Project Management (Concept, Definition, Methods)

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Abstract
Project management is a subject that studied on it in this research. For this, at first defined the project, its concept & characteristics, management definition & its importance, defining the limits of the project and its history, benefit users in project management, project phases and techniques of project management, project management usage in IT & problems that faced to it & its solution. Management means as a process of planning, directing, coordinating, controlling human resources, material, financial and information for guidance individual & collective activities for desired organizational goals. Project means that a work that has beginning and end & makes a product, service or it has unique result. Management project means managing & guiding time, material; personnel (workers) and the cost of doing a project in orderly and economic manner realize the objectives of the project time, cost and determined technical outcomes or services, simultaneity. The importance of management project is specified that it caused to the saving time by true planning that it is the most critical phase of a project & decreasing the costs to achieve the desired goal is to properly and efficiently. The using & application of project management can be seen in everywhere and all work. The project management has the role in personal and business issues ranging from everyday life and extensive technical. Project management principles involved in solving complex problems of today projects.
Key words: management, project, management project, project phases

Introduction
The rapid rise in management is adjusted as a professional system & caused to making number of best standards that it defines the area of system operation & describes the tools, techniques & attitudes. Now, these standards uses broadly for evaluating the professional competence & its improvement & determination, they are based on the assumption that individuals who are able to demonstrate their understanding of project management principles in these standard. Professionally, they need to necessary competence as project managers. This subject follows logic theory that it caused to the competent managers defined as special group of knowledge environment independent content & persons. There is little knowledge about the method of using these conditions by project managers [7]. Today, a large share of the assets of an organization is included knowledge and experience. Sometimes, in projects made some of knowledge & experience that must be managed [2].

Review on the literature
Regarding to that this research is about project management, in continues describe the general concepts and techniques discussed

Project concept
It is temporary effort for making a product, service, or unique result [8]. What it affected on the project is that a project has unique & temporary goal & it is made by gradual progress it means; at first it is defined as total & in past time, all details are specified. Also a project needs to sources that they are from different parts & includes; software, hardware or other assets [8].
A project must be had an initial investment or client, always a project has stakeholders, such as investor of project, who provides the capital required for the project [8].

A project has uncertainty, it means sometimes it is hard that project goal defied significantly or specify the time of project or determine the costs of it. External factors also play a role in the absence of certainty such as; take unscheduled leave, a member of the project team [8].

There are some of scopes that they are made by goals, time & limitations, these constraints are considered as triple constraints. The project manager must be balanced among 3 issues which they are in competitions together.

1-   Scope; what kinds of working must be done? What are the client or investor's expectations the project?

2-   Time; how long is project? What is the project schedule?

3-   Cost; how much is project cost? What is the project budget?

Project management concept

It means; usage of practical, knowledge, skill, tools, methods in doing a project as if it could be obtained the project needs. Te project managers, not only must not effort in arriving special goal, time, scope, cost & quality, but also, they must provide progress which it cause to replying to persons' needs & expectations who they involve project [8].

Project concept

Project is to create something new, or modify what is defined as a dwelling unit for personal [10]. Based on standard of project management institute, project is a temporary effort for making a product, service or unique result[4].

Today, all projects are done comprehensively in all organization & cannot find any organization that it don't involve project. Projects are considered as change tools in institutional framework of the interim & different sources was used for obtaining the specific goal in limitation framework; time, cost & operation & organized them as new way [10]. Might imagine in your mind that the project is same as project, but we must say after reading the definition and characteristics of the process of change will be initialized.

Process definition

Process has beginning point but don't have final point & repeats the basic procedure & and each produces the same output such as the construction of residential units of housing is similar to the business process [10].

Management project definition

Group of tools, techniques & knowledge that when it is used help us to better results. Organizing a project without project manager is same as designing software without programmer [10]. Deployment and integration of knowledge, skills, tools and techniques to project activities is to meet project requirements [4].

Project management history

History of project management in large projects is considered such as the construction of the pyramids of the world generally, Wall of China and establish the order of Darius Persepolis. Each one of these project are the largest & most complex projects of history that they were made with high standard & also used human forces. When a project manager visited Achaemenid series of mysterious city, and saw every corner of the outstanding artistic designs of the ancient collision, No doubt he/she will wonder how such a huge project about two thousand five hundred years ago with a unique quality made, despite being repeatedly destroyed and burned by Alexander the participants after his capture, as well as it is called an amazing symbol of the Iranian project. Although the order of Cyrus, engineers and builders were required to describe their work and declared her agenda next day on top of which they were known as the Curriculum vitas, but today we can only express that speculation based on overwhelming commenting on how accurate project management was done great antiquity, unfortunately, since there is no evidence & symptom indicating that applying the methods and techniques of project management in these projects.

But project management history is originated to the first decade of 1900s in new world, Where Henry Gantt participated in the air space of the US and British military projects with the bar chart development of innovative start the next move rapidly between 1950 and 1960. So the name of Gantt as father renovation project planning and control techniques, then the 1950 & 1960 decades were recognized as first years of progress & development project management in contemporary world.

Almost dominant project management techniques and methods that we use today, are developed by the Department of Defense, the Military and Aerospace industry in the United States during 1950 and 1960 that techniques such as using Pert, earned value, value engineering and work breakdown structures are among them and then England.

Other most important development was responsibility for multi-sectoral projects definition & concept in these years, this concept uses when a person be a responsible in a project form primary to final of it. Implementation of this concept, the project team were helped to establish resource sharing and helping each other in a matrix organizational structure project (Hasti, 2010: 3)

Project characteristics
1-   Evanescent: having the start & end point
2-   Having unique outputs
3-   Lack of predefined allocation of work [10].

Key elements of project management include:
There are persons in each project who he/she involves in it directly or will profit from its results that they are called benefit users. Home users benefit includes;

*   Project leader; is project manager who he/she is headed on the project.
*   Project team members; they are production output of the project that they participate in project management
*   Supervisor: is a person from management as interface between management and project leader
*   A customer is an individual or group project that accept final outputs of the project as product
*   Resource management: providing the necessary resources, especially human resources project [10].

Project management importance

The importance of project management caused to saving time by correct planning that it is the most critical phase of a project, reduce costs to achieve the desired objective is to properly and efficiently. Following statistics showed the necessary of using project management in modern society:

*   The report of 2001 showed that USA spends 2/3 trillion dollars equal to a quarter of GDP. All countries of world 10 trillion dollars of 40/7 trillion dollars of GDP spend for projects. More than 16 million persons just know the project management.
*   In 2003, in USA, a project manager has 90 thousand dollars salary in each year. The average salary of a project manager is about 103/464, it means lower than chiefˋs salary who her/his salary is 103/925 dollars. Average salary of the Director of Project Management Office is about 118/633 dollars.
*   The best TV show was called "Trainee plays important role for managers in business" in USA in 2004 [8].

Project management usage
At first glance, the tools and methods used in management seems waste time, cost, but must be paid attention that project management is just a way that can be confident you doing the project. Project management is a suitable way for correct using of human, machine, money when updated a new work, work that must be done correctly in the first run.

Project management or based project management is the performance management procedures in order to deal with new tasks and balance in respect to the project scope, cost and quality in terms of time and in an

environment of risk. The goal of the project management is training to enable them against problems in project preparation for entering a new and unknown environment project.

Project management is useful in various subjects such as; buildings, utilities (water, electricity, telephone, etc.), engineering, motor vehicles, pharmaceuticals, manufacturing, engineering, architecture, banking, marketing, healthcare and manufacturing software (Spinner, 2008: 9)

Project management usage is in IT hardware & software or network for making a service, product or result such as;

- One of the employees of technical part replaces desktop computers with mobile computers.
- A multiple tasks group decides what kind of software buying & how it use, in an organization.
- The automotive industry is designed a website to facilitate the sales.

Tom Walters has new responsibilities as director of information technology at the College, recently. He is known as a faculty member in collage for 15 years, he prepared distance learning & for doing this must be developed computer rentals for future students. He sent Electronic mail to faculty members & all employees which it explained this program & other programs briefly but he didn't receive so many answers. The deans of history, English, philosophy and economics have all voiced their opposition to him & they said that collage was not technical training school , so his idea is ridiculous [8]. Successful project management is useful in various dimensions such as; time management, cost management, risk management & quality management & others & need to the pre-defined standard methods utilization. Projects in some industries have low specificity such as IT industry & not only the methods of doing work, but also its goal is not specified, but it is showed that using standard progresses & guidelines caused to increase successful chance [1]. Management phases includes main (large) group of activities that it must be done by project management process.

1-   Initial phase

 First phase is initial phase that it begins after selecting a project by management team. The goal of it is determining the way of project team to know what they must do & what limitations there are. The product of this phase is a document that it is called prism. Initial phase is a supervisors' task but in most of organizations are done by project leader who provide it & the supervisors adopt it [10].

Table (1): initial phases of project

Initial phase		
Phase	Task explanation	Output
Initial	All direction is depicted by supervisors for project leader. Also boundaries, limitations and features of the project are defined	Initial prism

2-   Planning phase

Next phase of project management is planning. In this phase, project team provide the planning for how doing work & when doing it. Planning is critical part of a project, because in this phase determines who must do which work & how can be confident to the group work. Without planning will face to doing repeated work that they are costly & taking time. If the planning is done how each person understands the project, the project will past its path smoothly. The output of the planning phase of the project designs document. Supervisor, client and resource managers have ratified this document [10].

Table (2): planning phase of project

planning phase		
Phase	Task explanation	Output
Planning	• Selecting team member	Project design (plan)

	• Scope project definition	
	• Necessary sources for project determination	
	• Project risk definition along with methods to prevent them	

Implementation phase

After ratifying the design the project must be run. In implementation phase, the work of project; output production, is done & after final of implementation phase, final product is delivered for client.
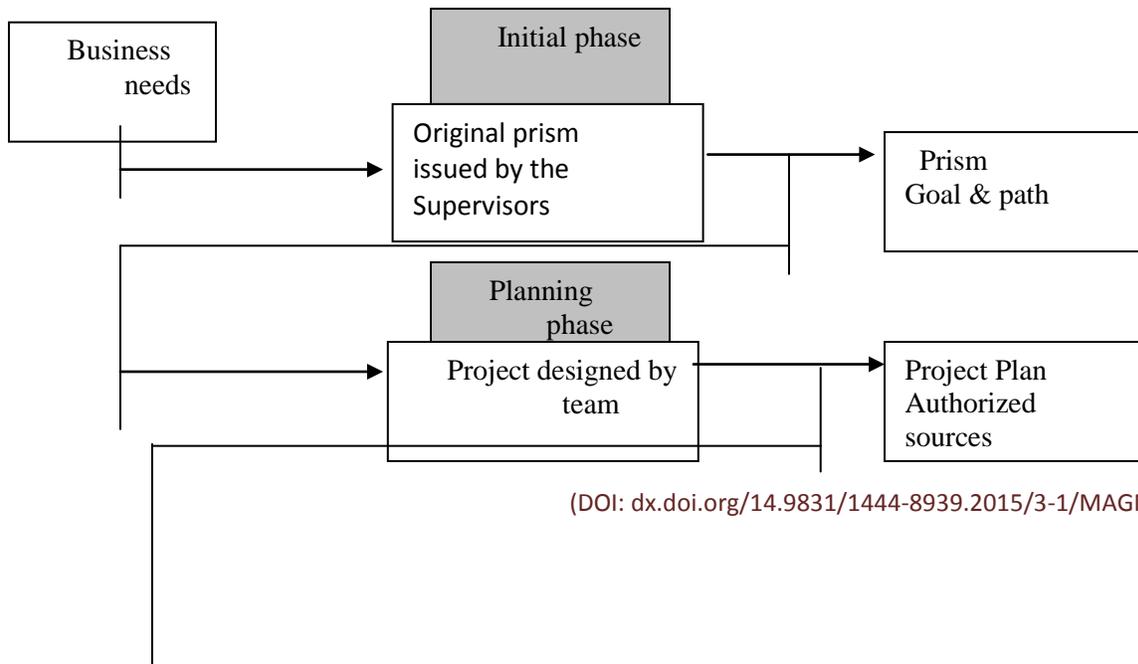
Table (3): implantation phase of project

Implementation phase		
Phase	Task explanation	Output
implementation	• Product produce • Supervise on project progress • Solve issues • Inform project progress • Management project plans changes	Reports of final product characteristics

Termination phase

After final product delivery to client, begins termination phase. In this phase, customer evaluates his/her satisfaction the project, also it is evaluated by supervisors & project team, too & its members discussed about it during implementation & they provide their recommendations to improve the project management system. Project final report, published in the report included the termination phase. Finally, do not forget to celebrate the end of the project [10].

Table (4): termination phase of project

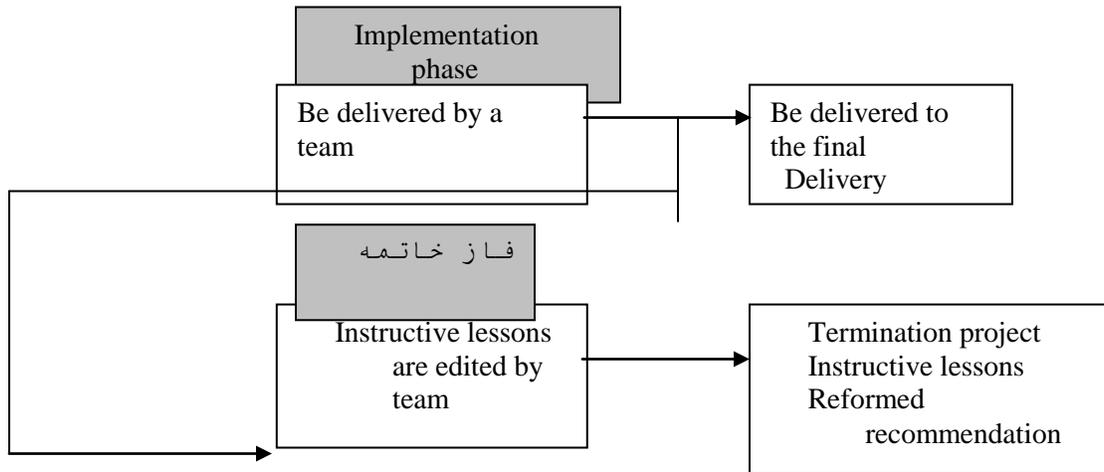| termination phase		
Phase	Task explanation	Output
Termination	• Clients' satisfaction evaluation • Learning assessment	Reports of termination phase

Implementation phase
Be delivered by a team

Be delivered to the final Delivery

فــاز خــاتــمـه
Instructive lessons are edited by team

Termination project Instructive lessons Reformed recommendation

Figure (1): project phase's progress [10].

Progress of phases

Each phase establishes on the last phase. If you worked weak in initial phase, so next three phases of project will affect problems. The termination phase is called gate of phase [10].

Table (5): progress of project phases

Gate of phase	
Phase	Gate of phase
Initial	Approved initial prism
Planning	Approved the project design
Implantation	Delivered final product
Termination	Approved termination report

One of the profits of approving gate of phase, minimum the project cost, why the cost of project increases from beginning to planning phase & then in the implantation phase increases exponentially & then the cost decreases suddenly in the termination phase [10].
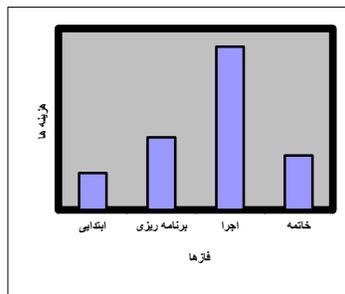

Figure (2): the costs in project management phases

The method of project management CORE PM

The project management can be done by different methods that one of them is CORE PM (Collaborative Open Architecture, Results Oriented Easy to use Project Management).
In this method was used last management technologies such as; modern responsibilities, comprehensive quality, theory scopes, enrichment, team thoughts & also project management. Some of project leaders &

team were used this methods in all over the world & determined its ease of using & high performance features. This method runs as a collaborative project management or direct project management [10].

Direct project management
In this method assumed that project manager is best person for planning & controlling the project. The project manager does the planning of project & then the tasks will be assigned to each group & timely, pursue them completion of tasks. There is relationship & connection between team members & leader project & if they face to the problem, will inform the leader.
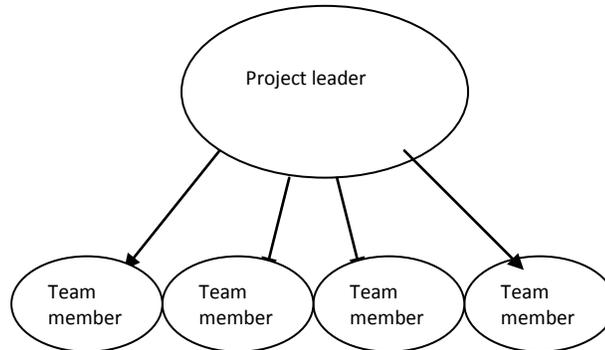

Figure (3): direct project management method
The advantage of this method is saving time & its disadvantage includes:
1-   The total time of project become increase & the implementation phase is prolonged
2-   Team members has low understanding of project as total group & from his/her place in this large group
3-   Commitment or a sense of ownership of the project team is low [10].

   Collaborative project management
 This method has newer management. The project leader facilitates the progress of project management & guides the team members in planning stage. Persons, under the guidance of project leader, monitor project progress while completing their work. Working decisions are done by persons' involvement & vertical flow of communication between team members and leadership of the project out and spend well-done among people.
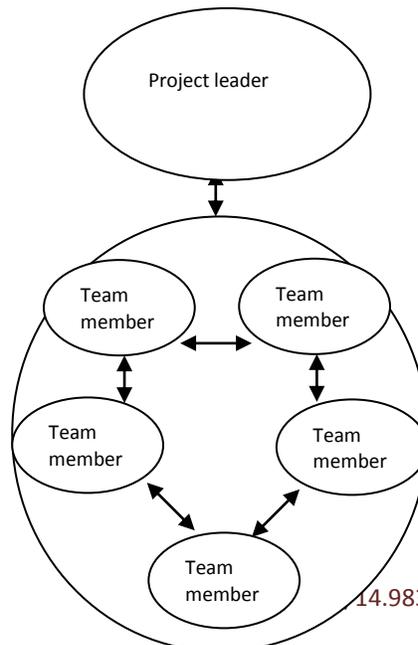
Figure (4): Collaborative project management method
The advantages
- Each person understands his/her situation in a project as part of large image
- Proper lots of comments
- Better decisions are obtained on the individuals' participation.
- Participation creates ownership & properly reinforcing the personals' commitment and responsibility
- Team mental is often better in this attitude
- The amount of work is much less
- Individual and team performance increases [10].

Other methods of project management
1-   Network analysis: shows action plan by using video chart
2-   Management based on goal: defines the goal & for measuring the performance of the method uses disciplined method.
3-   Management based on exclusion: in this method specifies some problems that needs to the management's attention
4-   Minimize the costs: in this method, the time of project is decreased by saving & minimizing the costs.
5-   Resources allocation: This method of allocating the resources required for each project such as; activities, resources, staff, workers, cost allocation for activities, equipment and material.
6-   Par resources: it is method for scheduling project activities in order to obtain the resources which are needed daily (Spinner, 2008: 5)

Problems in project management
Failure, delayed and incomplete infrastructure projects is the most important results of scientific management principles of project proposals, which it isn't institutionalized. Today, organizing & using the projects cannot be available except that training & using the project management techniques & the situations showed that reliance on traditional management practices are not enough for optimal plans. Prolonged project implantation, apparent lack of quality projects & the high costs of it than initial estimate & … are the reasons of some parts of important problems in country.
If we face to the lots of problems in project management, there are so many solutions for them. One of them is DAS/IR for solution the problems which this method has 3 stages;
1-   First stage: define the stage D: in this stage, team specify & define the problem & around its environment.
2-   Second stage: analyze stage A: in this stage surveying on the data collection & understand the main basic problems.
3-   Third stage: select stage S: in this stage selects best & optimal solution.
IR (Implementation & Review) s related to the best solution. During these two stages; Implementation & Review are done that it is a project, too. Team provides leadership the solution process during the implementation. During the reviewing, data resulting from the implementation of the solution of the problem are compared with the original data to ensure to solve the root causes of the problem. If necessary, the n corrections were applied, and then the charge entrusted to protect and monitor [10].
Goal of research
 The main goal of research is project management explanation & regarding to this subject surveying on the management, project, and project management & its importance definition & the methods of project management & potential problems.

Findings of research

What I noticed was that during the survey is that project is completely different form progress, project is a work that has beginning & end but progress is a work that it has beginning but don't have end. Project management is an art. In fact, the goal of non work obtained it unless, it controlled, guided or planned by special management methods & it is done just by a person will be working all the hard work and continuous & such authorities uses the art collection tools, knowledge, experience, techniques, materials, and methods & does the managements' tasks that includes planning, organizing, leading, controlling and monitoring to obtain the suitable goal by saving time & cost & increasing the quality of work & create clients' needs and expectations of all project stakeholders to appropriately & during the work, solve the pre-defined or sudden problems.

Discussion & conclusion

Understanding some of project management concepts & opinions are not difficult, but the problem is implementing them in different environments that we survey the subject. The important of this subject & it usage in every where (personal or social or productive issues) caused to we survey on this subject. I clearly see that despite the project definition, project management and all issues related to this matter is quite clear. But perhaps I see a lot of managers who have been unsuccessful in People Management & some of them have good management techniques but failure because of the lack of good manners to others, some of them with good manner & good-tempered and calm, and all human rituals fail, too because cannot use the management technique & among them just a limited number of them know the human affairs and techniques & become success. The administrator may have seen who encourage his/her staffs with a sweet smile and a slap on him/her & then the employee love him/her forever & efforts to achieve the manager to his/her goals.

Management means progress of correct planning, organizing, controlling, monitoring & leadership to achieve the organization's desired objectives. Project management is an art & who can do it, is considered as artist. Art utilization of all personal and social skills & using the knowledge gained over the years & using best experiences in different areas & also using the correct management methods & other facilities such as; personnel, financial, material, materials, tools, techniques facilities to achieve final project goals along with saving time & costs & increasing the working quality.

The importance of project management is in all the different areas such as software, hardware, operating systems, services, products, applications & …

References

[1] Arbabi, Hani & Nazari, Ahad & Kashef Haghighi, Mohammadali (2010), there is project management office in engineering and construction organizations & Iran oil, gas and petrochemical industries, Sharif Industrial Engineering and Management, No 1: 1-27: 55-63.

[2] Jafari, M, Akhavan, P & Akhtari, M (2011). Management knowledge: comprehensive glance on tools & techniques. Tehran, Rasa press.

[3] Chaharsoghi, Seyed Kamal & Hosseinif Majid (2013). Recognizing, classified & priority the common tools of knowledge in project management area, IT management, No 3, course 3: 5: 43-62.

[4] Zanjani, Mahdi Shami & Farzaneh Kandari, Narges (2013), provide a conceptual framework for the use of the mechanism of storytelling in the project lifecycle management, IT management, No 3, course 5: 43-62.

[5] Mohaghar, Ali & Jafarnezhad, Ahmad & Golabchi, Mahmood & Jabarzadeh, Younes (2013), identify the functions of the parent organization: a case study of project-driven organizations active in the construction industry. Industrial Management, No 2, course 5: 141-154.

[6] Hasti (2010), project management; definition, history, performance, standard & areas

[7] Vakili, Marzieh (2012), Three conceptual level for project management professionals, Scientific Management Papers Database

[8] Kathy ,Schwalbe (2010), Project management approach to IT projects, Tehran, Institute of Tehran University Press.

[9] M.Pet ,Spinner (2005), project management, Tehran, Sharif University Press.

[10] Paula ,Martin & Karen ,Tate (2003), project management, translated by Mohsen Zokayee, Tehran, Adineh press