

**Name**

**Team #**

**Grade and Comments:**

# **Strategic Project Management**

**Team Leader Seminars  
10.26**

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## **INTRODUCTION:**

The Strategic Project Management Model (SPM) explicates the important elements that are key for developing strategic leadership project management in a team. Learning about project management includes learning new terminology and key concepts in project management. The underlying theoretical concept is that environment and cultural orientation impact upon task performance in a team. Cultural orientation is defined as an organization that is comprised of an environment. An environment is a theoretical construct composed of beliefs that have material consequence. Culture is an exhibition of collective behavior resulting from the attitudes and beliefs of the inhabitants.

The environment is divided into general sectors including social, cultural, legal, political, economic, technological, and physical. The culture in a team is defined as the collective phenomena that embodies people's responses to the uncertainties and chaos that are inevitable in a collective experience. This includes history, tradition, expectations of behavior, and values.

These responses fall into two major categories. The first is the substance of a culture, shared emotionally charged beliefs that we call ideologies. The second is cultural forms, which are observable entities, including actions, through which members of a culture express, affirm, and communicate the substance of their culture to one another (Trice & Beyer, 1993). The culture is one sector of the general environment. In today's cultural sector of the general environment the trend is toward having a decreasing value for hierarchical authority and an increasing value for collaboration. These cultural value changes transform the other sectors of the general environment by changing how we manage projects. Our values, use of technology, definition of leadership, and use of power and influence is transforming. Understanding how to develop proficiency in strategic project management skills as we now value them can make a team more efficient and high performing. In developing an action plan for a specific goal this model breaks down the general environment into different sectors so that specific influences impacting on performance of the team can be delineated.

The mission statement is the first step in defining the strategies your team will use to become high performing. The mission statement defines your team's core values or vision. It is the first step to creating your team's culture. There are key variables that define a culture: structure, time, thinking, specific environment, defining power, integrating individualism, transforming competitiveness into collaboration, and competently leading in a learning organization. Teams are transitory cultures therefore rapid identification of key factors is needed. Other factors considered in the Strategic Project Management Model are assessing leadership skills, identifying availability of technology and resources, the use of power, and strategically managing a changing environment to support effectiveness and efficiency. Understanding how these elements work in concert to impact upon a team's performance is the main objective of the model. The model includes assessments of some of these areas of influence you and your team will encounter. Understanding the scope of a project, and setting appropriate realistic goals for a team project takes skillful discussion and

clarification. Learning how to identify culture, the environment, competencies, and providing appropriate technologies provides structure for the team culture. Effective time management in a team, assessing individuals, competently, managing conflict, recognizing the impact of how a person thinks when problem-solving, and other behavioral aspects of individual team members provides the foundation for strategic project management. This workbook addresses environment, culture, technology and resources, thinking styles, goals, strategic time management, and action plans. Many of these factors explicated in this workbook are also explained in the leadership workbook. The leadership workbook also addresses leadership roles and competencies, and power and influence. These exercises are designed to define the terms and to teach you how to define and integrate the advantages and disadvantages of each of the influences impacting upon your team when designing and implementing a project.

**The Overall Objective is:** to understand how the general and specific environment works in concert to impact upon a team's performance To support leaders in learning how to create effective project management. Creating action plans for goals tasks that need to be accomplished is a key concept in this model. Projects in this course include written team assignment, developing and rehearsing the oral presentations, executing the experiments and any other professional activity the team may want to execute collaboratively.

**An attempt has been made to keep the jargon to a minimum. All jargon is in the Definitions and also unique definitions to commonly used words.**

The Strategic Project Management model combines time management (Parato, 19), systems thinking (Senge et al, 1994), cultural orientation theory (Brake & Walter, 1995), leadership theory (Nahavandi, A.,1997;Dubrin,1995) within the context of team development, and organization theory (Hatch, M. J., 1997).

## Definitions

**ACTION PLAN:** a system utilized to break goals into sub goals and then tasks which are then defined by the steps and time it will take to accomplish the goals.

**ACTIVITY DEFINITION:** is identifying and documenting the specific activities that must be performed to successfully complete the project as defined in the work breakdown structure.

**ACTIVITY SEQUENCING:** is identifying and documenting interactivity dependencies. Activities must be sequenced accurately in order to support later development of a realistic action plan (activities schedule). Sequencing can be performed with the aid of project management software or with manual techniques, which are more productive on smaller projects such as yours or in combination.

**ACTIVITY DIAGRAMMING METHOD:** project network analysis. Each circle represents an event in the project. Each circle is the start of work or the completion of a project. The arrow represents the activity or task that must take place before the second event can be declared as achieved. Network diagrams are not drawn to scale. Originated in mathematical theory of networks. (Lock, 1996)

**ACTIVITY DURATION ESTIMATING:** is assessing the number of work periods that an individual team member must completed in each identified activity and the number of work periods that the team will need to collaborate on the activity. The team must approve both individual and team work estimates.

**ANALOGOUS ESTIMATING:** also called top down estimating is using the actual duration of a previous, similar activity as the basis for estimating the duration for future activity. On the first experiment your will not be able to use analogous estimating or historical information.

**ASSUMPTIONS:** are factors for planning purposes that all of the team consider true, real or certain.

**AUTHORITY:** represents the right to secure compliance by others; power backed by legitimacy.

**CONSTRAINTS:** factors that will limit the project team's options. Your constraints are few because they are usually items such as market shifts or government action,

**CULTURE:** is the common set of behaviors, values, beliefs, patterns of thinking and assumptions shared by members of an organization. Culture shapes our view of the world. Culture determines how we think and behave towards ourselves, others, and the world.

**DECOMPOSITION:** subdividing project elements into smaller, more manageable components (goals and sub-goals). (PmBok, 1996)

**DISCRETIONARY DEPENDENCIES:** dependencies which are decided upon by the team (example will only work fifteen hours per week on the project) They should be fully discussed and documented since they may limit your scheduling options. They are limited by best practices, which in this course means amount of time you and advisor and course syllabus define as discretionary. You may also decide upon a sequencing of events for the action plan that is desired even though there are other acceptable sequences. (PmBpok, 1996)

**ENVIRONMENT:** The outside forces that have the potential to affect the organization. An environment is a theoretical construct formed by beliefs about their existence; environments have material consequences. The model uses two environmental constructs. . The external environment is made up of all entities and forces that impinge upon organizational activities and with which the organization must deal with to be effective. The general environment refers to those aspects of the external world that affect organizations. The general environment includes many situational factors that can influence how an organization forms its culture.

**EXTERNAL DEPENDENCIES:** the dependencies that are from outside sources that were decided would have impact upon the team's ability to do the project successfully. (ordering equipment that is not working properly)

**LEADERSHIP:** The methods and behaviors by which the strategies are implemented.

**MANDATORY DEPENDENCIES:** are inherent in the nature of the work being done such as time and other physical limitations such as the sequencing of the events (can't take data until experiment equipment is running properly). (PMBOK, 1996)

**MILESTONES:** Intermediate points throughout the network diagram that are placed on the schedule as benchmarks to show the team that the project is being accomplished. A milestone is achieved when the milestone activity is finished. In arrow networks events can be designated as milestones. (Lock, 1996)

**POWER:** is the capacity of one person or group to secure compliance from another person

or group.

**STRATEGIC PROJECT MANAGEMENT:** The balance and fit among strategy, culture, environment, leadership, structure and technology in achieving short-term and long-term goals. In teams it is developing strategies that help team members to harmonize their personal and organizational commitments so at any moment, their reasoning, decision making, and actions have integrity for the team as well as for themselves (Culbert, 1996)

**STRATEGY:** The creation of a strategy is how vision, mission, goals, and decisions are realized.

**STRUCTURE:** The basic design dimensions including centralizations, formulization, integration, and span of control that organize the human resources of an organization.

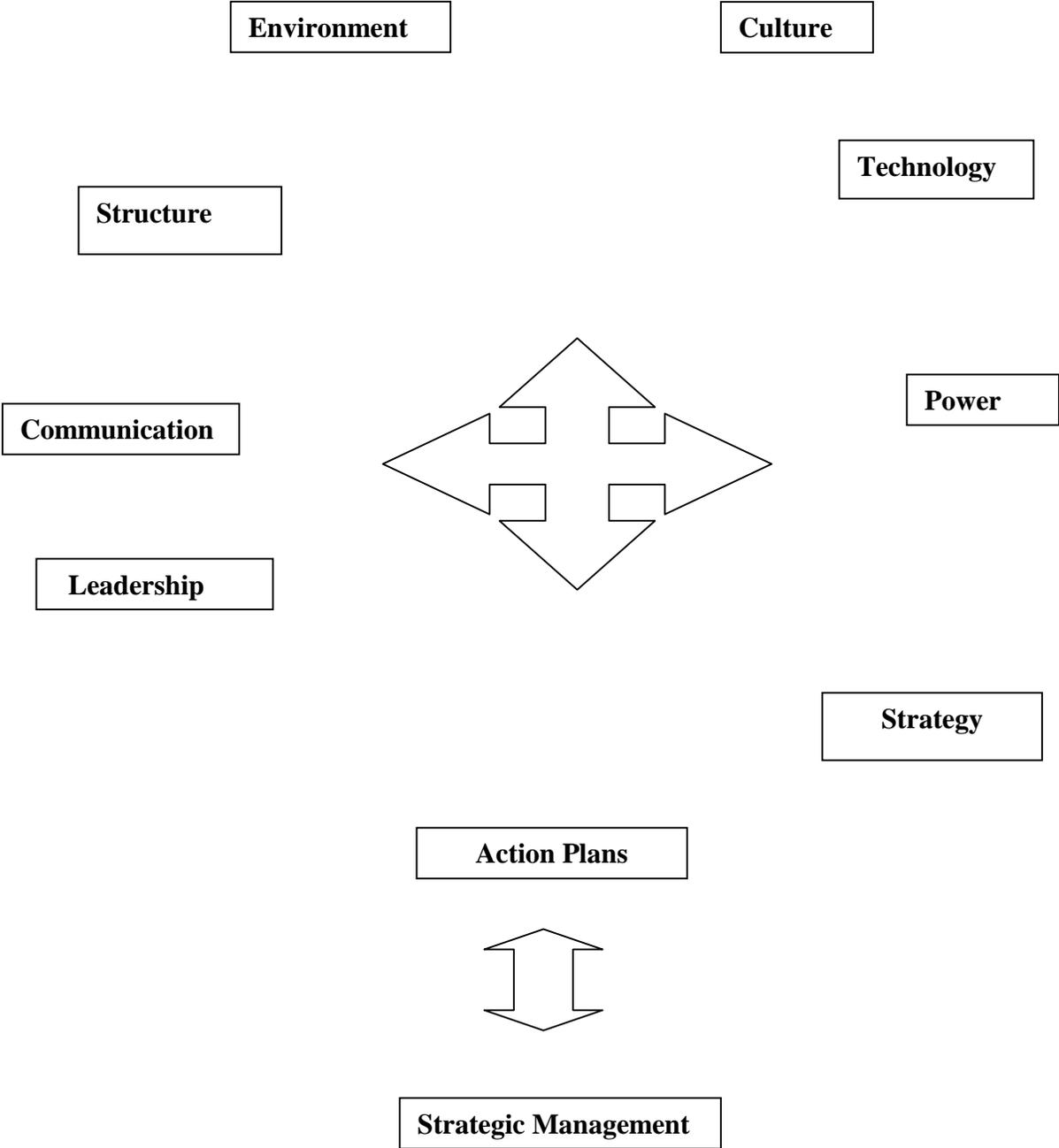
**SYSTEMS THINKING:** a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior of systems. This discipline helps us to see how to change systems more effectively, and to act more in tune with the larger processes of the natural and economic world (Senge et al., 1994).

**TECHNOLOGY:** The process by which inputs are transformed into outputs.

**TEMPLATES:** are activity lists from a previous project which you can use all or part of in this project. In addition the activity list for the Work Break Down Schedule can be used as template for this project as well as for other projects.

**VISION OR MISSION STATEMENTS:** for teams are a tool used to establish and guide the team's direction. They are descriptions of what team members would like their work, their performance and results, their relationship to each other, and their work area to look like.

# Strategic Project Management Model



## Strategic Management

Are there individual or team characteristics that must change or be created in order to accomplish the project successfully? If so what are the changes?

In order to answer this question many influences have to be clarified until an understanding of their synergy is apparent to the team.

To manage a team strategically the team must develop a vision for the task and vision for the opportunity to collaborate which will include developing new attitudes and beliefs. **Write your team's Mission Statement here:**

As you are aware a mission is a statement used as a tool to help the team set their direction. The mission statement clarifies and summarizes what the team wants to do. The mission statement states in concrete terms what the team does and helps others to relate to the team's activities. Scope Statements are subdividing the major project deliverables or goals into smaller manageable components (PMBOK Guide, 1996). Goals are what the team members commit to do. Goals are specific, time based, and challenging. Goal setting requires a structured process. In the following assessment you will learn how to set goals in a structured process which will enhance the efficiency and effectiveness of your team.

Action Plans are accomplished by developing action steps from scope statements and goals. An action plan takes a project's goals, which are perceived as overwhelming and makes them feasible. Teams create action plans from scope statements and goals and by integrating all components of the Strategic Project Management Model into one overall plan of strategic management. Once the action steps are created roles and responsibilities become more clearly defined, allowing team members to discuss who has the expertise and motivation to do individual steps. In the early stages of this process it will seem overwhelming and pointless to some team members. Aligning team members to be motivated and high performing is difficult to manage. Learning to become a proficient leader is important at this stage of Strategic Project Management.

## **Objective of Project**

In order to later create an appropriate scope statement break down your Mission Statement, divide the team objective into two primary specific objectives, the team process objective and the task process objective. (Read “General Overview of Behaviors used to Form a High Performing Team” in the Manual for a complete understanding of these two processes.) Remember to include in your objective the vision of your team being a living system with a culture of its own, distinct and apart from the rest of the organization and yet inextricably linked to the organization.

**Team Process Objective:**

---

**Task Process Objective:**

## **The Scope Statement**

The mission statement expresses what your team would ideally like to accomplish. The scope statement defines the boundaries. In the succeeding pages you will define the boundaries of your project and create a plan to accomplish the project. The boundaries include the environmental constraints the cultural constraints, time constraints, technological constraints, structural constraints, and effective leadership and communication.

Scope planning should include experiment description, constraints, assumptions, the tools you will use to accomplish the tasks, the culture, technology, individual competencies, and any other factors impacting upon the project. The following pages will help you create a scope statement, action plans for the scope statement and teach you to observe factors that will impact upon your team's performance while performing the task. The project scope statement will include justification, description, deliverable and success criteria for the project. Justification for the project comes from your mission statement but more clearly defines the problem you are being asked to solve. The product description is the statement of work to be done or the overall objective or solution. The project deliverables are a summary of the sub products or goals. A good question to ask is "How will we know when we are done?" The project success criteria is what you can quantify - schedule (action plan) team's satisfaction criteria, criteria for advisor' satisfaction that the goals have been met.

**Create a Scope Statement for your new Project:**

## **Decomposing the Project**

**Identify the major elements of the project. Start with the goals of each team member and the goals of the project..**

**List the Personal Goals your Team Members and you discussed in the Goal Setting Exercise.**

**Team Member Name** \_\_\_\_\_

- 1.
- 2.
- 3.

**Team Member Name** \_\_\_\_\_

- 1.
- 2.
- 3.

**Your Goals:**

- 1.
- 2.
- 3.

**Incorporate these goals in your action plan.**

**List the Competencies (from the survey you took the first week of class; do not make up new ones, use the sheet you were given at the first team meeting in class) You and Your Team Members will be Strengthening:**

**Team Member Name** \_\_\_\_\_

1.

2.

3.

**Team Member Name** \_\_\_\_\_

1.

2.

3.

**Your Competencies:**

1.

2.

3.

**Incorporate working on these Competencies into your action plan.**

## **Work Breakdown Structural Assessment**

### **Organizational Structure**

An organization's structure can constrain or enhance your ability as a team to gain resources for your project. According to the Project Management Institute structures can be categorized from being functional to being projectized with a variety of matrixes on the continuum.

A functional organization is a hierarchy where each team has one clear superior. Staff is grouped by their technical knowledge, such as chemist, biologists, production, marketing, engineering and financial. There can be subdivisions in this structure. Functional organizations have projects but they are usually highly defined work groups with every one working independent of each other and reporting to one functional manager in one department. When their phase of the project is completed, the results are passed up the hierarchy to top management where the heads of the department pass the results on to other department heads and then the results and decisions on how to proceed are passed down again to the same department or to another department.

Projectized Organizations are at the other end of the continuum. In projectized organizations team members are collocated. The organization's resources are used for the project directly with project managers or team leaders being independent and holding the authority to make decisions. Projectized organizations have departments that report directly to upper management and to the project managers but mainly they are support services to the project manager.

Matrix organizations are a blend of functional and projectized organizations. Weak matrixes are similar to functional organizations and the project manager or team leader is more of an organizer or expeditor of predetermined goals and tasks, while a strong matrix has many of the characteristics of a projectized organization. In today's business environment many organizations have a mixture of matrixes, functional organizations and projectized organization. These organizations are called balanced matrixes. Special project teams may be formed to work outside the formalized structure of the organization and may report to several departments while they operate.

## ORGANIZATIONAL STRUCTURAL INFLUENCES ON PROJECT

(PMBOK, 1996)

Project Characteristics and Organization Type	Functional	Weak Matrix	Balanced Matrix	Strong Matrix	Projectized
Project Manager's Authority	Little or None	Limited	Low to Moderate	Moderate to High	High to Almost Total
Percent of Performing Organization's Personnel Assigned Full-Time to Project	Virtually None	0-25%	15-60%	50-95%	85-100%
Project Manager or Team Leader Role	Part-Time	Part-Time	Full-Time	Full-Time	Full-Time
Common Titles for Project Manager's Role	Project Coordinator/ Project Leader	Project Coordinator/ Project Leader	Project Manager/ Team Leader/ Project Officer	Project Manager/ Program Manager/ Team Leader	Project Manager/ Program Manager/ Team Leader
Project Management Administrative Staff	Part-Time	Part-Time	Full-Time	Full-Time	Full-Time

**Describe the structure** of the university and how this structure will effect the way you will manage the project.

## **MIT as an Organization**

### **Structure**

#### **Functional**

#### **Project Oriented**

#### **Weak Matrix**

#### **Balanced Matrix**

#### **Strong Matrix**

#### **Composite**

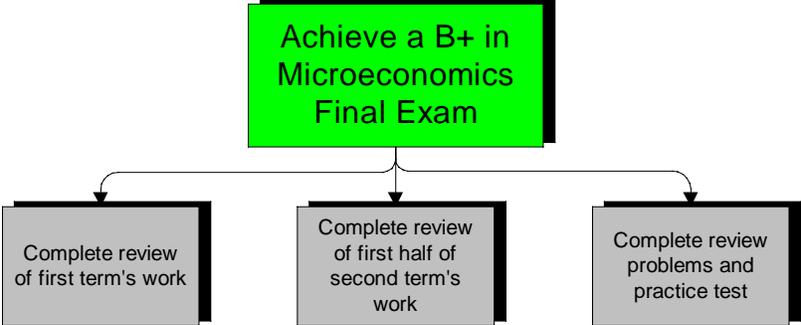
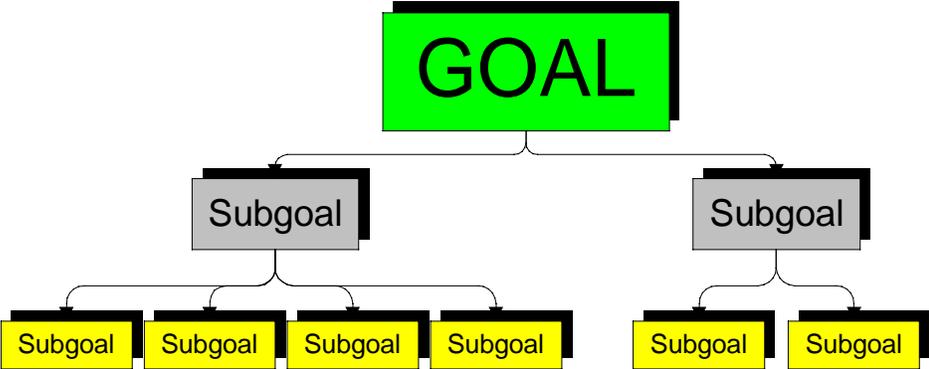
#### **Advantages**

#### **Disadvantages**

A work breakdown structure (WBS) is a deliverable-oriented grouping of project elements that organizes and defines the total scope of project. The work breakdown structure is used to develop or confirm a common understanding of project scope. Included in your work breakdown scope are all the elements. Decompose your goals (goals for project including your personal goals and competencies you wish to improve) into smaller more manageable goals and break into sub-goals. Define goals in enough detail to allow the team to use them in action plans for your deliverables, which are the oral presentation, written reports, and

experiment results.

# Goals



## **Goals**

Use the chart to breakdown your goals for each project: (after the first experiment you can use the breakdown as historical information for the next experiment and adjust the plan to make it more accurate to the situation. Correct any errors in estimated time because you will have historical data on time estimates.

**Experiment:**

**Written Assignment:**

**Oral Presentation:**

**List the Team Goals your team members and you discussed in the Goal Setting Exercise and listed on the progress report #1.**

**Sample of Work Breakdown Statement for Experiment**

**List what you know about each of these categories**

**Experiment**

**Project Management**

**Data**

**Conclusions**

**Planning**

**Training materials**

**Written Paper**

**Meetings**

**Equipment needed**

**Oral Presentation**

**Administration**

**Technical Information**

## **Environment** (Steers & Black, 1994)

### **Organizational Environment**

ENVIRONMENTAL FACTORS that a team may want to understand are what the shared values, norms, beliefs and expectations are of the organization where the team will be functioning. These beliefs are reflected in their policies and procedures and in how they view authority. These environmental factors effect a team's ability to function in both advantageous and disadvantageous ways. A team leader must be able to identify which of these factors will have a direct influence on the project. Example: teams wanting to develop their own procedures will more likely gain approval in an aggressive or entrepreneurial organization.

At MIT there are different environments that interact with each other, just as there are in any large organization or company. The external environment is made up of all entities and forces that impinge upon organizational activities and with which the organization must deal with to be effective. The general environment refers to those aspects of the external world that effect organizations. The general environment includes many situational factors that can influence how an organization forms its culture. Some situational factors are the economy, governmental and political affairs, financial resources, natural resources, geography, technology, and culture. The task environment refers to those aspects of an organization's environment that directly affect its goal and the degree of goal attainment. In 10.27 your task environment includes support staff, teaching assistants, faculty advisors, the instructor in charge, the writing practicum lecturers, and Phase Two evaluators.

What makes an analysis of the environment so important? All the resources your team will be ultimately using come from the general environment. It can be the place where there is the most uncertainty. An added uncertainty for knowledge teams is whether they can or can not prove their null hypothesis. Keeping these factors in mind by defining the environment properly can enhance the team's ability to become creative. You have been given a problem to solve, which will take technological knowledge but will also take knowledge of yourself and others to complete the task efficiently. Learning how to assess environmental changes and have your team respond appropriately is a skill to be mastered. Planning ahead for environmental influences helps the team respond more efficiently.

Environmental uncertainty is a result of three conditions (Duncan,pg 365)

3. A lack of information concerning the environmental factors associated with a particular organizational decision making situation.
4. An inability to assign probabilities accurately with regard to how environmental

factors will affect the success or failure of a decision unit in performing its functions.

5. A lack of information regarding the costs (monetary, time, allocation of scarce resources, etc.) associated with an incorrect decision or action.

To limit the amount of environmental uncertainty team members need to become aware of what the environmental factors are and accurately perceive how they impact on the task.

Accurate perceptions

**Using MIT as the organization. Rate your “organization” on the following items, using the following scale:**

**1**                      **2**                      **3**                      **4**                      **5**  
**Strongly disagree**   **Somewhat disagree**   **Neither agree nor disagree**   **Somewhat agree**   **Strongly agree**

- \_\_\_\_ 1. Decision-making is centralized.
- \_\_\_\_ 2. There is a very strong, cohesive culture.
- \_\_\_\_ 3. We are always coming up with new ways of doing things.
- \_\_\_\_ 4. A few people make most of the decisions.
- \_\_\_\_ 5. There are many subgroups and cliques.
- \_\_\_\_ 6. Our primary concern is efficiency.
- \_\_\_\_ 7. We are known for our ability to innovate.
- \_\_\_\_ 8. We are open to differing points of view.
- \_\_\_\_ 9. Team members are empowered to make many decisions without checking with faculty.
- \_\_\_\_ 10. We are not allowed to generate ideas without supervision.
- \_\_\_\_ 11. We take many risks.
- \_\_\_\_ 12. There are many rules and procedures for our tasks.
- \_\_\_\_ 13. People are encouraged to do their own thing.

**SCORING:** Reverse score items 5, 6, 8, 9 and 13

**ORGANIZATIONAL STRUCTURE:** Add items 1, 4, 9, and 12. Maximum score is 20. A higher score indicates more centralized, control oriented structure.

**ORGANIZATIONAL CULTURE:** Add items 2, 5, 8, and 13. Maximum score is 20. A higher score indicates unicultural organization where diversity is not encouraged.

**STRATEGY:** Add items 3, 6, 7, 10, and 11. Maximum score is 25. A higher score indicates risk taking and innovation.

## **Environment Assessment:**

**Define the outside forces** that have the potential to affect the success of your goal.

**List four different outside forces and decide** how they are an advantage and/or disadvantage to the team.

**What is the amount** of task definition and knowledge required to perform in the organization?

Highly Directive

Medium Directive

Low Directive

**What is the extent** of task flexibility?

**What is the primary pattern** of communication?

**How are** decisions made?

**Does the organization exist** in a stable, predictable environment or an unstable turbulent one?

**Identify the links** with others that the organization interacts with, or that can influence these relationships through competition, regulation, or social pressure (i.e. companies (national and international) that hire students). The network consists of faculty advisors, suppliers, librarians, parents, other course instructors, and roommates, etc.

**Assess** how the relationship between organization and its network are likely to be affected by

specific conditions and trends. Consider likely sources of influence from the environment. An example: the ability to access knowledge, competent staff, and laboratory equipment. Trace these resources back to their source.

**Assess patterns of success and failure** in relationship to other technological institutes (short and concise)

**Assess** the social legitimacy of MIT:

**Do the outside influences reward** MIT for producing technically qualified scientists?

**Do the outside influences acknowledge** MIT for producing scientists who conform to the values, norms, rules, and beliefs of the society?

## **Culture** (Steers & Black, 1994)

Culture is the common set of behaviors, values, beliefs, patterns of thinking and assumptions shared by members of an organization. Culture shapes our view of the world. Culture determines how we think and behave towards others, the world, and ourselves. From cross-cultural research we know that cultures are built on core value orientations. Value orientations are preferences for certain states of affairs or outcomes over others. As previously mentioned, identifying how a culture is defined relates to ten key variables, environment, time, action, communication, space, power, individualism, competitiveness, structure, and thinking (Brake & Walker, 1995). In this chapter we have expanded the meaning of culture to the different cultures in the MIT environment which includes each individual team in the course. Each team is comprised of three individuals each coming from a particular culture, once the team is formed the team develops its own culture. Then the team's culture is within the culture of the class, which is within the culture of the department, which is within the culture of MIT. In some models culture is defined as the organization's culture and all other cultures are considered subcultures.

## **Cultural Assessment:**

Determine the common set of values, assumptions and beliefs shared by members of the organization that affect your goal. Describe the team culture. List three values, three beliefs, and three assumptions for the team culture. Remember to include patterns of thinking and distinct shared behaviors you have observed. Decide how these cultures impact upon your goal by describing the advantages and disadvantages of the culture.

### **Team Culture**

#### **Values:**

- 1.
- 2.
- 3.

#### **Advantages:**

#### **Disadvantages:**

#### **Beliefs:**

- 1.
- 2.
- 3.

#### **Advantages:**

**Disadvantages:**

**Assumptions:**

**1.**

**2.**

**3.**

**Advantages:**

**Disadvantages:**

## Resources Planning

Resource Planning is determining what resources (people, equipment, materials, tools) and what quantities of each should be used to perform project activities. On a real project resource planning would be closely coordinated with cost estimating and budgeting.

In a team technology is more complex and the structure needs to be more specific and concise. Time management is a large factor in the successful completion of the task. As a team your goal is to produce systems that allow the team to collaborate successfully. In order to accomplish the goal a clear understanding of the reliability of the resources and technologies available including viewing your team members as part of the team's resources is integral to the success of the team.

**Remember:** MIT's Goals is to educate your team so you can manage a project within a team context.

### Knowledge needed to do Resource Planning

**1. Work Breakdown Structures** help define activities or processes that will be needed to do the project. Remember your projects are the oral presentation, the experiment, and the written paper.

**2. Historical Information** is obtained from your faculty advisor and the laboratory staff. You may already have gathered some of this information which includes types of resources available.

**3. List and describe resources** needed to do project (include resources needed to do experiment, oral presentation and written paper) Resources include technical knowledge your team already possesses to do project. These technical skills will be of interest to laboratory staff and faculty advisor and other team members. How are each team member's technical abilities impacting upon the completion of the projects?

**Experiment:**

Team Member #1

Team Member #2

Team Member #3

**Written Paper:**

Team Member #1

Team Member #2

Team Member #3

**Oral Presentation:**

Team Member #1

Team Member #2

Team Member #3

**4. Policies of the organization** regarding resources needed to complete projects:

**Sharing of equipment:**

**Specific Instruction on how to use equipment:** (if oral instructions have been provided to you on the use of any equipment list this. If written instruction have be provided summarize your understanding of how to perform the task)

**5. Scope Statement** From your Mission Statement and Project Objectives develop a scope statement for the team. Be clear and concise. Include in the scope statement your sub projects of performing the experiment, preparing for the oral presentation and preparing for the individual or team writing assignment .

**6. Knowledge needed to** develop and apply equipment, tools, and methods to produce a particular outcome. What do you have to read and learn to do experiment, oral presentation and written papers?

**7. Creating a method of assessing** whether the process was successful or not.

**8. What core technology** is being used in your team?

**9. List the advantages and disadvantages** of the technology ( .

**10. What activities** is your team participating in that support the technology? (Example: When problem with computer in cluster arise report them to headquarters immediately)

**11. What activities** are diminishing the technology? (Example: Team members are not communicating effectively with each other

## What are the Thinking Style Interactions of the Team when Problem-Solving?

### Thinking Style Interactions

One thinking style tends to dominate when problem solving, or when completing a project. A team member's dominant style is important to note due to the effects that thinking styles can have on other team members and on the process of interaction and relationship building. In the following summary different thinking style interactions are compared. Please note that one style is not better than another is, just different. It should also be emphasized that each individual has the capability to use all five thinking styles, however studies have shown that in 60% of respondent who were studied one thinking style dominated.

#### WHEN SYNTHESISTS AND IDEALISTS INTERACT:

##### STRENGTHS:

<u>Synthesist</u>	<u>Idealist</u>
Focus on underlying assumptions	Focus on process relationship
Points out abstract conceptual aspects	Points out views and aspirations
Good at preventing over agreement	Good at articulating goals
Best in controversial conflict-laden situations	Best in unstructured value laden situations
Provides debate and creativity	Provides broad view, goals and standards

##### LIABILITIES

<u>Synthesist</u>	<u>Idealist</u>
May screen out agreement	May screen out "hard data"
May seek conflict unnecessarily	May delay from exploring too many choices
May try to hard for change and innovation	May try to hard for perfect solution
May theorize excessively	May overlook situations
Can appear uncommitted	Can appear overly sentimental

#### WHEN SYNTHESISTS AND PRAGMATISTS INTERACT:

##### STRENGTHS

<u>Synthesist</u>	<u>Pragmatist</u>
Focus on underlying assumptions	Focus on payoff
Points out abstract conceptual aspects	Points out tactics and strengths
Good at preventing over agreement	Good at identifying impacts

Best in controversial conflict-laden situations

Provides debate and creativity

Best in complex incremental situations

Provides experiment and innovation

**LIABILITIES**

Synthesist

Pragmatist

May screen out agreement

May seek conflict unnecessarily  
May try too hard for change and innovation  
May theorize excessively

Can appear uncommitted

May screen out long range aspects

May rush too quickly to pay off  
May try too hard for expediency  
May rely too much on what “sells”

Can appear over compromising

**WHEN SYNTHESISTS AND ANALYSTS INTERACT:**

**STRENGTHS**

Synthesist

Analyst

Focus on underlying assumptions  
Points out abstract conceptual aspects  
Good at preventing over agreement

Best in controversial conflict-laden situations

Provides debate and creativity

Focus on method and plan  
Points out data and detail  
Good at model building and planning

Best in structured calculable situations

Provides stability and structure

**LIABILITIES**

Synthesist

Analysts

May screen out agreement

May seek conflict unnecessarily  
May try too hard for change and innovation  
May theorize excessively

Can appear uncommitted

May screen out values and subjective

May over plan and over-analyze  
May try too hard for predictability  
May be inflexible and overly cautious

Can appear tunnel visioned

**WHEN SYNTHESISTS AND REALISTS INTERACT**

**STRENGTHS**

Synthesist

Realist

Focus on underlying assumptions	Focus on facts and results
Points out abstract conceptual aspects	Points out realities and resources
Good at preventing over agreement	Good at simplifying; cutting through
Best in controversial conflict-laden situations	Best in well defined objective situations
Provides debate and creativity	Provides drive and momentum

**LIABILITIES**

<u>Synthesist</u>	<u>Realist</u>
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May screen out agreement	May screen out disagreement
May seek conflict unnecessarily	May rush to over simplified solutions
May try to hard for change and innovation	May try to hard for conscious and immediate response
May theorize excessively	May over emphasize perceived “facts”
Can appear uncommitted	

**WHEN IDEALISTS AND PRAGMATISTS INTERACT:**

**STRENGTHS**

<u>Idealist</u>	<u>Pragmatist</u>
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Focus on process relationship	Focus on payoff
Points out views and aspirations	Points out tactics and strengths
Good at articulating goals	Good at identifying impacts
Best in unstructured value laden situations	Best in complex incremental situation
Provides broad view, goals, and standards	Provides experiment and innovation

**LIABILITIES**

<u>Idealist</u>	<u>Pragmatist</u>
-----------------	-------------------

May screen out “hard data”	May screen out long range aspects
May delay from exploring too many choices	May rush too quickly to pay off
May try to hard for perfect solution	May try too hard for expediency
May overlook situations	May rely too much on what “sells”
Can appear overly sentimental	Can appear over-compromising

**WHEN IDEALISTS AND ANALYSTS INTERACT:**

**STRENGTHS**

<u>Idealist</u>	<u>Analyst</u>
-----------------	----------------

Focus on process relationship	Focus on method and plans
Points out views and aspirations	Points out data and detail
Good at articulating goals	Good at model building and planning
Best in unstructured value laden situations	Best in structured calculable situations
Provides broad view, goals and standards	Provides stability and structure

## LIABILITIES

Idealist

Analyst

May screen out “hard data”

May delay from exploring too many choices

May try too hard for perfect solution

May overlook situations

Can appear overly sentimental

May screen out values and objects

May over plan and over analyze

May try too hard for predictability

May be inflexible and overly cautious

Can appear tunnel-visioned

## WHEN IDEALISTS AND REALISTS INTERACT:

### STRENGTHS

Idealist

Realist

Focus on process relationship

Points out views and aspirations

Good at articulating goals

Best in unstructured value laden situations

Provides broad view, goals and standards

Focus on payoff

Points out tactics and strengths

Good at identifying impacts

Best in complex incremental situation

Provides experiment and innovation

## LIABILITIES

Idealist

Realist

May screen out “hard data”

May delay from exploring too many choices

May try too hard for perfect solution

May overlook situations

Can appear overly sentimental

May screen out disagreements

May rush to over-simplified situations

May try too hard for conscious and  
immediate response

May over-emphasize “perceived facts”

Can appear too results-oriented

## WHEN PRAGMATISTS AND ANALYSTS INTERACT:

### STRENGTHS

Pragmatist

Analyst

Focus on payoff

Points out tactics and strengths

Good at identifying impacts

Best in complex incremental situations

Provides experiment and innovation

Focus on methods and plans

Points out data and details

Good at model building and planning

Best in structured calculable situations

Provides stability and structure

## LIABILITIES

Pragmatist

Analyst

May screen out long range aspects

May screen out values and subjectives

May rush too quickly to pay off  
May try too hard for expediency  
May rely too much on what “sells”  
Can appear over compromising

May over plan or over analyze  
May try too hard for predictability  
May be inflexible and over-cautious  
Can appear tunnel-visioned

**WHEN PRAGMATISTS AND REALISTS INTERACT:  
STRENGTHS**

<u>Pragmatist</u>	<u>Realist</u>
Focus on payoff	Focus on facts and results
Points out tactics and strengths	Points out realities and resources
Good at identifying impacts	Good at simplifying, “cutting through”
Best in complex incremental situations	Best in well-defined, objective situation
Provides experiment and innovation	Provides drive and momentum

**LIABILITIES**

<u>Pragmatist</u>	<u>Realist</u>
May screen out long range aspects	May screen out disagreements
May rush too quickly to pay off	May rush to over simplified solutions
May try too hard for expediency	May try too hard for conscious and immediate response
May rely too much on what “sells”	May over emphasize perceived facts
Can appear over compromising	Can appear too results oriented

**WHEN ANALYSTS AND REALISTS INTERACT:  
STRENGTHS**

<u>Analyst</u>	<u>Realist</u>
Focus on method and plans	Focuses on facts and results
Points out data and detail	Points out realities and resources
Good at model building and planning	Good at simplifying, “cutting through”
Best in structured calculable situations	Best in well defined, objective situations
Provides stability and structure	Provides drive and momentum

**LIABILITIES**

<u>Analyst</u>	<u>Realist</u>
May screen out values and objectives	May screen out disagreements
May over plan and over analyze	May rush to oversimplified solutions
May try too hard for predictability	May try too hard for conscious and immediate response
May be inflexible and overly cautious	May over emphasize “perceived facts”
Can appear tunnel-visioned	Can appear to be too results oriented

(Source: Langlois, Harold V., Challenges of Team Management, a course for graduate students. Cambridge, MA: Harvard University.)

## **Thinking Styles**

Discuss how you think the interaction of your dominant problem-solving styles will impact upon the goal.

**Team Member Name**

**Dominant Style**

**Team Member Name**

**Dominant Style**

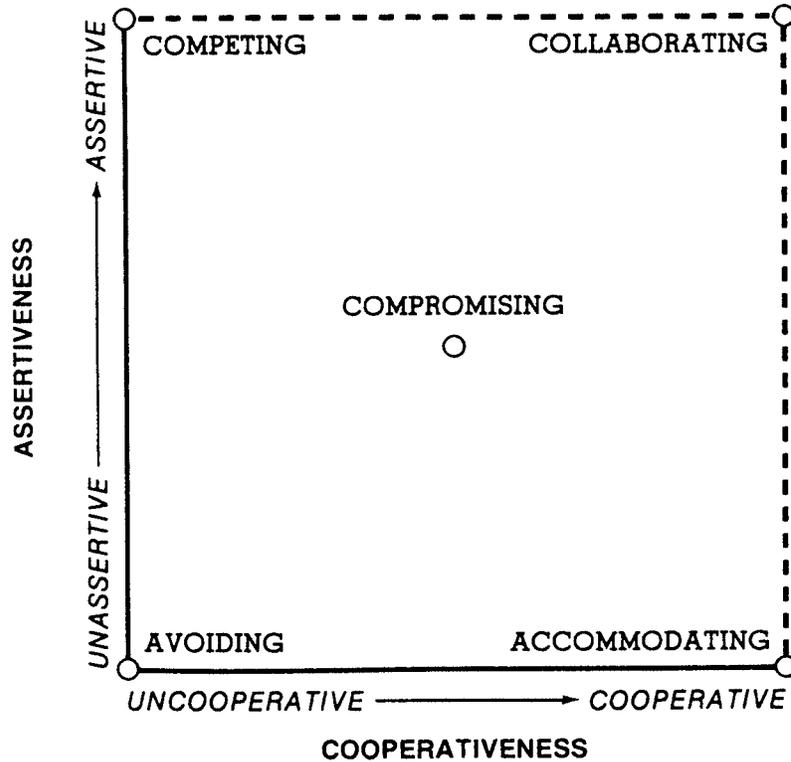
**Team Member Name**

**Dominant Style**

**Interactions:**

How will these interaction support your effectiveness?

## Conflict Styles



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\*This two dimensional model of conflict handling behavior is adapted from "Conflict and Conflict Management" by Kenneth Thomas in *The Handbook of Industrial and Organizational Psychology*, edited by Marvin Dunnette (Chicago: Rand McNally, 1976). Another valuable contribution in this field is the work by Robert Blake and Jane Mouton in *The Managerial Grid* (Houston: Gulf Publishing, 1964).

*Competing* is assertive and uncooperative – an individual pursues their own concerns at the other person's expense. This is a power-oriented mode, in which one uses whatever power seems appropriate to win one's own position – one's ability to argue, one's rank, economic sanctions. Competing might mean "standing up for your rights," defending a position which you believe is correct, or simply trying to win.

*Accommodating* is unassertive and cooperative – the opposite of competing. When accommodating, an individual neglects their own concerns to satisfy the concerns of the other person; there is an element of self-sacrifice in this mode. Accommodating might take the form of selfless generosity or charity, obeying another person's order when one would prefer not to, or yielding to another's point of view.

*Avoiding* is unassertive and uncooperative – the individual does not immediately pursue their own concerns or those of the other person. They do not address the conflict. Avoiding might take the form of diplomatically sidestepping an issue, postponing an issue until a better time, or simply withdrawing from a threatening situation.

*Collaborating* is both assertive and cooperative – the opposite of avoiding. Collaborating involves an attempt to work with the other person to find some solution which fully satisfies the concerns of both persons. It means digging into an issue to identify the underlying concerns of the two individuals and to find an alternative which meets both sets of concerns. Collaborating between two persons might take the form of exploring a disagreement to learn from each other's insights, concluding to resolve some condition which would otherwise have them competing for resources, or confronting and trying to find a creative solution to an interpersonal problem.

*Compromising* is intermediate in both assertiveness and cooperativeness. The objective is to find some expedient, mutually acceptable solution which partially satisfies both parties. It falls on a middle ground between competing and accommodating. Compromising gives up more than competing but less than accommodating. Likewise, it addresses an issue more directly than avoiding, but doesn't explore it in as much depth as collaborating. Compromising might mean splitting the difference, exchanging concessions, or seeking a quick middle-ground position.

## Interpreting Your Scores

Usually, after getting back the results of any test, people first want to know: "What are the right answers?" In the case of conflict-handling behavior, there are no universal right answers. All five modes are useful in some situations: each represents a set of useful social skills. Our conventional wisdom recognizes, for example, that often "two heads are better than one" (Collaborating). But it also says, "Kill your enemies with kindness" (Accommodating), "Split the difference" (Compromising), "Leave well enough alone" (Avoiding), "Might makes right" (Competing). The effectiveness of a given conflict-handling mode depends upon the requirements of the specific conflict situation and the skill with which the mode is used.

Each of us is capable of using all five conflict-handling modes: none of us can be characterized as having a single, rigid style of dealing with conflict. However, any given individual uses some modes better than others and therefore, tends to rely upon those modes more heavily than others, whether because of temperament or practice.

The conflict behaviors which individuals use are therefore the result of both their personal predispositions and the requirements of the situations in which they find themselves. The Thomas-Kilmann Conflict Mode Instrument is designed to assess this mix of conflict-handling modes.

To help you judge how appropriate your utilization of the five modes is for your situation, we have listed a number of uses for each mode – based upon lists generated by company presidents. Your score, high or low, indicates its usefulness in your situation. However, there is the possibility that your social skills lead you to rely upon some conflict behaviors more or less than necessary. To help you determine this, we have also listed some diagnostic questions concerning warning signals for the overuse or underuse of each mode.

### A. Competing

- Uses:
1. When quick, decisive action is vital – e.g., emergencies.
  2. On important issues where unpopular courses of action need implementing – e.g., cost cutting, enforcing unpopular rules, discipline.
  3. On issues vital to company welfare when you know you're right.
  4. To protect yourself against people who take advantage of noncompetitive behavior.

If you scored High:

1. Are you surrounded by "yes" men?  
(If so, perhaps it's because they have learned that it's unwise to disagree with you, or have given up trying to influence you. This closes you off from information.)
2. Are subordinates afraid to admit ignorance and uncertainties to you?  
(In competitive climates, one must fight for influence and respect – which means acting more certain and confident than one feels. The upshot is that people are less able to ask for information and opinion – they are less able to learn.)

If you scored Low:

1. Do you often feel powerless in situations?  
(It may be because you are unaware of the power you do have, unskilled in its use, or uncomfortable with the idea of using it. This may hinder your effectiveness by restricting your influence.)
2. Do you have trouble taking a firm stand, even when you see the need?  
(Sometimes concerns for other's feelings or anxieties about the use of power cause us to vacillate, which may mean postponing the decision and adding to the suffering and/or resentment of others.)

## **B. Collaborating**

- Uses:
1. To find an integrative solution when both sets of concerns are too important to be compromised.
  2. When your objective is to learn – e.g., testing your own assumptions, understanding the views of others.
  3. To merge insights from people with different perspectives on a problem.
  4. To gain commitment by incorporating other's concerns into a consensual decision.
  5. To work through hard feelings which have been interfering with an interpersonal relationship.

If you scored High:

1. Do you spend time discussing issues in depth that do not seem to deserve it? (Collaboration takes time and energy – perhaps the scarcest organizational resources. Trivial problems don't require optimal solutions, and not all personal differences need to be hashed out. The overuse of collaboration and consensual decision making sometimes represents a desire to minimize risk – by diffusing responsibility for a decision or by postponing action.)
2. Does your collaborative behavior fail to elicit collaborative responses from others? (The exploratory and tentative nature of some collaborative behavior may make it easy for others to disregard collaborative overtures; or the trust and openness may be taken advantage of. You may be missing some cues which would indicate the presence of defensiveness, strong feelings, impatience, competitiveness, or conflicting interests.)

If you scored Low:

1. Is it hard for you to see differences as opportunities for joint gain – as opportunities to learn or solve problems? (Although there are often threatening or unproductive aspects of conflict, indiscriminate pessimism can prevent you from seeing collaborative possibilities and thus deprive you of the mutual gains and satisfactions which accompany successful collaboration.)
2. Are subordinates uncommitted to your decisions or policies? (Perhaps their own concerns are not being incorporated into those decisions or policies.)

### **C. Compromising**

- Uses:
1. When goals are moderately important, but not worth the effort or potential disruption of more assertive modes.
  2. When two opponents with equal power are strongly committed to mutually exclusive goals – as in labor-management bargaining.
  3. To achieve temporary settlements to complex issues.
  4. To arrive at expedient solutions under time pressure.
  5. As a backup mode when collaboration or competition fails to be successful.

If you scored High:

1. Do you concentrate so heavily upon the practicalities and tactics of compromise that you sometimes lose sight of larger issues – principles, values, long-term objectives, company welfare?
2. Does an emphasis on bargaining and trading create a cynical climate of gamesmanship?  
(Such a climate might undermine interpersonal trust and deflect attention away from the *merits* of the issues discussed.)

If you scored Low:

1. Do you find yourself too sensitive or embarrassed to be effective in bargaining situations?
2. Do you find it hard to make concessions?  
(Without this safety valve, you may have trouble getting gracefully out of mutually destructive arguments, power struggles, etc.)

#### **D. Avoiding**

- Uses:
1. When an issue is trivial, of only passing importance, or when other more important issues are pressing.
  2. When you perceive no chance of satisfying your concerns – e.g., when you have low power or you are frustrated by something which would be very difficult to change (national policies, someone's personality structure, etc.)
  3. When the potential damage of confronting a conflict outweighs the benefits of its resolution.
  4. To let people cool down – to reduce tensions to a productive level and to regain perspective and composure.
  5. When gathering more information outweighs the advantages of an immediate decision.
  6. When others can resolve the conflict more effectively.
  7. When the issue seems tangential or symptomatic of another more basic issue.

If you scored High:

1. Does your coordination suffer because people have trouble getting your inputs

on issues?

2. Does it often appear that people are "walking on eggshells?"  
(Sometimes a dysfunctional amount of energy can be devoted to caution and the avoiding of issues, indicating that issues need to be faced and resolved.)
3. Are decisions on important issues made by default?

If you scored Low:

1. Do you find yourself hurting people's feelings or stirring up hostilities?  
(You may need to exercise more discretion in confronting issues or more tact in framing issues in nonthreatening ways. Tact is partially the art of avoiding potentially disruptive aspects of an issue.)
2. Do you often feel harried or overwhelmed by a number of issues?  
(You may need to devote more time to setting priorities – deciding which issues are relatively unimportant and perhaps delegating them to others.)

### **E. Accommodating**

- Uses:
1. When you realize that you are wrong – to allow a better position to be heard, to from others, and to show that you are reasonable.
  2. When the issue is much more important to the other person than to yourself – to satisfy the needs of others, and as a goodwill gesture to help maintain a cooperative relationship.
  3. To build up social credits for later issues which are important to you.
  4. When continued competition would only damage your cause – when you are outmatched and losing.
  5. When preserving harmony and avoiding disruption are especially important.
  6. To aid in the managerial development of subordinates by allowing them to experiment and learn from their own mistakes.

If you scored High:

1. Do you feel that your own ideas and concerns are not getting the attention they deserve?

(Deferring too much to the concerns of others can deprive you of influence, respect, and recognition. It also deprives the organization of your potential contributions.)

2. Is discipline lax?

(Although discipline for its own sake may be of little value, there are often rules, procedures, and assignments whose implementation is crucial for you or the organization.)

If you scored Low:

1. Do you have trouble building goodwill with others?  
(Accommodation on minor issues which are important to others are gestures of goodwill.)
2. Do others often seem to regard you as unreasonable?
3. Do you have trouble admitting it when you are wrong?
4. Do you recognize legitimate exceptions to rules?
5. Do you know when to give up?

Discuss which is your predominant style when dealing with conflict in a work environment. What are the predominant styles of your team members? Discuss what interactions you think will happen while reaching your goal.

**Team Member Name**

**Dominant Style**

**Under used Style**

**Team Member Name**

**Dominant Style**

**Under used Style**

**Team Member Name**

**Dominant Style**

**Under used Style**

## **Conflict Interactions:**

**How will the over or under use of one style effect your team's efficiency?**

**How will your team overcome any obstacles you have found?**

## **Project Time Management** (PmBok, 1996)

**Activity Definition** is identifying and documenting the specific activities that must be performed to successfully complete the project as defined in the work breakdown structure.

**Activity Sequencing** is identifying and documenting interactivity dependencies. Activities must be sequenced accurately in order to support later development of a realistic action plan (activities schedule). Sequencing can be performed with the aid of project management software or with manual techniques, which are more productive on smaller projects such as yours or in combination.

**Activity Duration Estimating** is assessing the number of work periods that an individual team member must complete in each identified activity and the number of work periods that the team will need to collaborate on the activity. The team must approve both individual and team work estimates.

**ACTION PLAN:** a system utilized to break goals into sub goals and then tasks which are then defined by the steps and time it will take to accomplish the goals.

**ANALOGOUS ESTIMATING:** also called top down estimating is using the actual duration of a previous, similar activity as the basis for estimating the duration for future activity. On the first experiment you will not be able to use analogous estimating or historical information.

**ASSUMPTIONS:** are factors for planning purposes that all of the team consider true, real or certain. Advantages of Culture, Thinking Style Interactions, Conflict Style Interactions and Team Report Strengths.

**CONSTRAINTS:** factors that will limit the project team's options. Weaknesses in cultural beliefs, thinking style interactions, conflict style interactions and on team report.

**DECOMPOSITION:** subdividing project elements into smaller, more manageable components (goals and sub-goals). (PmBok, 1996)

**DISCRETIONARY DEPENDENCIES:** dependencies which are decided upon by the team (example will only work fifteen hours per week on the project). They should be fully discussed and documented since they may limit your scheduling options. They are limited by best practices, which in this course means amount of time you and advisor and course syllabus define as discretionary. You may also decide upon a sequencing of events for the action plan that is desired even though there are other acceptable sequences. (PmBok, 1996)

**EXTERNAL DEPENDENCIES:** the dependencies that are from outside sources that were decided would have impact upon the team's ability to do the project successfully. (ordering equipment that is not working properly; environment disadvantages)

**MANDATORY DEPENDENCIES:** are inherent in the nature of the work being done such as time and other physical limitations such as the sequencing of the events (can't take data until experiment equipment is running properly). (PMBOK, 1996)

Templates: are activity lists from a previous project which you can use all or part of in this project. In addition the activity list for the Work Break Down Schedule can be used as template for this project as well as for other projects

## Project Time Management

### Activity Definition

#### Inputs

Work Breakdown Structure  
Scope Statement  
Historical Information  
Assumptions  
Constraints

#### Tools and Techniques

Decomposition  
Templates

#### Outputs

Activity List  
Supporting Detail  
Work Breakdown Structure updates

### Schedule Development

#### Inputs

Project Network Diagram  
Activity Duration estimates  
Resource requirements  
Monthly calendars  
Activities List Update

#### Tools and Techniques

Program Evaluation and Review Technique (PERT)  
Duration Compression  
Project Management Software

#### OutPuts

Project Schedule or Action Plan  
Schedule Management Plan  
Resource Requirements update

### Activity Sequencing

#### Inputs

Activity List  
Experiment description  
Mandatory dependencies  
Discretionary dependencies  
External dependencies

#### Tools and Techniques

Arrow Diagramming Method (ADM)

#### Outputs

Project Network Diagram  
Activity List updates

### Activity Duration Estimating

#### Inputs

Activity List (same list with EAT)  
Constraints  
Assumptions  
Resource Requirements and capabilities  
Historical Information

#### Tools and Techniques

Expert judgement  
Analogous estimating

#### Outputs

Activity Duration Estimates  
Basis of estimates  
Activity List updates

### Schedule Control

#### Inputs

Project Schedule  
Performance reports  
Changes on Schedule  
Activities List update

#### Tools and Techniques

Schedule change control system  
Performance measurement  
Additional Planning  
Project Management Software

#### OutPuts

Schedule Updates  
Corrective Action  
Lessons Learned

The Activity Definition, Activity Sequencing and Activity Duration Estimating categories are usually done by the Team Leader. The outputs for these three categories then become inputs for the Schedule Development. The outputs for The Schedule Development become Inputs for Schedule Control. The outputs for Schedule Control will become the Inputs under Historical Information for Activity Definition and Activity Duration Estimating for the second Team Leader to use for the next experiment, written assignment and oral presentation. The new team leader will begin the Project Time Management Cycle over again for the new experiment.

Templates: are activity lists from a previous project which you can use all or part of in this project. In addition the activity list for the Work Break Down Schedule can be used as template for this project as well as for other projects.

## **Historical Information:**

The activity definition and Activity Duration Estimating will be blank for the first team leader because you have no historical information. Therefore your team will be creating the Activity Sequencing and Activity Duration Estimating using EAT for the first time because you have no historical data.

## **Activity Definition:**

## **Activity Duration Estimating:**

## **Activity List**

### **Activity Sequencing**

### **Activity Duration Estimating Use EAT**

## Tool - Estimating Activity Time (EAT)

You have some historical data to draw upon. You know how long it has taken each of you individually to prepare for some of the tasks. Establishing how much time it will take to collaborate and write a paper and support the oral presentation, run experiments in the laboratory, etc. estimates must rely upon assumptions. These assumptions include, the optimistic completion time, the pessimistic completion time, and the most likely completion time.

Optimistic Completion Times are predicated upon the assumption that all will go according to your action plans. According to Kerzner (1999) this occurs about 1% of the time.

Pessimistic Completion Times are predicated upon the assumption that everything will go wrong. This also occurs about 1% of the time.

Most Likely Completion Time using historical evidence, team members committed time schedules, and your strategic management skills to predict the time. This the time that you feel would most often occur.

Before combining these three times into a single value for expected time, two assumptions must be made. The first assumption is that the standard deviation is one sixth of the time requirement range. Predicated upon probability theory, we assume that the end points of a curve are three standard deviations from the mean. The second assumption requires that the probability distribution of time required for an activity be expressible as a beta distribution (Hiller & Lieberman, 1967). The expected time to do the task can be calculated as:

$$t_e = \frac{a + 4m + b}{6}$$

t = expected time

a = optimistic time

b = pessimistic time

m = most likely

Example if

$$a = 3$$

$$b = 7$$

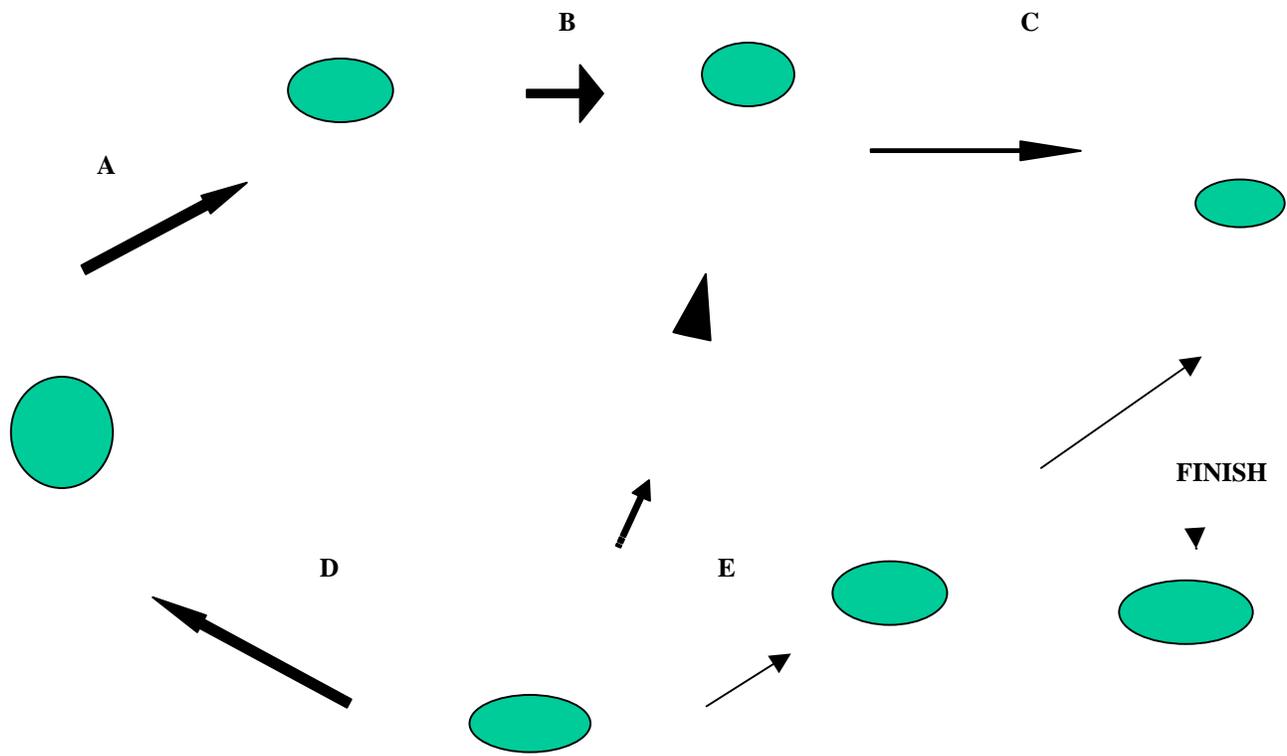
$$m = 5 \text{ weeks}$$

$$t = 5 \text{ weeks}$$

Adapted from Kerzner H., 1998. Project Management A Systems Approach to Planning, Scheduling, and Control.

# Arrow Diagramming Method

## Network Logic Diagram Using The Arrow Diagramming Method



## **Constraints and Assumptions:**

Revisit your activity duration estimating list and do a check on what the constraints and assumptions you feel you used to estimate activity duration times and list them here. Then brainstorm whether or not given these constraints you have identified and assumptions you have made is this Activity Duration Estimate realistic and can it be used as an input to make up the Action Plan for the project.

### **Activity Sequencing**

#### **Constraints**

#### **Assumptions**

### **Activity Duration Estimating**

#### **Constraints**

**Assumptions:**

# **Dependencies**

**Mandatory Dependencies**

**Discretionary Dependencies**

**External Dependencies**

## **Tools and Techniques**

### **Activity Definition:**

Decomposition

Templates are activity lists from a previous project which you can use all or part of in this project. In addition the activity list for the Work Break Down Schedule can be used as template for this project as well as for other projects

### **Activity Sequencing**

Arrow Diagramming Method (ADM)

### **Activity Duration Estimating**

Expert judgement

Your faculty advisor could act as an expert and give you analogous time estimates. You would supply the expert with your Activity List. The advisor could supply you with historical estimates on the experiment. Next rotation you could ask the team that had that experiment to act as an expert and share their action plan with you with a summary of where their estimates were off so you can update them and use them as analogous estimates.

### Analogous Estimating

Analogous Estimating is the time estimation activity of using EAT with historical information when the you have previous activities that you in fact not appearance know how much time the activity takes to do or the person doing the estimating is an expert.

## Action Plans or Project Management Schedule

Now you have everything you need to do Schedule Development and Schedule Changes. Do the three action plans that are needed to efficiently run your team. An action plan is used to improve work or task process. Coordinated and collaborative action plans are important. Otherwise individuals could improve their own working process while creating conflict and dissatisfaction with other team members. Action plans are used to make decisions about task assignments and work methods. An action plan has the shared objectives of all the team members.

### PROCEDURE

1. You have stated the goals
2. You have pictured the whole task process
3. You have identify the criterion to be applied to the goal
4. You have used your criteria from your assessments to chart the steps you need to take to successfully complete the tasks
5. You have shown unexpected complexities, problem, redundancies, unnecessary loops
6. You have brainstormed a list of all major activities, input, outputs and decisions from the beginning to the end of the project
7. You have pointed out where standardization and simplification is possible
8. You have sequenced the steps and described how you will decide who will do what part of each step. Stay away from minute details
9. You have made activity lists and broken down each step into tasks and decided as a team who will do each component of the task.
10. You have defined how long each part of the task should take each team member
11. You have identified how you plan on evaluating how the project will be accomplished
12. You have broken the project into sub goals
13. You have identified the sub goals and in the action plan will break them into milestones and determine the boundaries of each milestone

14. Using the action plan template decide on the steps for each milestone
15. Compare and contrast the actual versus the ideal flow of process for each milestone, using the Activity List you created during the Activity Duration Estimation and decided on the time it will take to complete the project.
16. You have identified areas for improvement
17. Provide a complete picture of the work process so team members can come to consensus about the action plan

## **ACTION PLAN or PROJECT MANAGEMENT SCHEDULE**

### **Step One Outline of Action Plan using the Project Management Model**

#### **GOAL: TEAM ORAL PRESENTATION**

Date due:

Important Milestones for getting the Goal accomplished:

1. Outline
2. Gathering laboratory data
3. Analyzing Data
4. Discussion about data and results
5. Creating Graphic Representations
6. Overheads
7. Practice Presentation with team
8. Practice Presentation with advisor
9. Final critique by presenter

### **Step Two First Milestone Outline**

Date Due:

Person assigned to complete

# of hours needed to complete

Task to accomplish the goal

Obstacles to goal

Strategies to use to Overcome Obstacles

Resources needed to do task

# of Meetings Needed

Support People Involved

### **Step Three Second Milestone      Gather Data**

# of Laboratory Sessions Needed

Tasks to accomplish Goal

Obstacles to Goal

Strategies to use to Overcome Obstacles

Persons assigned to each task

# of hours needed to complete

Resources Needed to do the task

**Step Four Third and Fourth Milestone Analyzing Data and Discussion about Data and Results**

# of Meetings Needed

Tasks to accomplish Goal

Obstacles to Goal

Strategies to use to Overcome Obstacles

Persons assigned to each task

# of hours needed to complete

Resources needed to do the task

Support People Involved

**Step Five Fifth Milestone**

**Creating Graphic Representations**

# of Meetings Needed

Tasks to accomplish Goal

Obstacles to Goal

Strategies to use to Overcome Obstacles

Persons assigned to each task

# of hours needed to complete

Resources needed to do the task

Support People Involved

**Step Six Sixth Milestone**

**Creating Overheads**

# of Meetings Needed

Tasks to accomplish Goal

Obstacles to Goal

Strategies to use to Overcome Obstacles

Persons assigned to each task

# of hours needed to complete

Resources needed to do the task

Support People Involved

**Step Seven Seventh, Eighth and Ninth Milestones**

**Practice Sessions**

# of Meetings Needed

Tasks to accomplish Goal

Obstacles to Goal

Strategies to use to Overcome Obstacles

Persons assigned to each task

# of hours needed to complete

Resources needed to do the task

Support People Involved

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