NaSTech
JOURNAL OF NATURAL SCIENCES AND TECHNOLOGIES
2024, 3 (1), pp. 290-301, DOI: 10.5281/zenodo.12743040

OPTIMIZATION OF WORK: IN-DEPTH LOOK AT KANBAN, SCRUM AND LEAN

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ABSTRACT

This work examines three leading methodologies for optimizing production flows: Kanban, Scrum, and Lean. Their key principles, practices, strengths, and application areas are explored. A comparative analysis of these methods is carried out with focus on optimizing workflows, and increasing productivity and quality. The features of Agile and Lean concepts and their differences and common features are studied. Recommendations are given on how to choose the most appropriate methodology depending on production characteristics, production scale, production values and standards. The importance of continuous monitoring, adaptation and optimization of the chosen approach throughout product life cycle is emphasized. General statistics on the use of Kanban, Scrum and Lean in companies in period from 2019 to 2024 are presented. The work reveals practical aspects of the effective use of these methodologies to achieve high competitiveness of production in the market.

Keywords: Kanban, Scrum, Lean, method.

1. INTRODUCTION

In world of rapid technological progress, important factor is introduction of optimized production processes, robotization and automation [1-3]. Approaches based on principles of Lean, Kanban and other modern methodologies can help optimize production flows, reduce losses, ensure high product quality and increase efficiency [4-6].

Introverts don't consider time spent eating good dinner and watching good movie on TV as wasted. On contrary, they see such nights as necessity. It's fun time they enjoy before they go out into world again. We can say that about third of population is introverted.

In this context, it is important to consider not only compatibility with technological innovations and ability to integrate them to maximize productivity and efficiency, but also choice of methodology for optimizing production flows.

In today's production environment, where speed and efficiency determine competitiveness, choosing right methodology for optimizing production flows can be decisive factor in ensuring success of enterprise. Optimizing production flows can increase productivity, reduce costs, and improve product quality.

The right optimization methodology can significantly increase production speed, reduce equipment downtime, optimize inventory, and avoid overproduction. Thus, it helps to ensure company's competitiveness in market, increase its profitability and ability to respond quickly to changes in external environment.

Today, there is wide range of tools and approaches, but among most influential methodologies are Kanban, Scrum, which belong to Agile methodology, and Lean, which can be said to be complement to Agile. Sometimes it is said that Lean is another Agile method, but it is rather complement to Agile.

Kanban, Scrum and other methods based on both Agile and Lean principles define specific practices. Each of these methods has its own unique principles, processes, and strategies aimed at maximizing productivity and ensuring high quality of product.

Given choice between Kanban, Scrum, and Lean as methodologies for optimizing production flows, possible problem is that many companies and teams are not sure which of these methodologies is most effective for their production.

When comparing them, it can be difficult to understand which methodology is best suited to specific goals, team structure, and type of production that is planned to be implemented.

The problem is that choosing right methodology can affect efficiency of production processes, product quality, and ultimately company's competitiveness in market. The wrong choice can lead to delays in completing tasks, loss of product quality, or even failure in production in general.

2. ANALYSIS OF PUBLICATIONS

In recent years, production flow optimization methodologies, such as Kanban, Scrum and Lean, have gained wide popularity among industries of various sizes and fields of activity. Analysis of existing literature shows growing interest in topic of work optimization and implementation of modern methodologies for optimizing production flows.

Articles and studies on Kanban, Scrum, and Lean provide valuable insights into their effectiveness and capabilities in various areas of human life.

The interest in implementation of Agile Kanban method has increased significantly [7]. The authors describe in detail: overview of Kanban history, principles and practices, challenges and opportunities of Kanban. The issues of Kanban implementation are covered in many sources [8-10].

For example, application of Kanban system in healthcare sector is described in [8]. The study can serve as scenario for improving hospital management during pandemics, such as COVID-19 pandemic.

The creation and implementation of Kanban electronic management system in automotive industry is described in [9]. The authors developed and implemented e-Kanban system for internal logistics and production in automotive industry.

The creation and implementation of IoT sensor management system that uses Agile-Kanban methods with specific visualization of its application for collecting weather data and controlling electric wheelchair is presented in [10]. This will allow for effective coordination of data processing, rapid response to changes in environment, and high quality control of electric wheelchair to facilitate mobility of people with disabilities.

Since it is possible to combine methods, [11] highlights issue of combined use of Scrum-Kanban. The authors evaluate four scenarios: balanced line, unbalanced line, modification 1 of unbalanced line, and modification 2 of unbalanced line.

Along with Kanban, interest in implementing Scrum is also growing as more and more companies realize that this method allows for better organization of work processes and greater flexibility in product development. For example, [12] reveals study of Scrum application peculiarities from theoretical and practical points of view in IT projects. The authors describe principles and Scrum concept and focus on defining role, meaning, and Scrum structure.

The implementation of Scrum framework for developing fundraising mobile applications is presented in [13]. The mobile application facilitates dissemination of fundraising information, residents receive real-time notification system, and residents receive real-time notification system, and application allows people to easily make donations.

Paper [14] is devoted to creation of virtual reality mobile applications for learning English using Scrum methodology as new media tool. The authors present conceptualization of Scrum process. Thus, they consider process of developing "Game" in virtual reality applications in sprints form.

Now it is worth citing number of works that focus not just on implementation of these methods, but on their implementation for optimizing production flows.

The implementation of Lean optimization methods to improve production flows and manage cold storage and distribution at fruit center is presented in [15]. The authors show that by optimizing processes, it is possible to reduce or even eliminate waste, cut down on unnecessary movements, customize planning, maximize use of workspace, and level inventory levels. In addition, applying continuous improvement approach allows you to engage suppliers on broader level.

The introduction of Lean to optimize production flows in construction is presented in [16]. The authors reveal case of steel structure installation to study impact of Lean tools on productivity. They apply method of mapping flow

of actions important for production and observe possible improvements. The results of study indicate significant increase in productivity through application of Lean methodology, which may open up new prospects for optimizing production flows at construction sites.

The issues of Industry 4.0 and concepts of Lean and Agile production are discussed in [17]. The authors propose conceptual framework that shows relationship between these systems and their interaction with Industry 4.0. The study shows that Industry 4.0 supports both approaches and facilitates their implementation, in particular, by increasing competitiveness by reducing costs and increasing flexibility.

The issue of implementing Lean to optimize production flows with help of collaborative robots (cobots) and autonomous mobile robots (AMR) within Industry 4.0 [18]. The authors analyze concepts and methodology of Industry 4.0. The emphasis is on concept of lean manufacturing, which further contributes to elimination of missing or low added value in company's production flows.

The issue of implementing Kanban to optimize inventory levels by minimizing inventory holding costs and backorders is described in [19]. The authors propose development of model for improving Kanban system in manufacturing industry using various optimization methods, taking into account obstacles associated with operation of bottlenecks. Therefore, issues of implementing industrial model to improve system by minimizing delays and cost of work in progress in product flow at limited access point with Kanban production scheme are revealed.

The issue of implementing Scrum framework for Web development of salted egg production map is presented in [20]. The authors consider creation of sprint planning, which can speed up development process because with implementation of Scrum framework, process of developing Website for mapping production of salted eggs can be solved faster, since all Scrum teams are involved in process of completing work.

In recent years, methodologies for optimizing production flows, such as Kanban, Scrum and Lean, have gained great popularity among companies of various sizes and industries. Analysis of available literature confirms growing interest in optimizing work and implementing modern methodologies for optimizing production flows. Articles and studies on Kanban, Scrum, and Lean provide valuable insights into their effectiveness and capabilities in various business areas.

3. DISCUSSION

3.1 OVERVIEW OF KANBAN, SCRUM, AND LEAN BASIC PRINCIPLES.

In modern world of project management, including for optimizing production flows, there are several effective methodologies that are referred to as Agile and help improve product development and management processes. Among them, Kanban, Scrum, and Lean methods occupy special place, and they are now basis for many companies seeking to improve productivity and quality of their work.

Kanban is methodology aimed at managing inventory and workflow. Production processes can be visualized using Kanban boards, where each stage of production process is displayed as column and tasks or parts as cards. Kanban allows you to level work flow, avoid overloads and reduce waiting times and ensure stable work flow.

Let's look at each basic principles of these methods. Let's start with principles of Kanban:
1. Visualization of workflow (board with columns), because Kanban is Japanese term KAN – visible, BAN – cards on board (Fig. 1).

In Fig. 1 shows virtual board with cards on which tasks are written, which gradually move from one status to another. The main statuses in Kanban:
- To Do – development tasks (distributed by priority);
- In Progress – tasks that are currently being performed;
- Done – tasks that have been completed and "delivered" in product final version.

2. Limiting work in progress is key aspect of Kanban method. It is strategy that allows you to limit number of tasks that can be in workflow at same time. The main idea is to avoid workflow overload and maximize productivity.

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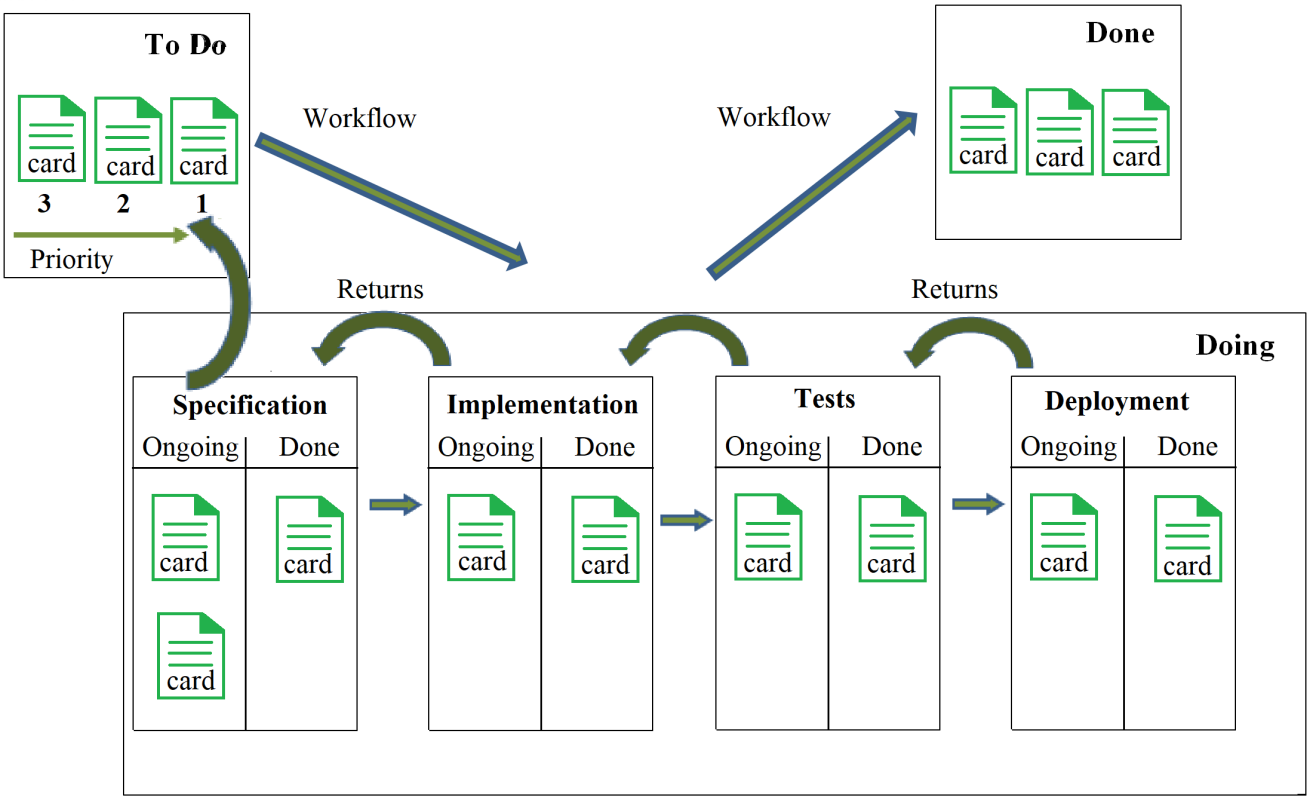

Figure 1. Visualize workflow on board in Kanban

3. Moving tasks between columns during execution. In Kanban method, tasks are moved between columns of process (To Do –> Specification ...) according to their status and progress. The initial task is usually created in "To Do" column or similar, and then, when team is ready to start working, it is moved to "Doing" or "In Progress" column. When task is completed, it is moved to Done column. Before moving task to next column, team can review and revise results. Communication about moving tasks is important to provide entire team with up-to-date information about workflow status.

4. Monitoring, adaptation, and optimization of process.
Teams continuously monitor progress and performance of their workflow using metrics such as completion rate, wait time, and other parameters. Based on this data, they adapt their methods and rules to improve efficiency. This may include changing constraints of work in process, optimizing sequence of tasks, and introducing new ideas to improve process. A constant cycle of monitoring, adaptation, and optimization helps team to continuously maintain and improve their performance.

5. Measurement of task life (lead time, cycle time, etc.).
Measuring task lifetime, such as lead time and cycle time, are key to effective process management in Kanban method. These metrics provide team with information about productivity and efficiency of workflow.

When considering Agile methods, from which many modern approaches to optimizing production flows, including Kanban and Scrum, are derived, we can focus on Scrum key principles that are common to Kanban methods. Scrum can be used to optimize production flows, especially in context of product development or manufacturing, where processes are iterative.

For example, Scrum can be used for task allocation, so production tasks can be broken down into short iterations, so-called sprints, each with clearly defined goals and objectives. This allows team to focus on specific goals and improve transparency in production processes. Scrum can be used for planning and progression. Daily stand-ups (daily meetings) help team track progress, identify possible problems, and respond quickly to them. This helps to improve coordination and management of production process. Scrum can also be used to implement changes, as Scrum allows team to quickly adapt to changes in production environment.

It has been determined that workflow visualization is general Agile principle that allows teams to clearly see status of tasks and their progress.

Similar to Kanban, Scrum also suggests use of visual tools, such as Scrum board or Scrum tables, to display tasks and their status (Fig. 2).

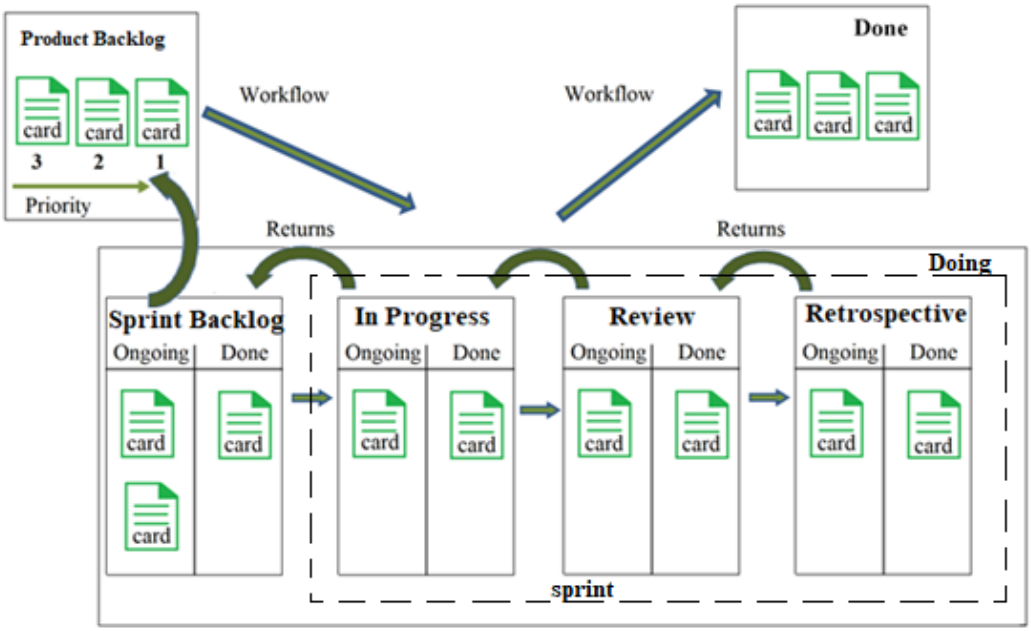

Figure 2. Visualize workflow on board in Scrum

Visualize workflow on board in Scrum
Scrum board consists of several columns, such as:
1. Product Backlog – list of all tasks that need to be done.
2. Sprint Backlog – tasks that team plans to complete in current sprint.
3. In Progress – tasks that are currently being worked on.
4. Review – completed tasks that are waiting for review.
5. Retrospective – designed to collect comments, ideas, and insights from team based on results of sprint.

The "Retrospective" column on Scrum board is designed to collect comments, ideas, and insights from team based on results of sprint. Often, special cards of different color are used, where team members record their observations in such categories as:
- Went Well;
- To Improve;
- Action Items.

6. Done – completed and accepted tasks.
Further, limiting work in progress is another key aspect of Scrum, this is done by setting limits on number of items that can be included in each sprint, i.e. in "To Do" column.

So, in Scrum, there are certain restrictions on number of works that can be in "In Progress" state at same time. This limitation is known as "Work in Progress Limit" or "WIP Limit" and is used to prevent excessive multitasking and increase team efficiency. The basic idea is to allow team to fully focus on limited number of tasks at time instead of spreading their efforts across many different tasks.

WIP limit is usually set for each column on Scrum board, for example:
- "In Progress" column can be limited, for example, to 3 tasks at time;
- for "Code Review" column – 2 tasks at most.

Monitoring, adaptation, and optimization of process are important aspects of Scrum. Scrum involves regularly tracking progress and effectiveness of process through daily stand-ups where team synchronizes and identifies

obstacles, or sprint reviews at end of sprint to demonstrate results, or monitoring metrics and measures such as accumulated velocity, task cycle, etc. A sprint is limited period of time during which developers focus on completing fixed set of tasks.

Based on findings from monitoring and retrospective, team makes changes to optimize process in next sprint. The changes usually include:
- adjusting meeting times and working practices;
- introduction of new tools or techniques;
- revision of WIP limits or sprint size.
Thus, Scrum is iterative and flexible methodology. The idea is to continuously improve through small incremental changes instead of revolutionary transformations.

Let's move on to Lean, which is one of methodologies within Agile, focusing on identifying and eliminating unnecessary operations, losses, and waste in production process. It focuses on creating value for customer and minimizing costs, which can be achieved by optimizing processes and improving management.

The basic principles of Lean (Fig. 3):
1. Specify Value – "Define value from customer's point of view and express it in form of specific product or service".
2. Map Value Stream – "To map all steps, both value-adding and non-value-adding, required to deliver product or service to customer".
3. Establish Pull – "Ensure continuous flow of products, services, and information from beginning to end of process, with next stage starting only when it is needed".
4. Implement Pull – "Nothing is done at higher levels of process until next level signals need, i.e. actual demand "pulls" product/service through value chain".
5. Work to Perfection – "The complete elimination of waste (laboriousness) so that all actions create value for customers through breakthrough and continuous improvement projects".

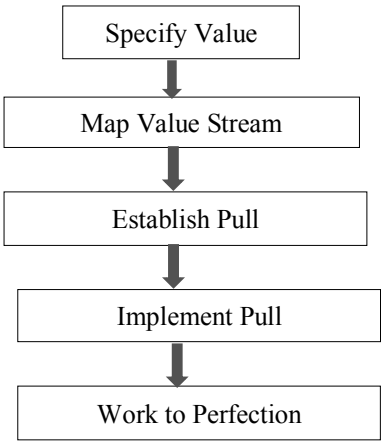

Figure 3. Visualize workflow in Lean

Losses that need to be identified and eliminated in accordance with Lean principles include: defects, overproduction, waiting, irrational use of human resources, transportation, excess inventory, unnecessary movements, and excessive processing.

Thus, while Scrum, Kanban, and Lean have their differences, they collectively help organizations achieve optimized production flows.

3.2 FEATURES OF AGILE AND LEAN CONCEPTS

Although Agile methodology is mainly associated with software development, its principles can be successfully adapted to manufacturing processes.

The Agile concept is based on:
1. Adaptability and ability to change.

2. Short planning and commitment periods facilitate flexibility and speed of response to change. The two main terms used for this are:

- Sprint Planning is Agile team meeting that takes place at beginning of each sprint. During this meeting, team discusses and plans work to be done during next sprint. It determines which tasks will be included in sprint and how they will be implemented;

- Daily Stand-up is daily short team meeting that is held standing up and usually lasts up to 15 minutes. Each team member reports on their progress, intentions, and any obstacles. This helps to ensure communication between team members, avoid delays, and solve problems quickly.

3. Increase collaboration and focus on delivering working product quickly for quick feedback and constant focus on people and interaction. Here, working product is more important than documentation, and people and processes are more important than tools. That is, cooperation with customer is more important than rigid contract.

The Lean concept is based on:
1. Considering entire process from system perspective – this means that focus is on entire system, how organization creates value for its customers. That is, not limited to development team; all steps that are required from initial idea to moment when customer receives product and organization makes profit are considered. The goal here is to improve this value stream so that product is delivered faster, more efficiently, and with higher quality.

2. Identifying ways to eliminate losses (switching between tasks; partially completed work and redundant functionality). Compared to Agile, where work should be done in short time (short cycles) and deliver more value faster, Lean emphasizes importance of limiting queues and thus preventing accumulation of work and provides concept of "pull".

3. Start new work only when it is possible to do it.

And together, Agile and Lean limit amount of work in process and offer to measure how much value has been delivered, not how much work has been done at all. The results of Agile and Lean comparison are shown in Table 1.

Table 1. Comparison of Agile and Lean concepts

Criterion	Agile	Lean
Focus	Agile software development.	Optimization of production processes.
Main goal	Timely delivery of working software product.	Eliminate all types of losses and optimize value stream.
Improving quality	+	+
Minimize costs	+/- (emphasis on creating flexible and fast teams. Iterative product development with constant client involvement).	+ (continuous elimination of losses (wastage) to maximize customer value).
Increase learning opportunities	+	+
Continuous improvement	+	+
Empowering people	+	+
Key practices	Iterative development, daily meetings, retrospectives.	Value stream mapping, pull systems.
Methodologies	Scrum, Kanban, XP, FDD, etc.	Kanban, Kaizen, Six Sigma, SMED, etc.
The role of client	Close collaboration and regular feedback	Defining value from customer's perspective.
Orientation	Project-based, for product development.	Process, for production operations.

3.3 COMPARİSON OF KANBAN, SCRUM AND LEAN

Let's consider and compare three important methodologies: Kanban, Scrum, and Lean. Let's compare their unique features and advantages, paying attention to workflow optimization (Table 2).

Table 2. Comparison of Kanban, Scrum and Lean

Criterion	Kanban	Scrum	Lean
Origin	Toyota's production process management system.	Flexible software development methodology.	Toyota's lean manufacturing philosophy.
Main purpose	Optimize workflow and maximize efficiency.	Creating working product in each sprint.	Continuous elimination of losses and maximization of customer value.
Key practices	Workflow visualization, WIP limits, "pull" system.	Sprints, daily meetings, retrospectives, roles (Scrum Master, etc.).	Value stream mapping, pull system, Kanban, Kaizen.
Daily Standup	-	+	-
Planning	Constant prioritized backlog.	Defining scope for sprint, sprint backlog.	Long-term goals of production system.
Iterations	Constant workflow. No iteration	Fixed sprints. Time-based.	Continuous process improvement. No iteration.
Flexibility	High, you can add/change tasks at any time	Limited within sprint.	Continuous adaptation of processes.
Emphasis	Visualization and continuous flow of work	Value, teamwork, and Agile principles.	Eliminating losses, optimizing flow
Release	Kanban provides continuous delivery. In Kanban, new functionality can be released as soon as it's ready, without clear division into sprints or fixed release points.	After each sprint, there is small release.	The emphasis is on continuous delivery, which can be defined as "continuous".

From Table 2, we can conclude that all three methodologies have common goal – to improve efficiency and quality. However, they differ in origin, key practices, and scope.

Kanban focuses on optimizing workflows, Scrum on iterative software development in accordance with Agile, and Lean on continuous improvement of production processes and elimination of losses.

However, these approaches can complement each other. For example, Lean and Kanban are often combined, and Scrum elements are sometimes used in Lean projects.

3.4 RESEARCH RESULTS

When choosing method among Kanban, Scrum, and Lean, there are several key factors to consider:

1. Project type:

- Kanban – projects with stable requirements and few changes;
- Scrum – dynamic projects with frequent changes in priorities;
- Lean – projects where focus is on efficiency and elimination of unnecessary costs.

2. Scale of production:

- Kanban is most effective for small production scales, such as small teams or departments, Kanban can be particularly effective because it allows for real-time management of tasks and priorities without requiring complex procedures or infrastructure. However, Kanban can be effective at variety of production scales, from small local teams to large multinational enterprises;

- Scrum – medium or large production, but its application may vary depending on specific conditions and needs of organization (in small and medium-sized teams. In such conditions, Scrum can provide flexible and iterative approach to product development, facilitating rapid implementation of changes and response to market requirements; in large organizations, Scrum can be effective at different levels; global and distributed teams, and here Scrum can be effective even when teams are located in different geographical locations);
- Lean – can be effective at any scale of production, from small enterprises to large corporations, but is usually suitable for medium and large teams.

3. Dynamism:

- Kanban – may be less effective for projects where strict time regulations are required or where dynamism of production flows is high;
- Scrum – ideal for product manufacturing or project development where you need to react quickly to changes;
- Lean – in dynamic production environments, Lean can be particularly useful as it allows for rapid response to changes and process improvement to produce products at lower costs.

4. The level of process standardization:
- Kanban and Scrum are more flexible and allow for more individualized approaches to optimizing production flows;
- Lean – emphasizes standardization of production processes to ensure efficiency and predictability.

5. Production values and norms:
- Kanban is conservative or less flexible culture;
- Scrum – open and collaborative culture;
- Lean – focuses on culture of continuous improvement and process improvement.

6. The level of customer involvement:
- Scrum – involves more active customer involvement and more frequent feedback, which can be important for processes with high degree of uncertainty or those that require frequent adjustments;
- Kanban and Lean – may be more suitable for production, where requirements for stability or customer activity are lower.

Therefore, when choosing between Kanban, Scrum, and Lean methodologies, number of key factors related to production and organizational context must be taken into account:

- characteristics of production (type of production, namely stable requirements or frequent changes during implementation; level of process standardization, which can be more flexible or with emphasis on standardizing production processes; frequency of changes and need for flexibility in adapting to these changes);

- scale of production, which can be small, large or global and distributed;

- production values and norms – cultural characteristics of company, such as conservative approach, openness to change, or focus on continuous process improvement.

A careful analysis of these critical factors will help you choose most appropriate methodology that best suits your production. The right choice will ensure optimal efficiency, quality, and timeliness of finished product.

Based on study [21-27], we can provide general information on use of these methodologies for optimizing production flows in form of diagram (Fig. 4).

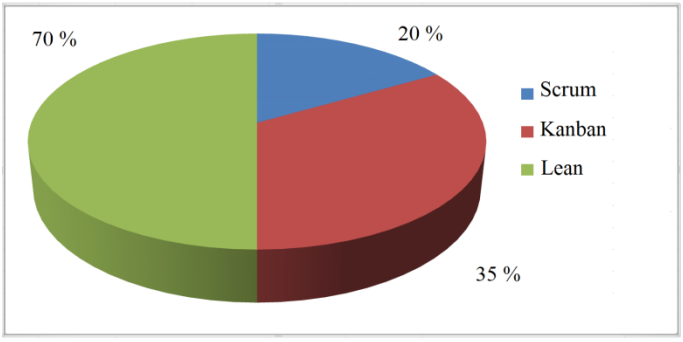

Figure 4. Using Kanban, Scrum and Lean

Scrum is widely used in many companies around world. The Scrum methodology was originally developed for IT industry, but recently it has also been implemented in manufacturing companies. However, its share in manufacturing is still relatively small – about 10-20 %, mainly for new product development projects.

Kanban is also gaining popularity as more flexible method of managing flow of work. It is often used alongside Scrum or as alternative. The share of companies that have implemented Kanban can be around 25-35 % and is also continuing to grow.

Lean is more general concept of improving process efficiency that is used in manufacturing, logistics, and other areas. It is difficult to quantify share of companies using Lean principles, but it is significant in many industries. In general, it can reach 50-70 % and is expected to continue growing in 2024.

But exact percentages may indeed vary depending on industry, region, company size, and other factors. As guide to which methodology may be more appropriate, based on above factors, Kanban is more suitable for processes with stable requirements, small teams, and infrequent changes, while Scrum is more suitable for dynamic processes with frequent changes, medium to large teams, and need for structured approach. Lean is focused on efficiency, elimination of losses, and continuous process improvement, regardless of scale of production.

Ultimately, choice should be determined by specific needs of production and context and culture of organization. Particular attention should be paid to optimizing production flows and processes.

These methodologies can complement each other, and organizations can adopt hybrid approach by combining elements from different methodologies (e.g., Kanban and Lean, Scrum and Kanban).

Regardless of chosen methodology – Kanban, Scrum or Lean – it is extremely important to continuously monitor, adapt and optimize adopted approach throughout product life cycle. This is necessary to maintain effectiveness of chosen methodology and its compliance with changing needs of both production itself and organization as whole.

Monitoring involves regular collection and analysis of key metrics and indicators that reflect progress and performance of production, which allows for timely identification of any problems, bottlenecks, or areas for improvement.

Adaptation involves flexibility to adjust processes, practices, and tools in accordance with data obtained from monitoring, which may include changing way team works, revising limits on amount of work in process, optimizing sequence of tasks, etc.

Optimization is logical consequence of monitoring and adaptation, aimed at continuously improving chosen approach, and this is achieved by implementing improvements based on experience, best practices and new ideas to increase process efficiency.

Cycle of continuous monitoring, adaptation, and optimization is essential because no production is static. Requirements, resources, priorities, and environmental conditions are constantly changing. Commitment to this cycle ensures that chosen methodology remains relevant, effective, and best suited to current needs of both production and entire organization.

4. CONCLUSION

In conclusion, it is worth noting that choosing right methodology for optimizing production flows, whether Kanban, Scrum or Lean, is crucial to success of any organization in today's dynamic environment. The right methodology helps to optimize workflows, increase resource efficiency, and ensure timely delivery of high-quality products and services.

Kanban focuses on visualizing flow of work, setting limits on volume of unfinished tasks, and principle of "pulling" work as resources become available. This methodology is best suited for industries with stable requirements and small scale.

Scrum, based on principles of Agile development, focuses on iterative implementation of requirements in form of short cycles (sprints). It has proven itself well for productions with frequent changes that require close teamwork. Lean aims to continuously improve processes by eliminating losses and optimizing customer value stream. This methodology can be applied to production facilities of any scale focused on improving efficiency and quality.

The choice should take into account specifics of production, scale, production values and norms, and frequency of changes. There is no universal ideal solution – it all depends on specific context. Moreover, it is possible to combine different methodologies to create hybrid approach.

Regardless of chosen path, it is crucial to constantly adapt and optimize adopted methodology through monitoring, taking into account lessons learned, and timely adjustments to processes. This is key to its relevance and compliance with changing conditions of production.

This paper presents chart with percentage of Kanban, Scrum, and Lean usage in period from 2019 to 2023. Studies have shown that Kanban is gradually gaining popularity as alternative or complement to Scrum, but is still inferior to it in terms of prevalence. Lean has fairly wide application, being most popular in manufacturing and logistics. According to some studies, share of companies that use Lean to some extent can reach 50-70 % and continues to grow. As result, we can say that use of Scrum in manufacturing is less widespread than Kanban and Lean.

The competent application of advanced methodologies for optimizing production flows, such as Kanban, Scrum and Lean, as well as their continuous optimization, is key to organization's high competitiveness in market and its ability to provide quality products that meet customer requirements in timely manner.

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