PROJECT LEADERSHIP
PROJECT MANAGEMENT KNOWLEDGE AREAS AND PROCESS GROUPS

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Overview

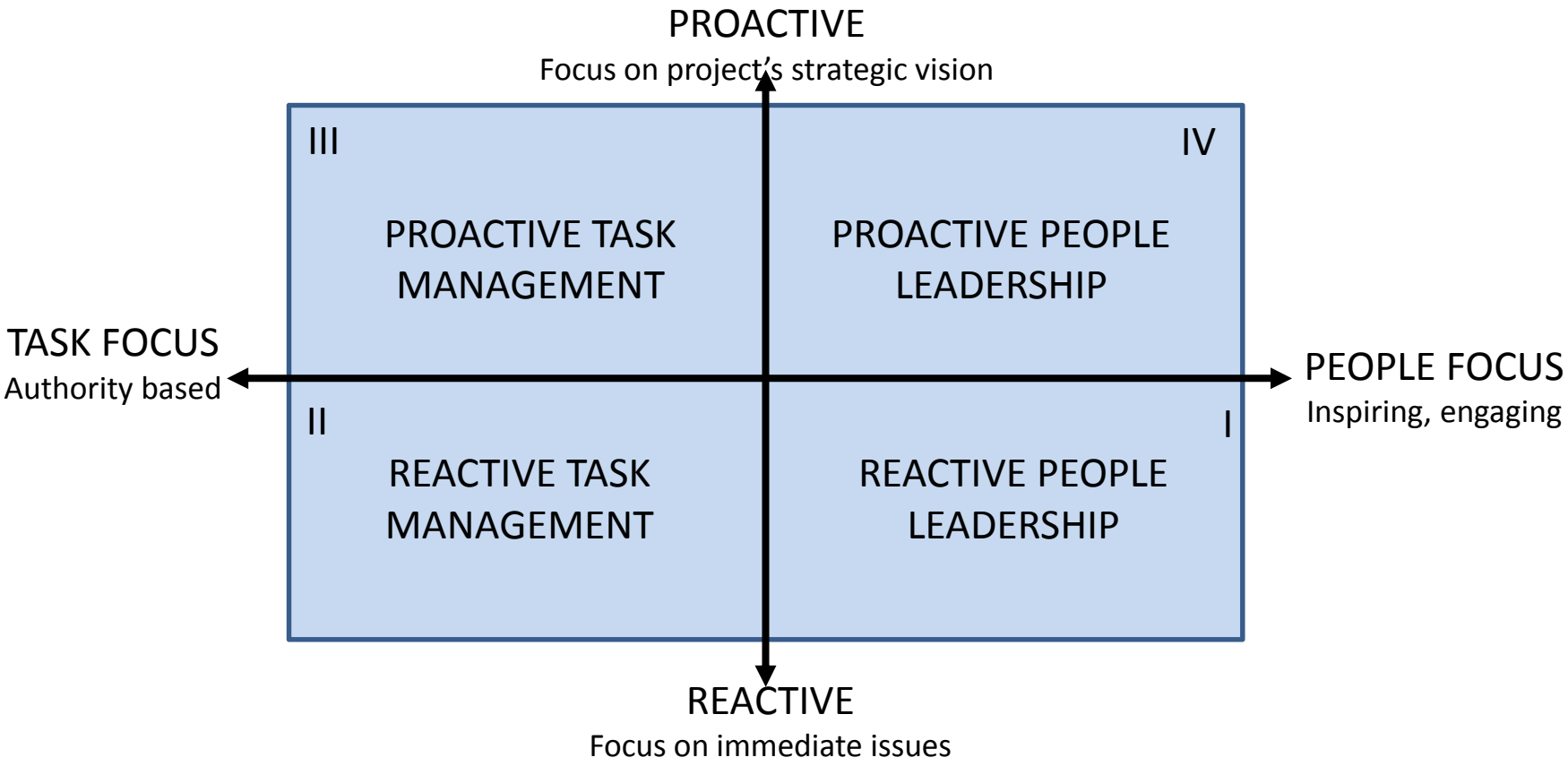
- Leadership in project management
- The ten project knowledge areas
- Mapping knowledge areas to process groups
- Relative importance of the knowledge areas

Project Leadership

- The act of leading a team towards the successful completion of a project.
  - It is a soft skill; part art, part science.
  - It's about "**placing more emphasis on people**" as opposed to the tactical management of tasks.
- Managers are often more comfortable with process and methodologies.
- **A leader focuses on inspiring and empowering her team.**
  - Get buy-in and loyalty by asking rather than demanding help
  - Work to motivate and speak to the team's emotional core rather than offering a dry intellectualism that omits the human part

Different Leadership Styles

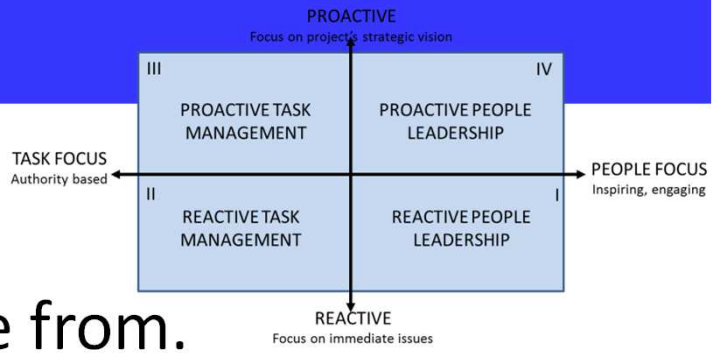
- The Project Leadership Matrix



Leadership Matrix Quadrants

- Reactive People Leadership
  - Drawn to helping out when there's interpersonal conflict, a natural mediator.
- Reactive Task Management
  - A lot of defect management, issue resolution, and firefighting.
- Proactive Task Management
  - Traditional project management disciplines. It's all about planning, managing risks, and quality assurance. We're looking ahead to mitigate items, but it's still with a task focus.
- Proactive People Leadership
  - Focused on strategic relationship building, on the project's vision, and providing direction to the team.

Leadership Matrix



- Proactive is where the results come from.

- A lot of project managers spend a lot of time in quadrant II.
  - It can be a vicious circle, because when we're down here, we're not able to free ourselves up to be proactive.

- Ideally, we should be placed between quadrant III and IV.
  - People sometimes believe that quadrant IV is the best one but we can't just leave out the operational plans.

What Are Knowledge Areas?

How do you remember everything that needs to be planned, executed, and monitored for a properly coordinated project?

- Knowledge areas provide a way to organize and categorize knowledge and skills needed in a particular specialty.
- Knowledge areas describe the overall knowledge and skills you'll need as a project manager.

Defining the Knowledge Areas

- To help organize all the knowledge a project manager needs to effectively perform the role, project management processes, key concepts, and activities has been organized into 10 best practice areas, or knowledge areas.
- They are all present in every project management life cycle
- They are part of more than one process group.

The Ten Project Management Knowledge Areas

- Integration Management
- Scope Management
- Time Management
- Cost Management
- Quality Management
- Human Resources Management
- Communications Management
- Risk Management
- Procurement Management
- Stakeholder Management

Integration Management

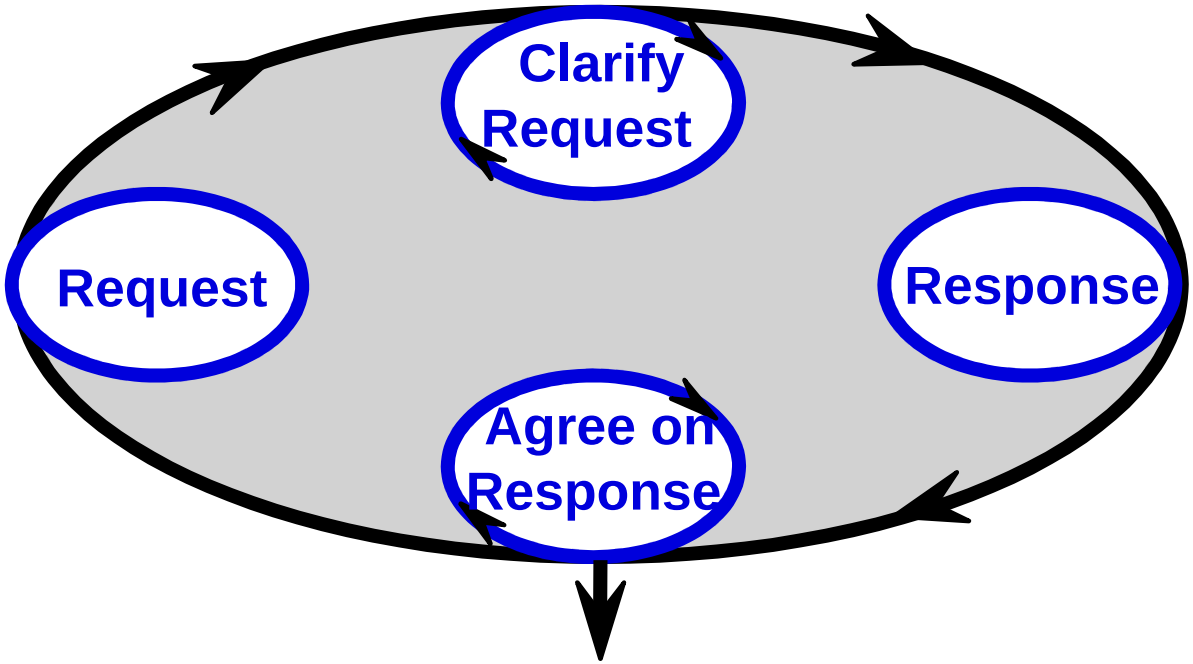
- Integration management ties together components from all other project management knowledge areas.
- During the planning stages integration management is focused on crafting a viable project plan.
- Integration is focused on completing the project.
- If changes are introduced into a project, it is necessary to coordinate these modifications.

Integration Management Activities

- Develop Project Overview Statement
- Develop Scope Statement
- Develop Project Plan
- Launch Project
- Monitor and Control Project Work
- Integrate Change Control
- Close Project

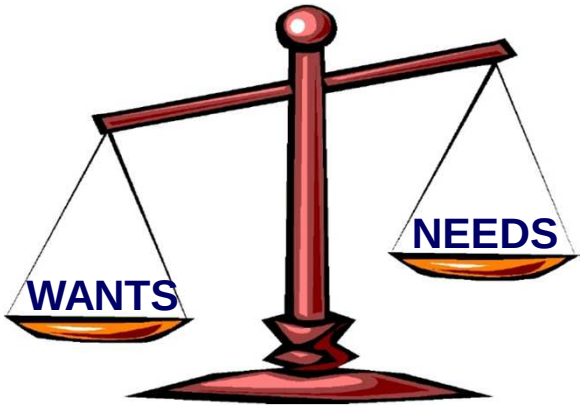
Scope Management – Conditions of Satisfaction

- Identification and documentation of client requirements



Scope Management – Client Wants vs. Client Needs

- What your client wants may not be what your client needs.



- Following requirements gathering and documentation
  - Select the best-fit project management life cycle
  - Develop the Work Breakdown Structure (WBS) that defines the work to be done to deliver those requirements.

Time Management

- Project Time Management includes the processes required to ensure timely completion of the project.
  - Activity definition
  - Activity sequencing
  - Activity duration estimating
  - Schedule development
  - Schedule control

Time Management – Duration and Labor

- Planning provides time estimates for both the duration of a project task and the actual labor time required to complete the task.
  - The duration is used to estimate the total time needed to complete the project.
  - The labor time is used to estimate the total labor cost of the project.
- Control involves comparing estimated times to actual times as well as managing the schedule and cost variances.

Time Management – Estimate Task Duration

- Similarity to other activities
- Historical data
- Expert advice
- Delphi technique
- Three-point technique
- Wide-band Delphi technique

Cost Management

- Processes required to ensure that the project is completed within the approved bugdet
  - Resource planning
  - Cost estimating
  - Cost budgeting
  - Cost control
  - Contracted Services
- Planning includes building the project budget and mapping those costs into the project schedule.
  - Provides a means of controlling the consumption of budget dollars across time.
- Reports are used to control cost management.

Quality Management – Definition of Quality

- Fit for use
- Meets all client requirements
- Delivered on time within budget and according to client specifications

Quality Management – Types of Quality

- Process Quality
  - The quality of the project management process that produced the product
- Product Quality
  - The quality of the deliverables from the project

Project Quality Management

- Quality Planning Process
- Quality Assurance Process
- Quality Control Process

Quality Planning

Determine relevant quality standards for the project and what you can do to satisfy them. The inputs to this process are:

- Environmental factors such as agency regulations, rules, standards and guidelines
- Organizational assets such as quality policies, procedures and guidelines, historical data and lessons learned
- Project Overview Statement
- Project Management Plan

Quality Plan Contents

A Quality Plan documents:

- How the quality policies will be met
- The metrics that will be used to measure quality
- A process improvement program

Quality Assurance

- Apply quality activities so that the project employs the processes needed to assure that quality requirements are met. These can include:
  - Quality Audits
  - Process Analysis
  - Project Quality Management Tools

Quality Control

- Monitor project performance to ensure compliance with the standards
- Identify ways to eliminate causes of unsatisfactory results

Human Resources Management

- Make the most effective use of people involved with the project
  - Organizational planning – identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
  - Staff acquisition – getting the needed human resources assigned to and working on the project.
  - Team development – developing individual and group skills to enhance project performance.

Human Resources Management Skills

- Skills and Competencies
  - Leading, communicating, negotiating
  - Delegating, motivating, coaching, mentoring
  - Team building, dealing with conflict,
  - Performance appraisal, recruitment, retention, labor relations, health & safety regulations

Human Resources Management

- Projects as Motivators
  - Achievement
  - Recognition
  - Advancement and Growth
  - Responsibility
  - Work Itself
- Hygiene Factors
  - Company Policy
  - Administrative Practices
  - Working Conditions
  - Technical Supervision
  - Interpersonal Relations
  - Job Security
  - Salary

Human Resources Management – Project Manager

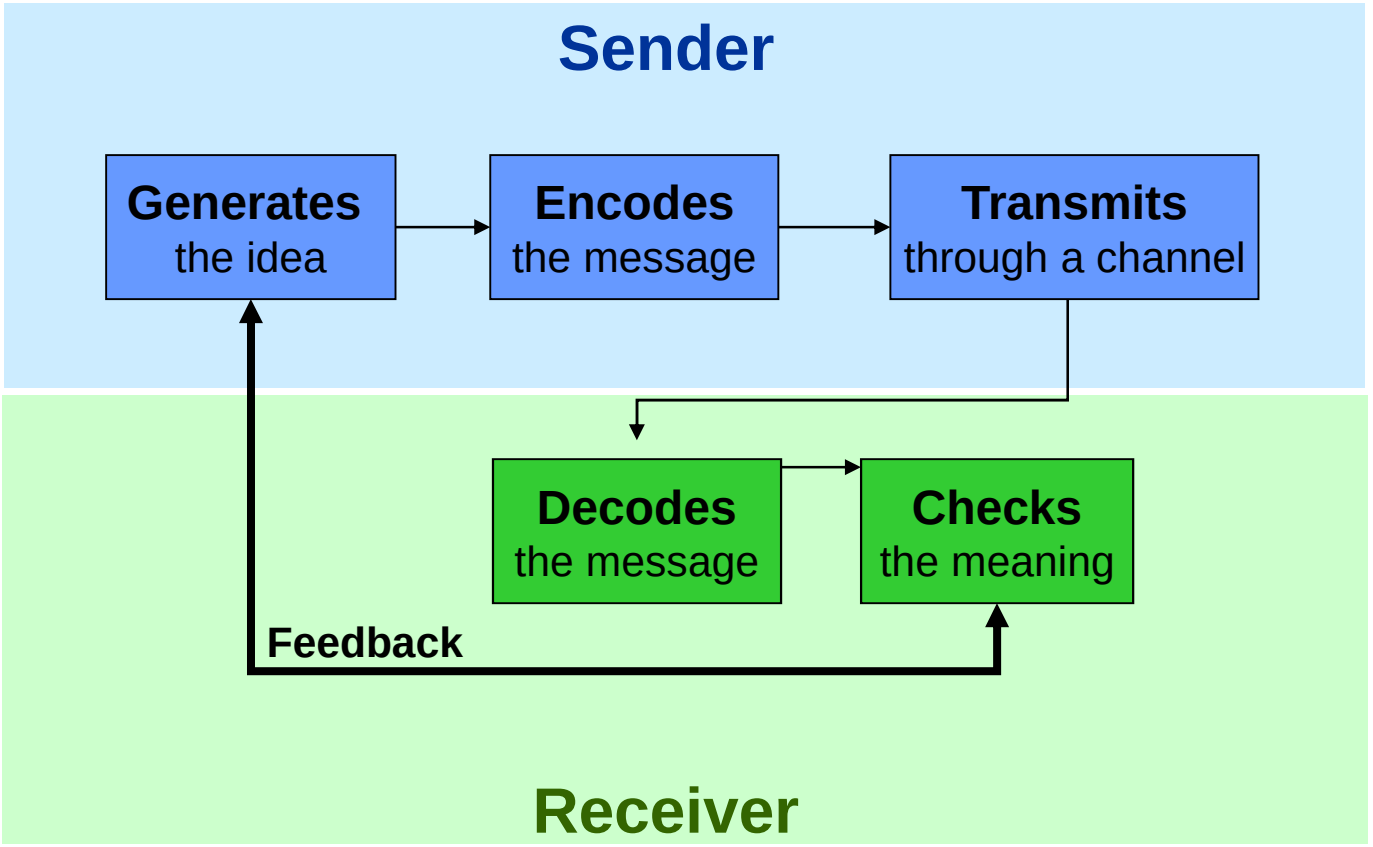
- The motivators directly controlled or influenced by actions and behaviors of the project manager regarding the work of the team member:
  - Challenge
  - Recognition
  - Job Design
  - Skill Variety
  - Task Identity
  - Task Significance
  - Autonomy
  - Feedback

Communications Management – Definition

- Communication is the process of passing information and understanding from one person to another.
  - transmitted properly
  - message sent is message received
  - understood by the receiver
  - accepted by the receiver
- Timely and appropriate generation, collection, dissemination, storage, and disposition of project information.

Communications Management – The Process

- Sender-receiver model

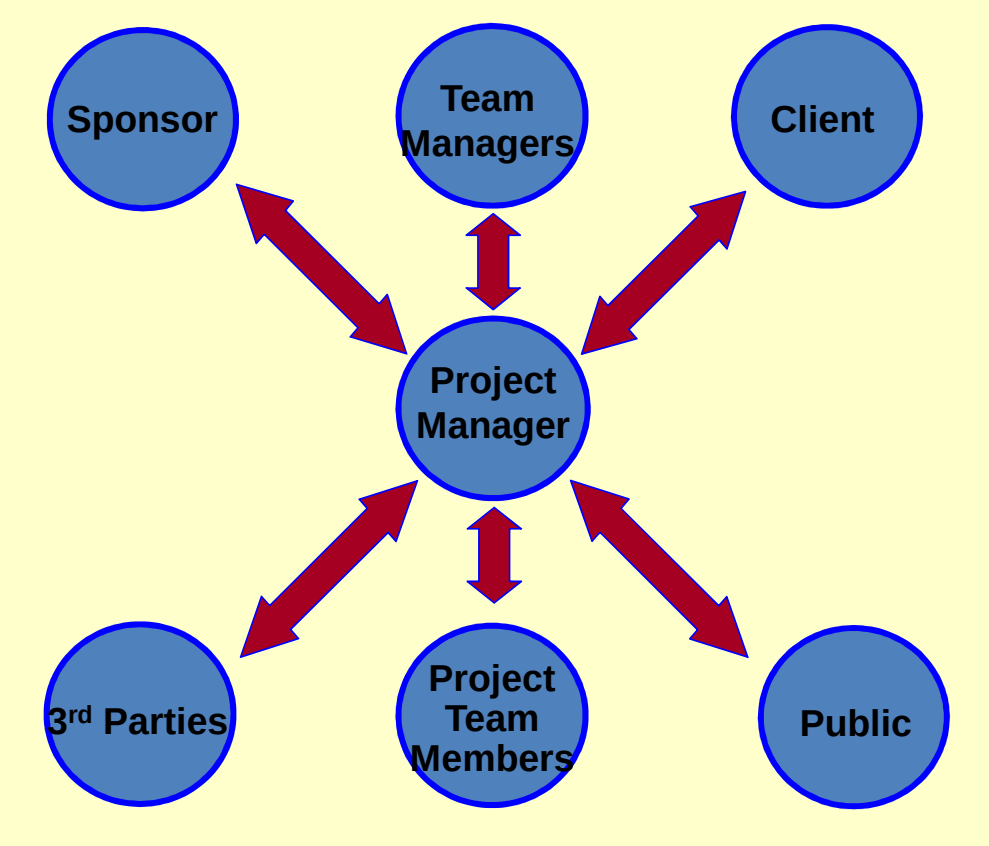


Communications Management – Types

- One-to-one
  - Conversations (in person and on the phone)
  - Meetings
- Electronic
  - Email messages
  - Web sites
  - Databases
- Written
  - Memos
  - Letters
  - Documents
  - Reports

Communications Management – Interfaces

- Interfaces (stakeholders) to communicate with



Risk Management – The Life Cycle

- What are the risks?
- What is the probability of loss that results from them?
- How much are the losses likely to cost?
- What might the losses be if the worst happens?
- What are the alternatives?
- How can the losses be reduced or eliminated?
- Will the alternatives produce other risks?

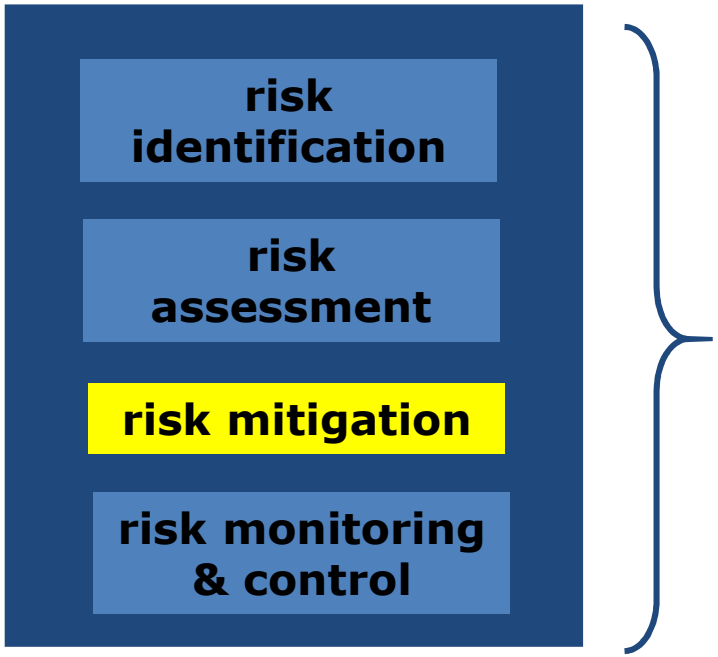
Risk Management – Risk Identification

- Technical risks
- Project management risks
- Organizational risks
- External risks

Risk Management – Risk Assessment

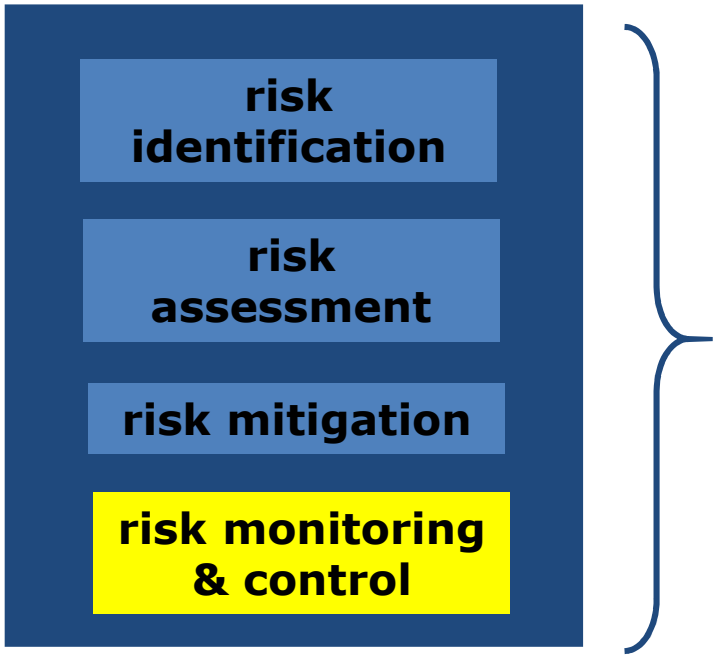
- What is the probability of loss that results from them?
- How much are the losses likely to cost?
- What might the losses be if the worst happens?

Risk Management – Risk Mitigation



- What are the alternatives?
- How can the losses be reduced or eliminated?
  - Accept
  - Avoid
  - Contingency planning
  - Mitigate
  - Transfer
- Will the alternatives produce other risks?

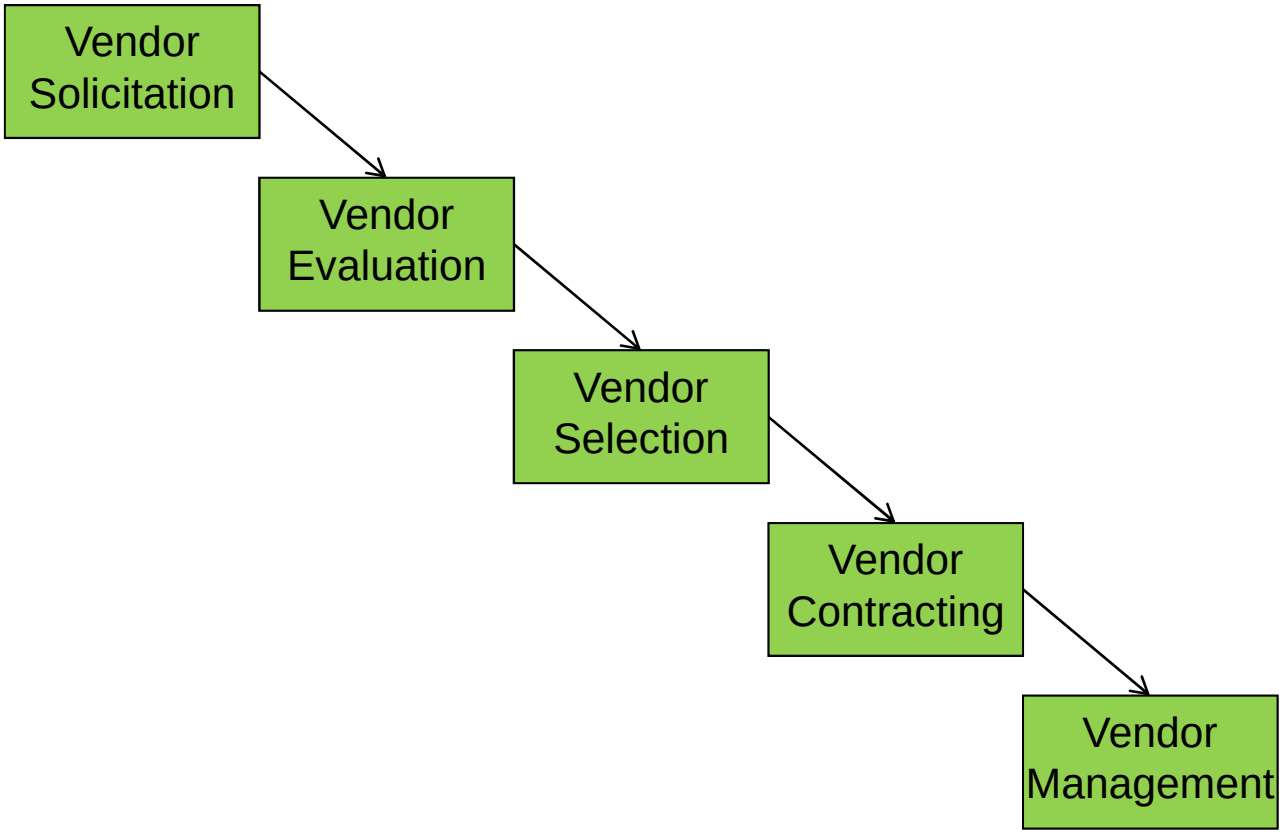
Risk Management – The Life Cycle



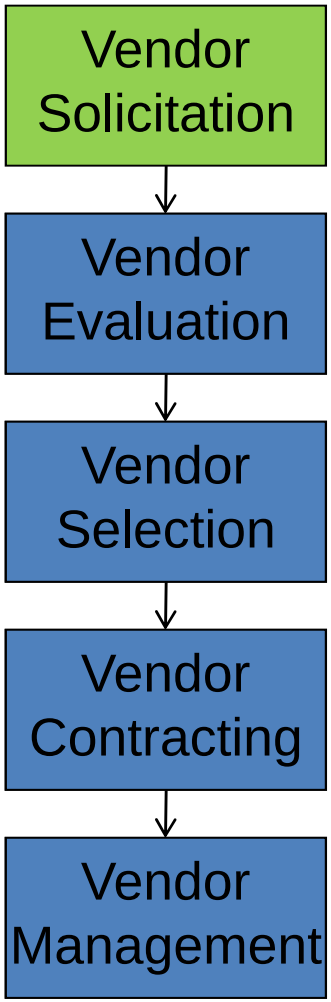
- Risk Log

Procurement Management – The Life Cycle

- Processes required to acquire goods and services from outside the performing organization.

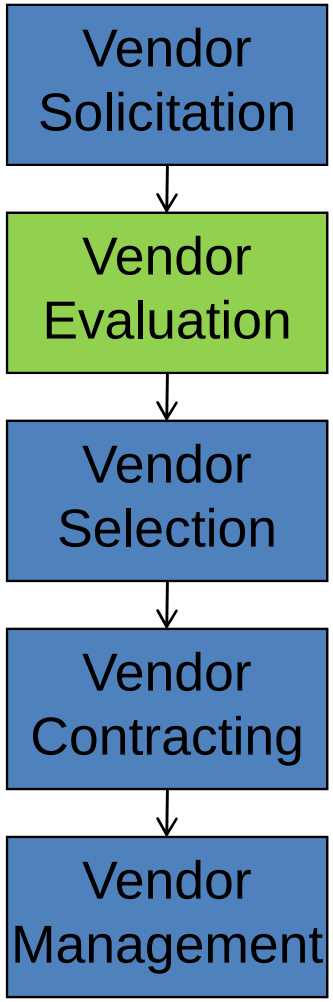


Procurement Management Life Cycle



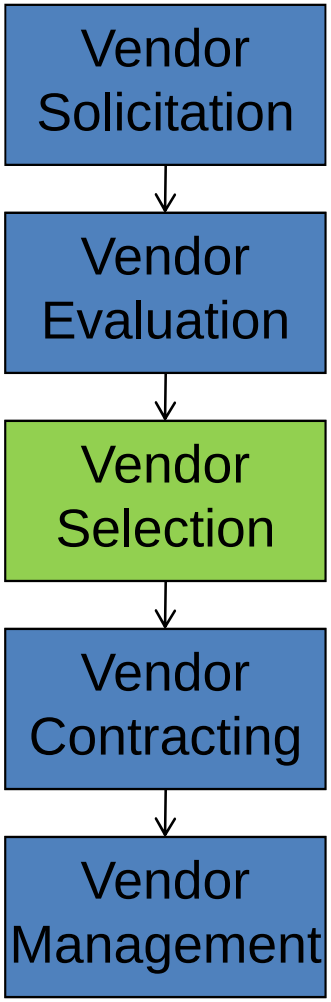
- Develop RBS
- Decide to use a vendor
- Identify potential vendors
- Select procurement management team (PMT)
- Determine vendor relationship
- Determine the acquisition strategy
- Establish vendor evaluation criteria
- Develop contract management
- Prepare & distribute Request for Proposal (RFP)
- Respond to bidder's questions

Procurement Management Life Cycle



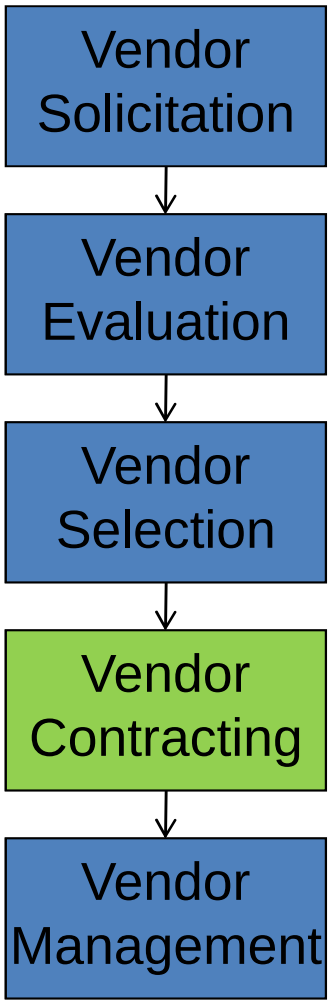
- Evaluate vendors
- Evaluate responses to RFP
- Reduce list of companies
- Conduct onsite presentations (optional)

Procurement Management Life Cycle



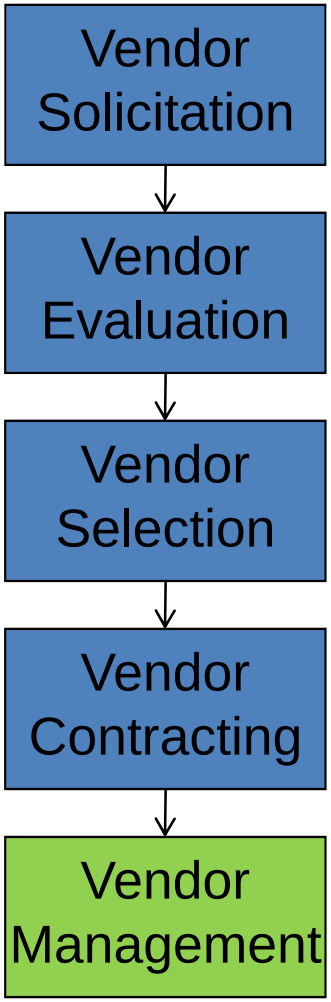
- Select the final vendor(s)

Procurement Management Life Cycle



- Negotiate the final contract

Procurement Management Life Cycle



- Set vendor expectations
- Monitor progress and performance
- Conduct acceptance testing
- Transition from vendor to client

Stakeholder Management

- In PMBOK 5 a tenth Knowledge Area, Project Stakeholder Management, is added.
- Stakeholder Management was part of Communications Management knowledge area before.
- The project manager must keep the stakeholders engaged throughout the project, not just informed.

Stakeholder Management Processes: PMBOK 4 vs PMBOK 5

PMBOK 4		PMBOK 5	
Identify Stakeholders	Identify stakeholders and create strategy	Identify Stakeholders	Identify stakeholders. No strategy created
No analog	N/A	Plan Stakeholder Management	Develop stakeholder management plan which includes strategies to engage stakeholders; create stakeholder engagement assessment matrix
Manage Stakeholder Expectations	Actively manage stakeholder expectations; Anticipate and address concerns; Clarify and resolve issues	Manage Stakeholder Engagement	Same as PMBOK 4 with more emphasis on keeping stakeholders engaged throughout the project.
No analog		Control Stakeholder Engagement	Monitor stakeholder relationships; report to stakeholders.

Stakeholder Management Processes

- Identify Stakeholders
- Plan Stakeholder Management includes
  - Desired and current engagement level of stakeholders
  - Interrelationships between stakeholders
  - Information to be shared with stakeholders

- Manage Stakeholder Engagement - the process of communicating and working with stakeholders
  - to meet their needs/expectations
  - address issues as they occur
  - foster appropriate stakeholder engagement in project activities throughout the project life cycle
  - more proactive attempt to keep stakeholders engaged

- Control Stakeholder Engagement - the process of monitoring overall project stakeholder relationships and adjusting strategies and plans for engaging stakeholders
  - Reporting to stakeholders
  - Updating artifacts such as the issue log and the stakeholder register

Stakeholder Categories

- PMI now classifies stakeholders as belonging to one of five categories:
  - Unaware
  - Resistant
  - Neutral
  - Supportive
  - Leading

- One would be trying to move a stakeholder from unaware to supportive.

Mapping Knowledge Areas to Process Groups

- Mapping shows how interdependent the Knowledge Areas are with the Process Groups
- Mapping helps to design project management approach

Knowledge Areas	Scoping Process Group	Planning Process Group	Launching Process Group	Monitoring & Controlling Process Group	Closing Process Group
Integration	X	X	X	X	X
Scope		X		X	
Time		X		X	
Cost		X		X	
Quality		X	X	X	
HR		X	X	X	
Communications		X	X	X	
Risk		X		X	
Procurement		X	X	X	X
Stakeholders	X	X	X	X	

Mapping Knowledge Areas to Process Groups in Detail

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

The Relative Importance of the Knowledge Areas During Project Planning - 1

Ref: https://www.pmi.org/learning/library/relative-importance-pmbok-guides-nine-knowledge-areas-during-project-planning-2409

- PMBOK Guide does not identify the relative importance of each Knowledge Area.
- Most project managers often have limited time to perform all the knowledge areas.
  - May choose to perform only those processes that are most familiar or easier to perform.
  - Risk of giving lower priority to Knowledge Areas that have higher impact on project success.
- This article analyzes the relative importance of knowledge areas by calculating the impact of their related planning processes on project success.
- The identification of the most influential knowledge areas
  - May be used as an aid for deciding on the most effective level of effort that should be devoted to each Knowledge Area.
  - May help project managers improve decision making with regard to the way that time and resources are allocated among different knowledge areas and associated processes.

Relative Importance of the Knowledge Areas - 2

- A knowledge area is important to project success when the higher extent of use of its related processes significantly improves project success.
- Seven knowledge areas have a significant impact on project success.
  - The Time Knowledge Area has the greatest impact on project success.
  - The more frequently planning processes—which are related to these Knowledge Areas—are performed, the better project success is.
- **In software organizations, Quality and Human Resources knowledge areas were found to be relatively important.**
  - The lack of resources enforces project managers to invest more planning effort in these knowledge areas.
  - Pay more attention to Quality and Human Resources planning.

Relative Importance of the Knowledge Areas - 3

Knowledge Area	Contribution to Project Success (ranked)
Time	1
Risk	2
Scope	3
Human resources	4
Integration	5
Quality	6
Communications	7
Cost	8
Procurement	9

Importance of the nine Knowledge Areas to project success

Knowledge Area	Ranked Extent of Use
Integration	1
Time	2
Scope	3
HR	4
Cost	5
Risk	6
Quality	7
Communications	8
Procurement	9

The average extent of use of each Knowledge Area during the planning phase of a project

Relative Importance of the Knowledge Areas - 4

Ranking of knowledge areas' relative importance in each industry type

Knowledge Areas	Construction and Engineering	Software	Production	Communications	Services	Government
Integration	1	6	3	3	7	8
Scope	9	9	8	8	8	9
Time	7	1	6	1	1	2
Cost	2	5	9	4	2	5
Quality	6	2	2	2	6	3
Human resources	3	3	7	9	5	6
Communications	5	7	1	6	9	4
Risk	4	4	5	7	4	1
Procurement	8	8	4	5	3	7

Summary

- A leader focuses on inspiring and empowering her team.
- The ten knowledge areas
  - Project Integration Management
  - Project Scope Management
  - Project Time Management
  - Project Cost Management
  - Project Quality Management
  - Project Human Resource Management
  - Project Communications Management
  - Project Risk Management
  - Project Procurement Management
  - Project Stakeholder Management
- Mapping knowledge areas to process groups helps to design project management approach
- The identification of the most influential knowledge areas may help to improve decision making.