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SUSTAINABLE ENTREPRENEURSHIP: ANALYSIS OF DIGITAL ACCOUNTING, MANAGEMENT, AND MARKETING TRENDS IN REGIONAL AND GLOBAL DIMENSIONS

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СТАЛЕ ПІДПРИЄМНИЦТВО: АНАЛІЗ ТЕНДЕНЦІЙ ЦИФРОВОГО ОБЛІКУ, МЕНЕДЖМЕНТУ ТА МАРКЕТИНГУ В РЕГІОНАЛЬНОМУ ТА ГЛОБАЛЬНОМУ ВИМІРАХ

In the face of evident instability in the economic, ecological, and social environments, the stabilizing tools development is highly deficient, among which sustainable entrepreneurship is the most effective. In our view, the trigger that initiates and guides the processes of sustainable entrepreneurship development is the transition to digital accounting, management, and marketing systems, as they are efficient both on a regional and global scale, thanks to a range of fundamental characteristics that define the consistent and enduring nature of achieving positive outcomes and the orientation of sustainability development in the long-term perspective. Thus, the article aims to identify the characteristics of shaping the phenomenon of sustainable entrepreneurship through the analysis of digitalization trends in accounting, management, and marketing systems on both regional and global scales. Based on the research outcomes, it has been demonstrated that as of 2021, on a global scale, out of 100 registered entrepreneurs, approximately 36% had digitized accounting, management, and marketing systems. Regarding the regional aspect, the processes of digitalization are quite heterogeneous. Furthermore, the digitalization of accounting, management, and marketing contributes to sustainable entrepreneurship development in various aspects. It has been concluded that the fundamental aspects of digitized accounting are formed through electronic document flow, electronic reporting; cloud technologies and data storage; automated processes, electronic reporting, electronic banking and finance, and cybersecurity. A conclusion has been drawn that the fundamental aspects of digitized management are formed through electronic document management; digital budgeting and other financial processes; digital project management; the utilization of analytics and Business Intelligence; virtual meetings and communication; digital marketing and sales; digital customer tracking and analysis; electronic HR management. It has been demonstrated that the core aspects of digitized marketing are shaped by digital advertising, sending personalized emails to clients, using social media, websites, SEO, analytics, and measurements, creating diverse content, and automating marketing processes.

В умовах очевидної нестабільності економічного, екологічного та соціального середовища надзвичайно важливим є розвиток стабілізуючих їх

інструментів, серед яких найбільш ефективним є стале підприємництво. При цьому тригером, який запускає та спрямовує процеси розвитку сталості підприємництва на наш погляд, є перехід на цифрові системи обліку, менеджменту та маркетингу. Вони дієві як на регіональному, так і на глобальному рівнях завдяки ряду базових ознак, які визначають постійний та тривалий характер досягнення позитивних результатів та спрямованість на розвиток сталості в довгостроковій перспективі. Відтак, метою статті є визначення особливостей формування феномену сталого підприємництва шляхом аналізу тенденцій цифровізації систем обліку, менеджменту та маркетингу як на регіональному, так і на глобальному рівнях. За наведеними вище результатами дослідження було доведено, що на глобальному рівні у 2021 році зі 100 зареєстрованих підприємців приблизно 36% мали повністю цифровізовані системи обліку, менеджменту та маркетингу. Щодо регіонального аспекту, процеси цифровізації є досить неоднорідними. Водночас, виявлено, що цифровізація обліку, менеджменту та маркетингу сприяє сталому розвитку підприємництва у різних аспектах. Зроблено висновок, що базові аспекти цифровізованого обліку формуються за рахунок: електронного документообігу, електронної звітності; хмарних технологій та зберігання даних; автоматизованих процесів, електронного банкінгу та фінансів; кібербезпеки. Звернено увагу, що базові аспекти цифровізованого менеджменту формуються шляхом: електронного управління документами; цифрового бюджетування та інших фінансових процесів; цифрового менеджменту проєкт; використання аналітики та Business Intelligence; віртуальних зустрічей та комунікації; цифрового маркетингу та продажів; цифрової відстежуваності та аналізу клієнтів; електронного HR-менеджменту. Доведено, що базові аспекти повністю цифрового маркетингу формуються шляхом: цифрової реклами, відправлення персоналізованих електронних листів клієнтам, використання соціальних мереж, сайтів та SEO, аналітики та вимірювання, створення різноманітного вмісту, автоматизації процесів маркетингу.

***Key words:** sustainability development; digitization; accounting systems; management systems; marketing systems.*

***Ключові слова:** розвиток сталості; цифровізація; системи обліку; системи менеджменту; системи маркетингу.*

Target setting. In the context of evident instability within the economic, ecological, and social environment, the development of stabilizing tools is of utmost importance, among which sustainable entrepreneurship proves to be the most effective. This type of entrepreneurship is focused on achieving success in the long-term perspective, considering all possible economic, social, and ecological requirements. In this regard, the trigger that initiates and guides the processes of sustainable entrepreneurship development, in our view, is the transition to digital accounting, management, and marketing systems. This is because they are effective both on a regional and global scale due to a range of fundamental attributes that define the consistent and enduring nature of achieving positive outcomes and the orientation toward long-term sustainability.

These attributes include resilience to financial fluctuations and adverse economic conditions; adaptability to societal ecological interests; positive impact on the surrounding environment; implementation of innovative solutions that enable adaptation to changing circumstances, improvement of products and services, enhancement of production efficiency, and incorporation of new technologies, and so forth. This implies that with the digitization of the outlined systems, success ceases to be a transient phenomenon; rather, it is built upon sturdy foundations rooted in effective strategies, management practices, and sustainable values.

Analysis of research and publications. The issues of digitizing accounting, management, and marketing systems on both regional and global scales are being investigated by scholars such as Bannikov, V., Lobunets, T., Buriak, I., Maslyhan, O., Shevchuk, L., Mashika Hanna, Zelic Victoria, Kiziun Alla, Maslyhan Roman, Plaksiienko V. Ya., Nazarenko I.M., and others. However, given the significance of digitization processes in these systems for future evolution and conceptual development

of sustainable entrepreneurship, new research in this domain remains highly relevant. These topics continue to be subjects of scientific debates and remain unresolved, necessitating further exploration and development.

The wording of the purposes of article (problem). The article aims to define the aspects of shaping the phenomenon of sustainable entrepreneurship through the analysis of digitization trends in accounting, management, and marketing systems at both regional and global levels.

The paper main body with full reasoning of academic results. Sustainable entrepreneurship is currently a modern approach to business that considers the economic, social, and ecological aspects of achieving success in the long term. The core idea is to conduct business in a manner that fulfills the needs of the present generation without compromising the ability of future generations to meet their own needs. Currently, the trends of digitizing accounting, management, and marketing are quite pronounced. Specifically, according to data from Ernst & Young Global Limited in 2021, on a global scale out of 100 registered businesses, approximately 36% had fully digitized accounting, management, and marketing systems.

In terms of the regional aspect, the processes of digitization in the outlined systems are quite heterogeneous (Table 1), which can be explained by several factors: different regions have varying levels of economic development, access to financial resources and investments; varying stability and speed of internet connectivity and differing availability of modern technologies; cultural and social peculiarities that might influence attitudes towards technology and readiness to adopt new solutions. Furthermore, the level of workforce readiness can vary across different regions. At the same time, the presence of qualified professionals capable of implementing and managing digital systems might be limited and of crucial importance.

Moreover, the digitization of accounting, management, and marketing contributes to the sustainable development of entrepreneurship on both regional and global scales and in various dimensions.

Table 1. Analysis of trends in digital accounting, management, and marketing across world regions (classified according to the UN schema)

Regional Dimension	Entrepreneurs provided digitalization by spheres, %								
	accounting			management			marketing		
	2015	2018	2021	2015	2018	2021	2015	2018	2021
Europe*	25	44	60	12	22	37	9	29	54,6
Asia	12	38	56	11	18	29,7	7	19,7	33,8
Oceania	16	26	53	17	30,7	57,8	10	18	44,8
America	22	43	49	16	29	60,5	16,7	26,7	66,8
Africa	3	8,8	11	2	4,2	7,6	1	3	7,8
Global Dimension	15,6	31,96	45,8	11,6	20,78	38,52	8,74	19,28	41,56

Note

*This region includes 46 countries, including European Union member states.

Source: formed based on Ernst&Young Global Limited data

In terms of the regional aspect (highlighted according to the UN scheme), as of 2021, the highest number of entrepreneurs with fully digitized accounting systems was observed in Europe (60%) and Asia (56%), where accounting procedures are most standardized. The lowest number of entrepreneurs with fully digitized accounting systems was observed in African countries, where limited access to modern technologies and accounting automation software prevails. Additionally, in some African countries, there is a lack of stability regarding basic accounting procedures due to numerous changes in legislation, tax policies, and other aspects that affect accounting practices. In Ukraine, 2021, the country had nearly reached the level of digitization seen in American countries. However, the digitization processes in this context are slow due to complex tax and legal requirements.

What is specific is that the number of entrepreneurs with fully digitized accounting has been increasing from 2015 to 2021. Currently, digitized accounting involves the use of modern technologies and tools for collecting, analyzing, and interpreting the financial and operational information of a business. Accordingly, based on the existing experience, it helps (Fig. 1):

1. Exercise more effective cost control from the perspective of sustainable development.
2. Optimize processes and resources from the perspective of sustainable development.

3. Make informed decisions from the perspective of sustainable development.

% of entrepreneurs who benefit from fully digitalized accounting

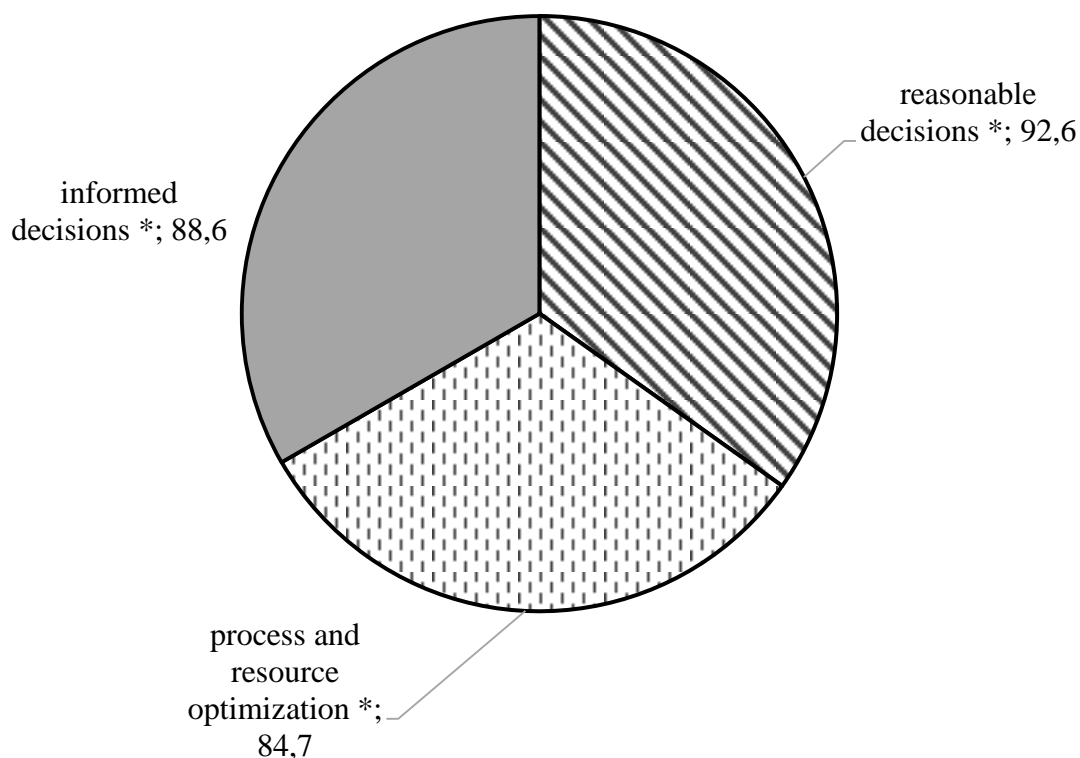


Fig. 1. Characterization of the benefits entrepreneurs gain from fully digitized accounting, 2021, %.

Note:

*From the standpoint of sustainable development

Source: formed based on Ernst&Young Global Limited data

It should be noted that fully digitized accounting involves the utilization of digital technologies and tools for the collection, processing, storage, and analysis of financial and accounting information within a business. This means that all accounting processes, including financial and tax-related ones, are carried out using digital resources and software. The fundamental aspects that fully digitized accounting can encompass are quite diverse (Fig. 2).

These are shaped by: electronic document circulation, e-reporting; cloud technologies and data storage; automated processes, automated report generation, electronic banking and finance, and cybersecurity.

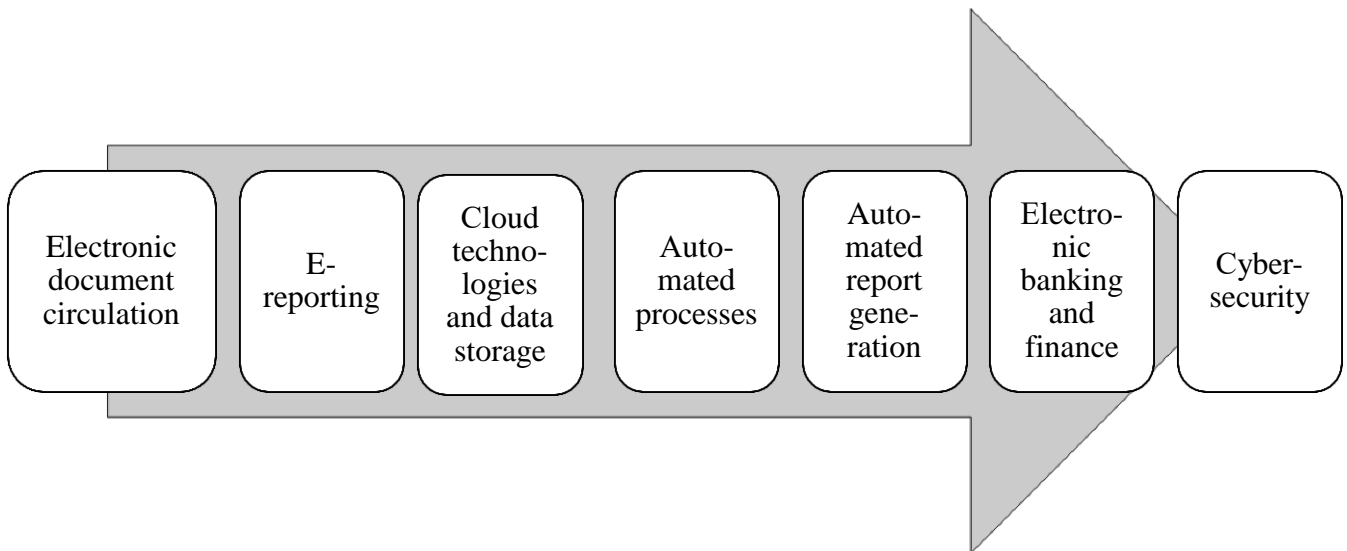


Fig. 2. Fundamental aspects that a fully digitized accounting of an entrepreneur can encompass.

Source: formed based on [2; 4]

Let's examine the outlined fundamental aspects of fully digitized accounting and their inherent diversity in more detail. Specifically:

1. The aspect of electronic document flow entails that instead of traditional paper documents, all financial papers, invoices, reports, and other information are stored and transmitted in digital form.

2. The aspect of e-reporting stipulates that entrepreneurs can submit tax and financial reports electronically (specifically through dedicated platforms that simplify interactions with government tax authorities, statistics agencies, etc.).

3. The aspect of cloud technology and data storage implies that all data can be stored in cloud services, allowing for access from any location and ensuring their security.

4. The aspect of automated processes involves the automation of various tasks, such as payroll calculation, invoice processing, report generation, and more.

5. The aspect of automated reporting entails that, through digitization, reports can be generated automatically.

6. The aspect of electronic banking and finance envisions those transactions, fund transfers, and bank account management that can be conducted through electronic platforms.

7. The aspect of cybersecurity involves ensuring protection against cyberattacks and data breaches, as digital information can be vulnerable.

In addition to accounting specifics, as of 2021, the highest proportion of entrepreneurs with fully digitized management systems was observed in Oceania (57.8%) and the Americas (60.5%). This phenomenon can be attributed to the fact that these countries are renowned for their advanced technological development and access to informational resources, which creates a conducive environment for digitization and sustainable entrepreneurship. Furthermore, the high level of economic development in these regions can provide entrepreneurs with the resources needed to implement digital technologies and processes. In Ukraine, this indicator reached 30%.

Meanwhile, the lowest percentage of entrepreneurs with fully digitized management systems is typically observed in African countries, where there is a lack of trust in digital technologies, a propensity for traditional methods, and cultural differences that can influence the adoption of digital initiatives.

Overall, sustainable entrepreneurship entails the integration of sustainable development principles across all management domains, which is most effectively facilitated by its digitization. In fact, digitized management enables (Fig. 3):

1. The development of strategies and plans that consider ecological and social aspects.
2. Supports the implementation of strategies and plans incorporating ecological and social aspects into entrepreneurial practice (which may encompass the adoption of green technologies, efficient resource utilization, promotion of employee internal responsibility, and other sustainability-focused practices).

Let's note that fully digitized management refers to the utilization of digital technologies and tools across all stages of enterprise or organizational management. This entails that all processes, resources, data, and communications become digital, leading to heightened efficiency, convenience, and adaptability to changing conditions.

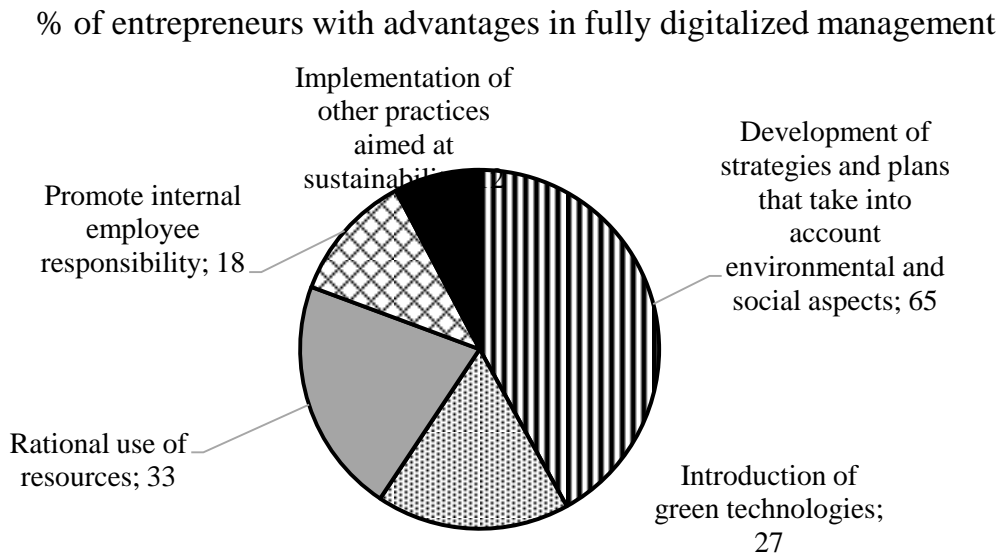


Fig. 3. Characterization of the benefits entrepreneurs gain from fully digitized management, 2021, %.

Note:

*From the standpoint of sustainable development

Source: formed based on Ernst&Young Global Limited data

Fundamental aspects encompassed by fully digitized management can be diverse (Fig. 4).

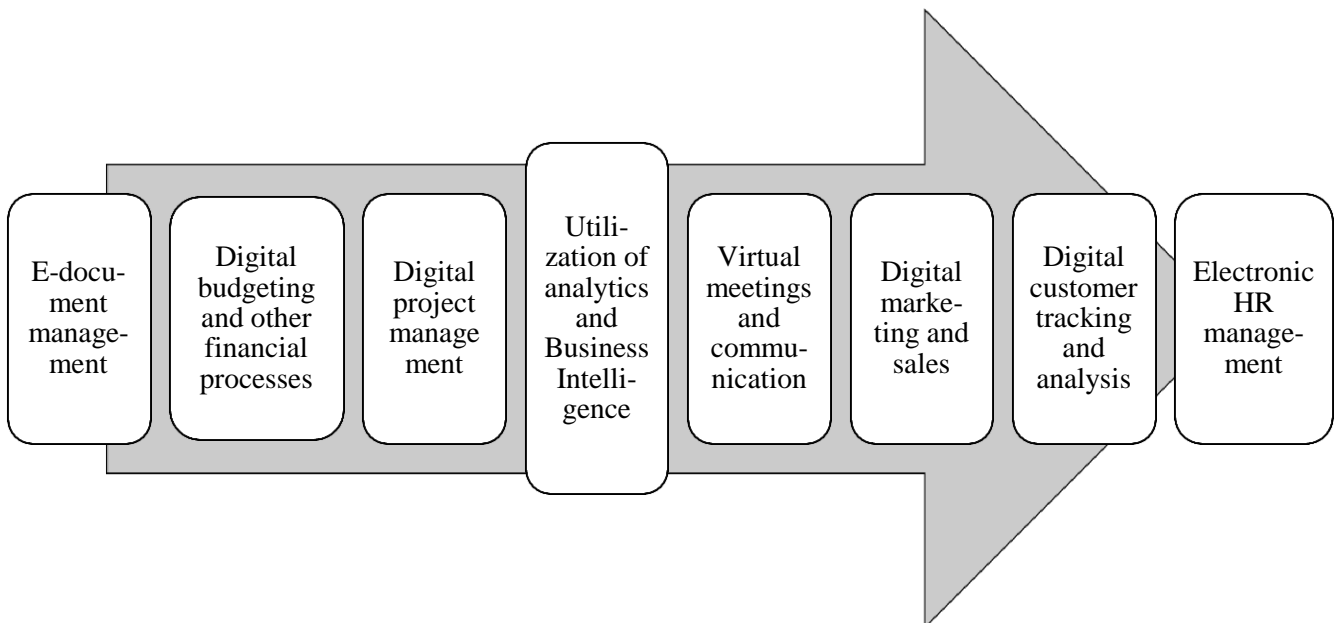


Fig. 4. Fundamental aspects that a fully digitized management of an entrepreneur may encompass.

Source: formed based on [1; 6]

These are shaped by [1; 6]: e-document management; digital budgeting and other financial processes; digital project management; utilization of analytics and Business Intelligence; virtual meetings and communication; digital marketing and sales; digital customer tracking and analysis; electronic HR management.

Let's examine the outlined fundamental aspects of fully digitized management and their inherent diversity in more detail. In particular:

1. The aspect of electronic document management entails that all documents previously stored on paper media are transferred into digital format. This aids in storing, managing, and sharing data with greater convenience, as well as reducing the need for storage space.

2. The aspect of digital budgeting and other financial processes involves executing these processes through specialized programs and systems. This allows for a more precise analysis of the financial condition and expenditures.

3. The aspect of digital project management entails that projects, tasks, and resources are managed using digital tools such as project management software, which aid in tracking progress, facilitating communication, and coordinating across teams.

4. The aspect of analytics and Business Intelligence involves analyzing large volumes of data through BI tools, which assist managers in making decisions based on objective data.

5. The aspect of virtual meetings and communication involves the use of video conferencing tools, chats, and electronic platforms for communication, fostering efficient communication and collaboration across different departments and locations.

6. The aspect of digital marketing and sales entails executing marketing campaigns, advertising, and sales through digital channels, such as social media, search engines, and online stores.

7. The aspect of digital customer tracking and analysis involves using CRM systems to track and analyze customer behavior, needs, and previous interactions.

8. The aspect of electronic HR management involves carrying out recruitment, personnel management, assessment, and development processes through digital systems.

Regarding the regional aspect of complete digitalization of marketing (highlighted by the UN framework), as of 2021, the highest number of entrepreneurs who have achieved this was observed in the Americas (66.8%). This is driven by the fact that countries in the Americas, particularly North America, have a high level of technological development and widespread internet access. This creates favorable conditions for the implementation of digital solutions in marketing practices. Additionally, certain American countries, such as the United States, exhibit a strong cultural inclination toward innovation, including digital innovation, and actively incorporate them into various aspects of life, including business. Up until 2021, Ukraine's indicators were closely aligned with the level achieved by European countries. As for the African region, there existed a critically low percentage of entrepreneurs who had fully digitized marketing systems. This is due to a shortage of qualified professionals in the field of digital technologies and a low level of digital literacy. These factors have complicated the implementation and management of digital marketing strategies.

In this context, based on the existing experience, the practices of fully digitized marketing enable entrepreneurs (Fig. 5) to:

1. Make a wide range of customers, including those who were previously beyond their reach.
2. Reduce budgets and resources for promoting products and services (by minimizing the use of paper and other materials, which helps decrease the ecological footprint).
3. Create opportunities for deeper customer interaction and engagement.
4. Personalize approaches to customers by providing them with individual offers and discounts.
5. Raise awareness about sustainability, ecological responsibility, and social issues, contributing to the formation of more conscious consumption.

These opportunities can be reflected in advertising campaigns, product packaging, the company's information policy, and other aspects that showcase its social and ecological responsibility.

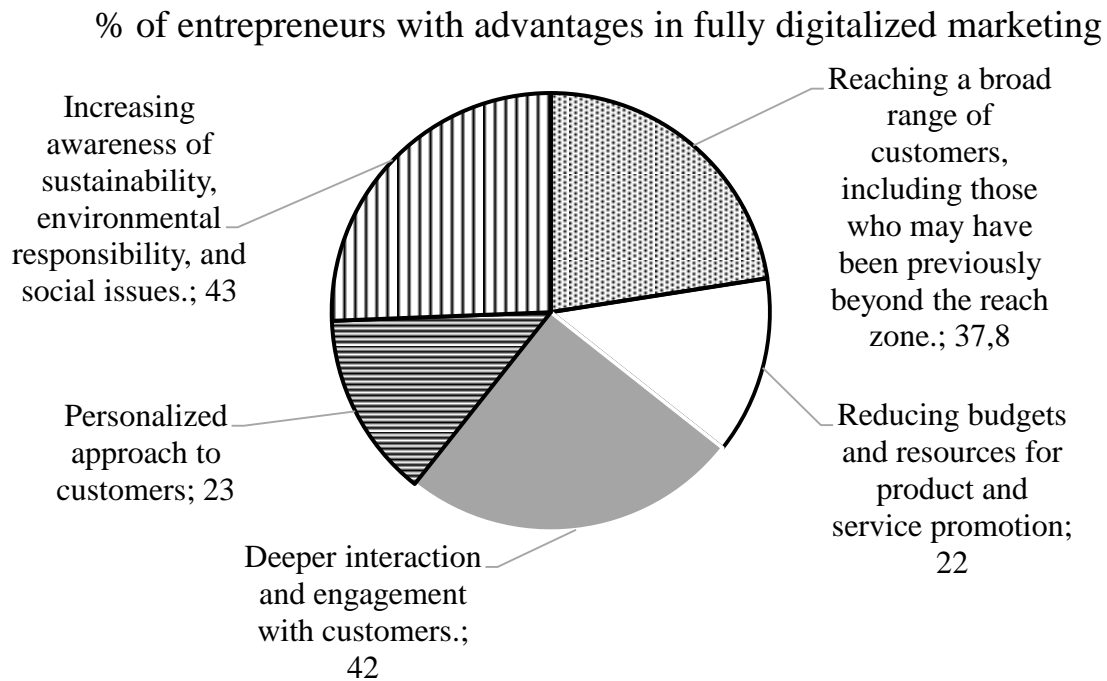


Fig. 5. Characterization of the benefits entrepreneurs gain from fully digitalized marketing, 2021, %.

Note:

*From the standpoint of sustainable development

Source: formed based on Ernst&Young Global Limited data

Let's note that fully digitized marketing is an approach to advertising and promoting products and services in which exclusively digital channels and tools are used to engage the target audience, interact with them, and analyze results. This means that all aspects of marketing activities, such as advertising, communication, analysis, and reporting, occur in electronic format. The fundamental aspects that can be encompassed within fully digitized marketing are diverse (Fig. 6).

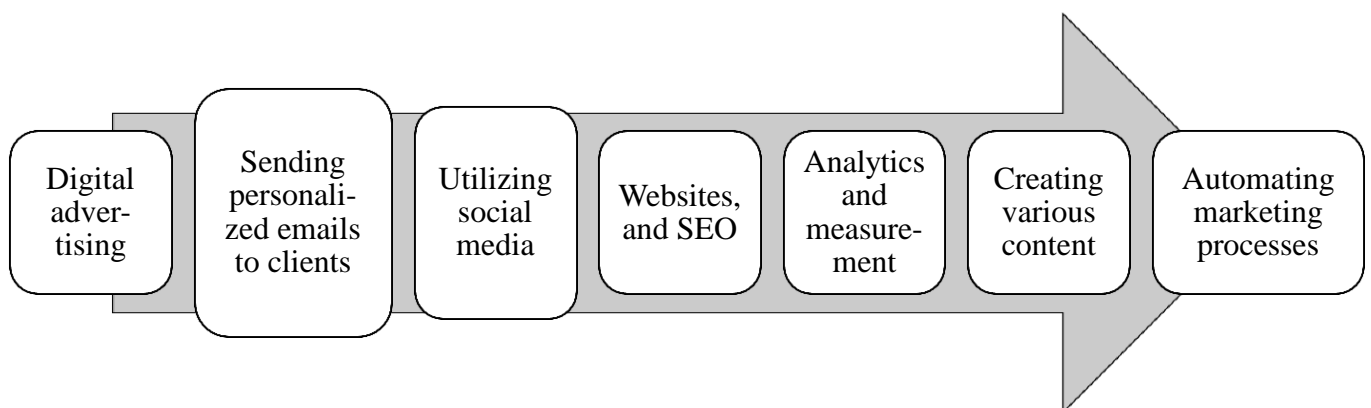


Fig. 6. Fundamental aspects that can be encompassed within an entrepreneur's fully digitized marketing.

Source: formed based on [3]

These are shaped by: digital advertising, sending personalized emails to clients, utilizing social media, websites, and SEO, analytics, and measurement, creating various content (texts, photos, videos, etc.), and automating marketing processes.

Let's delve more deeply into the outlined fundamental aspects of fully digitized marketing and their respective diversity. Specifically:

1. The aspect of digital advertising involves utilizing various digital channels for placing advertisements, such as social media platforms, search engines, video platforms, and more.
2. The aspect of sending personalized emails to clients involves using them for advertising products, services, special offers, and the like.
3. The aspect of using social media platforms entails their utilization for audience engagement, advertising, content creation, and user engagement.
4. The aspect of website and SEO entails optimizing a website for search engines to achieve a high-ranking in-search results and attract more organic traffic.
5. The aspect of analytics and measurement involves employing analytical tools to track the effectiveness of advertising campaigns, audience engagement, and other key metrics.
6. The aspect of creating diverse content (text, photos, videos, etc.) involves using it to engage, educate, and interest the audience.
7. The aspect of marketing automation involves utilizing automation tools for managing communications, advertising campaigns, data collection, and more automatically.

Conclusions from this study and prospects for further exploration in this area.

Based on the presented research findings, it has been demonstrated that on a global scale in 2021, out of 100 registered entrepreneurs, approximately 36% had fully digitized accounting, management, and marketing systems. In terms of the regional aspect, the processes of digitization exhibit considerable heterogeneity. However, it is noteworthy that the digitization of accounting, management, and marketing contributes to entrepreneurial sustainable development across various dimensions. In this case, conclusions can be drawn as follows:

1. The fundamental aspects of fully digitized accounting are shaped by electronic document flow, electronic reporting; cloud technologies and data storage; automated processes, electronic banking and finance, cybersecurity.

2. The fundamental aspects of fully digitized management are shaped by electronic document management; digital budgeting and other financial processes; digital project management; utilization of analytics and Business Intelligence; virtual meetings and communication; digital marketing and sales; digital customer tracking and analysis; electronic HR management.

3. The fundamental aspects of fully digitized marketing are shaped by digital advertising, sending personalized emails to clients, using social media, websites, and SEO, analytics, and measurement, creating various content (texts, photos, videos, etc.), and marketing process automation.

The prospects for further research lie in creating opportunities to investigate the impact of digitization on entrepreneurial sustainability. Specifically, there's a chance to delve deeper into how digitization precisely influences various aspects of sustainable entrepreneurial development, such as social responsibility, environmental sustainability, and economic stability.

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