CHAPTER XVIII. A MANAGEMENT FRAMEWORK FOR MAXIMIZING THE REALIZATION OF THE GENERATIVE POTENTIAL OF AI-TOOLS AS A MODERN TREND IN MARKETING COMMUNICATIONS

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Abstract. The paper has transformed the Agile-methodology and provided its variant compositional concept, where the focus of attention shifts from software development management to the management of creation of informational products that have marketing potential. A feature of such a transformation is the fact of using the generative potential of artificial intelligence. The work has investigated and adapted to the generative paradigm such an Agile method as Scrum. This has been done by reassessing its artifacts and integrating generative artificial intelligence tools into them. Special attention is paid in the paper to such an aspect of the Scrum method as the User Story, because it highlights the marketing potential of the generative capabilities of AI. The INVEST technique has been provided for formulating the optimal User Story, and the advantages and challenges of using User Story in AI generation processes are also have been identified.

Keywords: AI, Artificial Intelligence, AI-management, Agile, Scrum, Marketing Communications, Generative Artificial Intelligence.

Introduction. In today's world, the generative capabilities of artificial intelligence (AI) are rapidly developing, opening up new horizons for marketing activities. Thanks to AI's ability to create text, visual, and audio content, companies are gaining tools for more effective interaction with the audience and personalization of communications. According to a study by consulting company 'McKinsey & Company', in 2024 the level of implementation of artificial intelligence increased

significantly. If at the beginning of the year 72% of respondents declared the use of AI in their activities, then by the end of the year this share increased to 78%, which demonstrates positive dynamics compared to 55% in 2023. Artificial intelligence is most actively used in IT-departments, marketing and sales, as well as in customer service. The growth was especially noticeable in the IT-sector: the share of companies that integrated AI into their work increased from 27% to 36% over the past six months [1]. This highlights the growing role of generative AI in content creation and customer experience management. However, along with the opportunities, the use of generative AI in marketing poses new challenges for companies. In particular, there is a need to develop methodologies for managing content generation processes, ensuring its quality, compliance with brand standards and ethical norms. The lack of clear approaches can lead to risks associated with inaccurate information, copyright infringement or a negative impact on the company's reputation. Therefore, the integration of generative AI capabilities into marketing activities requires not only technical knowledge, but also a strategic approach to managing these processes. The development and implementation of appropriate methodologies would allow companies to use the potential of AI as effectively as possible, minimizing possible risks and ensuring high quality content.

Literature Analysis and Problem Statement. Modern scientific literature highlights the uncertainty that results from the implementation of AI technologies in the management and marketing processes of an organization, as well as the use of the generative potential of AI tools. The coexistence of humans and artificial intelligence raises the issue of the balance between technology and the human role in management. The main problems are ethical aspects, in particular, responsibility for decisions and information made and generated with the participation of AI, as well as the risks of losing human control over critical processes. The perspective of organizational justice is the leading topic of research by Nathan Bennett and Christopher L. Martin [2]. Creating a management framework of the principles of employee interaction with generative neural networks is a necessity for modern management.

An important challenge remains the need for managers to adapt to working with AI, since without a deep understanding of its capabilities and limitations, effective integration of technologies is impossible. The author Lee Kuo-Wei emphasizes adaptive processes for using AI [3].

Leif Jonas Tveita and co-authors emphasize the importance of precisely the collaboration of managerial organizational capabilities and the generative functionality of AI tools [4]. Similar ideas are also highlighted in the works of Ziying Mo, Hasnain Ali, Marcia R. C. Santos, Meng Li, and others [5-8].

Thus, the problem arises of the lack of an adaptive methodology for managing integrated tools of generative artificial intelligence that would comply with the principles of flexible creation of an informational product – the result of generation.

Research Results. The proposed applicable group of management methods for the implementation of generative artificial intelligence can be distinguished as the Agile-methodology of flexible development in information project management. Scrum can be attributed to such methods, since the fact that its application is adaptable to a large number of variable project characteristics is a proven statement [9-10]. An additional benefit is the ability to variably scale the Scrum-method techniques [11]. The paradox of agile development methods is that they are aimed at human-human interaction, but the most popular area of their application is the creation of an informational products, for which the use of AI-technologies is a trend today and a necessity in the future.

Agile informational product development is the implementation of an iterative process [12]. In this approach, the requirements for the desired result and the methods of their implementation are constantly changing and improving due to close cooperation between team members who are different specialists and able to independently organize their work. Creating a marketing informational product (in the broad sense of this term, namely, the informational component of a complex system [13]) is a multi-level process involving specialists with hard skills in working with information in various formats. In addition to data generation, the marketing potential of AI-tools also covers working with metadata [14]. On the other hand, Agile-methods

are not relevant if creating an informational product is not a resource-intensive process, and the product itself can be generated using a minimum number of neural networks and iterations.

The main goal of Agile-generation is to optimize the process and increase productivity. Most Agile-methodologies aim to reduce risks by breaking the generation process into short stages. Each iteration is like a small information project, which includes all the necessary steps to create a minimum information architecture. Although one iteration usually does not produce a complete new version of the result, it is assumed that the Agile-project is always ready for use after the completion of each generative iteration (in the case of continuing work on the informational product, the team reviews and changes the priorities of the generative processes, selected AI tools, etc.). Agile-methodology places great importance on direct communication between team members, which reduces the amount of written documentation compared to other approaches [15-16]. This is the reason for criticism of such methods as insufficiently disciplined.

Agile methods are defined and governed by values and principles that were formulated by 17 developers on February 11-13, 2001 at The Lodge at Snowbird ski resort in the mountains of Utah. This document was called the ‘Agile Development Manifesto’ [17]. Its ideas can be adapted to optimize generative processes when working on a complex informational product. The manifesto includes four values, basic ideas, and twelve principles for a manager’s work with a team. They could be adapted to generative processes of artificial intelligence while maintaining the original intent of using Agile-methodology.

Values:

1. The AI -toolkit is less valuable than the person who controls it.
2. The documentation of the result is less valuable than the result itself.
3. The tactical algorithm of actions developed to generate the result is less valuable than the algorithm according to which the informational components of the final result were actually generated.

4. The initial generation strategy is less valuable than the reaction to changes and the ability to adjust the initial strategy.

Principles:

1. Compliance with the generation goal through early, uninterrupted delivery of the generation result.
2. Welcoming changes in requirements even at the final stage of generation.
3. Delivering the generation result as often as possible.
4. Close human-human and human-neural network interaction throughout the project.
5. Employee motivation, trust in their hard skills in using AI-tools.
6. Offline communication with employees involved in generative processes.
7. The main metric of the effectiveness of Agile-methods is the generated result that meets the set goal.
8. Orientation to the pace of sustainable generative processes (without rushing, reduced motivation, burnout, etc.).
9. Using AI-tools with the highest level of productivity and usability.
10. Simplification for the sake of unnecessary generations.
11. The principle of self-organization when working with neural networks.
12. Flexibility and constant change in generative processes.

The most popular method of the Agile-family that can be adapted for AI-generation is Scrum. Scrum is a framework of an Agile-method for project management that is quite widely used in marketing, IT and other industries, and can also be adapted for managing generative artificial intelligence tools [17-18]. Its main goal is to increase the efficiency of generation processes through an iterative approach and regular adaptation to changes. In Scrum, the workflow is organized in the form of sprints – short development cycles. Each sprint ends with the creation of a potentially ready-to-use increment of information. Thus, Scrum provides a continuous process of generation and improvement of the informational product, which allows to quickly respond to changes in the requirements for its characteristics. The peculiarity of this

method regarding the importance of managerial intellectual capital when using AI-generation techniques remains unchanged [15, 19-21].

One of the key aspects of Scrum is its artifacts (Table 1), which play an important role in ensuring the transparency of the process. The Burndown Chart is a tool for visualizing the remaining work over time. The Project (Generation) Backlog contains a list of all the requirements for the informational product. It is a dynamic document that is constantly being updated and refined. Along with it, there is a Sprint Backlog, which contains the generations selected for execution in a particular sprint. These generations are displayed on the Scrum board, which is a convenient tool for visualizing the systematic progress of the generation. It is divided into columns that allow to quickly assess the current status of the generations.

Each sprint has its own key goal – Sprint Goal, which determines the main focus of using the generative neural network for this period. The sprint results in an increment of informational product that is ready to use and meets established criteria for the readiness of the generated information, known as the Definition of Done (DoD). User Stories are used to plan generative processes, which describe the requirements for the information in terms of its ultimate consumption or use.

User Stories for marketing information generated by neural networks in the Scrum methodology can be defined as a short but concise description of the requirements for the informational product, formulated from the perspective of the end user (recipient of information). When implementing generative AI-tools in management marketing processes, the end user is the audience that consumes the information generated by neural networks. The principle of role/action/result is preserved.

Table 1.

Scrum-artifacts in managing generative artificial intelligence processes

Artifact	**The role of the artifact in the Scrum methodology of managing generative AI**
Burndown Chart	Burndown Chart is a graph that displays the remaining work over time. It helps to estimate the speed of information generation by artificial intelligence tools and predict the approximate completion time of a sprint.
Generation Backlog	Project Backlog or Generation Backlog contains a list of all requirements that the generated information must meet, and which are constantly supplemented and refined according to the needs of marketing processes.
Sprint Backlog	Sprint Backlog is a subset of Generation (Project) Backlog containing the generations selected for execution in a specific sprint.
Scrum-board	Scrum-board is a visual tool for monitoring the progress of generation by different AI-tools and different team members. It is divided into columns (‘Planned’, ‘Generating’, ‘Completed’), which helps to track the execution of information generation.
Sprint Goal	Sprint Goal is a key generational goal that must be achieved within the sprint, defining its main focus.
Informational product increment	Informational product increment is the result of generating information after the sprint is complete, which should be ready for use.
User Story	User Story is a description of the requirement for the generated information from the perspective of its end user: As a user (consumer) of the information [user role], I want to be able to [action] to get [result]’.
Estimating the labor intensity of generations	Various evaluation methods (Story Points, T-shirt Sizing, Planning Poker) are used to determine the complexity of generations.
Definition of Done	Definition of Done (DoD) is a list of conditions that must be met for generation to be considered complete after certain iteration.
Velocity	Velocity is the average number of story points completed per sprint, which helps predict the future performance of generative AI -ools.

To create User Stories, the INVEST technique could be used. It means that the story should be: Independent, Negotiable, Valuable, Estimable, Small, and Testable (Fig. 1). In this case, the User Story might look like this: ‘As a site visitor, I want to see relevant articles to get up-to-date information without additional effort’ or ‘As a potential buyer, I want to receive personalized advertising to learn about products that can meet my needs’.

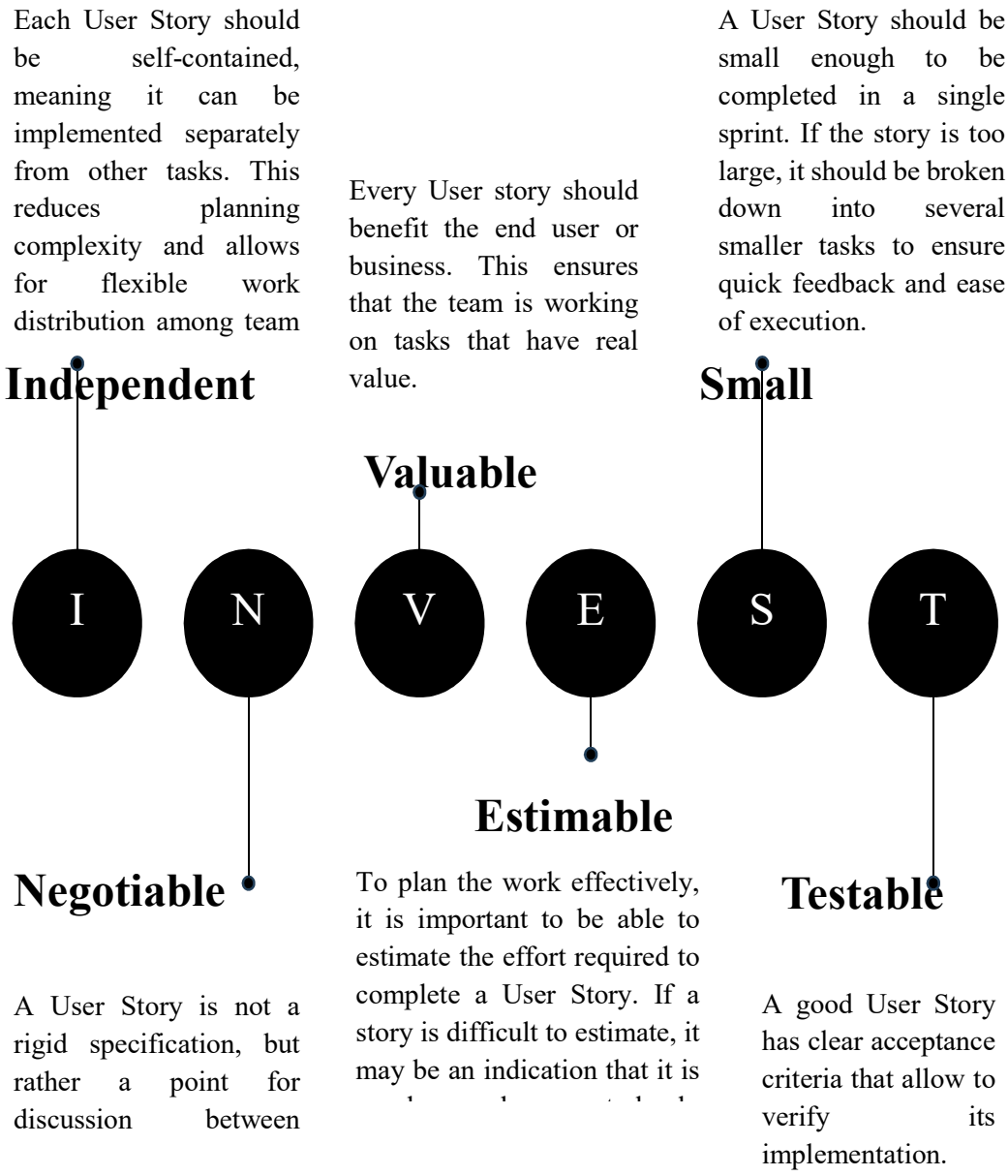


Fig. 1. INVEST technique for User Story formulating

Table 2.

Benefits and Challenges of User Stories

User Stories Benefits	**User Stories Challenges**
User Focus	*Subjectivity*
It optimizes understanding of audience needs instead of mindless generation.	Without specific acceptance tests, it is open to different interpretations, which makes it difficult to use.
Brevity	*Audience contact*
Stories are short. They are concise statements of business value.	Stories require permanent contact with the audience, which will consume the generated information, which is not always possible.
Flexibility	*Scalability*

It allows to change information generation requirements according to audience behavior and performance analysis.	There is no algorithm for scaling stories due to the specifics of the audience's informational needs, which are not congruent.
Easy maintenance	*Dependence on data quality*
Stories are not an independent informational product and do not require maintenance.	Properly formulated User Stories do not guarantee the generation of high-quality information by artificial intelligence tools if the hard skills of the specialists involved are low.
Speed	*Multifunctionality of information*
Stories only exist at the moment they are used.	The same generated information can be connected with different informational needs.
Structuredness	*Start a discussion*
Stories allow to structure the generation depending on the informational needs of the audience.	Stories are used to start a discussion with an audience. Unfortunately, they may not capture the end of that discussion and its final result.
Easy assessment	
Basic KPIs can be used to evaluate the generated information.	

User Stories help structure the generative process. They allow to define requirements for information quality, Tone of Voice, and audience expectations. For example, if a company uses a neural network to create content for a blog, its team can write a User Story like: ‘As a blog reader, I want to receive unique and structured content to quickly find useful information’. This helps to properly configure generative algorithms, write prompts, adjust the informational style, and control the quality of the final informational product in general. User Stories in Scrum are focused on the process of generating information, while information consumption scenarios focus on how the audience will interact with it. For example, a User Story might be: ‘As a social media user, I want to see personalized advertising messages to find the products I need’. An information consumption scenario describes the actual behavior of this user, for example: ‘A user goes to a social media site, views a feed, comes across an advertising post, views a product on a website, but does not buy. A few hours later, he sees a retargeted ad and returns to the website to make a purchase’. User Stories allow to correctly formulate tasks for generative processes, but without audience consumption scenarios, it is impossible to understand how effective it is in real use. The optimal strategy for AI-generation in marketing is to combine both approaches: User Stories are formed, on the basis of which information is generated, and consumption scenarios are analyzed to adjust and improve generative processes.

When assessing the complexity of the generation execution using artificial intelligence tools, various methods are used, such as Story Points, T-shirt Sizing or Planning Poker, which help determine the complexity of generative processes and their priority. This allows to determine another important indicator of the effectiveness of using generative neural networks – generation speed, or Velocity, which is defined as the average number of completed story points per sprint. This indicator is used to predict the future productivity of the team and effectively plan work.

Estimating the complexity of performing AI-generation of information in Scrum is important for sprint planning and predicting the performance of a generative neural network. For this, various methods are used to determine the relative complexity of the generation:

- **Story Points**

One of the most common methods is Story Points. This scoring technique is based on the subjective assessment by the person(s) operating the generative AI-tools of the difficulty of executing a particular generation relative to other generations. This is typically done using a modified Fibonacci sequence (1, 2, 3, 5, 8, 13, etc.), where each number represents the relative difficulty of the generation. Lower numbers indicate simpler information for the generation, while higher values indicate significant challenges or uncertainties in the generative processes.

- **T-Shirt Sizing**

Another approach is T-Shirt Sizing, which involves classifying generations by analogy with T-shirt sizes (XS, S, M, L, XL). This method is less precise, but is convenient for quick assessments, especially in the early stages of planning. Generations labeled XS or S are usually easy to implement, while generations labeled L or XL can require significant time and resources.

- **Planning Poker**

The effort assessment is performed by the entire marketing team. During a Planning Poker session, each employee simultaneously selects an estimate for a specific generation, and after the cards are revealed, the team discusses their decisions

until a consensus is reached. This allows for different perspectives on the complexity of the generations and provides a more accurate forecast.

The main purpose of estimating the labor intensity is not only to determine the complexity of the information that needs to be generated using AI-tools for informational product creating, but also to enable more effective sprint planning. Using data on the assessment and analysis of the speed of generative processes, it is possible to more accurately predict the amount of work that the neural network will be able to perform in subsequent iterations.

Scrum is a powerful tool for managing AI-generated information involved in marketing processes. Its iterative approach allows to quickly adapt to changes in generative processes, or initiate them. Scrum also has other components of the methodological system (main and additional meetings, sprint cancellation processes, tangential and hybrid methodologies, etc.), which can be adapted to manage generative processes for creating a complex informational product for implementation in the marketing communications system.

Conclusions. Agile software development methodology has proven to be suitable for adaptation to implement generative artificial intelligence in creating an informational product that can be used in marketing communications. The values and principles of Agile-methods reflect the role of managerial intellectual capital, namely human knowledge and skills, when using neural networks in informational processes. The Scrum framework has become a variant example of adapting Agile-methodology to managing the generative potential of artificial intelligence.

Scrum artifacts, when transforming the vector of use from project management to marketing management, not only retain their management benefit, but also optimize marketing generation with artificial intelligence. This approach can be used in content marketing strategies, SMM, influencer marketing, brand identity formation and other marketing activities.

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