Project Management

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Week: 3

Lecture 15 : Coordination through Integration Management

Dear students, today we are going to discuss about a new lecture called coordination through integration management. For every project for proper management of the project, the basic when very important requirement is coordination among all the project activities. Now, in this lecture we are going to discuss how we are going to achieve integration management through coordination. So, in the project planning stage the previous class I have discussed about agile project planning. So, in this lecture I am going to discuss about coordination through integration management. The agenda for this lecture is what is project integration management, then what is importance of integration management.
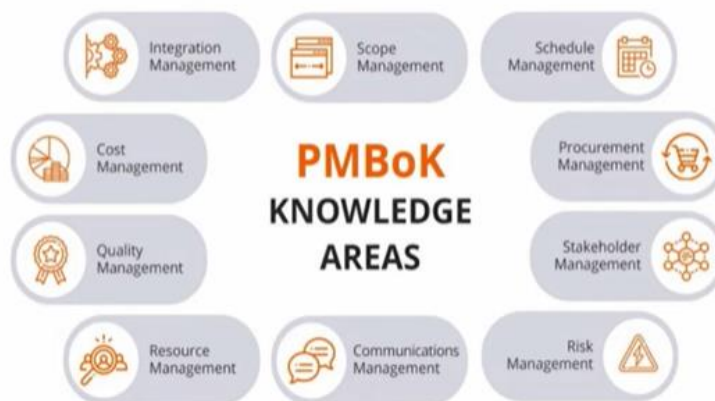
Agenda

- What Is Project Integration Management
- Importance of Integration Management
- Multidisciplinary teams (MTs) and Integration Management
- Problems of lack of Coordination
- RACI matrix for integration Management
- Managing Projects by Phases and Phase-Gates
- Fast tracking and Interface control systems

rce: Meredith. J. R.. Shafer. S. M.. & Mantel Jr. S. J. (2017). *Project management: a strategic managerial approach.* John Wiley & Sons.

After that we are going to discuss role of multidisciplinary teams and how it is going to positively or negatively impact integration management. Then we will discuss about problem of lack of coordination, then how to achieve this integration management. One way to achieve this integration management is using RACI matrix. The another way is managing the projects by phases and phase gates.

Areas

PMBoK KNOWLEDGE AREAS

- Integration Management
- Scope Management
- Schedule Management
- Cost Management
- Procurement Management
- Quality Management
- Stakeholder Management
- Resource Management
- Communications Management
- Risk Management

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Then finally we are going to do fast tracking interface control system. So, in the project management body of knowledge areas they discussed about 10 important knowledge areas like scope management, schedule management, procurement management, stakeholder management, risk management, communication management, resource management, quality management, cost management. In that integration management is one of the body of knowledge for the successful implementation of any projects. So, in

that is the this is the importance of this integration management. This is the topic today we are going to discuss.

What Is Project Integration Management?

- Project integration management is the coordination of all elements of a project.

- This includes coordinating tasks, resources, stakeholders, and any other project elements, in addition to managing conflicts between different aspects of a project, making trade-offs between competing requests, and evaluating resources.

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.

So, what is project integration management? So, project integration management is the coordination of all elements of a project. This includes coordinating task, resources, stakeholders and any other project elements in addition to managing conflicts between different aspect of your project and making trade-off between competing request and evaluating resources. So, project integration management is nothing but the coordination of coordination of all elements between different activities of a project. Then why project integration management is so important? Suppose in a project we have to track many aspect of the project like a cost, time, schedule, scope. Keeping track of everything and knowing how one factor impact the other can be very challenging.

Why is project integration management so important?

- Keeping track of everything and knowing how one factor impacts the others can be very challenging.

- However, if it is not done properly, it can lead to project failure.

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.

Importance of Integration Management

- The most difficult aspect of implementing the plan for a complex project is the coordination and integration of the various elements of the project so that they meet their joint goals of scope, schedule, and budget in such a way that the total project meets its goals.

However, if it is not done properly it can lead to project failure. So, the most difficult aspect of implementing the plan for a complex project is coordination and integration of various elements of project so that they meet their joint goals of scope, schedule and budget in such a way that the total project meet its goals. Now, we will see the importance of multidisciplinary teams. How this multidisciplinary team will influence the integration management? As project become more complex the problem of coordinating multidisciplinary teams becomes more troublesome. At the same time as a result uncertainty is also increased because managing multidisciplinary team is a very complex if it is not properly managed there is uncertainty on finishing on time, there is uncertainty   finishing   on   the   appropriate   cost.

Multidisciplinary teams (MTs) and Integration Management

- As projects become more complex, the problem of coordinating multidisciplinary teams (MTs) becomes more troublesome.

- At the same time, and as a result, uncertainty is increased.

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Multidisciplinary teams (MTs) and Integration Management

- Rather than operating as a team, they work as separate and distinct parts, each of which has its own tasks and is not much interested in the other parts.

- The intricate process of coordinating the work and timing of the different groups is called *integration management.*

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So, rather than operating as a team if they do not have multidisciplinary teams if they do not have any coordination they work as a separate distinct part each of which its own task and it is not much interested on the other parts. So, if there the coordination is not properly managed they started to work as a separate entity they never bother about what is happening to other part of the project. So, this intricate process of coordinating the work and the timing of different group is called integration management. There is a general statement that multidisciplinary team has a favorable impact on product or service design and delivery. For example, Huptman shows that multidisciplinary team have had a favorable impact on attainment of project budget goals, but achieves this without any adverse impact on quality, cost and schedule.

Multidisciplinary teams (MTs) and Integration Management

- There is general agreement that MT has a favorable impact on product/service design and delivery

- Hauptman et al. (1996, p. 161) shows that MTs have had a "favorable impact on attainment of project budget goals, but achieves this without any adverse impact on quality, cost or schedule."

Multidisciplinary teams (MTs) and Integration Management

- Recent work on managing the interfaces focuses on the use of MTs to plan the project as well as design the products/services the project is intended to produce.

There are many works the recent work on managing interfaces focus on use of multidisciplinary team to plan the project as well as design the product and services of the project is intended to produce. So, this process was also associated with high level of team job satisfaction. So, the use of multidisciplinary team in product development and planning is not without its difficulties. Even though there are many advantage of having multidisciplinary teams, but it has its own difficulties also. So, successfully involving cross functional teams in a project planning requires that some structure be imposed on the planning process.

Multidisciplinary teams (MTs) and Integration Management

- The process was also associated with higher levels of team job satisfaction
- The use of MTs in product development and planning is not without its difficulties

Multidisciplinary teams (MTs) and Integration Management

- Successfully involving cross-functional teams in project planning requires that some structure be imposed on the planning process

- The most common structure is simply to define the task of the group as having the responsibility to generate a plan to accomplish whatever is defined as the project scope.

That means even at the stage of planning itself you have to take care how to manage this multidisciplinary team. So, the most common structure is simply to define the task of the group as having the responsibility to generate a plan to accomplish whatever is defined as the project scope. So, what we have to do? In the planning stage itself the task of each group has to be clearly defined and what they have to accomplish also has to be clearly stated. So, there is a considerable evidence that this is not sufficient for complex projects. That means the advance to planning itself is not sufficient.

Multidisciplinary teams (MTs) and Integration Management

- There is considerable evidence that this is not sufficient for complex projects.
- Using MT creates what might well be considered a "virtual" project.
- In previous lecture, we noted the high level of conflict in many virtual projects.
- It follows that MT tends to involve conflict.

So, using multidisciplinary team creates what might well be considered as a virtual project. In the previous lecture we noted that high level of conflict in many virtual projects. It follows multidisciplinary team tend to involve conflict. So, obviously so having multidisciplinary team if it is not properly managed that will lead to conflict. Now, we will see what are the problem of lack of coordination.

Problems of lack of Coordination

- As the project proceeds from its initiation through the planning and into the actual process of trying to generate the project's deliverables, still more problems arise.

Problems of lack of Coordination

- One hears, "We tried to tell you that this would happen, but you didn't pay any attention."

- This, as well as less-printable remarks, are what one hears when the members of an Multi disciplinary Teams do not work and play well together

- In other words, when the various individuals and groups working on the project are not well integrate

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As the project proceeds from the initiation through the planning and into the actual process of trying to generate the project deliverable still more problem arises. If there is no proper coordination so that lead to more problems. So, some problems somebody may say that we try to tell you that this would happen, but you did not pay any attention. They may say like this because this is due to lack of coordination. This as well as less printable remarks are what one hears when the members of an multidisciplinary teams do not work and play well together.

In other words, when the various individuals and groups working on the project are not well integrate, when they are not properly integrated there will be lot of problems. So, conflict rises uncertainty and thus require risk management. So, if the multidisciplinary is not properly managed that will lead to conflict. So, that conflict lead to uncertainty that will lead to risk management. Obviously, many of the risk associated with multidisciplinary team involve intergroup political issues.

Coordination through Integration Management

- Conflict raises uncertainty and thus requires risk management.

- Obviously, many of the risks associated with MT involve intergroup political issues

- The PM's negotiating skill will be tested in dealing with intergroup problems, but the outcomes of MT seem to be worth the risks

- Mostly the risks arise when dealing with an outside group

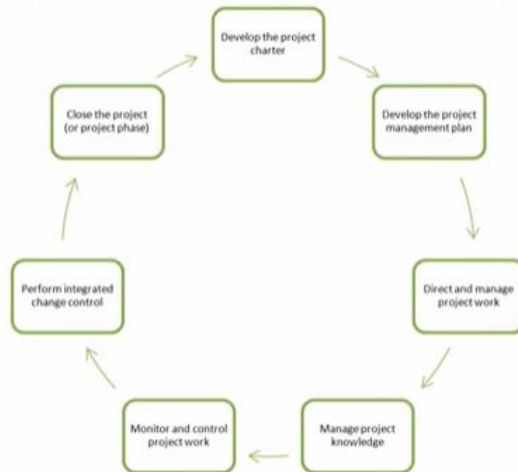## Why is project integration management so important?

- For example, if you don't understand how a scope change will impact your schedule, costs, and resource requirements, how do you manage the change?

- It increases the chances of not having the people you need, going over budget, delivering your project late, or all three.

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.

So, the project managers negotiating skill will be tested in dealing with intergroup problems, but the outcome of multidisciplinary teams seems to be worth of the risk. So, mostly the risk arise when dealing with an outside the group. Now, we will discuss why is the project integration management is so important. For example, if you do not understand how a scope change will impact your schedule, cost and resource requirements, how do you manage the change? So, it increases the chances of not having the people you need going over the budget, delivering your project late and all the three. So, you have to understand impact of one activity on other project activities that is why the importance of project integration management is required here.
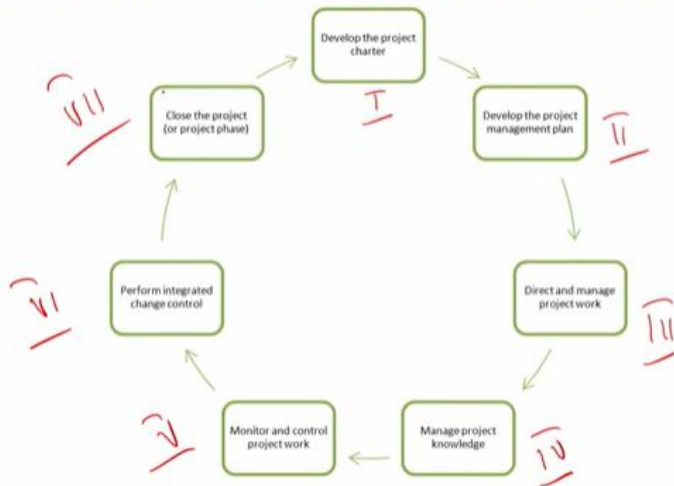
Seven processes of project integration management

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 Now, what are the seven process of project integration management? So, the first process is first stage is first you develop the project charter. The project charter we discussed in the previous lecture, we have to assign who is responsible for what task. The second stage is develop the project management plan. The third stage is direct and manage the project work. The fourth stage is manage project knowledge.

Seven processes of project integration management

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.

 The fifth one is monitor and control project work. So, the sixth one is perform integrated change control and finally, close the project. So, these are the seven stages for achieving the project integration management. But one technique for managing or achieving the integration management is with the help of RACI matrix. This we have discussed in the previous class R represents responsible,   A represents accountable, C represents consulted, I represents informed.

RACI matrix for integration Management

- The RACI matrix is a useful aid to the PM in carrying out this task.

So, what will happen? If you assign the right person and if the person knows exactly what he needs to do, then the integration management is achieved. There would not be any conflicts. So, the RACI matrix is a useful aid to the project manager in carrying out this task of achieving integration management or creating coordination among all activities. So, it displays this RACI matrix displays the many ways the members of the project team must interact and what the right duties and responsibility of each will be. So, what will happen if everybody understand that RACI matrix? For example, person role   person   A's   role   exactly   know   he   is   responsible.

RACI matrix for integration Management

- It displays the many ways the members of the project team must interact and what the rights, duties, and responsibilities of each will be.

So, he will take all the activities. Person B is only accountable. Person C is only consulted. Person D is only informed. So, if with the help of this RACI matrix, we can easily   achieve   this   integration   management.

Managing multi disciplinary teams

- In addition to mapping the interfaces (a necessary but not sufficient condition for MT peace), the process of using MTs on complex projects must be subject to some more specific kinds of control

- One of the ways to control any process is to break the overall objectives of the process into shorter-term phases and to focus the MT on achieving the milestones, as is done in APM

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). Project management: a strategic managerial approach. John Wiley & Sons.

In addition to mapping the interfaces what we discussed in the RACI matrix, the process of using multidisciplinary team on complex project must be subject to some more specific kind of control. One of the ways to control any process is to break the overall objective of the process into short term phases and to focus on multidisciplinary teams on achieving the milestone as is done in the agile project management. So, what we are doing in the agile project management? A bigger task is splitted into small task and each we focus on each task. As soon as each task is achieved, then we are getting feedback and we are seeing that whether it is really meeting the customer requirement. So, here what we can do? So, the project can be splitted into different phases.

Managing Projects by Phases and Phase-Gates

- If this is done, and if multidisciplinary cooperation and coordination can be established, the level of conflict will likely fall

- At least there is evidence that if team members work cooperatively and accomplish their short-term goals, the project will manage to meet its long-term objectives

- Moreover, the outcome of any conflict that does arise will be creative work on the project

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). Project management: a strategic managerial approach. John Wiley & Sons.

So, each phase of the project can be easily managed. So, that is the another way to achieve this integration management is managing the project by phases and phase gates. So, if this is done, if multidisciplinary cooperation and coordination can be established, the level of conflict will likely fall. At least there is a evidence that if team members work

cooperatively and accomplish their short term goals, the project will manage to meet its long term objectives. So, if you break the project into different phases, then the advantages, the coordination can be achieved and people can easily achieve their short term goals.

Managing Projects by Phases and Phase-Gates

- The project life cycle serves as a readily available way of breaking a project up into component phases, each of which has a unique, identifiable output

- Careful reviews should be conducted at the end of each "phase" of the life cycle, with feedback given to the entire project team each time a project review was conducted

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Moreover, the outcome of any conflict that arise will be creative work on the project. If there is any conflict in each phase, that can be easily solved. The project life cycle serve as a readily available way of breaking a project into component phases, each of which has unique identifiable output. So, now the question arises, how to break the project? So, based on the project life cycle, we can stage 1, stage 2, like that we can break the project into different components or different phases. So, careful review should be conducted at the end of each phase of the life cycle with feedback given to entire project team, each

time   a   project   review   was   conducted.

Managing Projects by Phases and Phase-Gates

- Another attack on the same problem was tied to project quality, again, via the life cycle (Aaron et al., 1993)

- They created 10 phase-gates associated with milestones for a software project

- To move between phases, the project had to pass a review.

So, every phase as soon as every phase of the project is over, so you have to take the feedback and that feedback has to be informed to everyone. Another attack on the same problem was tied to project quality again via the life cycle. So, what will happen when you break the project into different phases, the quality achieving quality may be the one of the problem. So, what we can do that in every stages you have to manage that it is meeting the quality. So, Aaron et al, they created 10 phase gates associated with the milestone for a software project.

So, what they have explained in their research paper, so to move between phases each project had to pass a review. So, there is a testing process from stage 1 to stage 2 with the help of a review process. So, as soon as the if the phase 1, if the project is fast then it will go to phase 2. So, managing quality on a project team means managing the quality of sub process, here the important term is sub process that produce the delivered product. So, overall suppose I have broken down see the project in different phases, phase 1, phase   2,   phase   3.

Managing Projects by Phases and Phase-Gates

- *Managing quality on a project means managing the quality of the subprocesses* that produce the delivered product

 So, every stage you have to see the quality. So, the overall project quality is the quality of sub process. So, the quality gate process here did not allow one phase to begin until the previous phase had been successfully completed. So, the purpose of quality gate process is it take care that unless otherwise it meets the quality it will not allowed to go to the next phase. But many of the phase gate systems allow sequential phases to overlap in an attempt to make sure that the output of one phase is satisfactory as a input to the next.

Managing Projects by Phases and Phase-Gates

- The quality-gate process here did not allow one phase to begin until the previous phase had been successfully completed

- But many of the phase-gate systems allow sequential phases to overlap in an attempt to make sure that the output of one phase is satisfactory as an input to the next

Fast tracking

- Another approach that also overlaps phases is called "fast tracking,"
- Here the phases are run in parallel as much as possible to reduce the completion time of the project
- This also increases the project risk as well

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But what we can do instead of doing it different phases, we can do it simultaneously. So, that managing project all the phases simultaneously is called fast tracking. So, another approach that also overlap the phases is called fast tracking. Here the phases are run in parallel as much as possible to reduce the completion time of the project. The advantage of different phases of the project in parallel is we can reduce the project completion time, but the same time you have to take care the precedence of each phases.

For example, if there is a requirement that phase 2 should be started after completion of phase 1 that precedence has to be maintained. So, this also increases the project risk as well. When you do it parallely if there is a problem on one phase that may affect the completion of other phase also. So, there is a risk also running the project in parallel. Now, we will discuss about different interface control system.

Interface control systems

There are many such interface control systems, but the ones that appear to work have two elements in common.

- First, they focus on relatively specific, short-term, interim outputs of a project with the reviews including the different disciplines involved with the project

- Next, feedback between these disciplines is emphasized

There are many such interface control system, but one that appear to work have two elements in common. One is they focus on relatively specific short term interim output of a project with the review including different disciplines involved in the project. The next one is the feedback between these discipline is emphasized. So, no matter what they are called it must be made clear to all involved that cooperation between is a very important term. The cooperation between the multiple discipline is required for success and that all parties to the project are mutually dependent on one another.

Interface control systems

- No matter what they are called, it must be made clear to all involved that cooperation between the multiple disciplines is required for success, and that all parties to the project are mutually dependent on one another

Interface control systems

- Finally, it should be stressed that phase-gate management systems were not meant as substitutes for the standard time, cost, and scope controls usually used for project management
- Instead, phase-gate and similar systems are intended to create a process by which to measure project progress, to keep projects on track and aligned with the current strategy
- And to keep senior management informed about the current state of projects being carried out

Source: Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.

Finally, it should be stressed that the phase gate management system were not meant as a substitute for the standard time, cost and scope controls usually used for project management. Instead, this phase gate and similar system are intended to create a process by which to measure the project progress to keep the project on on track and aligned with current strategy and also to keep the senior management informed about current state of the project being carried out. So, when we do the interfaces you have to make sure that the ultimate aim is that project is going in a correct manner of speed. So, in this lecture we discussed about what is project integration management. Then I have discussed about importance   of   integration   management.

Summary

- What Is Project Integration Management
- Importance of Integration Management
- Multidisciplinary teams (MTs) and Integration Management
- Problems of lack of Coordination
- RACI matrix for integration Management
- Managing Projects by Phases and Phase-Gates
- Fast tracking and Interface control systems

Then what will be the impact of multidisciplinary team on integration management I have discussed about. Then also discussed about outcome of lack of coordination. There are two way to achieve this integration management. One is with the help of RACI matrix. The second one managing the project by phases and an each phase we have to

have a phase gate so that it passes one phase to another phase only if it meeting the project requirement.

 Finally, we have discussed about the fast tracking that is instead of going different phases all the phases can be worked or achieved simultaneously that is called fast tracking. Then we discussed about fast tracking control system. Each control system the important requirement is there should be a progress at the same time it has to meet the project requirement. Thank you.