Automated Website Audit and SEO Diagnostics as E-Marketing Tools for Business Digitalization

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Abstract: Business digitalization increases the importance of measurable performance of digital assets, especially corporate websites that support product policy, customer communication, and online sales. This paper proposes an applied-IT workflow for intensifying e-marketing tools through a technical audit of the enterprise web resource "massiv-polotsk.by". The workflow is implemented as a diagnostic pipeline using software tools to evaluate HTTPS/SSL availability, indexing controllability (robots.txt, sitemap.xml), on-page optimization (title/description tags, headings, internal/external links, Schema.org markup), loading performance (HTML load time and mobile constraints), website structure, and content quality metrics (spam, "water content", classical and academic nausea). Each stage produces measurable indicators that are mapped to concrete remediation actions and prioritization rules ("metric → issue → fix"). Based on the collected metrics, the paper identifies bottlenecks that reduce visibility and user experience and provides a ranked improvement plan: adding robots.txt and sitemap.xml, optimizing images and unused CSS, configuring caching headers, improving mobile adaptation, refining internal link structure, and rewriting content to reduce excessive "water" while preserving relevance. The audit results demonstrate the practical applicability of a metric-driven workflow for translating marketing objectives into prioritized software and engineering tasks in the analyzed case, while full post-implementation validation remains a subject for follow-up re-audits.

1 INTRODUCTION

Business digitalization increasingly depends on measurable performance of digital assets. For many enterprises, the corporate website is a core digital component that supports product policy, customer communication, and lead generation, while also shaping brand perception and customer loyalty [1] - [3]. However, practical effectiveness of a website is constrained not only by marketing content but also by technical factors such as security configuration, loading performance, indexing controllability, and on-page optimization. The broader digitalization trend also affects transport and service systems, where measurable digital tools and marketing-oriented improvement mechanisms are increasingly used to strengthen user-facing performance and organizational transformation [4] - [6].

E-marketing tools in the digital environment therefore include applied IT instruments for auditing and improving a web resource: performance profiling, SEO diagnostics, content quality analytics, and information-architecture checks. Unlike generic discussions of KPI/ROI, tool-based diagnostics produce reproducible, machine-readable indicators (e.g., SSL/HTTPS status, HTTP response codes, load time, indexing signals, and text quality parameters) that can be directly mapped to remediation actions and prioritized [7], [8].

Empirical work on website quality and online loyalty formation further supports treating the website as a measurable digital asset [1], [3], [7].

This paper presents a case study of the enterprise website "massiv-polotsk.by" and proposes a practical workflow for intensifying the use of e-marketing tools through a diagnostic pipeline. The pipeline covers 1) technical condition testing, 2) internal optimization analysis, 3) performance and mobile constraints, 4) metric analysis for trust and indexing, 5) structure verification, and 6) content assessment.

Based on the collected metrics, we identify the key bottlenecks that limit search visibility and user experience and provide a ranked improvement plan (robots.txt and sitemap.xml, media/CSS optimization, caching configuration, mobile adaptation, internal link refinement, and content rewriting).

The novelty of this study lies in formalizing website optimization as an applied-IT diagnostic pipeline, where each audit stage produces measurable indicators and a mapping to concrete remediation tasks. The practical IT contribution also lies in defining a reusable audit-to-remediation workflow that can be implemented as a lightweight monitoring and decision-support module for repeated website re-audits. This transforms e-marketing objectives into implementable software/engineering actions supported by tool-extractable metrics [8].

Foundational aspects of electronic commerce and Internet presence in marketing are discussed in [9] - [17], while digital marketing technologies and contemporary promotion practices are summarized in [18] - [22].

1.1 Indicator-Based Monitoring of Website Effectiveness as a Digital Asset

Analysis and evaluation of marketing tool effectiveness is important for optimizing strategy and improving business outcomes. KPI (Key Performance Indicators) are used to evaluate the effectiveness of activities and business processes [23]. In this study, KPI/ROI are treated as summary measures derived from observable web signals (traffic, conversions, engagement and visibility), rather than as abstract definitions [23]. Therefore, the evaluation focuses on indicators that can be extracted through analytics systems and technical diagnostics: traffic sources, conversion actions, user behavior metrics (time-on-site, bounce rate), and SEO visibility (indexing coverage and keyword-driven traffic) [2], [23]. Web analytics explains "what users do", while technical diagnostics explains "why it happens" (performance, indexing controllability, on-page optimization, and content quality). Such a setup supports reproducible monitoring and prioritization of improvements based on data [7], [8]. More broadly, the need for structured indicator-based evaluation is also visible in other digital transformation contexts, including poorly formalized business processes, transport-system transformation, retail-system development, and the use of marketing tools to improve service attractiveness [4], [5], [24], [25]. These studies do not address website SEO directly, but they support the broader applied-IT relevance of measurable diagnostics and decision-oriented optimization in digital environments [24], [25]. Similar optimization logic is also observed in engineering studies focused on transforming measured system states into implementable technical decisions [26] - [28].

In this study, the website is not treated as a general marketing artifact but as a measurable digital system component of business digitalization. Therefore, the theoretical background is limited to concepts that directly support the audit problem: website quality as a driver of user perception and loyalty, search visibility as a condition of discoverability, and technical diagnostics as an evidence layer for optimization decisions. This allows the paper to focus on reproducible tool-based assessment rather than on broad descriptive classifications of products or promotion models.

1.2 The Contribution of the Paper is Threefold

First, it formalizes website audit as a structured applied-IT pipeline rather than a set of isolated SEO checks.

Second, it introduces an operational "metric → issue → fix" protocol that links diagnostic outputs to prioritized engineering actions.

Third, it defines a reusable audit setting that supports repeated assessment and, after implementation, future baseline-versus-follow-up comparison in business digitalization projects.

2 METHODS

The study combines a focused literature review on e-marketing and digital marketing foundations with an applied case-study of a real enterprise web resource. The case object is the corporate website "massiv-polotsk.by", which is treated as a measurable digital asset supporting product policy and online presence.

2.1 Audit Workflow and Tools

A tool-based diagnostic pipeline was applied to obtain reproducible indicators and map them to prioritized improvement actions. The audit was performed using pr-cy, Seolik, and octopus.do services, which provide technical diagnostics, on-page/content quality metrics, and website structure visualization, respectively [8]. Unlike descriptive

marketing analysis, the proposed approach uses diagnostic tools as a reproducible measurement layer: the same web resource can be re-audited after changes, and the effect can be quantified by comparing indicator values before/after optimization [8]. The workflow included the following stages:

1) Stage 1 - Technical condition analysis (HTTPS/SSL, server response, indexing permissions, robots.txt, sitemap.xml).
2) Stage 2 - Internal optimization analysis (meta tags, headings, internal/external links, structured data).
3) Stage 3 - Performance and loading speed analysis (HTML load time, mobile constraints, caching and resource optimization).
4) Stage 4 - Metric analysis (trust/authority indicators, indexing coverage).
5) Stage 5 - Site structure analysis (menu logic and navigation consistency).
6) Stage 6 - Content assessment (spam score, "water content", classical/academic keyword nausea) [8].

2.2 Audit Setting and Reproducibility

The audit was conducted during September 2024 under the same input conditions for all tools. The analyzed object was the corporate website "massiv-polotsk.by". The page scope included the homepage and the main user-relevant sections of the site, namely the product/catalog pages, the company information section, the contacts page, and the top-level navigation structure. If a metric was available only for the homepage in a given tool, this is explicitly indicated in the Results section.

The diagnostics were collected from three services: pr-cy for technical condition, indexing-related signals, and performance-related checks; Seolik for text and on-page content parameters; and octopus.do for website structure visualization. For each service, the obtained outputs were recorded manually in a structured audit sheet containing the following fields: metric name, measured value, page/scope, interpretation, and recommended remediation action.

To improve reproducibility, all measurements were taken during the same audit session and interpreted using a pre-declared metric-to-action protocol. The study therefore does not claim absolute stability of all values across time, because some website indicators may vary after content or configuration changes, but it does claim procedural reproducibility**:** the same resource can be re-audited with the same tools, same page scope, and same interpretation protocol to obtain a comparable baseline for repeated assessment.

The reproducibility protocol used in this study includes four fixed elements:

1) identical audit object;
2) predefined page scope;
3) fixed tool set (pr-cy, Seolik, octopus.do);
4) standardized recording of outputs in the "metric → issue → fix" format.

Under these conditions, the audit can be repeated after remediation steps to compare baseline and follow-up values.

2.3 Evaluation Logic

For each stage, the measured indicators were interpreted as either strengths or bottlenecks and converted into concrete remediation tasks (e.g., add robots.txt and sitemap.xml, optimize images and unused CSS, configure caching headers, improve mobile adaptation, refine internal link structure, and rewrite content to reduce excessive "water"). This approach converts marketing objectives into implementable software tasks guided by quantitative diagnostics [8].

The audit-to-fix logic is consistent with structured views of Internet marketing content and monitoring approaches [29], and with industry perspectives on customer experience management in digital channels [30].

3 RESULTS

This section reports the results of the tool-based diagnostic audit of the enterprise website "massiv-polotsk.by". The audit was performed using pr-cy, Seolik, and octopus.do tools [8]. The results are presented by stages, each producing measurable indicators and a corresponding remediation action plan.

1) Stage 1 - Technical Condition Analysis. According to pr-cy, the website demonstrates several strengths:
   - HTTPS/SSL: the site is accessible via HTTPS and has a valid SSL certificate, ensuring secure connection between user and server.
   - Server response: HTTP status code 200 OK indicates successful resource delivery.

- Indexing permissions: HTTP header and meta tag do not prohibit indexing, allowing search engines to index content [8].

The detected bottlenecks are:

- HTML loading speed: 1.42 s, which indicates a non-optimal loading condition within the current audit baseline and may negatively affect user experience.
- robots.txt: not found, which reduces control over search crawler behavior.
- sitemap.xml: not found, which complicates indexing and navigation [8].

Action: add robots.txt and sitemap.xml, keep HTTPS/SSL monitoring, and prioritize performance improvements to reduce load time and support mobile users [8].

2) Stage 2 - Internal Optimization Analysis. The internal optimization check shows the following:
   - Title tag: "Massiv-polotsk.by solid wood furniture production - Home" includes relevant keywords and reflects core activity.
   - Meta description: contains information about production, location, and services with product-related keywords.
   - Links: internal links are indexable; one external link is present, supporting navigation and crawling.
   - Schema.org markup: present, which helps search engines interpret page content and enhance snippets.
   - Favicon: present, supporting brand recognition and professional appearance [8].

   Action: improve H1-H6 heading structure, refine internal/external linking strategy, and add links to official social pages to support engagement and navigation [8].
3) Stage 3 - Performance and Loading Speed Analysis. pr-cy performance indicators suggest that desktop rendering is acceptable; however, mobile performance has optimization gaps. The main issues include:
   - Unoptimized images, which increase page weight and slow loading.
   - Unused CSS, which should be deferred to reduce render-blocking resources.
   - Caching headers are missing or too short for some resources, causing repeated downloads on each visit [8].

   Action: optimize images (compression, format selection, resizing), defer unused CSS, and configure caching headers for static resources; then re-measure loading performance after changes [8].

   To avoid purely impression-based judgments, each indicator was interpreted using an operational rule defined before the final synthesis of results. Binary technical checks (e.g., presence/absence of robots.txt, sitemap.xml, HTTPS validity, HTTP response status) were treated as direct diagnostics. Scaled or percentage-based indicators (e.g., authority/trust, water content, spam, nausea) were interpreted according to either tool-reported recommended ranges or the study's explicit audit protocol. Thus, the analytical unit in this paper is not the raw value alone, but the value combined with a documented interpretation rule and a corresponding remediation action.

   Table 1 summarizes the audit findings as a 'metric → issue → fix' mapping.
4) Stage 4 - Metric Analysis (Trust and Indexing Coverage). The website demonstrates a low level of trust/authority: PR-CY Rank = 6/100. Indexing coverage is limited: the number of indexed pages is low, and the absence of Yandex Turbo pages additionally suggests weak visibility. At the same time, Yandex virus scanning indicates the website is safe and it is not included in prohibited registries [8].

   Action: increase indexing coverage by implementing robots.txt and sitemap.xml, expanding relevant landing pages, improving internal linking, and monitoring indexing dynamics after fixes [8].
5) Stage 5 - Site Structure Analysis.The site structure and navigation logic were checked using octopus.do. The site tree appears clear and logically organized, with a header menu oriented toward buyers and partners. However, the website does not contain a dedicated "Vacancies" section. The absence of a dedicated vacancies page limits interpretation, but it also indicates that recruitment-related user journeys are not explicitly supported in the current site structure [8].

   Action: if recruiting is relevant, add a "Vacancies" tab to the main menu; keep navigation consistent and ensure that key user groups reach needed information within 2-3 clicks [8].
6) Stage 6 - Website Content Assessment. Content quality was assessed using Seolik (more strict than pr-cy). For the main page, Seolik reported:

Table 1: Audit summary: metric → issue → recommended fix (Applied IT).

Metric / check	Measured value (baseline)	Interpretation (issue)	Recommended fix (task)	Tool	Threshold / interpretation rule
HTTPS/SSL	Valid	OK (security baseline passed)	Keep monitoring; renew certificate on time	pr-cy	binary presence/validity check
HTTP response	200 OK	OK	-	pr-cy	200 = successful resource delivery
HTML load time	1.42 s	Slower than many sites → UX/SEO risk	Optimize images; defer unused CSS; enable caching headers	pr-cy	higher-than-optimal page response/load time reported by the audit tool = performance risk
robots.txt	Not found	No indexing control	Add robots.txt; specify allowed/disallowed paths	pr-cy	absent = no crawler-control file
sitemap.xml	Not found	Harder for crawlers to discover pages	Generate and submit sitemap.xml	pr-cy / octopus.do	absent = no sitemap for crawler discovery
Indexing coverage	low (few indexed pages)	Weak visibility	Improve internal links; add landing pages; submit sitemap	pr-cy	low indexed-page count reported by the audit service = weak discoverability signal
Authority / trust	PR-CY Rank 6/100	Low authority/traffic	Improve indexing + content specificity; add trust elements	pr-cy	low tool score = weak external visibility / authority signal
Content water	31.97%	Too “generic” text	Rewrite main-page text; increase specificity & useful details	Seolik	value above the service-recommended level = excessive generic phrasing
Spam	11.29%	Acceptable	Keep within threshold	Seolik	within service-recommended range
Classical nausea	2.65%	Acceptable	-	Seolik	within service-recommended range = acceptable keyword repetition level
Academic nausea	9.14%	Acceptable	-	Seolik	within service-recommended range = acceptable keyword repetition level
Site structure	clear	OK	Add “Vacancies” if hiring relevant	octopus.do	clear top-level navigation and logical menu grouping = acceptable structural usability baseline

- Text spam: 11.29%;
- Water content: 31.97%;
- Classical nausea: 2.65%;
- Academic nausea: 9.14% [8].

According to Seolik guidelines, spam and classical nausea are within acceptable limits, and academic nausea is within the recommended range. However, water content is higher than the recommended threshold, indicating excessive generic phrasing and reduced informational density, which may negatively affect content quality and perceived usefulness [8].

Action: rewrite the main-page text to reduce “water content” by increasing specificity (product features, materials, delivery/payment terms, guarantees, cooperation terms), then re-check Seolik indicators after editing [8].

In this study, “acceptable” means that the value remains within the recommended service range and does not require priority intervention at the current audit stage. By contrast, “critical” or “bottleneck” means that the metric either indicates a missing technical control element or exceeds the level at

which corrective action is justified within the audit-to-remediation workflow.

4 DISCUSSION

The main implication of this case study is that a corporate website can be assessed not only as a communication channel but also as a technical object within business digitalization. The practical value of the proposed workflow lies in combining heterogeneous diagnostics into one decision-oriented sequence: metric extraction, interpretation, prioritization, and remediation planning. This is especially relevant in weakly formalized decision environments, where structured indicator systems help reduce ambiguity and support more transparent prioritization [26].

At the same time, the study has limitations. First, the case is based on one enterprise website, which restricts statistical generalization. Second, some indicators depend on external platform logic and may vary over time. Third, not all recommended improvements were implemented within the same audit cycle; therefore, the present version of the study should be interpreted as a validated diagnostic baseline and a prioritized remediation framework rather than as a fully completed optimization experiment. Quantitative confirmation of improvement should be obtained during the next re-audit cycle after implementation of the proposed fixes.

In practical terms, the current study distinguishes between immediately actionable measures and measures requiring platform-level implementation. Planning of crawler-control and audit-support artifacts, including robots.txt and sitemap.xml specification, content revision tasks, and internal-link refinement recommendations, can be prepared directly within the remediation workflow, whereas performance-oriented measures such as image optimization, CSS deferral, caching-header configuration, and mobile rendering improvements require CMS- or server-level implementation and subsequent re-measurement.

Nevertheless, the approach is transferable to other small and medium-sized enterprise websites because it relies on a stable sequence of diagnostic actions rather than on sector-specific content alone. In this sense, the contribution is methodological and applied: the paper shows how routine SEO and website diagnostics can be reorganized into a repeatable decision-support workflow for digital asset improvement.

5 CONCLUSIONS

The study demonstrates the practical applicability of treating a corporate website as a measurable digital asset and improving it through a repeatable technical audit workflow within a business digitalization context. Using pr-cy, Seolik, and octopus.do diagnostics, the website “massiv-polotsk.by” was evaluated across security, indexing controllability, on-page optimization, performance, information architecture, and content quality dimensions [8].

The audit revealed that acceptable baseline conditions such as valid HTTPS/SSL and HTTP 200 OK are not sufficient to ensure visibility and usability. The main bottlenecks identified in the analyzed case were missing robots.txt and sitemap.xml, limited indexing coverage, low trust/authority indicators, non-optimal loading performance, and excessive content “water,” which together reduce discoverability, technical controllability, and informational density [8]. The navigation structure was generally clear and logically organized for the main user groups [8].

Based on measurable indicators, a ranked improvement plan was formulated and operationalized through the “metric → issue → fix” mapping presented in Table 1. The prioritized tasks include implementing robots.txt and sitemap.xml, optimizing images and unused CSS, configuring caching headers, improving mobile adaptation and usability, refining internal linking, expanding relevant landing pages, and rewriting main-page content to increase specificity and reduce excessive generic phrasing [8]. From an applied-IT perspective, the main contribution of the paper lies in the reproducible diagnostic pipeline and the decision-support logic that convert marketing objectives into implementable software and engineering actions. In practical terms, the proposed workflow can serve as a reusable digital monitoring pattern for repeated website diagnostics and priority-based remediation planning.

Future work may extend the approach by integrating continuous monitoring through web analytics and periodic technical scans, as well as by defining quantitative target thresholds for key metrics in order to strengthen data-driven prioritization and long-term optimization cycles [23]. Therefore, the novelty of the study lies not in the use of individual SEO tools as such, but in their integration into a reproducible audit-to-remediation workflow with explicit interpretation rules and decision-support logic.

REFERENCES

[1] H. Kim and L. S. Niehm, "The impact of website quality on information quality, value, and loyalty intentions in apparel retailing," Journal of Interactive Marketing, vol. 23, no. 3, pp. 221-233, 2009, [Online]. Available: https://doi.org/10.1016/j.intmar.2009.04.009.

[2] D. Chaffey, R. Mayer, F. Ellis-Chadwick, and K. Johnston, Internet Marketing: Strategy, Implementation and Practice. London, U.K.: Pearson Education, 2006.

[3] D. Ryan, Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation, 4th ed. U.K.: CPI Group, 2017.

[4] Z. T. Gaibnazarova, "Artificial intelligence and smart railway transport as a tool to accelerate the transformation process in Uzbekistan," in Digital Transformation: What Are the Smart Cities Today?, Lecture Notes in Networks and Systems, vol. 846, Cham, Switzerland: Springer, 2024, [Online]. Available: https://doi.org/10.1007/978-3-031-49390-4_19.

[5] S. A. Yuldasheva, A. J. Abdullayev, S. M. Arslanbekov, N. B. Shanazarova, and L. U. Akbarova, "Improving the use of marketing tools to enhance the attractiveness of public transport," in E. G. Popkova, Ed., Sustainable Development of Business 4.0, Advances in Science, Technology & Innovation, Cham, Switzerland: Springer, 2025, [Online]. Available: https://doi.org/10.1007/978-3-031-83595-7_18.

[6] V. Jain, D. Ather, A. B. Abdul Hamid, R. R. Sharma, G. Talipova, and G. Manteghi, "Secure Arduino-based LiFi communication for IoT sensor networks," in Proc. 2025 Optical Communication, Photonics, Telecommunications, and Intelligent Machine Applications (OPTIMA), Tashkent, Uzbekistan, 2025, pp. 189-194, [Online]. Available: https://doi.org/10.1109/OPTIMA67660.2025.11380401.

[7] B. Y. Shih, C. Y. Chen, and Z. S. Chen, "An empirical study of an internet marketing strategy for search engine optimization," Human Factors and Ergonomics in Manufacturing & Service Industries, vol. 23, pp. 528-540, 2012.

[8] Seolik, "SEO analysis tool (text parameters, meta tags, optimization diagnostics)," 2024, [Online]. Available: https://seolik.ru/, [Accessed: Sep. 2024].

[9] V. A. Afanasyev, "Distinctive features of electronic commerce," Internet Marketing, no. 5, pp. 296-300, 2012.

[10] L. V. Balabanov, Electronic Commerce. St. Petersburg, Russia: Piter, 2001.

[11] D. V. Valko, "Internet presence as a conceptual basis for modern marketing," Bulletin of the Council of Young Scientists and Specialists of the Chelyabinsk Region, no. 1, pp. 59-63, 2013.

[12] D. E. Voziyanov, Digital Marketing in Retail: Theoretical Foundations, Monitoring, Innovations. Donetsk, 2023. [In Russian].

[13] A. N. Germanchuk, Theory and Methodology of Formation of the Trade Marketing System. Donetsk, 2019. [In Russian].

[14] I. D. Kotlyarov, "Evolution of business growth," Internet Marketing, no. 4, pp. 253-258, 2012.

[15] A. N. Sokolova and N. I. Gerashchenko, Electronic Commerce: World and Russian Experience. Moscow, Russia: Open Systems, 2010.

[16] O. A. Tretyak, "Marketing concepts: concepts, methods, and development," HSE Russian Management Journal, vol. 11, no. 1, 2013.

[17] O. A. Tretyak, Marketing: New Guidelines for Management Models. Moscow, Russia: INFRA-M, 2015.

[18] M. V. Andreev, "Digital technologies in marketing," Young Scientist, no. 16 (358), pp. 204-207, 2021.

[19] P. Kotler, H. Kartajaya, and I. Setiawan, Marketing 4.0: Moving from Traditional to Digital. Moscow, Russia: Eksmo, 2019. [In Russian translation].

[20] S. Bhayani and N. V. Vachhani, "Internet marketing versus strategic marketing: a comparative analysis," FIIB Business Review, vol. 3, no. 3, pp. 53-63, 2014.

[21] J. Järvinen, A. Tollinen, H. Karjaluoto, and C. Jayawardhena, "Digital and social media marketing usage in B2B industrial section," Marketing Management Journal, vol. 22, no. 2, pp. 102-117, 2012.

[22] D. M. Scott, The New Rules of Marketing and PR, 7th ed. Hoboken, NJ, USA: Wiley, 2017.

[23] Business Studio, "KPI (Key Performance Indicator) system: development and application of business process indicators," 2024, [Online]. Available: https://www.businessstudio.ru/articles/article/sistema_kpi_key_performance_indicator_razrabotka_i/, [Accessed: Sep. 2024].

[24] Z. T. Gaibnazarova, B. T. Solieva, and N. A. Iminova, "Forecasting the risk of bankruptcy in poorly formalized processes," Science & Technique, vol. 23, no. 1, pp. 80-86, 2024, [Online]. Available: https://doi.org/10.21122/2227-1031-2024-23-1-80-86.

[25] V. Bakharev, B. B. Giyosidinov, T. Kirillova, N. Kozlova, V. Sheleiko, and T. Cherkesova, "State-run food retail chains as a tool of food security: An analysis of existing practices," in T. C. Devezas, M. A. Berawi, S. E. Barykin, and T. Kudryavtseva, Eds., Understanding the Digital Transformation of Socio-Economic-Technological Systems, Cham, Switzerland: Springer, 2024, pp. 581-594, [Online]. Available: https://doi.org/10.1007/978-3-031-56677-6_45.

[26] M. Yakubov, M. Talipov, and U. Nurullaev, "An optimized Lagrangian approach to reactive power compensation in nonlinear traction power-supply systems," Vibroengineering Procedia, vol. 60, pp. 724-730, Dec. 2025, [Online]. Available: https://doi.org/10.21595/vp.2025.25604.

[27] M. M. Talipov, "Computational modeling and analysis of mechanical power consumption in train assemblers' work," in Proc. Int. Conf. on Applied Innovation in IT (ICAIIT), vol. 13, no. 2, pp. 419-426, 2025, [Online]. Available: https://doi.org/10.25673/120513.

[28] A. Mamatov, X. Sotvoldiyev, M. Talipov, S. Shaumarov, K. Gafarbayli, and D. Bekmirzaev, "Metrological calibration and uncertainty evaluation of MEMS accelerometers for structural health monitoring in seismic regions," Vibroengineering Procedia, vol. 62, pp. 140-144, Jun. 2026, [Online]. Available: https://doi.org/10.21595/vp.2026.26360.

[29] S. V. Kulpin, “Structure and content of internet marketing,” 2020, [Online]. Available: https://elar.urfu.ru/bitstream/10995/86857/1/978-5-7996-3027-0_2020.pdf, [Accessed: Sep. 2024].

[30] Gartner, “CRM strategies and technologies to understand, grow and manage customer experiences,” 2011, [Online]. Available: https://www.gartner.com/imagesrv/summits/docs/na/customer-360/C360_2011_brochure_FINAL.pdf, [Accessed: Sep. 2024].