

Project Management Methods, Methodologies, and Frameworks: An Exploration for Study Guild for Project Management Practitioners of Ghana

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Abstract

Project management is driven by cost minimization, on-time project delivery, quality project deliverables, and stakeholder satisfaction. As a result, the demand for increased project management effectiveness in the early phase of the project process to enhance the project success rates and decrease project failure rates is increasing among project professionals. The purpose of this quantitative, correlational study was to evaluate the relationship between project management effectiveness and project success based upon responses from a sample comprised of 110 project managers from the Project Management Institute Consulting Community of Practice (PMI-CCoP). The study, which was informed by the scientific management and strategic management theory, used 2 existing valid and reliable survey instruments, the Project Management Effectiveness Construct and the Project Success Assessment Questionnaire, to collect the data. Pearson product-moment correlation coefficient was used to evaluate the correlation between project management effectiveness and project success. Statistically significant ($p < .001$) and strong positive correlations (Pearson's r ranging from 0.51 to 0.72) were found between both measures of project management effectiveness and all four measures of project success. This study provides strong evidence that among project managers who are members of the PMI-CCoP, greater project management effectiveness is correlated with greater project success. From a positive social change perspective, these findings may help to advance project management knowledge. The results also may assist organizational leaders to achieve greater project success through improvements in project management.

Keywords: Project Management Methods, Methodologies, Project Management Practitioners

1.0 INTRODUCTION

Projects can be brought to a successful end in various ways. But the best and most popular project management methodologies, methods, and frameworks are always changing. New concepts appear all the time. An entire string of methods, tools, and techniques lies behind all successful projects. In fact, as a project management practitioner, you'll probably get to use more than just one of these during your life. However, project management methods, methodologies, and frameworks are not just for project managers. The entire project team must understand their usage, purpose, and basic terms. This will ensure that the whole process will go smoothly regardless of your choice. Remember that no project or team is the same. A methodology or framework that worked for someone else might not be the right one for you. That's why it's best to test how you can use them for your own projects. We created this extensive guide for beginners to help you pick the project management methods, methodologies, and frameworks that will fit all your needs according to your industry and project objectives. In the last part of the article we mentioned some methods, methodologies, frameworks, guides, and other approaches that are sometimes debated in a project management context but are incorrectly labeled as project management methodologies. We also reached out to a couple of project management experts to offer you a practitioner's opinion on them.

2.0 LITERATURE REVIEW

The difference between methodologies, frameworks, and methods has always been a highly-debated subject, even in fields like Research and Architecture. To help you understand these terms, let's first have a look at the following definitions:

Method: The Merriam-Webster Dictionary defines a method as "a procedure or process for attaining an object: such as a systematic procedure, technique, or mode of inquiry employed by or proper to a particular discipline or a systematic plan followed in presenting material for instruction". In other words, a method refers to a single action, tool, technique, process, or way of doing something.

Methodology: Looking again at the Merriam-Webster Dictionary for consistency, a methodology is "a body of methods, rules, and postulates employed by a discipline; a particular procedure or set of procedures". Essentially, a methodology is a collection of methods, practices, processes, techniques, procedures, and rules. In project

management, methodologies are specific, strict, and usually contain a series of steps and activities for each phase of the project's life cycle. They're defined approaches that show us exactly what steps to take next, the motivation behind each step, and how a project stage should be performed.

Framework: According to the Merriam-Webster Dictionary, a framework is "a body of methods, rules, and postulates employed by a discipline: a particular procedure or set of procedures" or "the analysis of the principles or procedures of inquiry in a particular field".

Similarly, the Business Dictionary defines a framework as being a "broad overview, outline, or skeleton of interlinked items which supports a particular approach to a specific objective, and serves as a guide that can be modified as required by adding or deleting items". In the case of project management, a framework is an overview of how its guidelines should be implemented. While methodologies offer strict principles and practices for completing a project, frameworks are more flexible because they can adapt to changing situations or to a company's own needs, leaving room for the person in charge to find the best way of completing a project. You can also bring new existing methods or practices to the framework you're working with.

3.0 PROJECT MANAGEMENT METHODS, METHODOLOGIES, AND FRAMEWORKS

A number of studies have examined practitioner engagement with formal Continuous Professional Development (CPD) mechanisms and highlighted differing levels of engagement vis-à-vis professional roles. However, the nature of this difference had not been explained. It highlights that professions and professionals demonstrate unique characteristics, that professional competence is complex and that individual professionals must engage with learning and development in order to develop and maintain professional competence. The transformations that have occurred in the modern world due to technological innovation and new forms of work organization, with a progressively more unstable and flexible market, demand the implementation of models for the professional education and management of the workforce based on professional competences. In the project management sector, as a consequence of these changes, project management practitioners must constantly update their practices due to a requirement of project and project change with a unique profile and the necessary professional competence to fulfill a determined function or task, so that they can adapt to the new work demands.

The construction of professional competence is linked both to professional education acquisition and to informal learning processes that occur at different times and places. Saul Meghnagi, a constructivist representative, has studied professional competence since the late 1980s and is a proponent of a research model conducted in the professional development field, where the term competence can be defined as the acquisition of appropriate skills for the execution of a task, or the ability to decide, using acquired skills and knowledge, to perform in a particular situation. It can also be described as an articulate and complex combination of skills and capabilities that result from a conceptual and functional synthesis of theoretical aspects, linked to disciplinary contents and current experience. In this context, the professional competence becomes an important ally for industries, and it is for this reason that they seek professionals with advanced knowledge and behavioral qualities who are able to resolve problems.

The movement towards the adoption of professional competences, started in the 1960s and already common in the United States and in Europe, arrives timidly in Brazil, having its beginnings in multinational companies in the 1980s. The first wave of competences was successfully set up as a systematized process in hiring selection by making it possible to verify an individual's ability to fit the profile of competences of a defined work position or function.

Currently, in a context in which demands have been rising related to productivity and quality of services and products, professional competence has been approached as the sum of the American and European lines of thought; in other words, ascribed to the results of a determined function or task and to the characteristics of the person's profile, which can help ease the development of professional competences for the organization. Professional competence is affected by the organization's environment, and it shows a level of sophistication that is dependent on objective reality and the subjective ability to analyze and influence the environment, with the possibility of developing itself in various ways and in different locations which are not necessarily the ones designated for its formation.

In the project management field, professional competences is defined as a fundamental aspects for the formation of pedagogical projects and curricular design of projects management courses, guiding the formation of professionals. From this perspective, instruction based on professional competences is indicated as one of the strategies for the transformations that have been occurring in the working world, especially in development project management. In this sense, the theme of professional competence has been the focus of many project management professionals and practitioners, as well as of their organization, because human resources lies a possible solution to the greatest questions of development.

3.1 Institute of Project Management Professionals (IPMP)

The IPMP Professional Competence Baseline (PCB) is the Ghana standard for individual competence in project management, programme management and portfolio management. The PCB supports the development of individual competence through the presentation of a complete inventory of competence elements across projects, programmes and portfolios. IPMP's goals with Professional Competence Baseline (PCB) are simple: to enrich and improve the individual's competence in project, portfolio and programme management, and to provide an inventory of competences that, if fully realized, represent complete mastery of these management domains. Projects, programmes and portfolios are at the forefront of change in the world today.

Projects drive the development of new products and services, investments and expansion, capabilities, the implementation of new strategies and a new generation of infrastructure. PCB recognize that projects begin and end with people, and that competent execution is at the heart of every successful project. The burden has never been higher for project, programme and portfolio managers to produce measurable results on time, on budget, within scope and while meeting the quality criteria. The IPMP Professional Competence Baseline (PCB) competence standard is intended to support the growth of Project Management Professional's, individuals, and also of organisations as they grapple with increasingly competitive project environments in Ghana. The IPMP Professional Competence Baseline (PCB) describes a comprehensive inventory of competences an individual needs to have or to develop to successfully master the work package, project, the programme or the portfolio the individual is tasked to manage.

However, the Professional Competence Baseline (PCB) is not a 'how-to' guide or a cookbook for managing projects, programmes or portfolios. Therefore, it does not describe the processes or steps involved in project, programme or portfolio management. It stands beside of any other global standards focus more on the processes. To everyone who uses the PCB, we wish you a successful journey.

3.2 PRINCE2 (PProjects IN Controlled Environments)

PRINCE2 is a project management method that enforces the need to split project accountability between a board and a project manager. While the board's responsibility is to bring in the required resources and focus on business justification, the project manager handles all tasks and manages the team on a daily basis. PRINCE2 offers better control over your resources, increased risk management, defined team roles and responsibilities, an emphasis on the end user and the final product, a consistent approach to review cycles, organized plans, and controllable project management phases. This method contains all the needed tools, practices, and procedures that will favorably take a project from start to finish.

3.3 Critical Chain Project Management (CCPM)

The Critical Chain Project Management method focuses on a project's timing, reducing duration estimates, and calculating buffers, notifying activity completion, measuring progress, and setting priorities. Any project team that uses CCPM starts off by creating an initial project schedule. Then, based on resource availability, they establish the task dependencies and activities that must be completed so that the rest of the project can be finished successfully without any delay. This is the "Critical Chain". It's the longest path until the project's end after you've done resource leveling. All of the tasks that are part of it require special resource reserves and backup plans to ensure that nothing will postpone them. The schedule made using this method allows free time slots (known as project buffers) to be placed between these important (critical) tasks so that deadlines are met effectively. "CCPM encompasses much good practice but the seminal development concerns managing variability using aggregated buffers and the use of a management signalling tool (buffer management). This project management development is a natural extension to flow based systems management developments in manufacturing such as Kanban and Drum-Buffer-Rope.", remarks Roy Stratton, the author of Critical Chain Project Management Theory and Practice.

3.4 Critical Path Method (CPM)

The Critical Path Method can be used to establish the priority of a project's activities, reassign team roles, evaluate risks, and distribute resources accordingly. This method helps teams identify milestones, task dependencies, and deadlines with ease. To begin with, create a model of the project and add four elements: A list of the tasks that need to be completed, the duration of each task, the dependencies between activities, and the endpoint of a task. A Critical Path refers to a sequence of critical activities (dependent or floating) in a project that determines the longest succession of tasks that have to be completed on time in order for the project to meet the deadline. Critical activities aren't always the most important, difficult, or costly ones in a project. A task is considered "critical" if, when delayed, it influences the project's completion time. The system will automatically calculate and indicate which activities are "critical" and which aren't based on their duration, and how this changes over time. The Critical Path Method is based on the notion that work on a new task can't start unless you've finished your previous task duties. In this way, CPM supports the

team to complete work faster, distribute resources correctly and evenly, and spot bottlenecks to avoid any further problems in time.

3.5 Adaptive Project Framework (APF)

The Adaptive Project Framework (APF) borrows several elements and processes from other project management methods, methodologies, and frameworks. You can use these for your own projects in a personalized way. What distinguishes APF is the way in which you create a project. A decision is first taken to pick the most suitable existing approach and adapt it to your own project. Projects are then divided into smaller task groups and handled by different teams. The latter are in charge of evaluating the outcomes of each project group and identifying possible ways to improve performance. The client is also involved in the project development process to ensure that they are fully aware of the changes that go into it. No project is the same. This is why this framework makes it easier for you to adapt a project to an approach and balance it against your own objectives, identified risks, and changing client demands.

3.6 Extreme Project Management (XPM)

“Importantly, eXtreme Project Management is not a methodology. Rather, it is a flexible project management framework and set of leadership practices for delivering value in the face of volatility.” says Doug DeCarlo, author of *eXtreme Project Management: Using Leadership, Principles, and Tools to Deliver Value in the Face of Volatility*. Work through XPM is done at a fast pace and with several twists and turns. Extreme Project Management is required by projects with unpredictable development or that face considerably more changes than traditional projects do. Doug also states that “It is applied in complex project environments when: Failure is not an option, speed, innovation and profitability count and quality of life is important.” In XPM, plans are no longer reliable. Situations can change every second. Project team members have the freedom to bring their own touch to a project or task for which they hold complete accountability. A radical shift in the way your team thinks and regards a project will happen. Chaotic client needs and tasks, spontaneity, uncertainty, and less control over projects are now a normal daily occurrence they will have to adapt to. That’s because at the base of XPM lies the belief that work on more difficult projects can only be done through trial and error. Thus, any unpredicted mistake or bug will be fixed on the go.

3.7 PRiSM (Projects integrating Sustainable Methods)

A project management methodology that considers all environmental factors as well as human rights, work values, and corruption prevention. How does green project management sound to you? If you’re looking for a sustainable way to manage your projects, try PRiSM. This project management methodology was built around environmental factors and how they can influence the development of the project management process. It helps project teams eliminate pollution or waste and save energy. Since PRiSM also deals with human rights, labor values, and corruption prevention, it’s so much more than just an approach to the way in which you handle nature.

3.8 Benefits Realization Management (BRM)

Benefits Realization Management is a framework which ensures stakeholders that a project has achieved the desired benefits. Projects are finished when all benefits have been met. BRM imposes the need to find all benefits at the beginning of a project and make sure that all tasks are conducted and evaluated to help a business reach them. A Business Change Manager helps the Benefits Owner with this. While the latter one has to identify the business’ benefits and establish methods for handling them, the Business Change Manager is in charge of evaluating the project’s progress towards reaching those goals. The ultimate goal remains to increase the return on investment based on the organization’s strategy. There are 3 steps BRM takes a project through:

- **Identify benefits:** determining and categorizing a business’s or project’s benefits and the people who will be in charge of handling them
- **Execute benefits management:** overseeing the management of benefits to avoid risks and find new opportunities
- **Sustain benefits realization:** monitoring the performance of a project’s benefits and ensuring they’re valuable even after implementation

3.9 Crystal

We reached out to Dr. Alistair Cockburn, the developer of the Crystal methodology and one of the initiators of the Agile Movement, to have him resume this methodology in a few words: “Crystal is a family of related agile methodologies based on the ideas that: No one methodology can fit all projects, they should be tuned by the project participants to fit themselves, and they should be light and communication-centric. The three elements common to all

Crystal family members are frequent delivery, close communication, and reflective improvement. Crystal Clear, Yellow, and Orange have been used on projects from three to 50 people in size, informal projects, and ISO 9001 projects.” With this flexible methodology, people are the most important part of a project. All processes must be adapted to their needs. While the books describing Crystal provide resources for tuning the details of your team’s method, there are no specifically required techniques or tools. The way in which you use Crystal depends entirely on your project and team. For example, Crystal Clear is commonly used for projects handled by small teams and those who work from a single location. Crystal Sapphire, on the other hand, is preferred for large projects that might pose a risk to human life. This ability to adapt to different project types is why Crystal focuses on 6 main elements: people, interaction, community, communication, skills, and talents. The members of the method family are color-coded according to how many people are being coordinated (Clear, Yellow, Orange, Red, and so on). Several versions of Crystal Clear, Yellow and Orange are described in the books.

3.10 Agile

A series of short delivery cycles (known as sprints), team feedback, and client reviews to deliver results as part of Agile development. “Just like its name, Agile means being adaptable the ability to gracefully adapt to rapidly changing customer needs”, says Kamlesh Ravlani, Agile Coach and Scrum Trainer at Agile For Growth. We must first distinguish between the concepts of “agility” and Agile. While “agility” refers to the ability of quickly responding to change, Agile is a mindset or set of principles and practices that were originally mentioned in the Agile Manifesto. It’s best suited for products and initiatives that face diverse changes during their progress. Agile development is based on brief delivery cycles (known as sprints) tightly coupled with regular feedback sessions. In order for a process to be Agile, the work environment should assist the continuous and intense collaboration with co-workers and clients. Strong communication facilitates regular feedback that lets you change the product’s evolution during every sprint. Stakeholders will then go over each step and propose improvements accordingly. By using these principles, the entire team becomes accountable for a product’s development and success. This is why each person is responsible for tasks that contribute to planning, developing, and delivering a project. Agile teams don’t use clearly established roadmaps or focus on monitoring because the entire planning phase is iterative and flexible. All goals are defined before starting work, but you can always change the deliverables or final results.

3.11 Scrum

A framework that divides software development into small cycles that usually span across two weeks and are used to review work and fix problems during daily stand-up meetings. “The Scrum framework is used mainly for product or software development. The good thing about this methodology is that you can use Scrum not only to design better software, but also, for example, to run the marketing division of a media company or build a better mobile phone. Scrum can even be helpful when writing a book. This framework is more than just highly effective. It’s a productive and creative way to deliver high-value end products. It’s suitable for complex environments where teams have to quickly react and adapt to new situations within a system. It’s not a very suitable framework for a simple, obvious, easy, and predictable environment.” remarks Luis Gonçalves, Management Consultant and Founder at Evolution4All. Through the Scrum framework, small, cross-functional, and self-organizing teams work closely with the Product Owner. The latter is responsible for the product’s development and, ultimately, success. There’s also a Scrum Master who serves the team by eliminating any issues during the project’s progress, holding meetings, and preparing the product backlog for the next sprints. This framework is divided into smaller cycles (known as sprints)—commonly a timebox of 2 weeks. During daily stand-ups, the team reviews what they’ve done and what they will work on for rest of the day during a daily stand-up meeting while also exposing the difficulties they encountered or which they could come across in the future. Sometimes teams prefer to have this meeting weekly instead.

3.12 Kanban

Kanban is a pull-based manufacturing method that has been adopted by IT teams in recent years. When applied to project management, it’s a method and visual tool that gives you a quick glimpse overall project activities and their evolution. The typical approach consists of using either a physical or virtual board with three default columns (To Do, in progress, Done). Tasks in the form of cards then move from one column to another whenever work is done or until they are officially completed and approved. Kanban focuses on continuous delivery and the whole group’s ability to collaborate efficiently. It can also help you better organize your workflow and spot bottlenecks before issues arise.

3.13 Scrumban

If you want the best of Scrum and Kanban at the same time, try Scrumban. It's a hybrid alternative solution for teams who are looking to make the switch from Scrum to Kanban. That's why it blends Scrum's daily stand-up meetings and demos with Kanban's WIP (Work in Progress) limits and continuous workflow. Scrumban is used for software and product development that are often interrupted or face regular changes or updates when it comes to activities and their priority. Planning is done only when demanded while estimates are optional. Similar to Kanban, it's a visual method that relies on a board and pull-system to manage tasks. The use of sprints with Scrumban remains a highly-debated topic. When sprints aren't used during a project, changes can occur at any time as long as there are still resources available.

3.14 Extreme Programming (XP)

This Agile framework was created to help you improve the overall quality of agile software development. "Every agile team should consider using the technical practices that form a part of Extreme Programming," says Mike Cohn from Mountain Goat Software. Being developed for software engineering work, XP comes with a set of engineering principles that you can impose to improve your product's quality such as test-driven development, unit and automated testing, continuous integration, pair programming, refactoring, and many more. Usually, Extreme Programming teams work in iterations that span across one or two weeks (depending on the project's specifications). Similarly to Scrum, it relies on quick sprints, constant releases, and frequent stakeholder collaboration to boost productivity levels. XP can help you avoid employee burnout and increase the quality of what you deliver. Outcomes are delivered only when they are needed and aren't dependent on a due date, helping you efficiently meet your client's requirements and increase their satisfaction.

3.15 PMI's PMBOK® Guide

PMI's PMBOK® Guide is different from the other ways of managing projects mentioned in this list. It's a set of standards or, simply put, a body of knowledge, a guide that contains structured information on managing projects. Created by the Project Management Institute (PMI), it divides your project work into five distinct but related process groups:

- **Initiation:** holding the first meetings with the client and obtaining the authorization to start work
- **Planning:** setting the objectives, establishing a scope, and creating the project's plan
- **Execution:** completing work on tasks and preparing deliverables
- **Monitoring:** overseeing the evolution of the project and reviewing its performance
- **Closure:** ending all contracts and delivering the final results

PMI's PMBOK® Guide is used mainly in USA, Canada, and the Middle East. It sets the baseline for project management's processes, and techniques. Its status as a methodology is debatable because it's truly a reference guide that establishes the universal benchmarks of project management and not an actual methodology.

On this debate, Dmitriy Nizhebetkiy from PM Basics observes that "The approach described in PMI's PMBOK® Guide is not a methodology. In real life, it would be inefficient to implement such an approach to a full extent. The real value is in the PMI's vision of the scope of project management and responsibilities of a project manager. It explains what you may need to do to lead a project. It teaches you to select appropriate tools and techniques for the current project. Moreover, it shows what it takes to integrate all processes together."

3.16 Lean

Lean was originally a product manufacturing method and is still used today for product development. If you're looking to lower your project's waste rates and eventually eliminate them completely, try Lean. It aids the delivery of highly valuable products by using fewer people and resources in much less time. An emphasis on the customer's desires, removing problems and possible risks or hazards, and frequently improving systems can cut out waste in terms of time and costs. Using Lean helps small teams progress and create greater outcomes in a short time span, without having to overspend on materials. The main focus when using this method is to deliver valuable products and increase the organization's profits with fewer resources. Lean also guides companies to quickly adapt to constantly changing client standards, needs, and actions.

3.17 Six Sigma

Six Sigma is an approach and methodology for eliminating defects and improving the quality of your processes and results. Its principles can also be applied to project management and product development. Using quality control, Six Sigma (6σ) emphasizes the need to minimize bugs, defects, and errors until they no longer affect a project

or its outcomes. Before further problems occur, existing data and error reports need to be evaluated. This helps you find project nonconformities that don't match the originally approved product requirements. Thomas Pyzdek, author of *The Six Sigma Handbook*, remarks that: "Unlike most project management methodologies taught in management classes at universities, Six Sigma does not focus on the bottom line. Rather, it considers the bottom line as the result of the work done within the organization to add value. This approach teaches people how to analyze and improve processes to do a better job of adding value. Six Sigma projects are a primary way of achieving process analysis and improvement." With Six Sigma, any decision is made starting from existing data and statistics. The goal is to deliver efficient, uniform, and defect-free final products. To do this, Six Sigma employs the use of six distinct steps:

- **Define:** establishing the client's requirements and project objectives, appointing team members and leaders, and setting project guidelines and team rules
- **Measure:** gathering performance data, identifying process and output indicators, and setting up a series of causes and their outcomes
- **Analyze:** evaluating and comparing the existing data and identifying the relationship between causes and effects
- **Improve:** constantly optimizing processes and finding new solutions to existing or possible problems
- **Control:** creating a long-term control plan to keep all processes under check
- **Synergize:** sharing the team's results and acquired knowledge with the entire organization to use them for future projects

3.18 Lean Six Sigma

Lean Six Sigma is a combination of Lean and Six Sigma in an attempt to reduce waste and defects at the same time. This hybrid result creates more efficient projects that meet client requirements with fewer resources and on a lower budget. Teams collaborate to eliminate waste when it comes to defects, wait time, inventory, overproduction, non-utilized talent, transportation, motion, and extra processing. Consequently, using Lean Six Sigma supports the simultaneous development of your business, products, and people alike. Implementing this integration can change the way in which your entire company handles its projects, sees defects, and treats quality.

3.19 Waterfall

The structure of the Waterfall approach where each series of tasks must be completed before work on the following one can start. Waterfall is a traditional approach that separates the product development process into groups of related tasks that must be completed before moving on to the next group or phase. Hence, it requires extensive planning. Establishing all steps before you start working on the product's development helps minimize hazards and further errors. This has your team always knowing what they should work on next and what to expect in the future.

The 5 core phases commonly used with Waterfall are:

- **Requirements:** finding out and analyzing what the client's needs are and what the final product should do
- **Design:** choosing the right technology and creating the product's mockups and detailed architecture
- **Implementation:** solving problems, implementing solutions, and completing tasks
- **Verification (Testing):** finding out if the product matches the established performance requirements and conducting quality assurance
- **Maintenance:** fixing errors and bugs to ensure the product can be used easily without interruptions

Waterfall practitioners believe that putting more time and effort into the first stages of product development can prevent risks from happening and save you hours of maintenance time. Waterfall also provides clear and detailed timelines and costs. These will guide your team towards becoming more productive. The downside of Waterfall is that it's rather outdated for the requirements of modern software engineering. Writing code and simultaneously performing quality assurance is rather difficult since each stage of this methodology depends on the previous one and no activities overlap. With Waterfall, teams have to wait for those in charge of the preceding steps to finish their work. If the latter are late, all other tasks could be postponed.

3.20 Rapid Applications Development (RAD)

The rapidly-changing markets prompt organizations to step up their product-delivery processes to keep up with their competition. The Rapid Applications Development iterative process was created to do just that: speed up the development and delivery of high-quality products. RAD was the first software development process to solve what previous processes couldn't. Apps required long lengths of time to be fully developed. Their requirements were changing so often before completion that they were sometimes unstable and unusable. With the RAD approach, apps could be developed on time and within budget. Despite its fast pace, the RAD method ensures that all essential features

work properly. It helps you build products around object-oriented programming and the users' needs in terms of UI. Prototypes are used in place of any documented design specifications. There is very little (sometimes none) planning done before the start of product development, with emphasis on the actual development and prototyping process.

3.21 Dynamic Systems Development Method (DSDM)

The Dynamic Systems Development Method was first used as a software development method. It was created in 1994 (before the official Agile Manifesto) after project managers who were using the costly Rapid Application Development approach wanted a better way of structuring their work. DSDM brought them more organization, responsiveness, reliability, proactivity, and an iterative manner of handling tasks and projects. The method also prioritized schedule and quality over functionality through the MoSCoW method (Must have, Should have, Could have, and won't have). This technique uses stakeholder communication to identify the order and importance of their requirements. DSDM clearly defines all roles, responsibilities, and communication techniques for team members. This method also guides you to establish strategic goals and deliver valuable benefits in less time without exceeding your budget. This philosophy allows teams to maintain their focus and achieve project goals once they follow the eight core principles:

- Focus on business needs
- Timely delivery
- Collaboration
- Don't compromise quality
- Build incrementally from solid foundations
- Iterative development
- Continuous and clear communication
- Demonstrate control

3.22 Rational Unified Process (RUP)

The Rational Unified Process is a process framework that, similarly to Extreme Programming, gives the appropriate best practices, standards, templates, and samples for software development. It also offers a more organized manner of assigning activities and roles. The objective of this process is to develop high-quality software that fulfills the requirements of its clients and the needs of future users in time and on budget. The RUP supports team productivity by offering all group members access to a knowledge area that contains all the information and tools needed to help them conduct development tasks. The Rational Unified Process doesn't have a fixed set of processes you must follow at all costs. It can be adapted and customized to match the requirements of any project. Each stage of this process is divided into distinct iterations that need to be completed before moving on to the next stage. The four stages the RUP takes a project through are:

- **Inception:** creating the idea behind the project and seeing if you have the right resources to pursue it and if it matches your organization's needs
- **Elaboration:** modeling the software's architecture based on the available budget and resources and evaluating hazards and opportunities to see how changes or new technologies could be added to a project as it progresses
- **Construction:** undertaking software development from its design, through coding and testing
- **Transition:** delivering the final software and making changes to improve deliverables or fix any issues

3.23 Feature Driven Development (FDD)

Feature Driven development is an iterative and incremental software development and delivery process. Teams commonly use FDD for long-term product development that faces regular and repeated changes. The objective of FDD is to create product features based on a client's needs and requirements. To help you reach this goal, the FDD process brings a series of software and product development best practices. The team will now work on developing the features that hold the most value for a client and meet the expectations of the product's end-users. Using Feature Driven Development, software engineers develop functional features every two weeks (usually) and monitor their performance using a series of industry standard procedures such as domain object modeling, individual code ownership, regular builds, configuration management, and more. Through this process, teams dedicate the start of a project to clearly understand what they will be working on. This is done without spending extra time on evaluating the project or brainstorming its design. There are 5 main activities that are part of the Feature Driven Development process:

- **Developing an overall model:** proposing domain models that will be added to the overall model to better outline the project as a whole
- **Building a features list:** identifying the most valuable features for clients using the following functions: “action—result—object”
- **Planning by feature:** organizing the features and their application procedures and assigning the people who’ll be in charge of them
- **Designing by feature:** prioritizing the features, finding design solutions for them, and assessing the results
- **Building by feature:** starting to build and test code based on the inspected feature

4.0 CONCLUSION

There are other popular methods, methodologies, frameworks, approaches, and guides etc. which are not project management methods, methodologies or frameworks. The main issue comes from the fact that people don’t understand the difference between a project and a product. They are often used interchangeably, but in project work it’s important to understand exactly what they are. A project is a one-at-a-time endeavor with the aim of creating a product or service. It has a start and end date, as well as a clearly defined outcome. It usually goes through five stages initiation, planning, execution, monitoring and control, and closure.

A product can be anything from a physical product, to a software or a service that satisfies the needs of a group of users. It goes through a life cycle, being developed and introduced on the market, grown in acceptance until it matures, and retired once it’s no longer needed. Unlike a project, a product is not a temporary endeavor. It evolves and adapts to the current user’s needs to prove its utility and avoid being retired. Hence, it can include several projects that aim to maintain, improve, or diversify it.

In this article I have given you just a basic introduction to the project management methods, methodologies, and frameworks. First of all, it’s important to identify in what type of projects you are involved, then choose the appropriate method, methodology, or framework that you should study and try to understand it thoroughly. Since they are stricter and have clearly-defined processes and principles, methodologies could be more suited for larger projects and beginner project managers. Meanwhile, frameworks are better for those who have already gained some experience in working on several projects and tried different methods.

