Assessment of digital maturity of enterprises

D.A. Levaniuk¹, M V Bolsunovskaya², S V Shirokova² and A M Gintciak²

¹StudyFree Inc., Delaware, the USA, marina.bolsunovskaia@spbpu.com
²National Technology Initiative Center for Advanced Manufacturing Technologies based on the Institute of Advanced Manufacturing Technologies of Peter the Great St. Petersburg Polytechnic University Polytechnicheskaya, 29, St.Petersburg, 195251, Russia

Abstract. The project management methodology is an approach to the formation of a set of methods that structures the project management system and is reflected in the manuals. The aim of the article is to increase the efficiency of IT project management by adapting existing management methodologies considering the characteristics of projects implemented in the company. Performing the following tasks allows to achieve the goal:
- review of existing methodologies;
- description of the object of study;
- identification of key features of IT project management in the company ООО «ITSK»;
- IT project management guidelines;
- application of a corporate standard as part of an IT project in the oil and gas industry.

The relevance of the article is explained by the wide distribution of IT projects of various fields of application, including projects to automate the activities of an oil and gas industry company that require management throughout the entire life cycle. The application of the project management methodology allows you to record the goals and results of the project, give them quantitative characteristics, determine the time, cost and quality parameters of the project, create a realistic plan for the project, identify, assess risks and prevent possible negative consequences during the implementation of the project. In the course of the work, a brief analysis of the existing project management methodologies was carried out, the specifics of IT project management described, the adaptation of the methodology in the oil and gas industry and the description of the standard used within the company are reflected. Using an example of a project to automate monitoring of KPIs, the application of a corporate methodology based on best practices was demonstrated.

1. Introduction
In the 21st century, project management is one of the most popular ways to achieve the strategic goals of companies. Creating a unique result for a certain time interval with allocated resources allows you to better focus on the implementation task. Firstly, the effectiveness of the project participants is increasing, everyone is interested in achieving its success. Secondly, the predictability of the result is the advantage of project management. In the course of work, a schedule is compiled, divided into stages with specific start and end dates, possible risks. Thirdly, the company's activities become transparent, controlled and easily managed. When managing, specific results are indicated, the resources that are already spent or needed at further stages are fixed.

Proper project management, following the recommendations of existing methodologies, using the regulatory framework of standards allows us to achieve successful results. To get the most efficient
work in the midst of change, it is important not only to use best practices, but also to be able to adapt to the particularities of the organization of activities of enterprises in which projects are implemented.

2. Material and methods
The article is based on the analysis of existing approaches to the assessment of maturity and digital maturity and summarizes the data obtained from various sources. This section will briefly describe the methods that companies use in project management and strategy development.

2.1. Project management methodologies
The project management methodology is an approach to the formation of a set of methods that structures the project management system and is reflected in the manuals.
Standards in the field of project management are a combination of best practices and they are developed by examining successfully implemented projects, systematizing the information received and accumulating it in specialized reference books. This knowledge is formed sequentially over a long time [1].
Consider the main project management standards used in the world.
PMBoK, by far, is the most popular project management standard and is applied in almost all countries of the world. Historically, it is most popular in the countries of North and Central America (more than 70% of PMI members live in North America), as well as Southeast Asia, but it is no less popular and successfully used in Europe [2].
The PRINCE2 methodology is slightly less popular and is mostly used in European countries. Historically, it enjoys the greatest popularity in the UK, but is often used by American companies, especially in the field of oil production and refining[3].
The use of PMBoK in the PRINCE2 environment enriches PRINCE2 with valuable information, especially in the following areas that are missing or insufficiently strong in PRINCE2: Procurement Management, Human Resource Management, Earned Volume Method, Communication Management, Cost Management, Timing Management, Common Project Management Knowledge, including well-known terminology.
When using PRINCE2 in the PMBoK environment, PMBoK acts as a foundation on which the well-developed processes of the PRINCE2 methodology work, the latter can be considered as a structured checklist for project management.
Thus, an organization whose project managers use PRINCE 2, one way or another, needs additionally a more extensive methodology, such as, for example, the PMBOK Guide.
At the same time, the application of the PMBOK Guidelines requires a localized method for national and industry specifics, the same PRINCE 2 or another specialized standard.
ISO 21500: 2012 or its equivalent GOST R ISO 21500-2014 establishes more concise requirements that make it easier to develop an adapted corporate standard. At the same time, neither PMBOK nor PRINCE 2 ISO contradict.
Consider the distinguishing features of the most popular PMBoK and PRINCE2 standards used by the company for project management.
To apply PRINCE 2 and the PMBoK Guide at the corporate level, these standards require a process of adaptation to real conditions and an established management culture.
Thus, almost all standards applied to project management are based on two main PMBoK and PRINCE2. Companies are based on best practices and create their own corporate standards that suit their occupation and individual characteristics.
Despite the existence of a large number of different project management standards, all of them are aimed at fixing the purpose and results of the project, determining quantitative characteristics, determining the time, cost and quality parameters of the project, creating a realistic plan for the project, designating, assessing risks and preventing possible negative consequences during project implementation.
2.2. IT project management

The term "IT project" is usually used to refer to activities related to the use or creation of some information technology. This leads to the fact that IT projects cover a wide variety of areas: development of software applications, creation of information systems, deployment of IT infrastructure, etc. A project is a set of efforts undertaken to obtain specific unique results within the allotted time and within the approved budget, which is allocated to pay for resources used or consumed during the project. An IT project is a separate set of interrelated activities aimed at creating or substantially changing the totality of hardware and software tools aimed at automating business processes for managing an enterprise / company under temporary, resource, financial, and technical constraints [8].

On the other hand, they have well-known distinctive features:

- Separation at the ideology level of the customer and the contractor: the customer, as a rule, is a business, and the contractor is IT specialists, and there are difficulties in identifying requirements, expectations from the project, in the formation of technical specifications. There is also the problem of effective communications.
- Responsibility for the result of the project has a “joint” character. That is, one cannot assign responsibility for the success of the project only to the contractor, just as one cannot say that the customer is solely guilty of the failure of the project. The IT project must create certain conditions for the interaction of the parties, and the parties involved in it bear equal responsibility for the results of the project; often the implementation of the IT project involves changing the existing organizational structures in the enterprise;
- Typically, many organizational units are involved in an IT project.
- There is a high likelihood of conflicts between the project manager, senior management, department heads, and organization personnel.
- Many IT projects have huge budgets. In large companies, the scale of project activities in the field of information technology (IT) is measured in millions of dollars, and the implementation of new projects is ongoing. If, for example, it is enough to build an industrial enterprise once — and it will work without requiring regular investments, then the development of IT infrastructure in growing companies requires large and regular investments. Large budgets, in turn, imply a greater level of responsibility and, accordingly, a greater level of competence of those people who manage these projects.

The implementation of IT projects, requires following such features as:

- Often, at the customer’s company, several IT projects are carried out simultaneously.
- Priorities for the implementation of projects are constantly being adjusted.
- As the projects are implemented, the requirements and content of the projects are refined and adjusted.
- The influence of the human factor is great: the timing and quality of the project are mainly dependent on the direct performers and the communication between them.
- Each performer can participate in several projects; there are difficulties in planning creative activity; there are no uniform norms and standards.
- An increased level of risk remains, up to unpredictability of results.
- There is a continuous improvement of the technology of work [9].

Analysis of statistics shows that approximately 90 percent of IT projects are similar to those already completed. The project manager has experience in implementing such tasks and understanding of possible problems. In these cases, the hierarchical structure of the project and work (ISP / ISR) is formed using the Top-down approach (top to bottom), the typical structure of the project team is used, project plans (risk management plan, communication plan, etc.) are similar to the plans of previous projects [10]. However, 10 percent of projects are innovative, implemented from scratch and require creativity, innovative solutions and managerial courage. Decision-making in such projects is characterized by high risks, which requires the head of deep knowledge of the project management methodology and understanding of the features of its application in the field of information technology.

GOST 34 standard. “Development of an automated control system (ACS)”

One of the widely used is GOST 34. “Development of an automated control system (ACS). This standard was created to record the results of the work performed.
According to GOST 34.601-90, the life cycle of the process of creating an ACS consists of certain stages [11]:
- Formation of requirements for speakers.
- Development of a speaker concept.
- Terms of Reference.
- Draft design.
- Technical project.
- Working documentation.
- Commissioning.
- Speaker support.

2.3. Description of the current standard for managing IT projects using the example of an oil and gas company

In the course of the work, referring to the enterprises of the oil and gas area, one of the companies developed its own corporate standard. In this paper, we will consider an aspect that relates more to project planning. In cases of IT projects, the probability of technological changes is high, so the project manager should clearly understand what actions and at what stages will be undertaken. In such situations, planning and preparation become crucial tasks, along with managing the project participants, choosing a technological solution, forming and using the budget.

Awareness of possible changes during the project in advance helps to avoid the risk of a shift in the timing of the start or implementation of the project, which is perceived extremely negatively by stakeholders and users.

One of the reasons for the failure of the project is the poor communication between the participants. As a result, the project manager should be able to manage all aspects of the project, quickly and clearly interact with participants to quickly resolve any problems that arise [12].

IT project management aims to successfully complete and get a business effect. Each group of project processes begins with initiation and should be as clear and transparent as possible for the performers. In cases where adjustments to the technical solution, selection of another contractor, change of concept, or failure to meet deadlines by suppliers, it is also necessary to maintain transparency of the process. Each stage and milestone of the project must have an actual start or end date. Thus, management, in particular IT project, requires constant monitoring of compliance with the plan.

The methodology of the company's IT projects corresponds to:
- the approach adopted by the GPN to the implementation of projects;
- best practices of international oil companies;
- standard GOST 34 601-90.
- The best IT project management methodologies contain the following key elements:
  - stages and gates;
  - tasks and results of the stages;
  - role model.

The focus on obtaining business benefits as part of a single and transparent project management process is key in the implementation of projects.

This standard describes the basic rules of IT project management for:
- focus on obtaining business effects, as part of a single and transparent project management process;
- increase the degree of satisfaction of business requirements;
- rational use of internal and external resources, as well as effective planning and implementation of project tasks;
- project risk and deviation management;
- increasing the guarantee of obtaining the declared results of projects;
- ensuring compliance with the terms, budget and scope of the project.

To achieve these goals, the following guidelines have been introduced:
- Improving the manageability of the project by breaking it into successive stages;
• Phased implementation of the project and reducing the level of uncertainty of project parameters (timelines, budget, volume of tasks);
• Phased detailing of requirements and control of their satisfaction;
• Use of external expertise to ensure the quality of project results;
• Use of previous experience;
• The materiality of deviations of project parameters.

Guidelines
Consider implementing the guidelines in more detail:
1. Improving the manageability of the project by breaking it into successive stages.
   To increase the controllability of achieving results, all project activities are divided into stages. The stages of the project are carried out sequentially. This provides an opportunity to stop the implementation of the project at any stage, if its further implementation is deemed inappropriate.
   Each stage is implemented as part of the Deming cycle (PDCA approach): stage work planning (“Plan”), stage work (“Do”), verification (“Check”), improvement, decision making (“Act”).
   Each stage of the project ends with the adoption of one of the decisions:
   • Finalize the project results;
   • Pause the project;
   • Cancel the project;
   • Go to the next stage of the project.
   The work of the stage begins after a decision is made on the transition of the project to this stage.
2. Phased implementation of the project and reducing the level of uncertainty of project parameters.
   Staging is an uncertainty management tool. The work of the stages is aimed at increasing the value of the project and reducing the level of uncertainty of project parameters (time, budget, amount of work).
   Achieving the required level of uncertainty of the project parameters (timelines, budget, volume of tasks) and the project value is confirmed by the results of the stage.
3. Phased detailing of requirements and control of their satisfaction.
   Particular attention in the project should be given to the conceptual development of an IT solution. Choosing the right project implementation concept is critical to project success.
   At the stages preceding the direct implementation of the IT solution, a consistent study of the requirements for the IT solution delivered by the Project is carried out.
   When forming requirements, it is important to determine the circle of stakeholders of the project, reflecting them in the organizational structure of the project, and take into account the requirements of all project participants.
   At the stage of "1. Evaluation "defines the objectives of the IT project according to SMART criteria (specific, measurable, achievable, relevant, time-limited), business requirements, the process and organizational scope of the IT project, at stage“ 2. Choice "solution architecture with approval by the Technical Council, requirements for the subsystems and components of IT solutions, at the stage of" 3. Definition »detailed requirements for an IT solution.
   Throughout the project life cycle, the compliance of requirements of different levels to each other is monitored.
   Compliance with the requirements of all levels should be monitored (the requirements for examinations are described in clause 6. “Project implementation process”).
4. Using external expertise to ensure the quality of project results.
   In most cases, external experts (in relation to the project team) are involved to ensure the quality of the project results and individual stages of the project. Based on the results of the examination of the project results, either quality is confirmed, or recommendations are given for their refinement.
5. Use of previous experience.
   In the course of the project activity, the experience and results of already implemented projects are actively used, including the replication of best practices, the use of ready-made results as a basis for developing and preventing the repetition of mistakes.
6. The materiality of deviations of project parameters.
   If there are significant deviations from the project, the Project Manager submits the project for reapproval to the level of the body that made the decision to launch the project - IC.
Stage works that do not lead to significant deviations are not suspended unless otherwise approved by the decision of the UKP.

Significant deviations from the project include any of the following:
- by time: increase the duration of the project / project phase by a period exceeding the possible assumptions (the ratio of the planned duration of the project to the projected duration (in days)).
- by budget: increasing the ratio of the planned budget of the project to the forecast budget of the project.
- in terms of the volume of tasks to be solved: changing / expanding the goals of the project, changing the functional or organizational volume of the project (the volume of tasks to be solved).

Choosing the right project implementation concept is critical to project success. The ability to control project costs varies significantly from stage to stage. A significant influence is exerted in the early stages, when major design decisions are made and actual costs are small. At the “implementation” stage, the bulk of the actual costs occur, and the ability to influence them practically disappears. Project life cycle.

When carrying out projects, four consecutive stages are distinguished:
- Evaluation;
- Choice;
- Definition;
- Implementation;
- Development and implementation;
- Experimental-industrial exploitation;
- Completion.

**Figure 1.** Each stage is aimed at solving a specific problem and corresponding solutions.

The key decisions are at stages “2. Choice” and “4.1 Development and implementation”: 
- ”2. Choice” - Making the final decision on investing;
- ”4.1 Development and implementation” - Decision-making on the readiness to use an IT solution.

Tasks and results of the stages.
Each stage has its own task and results, the receipt of which provides a solution to the task of the stage. The achievement of the results of the stage is documented in the form of a package of documents for decision-making.

Role model
In the applicable standard for project management, key roles are identified:
- Single responsible person: the employee responsible for the implementation of the project and for achieving the goals and key performance indicators of the project.
- Stakeholder of the project: the employee, whose functions and business processes can positively or negatively affect the results of the project and which can influence the project and its results.
Customer: a unit (manager) interested in the implementation of the project, initiating its formation for subsequent approval and carrying out strategic project management, responsible to the IC for achieving the project goals.

Investment body (IC): a permanent collegial body that makes decisions on the launch of the project (the feasibility of implementation, taking into account the volume, cost and timing).

Project Steering Committee: the collegial body of the project, monitoring the progress of the project and its strategic leadership.

Project manager: an employee of the organization responsible for the implementation of the work and activities provided for by the investment project, taking into account the planned time and the assigned budget and resources and endowed with the necessary authority.

Project team: a temporary team consisting of workers from various fields of activity, organized for the implementation of the project.

Group of expert assessment: an external (in relation to the project group) group of persons having sufficient competencies and authority to conduct an examination of the results of the project stage and to develop recommendations for improving their quality.

**Table 1. Role model**

| After-sales service: an organization that provides technical support for software under a service agreement with the Company. | PMBoK | Company standard | PRINCE2 | GOST.34 |
|---|---|---|---|---|
| Stages (phases) of the life cycle | Initiation: Planning; Organization of execution; Control of execution; Completion. | Evaluation; Choice; Definition; Implementation; Development and implementation; Experimental-industrial exploitation. Completion; | Start of the project Initiation of the project Project management Stage boundary management Stage control Product Supply Management Closure of the project | Formation of requirements Concept development Terms of Reference Draft design Technical project Working documentation Commissioning Support |
| Key roles | Customer; Project manager; Project team; Contractor; Project management team; Sponsor; Sources of influence; Project Management Office. | Customer; Project Manager; Project team; Common responsible person; Investment committee (IC); Project Steering Committee; Stakeholder of the project; Peer Review Team; Service group | Customer; Project manager; Design team; Consumer Supplier; Administrator; Project team. | - |
After-sales service: an organization that provides technical support for software under a service agreement with the Company. Criterion

| Application features | PMBoK | Company standard | PRINCE2 | GOST.34 |
|----------------------|-------|------------------|---------|---------|
|                      | Doesn’t give clear practical ones. Explains which parts of the process may be included depending on the situation, describes inputs and outputs, results and tools. Suitable for most projects as a universal guide. Redundancy of documentation; Difficulty for small projects; The need for adaptation to the field of application | Used to implement IT projects in a group of companies in the oil and gas industry. | Applies to all managed elements of the company. Three-level project management, a clear distribution of tasks between participants. A clear sequence of steps (steps) for a number of repetitive processes. It is used where constant monitoring of processes is required, due to large losses due to failure, in the implementation of large projects that are closely monitored by management in government agencies. Non-universality - the complexity of application in an environment with high uncertainty and poor communication between the management and the executors (for example, due to the independence of the executing team). Excessive bureaucratization is inherent. | It is used in the fields of automated systems (AS) and applies to AS used in various fields of activity (management, research, design, etc., including their combination), the content of which is information processing. |

The materials of table 1, we can draw the following conclusions:

The project life cycle in the standard of the company considered during the work does not contradict those described in the PMBoK, PRINCE2 and GOST 34 methodologies. However, IT projects involve the creation / refinement / use of an information system, therefore it is advisable, to a greater extent, to use the stages from GOST. 34.

The definition of the project in the methodology used in the company is similar to the others and includes both the general features of the project (the concept of uniqueness) described in the American and British standards, as well as the features of the IT terminology used in GOST. 34.

The standard within the company is collective. The peculiarities of conducting IT projects are borrowed from GOST. 34, but the corporate management system considered to a greater extent is based on the existing PRINCE2 and PMBoK methodologies.

The description of the key roles in the standard applied by ITSK LLC represents the common between PRINCE2 and PMBoK, but also highlights the distinctive inherent roles of the enterprise, such as the Investment Committee, the Single Responsible Person (EOL).
PRINCE2 focuses on key roles and their responsibilities. The British standard provides step-by-step instructions on project management, concretizes the processes. This methodology is prescriptive. Unlike PRINCE2, PMBoK is a recommendation only. A common body of knowledge that emphasizes project management tools and techniques. Provides a common understanding of process control in accordance with the entire spectrum of emerging situations.

The applied management processes in ITSK LLC are defined in the Charter of the project and comply with the recommendations on the application of the PMBoK management processes discussed in APPENDIX D.

Organization of IT project management in the company clearly demonstrates the application of the following areas of knowledge: Management of integration, content, project timing, cost, quality, human resources, communications, risks and procurement.

The distribution of processes occurs not only in areas of knowledge, but also in the phases of the life cycle: Assessment, Selection, Definition, Implementation. In addition, each region has a low, medium or high degree of importance at a certain stage of the LC project.

Despite the existence of minor differences, the corporate project management system is based on the base of best international practices.

Thus, the symbiosis of the methodologies considered provides new opportunities in managing IT projects in the Information Technology Service Company.

2.4. The key role of checkpoints in project management

The weakness of the project management can be considered a low level of control over compliance with the schedule, as well as insufficient control over the actions of the contractor, which also lead to delayed deadlines.

The company under consideration, using well-known methodologies, has key features that allow us to achieve our goals and easily control the processes in stages. One of them is the use of control points throughout the project.

Checkpoint (ChP) - a project event related to the receipt of any project result (isolated / product element of the project).

Milestones reflect project progress based on key deliverables.

Project management based on control points allows to:

- Improve the reliability of the evaluation of the intermediate results of the project.
- Focus on key project results.
- Assess the dynamics of the project to achieve intermediate results.
- Carry out an assessment of the risks of passing ChP and forecasting the timing of the implementation of ChP.
- Analyze the passage of ChP based on statistics.

Type ChP - allows to separate different types of ChP ("stage", "financial", "grocery", "atypical").

| Type                   | Description                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stage ChP             | ChP stages of the life cycle of the project; required in every project; are formed at the time of the start of the project.                                                  |
| Financial ChP         | comply with acts under the project contracts; contain information on planned and actual costs of the project and the deadlines for acceptance of work; are planned and updated from the “Assessment” stage through the project budget. |
| Product ChP           | ChP of the project results; reflects the creation of a project product; the results of product ChP are material in nature and are confirmed by documents; initially planned at the Assessment stage. |
| Not typical ChP       | ChP of the operational control of the project; can be formed at each stage without restrictions.                                                                          |
Management based on ChP allows to combine the traditional management approach based on the control of the stages of the project roadmap and budget with details regarding the creation of the project product. To shift the focus of management from fulfilling tasks to achieving project results.

The role model of ChP allows to provide differentiation of powers when planning, evaluating the forecast of terms for achieving ChP and accepting the results of ChP.

ChP life cycle - allows you to monitor the state of the ChP (“draft”, “in work”, “completed”, “completed”).

ChP weight - a sign of “importance” of the result associated with the control point (“high”, “medium”, "low", the greater the weight of ChP, the more important result is associated with this ChP).

The deadline for the implementation of ChP is the date of the planned / forecasted / actual implementation of the ChP.

Indicators - reflect the status of the implementation of the ChP (“in operation”, “forecast of failure to meet the deadlines”, “overdue”, “completed”, “confirmed”).

The distribution of key points in stages with deadlines, results, as well as additional information, for example, the number of contracts, applications, indicating the name of the counterparty forms a road map.

The ChP role model is based on several mandatory roles with its own set of ChP tasks:

Owner - launches ChP to work, manages the planned date of ChP, agrees the changes for ChP. Basically, the project administrator.

Responsible - a project participant who is responsible for obtaining a result related to ChP (forecast and fact of ChP implementation). In general, the project manager.

Receiver - an employee confirming receipt of the result by ChP (IT architect, Business Analyst of the project).

The life cycle ensures the sequential passage of the following conditions of “draft”, “in work”, “completed”, “completed” ChP.

Changing the planned dates, launched by ChP, is possible only through a change request with confirmation of the change by the ChP Owner.

To confirm ChP, one Receiver can be involved, as well as several Receivers within the framework of the Checklist for the approval of the results of ChP (see Figure 2.10).

Determination of achievement of the project result by control points:

Each “product” and “step-by-step” KTP creates a contribution to the achievement of the stage results taking into account its weight.

\[
\text{Contribution of one ChP to} \% \text{ of project completion} = \text{ChP weight} \times \text{Stage Weight} / \text{Total Stage ChP Weight}
\]

\[
\% \text{ completion of the project} = \sum \text{Contributions of each ChP in} \% \text{ of completion of the project.}
\]

In the general case, the weight distribution of ChP at each stage of the LC is shown in Figure 1. It should be noted that weights may vary at the “Assessment” stage, depending on the project concept.

### Table 3. Composite formulation.

| Stage                | Weight, % | ChP           | Weight, 0-4 | Status ChP | Result, % |
|----------------------|-----------|---------------|-------------|------------|-----------|
| 1. Evaluation;       | 5         | ChP№1         | 1           | 1          | 0,625     |
|                      |           | ChP№2         | 3           | 1          | 1,875     |
|                      |           | ChP№3         | 2           | 1          | 1,25      |
|                      |           | First Stage ChP | 2     | 1          | 1,25      |
| 2. Choice            | 10        | Second Stage ChP | 2     | 1          | 10,00     |
| 3. Definition        | 15        | ChP№4         | 2           | 0          | -         |
|                      |           | ChP№5         | 3           | 0          | -         |
|                      |           | Third Stage ChP | 2     | 0          | -         |
| 4.1. Development and implementation | 40 | ChP№6         | 0           | 0          | -         |
|                      |           | ChP№7         | 3           | 0          | -         |
|                      |           | Fourth (1) Stage ChP | 3 | 0          | -         |
| Stage                              | Weight, % | ChP   | Weight, 0-4 | Status ChP | Result, % |
|-----------------------------------|-----------|-------|-------------|------------|-----------|
| 4.2. Experimental-industrial exploitation | 20        | ChP№8| 2           | 0          | -         |
| Fourth (2) Stage ChP              |           |       |             | 3          | 0         | -         |
| 5. Completion                     | 10        | ChP№9| 2           | 0          | -         |
| Fifth Stage ChP                   |           |       | 3           | 0          | -         |
| Final result,%                    |           |       |             |            | 15%       |

Based on the selected criteria for comparison, it was concluded that despite the existence of minor differences, the corporate project management system is based on the best international practices, but has key features. For example, the control points considered in more detail necessary to track the status of the project and create a picture of the implementation of each of the stages.

An analysis was carried out to identify the key features of the two most widely used: Code of Knowledge PMBoK and PRINCE2. Despite the existence of a large number of different project management standards, all of them are aimed at fixing the purpose and results of the project, determining quantitative characteristics, determining the time, cost and quality parameters of the project, creating a realistic plan for the project, designating, assessing risks and preventing possible negative consequences during project implementation. In addition, the standard GOST. 34, which is used in projects to create automated systems of various fields of activity, was described.

3. Conclusion
Comparison of methodologies in the main part showed that the standard operating within the company standard is a symbiosis of the best world practices, which takes into account the scope of the company and has individual characteristics. So, in addition to the guidelines, role model, life cycle stages, control points were described. Reference points allow to track the status of the project at any time and see a transparent picture of the project. In addition, ChP-based management allows to combine the traditional management approach based on the control of the stages of the project roadmap and budget with details regarding the creation of the project product. In the research work, examples of types of control points, responsible roles, life cycle were described. Based on the results of the analysis, a list of recommendations for managing IT projects implemented within the company methodology was formulated.

References
[1] Denisenko V I 2015 Project Management: Textbook. allowance Vladimir: Publishing House of VlSU p 108.
[2] Guide to the Project Management Body of Knowledge (PMBOK Guide) (Sixth Edition - Project Management Institute) p 978.
[3] Andy Murray, Nigel Bennett, John Edmonds, Bob Patterson, Sue Taylor and Graham Williams 2017 Managing Successful Projects with PRINCE2 TSO Publishing House p 400.
[4] Joseph Higney 2018 Fundamentals of project management: Classical management From Mann, Ivanov and Ferber p 240
[5] Dzhuraev E Sh and Persod N L 2016 Mechanics of project management. Management Methodology Research Institute of KPU p 290
[6] Matveeva L G and Nikitaeva A Yu 2016 IT project management, textbook allowance Publishing house of the Southern Federal University p 288
[7] Afonin A M 2016 Project Management (M. : Forum) p 184
[8] Zharova M, Shirokova S and Rostova O 2019 Management of pilot IT projects in the preparation of energy resources E3S Web of Conferences
[9] Bolsunovskaya M, Shirokova S, Loginova A and Uspenskij M 2019 The development and application of non-standard approach to the management of a pilot project. *2019 IOP Conference Series: Materials Science and Engineering*  

[10] Kulikova L L 2017 Features of evaluating the effectiveness of IT projects *Bulletin of Irkutsk State Technical University* p 7  

[11] GOST 34. Development of an automated control system (ACS).  

[12] Knowledge Base: IT Project Management (5 challenges and their overcoming URL: https://it-guild.com/info/blog/upravlenie-it-proektami-5-vyzovov-i-ikh-preodolenie/ appeal date 05/11/2020)  

[13] GOST 34.003-90 Automated systems. Terms and Definitions.  

[14] Kazak A Yu 2018 Modern methods for assessing project risks: traditions and innovations *Vestnik Ural Federal University. Series Economics and Management* p 13