3. Tools and Techniques

Throughout the lifecycle of a project there will be a range of tools and techniques available to the project manager. Some of these are described below, informing you how and when they can be used with links to useful references.

3.1 Project Schedule

Microsoft Project: One particular tool that can be very effective if used properly is Microsoft Project. Rather than merely using the software to draw a Gantt chart, a network diagram should be created first, and from this the critical path can be worked out. Knowing what tasks are on the critical path [See page 27 for definition] and cannot be allowed to slip if achieving the target deadline is important is a major element in running a successful project. Once all the relevant data has been added to Project, it can be used to provide some very helpful reports on progress, commitment of resources, etc.

Useful Links:

- http://www.project-blog.com/?page_id=12
- http://www.youtube.com/watch?v=k8vdjVk48Yw

To arrange to have MS Project installed, see https://intranet.uea.ac.uk/is/software/pcsoftwareatom/msproject.

Project Scope: This is where you define the deliverables and work needed to produce them. This should identify and describe what the project will include and what it will not include. This will be defined in the main project plan but may be adjusted as you develop each of the stage plans. The outcome of creating the scope is a schedule of tasks, resources and costs needed to complete the project. You should monitor the project so that scope creep does not get introduced. This is where changes are made to the scope increasing the size of the project and the amount of work and effort needed to complete it. This will usually have the effect of causing delays to the delivery of the project. Preventing scope creep is not always possible but you should minimise it by have a well-defined, clear and concise description of the project scope in the project plan. If scope creep were to occur this must be managed carefully as a change to the project. It should be recorded in your change control log and reported to the project sponsor / board. You may need to gain approval for the change. Within the project schedule you can set MS Project to baseline your original project schedule. This will fix the schedule at that point in time and allow you to measure your progress against this schedule. If scope creep were to occur, the project schedule should be changed and the baseline re-set.

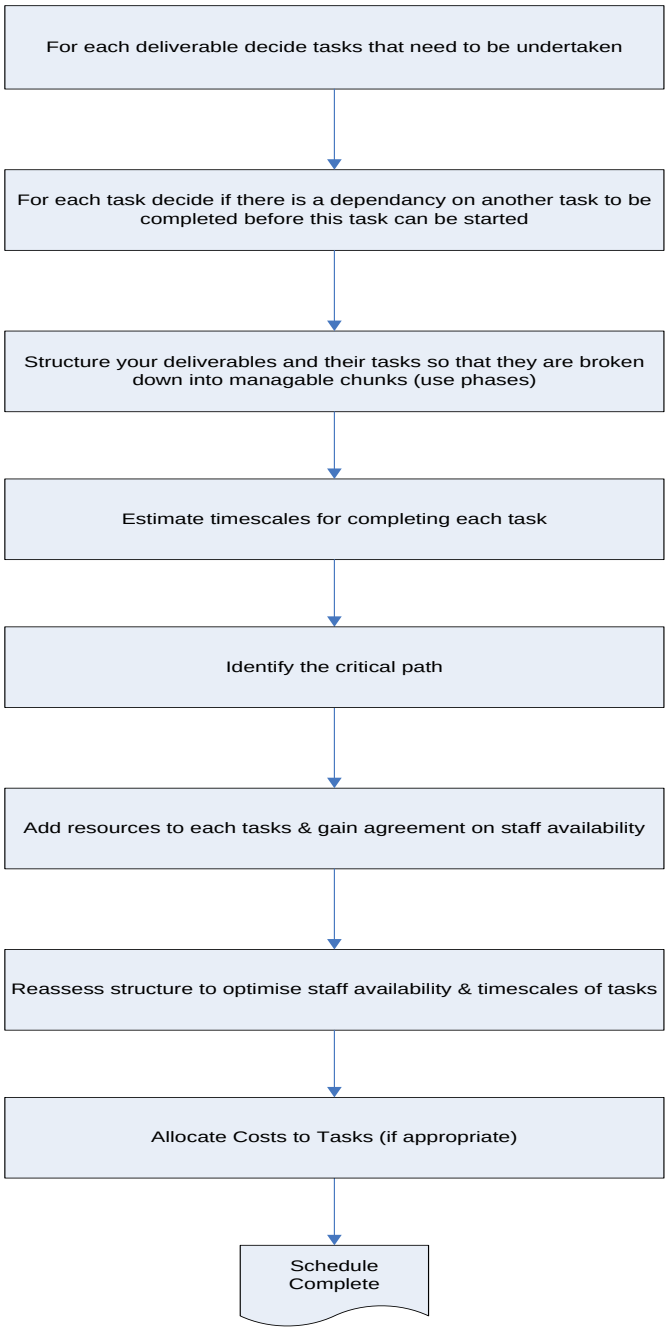
Useful Links:

- http://www.projectsmart.co.uk/managing-scope-creep.html
- http://www.techrepublic.com/article/seven-steps-for-avoiding-scope-creep/1045555
- http://www.project-blog.com/?p=72

Project Schedule Structure: When creating your project schedule it is important to gain an understanding of the tasks involved in achieving each deliverable, the resource needed, any associated costs with individual tasks, estimated timescales

for completing each task and any dependencies between the tasks and deliverables being undertaken. Figure 3 below shows each step that you can take to complete the schedule. The best way to establish the tasks and how these should be structured in a plan is by having a brainstorming meeting with those involved in the project. This could be completed in the project initiation meeting or a separate more detailed session.

Figure 1: *Process for creating a project schedule*



When you have completed the first draft of the project schedule you should assess where you will need to check the quality of the project. By adding in checkpoints to the schedule you are able to make an assessment of the work taken place, any risks that may be occurring and any issues (problems) to see if the project is still on track. These checkpoints can be in the guise of a project milestone which indicate a

significant point in the project such as completing and signing-off a deliverable, Checks to establish you are in the right position to be able to proceed to the next stage or key decision points where project board meetings may need to take place.

Useful Links:

- http://www.mindtools.com/pages/article/newPPM_71.htm
- http://en.wikipedia.org/wiki/Milestone_%28project_management%29
- http://en.wikipedia.org/wiki/Critical_Path_Method
- http://projectmanagementmonkey.blogspot.co.uk/2009/05/brief-tip-7-choose-your-checkpoints.html

Estimating Timescales: Estimating is approximation of project time and cost targets that are refined throughout the project lifecycle. When creating the project schedule in the main project plan at the beginning of the project it is difficult to establish accurate timescales. Three methods can be used throughout the project to help adjust timescales to reflect a more accurate picture. ***Bottom-up estimating*** is where you break down the project tasks in to a high level of detail and gain understanding of the timescales for each individual task. ***Comparative estimating*** is where you use historical data and information of similar projects to determine the most appropriate timescales. Scale, complexity and type of technology employed should be considered when comparing the projects so as to provide a more accurate estimate. ***Parametric estimating*** uses defined variables by which a project can be measured. These are then multiplied to establish a timescale. E.g. Time needed for a car journey to Edinburgh from Norwich would include variables such as distance, fuel consumption of car (number of times you need to refuel), route (motorways or A roads), a delay factor and number of comfort breaks you require. If these are all considered and time allocated for each you can estimate how long it will take. In real life, we use a mix of all three methods to help provide a reliable estimate.

Useful Links:

- http://www.mindtools.com/pages/article/newPPM_01.htm
- http://www.quanta.co.uk/sites/default/files/podcasts/4-3_Estimating.mp3

Critical Path Method: Critical path method of scheduling and monitoring is used on schedules when you have certainty over the duration that tasks will take. It essentially identifies those tasks which are dependent on one another and do not have any flexibility to have their duration changed or moved as it will result in the end date of the project being delayed or moved. This can be used to highlight those tasks that you need to monitor very closely and ensure that no delay of any sort is encountered on these tasks. If a delay does occur you know that this will impact on the project and will need to be highlight to the project board and sponsor to either put in place mitigation to resolve the issue or reassess if the project still provides the benefits agreed in the plan and this is still value for money.

Useful Links:

- http://en.wikipedia.org/wiki/Critical_path_method
- http://www.youtube.com/watch?v=DdDzybQ_9vM&feature=related
- http://en.wikipedia.org/wiki/Program_Evaluation_and_Review_Technique

3.2 Managing the Project

Issues Management: Is the process by which concerns; that threaten the project objectives and which cannot be resolved by the project manager; are identified and addressed to remove the threat. Issues are threats on project objectives and should be differentiated from problems that may occur when undertaking daily tasks. Issues should not be confused with risks. A risk is a threat where it is not known if that threat will actually happen or not. Issues have already happened and therefore the uncertainty does not exist. Issues are outside the direct control of the project manager. They can in many circumstances be the main cause of a project failure if left unaddressed.

Issues must be dealt with speedily so that they can, if possible, be resolved and clear the way for further progress to be made. They should therefore be drawn to the attention of the Project Sponsor at the earliest opportunity for discussion, direction and advice to be given. If necessary the issue should be escalated to the project board.

An issue log can be used to record and track the progress from identification to resolution. Issues should be logged by the Project Manager, so that they can be tracked back in the event of queries and included in the Post Project Review. When logging issues you should record a description of the issue, who raised it, the date the issues was raised, possible consequences or impacts on the project, possible resolution/workaround, the resolution owner, the final outcome and date the issue was closed. One of the fundamental purposes of the project board is to resolve project issues. Therefore all issues should be reported to the project board in the highlight report. Common failures of issue management are:

- Wrongly identifying issues when they are just problems that the project manager should be able to resolve
- Wrongly identifying risks as issues
- Failure to escalate issues
- Failure to escalate an issue when the owner of the issue resolution has not resolved it in a timely manner

Useful Links:

- http://www.mindtools.com/pages/article/newPPM_69.htm
- http://www.techrepublic.com/blog/project-management/three-minutes-to-effective-issue-management/3151

Risk Management: Risk management is a structured process for identifying risks, understanding them and managing them proactively. This should optimise project success by minimizing threats and maximising opportunities.

> *A risk event is "… an uncertain event or set of circumstances that, should it occur, will have an effect on achievement or one or more of the projects objectives" (Project Risk Analysis and Management Guide).*
>
> *Project risk is "the exposure of stakeholders to the consequences of variations in outcome" (Project Risk Analysis and Management Guide).*

Figure 2: *Process for managing risk (PRAM)*

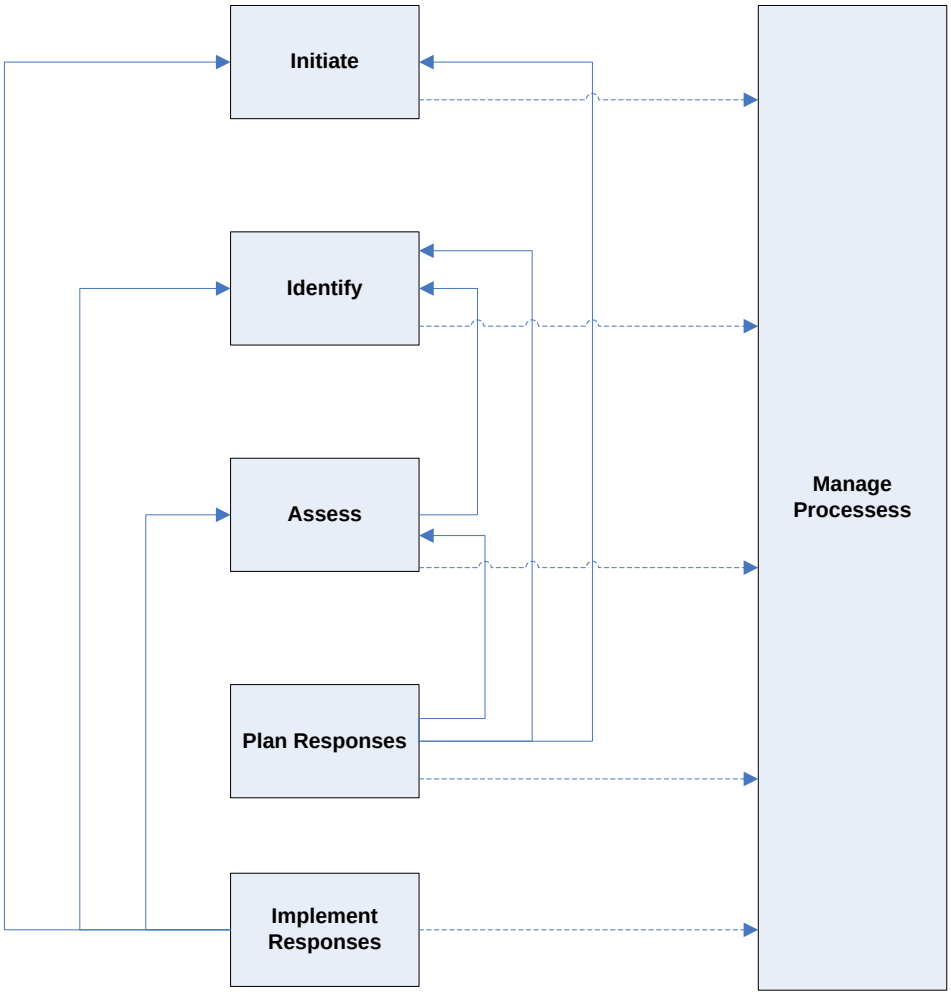


Figure 4 above shows a process for managing risk which has been adopted and developed by the Association of Project Managers (APM). In brief terms, the process described below.

Initiate: This defines scope and objectives of the project so you are aware what to analyse for risk. You should also decide which methods to use to help identify risk (see risk identification).

Identify: Process to identify risk considering both threats and opportunities. The output of this stage is the risk log. Techniques that can be used to identify risk include:

- *Assumptions Analysis:* identify key assumptions (look in project plan) and evaluate risk of assumptions not occurring.
- *Constraints Analysis:* Similar to above but reviewing key constraints of the project to establish if any risk could occur.
- *Checklist:* A checklist will help project managers to look at specific areas where risk could occur.
- *Workshops:* Performing brainstorming workshops with stakeholders may help identify risks that the project manager will be unaware of. Other analysis tools that can be used in the workshop to facilitate the brainstorming include:
    - SWOT / PESTLE Analysis
    - Stakeholder Analysis

    - Using techniques already described above
- *Delphi Technique:* Some at the brainstorming session may not have the confidence to raise their point of view or may want to raise something anonymously. The Delphi technique reiterative process of sending out a document containing risks and asking for people's opinions (via email) to be sent back directly to the project manager. The responses are collated and added to the document and then sent back out for review. This continues until opinions are exhausted.
- *Previous Experience:* By reviewing previous & similar project documents such as lessons learned, post-project reviews, issues & risk logs you may ascertain risks for your own project. You could also use internet search engines to see if anybody else has encountered risk on a similar project or discuss in forums to see what other have encountered when doing a similar project. If you are purchasing a product / software such as an information system then consultancy and professional services should be the ideal candidates for discussing risk they have encountered doing the same work elsewhere.

Assess: This key stage will assess each risk to evaluate the level of impact the risk has on the project and the likelihood it will occur. The overall severity of the risk can be identified by deciding on the level of impact (high, medium, low) and probability (high, medium, low) and placing it on a probability/impact matrix as in table 1.

Table 1: *Assessing the severity of the risk*

Probability (likelihood)	High	Medium	High	Critical
	Medium	Low	Medium	High
	Low	Very Low	Low	Medium
		Low	Medium	High
		Impact		

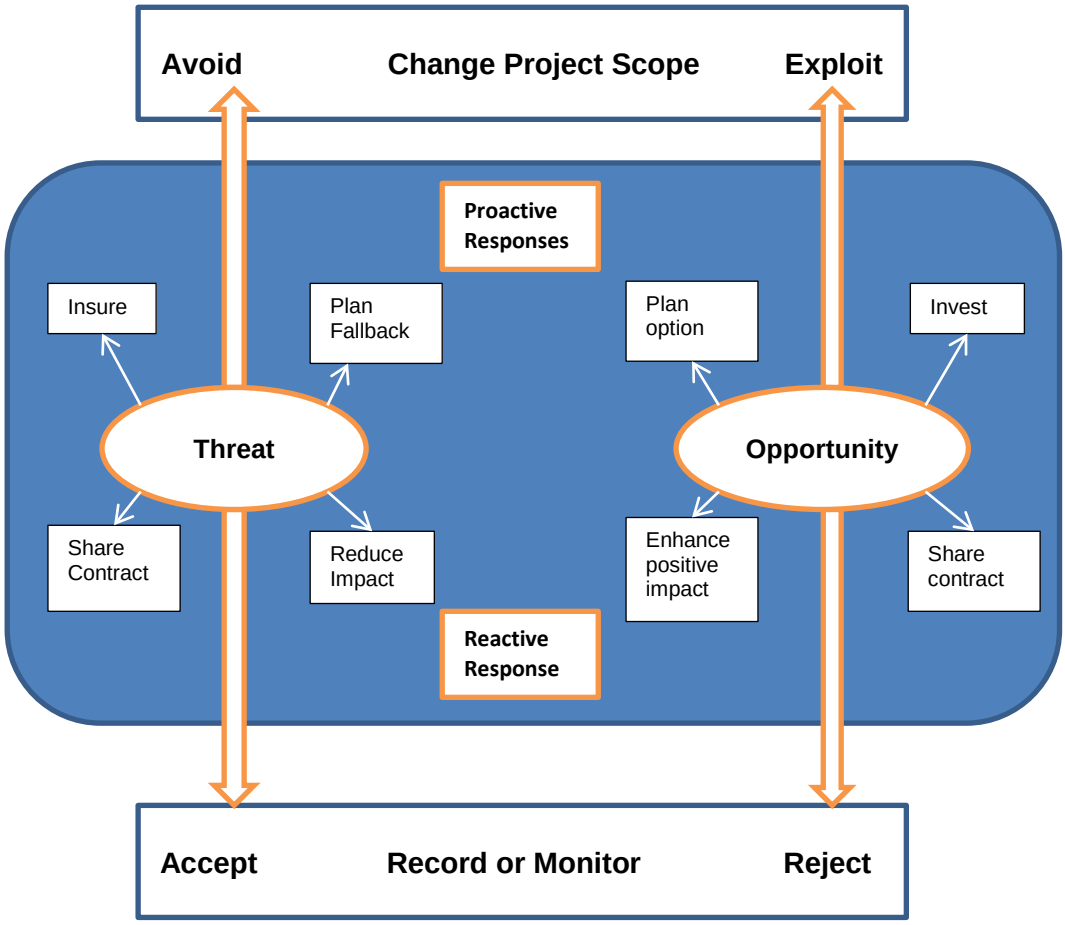
Once you have decided on the level of risk this should be recorded in the risk log.

Plan Response: Once you have identified and assessed each risk, an appropriate means of dealing with that risk should be decided upon. You can design mitigation against the risk or a number of options to reduce the risk. A decision will be needed on which response is appropriate. Figure 5 shows the options available to any risk.

It is essential that you have a strategy to deal with the risk, putting in place a course of action to try and prevent or avoid it occurring (e.g. put in place mitigation such as buying consultancy to solve a problem that your own staff do not have experience of); transfer the risk such as passing the risk onto someone else (e.g. outsourcing a complete package such as externally hosted and managed finance system); ignore the risk (e.g. accept that it could happen but that the impact is low enough to accept such as risk of air conditioning failing in a data centre could mean a large financial investment but risk of if actually happening is low and the second data centre could take over if it occurred therefore the impact on service is minimal); exploit the risk to

your advantage (e.g. There may be a risk that a new system does not meet all of your needs from day one. There may be an opportunity to partner the software company so as to enhance the product to precisely meet your needs and so shape the on-going development life cycle of the product). Any decision should be noted in the "Risk reduction strategy/contingency" column in the risk log. In Figure 5 It shows that the options for threats are to with Avoid or accept the risk which may impact on the project scope. An opportunity could be used to exploit an advantage and change project scope or ignored. If threats and opportunities are left (accepted or ignored) then they should be monitored for changes and likelihood of affecting the project.

Figure 3: *Risk Response Strategies*



Implement Response: Once you have decided what action to take this will need to be implemented. If internal resource is needed, this will need to be added to the project schedule and an owner added to the risk log. When the actions have been completed, the risk log will need to be updated with a closure date. Once the actions are completed, a re-assessment of risk should be undertaken in case any new risks have been introduced.

Useful Links:

- http://en.wikipedia.org/wiki/Risk_management
- http://www.projectperfect.com.au/info_risk_mgmt.php

- http://books.google.co.uk/books?id=_gJHsyQah98C&lpg=PA29&ots=uyqKfBFfyF&dq=project%20management%20%2B%20PRAM&pg=PP1#v=onepage&q&f=false
- http://www.mindtools.com/pages/article/newPPM_78.htm
- http://pmtips.net/defining-risk-management-part-6-risk-response/
- http://www.projectsmart.co.uk/swot-analysis.html
- http://www.jiscinfonet.ac.uk/tools/pestle-swot

Communications: Communication is the giving, receiving, processing and interpretation of information. Information can be conveyed verbally, non-verbally, actively, passively formally, informally, consciously or unconsciously. Good communication:

- Ensures a common understanding
- Ensures people know what to do
- Increases team commitment
- Encourages project interest
- Enables identification with a project
- Facilitates change
- Avoids costly communication failures
- Supports personal development/growth

Barriers to communication include:

- Out of date information
- Too much information
- Distance
- Inaccurate, incomplete or ambiguous information
- Focused at inappropriate level (e.g. technical level rather than summary level)
- Receiver hearing what they want to hear
- Sender or Receiver having different perceptions
- Receiver ignoring conflicting information and doing as they see fit
- Words meaning different things to different people

How to improve communications:

- Obtain feedback
- Establish multiple communication channels
- Use face to face if possible
- Find out how sensitive the receiver is to your communications
- Be aware of body language
- Communicate at the right time
- Reinforce words with actions
- Use simple language (one that they understand)
- Say the same thing in different ways
- When you get an agreement write it down for reference (for all parties to see)

The project plan should contain a communications plan explaining at the project's initiation how communication matters will be handled. A communications plan should include:

- Stakeholder Group & how to contact them

- Description of key messages & information
- Format (Communication channel i.e. face to face, email, blog, group meetings etc.)
- Responsibilities for delivery of messages
- Description of channels to be used
- Frequency of communication activities
- Feedback required
- How and when to review performance

A key tool for understanding how to communicate to different groups is to perform a stakeholder analysis. This is explained in more detail in section 4.3 Managing People.

Useful Links:

- http://www.collegiateproject.com/articles/Developing%20Your%20Project%20Communication%20Plan.pdf
- http://www.pma.doit.wisc.edu/plan/3-1/tools.html
- http://en.wikipedia.org/wiki/Stakeholder_analysis

3.3 Managing People

Teamwork & Motivation: Teamwork is when people work collaboratively towards a common goal gaining from synergy as distinct from other ways that individuals can work within a group. It's unlikely that one individual will have the knowledge and skills required to undertake all the activities necessary to successfully complete a modern project. A team-based approach is more likely to be successful because an effective team will apply its collective knowledge, skills and experience to the problem.

When forming teams for a project ensure you consider that effective teams are:

- Task orientated (everyone knows their task)
- Co-ordinated
- Mutually supportive
- Accountable to each other (if one fails they all fail)
- Comprised of people with complementary skills (range of skills to provide a flexible team)

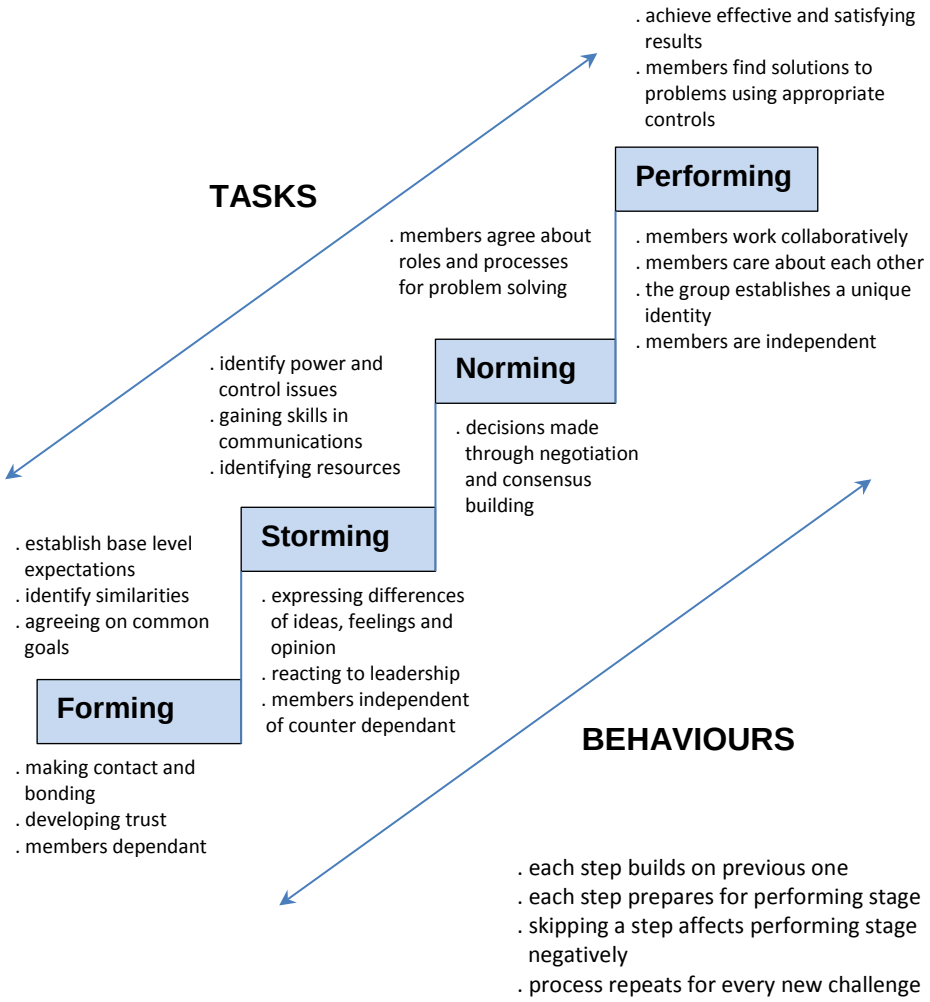
When forming teams for a project also consider the following:

- Skills needed for the project vs. skills inventory of the business
- Availability of people
- Relocation of people
- Will the personalities gel
- Is each person intrigued by the challenge?
- Is each person resilient enough?

There are several models on team development and motivation. The Tuckman Model describes how a team goes through a process of development. Figure 6 shows the five stages a team can go through. This shows that consideration should be made of the team's needs in order to allow them to get from Forming to the Performing stage. This is especially true for projects where the project team is usually compiled of a group of people who have not worked together before. The project manager needs to facilitate the process of the project team moving from the forming stage to the

performing stage as quickly as possible without it getting stuck at one of the early stages. The effect of a team not reaching the performing stage is that progress will be slowed and the schedule is more likely to slip. When creating the project schedule you should take into account the level of development needed to get that team to perform effectively.

Figure 4*: Tuckman's Team Development Model*



Forming: Everyone's coming together, getting to know each other and able to express their preferences. Group members tend to be on their best behaviour, depending on the incentive. The project manager needs to define roles and responsibilities, clarify objectives, set goals and targets, develop the project plan, allocate resources and initiate action.

Storming: The honeymoon is over. Everyone is stretched trying to do their day job as well as trying to perform project work in "other peoples' way" but each person wants to do it their way, or get a way decided. People are tired of the group interaction and just want to get the work done. The project manager needs to resolve conflict, clarify roles and responsibilities, reaffirm objectives, goals and targets, ensure sufficient resources are available, motivate staff, manage politics and urge progress.

Norming: Having enough experience together now to set group rules, and group goals. The group is becoming more decisive but still struggles to understand the best way to complete tasks. The project manager needs to encourage progress, continue to motivate, provide feedback, communicate effectively, coach and support the team and drive performance.

Performing: The big wrinkles are worked out. The group knows what it is doing and what its goals are. The processes for performing work have been refined. The group is now able to celebrate success. The project manager needs to continue to encourage and motivate, provide positive feedback, communicate and celebrate success.

Other models to analyse the role people take within a team can be used such as Belbin's Team Role. This model allocates a role to people with certain characteristics so that you are able to understand how best to use them within your team. Table 2 shows the types of roles and the positive and negative aspects of each when included in a project team.

Table 2*: Belbin's Team Roles*

Role	Positives	Negatives
Implementer	Organising; practical	Inflexible
Co-ordinator	Welcoming; strong sense of objectives	Ordinary intellect or creativity
Shaper	Drive	Prone to impatience and provocation
Plant	Genius	Up in the clouds
Resource Investigator	Knows a man/woman who can	Soon loses interest
Monitor / Evaluator	Judgement; critical reasoning	Unimaginative; not inspirational
Team worker	Promotes team spirit	indecisive
Completer / Finisher	Perfectionist	Tends to worry about everything
Specialist	Technically specialised	Uninterested outside own area

Belbin's theory shows that an effective team needs a balance of personality roles. Belbin identified nine roles and suggests that an imbalance will compromise the team's performance. This is an important aspect to consider especially when considering who should be involved the project team.

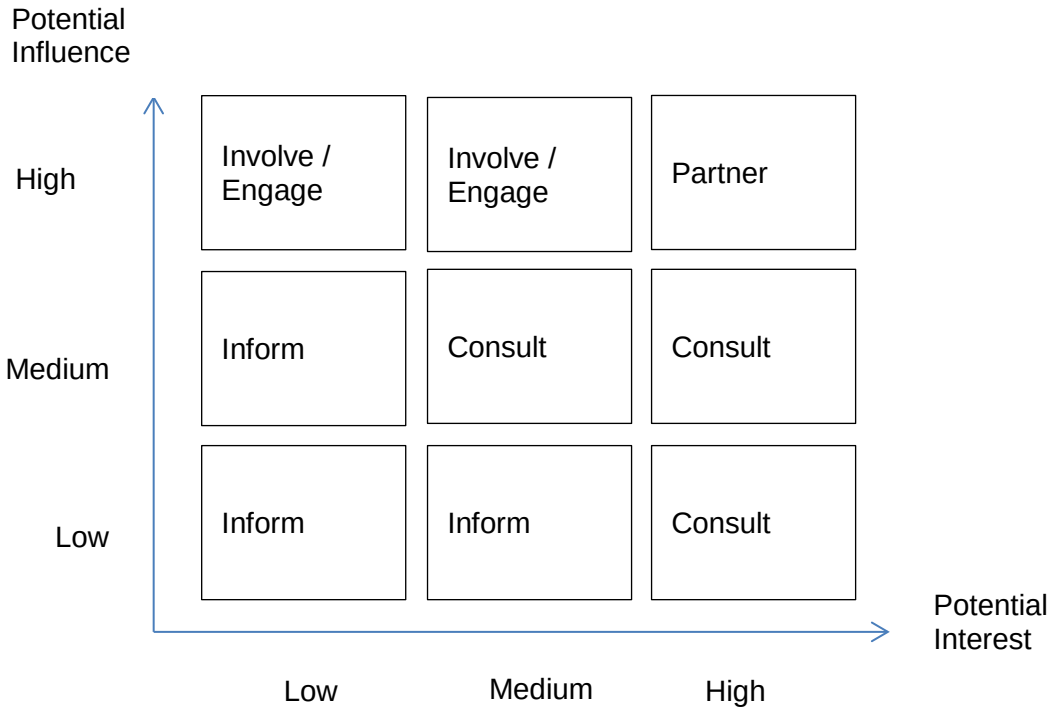
Useful Links:

- http://en.wikipedia.org/wiki/Tuckman%27s_stages_of_group_development
- http://www.managementcentre.co.uk/knowledge_base_detail.php/648/High%20performing%20teams:%20Belbin%27s%20team%20roles
- http://www.quanta.co.uk/sites/default/files/podcasts/7-2_Teamwork.mp3

Stakeholder Management: Stakeholder management is the systematic identification, analysis and planning of actions to communicate with, negotiate with and influence stakeholders. Stakeholders are all those who have an interest or role in the project or are impacted by the project or can impact the project itself. The first key step in stakeholder management is to identify all stakeholders. This can be achieved

by using brainstorming meetings or looking at similar projects for types of people. Decide on the level and area of interest for each stakeholder. Identify the power (or influence) each stakeholder has and determine for each stakeholder if they are for or against the project. Plot these results on a stakeholder grid as in **Error! Reference source not found.**.

Figure 5: *Stakeholder Influence / Interest Grid*



Once you have an understanding of the groups of stakeholders and their interest / influence over the project you are in a better position to understand how to handle them. You can use a table (see table 3) to identify all stakeholders, their level of influence and interest and then comment on what the implications of this are the project. Suggest any mitigating actions that may need to be taken to minimise any of the impacts suggested. Once you have this information it will be easier to perform the final step of completing the communications plan. An example is summarised in table 4. Consider the best means of communicating to different groups of people; the type of language and detail you need to provide; how frequently you should communicate with them.

Table 3: Stakeholder interest and implications

Stakeholder	Interests / influence	Implications / actions
Shareholders	Business to make as much profit (return on capital) as possible.	Remove investment or directors if not happy.
Management	To earn as much profit as possible.	Make wrong decision, bad mgmt. can lose profit.
Employees	Development of products, values of company & business goals.	Can move companies, create inferior products & lose custom
Current customers	To have a product that meets their needs. Can influence others to purchase.	Give bad publicity and lose custom.
Competitors	Influence customer base decisions.	Can reduce profits if competition is high.

You may need to consider different means of communication for the same group of people, depending on the nature of the communication. See the ISD Communications guide for further help.

Table 4: Stakeholder communications plan

Stakeholder name	**Type of communication**	**Description**	**Frequency of communication**
[Academic staff]	*[Email]*	*[Summary of progress on the project and notification of key dates that will affect them]*	*[Monthly updates, plus remind a week in advance of key dates, and then on the key dates themselves]*
[Student community]	*[Email]*	*Notification of key dates that will affect them*	*[Remind a week in advance of key dates, and then on the key dates themselves]*

Useful Links:

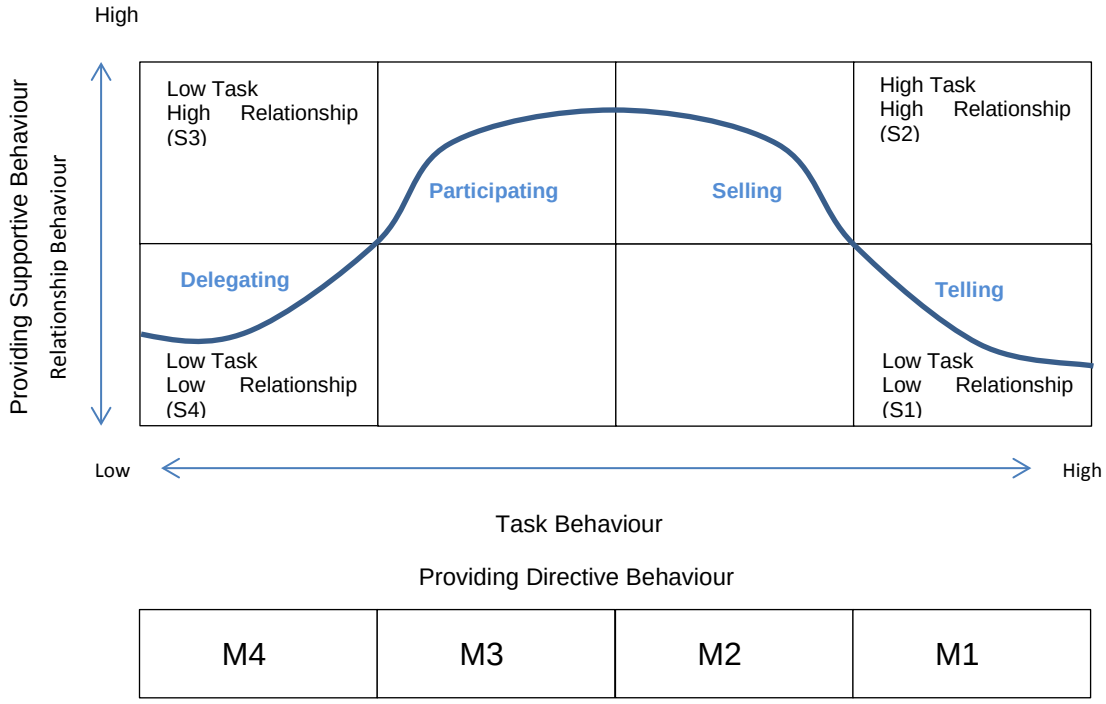
- http://en.wikipedia.org/wiki/Stakeholder_analysis
- http://en.wikipedia.org/wiki/Stakeholder_management
- http://www.youtube.com/watch?v=BkUCcJwwvAQ
- http://www.quanta.co.uk/sites/default/files/podcasts/2-2_Stakeholder_Management.mp3

Leadership & Motivation: Leadership is essential to the success of projects. It can be defined as the ability to establish vision and direction, to influence and align others towards a common purpose, and to empower and inspire people to achieve project success. It enables the project to proceed in an environment of change and uncertainty.

There are numerous theories and models on what makes a good leader. McGregor defines leadership styles which are commonly used. Theory X leaders believe people must be made to work. They instruct, drive and monitor people very closely. Theory Y leaders allow workers to self-manage and are democratic in nature.

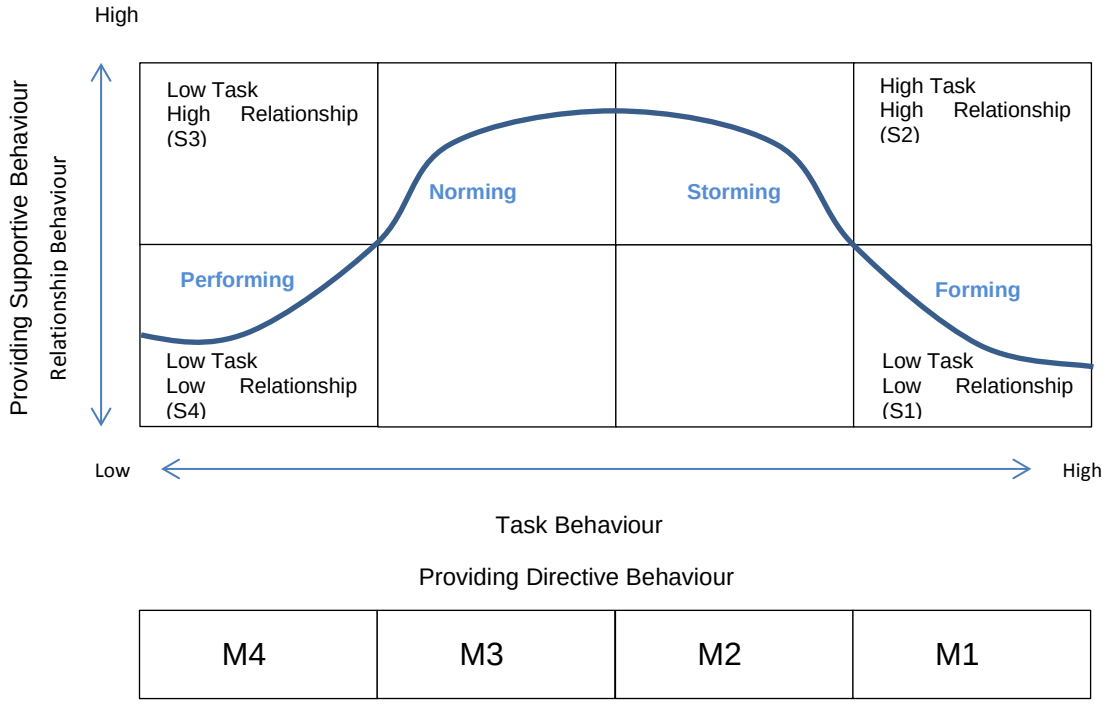
Hersey and Blanchard take this concept of leadership styles further by stating that the type of style you apply should change according to the maturity position of the individual. As an example in Figure 8 if an individual was new to the organisation they would have a low maturity level (position M1). A low maturity level is where the person has little in terms of commitment (loyalty) to the business and low competence as they have not been shown or understand their new job as yet. The leadership style would therefore be one of explaining the business goals and how they fit in and spending a lot of time explaining and showing them how to complete their tasks (position S1). As the individual gains understanding of their work and gains in commitment (loyalty over time), your leadership style as project manager will change until you get to position S4 / M4 on the diagram. This is where the individual is very loyal and understands what needs to be done. Leadership style is much more about delegating tasks to the individual.

Figure 6*: Situational Leadership*



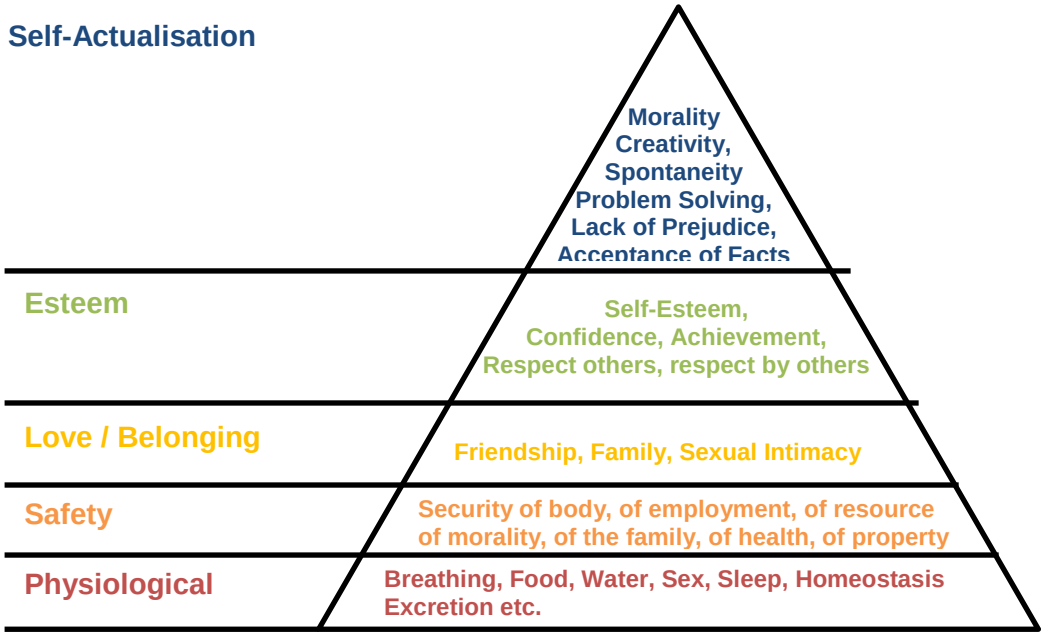
If this leadership style was to be applied to the Tuckman's team development (Figure 6) you can see how your leadership style will change when managing the project team (see Figure 9).

Figure 7: *Leadership styles applied to a project team*



In understanding your team and providing them with leadership, you also need to understand what motivates individuals. Leaders should provide opportunity to release the potential that exists within their people. People work hard if they have an emotional need for a sense of security or recognition. People work to achieve goals which in turn satisfy their needs. Maslow's Hierarchy of Needs shown in Figure 10 shows that people attain the greatest level of motivation when they reach the top of the pyramid. At this point they are likely to go the extra mile to ensure tasks are completed to the satisfaction of the customer and within defined timescales.

Figure 8*: Maslow's Hierarchy of Needs*



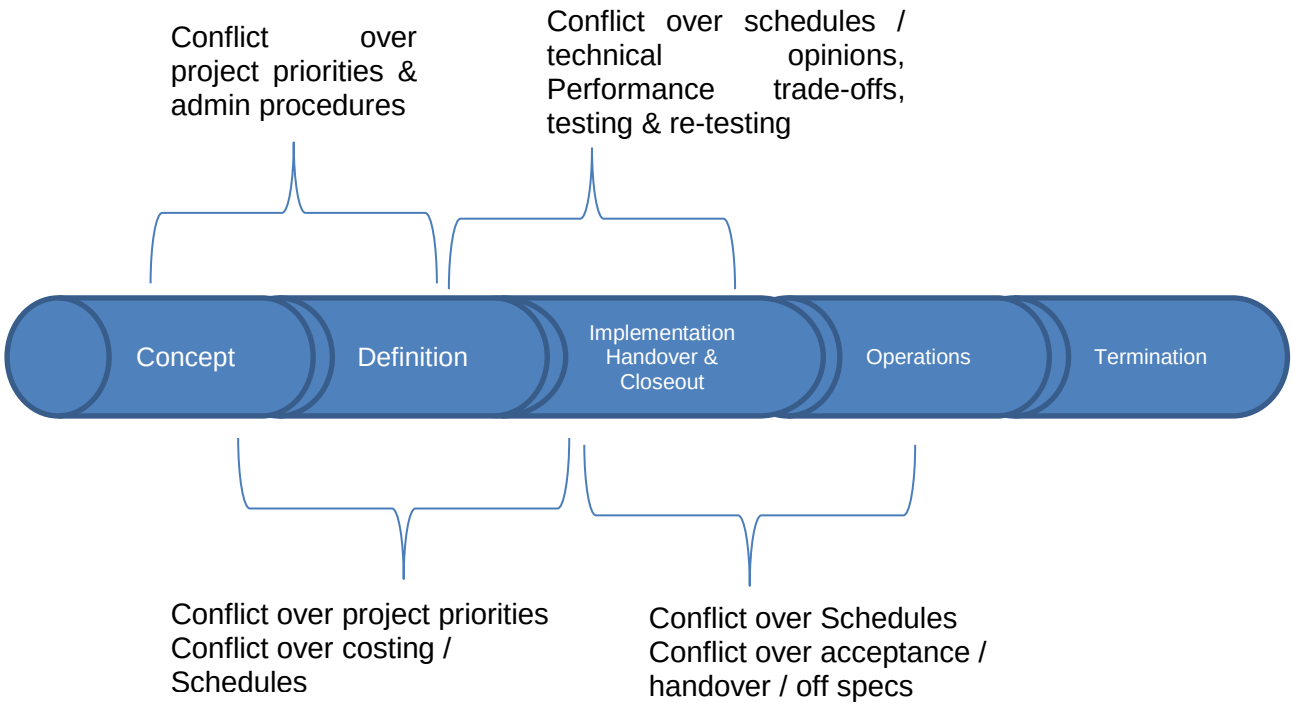
Herzberg defined extrinsic or hygienic factors which if absent would cause dissatisfaction and demotivate people e.g. lack of heating/cooling in the office they work in. Intrinsic factors or motivational factors are also defined which would not demotivate if absent but causes a lack of satisfaction which may lead to apathy or a lack of interest in their work. Links are provided explaining these factors in more detail but a project manager would have to ensure all appropriate hygienic factors were in place and motivational factors were provided.

Useful Links:

- http://www.project-management-skills.com/maslow-theory-of-motivation.html
- http://www.mindtools.com/pages/article/newTMM_74.htm
- http://en.wikipedia.org/wiki/Two-factor_theory
- http://en.wikipedia.org/wiki/Situational_leadership
- http://www.quanta.co.uk/sites/default/files/podcasts/7-3_Leadership.mp3

Conflict: Conflict management is the process of identifying and addressing differences that if unmanaged would affect project objectives. Effective conflict management prevents differences becoming destructive elements in a project. Conflict is a process that begins when one party perceives that another party has negatively affected or is about to negatively affect something that the first party cares about. Conflict management is the ability to manage conflict creatively and effectively. Figure 11 shows that conflict has the potential to occur during most stages of the project lifecycle.

Figure 9: *Conflict and the Project Lifecycle*



Consequences of conflict can be both positive and harmful. Positive consequences include:

- *Motivate:* improved performance and regard for the task being undertaken
- *Builds identity:* develops loyalty and encourages openness
- *Increases innovation:* promotes competition which may lead to a better solution

Harmful consequences include:

- Competing goals: loss of communication and co-operation
- Lack of respect, trust and harmony
- Increases chance of mistakes & causes waste
- Break-up of team, back stabbing, rumour, arguments etc.

The causes of conflict are usually:

- Friction, discontent, previous hostility, personality clash, rumours etc.
- Hidden agenda, stress, fear
- Time, cost, resource changes, peer pressure
- Failure to consult, inform or include

How to handle conflict:

- Focus on fact
- Take account of opinions
- Establish needs & wants
- Build allies
- Find common ground
- Explore alternatives
- Defuse emotions
- Find mutual gain solution

Thomas-Kilmann has built a model which identifies five styles of dealing with conflict which can be seen in Figure 12. This model applies a style of conflict according to the level of cooperativeness (level you are willing to give to allow the other part to fulfil their objective) and assertiveness (level you want your objectives to be fulfilled).

Collaborate: This is the best position whereby both parties have high levels of cooperativeness and assertiveness. Both parties win by thinking outside of the box and coming up with a solution to meet both their needs. It's rare that this style can be achieved as its time consuming and difficult to achieve.

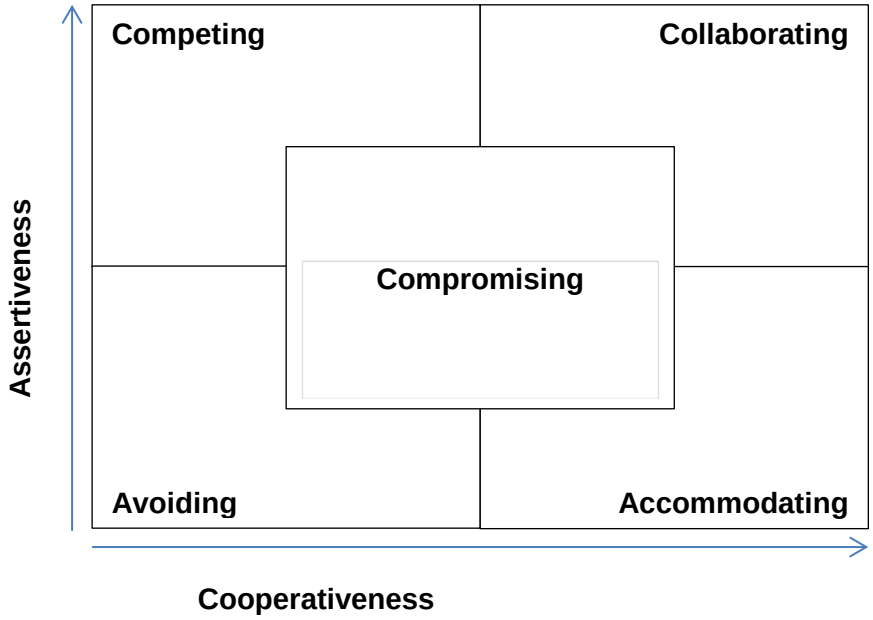
Competing: This is where assertiveness is high and cooperativeness is low. One side will lose as the winning side's objectives are prioritised.

Compromising: Both sides give something up but also sacrifice some of their objectives and fulfilling other objectives. Both sides win and lose. There are medium levels of co-operation and assertiveness.

Avoiding: Both sides lose as assertiveness and cooperativeness are low. .e.g. resource goes on holiday during critical time to complete a task. Both sides do not complete their objectives or resolve the issue by asking resource to change holiday or getting different resource in to complete the tasks. Generally causes delays to all parties.

Accommodating: This is where one party decides to accommodate the others objectives. One side may win at this point in time but it may be a calculated decision to ensure the favour is returned in the future.

Figure 10: *Thomas-Kilmann Model*

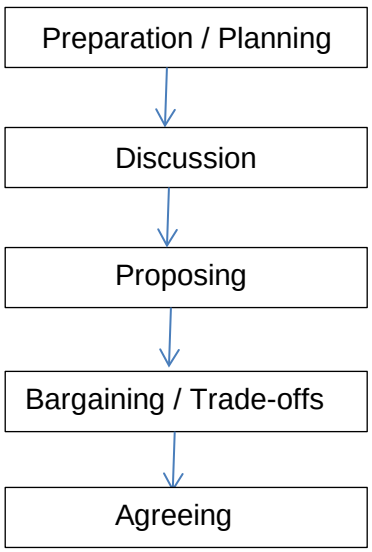


Useful Links:

- http://www.mindtools.com/pages/article/newLDR_81.htm
- http://youtu.be/QFf88IVl_Wc
- http://www.quanta.co.uk/sites/default/files/podcasts/7-4_Conflict_Management.mp3

Negotiation: Negotiation is a search for agreement, seeking acceptance, consensus and alignment of views. This is linked very closely to conflict management but is more of a pre-emptive approach to best position yourself to gain the outcomes you need. Negotiation in a project can take place on an informal basis such as during procurement and between signatories to a contract. Figure 13 shows five stages you can go through in negotiation.

Figure 11*: 5-stage process for negotiation*



Preparation / Planning: Understand the issue and study relevant material (knowledge is power). Learn and understand the other person's objectives. Anticipate their strategy. Define own objective and priorities. Define own strategy such as MoSCoW in table 5. Decide what you **M**ust have, **S**hould have, **C**ould have and **W**on't have.

Table 5: *MoSCoW*

	Tradable 1	**Tradable 1**	**Tradable 1**
Could Have			
Should Have			
Must have (Bottom Line)			

Discussion: During discussions ensure you know names and positions of everybody, make them feel comfortable, maintain a business-like approach, show confidence, limit distractions, keep a positive attitude and watch for reactions. Overall keep in control.

Proposals: For your proposal, during the discussion, ensure you have defined your objectives, don't overstate these but ensure you have scope for movement. Don't give too much away on the importance of each objective. Leave room for manoeuvre. After discussion, turn your proposal into something more formal by re-stating in writing the proposal and your opponents position.

Bargaining / Trade-off: The proposal can then form the basis for the bargaining stage where you try to change the others perception of where one would settle. Most agreements tend to fall somewhere in the middle of the range of initial proposals. Thus the first proposal is important to get right.

Agreeing: Closing the deal is all about the timing, agreeing the minor issues first and trading and conceding until all major issues are resolved. Summarise final position and don't re-open the discussion then get it in writing.

Overall it's essential that you:

- Prepare
- Know what you need, want and can give away
- Consider what they need and want
- Agree a strategy and prepare for answers and questions
- Avoid conflict
- Identify a common ground & test acceptance
- Confirm agreement and close the deal

Useful Links:

- http://www.mindtools.com/pages/article/newLDR_81.htm
- http://youtu.be/QFf88IVl_Wc
- http://en.wikipedia.org/wiki/MoSCoW_Method
- http://www.quanta.co.uk/sites/default/files/podcasts/7-5_Negotiation.mp3