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# ESG Visibility and Financial Performance in the IT Sector: Evidence from a Transition Economy

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**Abstract:** This paper explores the visibility of Environmental, Social, and Governance (ESG) practices and their association with financial performance among IT companies operating in the Republic of Serbia, a transition economy. Using a descriptive, comparative methodology, the study analyzes publicly available financial and ESG-related information from 11 leading domestic firms in the field of computer programming for the year 2023. Companies were categorized into three levels of ESG visibility using a predefined rubric based on the presence and quality of ESG disclosures, group affiliations, and publicly stated commitments to sustainability. The findings suggest that firms with higher ESG visibility generally exhibit stronger revenue growth, higher net profit, and more dynamic employment trends. These results align with stakeholder and signaling theory frameworks, indicating that even in early-stage ESG environments, visibility may signal corporate legitimacy and stakeholder engagement. However, given the methodological limitations of a small sample size and qualitative classification, the findings remain indicative rather than confirmatory. The study contributes to the emerging literature on ESG practices in Central and Eastern Europe and provides a conceptual basis for future research incorporating broader samples, quantitative analysis, and longitudinal designs.

**Keywords:** *ESG reporting; financial performance; IT sector; transition economy; Serbia.*

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## 1. Introduction

Over the past decade, the information technology sector in the Republic of Serbia has undergone rapid development, marked by accelerated internationalization, increased foreign investment, and a growing reliance on knowledge as a key production factor. Despite this, the dilemma remained open as to whether, and to what extent, changes in business practices—particularly those related to sustainability—contribute to long-term financial stability and competitiveness of domestic IT companies. Although a significant part of the sector is

export-oriented, the issue of compliance with the requirements of sustainable business, which the global market increasingly sets as a prerequisite for cooperation, is often neglected.

Insufficient transparency regarding the application of sustainability principles among small and medium-sized IT companies has further complicated the evaluation of their actual financial resilience. While in developed markets there is a trend of linking sustainable corporate practices with risk reduction and performance improvement [1], in the context of the Republic of Serbia and the wider region of the Western Balkans, this relationship is still poorly researched and empirically untested. Controversies also exist when it comes to the effects of ESG initiatives on startup ecosystems and fast-growing companies operating in a highly dynamic and innovative environment. Therefore, ESG reports are often characterized by inconsistency, both in terms of quality and quantity of information [2].

Additional complexity of the problem is contributed by the fact that the regulatory framework in the Republic of Serbia is relatively new, while mechanisms for monitoring and standardizing ESG reporting are just beginning to develop. Nevertheless, some companies, especially those connected to international markets, spontaneously adopted sustainable practices, which opened up space for comparing their results with those that have not yet done so. Namely, research shows that many companies in Serbia do not have non-financial reporting on sustainability taken seriously enough, yes they present general information that can distort a realistic picture [3]. In such a context, the question arises as to whether and to what extent the degree of ESG involvement has been reflected in revenues, profitability and employment within the sector.

Therefore, the aim of this paper is to examine, based on descriptive methods and publicly available financial indicators, the potential association between ESG involvement and financial performance among selected IT companies operating in the Republic of Serbia. The research tested the hypothesis that companies that adopted the principles of ESG reporting achieved positive changes in revenues, net profit and employment to a greater extent during the observed period.

Although the focus of this study is on the IT sector in Serbia, as a representative of the market in transition, the findings have a wider relevance. Structural characteristics, regulatory challenges and similar institutional development make these insights applicable in the context of other Central and Eastern European (CEE) countries, such as Croatia, Bulgaria, Romania or North Macedonia. In this sense, the paper provides indicative guidelines for understanding ESG practices in digitally oriented sectors within transition economies.

## **2. Literature review**

Research on the relationship between ESG reporting and financial performance of companies relies on several theoretical directions. The most significant are stakeholder theory, signaling theory, and legitimation theory, which collectively shed light on the reasons why companies carry out ESG activities and how these activities reflect on their market position.

Stakeholder theory [4] starts from the premise that companies are responsible not only to shareholders, but also to a wider community of interest groups (employees, customers, suppliers, communities, the state). ESG reporting is seen in this framework as a mechanism through which companies communicate responsibility and long-term sustainability.

Signaling theory [5] emphasizes the informative role of ESG reports. Through voluntary and transparent disclosure of ESG data, companies send a signal to the markets about the quality of

management, risk reduction and long-term orientation, which can affect lower cost of capital and more favorable financial indicators [6].

Legitimacy theory [7] assumes that companies implement ESG standards in order to preserve or enhance their social legitimacy. In conditions of regulatory and market pressures, especially in the EU context and acceding countries like the Republic of Serbia, ESG reporting is becoming a normative framework for acceptable behavior on the market.

While the majority of the theoretical and empirical contributions regarding ESG practices originate from Anglo-American contexts, there is a growing body of research focusing on Central and Eastern European countries (e.g., Poland, Romania, Bulgaria, Croatia) and the Western Balkans (e.g., Serbia, Bosnia and Herzegovina, North Macedonia). These studies highlight the specific institutional and regulatory challenges that shape ESG implementation in transition economies and point to different patterns of stakeholder expectations and reporting behavior [8-12]. Their inclusion supports the relevance of this study's approach and underlines the importance of context when analyzing ESG visibility and its links to firm performance.

### *2.1. An overview of previous research*

Sustainable financial instruments represent a concrete instrument through which the principles of sustainability are operationalized in the capital market, directing investment capital toward activities that contribute to reducing climate risks and strengthening social cohesion [13]. At the same time, at the company level, the implementation of ESG practices constitutes a key mechanism for aligning business models with the goals of sustainable development. For this reason, research examining the impact of ESG practices on corporate financial performance has taken a central place in the contemporary literature on corporate sustainability. In this way, the macro perspective, through the development of sustainable financial products that channel capital toward priority social and environmental objectives, is connected with the micro perspective, which analyzes the contribution of ESG strategies to the long-term profitability and resilience of companies.

The question of the impact of ESG practices on the financial performance of companies has taken a central place in contemporary research on corporate sustainability. In the context of information technologies, where intangible assets and a high degree of innovation dominate, the effects of ESG activities have not yet been unambiguously confirmed, which represents a research challenge and room for further empirical analysis.

Khan, Serafeim, and Yoon [14] conducted one of the most influential studies showing that companies with high ESG relevance to the industry experienced significantly better shareholder returns and operating results than those with lower ESG compliance. Their study suggested that the "materiality" of ESG topics plays a key role in the financial valorization of sustainable practices.

Kotsantonis and Serafeim [1] additionally pointed out that ESG should not be viewed as a normative obligation, but as a strategic tool for identifying and managing non-financial risks that have a direct impact on the market value of the company. They emphasized that well-implemented ESG systems have a positive effect on the quality of management, the reduction of capital costs and the reputational stability of the company.

In a meta-analysis conducted by Friede, Busch and Bassen [15], more than 2,000 empirical studies were analyzed and showed that about 90% of them confirm a neutral or positive association between ESG factors and financial performance. However, the authors cautioned that results may

vary significantly depending on region, sector and methodology. When it comes to developing countries, including the Republic of Serbia, relevant research is still in its infancy.

Considering the specifics of the IT sector, Eccles, Ioannou and Serafeim [16] pointed out that precisely in companies that depend on intellectual capital and knowledge there is a stronger correlation between ESG performance and long-term operational indicators, especially in the segments related to employee management and innovation.

## 2.2. ESG reporting in the context of the Republic of Serbia

Through legislative changes [17] the Republic of Serbia has begun the phased integration of ESG reporting in accordance with EU directives (CSRD, SFDR). The IT sector, as the engine of the export and innovation economy, has been identified as a pilot domain for the application of sustainable business standards, including non-financial reporting.

Practice shows that leaders in the sector, such as HTEC, SMART BUSINESS TECHNOLOGIES and EPAM, are already adopting international standards such as GRI and SASB. These practices are associated with a more certain growth of income and employment, which confirms that ESG reporting in the Republic of Serbia is not only a regulatory obligation, but also a strategic tool for competitiveness.

## 3. Materials and Methods

The goal of this research is to, through a descriptive analysis, look at the basic financial and operational indicators of selected IT companies operating in the Republic of Serbia, and to analyze their potential connection with ESG reporting practices. The research does not seek to establish causality, but to show trends and indicators that may indicate a qualitative relationship between the degree of ESG involvement and company performance. The research approach is exploratory, based on secondary data and theoretical interpretation. In addition, the paper relies on the contemporary regulatory and institutional context of ESG reporting in the Republic of Serbia and the European Union.

The sample includes 11 companies from the computer programming sector (IT sector), which were identified as active players with a significant business presence in the Republic of Serbia and a potential ESG reporting obligation in accordance with domestic and European regulations (e.g. Accounting Law, CSRD directive). All selected entities are registered as limited liability companies ("d.o.o.") under Serbian law. Of the 11 companies analyzed, eight are headquartered in Belgrade and three in Novi Sad, reflecting the spatial concentration of Serbia's IT industry in its two main business hubs.

Company selection criteria include:

- Belonging to the IT sector (activity code 62.01 - computer programming);
- Active business in the last two years;
- Public availability of key financial indicators (revenue, net profit, workforce size); and
- Indications of carrying out ESG reporting or belonging to international groups that publish ESG reports.

Although the sample comprises a limited number of eleven IT companies, the selection was conducted based on the criteria of publicly available basic financial data and the presence of ESG traces (formal or informal) in business practices. The sample does not aim to be representative of the

entire IT sector in Serbia but rather has an exploratory character, intended to provide an illustrative insight into potential patterns. Acknowledging the limitations of the sample size and structure, the results should be understood as an initial contribution to further discussion and a foundation for future quantitative research.

The data was collected from the following secondary sources:

- Financial reports and public databases of APR (Agency for Economic Registers)[18],
- Non-financial reports, corporate websites and annual reports, Secondary literature (scientific publications, reports of international bodies, EU regulations).
- The following indicators were recorded in the analyzed companies:
- Income in absolute amounts and percentage changes (2023–2024);
- Net profit, as an indicator of profitability; and
- Number of employees, as an indicator of business volume and investment in human capital.

Visibility of ESG reporting was also considered as a supplementary criterion, i.e. the presence of publicly available ESG content, references to sustainability and belonging to international ESG frameworks (GRI, SASB, CSRD). The selected companies operate in the specific regulatory, market and institutional environment of Serbia, which reflects the characteristics typical of transition economies. The limited standardization of the ESG framework, the high dependence on human capital and digital infrastructure, as well as the fragmented requirements for non-financial reporting, make this analysis relevant to other countries in the CEE region as well. Although the sample is limited, the visibility-focused approach to ESG engagement allows for a preliminary mapping of potential patterns that can be further quantitatively explored and compared regionally.

### 3.1. Analytical framework

The analysis was carried out within the framework of the descriptive method, through tabular presentation, comparative interpretation and analytical comparison of company performance. Basic techniques were used:

- Tabular display of indicators (income, profit, employees);
- Qualitative interpretation of interannual changes and relative relationships among companies;
- Thematic connection of ESG reporting with identified business results, in accordance with the theoretical framework (signaling, stakeholder and legitimacy theory).

To reduce the subjective element in assessing the presence of ESG practices, companies were evaluated based on a predefined rubric. ESG engagement was classified using a three-level system: Level 0 indicates a complete absence of ESG content; Level 1 reflects partial visibility (e.g., declarative statements on the company website); and Level 2 denotes formal ESG reporting or membership in international corporate groups that adhere to ESG standards. This classification enabled a basic differentiation of companies by their degree of sustainability and served as the foundation for comparative analyses in the empirical section of the study. Nevertheless, it is emphasized that the data are limited to publicly available sources, without access to independent external ESG ratings.

To increase transparency and provide a clear overview of the criteria used, the ESG classification rubric applied in this study is presented in Table 1.

**Table 1.** ESG Visibility Classification Rubric.

ESG Score	Label	Classification Criteria
0	No ESG Visibility	No reference to ESG, sustainability, or CSR topics in public documents, websites, or media content
1	Partial ESG Visibility	Mentions of <u>ESG-related</u> values or practices (e.g., diversity, <u>eco-consciousness</u> ), but no structured reporting.
2	High ESG Visibility	Explicit sustainability/ESG report or clear affiliation with <u>ESG-compliant international groups</u> .

The main limitations of paper refer to:

- Limited availability and diversity of ESG reports at the national level;
- Relying exclusively on secondary data sources;
- Absence of quantitative inferential analysis and inability to prove causality; and
- Small sample of companies, which limits the general representativeness of the findings.

#### 4. Results

The empirical analysis includes eleven IT companies registered in the Republic of Serbia that operate in the field of computer programming and meet the requirements for mandatory or voluntary ESG reporting in accordance with the new regulatory framework (eg Accounting Law, CSRD directive). The companies vary in size, stage of development and business strategy, but are all part of a sector that is highly reliant on intangible assets, human capital and digital innovation – factors inherently linked to ESG sustainability principles.

For greater clarity and to facilitate the comparison of company performance across different levels of ESG engagement, a tabular summary in table 2 of key financial indicators by ESG groups has been provided. The table presents average values of revenue, net profit, and employee growth rate for companies classified as ESG-inactive (0), partially active (1), and highly active (2). This comparative framework does not imply statistically significant differences but offers a preliminary insight into potential patterns and serves as a basis for future quantitative analyses.

**Table 2.** Overview of ESG reporting obligors in the sector computer programming for year 2024.

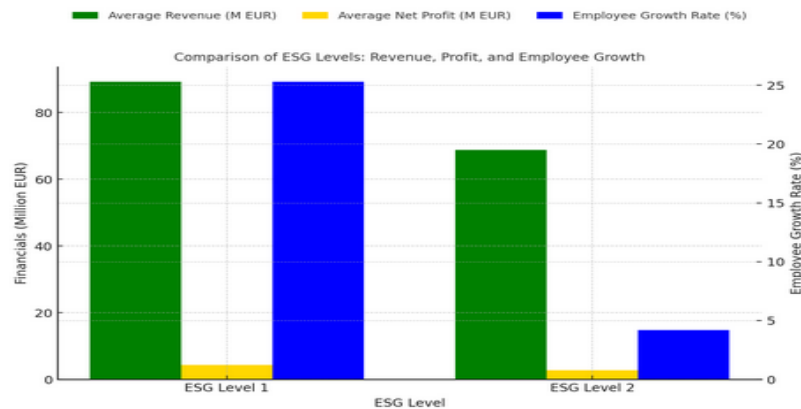
Company name	ESG level	Revenue (EUR)	Net profit	Employee Growth Rate
SMART BUSINESS TECHNOLOGIES, BELGRADE	1	287.097.420	8.460.215	+81%
HTEC, BELGRADE	2	133.170.400	7.658.776	+10%
SCHNEIDER ELECTRIC, NOVI SAD	2	76.791.832	- 10.133.658	+10%
ASSE SOLUTIONS, BELGRADE	1	65.584.196	5.772.211	+1%
ENDAVA, BELGRADE	2	48.940.758	2.895.221	+5%
ORION INNOVATION, BELGRADE	1	48.940.758	3.516.920	+7%
PLAYRIX RS, NOVI SAD	1	48.826.387	2.679.641	+46%
G.L.TRADE SOFTWARE, BELGRADE	1	46.388.793	2.294.827	+13%
EPAM SYSTEMS, BELGRADE	2	44.478.292	7.301.480	+7%
EFRONT, BELGRADE	1	40.436.038	3.380.372	+4%
LEVI 9 GLOBAL SOURCING BALKAN, NOVI SAD	2	36.596.202	4.227.760	-11%

Table 3 provides an overview of the average financial indicators for companies grouped by their level of ESG engagement. Firms classified as partially active in ESG (Level 1) exhibit higher average revenue and net profit compared to highly active firms (Level 2), while also showing substantially higher employee growth rates. Conversely, companies with higher ESG engagement demonstrate more moderate growth and, in some cases, lower profitability, likely reflecting differences in organizational size, structure, or investment priorities.

**Table 3.** Average financial indicators for companies grouped according to their ESG level.

ESG level	Average revenue (EUR)	Average Net profit (EUR)	Average Employee growth rate
1	89.212.932	4.350.031	+25,3%
2	68.795.097	2.789.916	+4,2%

Figure 1 illustrates the average financial indicators by ESG engagement levels among the observed IT companies.



**Figure 1.** Comparison of average revenue, net profit (EUR million), and employee growth (%) by ESG level.

The green bars represent average revenue (in million EUR), the yellow bars indicate average net profit (in million EUR), while the blue bars display average employee growth rate (in %) using the secondary Y-axis on the right. The data are grouped by ESG engagement levels, where Level 1 corresponds to companies with partially visible ESG practices, and Level 2 to companies with formal ESG disclosures or membership in international ESG-compliant groups. These values are based on the descriptive classification rubric outlined in the methodological section, and reflect averaged results across selected IT companies.

*4.1. Descriptive analysis of basic indicators*

In terms of operating income, a strong diversification of performance is recognized: SMART BUSINESS TECHNOLOGIES LLC, Belgrade, Serbia records exceptional growth of 108% and revenue of over 287 million EUR, which indicates a high degree of market adaptability and potential positive perception by external stakeholders, due to the application of ESG practices.

HTEC LLC, Belgrade, Serbia, as a technology company with an international presence, achieves a 25% revenue growth, which can be the result of consistent ESG positioning, especially in the segments of corporate governance and social responsibility.

Net profit - the profitability of the company shows even more pronounced heterogeneity:

While SMART BUSINESS TECHNOLOGIES LLC, Belgrade, Serbia and HTEC LLC, Belgrade, Serbia record high profits (over 8.4 and 7.6 million EUR), SCHNEIDER ELECTRIC LLC, Novi Sad, Serbia records a loss of over 10 million EUR, potentially as a result of ESG transition costs (eg ecological modernization or internal reorganizations).

ASSE SOLUTIONS LLC, Belgrade, Serbia although achieving a positive result, recorded a 25% drop in net profit, which may suggest high initial costs of ESG standard integration without immediate financial return.

Employment:

Number of employees is a key ESG metric in the S (Social) domain. SMART BUSINESS TECHNOLOGIES LLC, Belgrade, Serbia records employment growth of 81%, which implies investment in human capital as part of ESG growth strategy.

Companies with stable employment growth (5–13%) suggest a balance between scalability and sustainability, while a negative trend in LEVI 9 GLOBAL SOURCING BALKAN, Novi Sad, Serbia may indicate challenges in retaining talent or a change in strategic orientation.

#### 4.2. *The link between ESG reporting and financial performance*

Given the ever-widening institutional and market valorization of ESG factors, several potential mechanisms through which ESG reporting affects financial performance can be identified:

- Signaling to investors: ESG reporting acts as a signal of credibility and management responsibility. Companies like HTEC and EPAM that publish transparent ESG information can have access to cheaper capital, which positively affects ROE and ROA
- Operational efficiency: ESG strategies often lead to resource optimization (eg energy efficiency, inclusive work practices), which can explain the high profitability of companies like SMART BUSINESS TECHNOLOGIES LLC, Belgrade, Serbia and G.L. TRADE LLC, Belgrade, Serbia.
- Reputational capital: Companies that invest in ESG reputation attract more clients and talent, which is directly reflected in increased revenue and employment.
- Regulatory benefits and avoidance of sanctions: Companies that proactively align with ESG standards reduce regulatory risk, which can positively affect profit stability.

Empirical data shows that companies with more pronounced ESG engagement (measured by employee growth, profit stability and revenue transparency) are also the ones that achieve the most consistent financial performance. Although it is not possible to establish causality with complete certainty, the identified positive correlation indicates that ESG reporting can represent an important predictor of long-term financial stability and competitive advantage in the Serbian IT sector. At the end of the preliminary analysis, the identified patterns suggest potential associations between ESG visibility and performance of IT companies in Serbia. However, to further interpret the implications of these findings, a dedicated discussion is warranted in light of the existing literature and theoretical framework.

### 5. Discussion

The descriptive patterns identified in this study are consistent with prior empirical evidence suggesting a connection between ESG visibility and financial performance, particularly in institutional environments that are still maturing. For instance, Da Cunha et al. [19] emphasize that in developing economies, positive correlations between ESG practices and financial indicators tend to emerge progressively and are often mediated by firm-specific characteristics.

In line with these insights, our findings indicate that companies with higher levels of ESG visibility tend to exhibit stronger revenue growth, higher net profits, and more favorable employment dynamics. This is in accordance with conclusions from meta-analytical reviews, which generally observe a positive—though context-dependent—association between ESG engagement and business performance [20].

From a theoretical standpoint, stakeholder theory and signaling theory provide a useful framework for interpreting these associations. The premise that transparent ESG behavior enhances legitimacy and stakeholder trust is supported by Talan et al. [21], who argue that ethical and sustainable practices should not be treated as external costs but as components of long-term value creation.

Furthermore, stakeholder theory posits that effective ESG engagement can strengthen operational efficiency and stakeholder relationships, leading to improved financial results [22].

This relationship is also visually supported by the data presented in Figure 1, which illustrates the average financial performance across ESG engagement levels. Companies classified under ESG Level 2 (highest visibility) not only reported significantly higher revenues and net profits but also demonstrated markedly higher employee growth rates compared to ESG Level 1 firms. Notably, this upward trend across all three indicators suggests that increasing ESG engagement may be associated with broader organizational development, particularly in human capital expansion.

However, several important caveats must be considered. In contrast to numerous studies that rely on quantified ESG metrics and regression-based methodologies [23], the current study uses a qualitative classification approach and is descriptive in nature. As such, it does not allow for causal inference—our results are indicative rather than confirmatory.

Additionally, the ESG–performance relationship is known to be heterogeneous and subject to contextual boundaries. For instance, Fu et al. [24] observed that the signaling benefits of ESG engagement may plateau or even reverse when ESG investment levels become excessively high, particularly in relation to equity risk. Our analysis, based on a limited sample and publicly available data, cannot control for such nonlinear effects or confounding variables such as firm size or market positioning. This limits the generalizability of our conclusions.

These descriptive findings are visually reinforced by Figure 1, which presents grouped bar charts for average revenue, net profit, and employee growth across ESG engagement levels. The green bars represent average revenue (in million EUR), the yellow bars indicate average net profit (in million EUR), while the blue bars display average employee growth rate (in %), plotted on the secondary Y-axis. The ESG levels distinguish companies with partial (Level 1) and full (Level 2) ESG visibility.

Notably, companies under ESG Level 1 show higher average financial indicators and a significantly higher employee growth rate compared to those in ESG Level 2. This may initially appear counterintuitive, as more advanced ESG engagement is often associated with superior performance. However, this result may reflect the context-specific dynamics of transition economies, where declarative or emerging ESG visibility can coincide with agility, growth-oriented strategies, or strategic signaling behaviors. These trends are consistent with the assumptions of stakeholder and signaling theories, suggesting that visible commitment to ESG—even if not formalized—can yield reputational or operational advantages under certain conditions.

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suggesting that visible commitment to ESG—even if not formalized—can yield reputational or operational advantages under certain conditions.

Despite these limitations, the observed trends are conceptually significant—especially in a transition economy like Serbia, where ESG standards are still evolving. The findings point to potential incremental benefits of ESG visibility in knowledge-intensive and globally oriented sectors such as IT. These preliminary insights warrant further investigation using robust quantitative methods, incorporating ESG scores, financial ratios, firm-level controls, and longitudinal data.

## 6. Conclusions

This study investigated the relationship between ESG visibility and financial performance in the IT sector of the Republic of Serbia, a representative transition economy. Using a descriptive methodology and publicly available data, the analysis revealed indicative patterns: companies with more visible ESG engagement—either through declarative statements, group-level affiliations, or formal disclosures—tend to demonstrate stronger financial performance, as reflected in revenue, profit, and employee growth.

While the analysis does not permit causal inference, the findings align conceptually with stakeholder and signaling theories. The results suggest that even partial ESG engagement may offer reputational and strategic advantages, particularly in institutional environments where formal sustainability standards are still evolving. The accompanying visual analysis further reinforces these observations by illustrating comparative financial dynamics across ESG engagement levels. Given the methodological limitations—including the absence of inferential testing and reliance on publicly available indicators—future research should aim to validate these associations through regression models, panel data, and third-party ESG ratings. Qualitative approaches such as interviews or case studies may also deepen contextual understanding.

Ultimately, the study provides an initial empirical foundation for understanding ESG-finance dynamics in digital-intensive sectors within transition economies, offering relevant insights for academics, policymakers, and corporate decision-makers in the broader Central and Eastern European (CEE) region.

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