

Development of a Sustainability Strategy for a Road Construction Company in Latvia

Eduards Veide
Riga Technical University
Rīga, Latvia
eduards.veide@edu.rtu.lv

Vladimirs Šatrevičs
Riga Technical University
Rīga, Latvia
vladimirs.satrevics@rtu.lv

Irina Voronova
Riga Technical University
Rīga, Latvia
irina.voronova@rtu.lv

Rīta Greitane
Riga Technical University
Rīga, Latvia
rita.greitane@rtu.lv

Abstract— The Corporate Sustainability Reporting Directive (CSRD) entered into force on 5 January 2023. This new directive updates the rules on the social and environmental information that companies must report. Companies covered by the CSRD will be required to report in accordance with the European Sustainability Reporting Standards (ESRS). The unclear direction of the industry's development, unstable and unpredictable funding, limited innovation capacity due to regulatory enactments and various customer-created regulations are significant limitations for future plans. All these challenges, supplemented by the principle of the lowest price, complicate and make it difficult to develop new sustainable development strategies. While the selection criterion is the lowest price, large-scale sustainable innovations can put the company in an uncompetitive market position. Road construction companies need to develop a sustainability strategy that both complies with the new regulatory framework, and is in line with the market reality of the industry, and minimizes future risks that may arise from specifying sustainability goals and principles. A sustainability strategy for the road construction company has been developed. This strategy aims to enhance the company's competitiveness by reducing production costs and minimizing environmental impact. It ensures compliance with future sustainability requirements and mitigates risks associated with the loss of competitiveness. The strategy also incorporates the development of management skills necessary for the successful and efficient implementation of strategic directions and for the further development or adjustment of the sustainability strategy in response to policy changes.

Keywords— CSRD, ESRS, sustainability, strategy, competitiveness, environmental impact, construction

I. INTRODUCTION

On 5 January 2023, the Corporate Sustainability Reporting Directive (CSRD) entered into force. Similar initiatives aiming to contribute to the transition toward a more circular economy (CE) are increasingly numerous.

There are many debates about indicators and its interpretation – how to represent and what to represent [1], [2], [3]. Several recent papers have demonstrated high disagreement among existing social, environmental, and governance (ESG) rankings (e.g., [4], [5], [6], [7], [8]).

In financialized economy, decisions are driven by financial interests [9]. As the future environment is constantly changing, [10] suggest that countries and companies need to develop a vision for the future, take short-term actions, and create a theoretical model to guide future decisions in the face of changing circumstances.

Michael Porter argues that many companies narrowly focus on creating value and optimizing short-term financial performance, disregarding the most critical customer needs and ignoring the broader determinants of long-term success [11]. Therefore, the integration of sustainability in a long term-strategy is critically important through the implementation of CSRD, which enable the management to correctly address the sustainability challenges in the construction industry.

It is important to mention that evolution of CSRD is requiring company to adapt its performance indicators to keep pace with new investments to circular economy. Thus there is a vast range of indicators (e.g. over 200 [12]) which is necessary to consider and address all specific needs.

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CSRD requires also a broad set of large companies, as well as listed SMEs to disclose information on ESG issues with the first reports to be published in 2025.

The outcomes of this analysis suggest that better understanding of CSRD framework is important, as requirement pressures could affect voluntary earnings guidance, which is subject to the cost–benefit trade-off for companies. Therefore, [5] it is necessary to explain what constitutes good and bad ESG performance.

The additional administrative burden to ensure compliance with the reporting requirements will result in significant administrative costs. According to the European Commission, the average reporting costs per company are estimated at around €106,000 per year [13]. However, in the construction sector, given the complexity of supply chains and the various business and environmental factors, these costs are expected to be higher in the authors’ opinion.

TABLE 1 CONSTRUCTION OUTPUT AT CURRENT PRICES BY ECONOMIC ACTIVITY, THOUSAND EURO – ECONOMIC ACTIVITY (NACE REV. 2) [14]

Economic activity	2021	2022	2023	2024
F Construction	2 435 574	2 592 242	3 230 926	3 138 459
F4211 Construction of roads and motor ways	440 205	477 072	406 925	466505
Share, %	18.1%	18.4%	12.6%	14,9%

The volume of the road and motorway construction sector constitutes a significant part of the volume of the construction sector. Despite the significant decline in 2023, the volume reported in 2024 years is almost 15% of the total production volume of the construction sector (see Table 1).

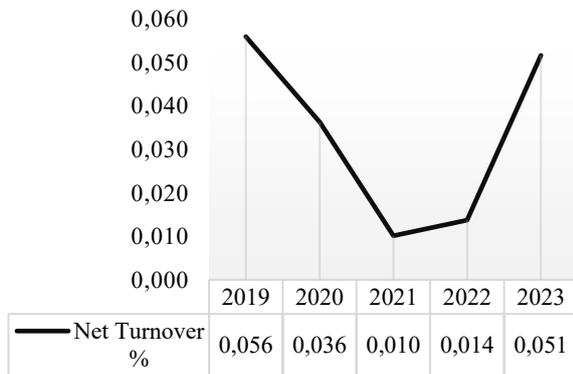


Fig. 1. Net turnover of merchants by type of activity (F42 Civil Engineering) [15].

The above-mentioned Table 1, which summarizes the production output of construction and road and motorway construction, shows that while the volume has almost constantly fallen to 2023, in the period from 2019 to 2022, the net profit of the civil engineering sector has also decreased significantly, reaching its lowest point in 2021, stopping at the 1.0% mark (see Fig. 1). The rapid recovery of profits seen in 2023 can be explained by the fact that in 2023 many companies may have received a share of the income received as a result of indexation for projects that

were implemented in previous years. Accordingly, profit figures from previous years should also be viewed over several years.

Overall, the situation in the sector remains unclear, and the expected amount of funding is also divided among different customers – Latvian State Roads, municipalities, Rail Baltica, VAMOIC. Each of these customers has its own specifics of the construction work required, which also means other necessary skills, equipment and construction methods to be implemented. In such situation, it is especially difficult to make decisions about capital investments in development, because it is difficult to predict the investment return in long-term. Therefore, it is necessary to consider peculiarities of the construction industry and its investment strategy for a equipment and processes that are universal or make a decision on specialization in long-term ESG, but this will almost certainly lead to a reduction in the output and operations limits of current needs.

II. METHODS AND RESEARCH DESIGN

To assess the main factors interpretation in strategy development from the perspective of the company's management, an expert method was used, surveying 6 members of the company's top management. The study was conducted in stages:

- The interviews identified the main development directions in the opinion of each manager;
- They were summarized and 10 main directions were proposed;
- Each manager was asked to rank them in order of importance from 1 to 10;
- The results obtained were summarized and analyzed.

The research was conducted using an expert survey method, in which the top management of the road construction company. The survey was conducted in two rounds, in the first round, factors were identified by discussing current industry and company issues, the improvement of which would contribute to the company's competitiveness, as a result of which 10 factors were selected. In the second round, each representative of the company's top management was asked to rank these factors by priority from highest to lowest. Statistical and analytical methods were used to analyze the results, including the Fishburne formula, which was used to determine the importance of the factors. To assess the coherence of the company's management's views, it was tested by calculating Kendall's W coefficient [16].

As it was mentioned various literature sources list vast number of factors that affect the growth of a company. To rank the factors in order of their importance, the authors of this table have used the relative importance index (RII). The relative importance index method is used to prioritize factors based on the answers provided by the respondents. Respondents rate the factors from 1 to 5, with 1 being the least important and 5 being the most important. The RII is then calculated using the following formula (1) [17]

$$RII = \sum \frac{w}{A \times N}, \quad (1)$$

where RII – relative importance index;
 w – importance of the factor;
 A – the highest importance indicator;
 N – sample size.

TABLE 2 LIST OF FACTORS FOR BUSINESS GROWTH [18]

Growth factor (F)	Σw	RII	Place
Good corporate governance	479	0.9392	1
Good cash flow management	459	0.9000	2
Sufficient knowledge and experience	456	0.8941	3
Good team of employees	453	0.8882	4
Technical knowledge	452	0.8862	5
Good project management	449	0.8803	6
Efforts to ensure customer requirements are met	447	0.8764	7
Capital availability	446	0.8745	8
Availability of qualified labor	444	0.8705	9
Good customer relations	441	0.8647	10
Internal efficiency	439	0.8607	11
Product quality	439	0.8607	12
Availability of loans and credit lines	432	0.8471	13
Political stability and peaceful environment	431	0.8450	14
Effective organizational structure	430	0.8431	15
Competitive prices	428	0.8392	16
Market specialization	418	0.8196	17
Open government economic policy	416	0.8156	18
Government support, tax policy	406	0.7960	19
Technological advantages	403	0.7901	20
Employee development and training	396	0.7764	21
Use of new technologies and automation	394	0.7725	22
Work safety	389	0.7627	23
Searching for innovation	382	0.7490	24
Research and development	374	0.7333	25
Knowledge diversification	370	0.7254	26
Formation of full societies	349	0.6843	27

The factors, based on the calculated index, are ranked in order of importance (see Table 2). It can be seen that the first places are occupied by such factors as good corporate governance, good cash flow management, sufficient knowledge and experience, a good team of employees and technical knowledge. In turn, job security, the search for innovations, research and development, diversification of knowledge and the formation of full societies are mentioned as less important factors.

The authors conclude that the key factor identified in this study is good corporate governance, which directly resonates with the conclusion of the study “Understanding the impact of ESG practices in corporate finance” that improving governance by implementing ESG principles contributes most to the ability of companies to increase profits [19]. In addition, there is a need to integrate efforts to achieve global sustainability goals with goals aimed at the company's economic growth. This is particularly important in the road and motorway construction industry, as it is subject to many different regulations and restrictions related to products, which also limits the ability to innovate.

III. DATA ANALYSIS

The factors used in the survey and the factor assessments provided by management can be seen in Table 3.

TABLE 3 SUMMARY OF SURVEY FACTORS AND RESULTS (TABLE CREATED BY THE AUTHORS)

	Factor (F)	V1	V2	V3	V4	V5	V6
1	Improve and modernize the company's equipment fleet to meet modern requirements.	3	2	2	3	1	3
2	Focus on the development of road construction and asphalt concrete production processes	1	9	1	9	9	10
3	Reduce equipment downtime and use resources more efficiently.12	2	1	3	1	4	1
4	Develop leadership skills and implement a strategic approach to business management.30	10	5	8	2	3	2
5	Develop digitalization projects more quickly, implement innovative solutions.	6	4	7	7	7	5
6	To introduce the latest technologies and automation solutions in road construction.	4	3	5	4	2	4
7	Increase cooperation with policymakers to create a desirable regulatory framework.	7	8	9	6	8	9
8	Develop opportunities for material reuse, thereby reducing the risk of material price increases	9	10	10	10	10	6
9	Implement cost-effective sustainability initiatives that promote low costs and high efficiency.	5	6	4	5	5	7
10	Develop innovations and environmentally friendly solutions, such as reducing CO2 emissions.	8	7	6	8	6	8

Calculation of the importance of factors was using the Fishburne formula. The general formula is as follows (2) [20].

$$S_i = \sum_{j=1}^n \omega_j \times \mu_{ij}, \quad (2)$$

where S_i - the total outcome or utility for option I ;
 ω_j - the weight of factor - j , reflecting its importance;
 μ_{ij} - the utility or performance of option i according to criterion j ;
 n - total number of criteria, $n=10$

The first step is to calculate the relative importance of each criterion. This is done using the following formula (3), for each criterion value.

$$\omega (R_i) = \omega_i = \frac{2(m-j(R_i)+1)}{m(m+1)}, \quad (3)$$

where $j(R_i)$ - factor F_i position number in a ranking sequence. See the calculated relative weights in Table 4.

TABLE 4 RELATIVE WEIGHTS OF CRITERIA (TABLE CREATED BY THE AUTHORS)

Factors	1	2	3	4	5	6	7	8	9	10
relative weight	0.19	0.16	0.15	0.15	0.10	0.08	0.07	0.05	0.04	0.01

In the next step, we replace the factor ranking with the calculated relative weight and calculate the average value between the managers. See the calculated indicators in Table 5.

TABLE 5 CALCULATED TOTAL IMPORTANCE OF CRITERIA (TABLE CREATED BY THE AUTHORS)

Factor	Average weight	Importance
Improve and modernize the company's equipment fleet to meet modern requirements.	0.164	2
Focus on the development of road construction and asphalt concrete production processes	0.073	7
Reduce equipment downtime and use resources more efficiently.	0.182	1
Develop leadership skills and implement a strategic approach to business management.	0.127	4
Develop digitalization projects more quickly, implement innovative solutions.	0.091	6
To introduce the latest technologies and automation solutions in road construction.	0.145	3
Increase cooperation with policymakers to create a desirable regulatory framework.	0.036	9
Develop opportunities for material reuse, thereby reducing the risk of material price increases	0.018	10
Implement cost-effective sustainability initiatives that promote low costs and high efficiency.	0.109	5
Develop innovations and environmentally friendly solutions, such as reducing CO2 emissions.	0.055	8

The main three factors that would positively affect the competitiveness of the company are those related to efficiency – reduction of downtime, modernization of the technical fleet and automation. In the middle category (4th-7th place), the first place is taken by managerial and strategic management skills. The authors point out that in

the study, the results of which are shown in Table 3, good corporate governance, which is related to management skills and a strategic approach, is the main factor strengthening competitiveness. This statement also appears in other scientific studies considered within the framework of this work. Accordingly, it can be assumed that the fact that this factor remains behind the first three may indicate an incomplete understanding on the part of the company's management, the cause of which may be precisely the lack of management skills. The difference in opinions is also shown by the difference in the ratings of this factor, which ranges from 2nd to 10th place.

TABLE 6 THE SUM OF SQUARED DEVIATIONS (TABLE CREATED BY THE AUTHORS)

Factor	V1	V2	V3	V4	V5	V6	Sum	D
Improve and modernize the company's equipment fleet to meet modern requirements.	3	2	2	3	1	3	14	361
Focus on the development of road construction and asphalt concrete production processes	1	9	1	9	9	10	39	36
Reduce equipment downtime and use resources more efficiently.	2	1	3	1	4	1	12	441
Develop leadership skills and implement a strategic approach to business management.	10	5	8	2	3	2	30	9
Develop digitalization projects more quickly, implement innovative solutions.	6	4	7	7	7	5	36	9
To introduce the latest technologies and automation solutions in road construction.	4	3	5	4	2	4	22	121
Increase cooperation with policymakers to create a desirable regulatory framework.	7	8	9	6	8	9	47	196
Develop opportunities for material reuse, thereby reducing the risk of material price increases	9	10	10	10	10	6	55	484
Implement cost-effective sustainability initiatives that promote low costs and high efficiency.	5	6	4	5	5	7	32	1
Develop innovations and environmentally friendly solutions, such as reducing CO2 emissions.	8	7	6	8	6	8	43	100
Average							33	
Sum of squared deviations from the overall rank mean (S)								1758

Therefore, to assess the overall consensus of the company's management, the Kendall W coefficient will be calculated. It is calculated according to the following formula (4).

$$W = \frac{12 \times S}{m^2(n^3 - n)}, \quad (4)$$

where S - sum of squared deviations (D) from the overall rank mean;

m - number of evaluators;
 n - number of factors.

The calculated results can be seen in Table 6

By inserting the calculated numbers into the formula, we obtain the following result

$$\frac{12 \times 1758}{6^2(10^3 - 10)} = 0.592$$

The results obtained can be categorized as follows:

- Weak agreement – below 0.20
- Moderate agreement – 0.21 – 0.40
- Average agreement – 0.41 – 0.60
- Good agreement – 0.61 – 0.80
- Very good agreement – 0.81 – 1.00

Therefore, the obtained result can be interpreted as an average or moderate coherence of opinions. This may indicate that the management has an agreement on the basic development directions, but taking into account the factors in different directions, fundamental differences are also observed. This further justifies the need to develop and implement a unified strategy to prevent uncoordinated prioritization of development directions, which can significantly hinder the development of the company.

IV. CONCLUSIONS

The findings of this study provide the analysis of the key factors interpretation by the management to consider when developing a sustainability strategy in changing environment. The strategy approach draws on research that assesses the impact of a sustainability strategy on a company's financial performance, risk management, the role of management and stakeholders in setting and implementing the strategy, and potential reporting challenges. The authors emphasise that a successful sustainability strategy is, first and foremost, a successful business strategy that integrates ESG factors to ensure multi-faceted decision-making that is acceptable to all stakeholders.

At a time when sustainability-related requirements are not assessed by industry customers or the assessment of such requirements is very minimal, the developed strategy must consider the promotion of long-term competitiveness and reduce risks. The specifics of the industry create prerequisites or targets that the company can achieve, but at present they can only be mentioned. For this reason, the authors combine the growth factors of companies highlighted in various studies, the impact of various sections of sustainability (environmental, social and governance) on company results, potential procurement requirements and the opinion of company management in order to create a strategy concept that contributes to the improvement of both the short-term and long-term results

of the company by interpreting vast number of CSRD metrics.

The competitiveness of a company is, of course, determined by many complex factors, and the company should pay attention to all of them. Taking into account the CSRD integration, significant attention should also be paid to participation in the development of regulatory enactments, representation of its interests in industry associations and the development of innovations. However, the strategy proposed by the authors is based on three main directions, which are the most important:

- Cost-effectiveness;
- Reducing environmental impact;
- Development of management skills.

The implementation of these three directions will allow the company to both reduce its direct costs, thereby gaining a competitive advantage in the lowest-price procurement, and reduce its environmental impact and prepare for the introduction of sustainability requirements in procurement, thereby reducing the risks of loss of competitiveness, and by developing management skills, ensure that the company and its management are able to implement and manage changes, which is also related to this sustainability strategy.

The construction of the main road is a technically intensive work, which means that a large part of the work can be done only using construction machinery and automation solutions without a large human workforce. Therefore, the renewal of the technical fleet can not only open up the opportunity to take an active part in the implementation of the project, but also gain competitive advantages over local competitors, and maintain competitiveness against foreign infrastructure construction companies.

In general, the benefits to be achieved from making such investments can be seen in conceptual model for the strategy ranking and interpretation example on Figure 2.

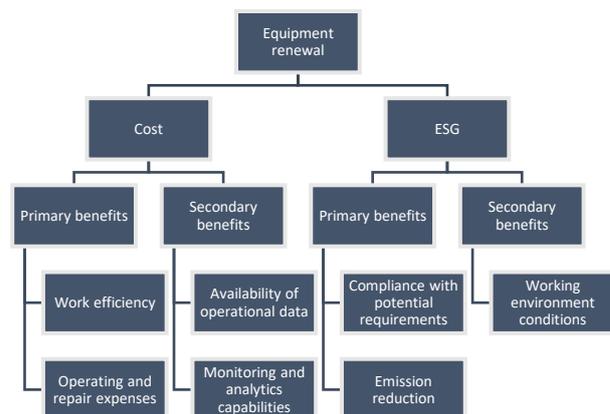


Fig. 2. Example interpretation of benefits of technical renewal for ESG (image created by the authors).

The main primary benefit of renewing the equipment fleet could be an increase in work efficiency and thus competitiveness. Different sources differ in data that allow comparing the performance of new and old equipment

units, because the total performance, expressed as the amount of work performed in a certain unit of time, and which is used to calculate the cost of work, depends on many factors, including:

- Technical performance;
- Operator skills;
- For planning and performance of other construction machines;
- The specifics of the construction project and the work to be performed;

However, industry estimates, comparing new equipment with equipment that is 10 years or more old, indicate an average efficiency improvement of 15%.

In the field of ESG and CSRD, the primary benefit is the reduction of the risk that the equipment will not meet future environmental requirements. This effectively reduces the risk that the company's fixed assets will no longer be usable for the company's core business. There is reason to believe that such a practice will also be adopted in projects of other customers, even if it is implemented in a different way, for example, when assessing direct CO₂ emissions, new equipment has lower CO₂ emissions and particulate emissions due to fuel economy and engine efficiency.

Summarizing the strategy described in the calculation part of the paper and based on the calculations, the author conclude that the chosen ESG strategy should consider the specifics of the industry capital requirements, there are currently no clear requirements related to sustainability factors that would be used to evaluate offers according to the principle of economic benefit.

The developed strategy contributes to the short-term and long-term competitiveness, while at the same time preparing the company for the development of sustainability requirements, the chosen strategic directions not only contribute to cost efficiency, but also have a beneficial effect on the working environment of employees and promote the strategic development of the company, promoting the development of management skills. In this way, an improvement in the company's results is achieved in all areas of sustainability - environmental, social and governance, while providing economic benefits and reducing risks.

Overall, the conceptual strategy successfully balances the company's goals in terms of profit generation with the need to prepare for and meet external demands. The strategy provides a clear but flexible framework, and ensures that it is adaptable to changing market conditions and can be used or projected down to each of the company's structural units.

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