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I.T. PROJECT MANAGEMENT

Lecture: Managing Project Risk

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Examples of IT Project Risks

MIS Software Risks	%	Systems Software Risks	%	Commercial Software Risks	%
Creeping user requirements	80	Long schedules	70	Inadequate user documentation	70
Excessive schedule pressure	65	Inadequate cost estimates	65	Low user satisfaction	55
Low quality	60	Excessive paper work	60	Excessive time to market	50
Cost overruns	55	Error prone modules	50	Harmful competitive actions	45
Inadequate configuration control	50	Cancelled projects	25	Litigation expense	30

Military Software Risks	%	Contract or outsourced software risks	%	End-user software risks	%
Excessive paper work	90	High maintenance cost	60	Non-transferable application hidden errors	80
Low productivity	85	Friction between contractor and client personnel	50	Unmaintainable software	65
Long schedules	75	Creeping user requirements	45	Redundant application	60
Creeping user requirements	70	Unanticipated acceptance criteria	30		50
Unused or unusable software	45	Legal ownership of software and deliverables	20	Legal ownership of software and deliverables	20

Project Risk

- **Project risk is defined as:**
  - An **uncertain event** or **condition** that, if it occurs, has a **positive** or **negative effect** on the project objectives.
- The definition provides an important starting point for understanding risk.
  - First, project risk arises from uncertainty.
    - This uncertainty comes from our attempt to **predict the future** based on **estimates**, **assumptions**, and **limited information**.
    - Although **project risk has a downside** resulting from **unexpected problems or threats**, project **risk management** must also **focus on positive events or opportunities**.
    - Therefore, it is important that we **understand what those events** are and **how they may impact the project beyond its objectives**.
    - We **need to understand the nature of project risks** and how they **interact and impact** other aspects of the project throughout the life of a project.

Risk Management

- **Project risk management is defined** as:
  - The **systematic** process of **identifying**, **analyzing**, and **responding to project risk**. It includes;
    - **maximizing the probability and consequences of positive events** and
    - **minimizing the probability and consequences of adverse events**.
- The definition implies that:
  - a systematic process is needed to effectively manage the risk of a project.
  - The 7-steps model to risk management

7-Steps Risk Management Plan

- Risk Planning
- Risk identification
- Risk Assessment
- Risk Strategies
- Risk Monitoring and Control
- Risk Response and
- Risk Evaluation

Managing IT Project Risks – The 7 Steps

- **Risk Planning** – Step 1
- Requires two critical actions;
  - Firm **commitment** to the entire risk management approach from all project stakeholders.
    - Adequate resources is in place to **properly plan** for and **manage** the various risks of the IT project.
    - Resources - time, people, and technology.
    - **Identify**, **analyze**, and **respond** to threats and opportunities.
    - Plans can be disregarded and adhoc measures resorted to – leads to crisis
  - **Preparation**.
    - Resources, processes, and tools to plan activities for project risk management. **Systematic preparation** and planning **helps minimize adverse effects** on the project

Managing IT Project Risks – The 7 Steps

- **Risk identification –** Step 2
  - Threats and opportunities must be identified.
  - Threats:
    - Identify the true problem, not just a symptom
    - Leads to effective solutions
    - **Determine** and **understand** the **causes** and **effects** of each risk
    - Allows for effective strategies and responses to be taken

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- **Risk Assessment –** Step 3
- Analyze the risks. Two basic questions are required to be answered:
  - What is the **likelihood** of a particular risk occurring?
  - What is the **impact** on the project if it does occur?
- Risk assessment - a basis for understanding how to deal with project risks.
- **Qualitative** and **quantitative** approaches can be used to assess the risks.
- Then **prioritize** and **formulate** responses to risks with the **greatest threat** or **opportunity** to the project.
- Responding to risks involves a cost – cost constraints, available resources.

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- **Risk Strategies** – Step 4
- Determine how to deal with the various project risks.
- In addition to resource constraints, an **appropriate strategy** needs to be taken **on a particular risk**.
- Four (4) project risk strategy approaches can be followed:
  - Accept or ignore the risk.
  - Avoid the risk completely.
  - Reduce the likelihood or impact of the risk (or both) if the risk occurs.
  - Transfer the risk to someone else (e.g. take insurance).

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- Identify **triggers** or **flags** in the form of metrics to draw attention to a particular risk when it occurs.
- This system requires that:
  - Each risk have an **owner** to **monitor the risk** and to ensure that **resources are made available** in order to **respond to the risk appropriately**.
  - Once **the risks**, the **risk triggers**, and **strategies** or responses are documented, this document then becomes the **risk response plan**.

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- **Risk Monitoring and Control** – Step 5
- Next **scanning the project environment** for both **identified** and **unidentified threats** and **opportunities** can be followed
  - E.g. is a radar screen following ships.
- Risk owners should:
  - monitor the various risk triggers so that **well-informed decisions** and **appropriate actions** can be taken

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- **Risk Response** – Step 7
- Risk monitoring and control provide a mechanism for scanning the project environment for risks, but the risk owner must **commit resources** and **take action** once a risk threat or opportunity is made known.
- This action normally follows the **planned risk strategy**.

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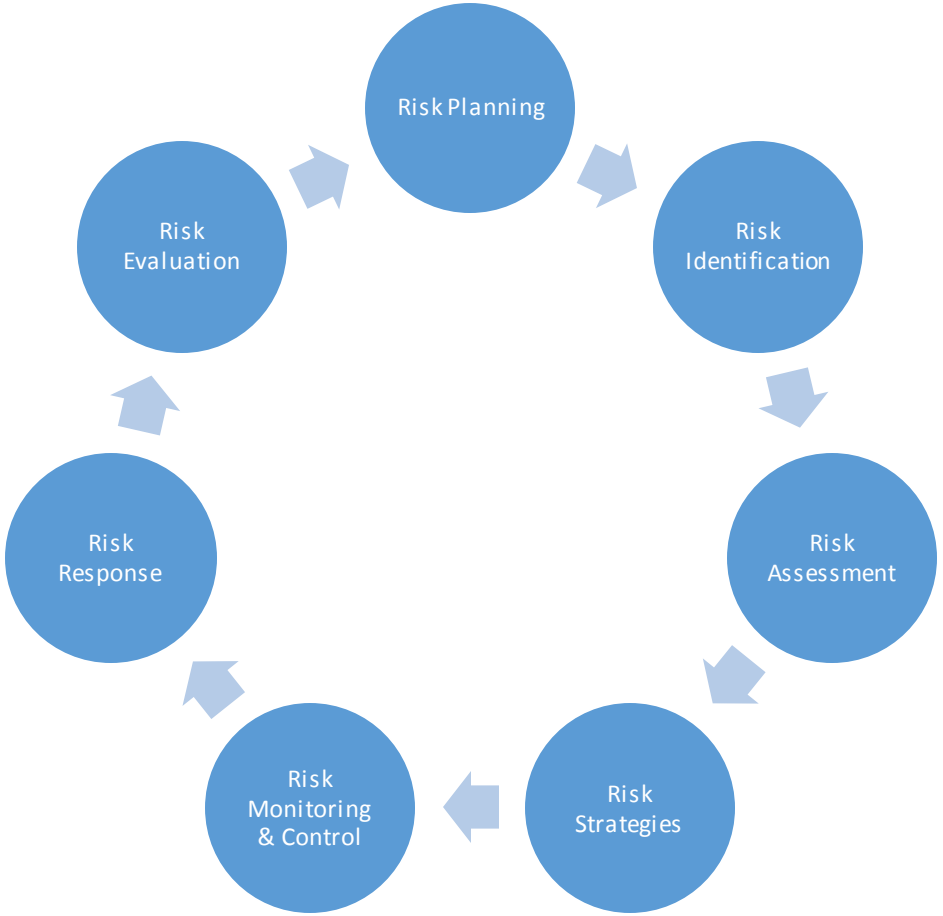
- **Risk Evaluation** – Step 7
- Responses to risks and the experience gained provide keys to learning.
- A **formal** and **documented** evaluation of a risk incidence provides the **basis for lessons learned** and **lays the foundation for identifying best practices**.
- The evaluation should **consider the entire risk management process** from planning through evaluation. In particular it should answer:
- How did we do?
- What can we do better next time?
- What lessons did we learn?
- What best practices can be incorporated in the risk management process?

Managing IT Project Risks – The 7 Steps

- The **risk planning process is cyclical** because the **evaluation of the risk responses** and the **risk planning process** can influence:
  - how an organization will plan,
  - prepare, and
  - commit to IT risk management.

Risk Management Process



EFFECTIVE AND SUCCESSFUL PROJECT RISK MANAGEMENT …(1)

- Effective and successful project risk management requires:
- 1. *Commitment by all stakeholders*
  - To be successful, project risk management requires a commitment by all project stakeholders. In particular, the project sponsor or client, senior management, the project manager, and the project team must all be committed. For many organizations, a new environment and commitment to following organizational and project processes may be required. For many managers, the first impulse may be to shortcut or sidestep many of these processes at the first sign that the project is in trouble. A firm commitment to a risk management approach will not allow these impulses to override the project management and risk management processes that the organization has in place.

EFFECTIVE AND SUCCESSFUL PROJECT RISK MANAGEMENT …. (2)

- 2. *Stakeholder Responsibility*
  - It is important that each risk have an owner.
  - This owner will be involved in the project,
  - The owner will take the responsibility to monitor the project in order to:
    - identify any new or increasing risks, and
    - who will make regular reports to the project sponsor or client.
- The risk owner may be required to ensure that adequate resources be available for managing and responding to a particular project risk.
- Ultimately the project manager is responsible for ensuring that appropriate risk processes and plans are in place.

EFFECTIVE AND SUCCESSFUL PROJECT RISK MANAGEMENT ….. (3)

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- *Different Risks for Different Types of Projects*
- In a study that looked at IT project risks, Jones (1994) found that **patterns of risk are different across different types of IT projects**.
- This implies that **each project has its own unique risk considerations**. To attempt to manage all projects and risks the same way may spell disaster.
- Below is a table showing various software risks for IT Projects

MIS Software Risks		*Systems Software Risks*		*Commercial Software Risks*		*Military Software Risks*		*Contract or Outsourced Software Risks*		*End-User Software Risks*	
Creeping user requirements	80%	Long schedules	70%	Inadequate user documentation	70%	Excessive paper work	90%	High maintenance costs	60%	Non-transferable application	80%
Excessive schedule pressure	65%	Inadequate cost estimates	65%	Low user satisfaction	55%	Low productivity	85%	Friction between contractor & client personnel	50%	Hidden errors	65%
Low quality	60%	Excessive paper work	60%	Excessive time to market	50%	Long schedules	75%	Creeping user requirements	45%	Unmaintainable software	60%
Cost overruns	55%	Error-prone modules	50%	Harmful competitive actions	45%	Creeping user requirements	70%	Unanticipated acceptance criteria	30%	Redundant application	50%
Inadequate configuration control	50%	Canceled projects	25%	Litigation expense	30%	Unused or unusable software	45%	Legal ownership of software & deliverables	20%	Legal ownership of software & deliverables	20%