Information openness in the sphere of environment protection as a factor of sustainability of machine-building companies

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Abstract. The research is devoted to the issues of information openness of machine-building companies in the sphere of environment protection. The contemporary state of environmental legal awareness calls for the need to consciously opt for environmentally-effective enterprises, which refers equally to consumers, investors, partners, and governmental bodies. The research objective is to reveal the contemporary state of disclosing environment information in enterprises’ open sources. To achieve the set goal, 14 leading machine-building companies were selected and their annual reports were studied as public sources of the company information. The comparative analysis of empirical documents allowed identifying the best practices in the sphere of disclosing environmental information by the Russian machine-building sector.

1. Introduction
Today, the work of industrial enterprises in Russia is subject to comprehensive regulation on the part of the state. Besides other spheres, special attention is paid to observing the ecological norms related to environment pollution as a side effect of production. For industrial enterprises, these issues are of topical importance. Observation of the ecological norms is confirmed by environment-protection measures and regular ecological reports to all appropriate supervisory structures. At the same time, the modern eco-friendly conception of production and consumption implies that information on the activities related to environment pollution must be available to the broad public. This factor may influence the company’s sustainability, as the groups interested in ecological information may include not only government structures but also eco-activists, non-profit organizations, the company investors and partners, consumers, and the local community in the regions of the company’s presence. The experience of the influence of companies’ environmental activities on their performance was described in a number of works by foreign researchers [1–4]. For example, since the early 1990s Portuguese companies have developed corporate environmental reporting practices in response to internal and
external factors. The study focused on the environmental disclosures made in the annual reports by a sample of 109 large firms operating in Portugal during the period 2002-04 [5]. By analyzing annual reports, E. H. Bowman studied the corporate strategy of 46 American companies in the minicomputer/peripheral industry. Based in part on a previous study of the food-processing industry, the effects of environmental coping and 4 other factors on commercial success were investigated [6]. W. Aerts, D. Cormier, and M. Magnan researched the information dynamics between corporate environmental disclosure, financial markets (as proxied by financial analysts’ earnings forecasts) and public pressures (as proxied by a firm’s media exposure). Relying on a system of equations that controls for endogeneity between environmental disclosure determination and financial analysts’ work, they showed that enhanced environmental disclosure translates into more precise earnings forecasts by analysts. These relationships were shown to be starker in Europe than in North America, i.e., environmental disclosure had a greater impact on analysts’ forecasts [7].

In general, ecological activity can be viewed as a part of corporate social responsibility [8–10]. The company’s environment protection activities, minimization of ecological harm during production is one of the components influencing the company’s reputation. It has been long stated that corporations in North America, Europe, Japan, and in most newly industrializing nations are embracing environmental protection as part of their international competitive strategies. Calls for responsible corporate behavior are coming from investors, insurers, environmental interest groups, financial institutions, and international trading partners [11]. D. Neu, H. Warsame, and K. Pedwell focused on three concerns: the influence of external pressure on environmental disclosures in annual reports, including the amount and types of strategies used in disclosure; the characteristics of environmental disclosure vis-à-vis other “social” disclosures; and the association between environmental disclosures and actual performance [12]. Other researchers focused on the features of green marketing concept as a new promotion trend [13–15]. Thus, it is not sufficient to just meet the requirements of national and international legislation on environment protection; one should actively promote these activities, linking them to the company’s image.

2. Materials and methods
Materials on environment protection were analyzed, which were published in open sources of companies and aimed at external target groups of machine-building enterprises. The empirical base of the research is companies’ annual reports. Companies for analysis were selected through nonrandom sampling. The studied enterprises were divided into two groups. The first group is the leading enterprises in the sector: members of the 2018 Top-100 ranking of the Russian companies with the largest capitalization and members of the list of 200 largest Russian private companies in the analyzed sector. The second group included the machine-building enterprises – members of the ranking of ecological and economic efficiency of business in Russia by the Interfaks-ERA ecological-energy ranking agency. Comparative analysis of the results of enterprises from the two groups was carried out.

3. Results and discussion
Many organizations are currently becoming more environmentally friendly. «Eco-efficiency maximizes the effectiveness of a business operation while reducing its impact on the environment; with the necessary skills, organizations can create more value while using less input. Prior empirical studies have suggested that firms engaging in eco-efficient activities are better valued than those without such activities. Therefore, this will enhance business efficiency and excellence» [16]. «As a result, many firms are voluntarily increasing the extent of their environmental disclosure in their annual report. While mostly unregulated, corporate environmental disclosure does have potential economic significance considering the scarcity of alternative information sources [17]. Moreover, the firm size and the fact that a company is listed on the stock market are positively related to the extent of environmental disclosure» [18]. This is due to special attention paid by target groups to the environmental issues. For instance, «both consumers and investors are beginning to see more clearly
the relationship between business performance and environmental quality. The trend toward proactive environmental management is being accelerated by public pressures on governments almost everywhere to assure a cleaner environment. Government regulations have become more stringent, legal liabilities for environmental damage have become more burdensome, and customers have become more demanding. But more importantly, there is growing evidence that firms that adopt proactive environmental management strategies become more efficient and competitive [19].

J. Haddock-Fraser and I. Fraser found that companies who are close to market, or are brand-name companies, are highly likely to adopt one of the several forms of environmental reporting considered (particularly reporting on product life-cycle or supply chain and reporting through the BitC benchmark system). They also showed that «companies proximate to market are more likely to be the target of media attention, but are unable within the bounds of the research to assess whether this is a cause of increased environmental reporting or an effect of it» [20].

Research results by S. A. Al-Tuwaijri, T. E. Christensen, and K. E. Hughes imply that “good” ecological indicators are largely associated with “good” economic indicators, as well as with broader quantitative ecological disclosures of specific measures and pollution phenomena [21]. In this work, we consider the features of information openness of machine-building enterprises well-established as the leaders of ecological efficiency. For example, the website presenting a 2017 annual report of United Shipbuilding Corporation JSC and the companies of USC Group (more recent information is lacking) contains description of environmental policy of the company. Assistance in implementation of programs and projects aimed at ensuring rational consumption of natural resources and environment protection is proclaimed as one of the key goals of the corporation. Notably, all requirements to providing the guaranteed safety when dealing with sources of pollution are unified for all companies within the USC Group. The environmental policy objectives are specified as: standardization of this sphere through elaborating and introducing the ecological management system in compliance with GOST R ISO 14001-2016, certification for the compliance of the said standard up to 2020; ecological passportization of the enterprises. Economic objectives are set too: reducing the USC Group’s payments for the negative impact on the environment, observing the norms of wastes generation and limits for their placement. The measures aimed at environment protection include: proper maintenance of equipment, constructions, communications, water-protective zones; control of environmental impact; wastes utilization; participation in educational seminars on ecology.

In 2018 annual report of United Aircraft Corporation (UAC) “ecological aspects of activity” are set off as a separate section. In particular, it is emphasized that “the strategic goal of ecological policy is preservation of the natural systems, maintenance of their integrity and life-support functions, promoting of life quality, and ensuring ecological safety when manufacturing aviation equipment”. However, the document does not yield any detailed characteristics of the immediate results. It is restricted to listing the key tasks in the sphere of ecology and the normative documents regulating these issues.

The 4\textsuperscript{th} quarter 2018 report of another leader of the ranking – “Uralvagonzavod Research-Production Corporation named after F. E. Dzerzhinskii” JSC – mentions two permits (licenses) for environment protection activity obtained in the report period. However, the projects for which the permits were obtained are not specified.

As for Russian Helicopters JSC and AVTOVAZ Public Corporation, despite the high positions of these companies in the above ranking, their 2018 public reports (annual report of Russian Helicopters and third quarter report of AVTOVAZ) give no information on their activity in the sphere of environment protection.

Below we compare these data with the information presented by the companies which are not included into the above ranking, but showing good performance.

The 2018 annual report of KAMAZ Public Corporation lists not only the key principles of environment protection, but the results in this sphere, for example, signed contracts for sanitary-chemical and bacteriological research of soil. Besides, the document presents the dynamics of exhausts, water consumption, and wastes generation.
In its annual report, the Public Corporation “Irkut Research-Production Corporation” (Irkut Corporation) mentions the ecological expertise of all company projects, discloses the 2018 expenditures for environment protection (71,124 thousand rubles) and their distribution by areas (protection and rational use of water resources, manufacturing of new ventilation systems, renovation of gas-cleaning facilities).

An annual report of SOLLERS Public Corporation contains information on ecological responsibility of the company; in particular, there is analysis of both the goods produced (Euro-5 standard), and office ecology (abandonment of mercury lamps).

An AVTOTOR annual report specifies that “production growth and increase of the volume of goods produced, introduction of new technological processes requires special attention to observing the norms of environmental protection at the enterprise” and presents detailed data on ecological monitoring.

In its annual report, Transmashkholding JSC points out the necessity to use energy-saving technologies, though the environmental strategy of the enterprise is not disclosed.

Silovyi mashiny Public Corporation also highlights in its annual report that the company adheres to “improving the production organization in terms of ecology”, further disclosing the main achievements of the company for the specified period, for example, the adopted Programs of regular monitoring of a water body. In general, the total sum allocated for environmental protection measures is 7.5 mln rubles.

Rostselmash Public Corporation annual report contains no information on environment protection programs, but just presents the mandatory data on each type of energy resources consumed by the Corporation in the report period.

United Wagon Company not only asserts that “environment protection is the basic principle of UWC”, but also gives a detailed statistics of atmospheric exhausts, waste structure and energy consumption dynamics on its production site.

HMS Group JSC, like many other companies, claims in its annual report that “the management and personnel of HMS Group fully recognize their responsibility to nature and to future generations”. One of the key results is that “for the last three years, no excess of the maximum allowable pollutant emissions has been discovered”.

Thus, most of the annual reports available to the broad public contain disclosed ecological issues, but not always detailed ones. Besides, even the companies with high indicators of ecological efficiency pay insufficient attention to information activities. Given no legislative regulation of the amount of the company’s additional activity on the sphere of ecology and the degree of the ecological activity reflection in the published materials, these issues are at the enterprise discretion. However, it is worth noting that, «besides the personality factor and orientation towards ecological activity of a company’s top management, it is found that disclosure consistency is positively associated with firm size and capital intensity» [22].

One should agree with A. Bhattacharyya and L. Cummings in that «as environmental protection has become a critical factor in achieving sustainable development, organizational stakeholders are becoming increasingly interested in corporate environmental performance (CEP)» [23]. Social disclosure «reinforces the informativeness of environmental disclosure for stock markets, even substituting for it under certain conditions. Stakeholders must assess and retain an increasing flow of information: a more efficient disclosure strategy becomes critical if firms want to convey the right picture of their performance» [24]. D. Cormier and M. Magnan explore how firms resolve this tension. Results show that «a firm’s environmental disclosure enhances the quality of analysts’ information context, which ultimately allows them to make better forecasts. Moreover, financial analysts seem to be able to decipher environmental information, discounting discourses that are inconsistent with a firm's underlying environmental performance» [25]. «The emergence of socially responsible investing has led to the development of a large number of methodologies for rating corporate social responsibility and to a growing body of research exploring the link between environmental and
financial performance. Increased availability of information potentially generates an abundance of riches upon which to base investment decisions» [26].

4. Conclusion
We have analyzed the published finalized documents (yearly and quarterly reports) of the leading Russian machine-building companies in terms of using information about achievements in ecological and environmental protection in order to from a positive public image. In general, it can be marked that machine-building companies do not always pay due attention to informing their target groups about their environmental activities via annual reports.

For example, the Russian leaders of the business economic and energy efficiency ranking, despite their recognized achievements in the said sphere, in the open sources demonstrate, at the best, framework conceptual description of the company’s vision in this sphere of activity (UAC, USC), at the worst (Russian Helicopters, AvtoVAZ) – complete absence of information. Other companies under analysis often confine to describing strategies in the sphere of ecology. Only several companies publish detailed reports on the areas of environment-protection activity, expenditures on it and the results obtained (KAMAZ Group, Irkut Corporation).

Meanwhile, information on environment protection is the socially significant data, which should be made available to a broad range of persons within the company target groups. Openness in environmental issues as a reputational factor may potentially lead to improving the company’s economic indicators through socially-responsible investment, green marketing strategies, and preferences of eco-friendly customers.

References
[1] Burritt R L and Saka C 2006 Environmental management accounting applications and eco-efficiency: case studies from Japan Journal of Cleaner Production 14 (14) 1262–75
[2] Cooke T E 1989 Voluntary Corporate Disclosure by Swedish Companies Journal of International Financial Management & Accounting 1 (2) 171–95
[3] Cormier D, Magnan M and Van Velthoven B 2005 Environmental disclosure quality in large German companies: Economic incentives, public pressures or institutional conditions? European Accounting Review 14 (1) 3–39
[4] Deegn C and Gordon B 1996 A study of the environmental disclosure practices of Australian corporations Accounting and Business Research 26 (3) 187–99
[5] Monteiro S M S and Aibar-Guzmán B 2010 Determinants of environmental disclosure in the annual reports of large companies operating in Portugal Corporate Social Responsibility and Environmental Management 17 (4) 185–204
[6] Bowman E H 1978 Strategy, Annual Reports, and Alchemy California Management Review 20 (3) 64–71
[7] Aerts W, Cormier D and Magnan M 2008 Corporate environmental disclosure, financial markets and the media: An international perspective Ecological Economics 64 (3) 643–59
[8] Brammer S J and Pavelin S 2006 Corporate reputation and social performance: The importance of fit Journal of Management Studies 43 (3) 435–55
[9] Aslaksen I and Synnestvedt T 2003 Ethical investment and the incentives for corporate environmental protection and social responsibility Corporate Social Responsibility and Environmental Management 10 (4) 212–23
[10] Dragomir V D 2018 How do we measure corporate environmental performance? A critical review Journal of Cleaner Production 196 1124–57
[11] Berry M A and Rondinelli D A 1998 Proactive corporate environmental management: A new industrial revolution Academy of Management Executive 12 (2) 38–50
[12] Neu D, Warsame H and Pedwell K 1998 Managing Public Impressions: Environmental Disclosures in Annual Reports Accounting, Organizations and Society 23 (3) 265–82
[13] Lu L, Bock D and Joseph M 2013 Green marketing: What the Millennials buy Journal of Business Strategy 34 (6) 3–10
[14] Brown T J and Dacin P A 1997 The company and the product: Corporate associations and consumer product responses Journal of Marketing 61 (1) 68–84
[15] Bansal P and Roth K 2000 Why companies go green: A model of ecological responsiveness Academy of Management Journal 43 (4) 717–36
[16] Al-Najjar B and Anfield A 2012 Environmental policies and firm value Business Strategy and the Environment 21 (1) 49
[17] Cormier D, Magnan M and Van Velthoven B 2005 Environmental disclosure quality in large German companies: Economic incentives, public pressures or institutional conditions? European Accounting Review 14 (1) 3
[18] Monteiro S M S and Aíbar-Guzmán B 2010 Determinants of environmental disclosure in the annual reports of large companies operating in Portugal Corporate Social Responsibility and Environmental Management 17 (4) 185
[19] Berry M A and Rondinell D A 1998 Proactive corporate environmental management: A new industrial revolution Academy of Management Executive 12 (2) 38
[20] Haddock-Fraser J and Fraser I 2008 Assessing corporate environmental reporting motivations: Differences between 'close-to-market' and 'business-to-business' companies Corporate Social Responsibility and Environmental Management 15 (3) 140
[21] Al-Tuwaijri S A, Christensen T E and Hughes II K E 2004 The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach Accounting, Organizations and Society 29 (5-6) 447
[22] Santosuosso P 2019 Code of ethics versus annual report: Analysis of environmental disclosures WSEAS Transactions on Business and Economics 16 239
[23] Bhattacharyya A and Cummings L 2015 Measuring Corporate Environmental Performance – Stakeholder Engagement Evaluation Business Strategy and the Environment 24 (5) 309
[24] Cormier D, Ledoux M-J and Magnan M 2011 The informational contribution of social and environmental disclosures for investors Management Decision 49 (8) 1276
[25] Cormier D and Magnan M 2015 The Economic Relevance of Environmental Disclosure and its Impact on Corporate Legitimacy: An Empirical Investigation Business Strategy and the Environment 24 (6) 431
[26] Delmas M A, Etzion, D and Nairn-Birch N 2013 Triangulating environmental performance: What do corporate social responsibility ratings really capture? Academy of Management Perspectives 27 (3) 255