, but final authority remains central.
Vitec Software Group	Decentralised	"Key individuals… with insight into the business units' operations have participated in the process."[90]	Operational embedding of engagement knowledge.
Tietoevry	Decentralised	"The assessment was conducted separately for each of Tietoevry's five specialized end-to-end businesses…"[91]	Engagement and materiality work distributed across business units.
Tietoevry	Decentralised	"Internal controls… supported by stakeholder engagement ensured reliability."[92]	Engagement embedded in operational governance.
Netcompany	Decentralised	"We engage in dialogue with suppliers to ensure a common understanding of data needs and data quality."[93]	Engagement operationalised in value-chain governance.
Yubico	Ecosystem-driven	"Developer of global IT security standards… creator and contributor to FIDO2, WebAuthn, U2F."[94]	Engagement happens through technical standard-setting ecosystems.
Yubico	Ecosystem-driven	"Yubico is one of the companies working on developing solutions for the European Digital Identity Framework… Yubico has been selected to actively contribute to Germany's ID project, led by SPRIND, with the aim of prototyping a universal EUID."[95]	Engagement in public–private governance systems.
Yubico	Ecosystem-driven	"Collaboration with Microsoft and Okta to simplify onboarding and authentication."[96]	Co-creation with industry partners.

[87] Sinch AB, *supra* note, 58.
[88] *Ibid*.
[89] Vitec Software Group, *supra* note, 80.
[90] *Ibid*., 86.
[91] Tietoevry, *supra* note 71, 93.
[92] *Ibid*.
[93] Netcompany, *supra* note 73, 72.
[94] Yubico, *supra* note 75, 3.
[95] *Ibid*., 5.
[96] *Ibid*.

Company	Engagement Model	Example excerpt (shortened)	What it shows
Qt Group	Ecosystem-driven	"Engagement structured through open-source communities and developer ecosystems."97	Innovation-driven stakeholder engagement logic.
Addnode Group	Centralised	"Continuous dialogue… to understand stakeholder expectations and improve performance."98	Engagement framed as informational and consultative.
Lagercrantz Group	Centralised	"Materiality assessment together with stakeholders updated based on CSRD."99	Engagement tied directly to sustainability reporting compliance.
Mycronic	Centralised	"The dialogues are held with key stakeholders and results are presented to executive management and the Board of Directors."100	Governance-embedded, but non-participatory.
Truecaller	Ecosystem-driven	"Based on the points of view of these stakeholders, … We then placed the topics in order of priority based on their impact on our business operations and their relevance to external stakeholders. Truecaller's materiality analysis was based on a review of internal and external stakeholder perspectives, on the expectations of relevant rating institutions, and on applicable regulations.101	Platform governance and multi-actor engagement.

Source: Author, 2025.

Appendix C. List of analysed documents

For each company, the following categories of documents were analysed where possible:

- Annual Reports (2024)
- Sustainability or Environmental, Social and Governance (ESG) Reports (2024)
- Corporate governance webpages
- Stakeholder engagement webpages
- Codes of Conduct
- Supplier Codes of Conduct
- Human Rights or Responsible Business policies
- Double materiality statements and ESRS disclosures
- This multi-source dataset enabled data-source triangulation and reduced reliance on any single corporate narrative.
- Model classification table

97 Qt Group, *supra* note 77, 11, 23–24.
98 Addnode Group, *supra* note 67, 38.
99 Lagercrantz Group, *supra* note 80, 4.
100 Mycronic, *supra* note 81, 102.
101 Truecaller, *supra* note 83, 34.

Appendix D. Model classification table

Table 7. Model classification

Company	Engagement model	Basis for classification
Addnode Group	Centralised	Engagement primarily used to understand stakeholder expectations and inform corporate sustainability reporting
Hexagon	Centralised	Engagement embedded in group-level materiality assessment and sustainability governance
Lagercrantz Group	Centralised	Stakeholder dialogue linked mainly to sustainability reporting and materiality processes
Mycronic	Centralised	Engagement framed through sustainability governance, stakeholder mapping, and policy compliance
Vitec Software Group	Decentralised	Responsibility for stakeholder engagement rests with business units and operational contexts
TietoEVRY	Decentralised	Stakeholder engagement managed throughout the organisation, with distributed operational responsibility
Netcompany Group	Decentralised	Engagement conducted through a mix of formal and informal structures across organisational levels
Qt Group	Ecosystem-driven	Engagement structured through open-source communities and developer ecosystems enabling co-creation
Yubico	Ecosystem-driven	Engagement through global authentication standards, industry alliances, and technical ecosystems
Truecaller	Ecosystem-driven	Engagement with users, regulators, and platform stakeholders within trust, safety, and digital governance ecosystems

Source: Author, 2025.

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