



Recovering Failing Projects
– Student Guide

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About the Student Guide

This Student Guide is designed to supplement the presentation on **Recovering Failing Projects**. It includes:

- **PowerPoint slides**
The PowerPoint presentation highlights the key points, concepts, illustrations and diagrams associated with the course. This guide contains a grab of each slide in that presentation.
- **student learning objectives**
The presentation is divided into a number of lessons. Each lesson is then further subdivided into a number of topics. A topic is stand-alone piece of instruction that has a specific, demonstrable learning objective. You should begin each lesson by taking a moment to review the objectives.
- **supplementary notes**
Supplementary notes appear with each slide, adding detail to what has been covered in the presentation. It is recommended that you review these notes following each presentation.

Lesson 1: Defining Failing Projects

Topic 1: Definition of a Failing Project

Topic 2: Characteristics of a Failing Project

Topic 3: Failing Project Indicator Tools and Techniques

Topic 4: Presenting the Failing Projects Indicator Outcomes

Student learning objectives

After completing this lesson, you should be able to

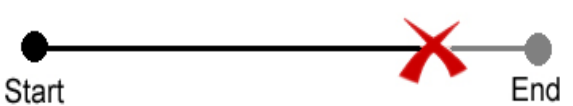
- define the term project health and explain what questions can be asked to judge the relative health of a project
- define the methods used to identify and report on project. The participant should understand what tools are required to immediately identify a failing project
- differentiate a failing project from a project that is manageable
- describe how project objectives are measured (with critical success factors) and how these are used to measure the relative project success
- explain how to use project objectives and critical success factors to gauge project success and failure
- use the outputs from a project health check to determine why a project is in a failing state

Topic 1: Definition of a Failing Project

Definition of a Failing Project



- A failing project is a project that does not make the journey from conception through to successful implementation and closeout.



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(Graphic Source: The course script provides this graphic)

What is a Failing Project?

A **failing project** is one that **does not make the journey from conception through to successful implementation and closeout**. No one factor that can be highlighted as the reason behind project failure. Projects fail or succeed for a number of reasons. Government projects, like all others, are influenced by a number of **different factors** that can contribute to **failure**.

Topic 1: Definition of a Failing Project (cont'd)

Caper Jones, in his research on government software projects (*Patterns of Software System Failure and Success*, International Thomson Computer Press 1995), identified the following reasons for project success:

- effective project **planning**
- effective project cost estimating
- effective project measurements
- effective project **milestone tracking**
- effective project quality control
- effective project **change management**
- effective development processes
- effective **communications**
- capable project managers
- capable **technical personnel**
- significant use of specialists
- substantial volume of reusable materials

Topic 1: Definition of a Failing Project (cont'd)

Definition of a Failing Project



What distinguishes success from failure?



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(Graphic Source: The course script provides this graphic)

Project Failing Factors

Government software projects are influenced by more than **100 different factors**. However, when Caper Jones compared successful (i.e., on time with good quality) and failed (i.e., cancelled, delayed, or inoperable) projects of similar size and scope, he found that there were approximately a **dozen key factors** that tended to distinguish success from failure. These included:

- inadequate **project planning**
- inadequate project cost estimating
- inadequate project measurements
- inadequate project **milestone tracking**
- inadequate project quality control
- ineffective project **change management**
- ineffective development processes
- ineffective **communications**
- ineffective project managers
- inexperienced **technical personnel**
- generalists rather than specialists

Topic 1: Definition of a Failing Project (cont'd)

- little or no reuse of technical material

Note the similarities between this list and the list on the previous page!

Topic 1: Definition of a Failing Project (cont'd)

Definition of a Failing Project



- Most definitions of project failure focus on the traditional concerns of meeting project requirements, delivering within scheduled timeframes, and keeping within budget.



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(Graphic Source: The course script provides this graphic)

Failing Project Factors

Most **definitions of project failure** focus on the **traditional concerns** of:

- meeting **requirements**
- keeping within **budget**
- delivering within estimated **deadlines**

Within this definition of failing projects, it could be concluded that the majority of projects are failing at one stage or another. The factors that Caper Jones identified can be divided into two groups:

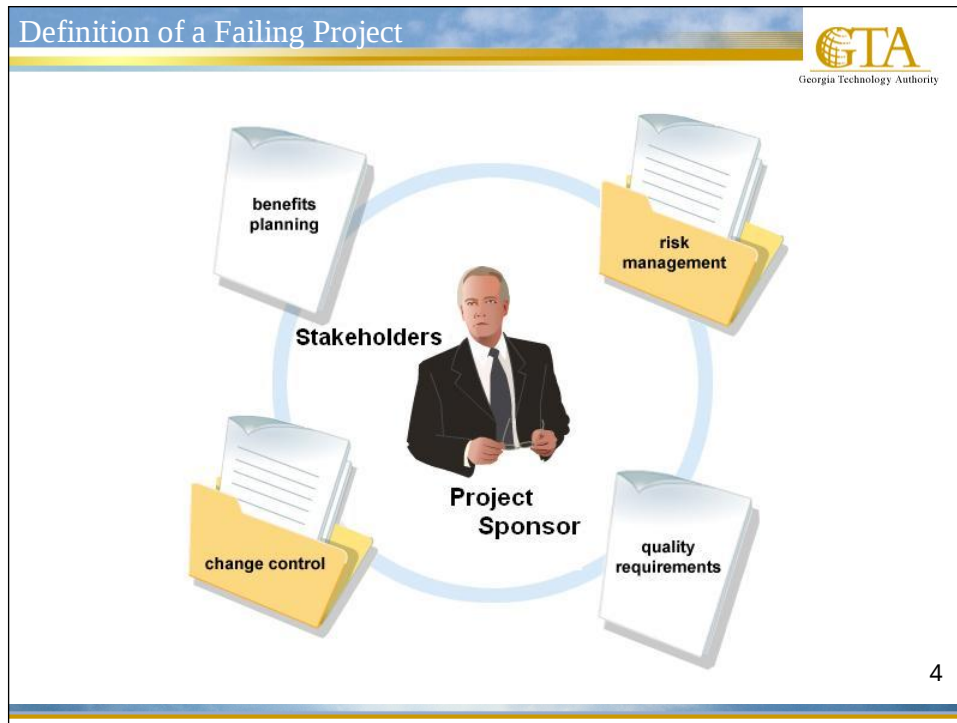
- failing project ‘show-stoppers’
- failing project rough factors

A ‘show-stopper’ is a factor so important to a project’s success that if it is flawed or absent, that alone will be sufficient to cause the project to fail.

Topic 1: Definition of a Failing Project (cont'd)

A rough factor is any factor of sufficient importance that if it is flawed or absent, it will contribute to project failure. However it is unlikely to cause a project to fail if all other aspects of the project are performing well.

Topic 1: Definition of a Failing Project (cont'd)



(Graphic Source: The course script provides this graphic)

Failing Project ‘Show-Stoppers’

‘Show-stoppers’ are factors that, if they are not addressed, guarantee project failure. If a ‘show-stopping’ issue is ignored, the project will fail to deliver quality, added value, and professional satisfaction on time and within budget. There are two major show-stoppers:

- **lack of an effective project sponsor**

It is not uncommon for a project manager to be given responsibility without authority. In other words, the project manager is not given the requisite organizational or financial power to achieve his or her objectives.

In these cases, the role of the project sponsor is crucial, and the **lack of an effective project sponsor** or owner is high on the list of reasons behind project failure.

The contemporary role of project sponsors and steering committee members goes far beyond the traditional passive roles of project approval and review. It is **critical that the senior management** who have sponsored a project also be **actively involved**. In effect, senior management should function as an executive project manager in assisting the project manager.

Topic 1: Definition of a Failing Project (cont'd)

- **stakeholder buy-in**

The **buy-in** of **stakeholders** (those people who are outside the project manager's scope of control and are service-providers) is also critical in achieving project success. If a project manager cannot gain effective **buy-in and support** from this group, then activities such as defining scope and objectives, identifying and managing risk, performing benefits analysis and realization, defining quality requirements and implementing change control will all be compromised.

- **schedule and cost management**

More than 20% of software projects fail and only less than 20% of software projects are completed on time and on budget. This is a fact that is taken from the Standish's Group Chaos Report. Given these figures, schedule and cost over-runs are a significant factor associated with a failing project.

Topic 1: Definition of a Failing Project (cont'd)

Definition of a Failing Project



Rough factors include

- benefits planning and realization
- quality requirements planning
- risk management
- project change control



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(Graphic Source: The course script provides this graphic)

Failing Projects Rough Factors

As discussed by Capers Jones, there are a number of other factors, which may not prevent the project from being delivered on time and in budget, but will generally result in substantial degradation of quality, added value, and professional satisfaction. These factors are known as rough factors, and include

- **benefits planning and realization**
- **quality requirements planning**
- **risk management**
- **project change control**

In many ways, rough factors are the direct result of the failure of a **‘show-stopper.’**

Benefits planning and realization

Benefits analysis, planning and realization require the participation and commitment of project stakeholders. For example, suppose a project manager is seeking to avoid high internal organizational costs and plans to

Topic 1: Definition of a Failing Project (cont'd)

achieve this by reengineering a client area and reducing staff in that area. He/she will not be able to guarantee those benefits without the input and support of stakeholder managers.

Quality requirements planning

It is normal for stakeholders to have differing views on the required quality of the system or product being developed. However, it is almost impossible for a project manager to resolve differing quality expectations without the commitment and participation of the various stakeholders and the project sponsor in resolving these conflicts.

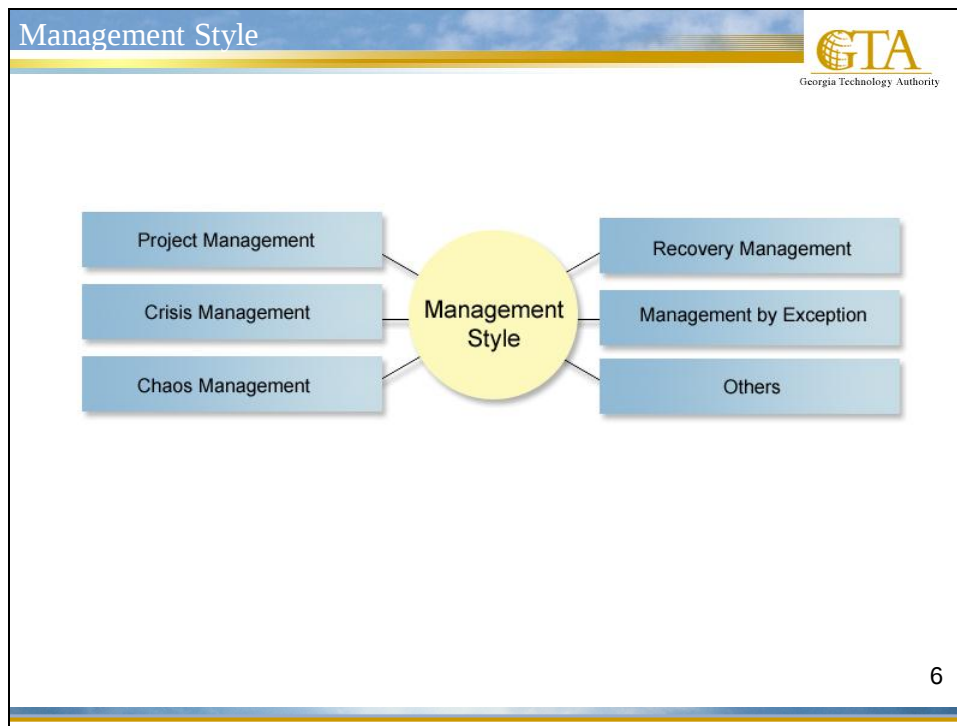
Risk management

In addition to examining and managing the risks inherent in the complexity and size of the proposed project, a project manager must also take account of the risks associated with the project team and the stakeholder environment.

Project change control

During the lifecycle of a project, changes in scope, objectives, quality requirements, risks, and project staffing inevitably occur. These changes require the project manager and his or her team to be able to negotiate with the various stakeholders who are affected. In order for issues to be resolved quickly and successfully, the stakeholders must be open to a degree of change and reasonable compromise.

Topic 1: Definition of a Failing Project (cont'd)



(Graphic Source: The course script provides this graphic)

Management Styles

Various **management styles** exist where individuals will adapt and react to the environment, and the political influences, in a manner to address whatever may be happening. Given this, the onus is not to be continually reacting but rather adopt an appropriate and systematic management style to deal with the work-stream. A management style is an overall method of leadership used by a manager and can be presented as either:

- **autocratic** where the leader makes all decisions unilaterally or
- **permissive** where the leader permits subordinates to take part in decision making and also gives them a considerable degree of autonomy in completing routine work activities.

Specific management styles are:

- **project management** - the ability to management and direct project activities towards the achievement of a common goal
- **crisis management** - involves the process of creating a crisis plan, training personnel to respond during a crisis, and amassing resources to address a crisis to ensure goals and objectives are accomplished in the event of a crisis. Crisis management is implementing activities to achieve the plan's goals and objectives which is an internal operational process where the organization produces what amounts to roadmaps to follow in the event of a crisis.
- **chaos management** - flexibility is required in managing projects or work subject to chaos or constant change. Work streams and projects may be redefined repeatedly as feedback spurs learning. Contingency plans are insufficient because learning may cause a fundamental change in the project structure, which in turn requires redefining the entire project. To keep the chances of success high enough, different approaches are entertained, either in series or in parallel where the focus is on the current status of learning about basic project assumptions.

Topic 1: Definition of a Failing Project (cont'd)

- **recovery management** - the ability to diagnose and remedy a project which has noticeably gone off course. This where the style is about swift and expedient decision-making to deliver project stability from a state of possible project ruination
- **management by exception** - during the normal course of any project, exception will occur and
- **others** - there a number of other management styles such as participative and behavioral styles that are applicable in a team context

Topic 1: Definition of a Failing Project (cont'd)

Question



What are the factors that contribute to project failure in your environment?

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Question

What are the factors that contribute to project failure in your environment?

Sample answer

The Standish Group provides the following reasons and contribution to failing projects:

Incomplete requirements:	13.1%
Lack of user involvement:	12.4%
Lack of resources:	10.6%
Unrealistic expectations:	9.9%
Lack of executive support:	9.3%
Changing requirements & specifications:	8.7%
Lack of planning:	8.1%
Didn't need it any longer:	7.5%
Lack of IT management:	6.2%
Technology illiteracy:	4.3%
Other:	9.9%

Topic 2: Characteristics of a Failing Project

Definition of a Failing Project



‘A failing project is a project that is unlikely to make the journey from conception to successful implementation’

(Source: Troubled IT Projects, Smith, John M., IEE © 2001)

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Definition of a Failing Project

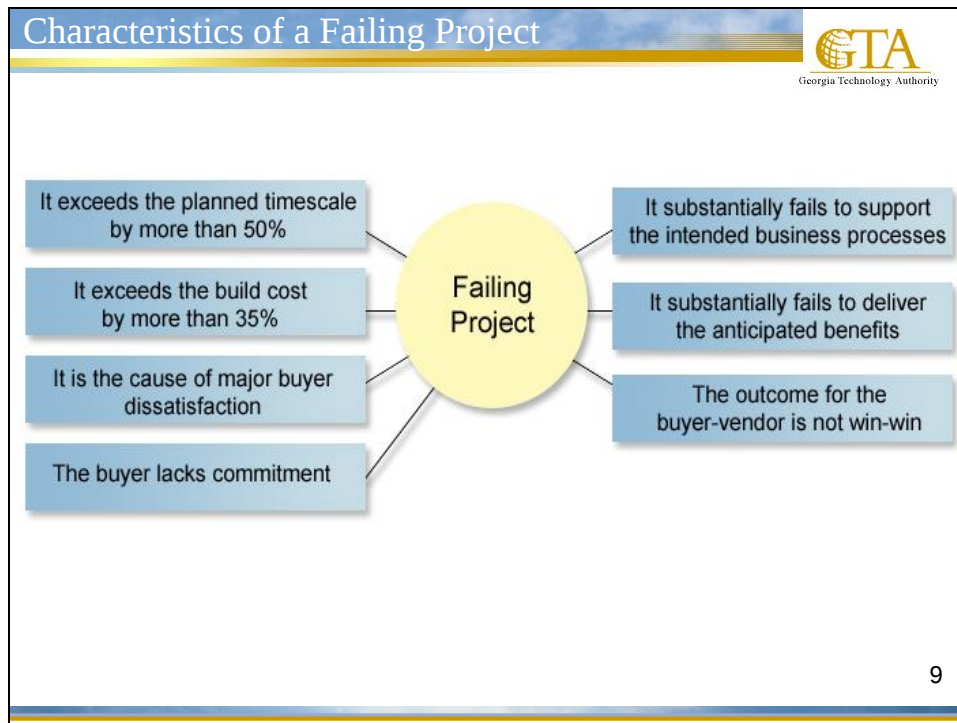
The notion of a **failing project** needs to be defined in more than simply **qualitative terms**.

Quantitative measures are also necessary to understand the full extent and implication of how a project is failing.

However, it is important to remember that quantitative measures don't always scale. For example, if a three-month project takes six months to complete, it may not be a total disaster for either the vendor or the buyer – provided that no major time imperative has been breached and the system is successful in operation.

However if a four-year project takes eight years to complete, this implies expenditure of a totally **different magnitude**. The business needs that the project is endeavoring to meet will almost certainly have changed by the time the project reaches completion.

Topic 2: Characteristics of a Failing Project (cont'd)



(Graphic Source: The course script provides this graphic)

Characteristics of a Failing Project

A failing project has one or more of the following characteristics:

- it exceeds the **planned timescale** by more than 50%, excluding the timescale impact of agreed changes in scope
- it exceeds the build **cost** by more than 35%, excluding the cost of agreed changes in scope
- it is the cause of major **buyer dissatisfaction** to the extent that the future of the project is called into question
- the **buyer lacks the commitment** to make the project succeed
- it substantially **fails to support the intended business processes**

Topic 2: Characteristics of a Failing Project (cont'd)

- it substantially **fails to deliver the anticipated benefits**
- the outcome for buyer-vendor and **government departments** is **not win-win**

Note that the above are characteristics of *how* a project may be failing.

The relationship between government bodies and contractors has a crucial effect on the success of a project. In particular:

- government departments should maintain a close relationship with suppliers, but avoid undue reliance on them, and maintain overall ownership of progress to achieving the intended benefits
- departments should also ensure that all parties have a clear understanding of their roles and responsibilities, and a shared understanding of key terms and deadlines
- where suppliers sub-contract work arising from PFI contracts, departments should satisfy themselves that the prime supplier's arrangements for managing the subcontracts are consistent with the requirement of the main contract

Contracts between departments and suppliers must be set out clearly. In particular:

- there should be an ongoing process of contract management during the life of the project to allow for any change to requirements. However the aim should be to manage, rather than police, project contracts
- departments should ensure that the business implications of late delivery are reflected in contractual incentives or penalties

Topic 2: Characteristics of a Failing Project (cont'd)

Characteristics of a Failing Project



- Exceeds the Planned Timescale
- Exceeds the Build Cost
- Major Buyer Dissatisfaction

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A project can be identified as failing if it exhibits any of the following characteristics:

- **exceeds the planned timescale**
- **exceeds the build cost**
- **major buyer dissatisfaction**
- **buyer lack of commitment**
- **failure to support intended business processes**
- **failure to deliver anticipated benefits**
- **failure of a win-win outcome**

Exceeds the Planned Timescale

A project's planned timescale is the timescale embodied in the contract between the parties. In some organizations, a 50% overrun of planned timescale may be regarded as excessive. Other experiences indicate that the average timescale overrun is 30%, with only 5% of all projects coming in on time (mostly very small ones) and about half of all projects overrunning by more than 30% of the planned timescale.

Topic 2: Characteristics of a Failing Project (cont'd)

Exceeds the Build Cost

An overrun in build cost may predominately impact on one of the contracting parties, depending on the contractual environment (fixed-price or time and materials). The average planned gross profit on fixed-price deals is around 25%. It takes a cost overrun of 33.3% for the vendor to reach break-even point.

The “impact of agreed changes” is excluded from the calculation of timescale or cost overrun. It is often reported that vendors tend to bid low and hope to make their money on the changes. This is sometimes the case, but in general the value of changes is typically less than 20% of the original contract value. At this level, even allowing for a very large gross profit on the changes, this approach will not restore a loss-making project to its planned level of gross profit.

Major Buyer Dissatisfaction

All projects have the potential for dispute between buyer and vendor, whether they are contracted at fixed prices or on time and materials terms.

However, major buyer dissatisfaction means that the buyer is unhappy to the point of discussing withholding payment or terminating the contract.

Topic 2: Characteristics of a Failing Project (cont'd)

Characteristics of a Failing Project



- Buyer Lack of Commitment
- Failure to Support Intended Business Processes
- Failure to Deliver Anticipated Benefits
- Failure of a Win-Win Outcome

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Buyer Lack of Commitment

Buyer lack of commitment occurs when the buyer organization does not do all in its power to make the project a success. In this scenario, the buyer tends to blame the vendor for all problems that occur throughout the life cycle of the project.

Examples of lack of commitment on the part of the buyer include:

- failure to champion the project within the organization
- failure to take culture change and user training challenges seriously

Topic 2: Characteristics of a Failing Project (cont'd)

Failure to Support Intended Business Processes

Substantially failing to support the intended business processes means that the project product is basically unusable. Despite possibly complying with the requirements specification or passing acceptance tests, it does not support the business in the intended way or to a sufficient level.

Failure to Deliver Anticipated Benefits

Substantially failing to deliver the anticipated benefits means that the project product is usable, but the anticipated cost savings, efficiency improvements, or other measures specified in the business case are not delivered.

Failure of a Win-Win Outcome

The buyer and the vendor should both be in a winning situation. If either or both parties feel exploited by the other, the project is failing and the prospect of a mutually rewarding business relationship in the future is reduced.

Topic 2: Exercise: Distinguishing Failing Projects

Exercise



Exercise: Distinguishing Failing Projects



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In this exercise, you are given six different scenarios and must order them according to the degree to which they are failing.

The project scenarios are as follows:

- Scenario 1: The technical specialist in the project has left due to illness and is not being replaced.
 - Scenario 2: As project manager you notice that you have completed the scope verification of your product but the project has not completed, or even started, some key development activities.
 - Scenario 3: The project team decides to stop working overtime as morale is low.
 - Scenario 4: As project manager, your boss tells you that the project has delivered on certain objectives but it cannot support the current stream of activity.
 - Scenario 5: You are presenting to your stakeholders that the project is 27% over the budget.
 - Scenario 6: The client insists that the product is failing in a number of live-tests.
-

Topic 2: Exercise Worksheet

Topic 3: Failing Project Indicator Tools and Techniques

Identifying a Failing Project



Signs that a project may be failing include

- lack of project plan and business case updates
- no quality assurance
- lack of stakeholder communication
- lack of project management processes



Project Team Stakeholder

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(Graphic Source: The course script provides this graphic)

Failing Project Symptoms

Projects exhibit clear symptoms of failure as the breakdown process proceeds. Some obvious early signs that project may fail include lack of an agreed scope statement, lack of stakeholder commitment, and lack of a formal stakeholder agreement before project commencement. However, more subtle signs may also emerge later, such as:

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

- **lack of project plan and business case updates**

Most projects are subject to change and, as a result, the original project management plan should be subjected to clear and managed project change control. The absence of a series of changes approved by the stakeholders is a potential sign of communication breakdown between the project manager and sponsor.

- **no quality assurance**

All formal quality assurance processes involve some independent external person being involved in detailed technical reviews of the deliverables and the project development and management process.

As a project begins to fail, it begins to look inward and external reviews are avoided. This is a clear symptom of problems and potential failure.

- **lack of stakeholder communication**

In a well managed project, stakeholders are involved in planning the project and are regularly briefed on its progress. Poor or no stakeholder communication on a regular [at least monthly] basis is a potential sign of failure.

- **lack of project management processes**

Project management processes are used to guide the project from start to finish. If these processes are not correctly aligned or are unsuitable, the consequences can be that the procedures are inadequate to manage any project

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Identifying a Failing Project



Further signs that a project may be failing include

- excessive overtime
- high staff turnover
- aggressive and defensive behavior
- no sense of fun



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(Graphic Source: The course script provides this graphic)

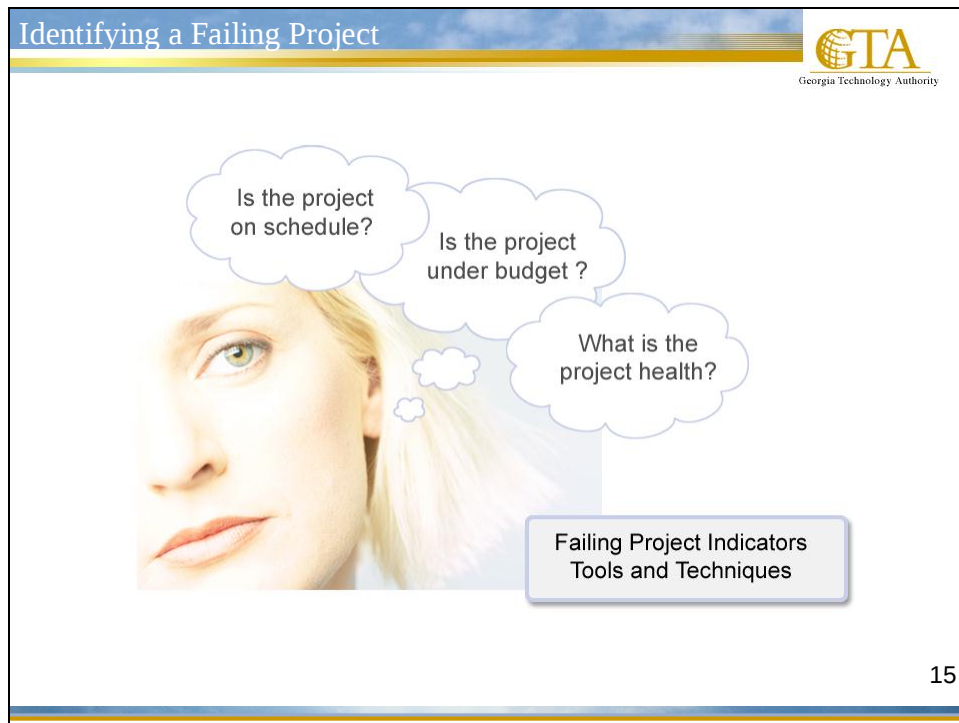
Further signs that a project may be failing that may not be immediately obvious include:

- **excessive overtime** – teams that are motivated often work long hours. However, in a failing project, the working of long hours is not voluntary and, indeed, becomes expected and the norm. In general, a team working more than 60 hours a week for a sustained period is an indication that the project is in difficulty.
- **high staff turnover** – many people will respond to the challenges offered by a poorly-managed project with energy and enthusiasm. However, the impact of sustained and unnecessary pressure over a sustained period on personal standards and private lives can result in the best people (i.e. those with other employment options or life choices) leaving the project.
- **aggressive and defensive behavior** – any attempt made by outsiders to help those involved in a project that is failing can be met with a combination of aggressive and defensive behaviour. This is because the bunker mentality of the team creates a delusion that the project will succeed and any indication by people outside the team that it may be in trouble is seen as a threat.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

- **no sense of fun** – while some symptoms are dismissed as irrelevant, a well-run project offers team members not only a challenge and an opportunity to learn, but also a level of enjoyment. Failing projects offer no fun, a lot of challenge and a lot of bad learning. Simply, instead of fun and excitement, failing projects exhibit frustration and desperation.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)



(Graphic Source: The course script provides this graphic)

Project Failing Indicator Tools and Techniques

When identifying a failing project, it is important to have effective indicators, tools and techniques at your disposal, and to pay close attention to the information they provide. The reasons for this are as follows:

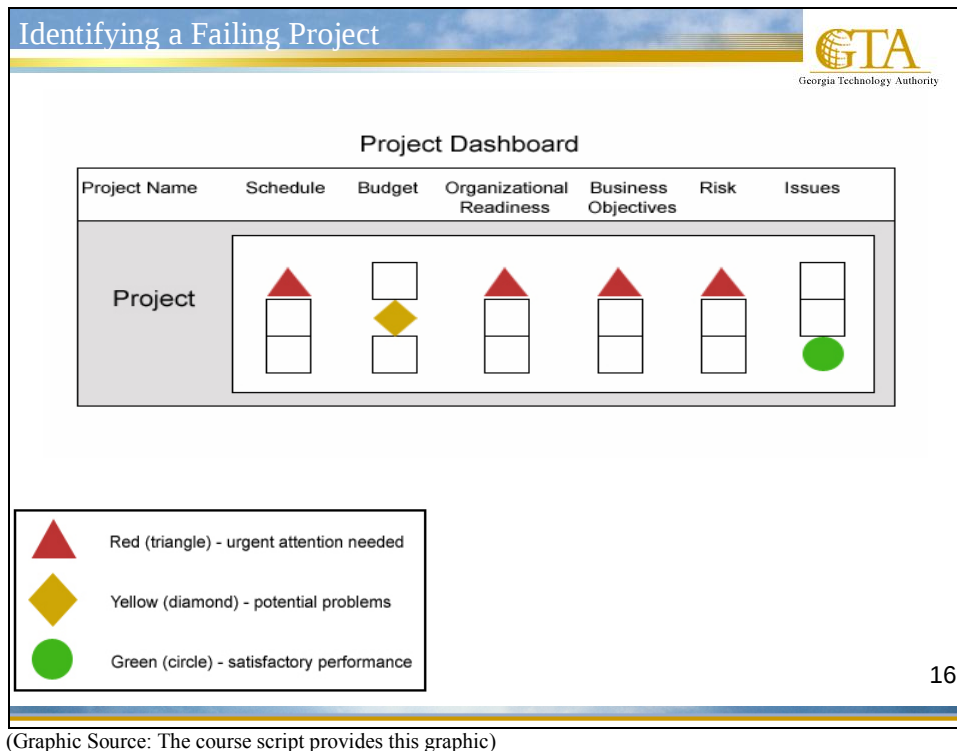
- if you **fail to understand the reasons why a project is failing**, you are not focusing on the needs of the customer
- if you **fail to bring yourself sufficiently up to speed** by reading the necessary indicators, the stakeholders won't respect you
- if your project is failing, you may need to bring **specialist help on board**, and this takes time to achieve as the best people are always busy

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

The most notable tools and techniques that are available to indicate project failure are:

- the dashboard report
- the earned value methodology
- the net present value

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)



Project Dashboard

Six criteria constantly emerge in a failing project, each of which requires continual assessment:

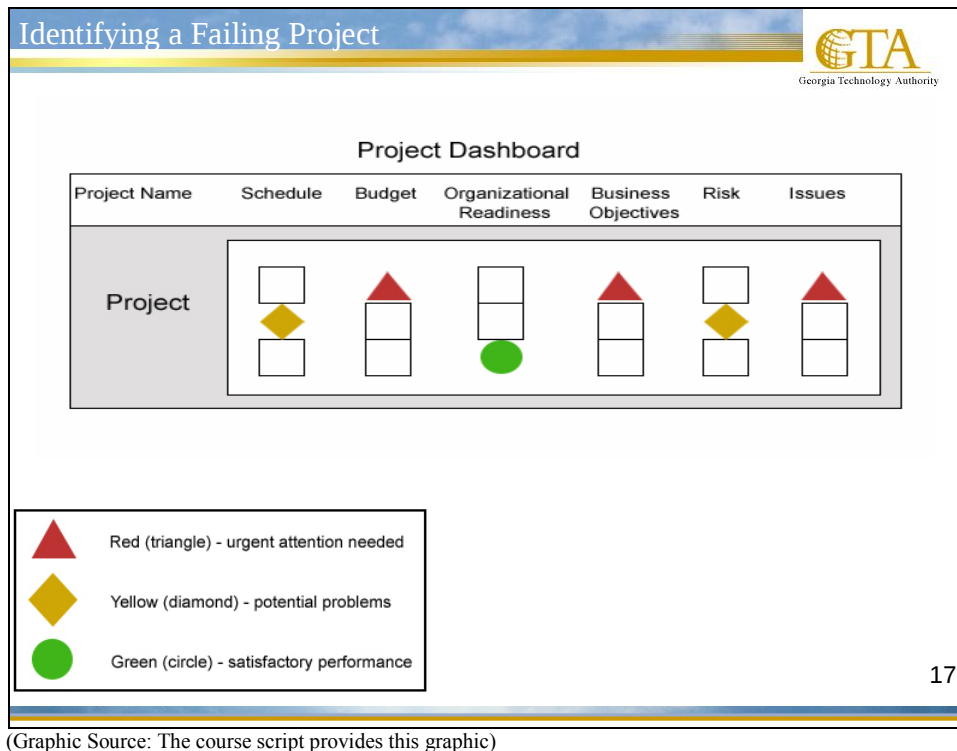
- **schedule** – how is the project performing against the schedule?
- **budget** – how is the project performing against the budget?
- **organizational readiness** – does the organisation have all the necessary resources / manpower to complete the project?
- **business objectives** – are the business objective being met by the project?
- **risk** – what type of risks is the project experiencing and are they being adequately reviewed and fixed?
- **issues** – are there any other issues outstanding?

These six criteria form the **project dashboard**. Just because a project comes in on time and within budget does not necessarily mean it is a success. The deliverables may be of poor quality, and there may be dozens of outstanding issues. A much broader view is required and can be provided through the use of a project dashboard.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Schedules and budgets only form a portion of the indicators required to answer the question ... is the project failing? By inputting the project's performance in these six areas into the dashboard, a project manager constructs a **dashboard report** – a series of indicators that deliver an overall verdict on a failing project.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)



Dashboard Report

Dashboard reports are presented using a traffic light system where green, yellow and red are used to indicating different types of project status. To facilitate the printing of this guide in black and white, these colors have also been given specific shapes: green is represented by a circle, yellow by a diamond, and red with a triangle.

Each color on a dashboard report indicates a specific project status:

- **green (circle)** – the project is performing satisfactorily in that area
- **yellow (diamond)** – there is a potential problem that may cause the project to fail
- **red (triangle)** – the project is about to fail in this area and it needs urgent attention

Presenting in a simple dashboard or traffic light display provides immediate information on the key areas, allowing a project manager to focus his/her attention directly on the problem areas. An hour of analysis is 59 minutes 55 seconds of wasted time if a traffic light can provide the answer. When there is a need to act swiftly – and this need is always present when dealing with a failing project – a dashboard is invaluable.

Sample GTA dashboards are provided on the following two pages.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

GENERAL INFORMATION:		PROJECT HEALTH RATING				Project Status Indicators :		Trend Indicators:	
Agency Name:	Agency 1	Agency		GTA		LEGEND	Green	On-track, only minor issues	+ = Improving
Panel Review Meeting Date:	30-Aug-04	Previous	Current	Previous	Current		Yellow	One or more areas of concern	- = Declining
Project Name:	Project Example 1	N/A	Red	N/A	N/A		Red	Significant issues that limit the effectiveness and/or success of the project	N/C = No Change
Project Status "As Of" Date:	01-Nov-04	Comments:					N/A	Not applicable	
Total Project Budget:	\$1								
Project Start Date:	30-Aug-04					PROJECT PHASES ("X" indicates current phase of project):			
Project End Date:	30-Jun-06					Initiation	Planning	Execution	Closing
						X			

PROJECT STATUS INDICATORS																	
SCHEDULE			BUDGET			BUSINESS OBJECTIVES			RISK			ISSUES			ORG. READINESS		
Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend
N/A	#DIV/0!	-	N/A	#DIV/0!	+	N/A	#DIV/0!	+	N/A	Red	+	N/A	Red	N/C	N/A	N/A	N/C
Comments:			Comments:			Comments:			Comments:			Comments:			Comments:		

FINANCIALS: Previous Actuals to Date						FINANCIALS: Previous Projected		
Total Budget (State) (a)	Total Budget (Other Funds) (b)	Total Project Budget (c) (a + b)	Total Planned Expenditures (Project to Date) (d)	Total Actual Expenditures (Project to Date) (e)	Expenditure Variance ('+' = Overbudget, '-' = Underbudget) (f) (e - d)	Available Funds to Complete Project (g) (c - e)	Estimate Funds Needed to Complete Project (h)	Budget Variance (i) (g - h)
\$0.00	\$0.00	\$0.00	\$ -	\$ -	0.00	\$0.00	\$ -	\$0.00

FINANCIALS: Current Actuals to Date						FINANCIALS: Projected		
\$0.00	\$0.00	\$0.00	\$ -	\$ -	\$0.00	\$0.00	\$ -	\$0.00

ACTIONS - include responses to action items assigned at previous panel review meetings (if applicable)

ITEMS FOR DISCUSSION - include significant items that the project team wants to communicate for awareness or escalate for action

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

MAJOR DELIVERABLES - include all major deliverables through the complete schedule. Please organize by program or sub-projects.				
Deliverable Description	Planned Finish Date (a)	Actual Finish Date (if applicable) (b)	Projected Finish Date (if applicable) (c)	Schedule Variance (Business Days Ahead or Behind) (d) [a-(b or c)]

CRITICAL ISSUES			
Issue Description	Response Plan	Due Date	Priority (H, M, L)

CRITICAL RISKS				
Risk Description	Mitigation / Response Plan (avoidance, transference, mitigation, or acceptance)	Probability (H, M, L)	Impact (H, M, L)	Category (1, 2, 3)

OTHER ITEMS TO REPORT
Change Requests - describe requests that have significant impact to project's progress and provide the impact to the project:
Major Accomplishments - since previous panel review:
Planned Activities for next panel review

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

What is Earned Value?

Quantifying Project Performance = Earned Value

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Earned Value

Earned value is a "**management-by-exception**" technique that allows project managers to utilize the exceptions principle to monitor the long-term performance trends of their projects, using schedule and cost performance indices. Earned value provides reliable indices to determine how much time and how much money it will take to finish a job.

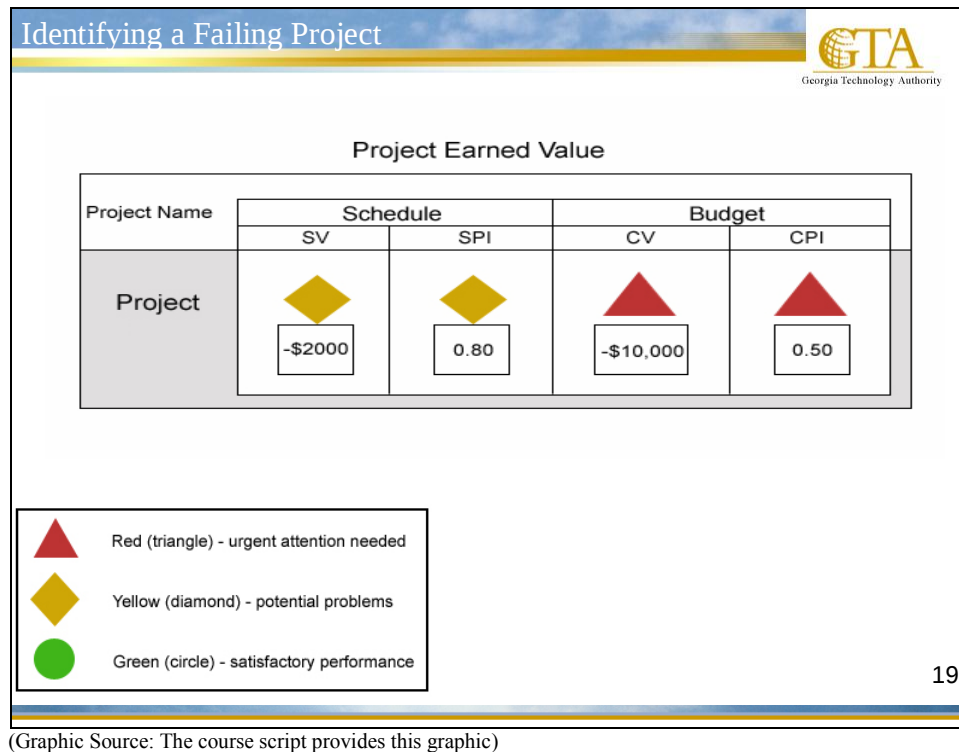
‘Management-by-exception’ assumes work is done according to orchestrated systems and standards. If these standards are not met or an exception occurs, the employee involved must notify the manager using an exception report. The manager can assume the work is being performed according to the standards, unless otherwise notified.

Earned value performance can be numerically quantified – perfect performance for an earned value project is considered to be 1.0 performance, reflecting both the cost and schedule position. Any cost or schedule performance that runs below the 1.0 standard requires close scrutiny by the project manager, and perhaps even senior management.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

As soon as the project reflects earned value performance falling below the 1.0 level for either the cost or scheduled work, the project management team needs to first understand the reasons causing the condition, and then take corrective actions to change and improve performance on the remaining tasks.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)



Earned Value Methodology

Of the various tools available for monitoring and controlling projects, earned value analysis captures project status most effectively.

Earned value analysis is a tool for reporting performance and understanding if a project is failing. In its various forms, it is the most commonly used method of performance measurement. It combines scope, cost (or resource), and schedule measures to help the project management team assess project performance.

There are three key values that must be calculated for each activity in earned value analysis.

These are

- **planned value (PV)**, previously called the budgeted cost of work scheduled (BCWS) – this is the portion of the approved cost estimate planned to be spent on the activity during a given period

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

- **earned value (EV)**, previously called the budgeted cost of work performed (BCWP) – this is the value of the work actually completed
- **actual cost (AC)**, previously called the actual cost of work performed (ACWP) – this is the total of all costs incurred in accomplishing work on the activity during a given period, and it must correspond to whatever was budgeted for the PV and the EV

Planned value, earned value, and actual cost can be combined in various ways to provide measures of whether work is being accomplished as planned.

The most commonly used measures are the **cost variance (CV)** and the **schedule variance (SV)**:

$$CV = EV - AC$$

$$SV = EV - PV$$

These two values can be converted to efficiency indicators to reflect the cost and schedule performance of any project.

The **cost performance index (CPI)** is the most commonly used cost-efficiency indicator:

$$CPI = EV/AC$$

The **schedule performance index (SPI)** is sometimes used in conjunction with the CPI to forecast the project completion estimates:

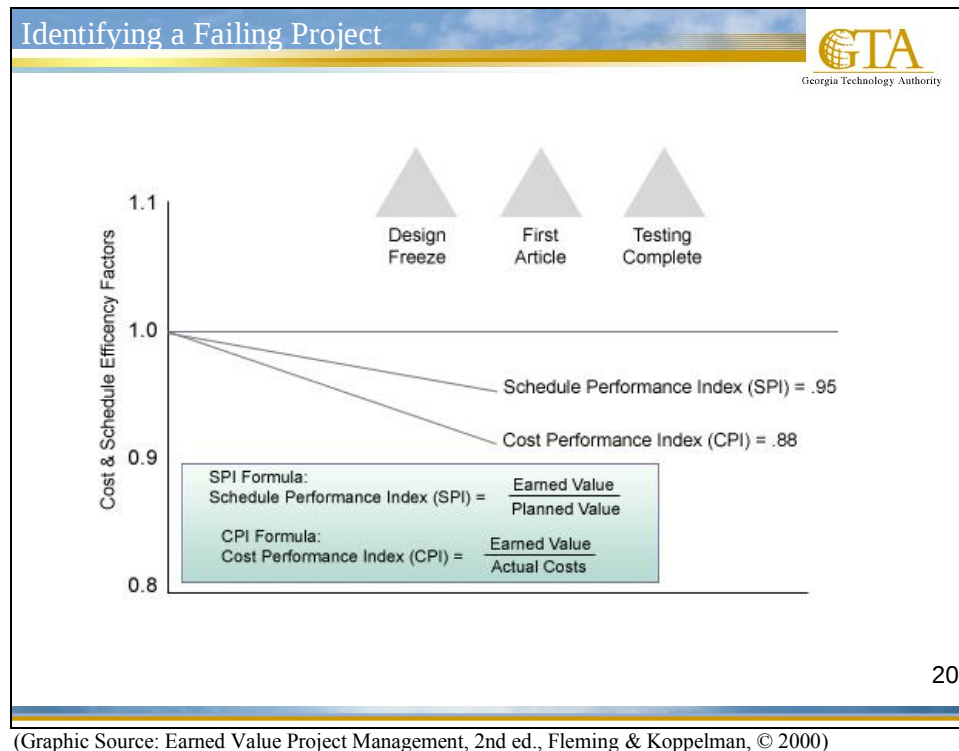
$$SPI = EV/PV$$

If the CV and SV are minus figures it indicates that the project is failing or about to fail, and the indices can reflect the following:

- a $CPI < 1$ indicates that the project is over-budget
- a $CPI = 1$ indicates that the project is on budget
- a $CPI > 1$ indicates that the project is under budget
- a $SPI < 1$ indicates that the project is behind schedule
- a $SPI = 1$ indicates that the project is on schedule
- a $SPI > 1$ indicates that the project is ahead of schedule

The traffic light setup can be used to previous the graveness of the situation given the indices and variances.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)



Failing Project Performance

In earned value projects, there are two primary areas of focus:

- how long will it take to complete a project?
- how much will it cost to complete a project?

To quantify how long it will take to complete a project, the earned value accomplished by a project to date is divided by the planned value, which provides the **Schedule Performance Index, or SPI**.

SPI indicates how much of the original scheduled work has been accomplished at a particular point in time. An SPI performance of less than 1.0 indicates that the project is running behind the dollar value of the work that it set out to achieve.

To quantify how much it will cost to complete a project, the dollar value of the earned value physically accomplished is divided by the actual costs incurred to accomplish the work. This index is called the **Cost Performance Index (CPI)**.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Although both SPI and CPI are important indicators, CPI is the more sensitive index because a negative CPI position (less than 1.0) is likely to be non-recoverable. SPI will eventually drift back up to a full 1.0 position when all of the project tasks have been completed, whereas any CPI performance of less than 1.0 will rarely (if ever) be improved by the project.

This fact has important implications for how project managers respond to negative SPI and CPI indices. Any funds spent to recover SPI that cause an overrun inflict permanent damage to the CPI and cannot be subsequently recovered.

The performance of any project that employs earned value can be effectively tracked by illustrating the cumulative SPI and CPI curves.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Identifying a Failing Project



Net Present Value

- The Net Present Value method (NPV) is a capital budgeting technique that equates discounted cash flows against the initial investment. It is calculated using the following formula:

$$NPV = \sum_{t=1}^n \left[\frac{FV_t}{(1 + k)^t} \right] - \Pi$$

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Net Present Value

Net Present Value is essentially a project appraisal technique.

If there is a positive NPV, there is a positive benefit to the organization from the project. If the NPV is negative however, the project will cost more than the initial investment and the organization will suffer a loss.

The NPV represents a basic go/no-go decision when it comes to project investment/appraisal. However, when it comes to assessing the status of the project, it becomes a key tool in identifying project failure. If a project has:

- a negative NPV – it is failing financially, and is not meeting its budgetary objectives
- a positive NPV – it is succeeding financially

To identify NPV requires a balance between current practice (present values) and forecasts (future values). Essentially, it asks the question –is the project meeting its initial investment?

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

The Net Present Value method (NPV) is calculated using the following formula:

$$NPV = \sum_{t=1}^n \left[\frac{FV_t}{(1+k)^t} \right] - \Pi$$

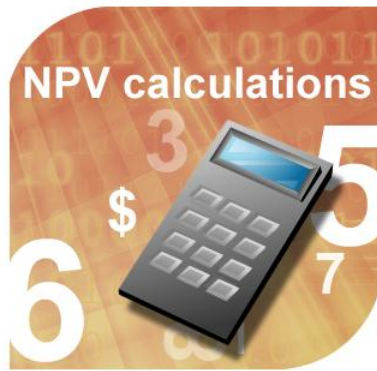
where FV is the future value of the cash inflows, k is the discount rate equal to the firm's cost of capital, and Π represents the initial investment. Net present value is becoming much more common as an evaluation tool, and is introduced as part of the management of a portfolio of projects.

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Identifying a Failing Project



Determining Net Present Value

$$NPV = \sum_{t=1}^n \left[\frac{FV_t}{(1 + k)^t} \right] - \Pi$$


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(Graphic Source: The course script provides this graphic)

For example, let's say an organization invests \$100,000 in an IT project. At the time of investment, it is forecast that the project will make \$20,000 of a return in two years. Given that the **cost of capital** is 10%, should the organization be happy with this?

Using the NPV formula, the FV is \$120,000, $k = 0.1$ (or 10%), $t = 2$ years and Π is \$100,000.

$$\begin{aligned} NPV &= (120,000 / (1 + 0.1)^2) - 100,000 \\ &= (120,000 / 1.21) - 100,000 \\ &= \$99,174 - \$100,000 \\ &= -\$826 \end{aligned}$$

The answer is **no**! The NPV is negative which indicates that the organization will not make a return on this project, given the interest rate, the return in two years, and the required investment.

However, the project is given the go-ahead purely because forecasts indicate the interest rates will reduce and after 1 year the interest rate is now 8%. However, the investment has risen to \$110,000. What is the status of the project?

Topic 3: Failing Project Indicator Tools and Techniques (cont'd)

Using NPV formula the FV is still \$120,000, $k = 0.08$ (or 8%), $t = 1$ years (1 year left on the project) and II is \$110,000.

$$\begin{aligned}\text{NPV} &= (120,000 / (1 + 0.08)^1) - 110,000 \\ &= (120,000 / 1.08) - 110,000 \\ &= \$111,111 - \$110,000 \\ &= \$1,111\end{aligned}$$

The NPV is positive which means that the project is financially viable. The above calculation show how Net Present Value can be used as a forecasting and appraisal tool.

Topic 3: Exercise - Identifying a Failing Project

Exercise



Exercise: Identifying Failing Projects



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Project Scenario

A Government IT project to install a new accountancy/payroll software system in all business units of the state authority commenced six months ago, with a budget of \$350,000. The justification for the project stemmed from the fact that the legacy system was not compatible with the latest operating system being installed on the mainframe. Various situations have arisen since the project began, and you have been asked to examine the project and determine if it is failing and in need of recovery:

- the client insists that the product is failing in a number of live-tests
- as project manager, your boss tells you that the project has delivered on certain objectives but it cannot support the current stream of activity
- as project manager you notice that you have completed the scope verification of your product but the project has not completed, or even started, some key development activities.
- you are presenting to your stakeholders that the project is 27% over the budget
- the project team decides to stop working overtime as morale is low
- the technical specialist in the project has left due to illness and is not being replaced

Setting the Dashboard Metrics

Before you start, you need to set the rules and financial limits for the project, deciding at what point your 'traffic lights' should change from green to yellow, and from yellow to red.

For example, you might decide that as far as cost is concerned, you have a budget of \$100k over 10 months and will spend \$10k per month. After 6 months, you should therefore have expenditure of \$60k.

You need to set metrics to capture any deviation from this projected expenditure. For example, you might decide that if the project costs start to escalate, the traffic light should remain green up to 10% over budget, but if it moves into the 10%-25% bracket it should be yellow, and if it goes over 25% it should be red.

You set these dashboard metrics before you tackle the scenario, to manage the color changes in the ‘traffic lights’ on your dashboard.

Dashboard Guidelines

Schedule: The most common tool for managing a project is the schedule. At any point in a large project, there will probably be one or two tasks behind schedule and an equal number ahead of schedule. By setting parameters as to the number of tasks that must be behind/ahead of schedule for the traffic lights to change, you can present the performance against schedule as a set of lights.

Budget: It is not sensible to monitor a project budget in total because if the budget were spent half way through a project, it would suddenly be in trouble with no prior warning that there was any problem. For this reason, we need to create a project cash flow for the budget. Typically this is a month-by-month estimate of expenditure.

Organizational Readiness: A subjective rating based on the willing and readiness of the organization. If the organization has all the necessary resources / manpower to complete the project it can be given a high rating.

Business Objectives: This involves putting in place a tracking system that records the number of changes that are approved on a project and how the business objectives are being met. At the start, the project manager identifies the objectives and forecasts any likely changes. The changes can be monitored as a percentage of the estimated budget, and as each increase is approved, he/she monitors the total creep.

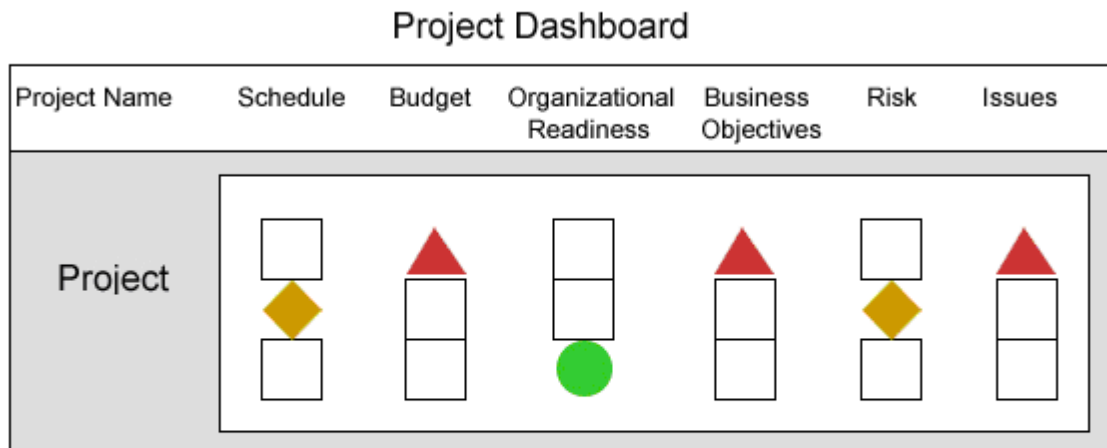
Topic 3: Exercise - Identifying a Failing Project (cont'd)

Risk: One way to monitor risk is to score the identified risks based in risk event status. For example, if a risk register contains 10 risks but they have a low risk event status, the project risk can be given a rating of 10 (i.e. 1 point for every low risk). However, if the risks are all high, the score may be 100 (i.e. 10 points for every high risk)

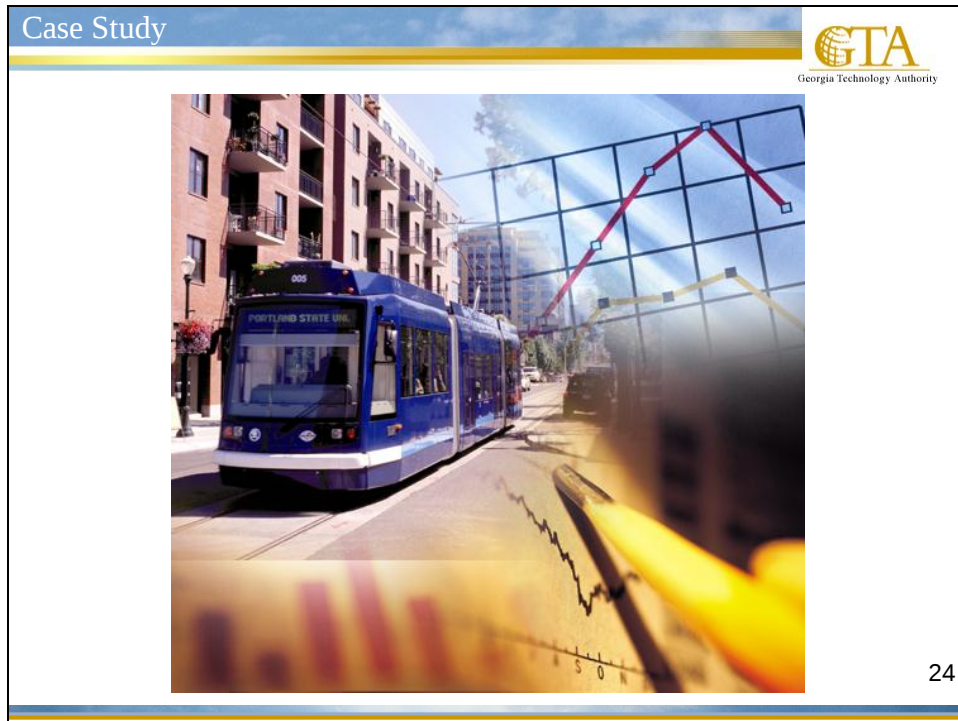
Issues: One of the most important attitudinal changes a project manager can initiate is to shift team focus from identifying problems to creating issue items for every problem. No issue should exist without at least one action item to address the issue.

The objective of the exercise is to identify with the aid of the dashboard if the project is failing.

This is a sample of the type of dashboard that you should create:



Topic 4: Presenting the Failing Project Indicator Outcomes



(Graphic Source: The course script provides this graphic)

The following fictional case study illustrates how in major infrastructure projects distinct project phases and life cycles must be completed before a project proceeds.

Read the case study and then complete the exercise that follows it.

The Georgia Rail Project

Introduction

Traffic flow, congestion, and pollution are major issues for the state of Georgia. According to statistics gathered over the past ten years,

- the number of licensed drivers has increased by 44%

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

- on average, 21% extra people travel into the major cities between 8:00 am and 1:00 am each working day
- there has been a 47% increase in the use of automobiles during a working week
- automobile ownership was increased by 7% per year
- over 77% of Georgia drivers now travel alone to work, whereas just over 14% avail of the carpool facility, and 4% avail of public transport
- incidents of crashes are up 4%

Project History

Georgia's transport needs have been under consideration for some time. In 1994, the state initiated an investigation, which led to the publication of a transport strategy report in 1997.

The report found that the public did not consider the current public transportation system to be an adequate alternative to auto transport, resulting in a high reliance on the car. Based on this, the report suggested that the state incorporate a series of measures into its transportation policy:

- review the current public transportation system and invest in new and alternative modes of public transportation in urban commuter areas
- encourage and educate auto users so they see the benefits of alternative transportation with an emphasis on reducing "auto-reliance"

After a period of discussion among various government bodies and other stakeholders, a committee – Transport 2000 – was formed in 1999 to investigate the different alternatives. The committee evaluated alternatives based on expert opinion and historical information, as well as public opinion. The committee also identified the public as a key stakeholder in any transportation project and sought their opinion.

For historical data and expert opinion, the committee looked to developments in Arizona, where a state-of-the-art, \$1.13 billion project proposes to link three cities (Phoenix, Tempe, and Mesa) by rail. Funded by the Arizona state government and the three cities, the Central Phoenix/East Valley Light Rail Transit system is scheduled for completion in August 2007. However, due to the success of the project, parts of the rail line will open to the commuter population in December 2006 and April 2007¹.

The Central Phoenix/East Valley Light Rail Transit system has the capacity to transport around 5000 passengers in each direction every hour. A private company will operate the system under a five-year franchise.

Project Proposal

- In late 2000, the Transport 2000 committee proposed the establishment of a rail-based public transportation system between the major urban cities of the state. The objective was to provide a speedy, efficient, and cost-effective commuter system, allowing the state population to travel within and between urban districts.

¹ Information on Phoenix Rail System sourced from article in PM Network 2004 (Admed H. Chilmeran, PMP; Keep Costs under Control; PM NETWORK, FEB 2004)

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

The committee detailed their plans to the state by breaking down the project specification into three sections:

- urban rail system: link each urban “business” area with a reliable light-rail system
- inter-city connection: provide rail segments that will join each urban rail system

vendor management: identified as a key aspect for the success of the project

The government accepted much of the committee’s evidence and the findings, but the major stumbling block was the budget. The state did not accept that the committee could justify the level of investment required for the project with sufficient tangible benefits. It did not help that Phoenix’s system was not up and running at the point of the committee reporting.

After lengthy discussion and analysis, the committee was disbanded in mid-2001 with its findings and proposals sitting in the governor’s office.

Project Implementation Alternative

During 2002, the statistics continued to show an increase in auto use coupled with a slight increase in road fatalities. The state authorities accepted that the Transport 2000 proposal should be reexamined, although a thorough feasibility study would first be required. In late 2002, a feasibility team was established to present project implementation alternatives. The objective for the team was to highlight implementation objectives, alternatives, and critical success factors.

Matching Business and Project Objectives

The feasibility team, in collaboration with government bodies, identified the business and strategic objectives:

No.	Business Objective	Strategic Objective
1	Reduce the amount of people using auto transport	1. Minimize traffic congestion 2. Minimize road fatalities 3. Increase public transportation options
2	Upgrade and “re-invent” the current public transportation system	1. Minimize traffic congestion 2. Increase appeal of state for new business location
3	Provide a reliable and efficient service to all individuals to accommodate both professional and private use	1. Increase commuter confidence in public transportation 2. Increase appeal of state for new business allocation
4	Establish a system that will generate revenue for the government	1. Profit orientated 2. Maximize sales potential

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

The feasibility team, like the previous committee, identified the public as a key factor in the success of any public-service project.

The public was broken into three categories:

- public users: potential customers with direct access to the rail system
- impacted users: people directly impacted by the construction of the railway system (i.e. land or property owners along the rail routes)
- operating users: rail operators that will work and maintain the system and provide a support function to the public users

The project objectives can be summarized as follows:

Project Objective No.	Business Objective No.	Project Objective Description
1	1,2,3	Provide light-rail system within major urban areas that will facilitate professional and private commuters
2	4	Provide a rail system between major urban areas that will facilitate professional and private commuters
3	1,2,3	Provide a transportation system that will reduce the number of auto users
4	1,2,3,4	Implement – in a seamless fashion – a new system that has minimal impact on current operations
5	3,4	Educate public on transportation alternatives to ensure each individual understands new system
6	1	Provide transportation system that is cost effective and geared toward profits

The feasibility team evaluated specialized contractors to recruit a team to establish detailed specification around the structural aspects of the project. The government also allocated a budget to invest in highly capable individuals who could provide a complete structural solution.

Project Implementation

Specialists recruited by the feasibility team subsequently presented a work breakdown structure (WBS) for the project, which subdivides the project work into the major elements and then their sub-elements. For example, a major element of work is the civil/track work, which is subdivided into five line sections. The system's work is split into light rail vehicles, the traction power/overhead contact system, fare collection machines, and light rail transit signals and communications. Other work elements, such as the station finishes, are treated as whole contract units.

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

The specialists developed the lower tiers of the WBS hierarchy in isolation. This practice provides flexibility and full control over respective responsibilities:

- WBS level 1 – Program: local and federal programs identified
- WBS level 2 – Project: the project's major work elements
- WBS level 3 – Project units: the main units/packages associated with each project
- WBS level 4 – Sections: the main sections of each unit
- WBS level 5 – Contract: the main contracts that can be offered
- WBS level 6 – Contract unit: level of work effort required, such as engineering and project management

The specialist team proposed that once the contracts and contract units were identified, the project could then be outsourced to different contractors, including, most likely, a consortium.

Project Management

The feasibility team has proposed that a dedicated project management team be established within the government. The team would have total control over budgets and schedules and would report directly to the state legislature.

The control, planning, and management of the project present complex logistical issues. The scheme may entail numerous individual contract packages, which will require coordination.

At a very early stage, the feasibility team settled the key project management objectives as

- effective and efficient communication of information
- utilization of thorough project control techniques
- efficient and widely understood procurement and contractor processes

This standardization is necessary to ensure that all contractors are working in unison. To furnish timely and accurate cost reports, the project control team needs a comprehensive system that integrates cost and schedule, provides reporting capabilities consistent with the project requirements, and improves operating efficiency.

The system has to be capable of processing and analyzing a vast amount of incoming monthly cost data quickly and accurately. Also, the team could use integrated systems to perform risk and schedule simulation analysis where the relationship between the schedule and cost is not always clear.

Although technology has simplified data collection and scheduling, the feasibility team has identified that professionals must carefully study and analyze the system output to provide a logical, meaningful explanation of the causes of any cost and schedule variances. In this way, sound project control methodologies reduce cost overruns, control cost growth, help meet project schedule objectives, and ultimately satisfy the client's expectations.

The state authority has sanctioned the Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you take action to determine why it seems to be failing. The following information is available:

- The contractors have not got the required level of expertise for the project. This is causing blockages on certain aspects of the design and construction phases. There has been no agreement to date on the preliminary designs.
- The planned budget of \$2.0 million for the initial construction phase is being adhered to, as the contractors are abiding to the financial agreement. However, the timelines have slipped and the project is behind schedule by 3 months.

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

- Certain elements within the stakeholders group are losing interest and beginning to oppose the project, as there have been problems with regard to traffic management during the initial construction.

It is not clear why the project seems to be failing. This is grave news to the state authority as this is their 'flagship project'. You have received a call from the state authority office to bring the project back to a stable state.

The main outcomes from the team are the following:

- The light-rail system should be piloted in one city. Based on the relative success of the pilot and after a period of "customization", the transportation initiative can be deployed in other areas.
- Contractor participation is a key aspect to the success of the project, and the government should establish and work with a set of preferred suppliers.
- The government should establish a detailed project management office that has the authority to manage and control the project and report to senior government officials.

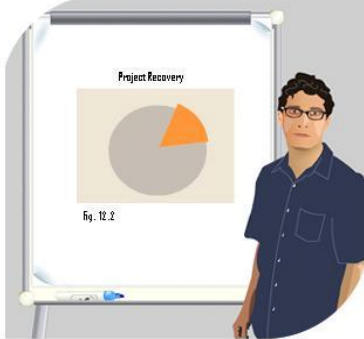
The feasibility team gave the green light for the project, based on these recommendations.

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

Presenting Back to the Project Team



- Presenting data in a clear, confident, organized and friendly way is the key to gaining good feedback, and acceptance for recovery proposals.



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(Graphic Source: The course script provides this graphic)

Presenting Back to the Project Team

When presenting to several members of the project team, it is usual to take the project manager through the slides ahead of time. This is a courtesy and should ensure that the presentation does not turn into a heated debate.

Normal advice regarding presentations applies:

- **visual aids** do not have to be world-class, but they should be tidy and readable
- be **friendly, confident, and professional**
- **maintain eye contact with your audience.** You will come across with more authority and receive instant feedback on the reception of your findings and recommendations.

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

Recovery Project Manager



- Swift appointment of a recovery project manager is imperative if a project is to be successfully recovered.

Recovery Project Manager



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(Graphic Source: The course script provides this graphic)

Identifying a Recovery Project Manager

As the project is failing, it is imperative that a recovery project manager is identified and installed. This is not to say the original project manager is dismissed – rather, the recovery manager is tasked with bringing the project back to a stable point, after which it is handed back to him/her. In many ways, the original project manager should see the recovery process as a learning opportunity. Characteristics of a recovery project manager include:

- ability to speedily integrate into a project
- ability to gather data in a quick and precise manner
- ability to make decisions quickly and take effective action
- ability to manage people in a stressful environment
- ability to articulate information to senior management and team members in a effortless manner
- authority to make decisions
- elicit full support of sponsor
- elicit full support of senior management

Topic 4: Presenting the Failing Project Indicator Outcomes (cont'd)

Exercise



Exercise: Delivering Project Information



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The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you are to become the project recovery manager. The project sponsor is asking you to gather information, in the following template, for their inspection.

Topic 4: Exercise Worksheet

Failing Project Record
Project Planning
Project Resourcing
Project Monitoring and Control (Earned Value)
Financial Management and Control
Contract Management
Risk Management

Topic 4: Exercise Worksheet

Lesson 1: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: Definition of a Failing Project

- A **failed project** is one that **does not make the journey from conception through to successful implementation and closeout**.
- No one factor that can be highlighted as the reason behind project failure. Projects fail or succeed for a number of reasons.
- There are two major failing project ‘show-stoppers’ that if not addressed, guarantee project failure:
 - **lack of an effective project sponsor**
 - **stakeholder buy-in**
- A number of rough factors, which can result in substantial degradation of quality, added value, and professional satisfaction if they are not addressed, include
 - **benefits planning and realization**
 - **quality requirements planning**
 - **risk management**
 - **project change control**

From this topic you should **take away** the following:

- an understanding of what a failing project is, and what causes it to fail
- an understanding of the difference between a show-stopper and a rough factor as they relate to failing projects

Topic 2: Characteristics of Failing Projects

- A failing project has one or more of the following characteristics:
 - it exceeds the **planned timescale** by more than 50%, excluding the timescale impact of agreed changes in scope
 - it exceeds the build **cost** by more than 35%, excluding the cost of agreed changes in scope
 - it is the cause of major **buyer dissatisfaction** to the extent that the future of the project is called into question
 - the **buyer lacks the commitment** to make the project succeed
 - it substantially **fails to support the intended business processes**
 - it substantially **fails to deliver the anticipated benefits**
 - the outcome for buyer-vendor is **not win-win**
- Government departments should always maintain a close relationship with suppliers, and should ensure that all parties have a clear understanding of their roles and responsibilities.
- Where suppliers sub-contract work, government departments should be satisfied that the prime supplier’s arrangements for managing the subcontracts are consistent with the requirement of the main contract.
- Contracts should be subject to an ongoing process of contract management during the life of the project, and departments should ensure that the business implications of late delivery are reflected in contractual incentives.

Lesson 1: Summary (cont'd)

From this topic you should **take away** the following:

- an ability to outline the characteristics of a failing project
- an understanding of the approach government departments should take when dealing with contractors and sub-contractors

Topic 3: Failing Project Indicator Tools and Techniques

- Projects exhibit clear symptoms of failure as the breakdown process proceeds, including
 - **lack of project plan and business case updates**
 - **no quality assurance**
 - **lack of stakeholder communication**
 - **excessive hard work**
 - **high staff turnover**
 - **aggressive and defensive behavior no sense of fun**
- The most notable tools and techniques that are available to indicate project failure are:
 - the dashboard report
 - the earned value methodology
 - the net present value
- A **dashboard report** is a series of indicators that deliver an overall verdict on a failing project. It includes information on
 - **time** – how is the project performing against the schedule?
 - **cost** – how is the project performing against the budget?
 - **resources** – how much is the project spending on its collective resources?
 - **scope** – is the scope creep of the project in line with expectations?
 - **quality** – what type of quality problems is the project experiencing and are they being adequately reviewed and fixed?
 - **actions** – are there any other action items outstanding?
- **Earned value analysis** is a tool for reporting performance and understanding if a project is failing. The three key values that must be calculated for each activity in earned value analysis are planned value (PV), earned value (EV), and actual cost (AC).
- To quantify how long it will take to complete a project, the earned value accomplished by a project to date is divided by the planned value, which provides the **Schedule Performance Index, or SPI**.

$$SPI = EV/PV$$
- To quantify how much it will cost to complete a project, the dollar value of the earned value physically accomplished is divided by the actual costs incurred to accomplish the work. This index is called the **Cost Performance Index (CPI)**.
$$CPI = EV/AC$$

Lesson 1: Summary (cont'd)

- The **Net Present Value method (NPV)** is a capital budgeting technique that equates discounted cash flows against the initial investment. It is calculated using the following formula:

$$NPV = \sum_{t=1}^n \left[\frac{FV_t}{(1+k)^t} \right] - \Pi$$

From this topic you should **take away** the following:

- an understanding of the various indicators that can be used to identify if a project is failing
- the ability to use these the tools and techniques used to present these indicators

Topic 4: Presenting the Failing Projects Indicator Outcomes

- When presenting project information to a group, ensure that **visual aids** are tidy and readable, be **friendly, confident, and professional** and **maintain eye contact with your audience**.
- **Swift appointment** of a recovery project manager is imperative if a project is to be successfully recovered.

From this topic you should **take away** the following:

- an understanding of the way in which project information should be presented
- an understanding of the concept of expediency, and the role of the recovery project manager

Lesson 2: Project Recovery Process

Topic 1: Urgency to Complete

Topic 2: Phases of Recovery

Topic 3: Recovery Success Criteria

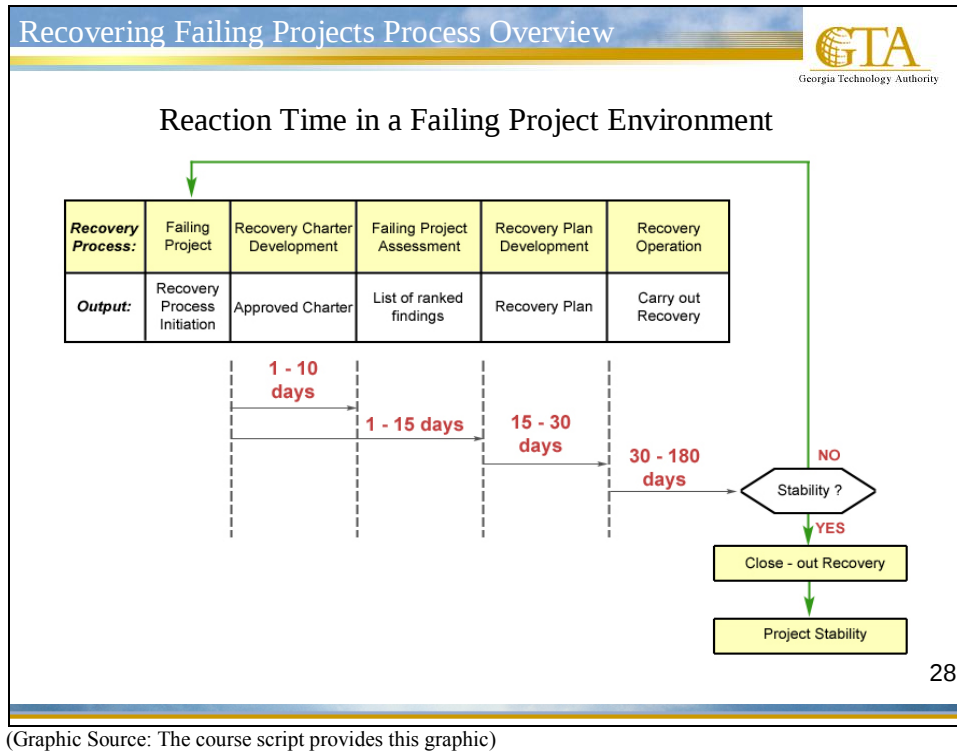
Topic 4: Recovery versus Abandonment

Student learning objectives

After completing this lesson, you should be able to

- identify the need for urgency when dealing with a failing project
- understand the need for urgency and be able to turn urgency for action into a structured and agreed recovery plan
- understand the purpose of a project recovery charter and how outline how it should be used
- examine the different components of assessing a failing project and turn this assessment into an agreed recovery plan
- identify how and why a project may be abandoned rather than recovered

Topic 1: Urgency to Complete



Recovering Failing Projects – Process Overview

There are six steps in the recovery process:

- failing project notification
- select project recovery manager
- recovery charter development
- failing project assessment
- recovery plan development
- recovery operation

Once it has been brought to management's attention that a project is failing, the recovery process **must begin immediately**. Early notification and action on failing project information is crucial if a project is to be salvaged. Once notification has been received, the remainder of the recovery process is set in motion.

Recovery Charter Development

Recovery Charter Development involves commissioning the assessment of the failing project.

The **output** from this step in the process is the **approved recovery charter** – a written document or agreement that exists between the project sponsor (senior management) and the project recovery manager, detailing the expected deliverables that will result from the recovery process, and a rough order of magnitude as to the cost of the recovery operation.

Topic 1: Urgency to Complete (cont'd)

Failing Project Assessment

Once the assessment has been commissioned and the assessment process documented in the recovery charter, a team conducts an assessment of the project utilizing proven tools and techniques.

The **output** from the assessment is a **prioritized list of issues** that must be resolved to stabilize the project, and a list of potential risks that may impact the recovery process and may impact the project itself. A 'heart-burn' or 'show-stopper' list can be generated with the high risks, which if not addressed, will most impact on the recovery process and project

Recovery Plan Development

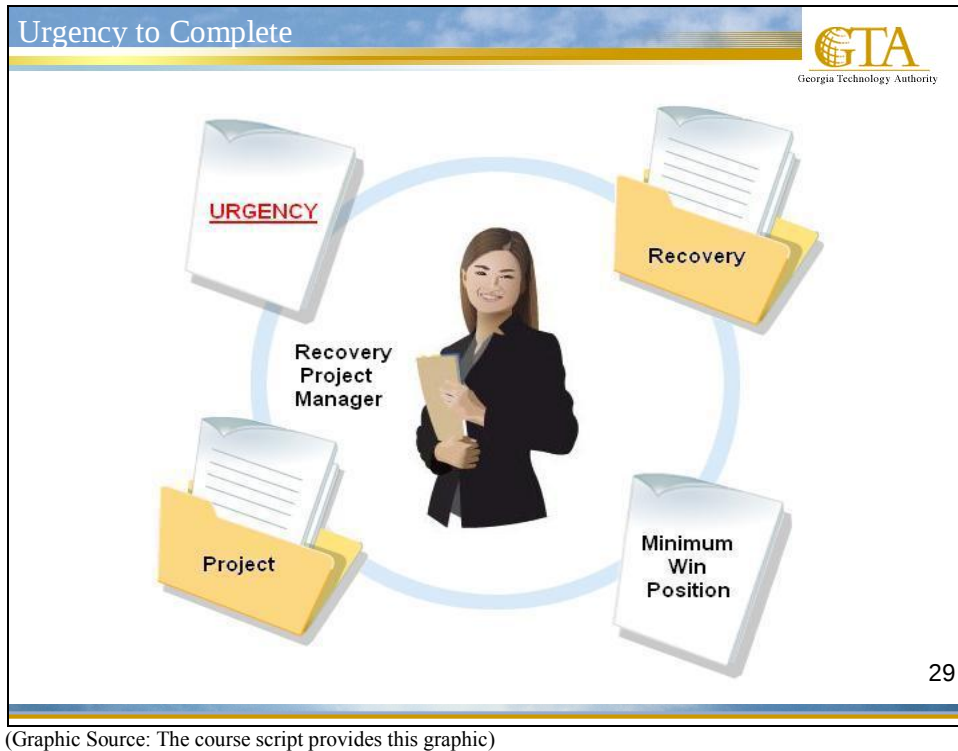
This step involves developing the plan that will be used to restore the project to "usefulness" – which should be the goal of the recovery. The recovery will take one of two approaches; if the project schedule can be slipped and the scope of the project maintained, then this will be done through a normal re-planning process. If the project due date is not negotiable, however, a full recovery must be accomplished, **as FAST as possible**, which will involve de-scoping and increasing the budget.

The main **output** from this stage is a **completed recovery plan**, ready to be implemented.

Recovery Operation

Recovery operation encompasses carrying out the recovery plan. Once this has been implemented and the project has stabilized, a new baseline is set, exit interviews are carried out, knowledge transfer takes place, and the recovery team turns over the project to the original project manager and team.

Topic 1: Urgency to Complete (cont'd)



Urgency to Recover the Failing Project

The following terms are frequently used in project recovery:

- **urgency** – time is critical on a failing project; there is only one opportunity to recover
- **recovery** – the process of saving the project from failure, and meeting project requirements
- **minimum win position** – the point at which the project is salvaged
- **project** – a temporary engagement to develop or create a product or service
- **recovery project manager** – the individual assigned to lead the recovery efforts of the project

Topic 1: Urgency to Complete (cont'd)

Urgency to Complete



If a project is failing, it is essential to act quickly to **get it back on track**.

If the recovery process takes too long, the project could run out of resources or reach its due date before the full recovery is complete.



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(Graphic Source: The course script provides this graphic)

The Need for Speed

If a project is failing, it is essential to act quickly to **get it back on track**. If the recovery process takes too long, the project could run out of resources or reach its due date before the full recovery is complete.

When a project is found to be failing, the most obvious recovery solution is to either extend the completion date or increase the budget. However, in almost all cases this is not a feasible option and therefore, the sponsor and the recovery project manager have the charge of salvaging the project to **minimum win position** while maintaining the morale of the existing project team.

For example, if a project has deviated excessively from the project plan, the first question a sponsor might ask is – **is the project still as valid as when it was launched** and will it support the organizational goals and objectives?

If the answer is yes, then the next question to be asked is – **is the due date for the project fixed?**

If the answer to this question is also yes, then the sponsor, project manager and team must all **move with urgency** to begin the recovery process. Alternatively, if the due date is changeable then it becomes the project manager's task to expedite the re-planning of the project.

In either case, all involved must bear in mind the urgency of the matter and that we must move rapidly to **RECOVER THE PROJECT**.

Topic 1: Urgency to Complete (cont'd)

Urgency to Complete



Abandonment vs. Recovery

- Project benefits are unattainable - *abandon*
- Political support is non-existent - *abandon*
- Organizational needs have changed - *abandon*
- Funding no longer available - *abandon*

“if the project can achieve a minimum win position, then recovery is appropriate”

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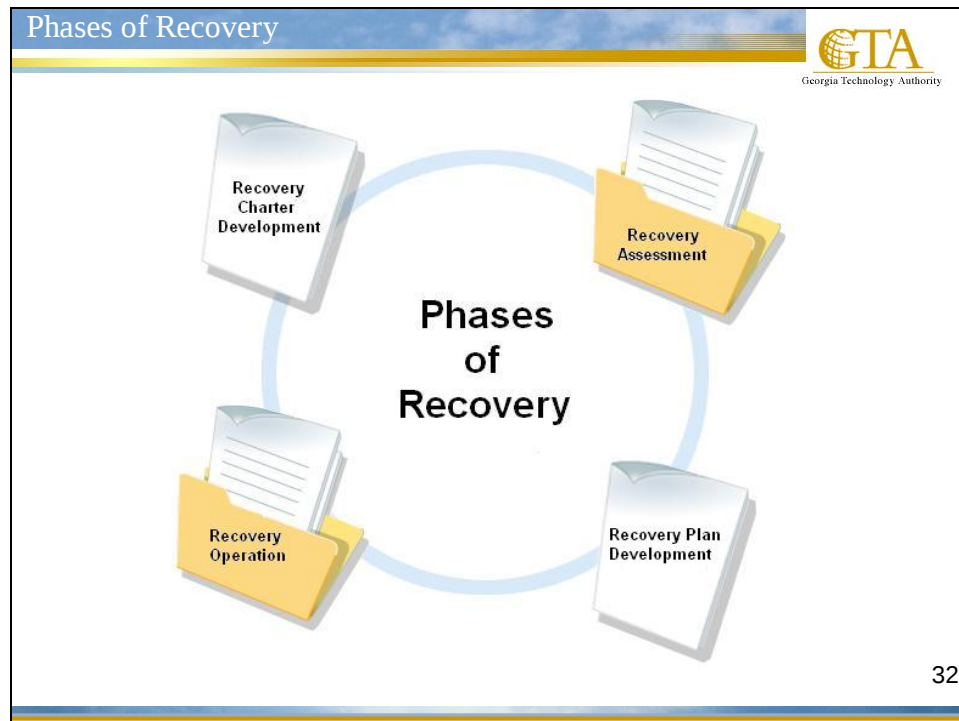
Abandonment vs. Recovery

In certain cases, **a minimum win position will not be attainable** on a failing project and **abandonment rather than recovery is the best solution**. Some examples of this might include:

- project benefits are unattainable
- political support has dwindled or is non-existent
- organizational needs have changed
- funding is no longer available

Abandonment is a drastic step, and the decision to abandon should not be taken lightly. A full examination of the process of abandonment is covered in topic four of this lesson.

Topic 2: Phases of Recovery



(Graphic Source: The course script provides this graphic)

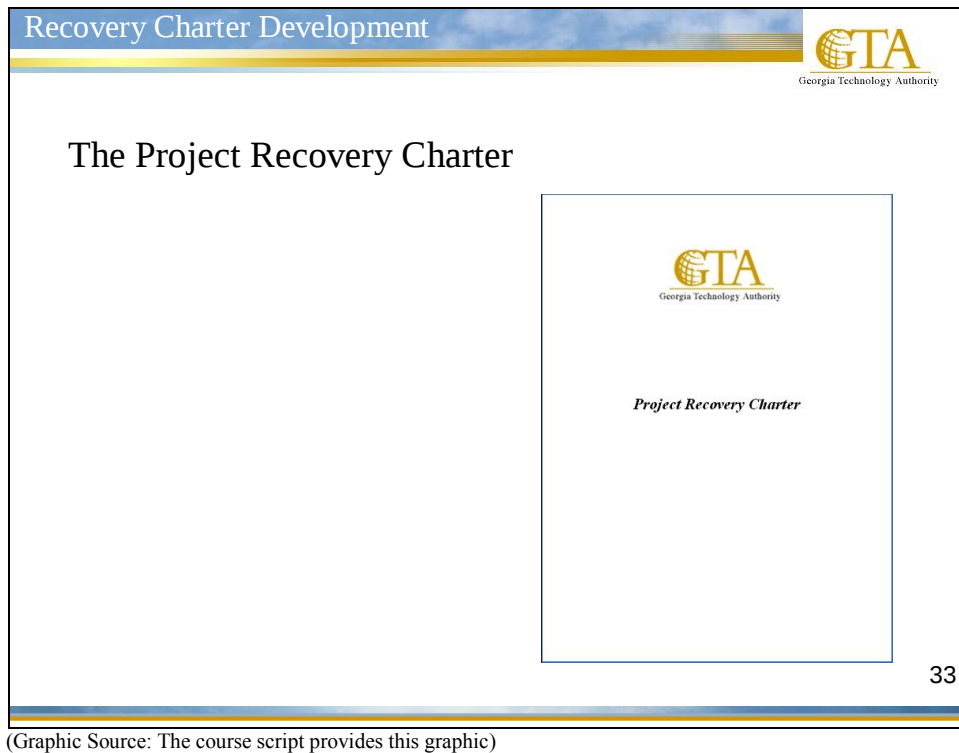
Phases of Recovery

Project notification, using earned value, dashboards, or financial forecasting tools, provides the information on whether a project is failing or succeeding. Once the project is noted as failing and a strategy identified, the recovery process involves the following steps:

- **recovery charter development** – a formal indication that project recovery is required
- **recovery assessment** – tools and techniques which can be deployed to assess the contribution of stakeholders to the project and in turn identify possible reasons why the project is failing
- **recovery plan development** – developing the plan that will be used to restore the project to “usefulness”, which should be the goal of the recovery
- **recovery operation** – closeout the recovery plan using a dedicated and committed recovery team

Failing project notification involves highlighting the poor performance of key project indicators to the appropriate sponsor or senior manager. Once this is done, the recovery process begins. We’ll now look at each subsequent phase of this process in more detail.

Topic 2: Phases of Recovery (cont'd)



Recovery Charter Development

The recovery charter is a **written document or agreement** that exists between the project sponsor (senior management) and the project recovery manager. It sends a signal to the project team that **project recovery is on the way**, and indicates that the organization is **committing resources to assess the project and reestablish stability** (if possible).

Typically, the recovery charter details the expected deliverables during the recovery process including a rough order of magnitude as to the cost of the recovery operation.

The finished document attempt indicates that senior management and the recovery manager have agreed on what is to be done. It also implies that consultation will take place between these two parties and any changes to the project will not be made unilaterally by either side.

Topic 2: Phases of Recovery (cont'd)

Typically, a recovery charter would cover the following areas:

- project recovery information
- detailed project information
- project personnel and project recovery manager
- assessment considerations
- assessment phase deliverables
- scope of assessment
- project recovery manager responsibility & authority
- assessment methodology
- key milestones to reach
- assessment output(s)
- assessment phase resource needs
- organizational / political factors
- assessment phase data requirements
- **approvals**

Topic 2: Phases of Recovery (cont'd)

Recovery Assessment



Recovery assessment is conducted using two types of interview:

- face-to-face
- modified Delphi technique



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(Graphic Source: The course script provides this graphic)

Recovery Assessment – Interviews

Recovery assessment is conducted using interviews to **gather relevant project information**. Two major types of interview are used in the recovery of failing projects:

- **face-to-face** – used to collect factual information that interviewees view as non-threatening to themselves or other members of the project team
- **modified Delphi technique** – a process by which questions are circulated amongst the team and answers are returned anonymously. This is especially useful when individuals are of different managerial levels as it creates a level playing field for gathering information.
- **lessons learned from previous similar projects** – previous projects that the organization has undertaken can be a valuable source of information. Data can be gathered from archived information or from associated project personnel.

Face-to-Face Interviews – Preparation

When preparing to conduct face-to-face interviews, you should:

- identify **target individuals**
- make an appointment
- **learn** what you can about the person ahead of time
- know what you want to get from the **interview**

Topic 2: Phases of Recovery (cont'd)

Face-to-Face Interviews – Conducting the Interview

When conducting a face-to-face interview, you should always be on time, **adopt a firm, fair, and friendly demeanor** and refrain from interrupting your subject. Also, make sure you set the stage to be **non-threatening and stress that any information provided will be maintained in strict confidence** and used only as means of determining why the project is failing to meet requirements.

In general, most interviewers make up their minds about a candidate in the first two minutes. However this is clearly irrational as a regular interview will typically last between 30 and 60 minutes. Keeping an open mind until the end of the interview is an important aspect of good interviewing.

Similarly, interviewers can often bring their own bias to an interview, based on what they have learned about the project elsewhere. Again, this should be avoided in order to get a true understanding of the interviewee's position. Afterwards, the interviewee's responses can be evaluated in the context of the wider issues.

Lack of confidence on the part of the interviewer can lead to an **unsuccessful interview**. By checking back over his/her notes to make sure the project pertinent information has been reviewed, the interviewer can increase their confidence at the next interview.

Other **tips for conducting a good interview** include the following:

- ask clearly open ended questions
- stay focused during the interview
- take good notes, and ask for clarification if you require it
- offer only relevant information to your goals
- review your notes with the interviewee
- thank the interviewee for their time

When interviewing in the face of a failing project, the most **appropriate people** to talk to include

- project sponsor
- senior management
- current project personal
- personal who have participated in previous projects (i.e. lesson learned)
- contractors / vendors involved in the project

Topic 2: Phases of Recovery (cont'd)

To see examples of the tools used in face-to-face interviews, including the Failing Projects Root Cause Assessment Questionnaire, see the appendix Tools & Templates.

Modified Delphi Technique

This process begins with the **development of a questionnaire** addressing areas of concern such as time, cost, scope, risk, human resources, communications, and the project management reporting system.

It is important that no one area is overemphasized, as this could direct the respondents to provide specific responses. When completed, the questionnaire is distributed amongst existing project sponsor(s), stakeholders, team members, and other key personnel who all respond anonymously. This tool is distributed to those working on the project (existing team members); it is not intended to be used to elicit information from the client or support personnel.

This anonymity gives all interviewees additional confidence, as they are protected from any retaliation by colleagues or superiors. As a result, the technique provides a good opportunity to uncover sensitive issues and gain an unbiased assessment of a project.

Topic 2: Phases of Recovery (cont'd)

Recovery Operation



Recovery Operation

- Building the project recovery team
- Developing the project recovery plan



(Graphic Source: The course script provides this graphic)

Beginning the Recovery Operation

A **dedicated and committed recovery team** is crucial to the success of any recovery project.

One of the key members of any project recovery team is the existing project manager. He/she will possess much of the information needed to define and implement the recovery process, and will be an invaluable resource in developing the Recovery Plan.

Building the Recovery Team

If a failing project is to be rescued and restored to usefulness and client satisfaction, the recovery personnel must be fully dedicated to the recovery effort. The best way to achieve this is to appoint a project recovery team on a full time basis. If the team is free from other commitments and constraints, they will suffer less distraction and work more effectively toward the recovery.

The project recovery manager must assume a leadership role, and it is his/her responsibility to facilitate a business environment in which success will flourish.

For example, establishing shared ground rules and creating a unified sense of purpose are important aspects of the recovery team building process. At the beginning of the recovery, the project recovery manager should have a frank, open, one-to-one discussion with each recovery team member to discuss the following:

- objectives of the project
- personnel involved in the project
- the importance of recovery
- the role the individual will play in the recovery
- assumptions and constraints

Topic 2: Phases of Recovery (cont'd)

- organizational rules
- the importance of the team concept

When forming a recovery team, a project recovery manager must dispel any anxiety that team members are likely to have about judging other people or their work. This anxiety can be a significant barrier to the team's effectiveness and often stems from a fear that this particular assignment (recovering a failing project) may hinder their long-term career goals with the organization.

To combat this, the project recovery manager must emphasize that the recovery is a business endeavor and should not be taken personally. Throughout the process, he/she should also continually encourage members and promote a solution-based attitude rather than a blame-oriented one.

Developing the Project Recovery Plan

The purpose of the kick-off meeting is to establish a point in time where the sponsor throws his/her weight behind the project recovery efforts and the process begins.

The meeting should be attended by the sponsor, the project recovery team, the existing project manager, key project personnel, and other key stakeholders.

This meeting is not intended to gather information about the project, but rather is an opportunity to highlight the key indicators that prompted management to initiate a recovery in the first place.

Prior to this meeting, the project recovery manager should send out a meeting notice to all involved, delineating the following:

- purpose of the meeting
- time and place

Topic 2: Phases of Recovery (cont'd)

- detailed agenda
- opening remarks by sponsor
- remarks from the project recovery manager
- remarks from existing project manager
- new potential members to recovery (i.e. risk manager, schedule manager, budget analyst, QA, architect, programmers, requirements manager, etc.)
- next steps or an action item register

Topic 2: Phases of Recovery (cont'd)

Recovery Closeout



Recovery close-out involves

- recovery performance analysis
- developing an exit strategy



The diagram illustrates the recovery process. At the bottom, three silhouettes represent the 'Original Project Team'. Above them, three people (two men and one woman) represent the 'Recovery Team'. A large blue arrow points from the Recovery Team towards the text 'Exit Strategy'.

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(Graphic Source: The course script provides this graphic)

Planning Recovery Close-out

There are two issues to consider when planning recovery close-out:

- **project stability**
- handover of the project to the project team

The ultimate goal of the recovery process is to bring **stability to the project**. Once this has been achieved, the time comes for the project to be handed back to the original project manager. Before this occurs, however, the project recovery manager must conduct a recovery performance analysis to evaluate and confirm the precise recovery status of the project.

Topic 2: Phases of Recovery (cont'd)

Recovery Closeout

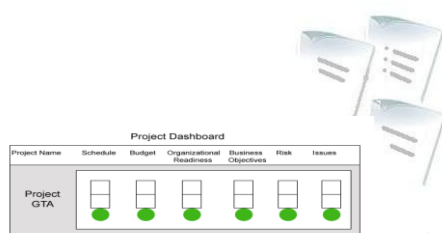


Recovery performance analysis

- performance questionnaire
- dashboard report

Exit Strategy

- closeout plan
- lessons learned



The graphic shows a 'Project Dashboard' with columns for Project Name, Schedule, Budget, Organizational Readiness, Business Objectives, Risk, and Issues. Below these columns, a row of six green circles indicates positive status for each metric. To the right of the dashboard is a stack of three documents.

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(Graphic Source: The course script provides this graphic)

Recovery Performance Analysis

Two tools are used to conduct a recovery performance analysis: the performance questionnaire and the dashboard report.

The **performance questionnaire** and score will be used to validate the performance level achieved following the recovery process. It is compared to the original assessment questionnaire.

The **dashboard report** is the tool that will indicate the performance indexes as presented in lesson 1.

Exit Strategy

The **close out plan** contains an outline of the specific tasks that must be accomplished to bring the recovery effort to an end. It includes the reassignment of any resources that will not be used in the continuation of the project. If the project is to be abandoned, then the plan needs to address how all organizational resources will be allocated and distributed.

The close out plan should also include an assessment of individuals who worked on recovery operation, as this can serve management as a useful guide for future assignments.

One task that is often talked about but frequently ignored is the documentation of **lessons learned**. The 'lessons learned' document should capture what worked well and what didn't work so well during the recovery process. This would benefit the organization greatly as it would provide a database of information for future project recovery efforts.

Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Exercise



Exercise: Identifying Failing Project Characteristics



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The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you are to become the project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. The reasoning is that they have requested you to conduct a series of interviews with the lead contractors and current project management to assess the exact state and reasoning behind the project failing.

Part 1

Using the following tips on conducting face-to-face interviews, you decide to carry out a series of face-to-face interviews starting with the lead contractor:

- ask clearly open ended questions, such as
 - in your opinion what made this project fail? Why?
 - what are the factors that affect the schedule?
 - what are some of the factors that affect costs?
 - what are the factors that affect technical performance?
 - are there other segments of the organization influencing the performance of the project?
 - how do you perceive customer satisfaction?
 - are the vendors performing according to specified terms and conditions?
 - how are the assigned resources affecting the project?

- are the materials (equipment) arriving on schedule?
- is transportation a factor in the performance of the project? How?
- are project team members affected by travel? How?
- how is the quality management plan affecting the project? Why?
- stay focused during the interview
- take good notes, and ask for clarification if you require it
- offer only relevant information to your goals
- review your notes with the interviewee
- thank the interviewee for their time

Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Part 2

Assessment questionnaires can be used as part of the face-to-face interview or as part of the Delphi technique. Use the following questionnaire to assess the reasoning behind the failing project

Failing Projects Assessment Questionnaire

Please answer the questions based on your personal knowledge and involvement in the project and the extent to which you agree with the statement presented.							
Project Time Management							
	Statement	Degree of Agreement					
1	The schedule was developed using the WBS.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
2	There is a graphical schedule for the project activities.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
3	The schedule clearly defines the start and end dates for the activities.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
4	The project end date was developed using bottom-up estimating process.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
5	The schedule was developed using predetermined dates.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
6	The lowest level of the WBS is measurable and within the 80 rule.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
7	The estimates are realistic.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
8	The critical path activities have been identified and communicated to the project team and stakeholders.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
9	The schedule takes non-working days into consideration.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
10	The schedule is dependent on limited resources.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
11	The schedule is detailed for the “near term” (30 – 90 days)	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
12	The schedule is regularly updated.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
13	The schedule status reports are presented often.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
14	All completed activities are captured promptly in the schedule.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
15	The project team was an active participant in the development of the schedule.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			
16	Time estimates were calculated at the work package level.	Low <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> High	1	2	3	4	5
1	2	3	4	5			

Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Project Cost Management		
	Statement	Degree of Agreement
17	The work packages are managed individually to a budget item expressed in terms of monetary units or hours.	Low High 1 2 3 4 5
18	The project team members were actively involved in the development of the budget.	Low High 1 2 3 4 5
19	The schedule played an important role in the development of the budget.	Low High 1 2 3 4 5
20	Other projects cost estimates were used in determining the project budget.	Low High 1 2 3 4 5
21	The project can be completed within the set budget.	Low High 1 2 3 4 5
Project Scope Management		
	Statement	Degree of Agreement
22	The project scope has been clearly defined	Low High 1 2 3 4 5
23	The WBS was validated to ensure it defines the entire project.	Low High 1 2 3 4 5
24	The WBS provides a clear hierarchical structure that defines the work to be accomplished, and the lower objectives support the overall project objectives.	Low High 1 2 3 4 5
25	The major milestones were identified.	Low High 1 2 3 4 5
26	Out of scope work is handled using a tightly-controlled change management process.	Low High 1 2 3 4 5
27	Operational requirements are communicated across the project team.	Low High 1 2 3 4 5
28	Deliverable requirements are communicated across the project team.	Low High 1 2 3 4 5
29	The acceptance criteria are well understood by the project team.	Low High 1 2 3 4 5
30	When a deliverable is completed, it is communicated promptly to the project team.	Low High 1 2 3 4 5
31	The overall project requirements have been affected by changes.	Low High 1 2 3 4 5
32	The project team has a clear understanding of the stakeholders/sponsor expectations.	Low High 1 2 3 4 5
33	External influences have been identified, documented, and monitored throughout the project execution.	Low High 1 2 3 4 5
Project Risk Management		
	Question	Degree of Agreement
34	A detailed process was used to identify risks in the project.	Low High 1 2 3 4 5
35	The top 10 risks are monitored and tracked.	Low High 1 2 3 4 5
36	Each identified risk has an associated response strategy.	Low High 1 2 3 4 5
37	The project team is aware of the existence of a Risk Management Plan.	Low High 1 2 3 4 5
38	Manifested risks are handled and tracked effectively.	Low High 1 2 3 4 5
39	Project personnel document and track additional identified risks effectively.	Low High 1 2 3 4 5

Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Project Communications Management		
Question	Degree of Agreement	
40	There is an effective and efficient communications plan in place.	Low 1 2 3 4 5 High
41	Changes are communicated to the project team in a prompt and effective manner.	Low 1 2 3 4 5 High
42	Stakeholders' expectations have been clearly communicated to all project team members.	Low 1 2 3 4 5 High
43	Informal communications (the 'grapevine') has impacted project performance.	Low 1 2 3 4 5 High
Project Human Resource Management		
Question	Degree of Agreement	
44	Key functional expertise was identified at the start of the project.	Low 1 2 3 4 5 High
45	The staffing plan adequately meets the demand of the project.	Low 1 2 3 4 5 High
46	There is a high degree of dependence on single individuals.	Low 1 2 3 4 5 High

Project Management Area	Max. Score	Actual Score	Variance
Project Time Management	80		
Project Cost Management	25		
Project Scope Management	60		
Project Risk Management	30		
Project Communications Management	20		
Project Human Resources Management	15		
Total Pre Recovery Score	230		

Your objective is to identify the reason, or at least what the lead contractor believes to be the reason, why the project is failing. You should note that as the interview is taking place, the project is continuing to fail; for this reason as the project recovery manager, you have a great deal to urgency for the need to recover is NOW.

Topic 3: Stakeholder Success Criteria

Stakeholder Success Criteria



What are stakeholders looking for in a recovery plan?

“That the project recovery effort restores the project to usefulness, and supports the ultimate organizational goals and objectives”



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(Graphic Source: The course script provides this graphic)

Stakeholder Success Criteria

Stakeholders' success criteria vary from sponsor to sponsor, project to project, and organization to organization. Key performance indicators such as SPI, CPI, and TCPI are inherently important to all projects. A poor reading from such indicators is sufficient to cause a shift in success criteria, independent of specific stakeholder circumstances.

For example, suppose the Georgia Drivers License Bureau is working on a project with a due date of September 15th. If the project is delayed, a major breakdown in the organizations software system will occur. The project sponsor may determine that adding additional personnel and increasing the costs of the project will better serve the public and avoid negative publicity, thus a shift in the 'success criteria for the project'.

Hence the project is willing to see an increase in spending (decrease in the CPI) in to order to obtain a more favorable public perception. What are the success criteria for this project? Public value is the most important one; there may be other success criteria too, but public value is the 'critical success criteria'.

A method used to monitor earned value performance data is the **To Complete Performance Index (TCPI)**. It is an index that displays what performance factor must be achieved in order to meet the goals of the project.

Topic 3: Stakeholder Success Criteria (cont'd)

The project recovery manager must understand the impact a shift may impose on the project, and keep the project sponsor and the project team in the information loop to avoid any misconceptions.

Topic 3: Stakeholder Success Criteria (cont'd)

Stakeholder Success Criteria



Sponsor involvement in the recovery process includes

- objective setting
- up-front planning
- establishing policies
- priority setting
- conflict resolution
- executive level contact
- behind the scenes support



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(Graphic Source: The course script provides this graphic)

Sponsor Involvement

When a project is performing well, a project sponsor typically has a low level of participation in a project. He/she plays a behind-the-scenes role, generally meeting only with the project manager and other stakeholders/senior managers to discuss project updates and major issues.

However, if the project begins to fail, the project team requires more substantial support from the project sponsor. In these cases, the project recovery manager has to work closely with the sponsor, keeping him/her fully informed on plans, progress, and results. Being aware of the sponsor's success criteria is therefore crucial. Examples of sponsor success criteria include:

- **objective setting** – this involves understanding the organizational requirements and demands of the project
- **up-front planning** – this involves looking at the big picture, to understand what the final product or service should look like
- **policy definition** – although all organizations have policies and procedures, there are often informal rules that must also be followed. The project recovery manager must be cognizant of those rules, and have a clear understanding how and when they apply.
- **priority setting** – this involves understanding the critical success factors for the project
- **conflict resolution** – this involves defining what type of issues will develop across organizational lines, and what type of executive support will be required to overcome them
- **executive level contact** – this involves assessing and redefining the communications policies with upper management, and the amount of information the project recovery manager should share with others
- **behind-the-scenes support** – this involves determining how the project recovery manager and the recovery team will remove road blocks, when encountered

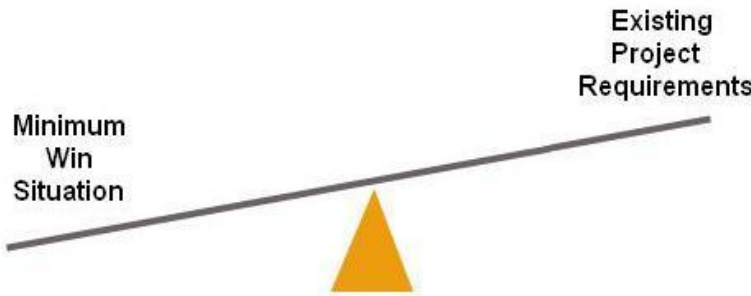
Topic 3: Stakeholder Success Criteria (cont'd)

Stakeholder Success Criteria



When in recovery mode, stakeholders must achieve a balance between meeting project requirements and doing what is necessary to recover the project.

Frequently, a trade-off must be made.



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(Graphic Source: The course script provides this graphic)

Recognizing Trade-Offs

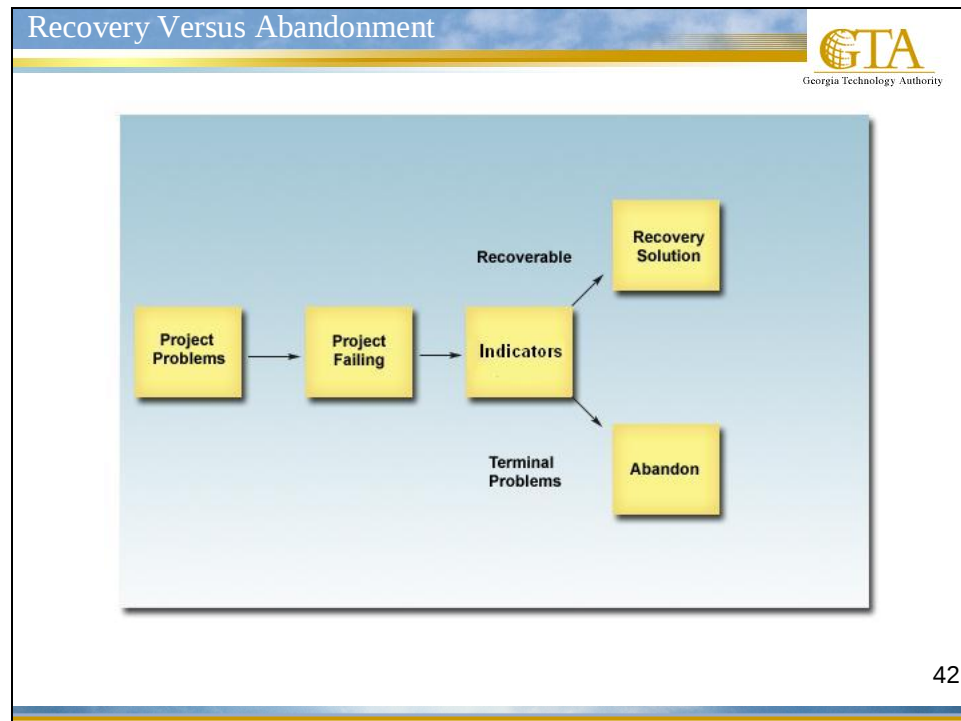
When a project is failing, stakeholders are faced with many challenges. One of most difficult of these is the trade-off, where something must be deliberately sacrificed in order to salvage the project.

In the public services arena this is particularly sensitive as there are many different interest groups that must be considered: voters, elected officials, and executive and managerial staff. How these different groups will ultimately judge the project's performance is a major concern for stakeholders.

In other words, all public service projects are subject to heavy scrutiny, and as a result project stakeholders and project recovery managers must consider the following:

- **scope** – if we can no longer deliver what was agreed to, then what? Can we reduce it and still achieve success?
- **costs** – if the cost overruns are out of control, how much is realistically required to meet the requirements?
- **schedule** – is there any wiggle room? If not what are options?
- **communications** – how much is enough? Has there been too much or too little so far?
- **legal** – is there any danger of litigation? If so, how do we minimize this risk?
- **politics** – how can we influence others to restore health to the project?
- **public relations** – can we stand in the “court of public opinion” with minimum impact? How can this be accomplished?

Topic 4: Recovery versus Abandonment



(Graphic Source: The course script provides this graphic)

Project Abandonment

Throughout all stages of a project, it is possible to identify **potential causes of future problems**. When examining project options, abandonment should always be considered. There are situations where a project cannot be recovered and the logical step is to abandon. When determining whether to abandon or recover, the project recovery manager should examine certain key project indicators, including

- is the project **based on an unsound premise** or an unrealistic business case?
- is there a **lack of stakeholder ownership/commitment or competence**?
- is there an inability to achieve an open, robust and equitable project-vendor relationship with clearly defined roles and responsibilities in the contract?
- is the **project based on immature technology**?
- is there a failure to **manage the change implicit in the project** (people, processes, technology) due to inadequate use r/ systems training, missing a crucial "go live" date?

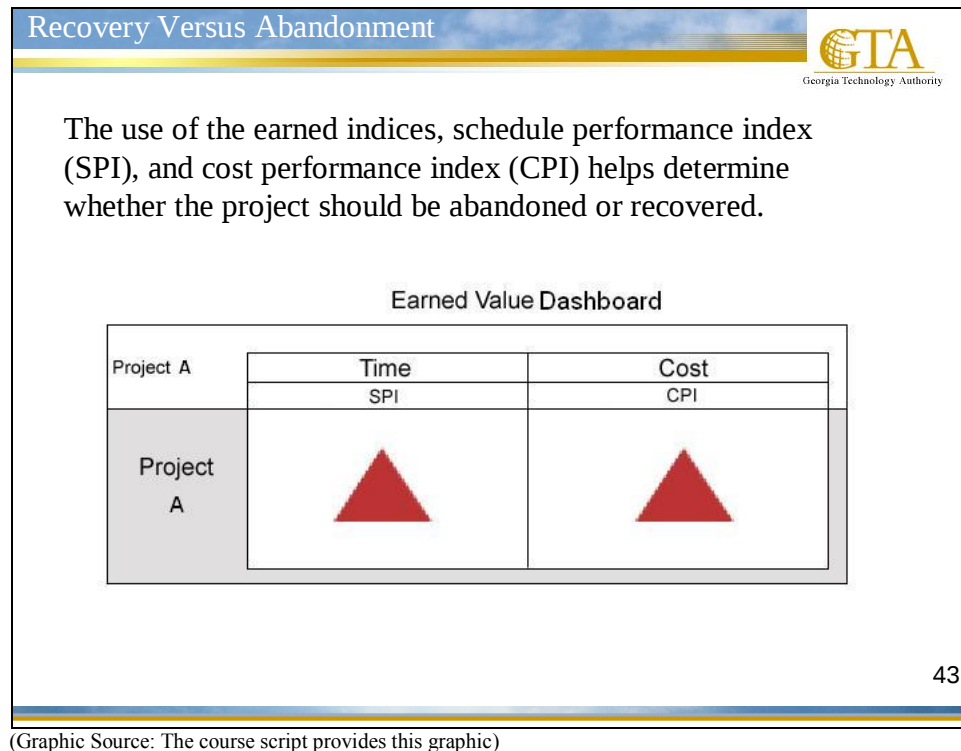
If the answer is yes to many of these questions, project abandonment should be considered. However, one of the biggest indicators that should lead to project abandonment are the project requirements – if they are not right for the business case and the project team are experiencing trouble in executing them, abandonment rather than recovery should be considered.

Not all **indicators are equal for each failing project**. For example, a project which is based on an unsound premise is, potentially, more likely to fail than a project in which the vendor fails to provide sufficient training and supervision to junior staff. Similarly, a project in which the buyer's funding and/or timescale expectations are unrealistically low is, arguably, more likely to fail than one in which the vendor starts a phase prior to completing a previous phase.

Topic 4: Recovery versus Abandonment (cont'd)

As a result, it is difficult to **rank generic abandonment indicators** in terms of importance. However, ranking is definitely of value for an individual project, where details of constraints, limitations and other factors are available.

Topic 4: Recovery versus Abandonment (cont'd)



Project Abandonment Indicators

The use of the **earned value indices**, schedule performance index (SPI), and cost performance index (CPI) helps determine whether the project should be abandoned or recovered. For example, on a 6 month IT installation project:

- if the project has been running for three consecutive weeks at an SPI lower than 60% and a CPI lower than 70%, abandonment should be considered
- if the critical ratio of the project (calculated by multiplying the SPI and CPI) is below 70%; abandonment should be considered
- if any of the indices is below 60% for longer than three consecutive weeks, abandonment should be considered

While these are indicators, the **major reasons for abandonment** are

- project scope is too ambitious
- project is taking too much technical complexity

Secondary reasons for abandonment include

- inappropriate sponsor support
- lack of project and organizational experience
- poor project management skills available to the organization
- organizational change overtakes original project objectives to a stage where the project is not recoverable
- poor organizational 'politics' (i.e. ongoing disputes about project objectives)

Topic 4: Recovery versus Abandonment (cont'd)

Recovery Versus Abandonment



Taking Action

- Re-visit the indices continually
- Look at alternative options
- Seek an outside/objective opinion



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(Graphic Source: The course script provides this graphic)

Project Abandonment Action

Even in cases where all available information points towards project abandonment rather than recovery, significant effort is usually required to convince the project stakeholders that it is the sensible course of action.

Obstacles to abandonment might include:

- **psychological factors** – there may be an emotional attachment to the project, meaning that project stakeholders are unwilling to let go
- **organizational factors** – it may be that there is pressure on the organization (from the market) to deliver the project. If so, organizational stakeholders may be unwilling to let go until there is no other possible alternative
- **social factors** – there may be internal rivalry between different project teams and while abandonment is the logical choice, there is a resistance as it may reflect poorly on the present project team

While these factors are evident in any failing or abandonment solution, the project recovery manager must deal with them in an expedient and timely fashion. Below are listed some tips that can be used to overcome these obstacles.

- **Re-visit the indices continually**, to prove that the abandonment option is feasible. In some cases, it may be prudent to forecast performance given current indices.
- Look at the **alternative options** being proposed by the stakeholders, and measure them in a comparable manner (i.e. using indices) to show future performance.

Topic 4: Recovery versus Abandonment (cont'd)

- **Seek an outside/objective opinion.** There may be cases where the stakeholder needs to hear the information from a source that is unattached to the project, e.g. from a project manager not associated with the project

Topic 4: Recovery versus Abandonment (cont'd)

Recovery Versus Abandonment



Sunk costs are costs that have already been incurred and which cannot be recovered to any significant degree.



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When a failing project is identified, a decision must be made whether to abandon it or develop a recovery solution. A large factor in this decision is the amount of sunk costs that are associated with the project.

Sunk costs are costs that have already been incurred and which cannot be recovered to any significant degree.

For example, if an IT project is failing, it may be that investment with a particular vendor or application technology is so significant that the only feasible project recovery solution involves continuing to invest in that vendor/technology.

Further investment would proceed on the basis that the project would be turned around, that it would ultimately be successful, and that the significant sunk cost would be recouped.

Project managers must be careful to base any decision regarding sunk costs on logical rather than emotional or historical reasoning. For example, while it may be convenient to maintain an existing subcontractor, if that subcontractor is underperforming, the logical decision would be to disengage him or her, and engage with another.

If a project chooses to abandon a project, the issue of sunk costs arises as psychological factor. The project sponsor may be unwilling to let go of the current project investment. However if a sponsor chooses to recover the project, the sunk costs associated with it become a significant consideration as they will affect the recovery options and in turn may increase.

Topic 4: Recovery versus Abandonment (cont'd)

Recovery Versus Abandonment



Project Abandonment Steps

- Agreeing on an abandonment strategy allows the project recovery manager to take the appropriate steps to close-out on the project



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(Graphic Source: The course script provides this graphic)

Project Abandonment Steps

Agreeing on an abandonment strategy allows the project recovery manager to take the appropriate steps to close-out on the project:

- develop an abandonment plan that includes an outline of the specific tasks to be accomplished to bring the project to an end. This plan should include:
 - reassignment of any resources
 - details of how all organizational equipment and materials will be allocated and distributed
 - documentation of lessons learned, to record what worked and what didn't work during the project. This requires the input from project participants and sponsors.
- gather project stakeholder support and project sponsor's approval for the abandonment plan and incorporate it as required
- attain sponsor approval
- implement the plan swiftly and decisively
- communicate to all concerned (i.e. bulletin board) that the project has been abandoned and explain the reasons behind the decision

Topic 4: Exercise – Developing a Recovery Solution (cont'd)

Exercise



Exercise: Developing a Recovery Solution



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The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you are to become the project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

Topic 4: Exercise – Developing a Recovery Solution (cont'd)

The state authority have requested your evaluation of whether the project should be recovered or abandoned by examining the following criteria

- psychological factors – there may be an emotional attachment to the project, meaning that project stakeholders are unwilling to let go
- organizational factors – it may be that there is pressure on the organization (from the market) to deliver the project. If so, organizational stakeholders may be unwilling to let go until there is no other possible alternative
- social factors – there may be internal rivalry between different project teams and while abandonment is the logical choice, there is a resistance as it may reflect poorly on the present project team
- re-visit the indices continually – to prove that the abandonment / recovery option is feasible.
- look at the alternative options being proposed by the stakeholders – measure them in a comparable manner (i.e. using indices) to show future performance.
- seek an outside/objective opinion – there may be cases where the stakeholder needs to hear the information from a source that is unattached to the project (in this case you the instructor as the outside source)

Topic 4: Exercise Worksheet

Topic 4: Exercise Worksheet

Lesson 2: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: Urgency to Complete

- There are five steps in the recovery process:
 - failing project notification – once it has been brought to management’s attention that a project is failing, the recovery process **must begin immediately**
 - recovery charter development – this involves commissioning the assessment of the failing project and its output is the **approved recovery charter**
 - failing project assessment – this involves an assessment utilizing proven tools and techniques and its output is a **prioritized list of issues** that must be resolved to stabilize the project
 - recovery plan development – this involves developing the plan that will be used to restore the project to “usefulness”, which should be the goal of the recovery
 - recovery operation – this encompasses carrying out the recovery plan
- If a project is failing, it is essential to act quickly to **get it back on track**. If the recovery process takes too long, the project could run out of resources or reach its due date before the full recovery is complete.
- In certain cases, **a minimum win position will not be attainable** on a failing project and **abandonment rather than recovery is the best solution**.
- **Abandonment is a drastic step**, and the decision to abandon should not be taken lightly. A full examination of the process of abandonment is covered in topic four of this lesson.

From this topic you should **take away** the following:

- an understanding of the steps involved in the recovery process and why it is critical to respond quickly if a project is failing

Topic 2: Phases of Recovery

- Once the project is noted as failing and a strategy identified, the following recovery process steps should be followed:
 - **recovery charter**
 - **recovery assessment**
 - **recovery plan**
 - **recovery operation**
- The recovery charter is a **written document or agreement** that exists between the project sponsor (senior management) and the project recovery manager. It sends a signal to the project team that **project recovery is on the way**, and indicates that the organization is **committing resources to assess the project and reestablish stability** (if possible).
- Recovery assessment is conducted using interviews to **gather relevant project information**. Two major types of interview are used in the recovery of failing projects: face-to-face interviews and the modified Delphi technique
- Recovery plan development involves developing the plan that will be used to restore the project to “usefulness” – which should be the goal of the recovery.

Lesson 2: Summary (cont'd)

- The recovery operation involves carrying out the recovery plan and requires a dedicated and committed recovery team is crucial to the success of any recovery project.
- There are two issues to consider when planning recovery close-out:
 - **project stability**
 - handover of the project to the project team

From this topic you should **take away** the following:

- an understanding of the recovery process steps that should be followed once the project is noted as failing and a strategy identified

Topic 3: Recovery Success Criteria

- Stakeholders' success criteria vary from sponsor to sponsor, project to project, and organization to organization, although key performance indicators such as SPI, CPI, and TCPI are inherently important to all projects.
- Examples of sponsor success criteria include
 - objective setting
 - up-front planning
 - policy definition
 - priority setting
 - conflict resolution
 - executive level contact
 - behind-the-scenes support
- When a project is failing, stakeholders face the issue of trade-offs, where something must be deliberately sacrificed in order to salvage the project. In the public services arena this is particularly sensitive as there are many different interest groups that must be considered: voters, elected officials, and executive and managerial staff.

From this topic you should **take away** the following:

- an understanding of the main success criteria that stakeholders consider when assessing a recovery project

Topic 4: Recovery versus Abandonment

- When determining whether to abandon or recover, the project recovery manager should examine certain key project indicators, including
 - is the project **based on an unsound premise** or an unrealistic business case?
 - is there a **lack of stakeholder ownership/commitment or competence**?
 - is there an inability to achieve an open, robust and equitable project-vendor relationship with clearly defined roles and responsibilities in the contract?
 - is the **project based on immature technology**?
 - is there a failure to **manage the change implicit in the project** (people, processes, technology) due to inadequate use r/ systems training, missing a crucial "go live" date?

Lesson 2: Summary (cont'd)

- It is difficult to **rank generic abandonment indicators** in terms of importance. However, ranking is definitely of value for an individual project, where details of constraints, limitations, and other factors are available.
- The use of the **earned value indices**, schedule performance index (SPI), and cost performance index (CPI) helps determine whether the project should be abandoned or recovered.
- the **major reasons for abandonment** are
 - project scope is too ambitious
 - project is taking too much technical complexity
- A large factor in the decision whether to abandon a failing project or develop a recovery solution is the amount of sunk costs that are associated with the project – sunk **costs** are costs that have already been incurred and which cannot be recovered to any significant degree.
- Agreeing on an abandonment strategy allows the project recovery manager to take the appropriate steps to close-out on the project, such as developing an abandonment plan, gaining project stakeholder support for the plan, and implementing it swiftly and decisively.

From this topic you should **take away** the following:

- an understanding of the issues to consider when deciding whether to abandon a failing project or develop a recovery solution

Lesson 3: Recovery Charter Development

Topic 1: Recovery Requirements Definition

Topic 2: Work Flow Plan Development

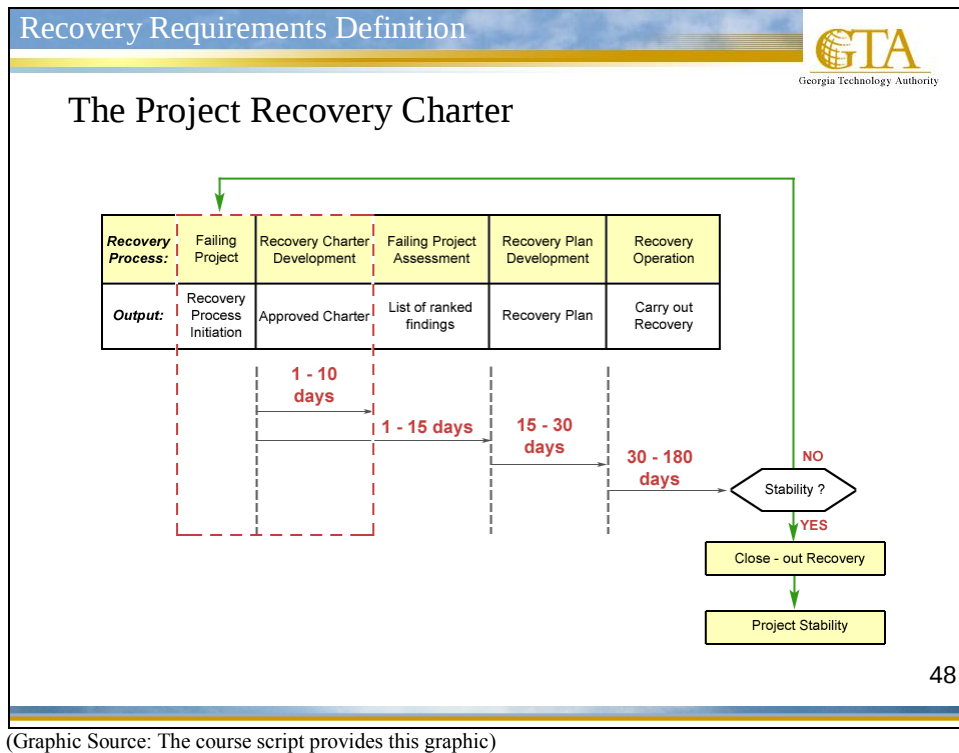
Topic 3: Developing the Recovery Action Model

Student learning objectives

After completing this lesson, you should be able to

- understand what a project charter is and how one can be presented to the project stakeholder
- identify with the main components of a project charter and what data should be part of it.
- understand the main elements of a recovery work-flow plan through the use of data gathering techniques such as interviews
- present models to show the current state of the project and then determine what needs to be done to recover it

Topic 1: Recovery Requirements Definition



Recovery Charter Development

The **recovery charter** is a written document or agreement that exists between the project sponsor (senior management) and the recovery project manager. It sends a signal to the project team that **project recovery is on the way**, and indicates that the organization is committing resources to assess the project and reestablish stability (if possible).

Typically, the recovery charter details the **expected deliverables** during the recovery process and includes a rough order of magnitude as to the cost of the recovery operation.

The finished document indicates that senior management and the recovery manager have agreed on what is to be done. It also implies that consultation will take place between these two parties and any changes to the project will not be made unilaterally by either side.

Topic 1: Recovery Requirements Definition (cont'd)

Typically, a recovery charter would cover the following areas:

- **project recovery information**
- detailed project information
- project personnel
- **assessment considerations**
- assessment phase deliverables
- scope of assessment
- recovery project manager responsibility & authority
- assessment methodology
- **key milestones** to reach
- assessment output(s)
- assessment phase resource needs
- assessment phase data requirements
- **approvals**

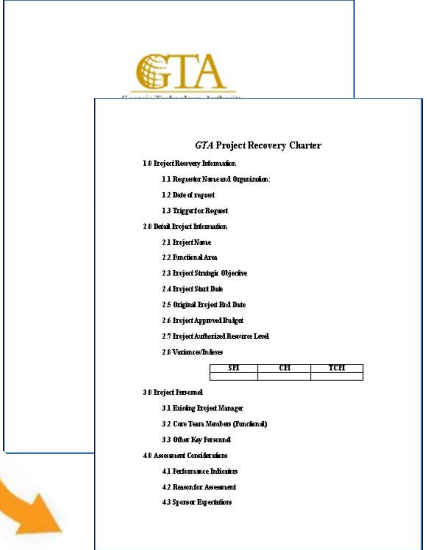
Topic 1: Recovery Requirements Definition (cont'd)

Recovery Requirements Definition



Project Recovery Charter

- Project recovery information
- Detailed project information
- Project personnel
- Assessment considerations



GTA Project Recovery Charter

1.0 Project Recovery Information:

1.1 Requester Name and Organization:

1.2 Date of request:

1.3 Trigger for Request:

2.0 Detail Project Information:

2.1 Project Name:

2.2 Function Area:

2.3 Project Strategic Objective:

2.4 Project Start Date:

2.5 Original Project End Date:

2.6 Project Approved Budget:

2.7 Project Authorized Resource Level:

2.8 Variance Index:

SPI	CPI	TCPI

3.0 Project Personnel:

3.1 Existing Project Manager:

3.2 Core Team Member (Function):

3.3 Other Key Personnel:

4.0 Assessment Considerations:

4.1 Performance Indicators:

4.2 Resource Assessment:

4.3 System Requirements:

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(Graphic Source: The course script provides this graphic)

Project Recovery Information

‘**Project recovery information**’ includes the name of the individual or organization making the request for recovery, the date of the request, and the trigger for it, i.e. the indicator(s) that illustrate that the project is failing.

Detailed Project Information

The ‘**detailed project information**’ section covers the history of the project. It outlines the functional area of the project, its strategic objective, the start date and original completion date, approved budget, authorized resource level, and the current Schedule Performance Index (SPI), Cost Performance Index (CPI), and To Complete Performance Index (TCPI).

Project Personnel

The ‘**project personnel**’ section of the recovery charter details not only the project manager and project team, but also any associated contractors and suppliers.

Such personnel can often offer valuable insight into what has transpired during the course of the project to date, and frequently possess critical information needed to establish a successful recovery process.

Topic 1: Recovery Requirements Definition (cont'd)

Assessment Considerations

The decision to launch a recovery is not based on a single indicator. The ‘**assessment considerations**’ section contains a combination of indicators that, collectively, prompt the sponsor to initiate a recovery process. In addition to conventional project indicators (such as SPI and CPI), this also includes sponsor expectations, team expectations, and project sensitivities.

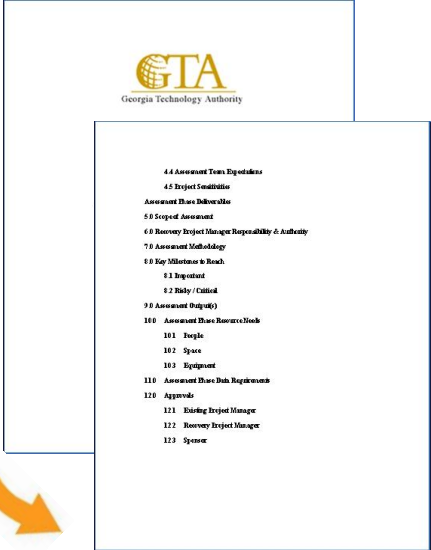
Topic 1: Recovery Requirements Definition (cont'd)

Recovery Requirements Definition



Project Recovery Charter

- Scope of assessment
- Recovery project manager's responsibility and authority
- Assessment methodology
- Key milestones



4.4 Assessment Team Responsibilities
4.5 Project Constraints
Assessment Phase Deliverables
5.0 Scope of Assessment
6.0 Recovery Project Manager Responsibility & Authority
7.0 Assessment Methodology
8.0 Key Milestones & Reach
8.1 Reported
8.2 Risky / Critical
9.0 Assessment Output(s)
10.0 Assessment Phase Resource Needs
10.1 People
10.2 Space
10.3 Equipment
11.0 Assessment Phase Data Requirements
12.0 Appendix
12.1 Existing Project Manager
12.2 Recovery Project Manager
12.3 System

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(Graphic Source: The course script provides this graphic)

Scope of Assessment

The **‘scope of assessment’** section of the recovery charter is used to evaluate the project team’s organizational environment and record any issues – both overt and underlying – that are causing the project to fail.

Recovery Project Manager’s Responsibility and Authority

The recovery project manager is the go-between for the sponsor, clients, team members and vendors. It is his/her responsibility to identify pressing problems and present recommendations as to how they can be overcome. Once the recovery PM is assigned, he/she should begin collecting information and developing projected recovery estimates. The section **‘recovery manager’s responsibility and authority’** outlines these relationships and tasks.

Assessment Methodology

The **‘assessment methodology’** section covers the steps the Recovery PM and team will follow when gathering information.

Topic 1: Recovery Requirements Definition (cont'd)

Key Milestones

According to PMBOK® 2004, a schedule milestone is a significant event in the project schedule, such as any issue that would restrain future work or any outcome that would mark the completion of a major deliverable.

The **'key milestone'** section classifies milestones as

- important
- risky/critical

Important milestones are those that make sense in the context of project management and mark the completion of a major deliverable. Risky / critical milestones are those that require completion before any further work can continue, and if neglected, may cause total collapse of the recovery process.

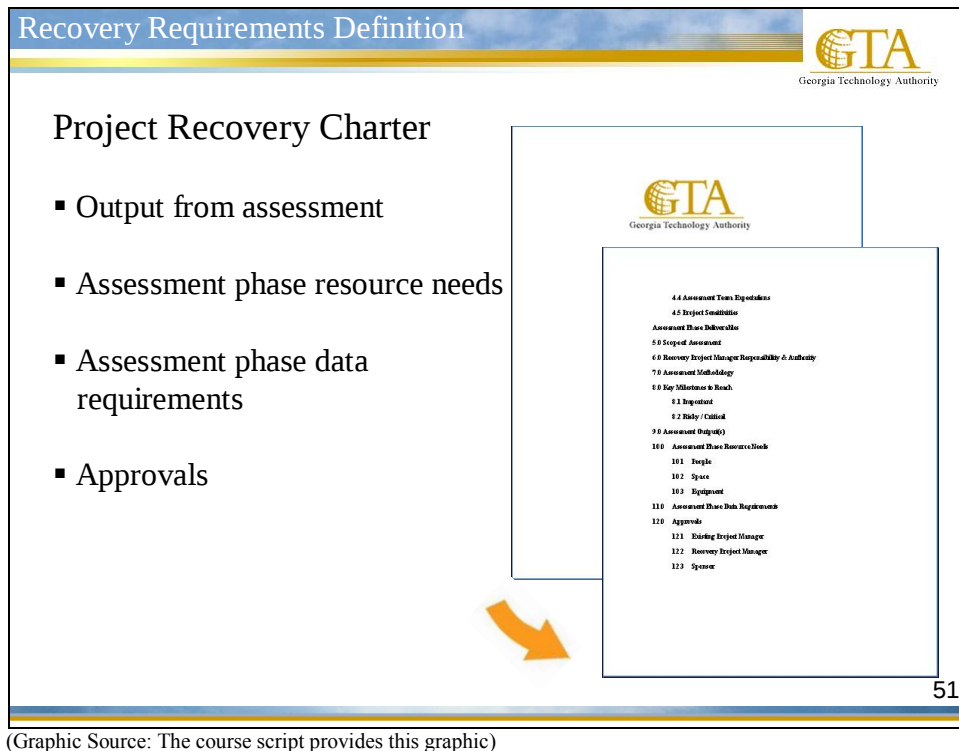
An example of this, using the 'Georgia Light Rail' project is that project stabilization is a major deliverable and a notable milestone. Understanding the skill deficiency of the existing project team is a critical milestone, without this the recovery cannot move forward. You may remember that the case study introduces a number of variables

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

Without an understanding of the missing skills, the project recovery manager would be taking a risk in moving forward.

In the recovery process, there are milestones that could stop the project recovery efforts in its tracks, while others may not impede the recovery effort from continuing, such as missing a mid-project review, delaying a press release, etc.

Topic 1: Recovery Requirements Definition (cont'd)



Output from Assessment

The ‘**output from assessment section**’ contains a prioritized list of project issues/deficiencies that must be corrected. This adds validity to the recovery process that will follow, and also serves as a checklist for the recovery team as issues are resolved. The section also outlines a set of recommendations detailing how to address each issue.

Assessment Phase Resource Needs

Even a small project recovery team of 1-3 people can have significant resource needs during the assessment phase. For example, it is common practice to set up a “war-room”, where the recovery team has the freedom to share and analyze gathered data. There may be specific equipment needs also. If the team will be printing sensitive data, for example, a dedicated printer might be required for the room. These details are captured in the ‘**assessment phase resource needs**’ section of the recovery charter.

The creation of a “war-room”, allows the project recovery manager with an invaluable resource where the team can immerse in the failing project without distractions. Creating a “war-room” for recovery is about turning that space into a shrine of everything about ‘recovery’. It gives a sense of purpose and a dedicated space where urgency and expediency can be communicated with any distractions. If you don’t have the permanent space, you can do it temporarily by turning a conference room into a “war-room” for a dedicated period each day (i.e. the first / last couple of hours of each working day).

Assessment Phase Data Requirements

The ‘**assessment phase data requirements**’ section outlines the documents and data the recovery project team will need for their assessment, e.g. the project plan, the risk management plan, vendor contracts, organizational charts, and test results.

Topic 1: Recovery Requirements Definition (cont'd)

Approvals

The '**approvals**' section lists the individuals with responsibility for approving the recovery charter, and typically includes the project sponsor and the existing and the recovery project managers. It is important to convey to the existing project manager and team that the recovery effort is not about ascribing blame, but rather is designed to restore the project to stability and usefulness.

Giving the existing project manager a degree of approving authority over the charter signals to the entire project team that their input into the recovery process is valued.

Topic 1: Exercise – Completing a Recovery Charter

Exercise



Exercise: Completing a Recovery Charter



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Instructor Delivery Notes:

The purpose of this exercise is to

- highlight that the ending point is when the participants deliver a complete project recovery charter
- an empty project recovery charter template is provided in the student text

If the participants are familiar with a project recovery charter, the exercise may be facilitated as follows (otherwise ask the participants to complete the charter in groups):

- step 1: break the participants into four groups
- step 2: ask each group to look at the recovery charter template provided for the exercise
- step 3: ask group 1 to complete the 'Project Recovery Information' and 'Detailed Project Information' sections
- step 4: ask group 2 to complete the 'Project Personnel' section
- step 5: ask group 3 to complete the 'Assessment Methodology' and 'Project Assessment' sections
- step 6: ask group 4 to complete the 'Key Milestones' and 'Data Requirements' section
- step 7: ask each group to present their outputs and use a flipchart to present their findings.

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you to become the project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

Topic 1: Exercise – Completing a Recovery Charter (cont'd)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

The state authority have requested your evaluation of whether the project should be recovered or abandoned by examining the following criteria

- psychological factors – there may be an emotional attachment to the project, meaning that project stakeholders are unwilling to let go
- organizational factors – it may be that there is pressure on the organization (from the voters, legislature, executive management, etc.) to deliver the project. If so, organizational stakeholders may be unwilling to let go until there is no other possible alternative
- social factors – there may be internal rivalry between different project teams and while abandonment is the logical choice, there is a resistance as it may reflect poorly on the present project team
- revisit the indices continually – to prove that the abandonment / recovery option is feasible.
- look at the alternative options being proposed by the stakeholders – measure them in a comparable manner (i.e. using indices) to show future performance.
- seek an outside/objective opinion – there may be cases where the stakeholder needs to hear the information from an source that is unattached to the project (in this case you the instructor as the outside source)

With the information, take from the project you have proposed to the state authority that the project should go through a recovery cycle. While the state authority agrees, they are anxious over the consequences if the recovery project fails. On hearing this, you re-iterate that some hard-decisions will have to be made, but if everyone is willing to co-operate the chances of success are good. As the project recovery manager, you and some subject matter experts of the state authority spend time drafting the project recovery charter.

You are requested to present this recovery charter using the template provided.

Topic 1: Exercise – Completing a Recovery Charter (cont’d)

Sample Template

Project Recovery Charter																			
Project Recovery Information • Organization Name: - • Project Sponsor: - • Date: -																			
Detailed Project Information Outlines the functional area of the project, its strategic objective, the start date and original completion date, approved budget, authorized resource level, and the current Schedule Performance Index (SPI), Cost Performance Index (CPI), and To Complete Performance Index (TCPI).																			
Project Personnel • Existing Project Manager • Existing Project Team Members <table border="1"><thead><tr><th>Name</th><th>Role</th></tr></thead><tbody><tr><td>Name</td><td>Role</td></tr><tr><td></td><td></td></tr></tbody></table> • Contractors: <table border="1"><thead><tr><th>Name</th><th>Role</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table> • Suppliers: <table border="1"><tbody><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></tbody></table> • Project Recovery Manager: <table border="1"><tbody><tr><td>Name</td></tr><tr><td>Role</td></tr><tr><td>Responsibility</td></tr></tbody></table>		Name	Role	Name	Role			Name	Role								Name	Role	Responsibility
Name	Role																		
Name	Role																		
Name	Role																		
Name																			
Role																			
Responsibility																			
Assessment Methodology The steps to be covered when gathering information on the failing project.																			

Topic 1: Exercise – Completing a Recovery Charter (cont'd)

Project Assessment

- Project Failing Indicators: - Indicators (i.e. SPI, CPI) that show the project is failing
- Psychological / Environment Failing Indicators: - Factors associated with the environment / stakeholders that may be contributing to the project failing (i.e. emotional attachment with the project)
- Assessment Outputs: - Factors / issues taken from the assessment that must be dealt with for the recovery to be successful

Issues	Resolved (Yes / No)

Key Milestones

- Recovery Milestone: - Project Recovery Milestones

Milestone	Date
Milestone	Date
Milestone	Date

- Critical Milestones: - The 'MUST MEET / DO' Milestones. If these milestones are not achieved, the recovery will not succeed

Milestone	Date
Milestone	Date
Milestone	Date

Data Requirements

Outlines the documents and data the recovery project team will need for their assessment (i.e. project plans, risk response plans, etc.)

Approvals / Signatures

Project Sponsor
Senior Manager
Recovery Project Manager

Topic 1: Exercise Worksheet

Blank Template

Project Recovery Charter																			
Project Recovery Information • Organization Name: - • Project Sponsor: - • Date: -																			
Detailed Project Information																			
Project Personnel • Existing Project Manager • Existing Project Team Members<table border="1"><tr><td>Name</td><td>Role</td></tr><tr><td>Name</td><td>Role</td></tr><tr><td></td><td></td></tr></table> • Contractors:<table border="1"><tr><td>Name</td><td>Role</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> • Suppliers:<table border="1"><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></table> • Project Recovery Manager:<table border="1"><tr><td>Name</td></tr><tr><td>Role</td></tr><tr><td>Responsibility</td></tr></table>		Name	Role	Name	Role			Name	Role								Name	Role	Responsibility
Name	Role																		
Name	Role																		
Name	Role																		
Name																			
Role																			
Responsibility																			
Assessment Methodology																			

Topic 1: Exercise Worksheet

Project Assessment

- Project Failing Indicators
- Psychological / Environment Failing Indicators:
- Assessment Outputs:

Issues	Resolved (Yes / No)

Key Milestones

- Recovery Milestone:

Milestone	Date
Milestone	Date
Milestone	Date

- Critical Milestones:

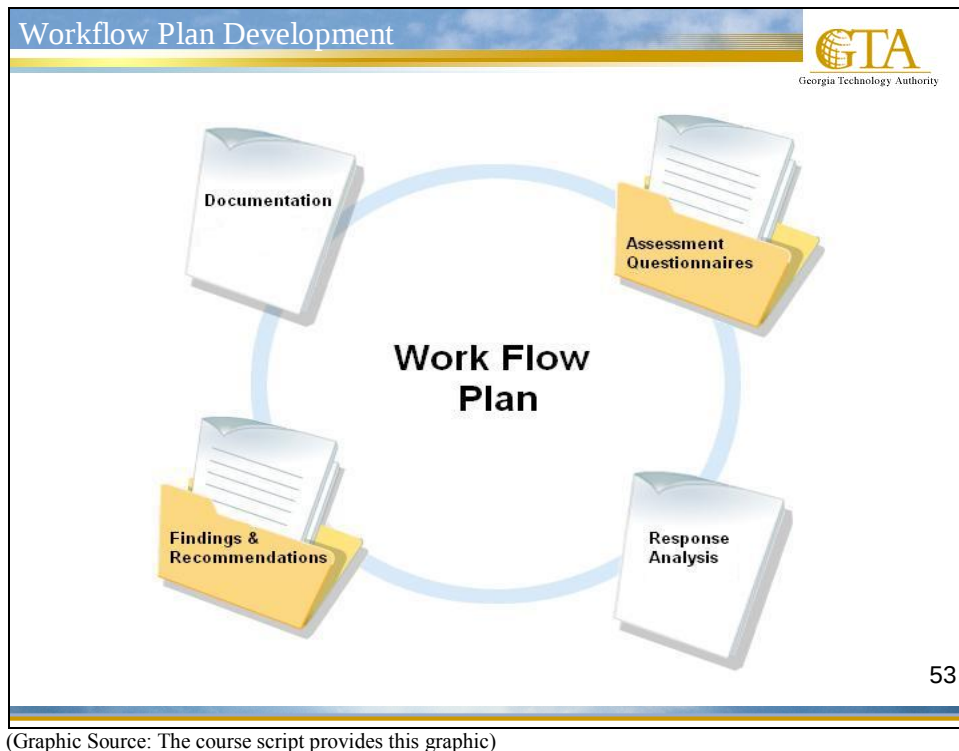
Milestone	Date
Milestone	Date
Milestone	Date

Data Requirements

Approvals / Signatures

Project Sponsor
Senior Manager
Recovery Project Manager

Topic 2: Work Flow Plan Development



The Work Flow Plan

The recovery process needs to be developed and agreed to by the project sponsor. The **work flow plan** lays out a map for the recovery team – identifying assessment documentation, setting out the information gathering process, outlining the responsibilities of recovery team members, and recommending the work to be carried out to restore the project to usefulness and stability.

The work flow plan should include

- review documentation
- distribute assessment questionnaires
- conduct interviews
- analyzed responses
- formulate findings
- make recommendations

Topic 2: Work Flow Plan Development (cont'd)

Review Documentation

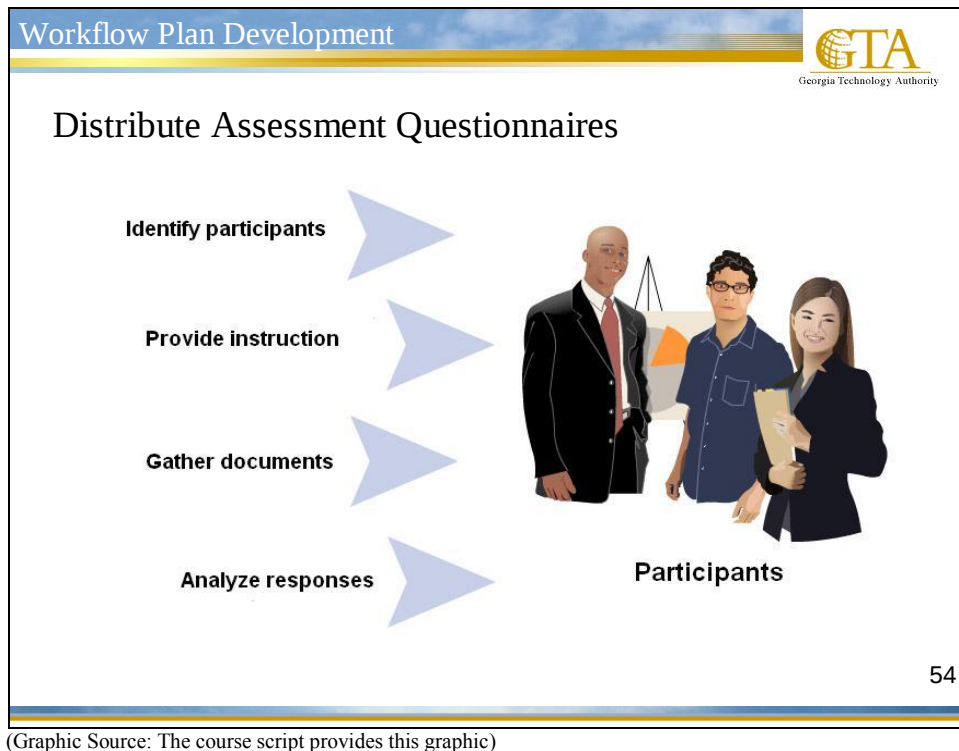
As the engagement of the recovery process commences, the first task is to gather all existing project documentation. This allows the recovery project manager and the recovery team to reconstruct the history of the project. The types of documents reviewed include

- existing project management plan
- contracts
- financial reports
- original project selection decision documents

If the documentation is in disarray, or if key documents are missing (e.g. WBS or project plan) this alone can provide some indications as to why the project is failing.

Similarly, if there is a lack of consistency between the documents or some are of poor quality, this can help the recovery team in determining where the problem areas are in the project.

Topic 2: Work Flow Plan Development (cont'd)



Distribute Assessment Questionnaires

The assessment questionnaires are distributed during the project recovery kick-off meeting. They should be handed out to pre-identified individuals who have had an active role in the project. The sequence of events, as captured in the work flow plan document, is as follows:

- identify participants
- provide instructions
- gather documents
- analyze responses

Once the questionnaires have been returned, the recovery project team analyzes the data to determine what may have gone wrong with the project. From the information provided, the team can start generating hypotheses and formulating solutions.

Topic 2: Work Flow Plan Development (cont'd)

Workflow Plan Development



Conduct Interviews

- Identify interviewees
- Schedule interviews
- Conduct and record interviews
- Analyze collected data



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(Graphic Source: The course script provides this graphic)

Conducting Interviews

The work flow plan document records the following steps in the interview process:

- identifying the interviewees
- scheduling the interviews
- conducting and recording the interviews
- analyzing the collected data

While the analyzing assessment questionnaires provides a significant amount of data, interviewing key project participants yields additional information vital to the project analysis, recovery and delivery process.

Interviewing should be carried out with tandem interviewers (i.e. two). This enables one individual to focus on asking questions while the other can concentrate on capturing the interviewee's responses.

Interviewing Techniques

Good interviewing techniques should always be followed. Mastering the art of interviewing is crucial for all individuals seeking to analyze project weakness, strengths, and overall performance. The below guidelines will help you to conduct a successful interview.

Topic 2: Work Flow Plan Development (cont'd)

Preparation

It is not necessary to spend hours doing background research in order to conduct a good interview, however some preparation is necessary to achieve success. For example, you should have a good an idea of what state the project is in, and its current level of performance.

It is also good practice to develop a set of interview questions beforehand, including a number of situational questions, e.g. describe a problem you faced in the project and how you solved it. (If you are having difficulty coming up with situational questions, review the interviewee's role in the team, and the project documentation – collectively these should provide enough material for several questions.)

Some interviews may be technical, while others will focus on project management methodologies. The purpose of a technical interview is to determine how specific software problems are solved on the project. Focusing on project management methodologies enables you to determine how the project is being managed, and what team members do if they meet an obstacle or get stuck on a problem.

Finally, once ready to conduct the interview, make sure you make a good impression; dress in a business-like manner, thank the interviewee for their time, explain why they were selected and the purpose of the interview, and be on time.

During the Interview

Try to keep a dialogue going with the interviewee, but avoid going off in tangents; remember the scope of the interview is to obtain information about the project.

If the interviewee asks questions or seeks additional information, be truthful and answer them to the best of your ability. Avoid offering opinions, as these can be taken as factual comments and may be misleading.

Most importantly, let the interviewee know how committed the project sponsor and team are to getting the project back on track and making sure the right decisions are made. Reiterate that the

Topic 2: Work Flow Plan Development (cont'd)

purpose of the interview is not to judge personal performance, but rather to gather project information for analysis.

At the end of the interview, make sure you ask the interviewee if he/she has any questions or would like any issue clarified; this will demonstrate you have an interest in their input.

After the Interview

If necessary, you may choose to make a follow-up call to the interviewee, or you can indicate that you are available if he/she has any subsequent questions. If there is any follow-up, it is a good opportunity to thank the interviewee again for their participation, cooperation, and time.

Topic 2: Work Flow Plan Development (cont'd)

Workflow Plan Development



RAPID, or Response Analysis Process Identified Deficiencies, involves

- defining an approach to analyzing data
- formulating findings in a report
- outlining a series of recommendations



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(Graphic Source: The course script provides this graphic)

Response Analysis

In addition to serving as an invaluable tool for determining and mining critical project information, the assessment phase also functions as the basis for developing integrated, problem-solving recommendations. In identifying the root cause of deficiencies within specific functional areas, the project recovery team simultaneously progresses towards a point where they can make effective recommendations on improvement.

This process can be encapsulated in the term RAPID, or Response Analysis Process Identified Deficiencies. RAPID involves

- defining an approach to analyzing data
- formulating findings in a report
- outlining a series of recommendations

Formulating Findings – Developing the ‘AS IS’ Model

One of the primary purposes of assessment and analysis is to identify potentially significant adverse impacts that would immediately result in a failure to reach project completion.

Topic 2: Work Flow Plan Development (cont'd)

During the analysis phase, issues that are likely to have a potentially greater impact on the project arise. To understand these issues, the recovery team identifies them as follows:

- **‘fix now’ issues** – those that require immediate correction before progress (reaching project stability) can be made
- **critical risk events** – issues that have the potential to bring the project to a complete halt
- **significant risk events** – issues that, if they occur, would cause adverse effects on the project but could be mitigated
- **opportunities** – issues or events that, if they occur, would have a positive impact on the project

The output from the analysis can be sorted and analyzed by the use of a modified ‘affinity diagram,’ known as the AS IS model. (**Affinity diagramming** is a very simple method for organizing a large body of information.) The process is as follows:

- divide the collected information into ‘Fix Now,’ Critical Risk, Significant Risk, and Opportunities categories
- working as a team, classify each issue as ‘significant’ or ‘less significant’ (see the Analysis and Segregation template)
- rank each of the issues in the ‘significant’ group

The output from an affinity diagram is a set of ranked events in each category. Determining the significance of specific issues and ranking them is accomplished using multi-voting.

Multi-voting is a process whereby a team ranks a list of project findings according to whether individuals perceive them as high or low priority. It does not provide for a detailed in-depth analysis, but it does offer a quick, economical way to rank different alternatives, issues, risks and/or opportunities. It is usually accomplished by a simple show of hands.

A sample ‘AS IS’ model is displayed on the following page.

Topic 2: Work Flow Plan Development (cont'd)

“AS IS” Model

	Fix Now	Critical Risks	Significant Risks	Opportunities
Significant	a) Show stoppers b) Inability to obtain permits will impede the completion of building construction c) Acceptance clause in the contract is preventing the installation of ancillary equipment d) Inability to meet EPA mandate halts the installation of fuel tanks for emergency engine	a) Economic downturn could affect funding b) Technology changes could prevent the integration of the system c) Purchased equipment could become outdated d) Excessive failures prove equipment unreliable	a) Module 1 could fail due to instability in software b) Installation schedule could be delayed c) Training manuals may be delayed, affecting the cutover	a) Adding one more programmer will improve the schedule by 15% b) Using standard off-the-shelf products can shave 30% off equipment costs
Less Significant	None Applicable	None Applicable	a) Snow storm in Iowa could delay the shipment of training binders	a) Close monitoring of output may reduce the amount of paper work

Topic 2: Work Flow Plan Development (cont'd)

Workflow Plan Development



Recommendations should

- address what is to be accomplished
- be analysis-based
- have the consensus of the recovery team and the existing project manager



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(Graphic Source: The course script provides this graphic)

Develop Recommendations

Once the recovery team has formulated their findings into an AS IS model, the next step is to develop recommendations that will address each issue.

Recommendations should

- address what is to be accomplished
- be analysis-based
- have the consensus of the recovery team and the existing project manager

Topic 3: Developing the Recovery Action Model

Recovery Action



The 'TO BE' model outlines how the project will look after the recovery charter has been implemented.



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(Graphic Source: The course script provides this graphic)

Developing the Recovery Action Model

Once the recovery team has identified an 'AS IS' model and developed a set of recommendations, the project recovery manager can develop the **'Recovery Success Factor' model**. This is an outline of how the project will look after the recovery process is complete, and is generated by applying the project team's recommendations to the 'AS IS' model.

Topic 3: Developing the Recovery Action Model (cont'd)

It can be presented in a variety of formats, depending on the nature of the data being presented, e.g. financial issues can be represented with graphs, project team performance can be documented as a bulleted list of items, redefined list of deliverables, etc.

This 'Recovery Success Factor' list constitutes the critical success factors for the recovery project. This is what the project recovery manager must deliver if the project is to be deemed stable. The following is an example of a 'Recovery Success Factor' model, where the word critical indicates those items which must be achieved.

“Example list of Recovery Success Factors”

	Financial	Schedule / Scope	Team Performance
Critical	The budget is back in line with the original plan	The scope of the project is in line with the original requirements	The team are trained to the level required by the other competing projects / organizations
Secondary	No further budget slips are forecasted for the remainder of the project	The scope and budget are the primary motivators and the schedule can be balanced in line with achieving these objectives	

With the work flow plan and 'Recovery Success Factor' model complete, the final step is to present to the sponsor and key players for approval.

Presenting Findings and Gaining Approval

The next step in the assessment phase is to present the recovery team's findings and recommendations. During this presentation, the recovery project manager and team should avoid using the words "I think", and ensure that their presentation is based only on hard facts.

The presentation should focus on the top three 'fix now' items on the AS IS model. The identified risks should be presented in order of priority, however it is important to point out that the majority of risks will not surface until the project has been replanned and normal operations have been restored.

The presentation of the "Recovery Success Factor" model should be no more than an outline of the end result of the recovery operation. Action is NOW required.

Lesson 3: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: Recovery Requirements Definition

- The **recovery charter** is a written document or agreement that exists between the project sponsor (senior management) and the recovery project manager. It sends a signal to the project team that **project recovery is on the way**, and indicates that the organization is committing resources to assess the project and reestablish stability (if possible).
- A **recovery charter** typically covers the following areas:
 - **project recovery information**
 - detailed project information
 - project personnel
 - **assessment considerations**
 - assessment phase deliverables
 - scope of assessment
 - recovery project manager responsibility & authority
 - assessment methodology
 - **key milestones** to reach
 - assessment output(s)
 - assessment phase resource needs
 - organizational / political factors
 - assessment phase data requirements
 - **approvals**

From this topic you should **take away** the following:

- an understanding of the function of the recovery charter and an ability to describe each of the sections it contains
- the ability to fill out a the ability to fill out a work flow plan

Topic 2: Work Flow Plan Development

- A **work flow plan** is used to identify assessment documentation, set out the information gathering process, outline the responsibilities of recovery team members, and recommend the work to be carried out to restore the project to usefulness and stability.
- As the engagement of the recovery process commences, the first task is to gather all **existing project documentation**, such as the existing project management plan, the original project selection decision documents, and any contracts, financial reports etc. associated with the project.
- The work flow plan records the following steps in the **interview** process:
 - identifying the interviewees
 - scheduling the interviews
 - conducting and recording the interviews
 - analyzing the collected data

Lesson 3: Summary (cont'd)

- **RAPID**, or Response Analysis Process Identified Deficiencies, is a responses analysis technique that involves defining an approach to analyzing data, formulating findings in a report, and outlining a series of recommendations.
- The output from the analysis can be sorted and analyzed by the use of a modified 'affinity diagram,' known as the AS IS model. Using this model, all issues are categorized as '**fix now**' issues, **critical risk events**, **significant risk events** or **opportunities**.
- Once the recovery team has formulated their findings into an AS IS model, the next step is to develop recommendations. Recommendations should address what is to be accomplished, be analysis-based, and have the consensus of the recovery team and the existing project manager.

From this topic you should **take away** the following:

- an understanding of the function of the work flow plan and an ability to describe each of the sections it contains
- the ability to fill out a work flow plan

Topic 3: Developing the Recovery Action Model

- The '**Recovery Success Factor**' model is an outline of how the project will look after the recovery process is complete, and is generated by applying the project team's recommendations to the 'AS IS' model.
- It can be presented in a variety of formats, depending on the nature of the data being presented.

From this topic you should **take away** the following:

- an understanding of the function of the Recovery Success Factor model

Lesson 4: Failing Project Assessment

Topic 1: Recovery Team Formation

Topic 2: Kick-off Meeting

Topic 3: Detailed Recovery using Root Cause Analysis

Topic 4: Developing Heart-Burn List

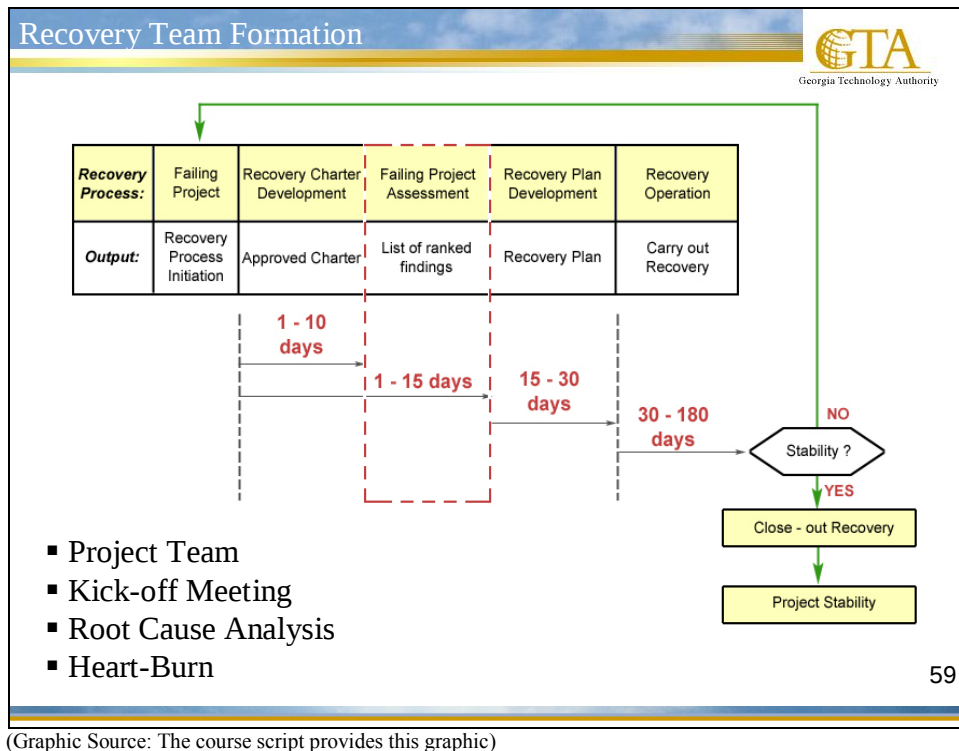
Topic 5: Identifying Remaining Recovery Work

Student learning objectives

After completing this lesson, you should be able to

- describe the skill set required by project recovery managers teams and the processes they should follow to effectively recover projects
- understand the composition of a recovery team and how one can be formed efficiently
- develop methodologies where team communication is aided in the face of MUST DO recovery
- show how root cause analysis enables detailed project recovery
- use the Pareto Principle to draw up a list of heart-burn issues that require immediate attention if a project is to be recovered
- diagnose the remaining work to be accomplished to ensure a successful recovery and to put this into a plan

Topic 1: Recovery Team Formation



The Project Team

Organizations are under **constant pressure to evaluate projects** and, at some point, almost every organization has had to analyze a failing project and attempt to find a solution to get it back on track. However, few have sufficient training to facilitate the type of detailed recovery process necessary to salvage the project and bring it to successful completion.

When considering how **best to staff the recovery process**, organizations can use

- the **existing project team**
- an **internal or external consultant**

Using the existing project team is not recommended, due to the proximity of each team member to the inner workings of the project, and the possibility of individual bias amongst team members towards certain issues.

Additionally, it can also lead to staffing problems because if the existing project team is assigned to plan and conduct the recovery, there may be no one left to continue the original work of the project.

Topic 1: Recovery Team Formation (cont'd)

Internal/External Consultants

Using a consultant is recommended, as it allows for an independent analysis of the project, and ensures an objective approach to its recovery. It also avoids any compromise with existing project resources.

Some organizations address this by establishing **Project Management Offices (PMO)** with trained “in-house” consultants to address many of the issues revolving around project methodology, processes and support, while others contract with outside sources.

Topic 1: Recovery Team Formation (cont'd)



(Graphic Source: The course script provides this graphic)

Skills for Tackling a Failing Project

Several management skills can be employed to help tackle a failing project. These include

- **communication skills** – good communication is the key factor when seeking to identify and successfully recover a project. Recovery project team members must be able to clearly express and exchange thoughts and information speedily and decisively if they are to achieve their goals.
- **expediency** – when a project begins to fail, it is vital that swift action be taken, so that the effect on the project cost and timescale is minimized. Recovery teams that can react and deal in a speedy manner with the crucial issues that face a failing project are much more likely to turn the project around than teams that are slow to develop and implement a recovery solution.
- **business and project management skills** – possessing good business skills is the most important trait of a project manager. Without knowledge of business objectives, a project manager could actually have a negative impact on a project. Similarly, project management skills such as good judgment, diplomacy, and time management are essential to a project's success.

Topic 1: Recovery Team Formation (cont'd)

- **decision skills** – there are hundreds of decision points throughout the course of recovering a project. Good choices help bring a project in on time and on budget.

Bad choices, on the other hand, can lead to increased time and expense, or outright failure. The ability to pass judgment on issues and reach a firm decision is a vital project management skill.

- **technical skills** – the Standish Report indicates that project managers with good technical skills are more likely to achieve success than those with only fair skills.
- **process skills** – one recent survey indicated that forty-six percent of successful projects had a formal project methodology, while challenged or failed projects used formal project methodology only thirty percent of the time. Project managers with good processes and plans are more likely to succeed. Consistently planning, enacting, and tracking all activities, tasks, changes, and functions gives project managers a much higher chance of project success.
- **organization and detail skills** – a recovery project manager and team must create and maintain an organizational structure in which individuals cooperate systematically. He/she must be able to assemble project components into a working structure and support that structure by having various functions contribute to the whole project.

Topic 1: Recovery Team Formation (cont'd)

Recovery Team Formation				
				
Project Recovery Lifecycle				
	Identification	Kick-off / Planning	Execution	Stabilization
Major Task	• Identify failure • Gather data • Analyze risk • Identify strategy & alternative	• Identify recovery plan • Prepare preliminary WBS • Prepare recovery charter	• Execute Work • Manage Systems • Communicate information	• Review and acceptance • Project stabilized • hand over to project team
Methods	• Task force led by recovery project manager	• Task force • Kick-off meeting	• Daily meetings/ reports • War-room facility	• Close-out meeting
Team Skills	• Visionary • Creative • Analytical	• Leader • Facilitator • Technically Strong • Communication	• People & Task orientated • Leader • Controller • Communication	• Trainer • Doer • Communicator

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(Graphic Source: The course script provides this graphic)

Skills for Tackling a Failing Project (cont'd)

There are two entities that need to be identified:

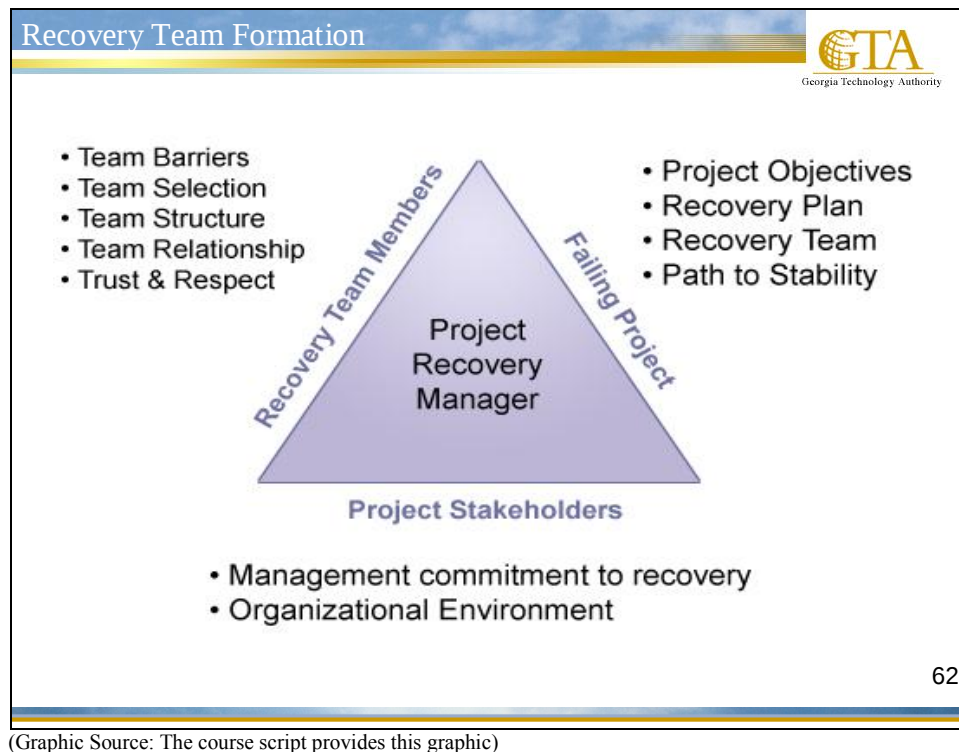
- **project recovery manager** – an individual who has the necessary characteristics to lead, direct, control, and communicate information in a decisive and speedy manner
- **project recovery team members** – individuals with specific skills that can help recover a failing project

Very often, project recovery teams (including the project recovery manager) are appointed to replace the current project team. Invariably the project recovery process becomes a useful learning curve for the initial project team members.

Specific characteristics of a recovery project manager include the ability to

- speedily **integrate** into a project
- **gather data** in a quick and precise manner
- **make decisions** quickly and take effective action
- **manage people** in a stressful environment
- **communicate information** to senior management

Topic 1: Recovery Team Formation (cont'd)



Project Recovery Manager

Effective communication and leadership skills are vital for successful project recovery managers.

Leadership skills are necessary in a project environment to increase **effectiveness of recovery participants**. These skills help in persuading major stakeholders to participate, give them clear direction, and ensure that sound decisions are made in a timely manner. In addition, a successful project recovery manager should be able to adapt to an appropriate leadership style depending on the phase of the project life cycle.

An effective project team leader is a "**social architect**" who recognizes the interaction between behavioral and organizational variables, can create a participative environment, and can minimize dysfunctional conflict among team members.

An **effective project recovery leader** must identify three important dimensions – recovery team members, failing project, and overall organization – and the major issues associated with them. These dimensions can be used to improve team leadership through effective inter-communication, which is a key to project management success.

Topic 1: Recovery Team Formation (cont'd)

Recovery Team Formation



Effective Project Recovery Teams

- Common values
- Shared responsibility
- Trust
- Creativity



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(Graphic Source: The course script provides this graphic)

Effective Team Development

Project recovery teams determine the ultimate success of the recovery process. Project recovery managers must be able to quickly develop a **cohesive team** with a set of common values / goals and a vision sufficient to bind them together and guide them in an appropriate direction to achieve the objective of project stabilization.

Responsibilities must be delegated and effective working relations, mutual trust, and creativity must all be fostered. In his article “What It Takes to Be a Good Project Manager” (*Project Management Journal* March 1987), Barry F. Posner polled a group of project managers on what characteristics are required to develop an effective team, with the following results:

Topic 1: Recovery Team Formation (cont'd)

SKILLS	POLL POPULARITY	CHARACTERISTICS
Communication	84%	• listening • persuading • verbal communication • written communication
Organization	75%	• planning • goal-setting • analyzing
Team Building	72%	• empathy • motivation
Leadership	64%	• sets example • energetic • vision (<i>big picture</i>) • delegates • positive
Coping	59%	• flexibility • creativity • patience • persistence
Technological	46%	• experience • project knowledge

Note: Numbers represent the percentage of project managers whose responses were included in this cluster.

The development of project recovery team members depends on four main factors:

- **competence** – task-relevant knowledge and skills as well as transferable skills
- **motivation** – the energy, enthusiasm, and commitment to complete tasks
- **confidence** – the self-esteem and self-assuredness that allows team members to trust in their own decision making
- **attitude** – beliefs and behavior regarding team members, teams, ideas, issues, and objectives

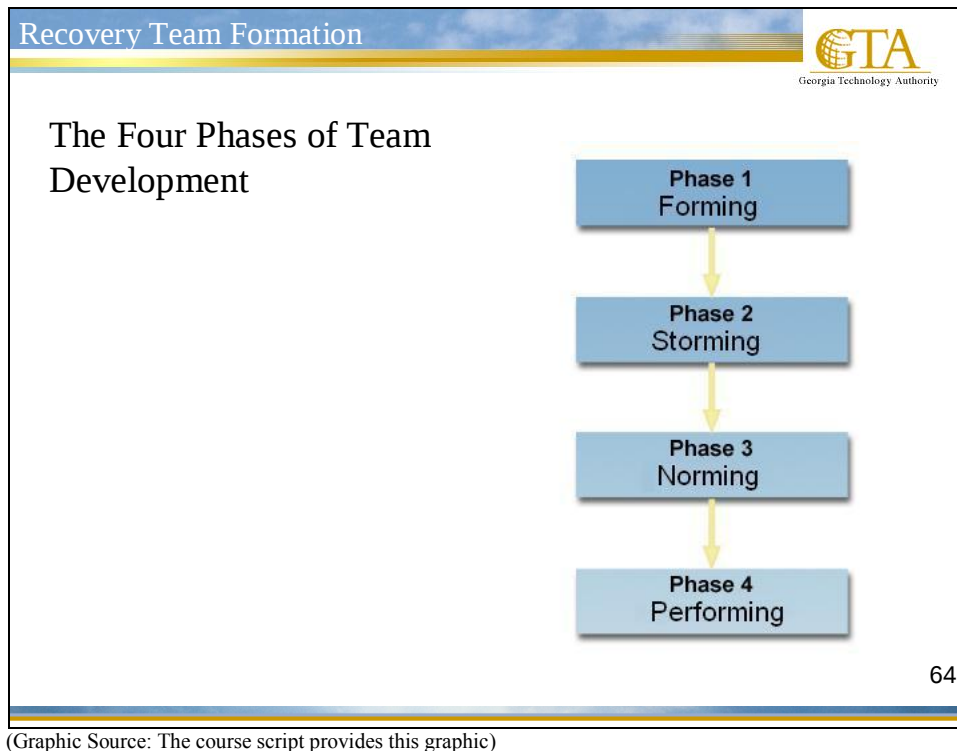
Depending upon their maturity level, team members can develop their own plans, procedures, and review systems, thereby requiring less direction and control. The role of the project recovery manager is to empower team members to enable this process.

Effective project recovery managers give team members

- **expectation** (i.e. “Tell me what you expect of me”)
- **opportunity** (i.e. “Give me an opportunity to perform”)
- **feedback** (i.e. “Let me know how I am doing”)
- **guidance** (i.e. “Give me guidance when and where I need it”)
- **reward** (i.e. “Reward me according to my contribution”)

In reality, project recovery managers and their team members develop interactively.

Topic 1: Recovery Team Formation (cont'd)



Effective Team Development

The project recovery manager focuses successively on telling, selling, gelling, and managing project activities with the aim of transforming the project team into a self-directed group that can recover the project.

However, this only happens when team members advance through four stages of team development, and leaders adapt their leadership style accordingly.

The four stages are

- **Forming** (Stage 1)

During this stage, team members are polite, guarded, and businesslike and therefore team leaders should emphasize directive behavior and expediency.

- **Storming** (Stage 2)

During this stage, team members confront one another and struggle for control; as a result they either become entrenched or opt out. The leaders must display high directive and supportive behavior.

- **Norming** (Stage 3)

In this stage, team members confront issues instead of people, establish procedures collectively, and become team-orientated. The team leaders must provide high support and low direction during this stage.

Topic 1: Recovery Team Formation (cont'd)

- **Performing** (Stage 4)

In this final stage, team members settle down to open and productive effort with trust, flexibility, and a mature cohesiveness that enables self-direction. The team leaders must be willing to delegate and provide low direction and low support. However, they must assure their team members of their commitment to provide necessary support and coaching as needed.

The situational leadership theory states that the choice of a leadership style depends upon the situation and, in particular, the developmental level of the individuals being managed. An effective situational leader should have the three abilities:

- **flexibility** – the ability to use a variety of leadership styles comfortably
- **diagnostic ability** – the ability to choose a leadership style appropriate to the competence, confidence, and attitude of team members
- **contracting for leadership style** – the ability to agree to provide the appropriate level of direction without over- or under- supervising

To be effective, a project team leader must be able to modify the level of supportive versus directive behavior in response to the progressive evolution or development of team members.

The **primary role** of project recovery managers is to **build up a dedicated project recovery team** through leadership skills. Leadership skills are essential for bringing the project together and building trust among the project stakeholders.

Topic 1: Exercise – Leadership Self-Assessment

Exercise



Exercise: Leadership Self-Assessment Exercise



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Instructions: Respond to each item according to the way you would be most likely to act as the project recovery manager. For each statement, circle whether you would be likely to behave in one of the described ways:

- always (A)
- frequently (F)
- occasionally (O)
- seldom (S)
- never (N)

Topic 1: Exercise – Leadership Self-Assessment (cont'd)

If I was the leader of a work group...

Item No.	Behavior					Statement
1	A	F	0	S	N	I would most likely act as the spokesperson of the group
2	A	F	0	S	N	I would encourage overtime work
3	A	F	0	S	N	I would allow members complete freedom in their work
4	A	F	0	S	N	I would encourage the use of uniform procedures
5	A	F	0	S	N	I would permit the members to use their own judgment in solving problems
6	A	F	0	S	N	I would stress being ahead of competing groups
7	A	F	0	S	N	I would speak as a representative of the group
8	A	F	0	S	N	I would needle members for greater effort
9	A	F	0	S	N	I would try out my own ideas in the group
10	A	F	0	S	N	I would let the members do their work the way they think best
11	A	F	0	S	N	I would be working hard for a promotion
12	A	F	0	S	N	I would be able to tolerate postponement and uncertainty
13	A	F	0	S	N	I would speak for the group when visitors were present
14	A	F	0	S	N	I would keep the work moving at a rapid pace
15	A	F	0	S	N	I would turn the members loose on a job and let them go to it
16	A	F	0	S	N	I would settle conflicts when they occur in the group
17	A	F	0	S	N	I would get swamped by details
18	A	F	0	S	N	I would represent the group at outside meetings
19	A	F	0	S	N	I would be reluctant to allow the members any freedom of action
20	A	F	0	S	N	I would decide what shall be done and how it shall be done
21	A	F	0	S	N	I would push for increased production
22	A	F	0	S	N	I would let some members have authority that I could keep
23	A	F	0	S	N	Things would usually turn out as I predict
24	A	F	0	S	N	I would allow the group a high degree of initiative
25	A	F	0	S	N	I would assign group members to particular tasks
26	A	F	0	S	N	I would be willing to make changes
27	A	F	0	S	N	I would ask the members to work harder
28	A	F	0	S	N	I would trust the group members to exercise good judgment
29	A	F	0	S	N	I would schedule the work to be done
30	A	F	0	S	N	I would refuse to explain my actions
31	A	F	0	S	N	I would persuade others that my ideas are to their advantage
32	A	F	0	S	N	I would permit the group to set its own pace
33	A	F	0	S	N	I would urge the group to beat its previous record
34	A	F	0	S	N	I would act without consulting the group
35	A	F	0	S	N	I would ask that group members follow standard rules and regulations

Topic 1: Exercise – Leadership Self-Assessment (cont'd)

Scoring Key:

To find your leadership style:

Step 1: Circle the item numbers for items 8,12,17,18,19,30,34, and 35.

Step 2: Write a "1" in front of the circled items to which you responded S (seldom) or N (never).

Step 3: Write a "1" in front of the items *not* circled to which you responded A (always) or F (frequently).

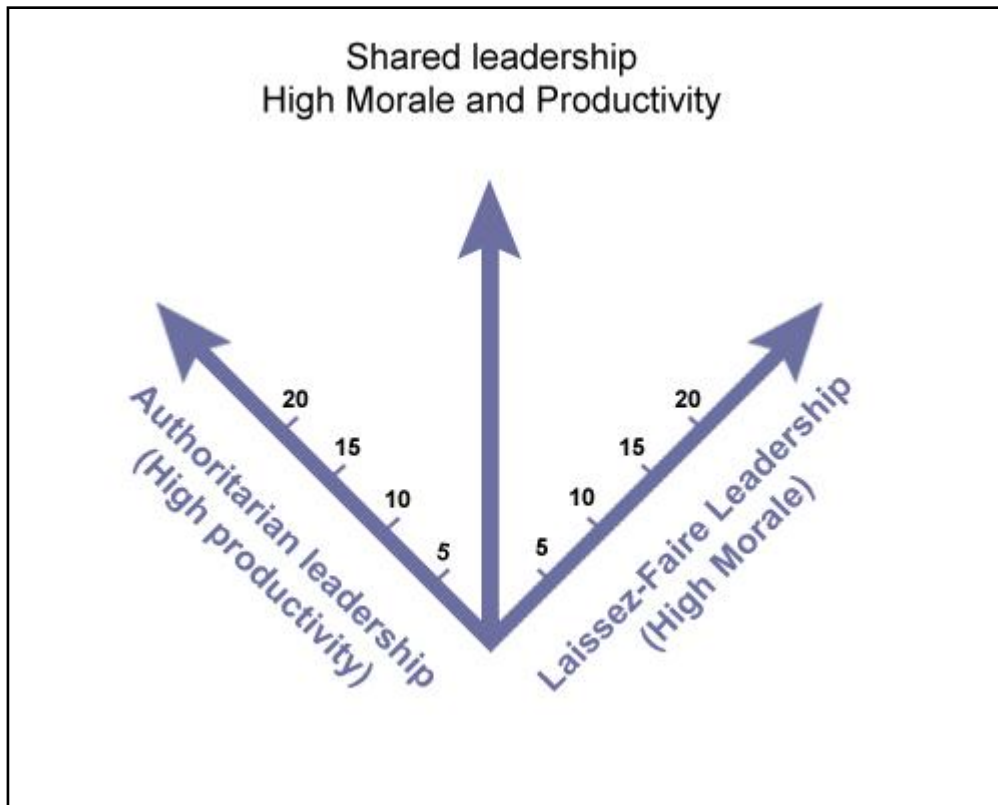
Step 4: Circle the "1's" which you have written in front of the following items: 3,5,8,10, 15, 18, 19,22,24,26,28,30,32,34, and 35.

Step 5: Count the circled '1's'. This is your score for concern-for-people.

Step 6: Count the un-circled '1's'. This is your concern-for-task.

Step 7: Refer to the diagram below. Find your score for task dimension on the left-hand arrow. Next, move to the right-hand arrow and find your score on the concern-for-people dimension.

Step 8: Draw a straight line that intersects the two scores. The point at which that line crosses the shared leadership arrow indicates your score on that dimension.



Topic 1: Exercise Worksheet

Topic 2: Kick-off Meeting

Kick-off Meeting



The objectives of the project recovery kick-off meeting are

- to publicly state that the project is failing
- to present the project recovery team
- to establish a commitment from the project team



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(Graphic Source: The course script provides this graphic)

Kick-off Meeting

A kick-off meeting is one of the most valuable **forums in which the project recovery manager can elicit initial information** and deliver the precise objectives for the recovery process. Such meetings should be driven by a sharp and concise agenda. The **kick-off meeting** may be held prior to baselining of the project recovery. It provides a forum to

- publicly state that the project is failing and that recovery is required
- introduce the recovery team to each other and to existing project team members
- identify and describe the function of each of the recovery team members (it may appropriate to allow the recovery team members take the initiative and perform this task)
- communicate the shared view from the recovery team of the project and what is required to stabilize the project
- establish a commitment by all who affect the recovery of the projects

Topic 2: Kick-off Meeting (cont'd)

Kick-off Meeting



A typical agenda, might be as follows:

- welcome participants
- state that the project is failing and why
- introduce the recovery team members
- introduce the steps of the recovery process
- identify roles and responsibilities
- summarize and invite questions

Agenda



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(Graphic Source: The course script provides this graphic)

Who Should Attend the Kick-off?

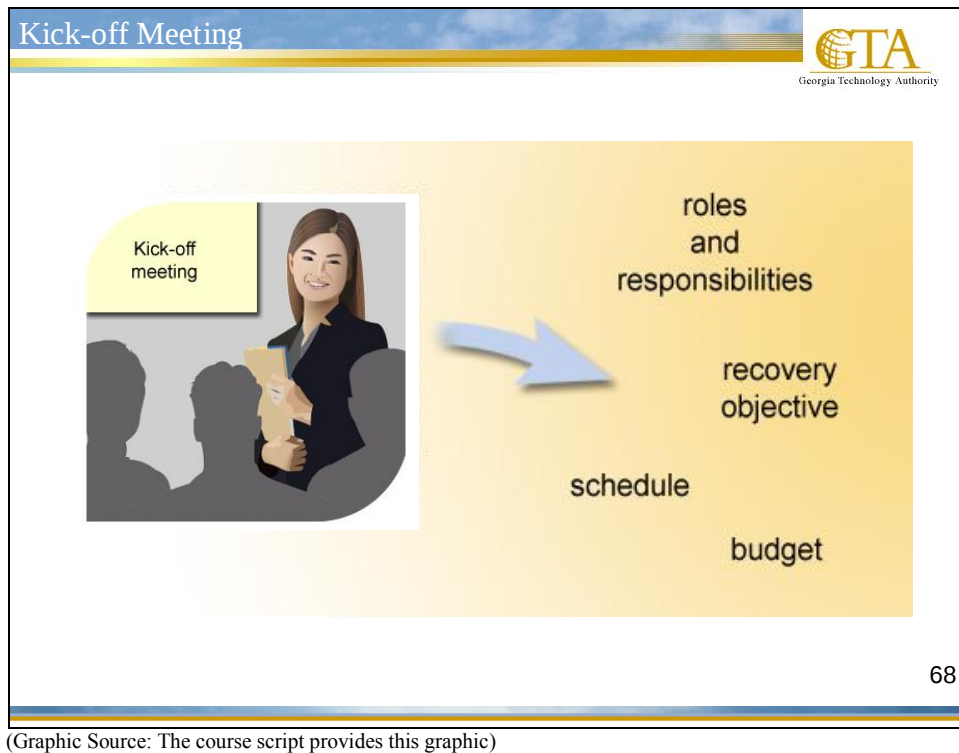
This meeting brings together the existing project team, the project recovery team, stakeholders, senior management, and others who need to **officially recognize that the project is failing** and needs to be recovered. The meeting should be conducted jointly by the executive sponsor and the recovery project manager. The presence of the executive sponsor will show the audience that the project team and other stakeholders have the sponsor's commitment and support.

The format of the meeting should be driven by the size of the project and the complexity of the recovery. Recovery projects that involve multiple locations will need close coordination for this meeting.

The **timeframe** is usually **one hour** and the meeting should not be viewed as a status meeting. Generally, the format is a presentation model with little interactive discussion, except for a short question-and-answer period near the end of the meeting.

Notification of the meeting's occurrence **should be formal and in writing**, again to convey the importance of the recovery. Some key stakeholders and senior management may need to be contacted prior to selecting a date to determine their schedule availability.

Topic 2: Kick-off Meeting (cont'd)



After the Kick-off Meeting

All participants who attend the project recovery kick-off meeting should leave with a clear view of

- the **course of action** to recover the project
- who the project sponsor is
- who the project recovery manager is
- **recovery roles and responsibilities** and who the key project recovery team members are
- the project **recovery objective**
- the **general schedule, budget, and activities**
- benefits that these groups will realize upon stabilization of the project
- challenges to complete the project
- the **next steps in the project**

Topic 2: Kick-off Meeting (cont'd)

Exercise



Exercise: Communication Style Self-Assessment
Exercise



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For each item, read both statements and circle the one that best describes you. Even if you think they are both like you, choose the one that is *most* like you.

Topic 2: Kick-off Meeting (cont'd)

Item No.	Statement
1	A. I like all the evidence (facts, details, examples, expected outcomes, etc.) presented first in an orderly fashion.
	B. I like the broad and general issues presented first, then the detail.
2	A. I prefer brief and concise information.
	B. I am persuaded by enthusiastic presentations.
3	A. I pay attention to my gut instinct, not just logical analysis.
	B. I am influenced by logical reasoning.
4	A. I like novel and unusual suggestions.
	B. I want practical and realistic applications.
5	A. I am persuaded by evidence (stuff that can be verified) to make decisions.
	B. I like to take an idea and run with it.
6	A. I want to know the points of agreement first, then the points of contention.
	B. I like the goals and objectives presented first, then the detail.
7	A. I want to know how people will feel about each alternative.
	B. I want to know the pros and cons of each alternative.

Topic 2: Kick-off Meeting (cont'd)

Scoring key:

Count the number of each type you circled to determine your preferred communication style – concrete-sequential (CS), abstract-sequential (AS), concrete-random (CR), or abstract-random (AR).

1	a. CS	b. AR
2	a. AS	b. CR
3	a. CS	b. AS
4	a. AR	b. CS/CR
5	a. CS	b. AR
6	a. CR	b. AS
7	a. CR	b. AS

- **Concrete-sequential** – this person is a "Mr. /Ms. Fix-it" who likes to focus on ideas and tasks, thinks systematically and predictably, and wants to complete tasks and minimize change
- **Abstract-sequential** – this person is an organizer who relies on logical analysis and systematic planning to solve problems. Abstract-sequential communicators are both people-oriented and task-oriented, which makes them effective team builders
- **Concrete-random** – this explorer/entrepreneur type relies on people and technology, finds practical use for theories and models, makes decisions after thorough analysis and evaluation, and excels at facilitating planning sessions, discussions, and changes.
- **Abstract-random** – this intuitive freethinker has "the vision thing." He or she views experiences from different perspectives, sees the big picture and the long-term view, and is a creative thinker.

These four communication styles are a combination of two dimensions:

- the thinking and decision-making approach, which varies from logical (sequential) to intuitive (random)
- the action style, which varies from concrete (hands-on) to abstract (research-based)

Topic 2: Exercise Worksheet

Topic 3: Detailed Recovery using Root Cause Analysis

Detailed Recovery Using Root Cause Analysis

GTA
Georgia Technology Authority

Root Cause Analysis

- Project objectives not fully specified
- Bad planning and estimating
- Technology new to the organization
- Inadequate/no project management methodology
- Insufficient senior staff on the team
- Poor performance by hardware/software suppliers
- Inadequate communication
- Lack of senior management involvement

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(Graphic Source: The course script provides this graphic)

Detailed Recovery using Root Causes

One influential survey on failing projects was carried out in 1994 by KPMG Management Consulting. KPMG surveyed some 120 companies in manufacturing, distribution, retail, energy, finance, and government organizations, asking participants to name the root causes of failing projects.

The most frequently mentioned **root causes of failing projects** identified by participants included the following:

- **project objectives not fully specified**
- **bad planning** and estimating
- technology new to the organization
- inadequate/no project management methodology
- **insufficient senior staff on the team**
- poor performance by hardware/software suppliers

Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)

Secondary root causes identified included

- **inadequate communication**
- lack of senior management involvement
- **inappropriate project staffing**
- insufficient user training

KPMG found that more than half of failing projects had not been subjected to any form of risk assessment or ongoing risk management. In addition, they found that failing projects occur with equal frequency across all market sectors, 25% of projects ran into difficulty during the initial planning stage, and the use of new technology was becoming an increasing contributor to failing projects.

Identifying an Action Plan

Once the project is noted as failing and a strategy identified, the following recovery process steps should be followed:

- **develop a recovery charter**
- **conduct a recovery assessment**
- **implement recovery operation**
- **implement recovery closeout**

The recovery charter is a **written document or agreement** that exists between the project sponsor (senior management) and the project recovery manager. It sends a signal to the project team that **project recovery is on the way**, and indicates that the organization is **committing resources to assess the project and reestablish stability** (if possible). A sample recovery charter template is contained in the appendix “Tools & Templates.”

Once the recovery charter is complete, the assessment phase is conducted using interviews to **gather relevant project information**. Two major types of interview are used in the recovery of failing projects: face-to-face interviews and the modified Delphi technique.

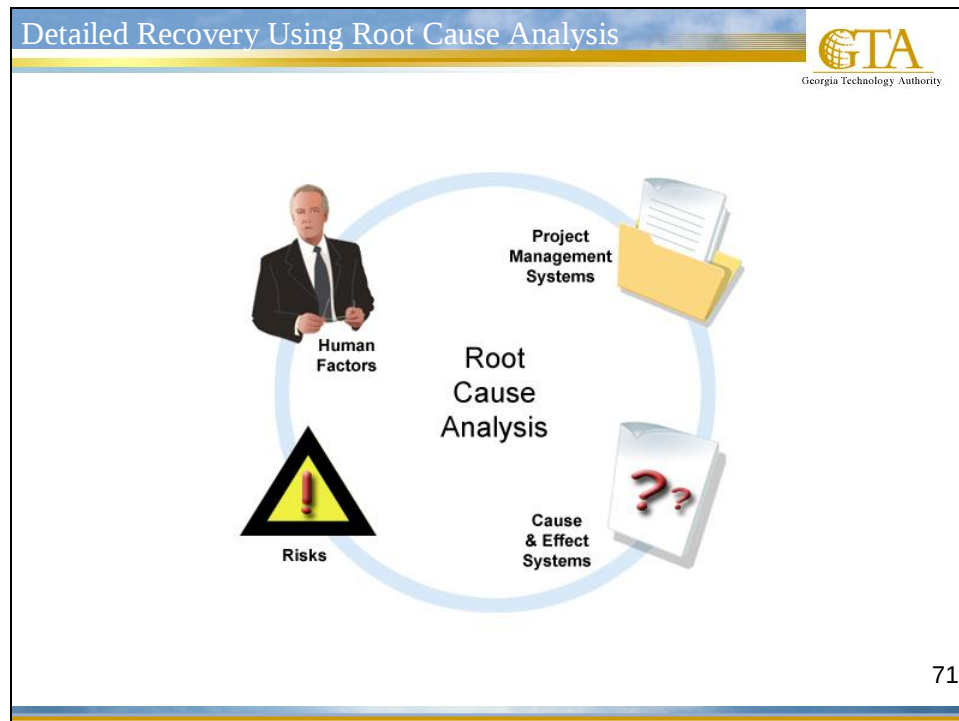
Implementing a recovery operation involves **building a recovery plan** that will restore the project to “usefulness” – which should be the goal of the recovery. A dedicated and committed recovery team, able to take **swift and decisive action**, is then required to implement the plan.

There are two issues to consider when planning recovery **close-out**:

- **project stability**
- handover of the project to the project team

The ultimate goal of the recovery process is to bring **stability to the project**. Once this has been achieved, the time comes for the project to be handed back to the original project manager.

Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)



(Graphic Source: The course script provides this graphic)

Root Cause Analysis Tools

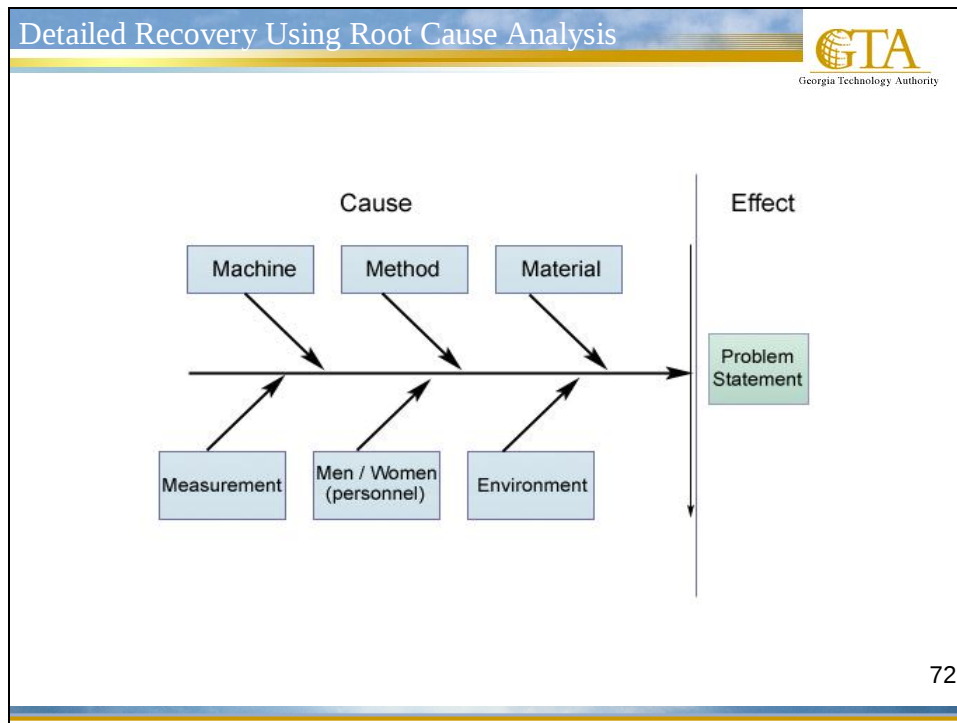
Root cause analysis is a **tool used to identify and alleviate factors that cause project failure**. It is a process that is part of the effort to build a culture of safety and move beyond the culture of blame.

Root cause analysis is an inter-disciplinary and impartial process that identifies changes that need to be made to the project and the project management system. It involves individuals and groups who are most familiar with the situation and thorough and continuous investigation at each level of cause and effect. To be thorough, a root cause analysis must include

- determination of **human and other factors**
- determination of **related processes and project management systems**
- analysis of underlying **cause and effect systems** through a series of why questions
- identification of **risks** and their potential contributions
- determination of **potential improvement** in processes or systems

Tools and techniques that can be used in a root cause analysis include structured interviews and brainstorming using cause and effect diagrams.

Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)



(Graphic Source: The course script provides this graphic)

Root Cause Analysis

Cause-and-effect analysis uses **diagramming techniques** to identify the relationship between an effect and its causes. Cause-and-effect diagrams are also known as fishbone diagrams (see slide). The following steps are used to perform a root cause analysis with the cause-and-effect (or fishbone tool):

- identify **why the project is failing** and create a problem statement

This step often involves the use of other statistical process control tools, such as Pareto analysis, histograms, and control charts, as well as brainstorming. The result is a clear, concise problem statement of why the project is failing

- select interdisciplinary **brainstorming team**

Select an interdisciplinary team based on the technical, analytical, and management knowledge required to determine the causes of the problem.

- draw **problem box and prime arrow**

The problem box contains the problem statement describing why the project is failing; this is being evaluated for cause and effect. The prime arrow functions as the foundation for their major categories.

- specify **major categories**

Identify the major categories contributing to the failing problem stated in the problem box.

Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)

The basic categories are

- personnel or people associated with the failing project
- methods, practices, or the project management system used in the failing project
- materials and machinery or technology that is used in the project
- measurements and environment

Other categories may be specified, based on the needs analysis.

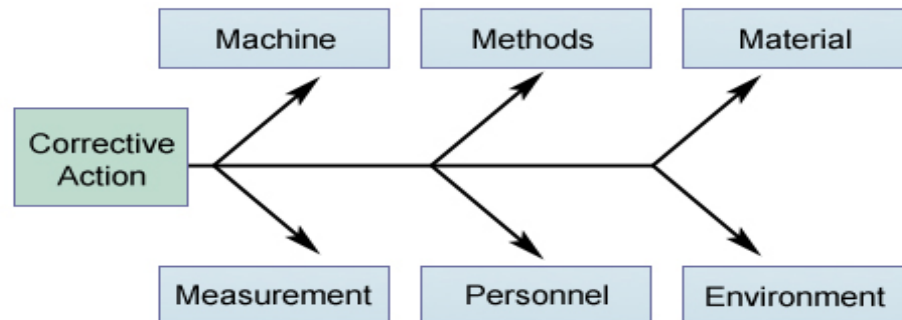
- **identify defect causes**

When you have identified the major causes contributing to the problem, you can determine the how they relate to each of the major categories. There are three approaches to this analysis:

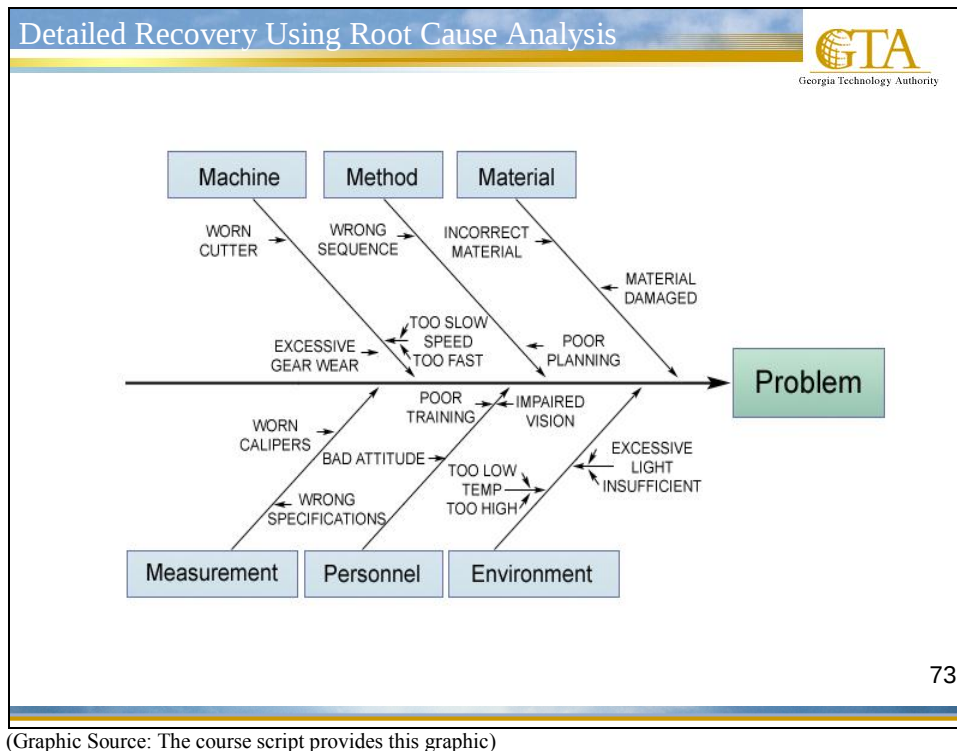
- the random method
- the systematic method
- the process analysis method

- **identify corrective action**

Based on the cause-and-effect analysis of the problem and the determination of causes contributing to each major category, identify corrective action. Corrective action analysis is performed in the same manner as the cause and-effect analysis. The cause-and-effect diagram is simply reversed, so that the problem box becomes the corrective action box as shown in the below figure.



Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)



Identifying Causes

When you have identified the major causes contributing to the problem, you can determine the causes related to each of the major categories. There are three approaches to this analysis:

- the **random method** – list all major causes contributing to the problem at the same time and identify the possible causes related to each of the categories that result in project failure
- the **systematic method** – focus your analysis on one major category at a time, in descending order of importance. Move to the next most important category only after completing the most important one.
- the **process analysis method** – identify each sequential step in the process and perform root cause analysis for each step, one at a time

Topic 3: Detailed Recovery using Root Cause Analysis (cont'd)

Detailed Recovery Using Root Cause Analysis



In some cases, the project management system itself may be the cause of project failure.



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(Graphic Source: The course script provides this graphic)

Project Management System (Methodologies)

The project management system sets out the **good practices** required to **facilitate implementation** of the **performing organization's rules and regulations**. Its primary role is to provide guidance to the project.

As the project recovery team moves through the process of identifying and analyzing root causes and then addressing a project recovery plan, the question should be asked if the current project management system is working. There may be cases where the root cause of the failing project is the system and it is this that needs to be recovered, rather than anything in the project scope, schedule or budget.

A project management system may be the cause of project failure if

- the project needs to abide by too many rules or regulations and the necessary work to guide the project is reprioritized
- the project is managing the project management system rather than the other way around
- the project management system is out-of-date and proposed guidelines are ineffective
- the project is over- or under-audited

Topic 3: Exercise – Championing a Recovery Solution

Exercise



Exercise: Championing a Recovery Solution



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Championing is communication that is tailored to a specific audience. In order to effectively persuade your management team to follow a recovery plan based on root cause analysis, you should follow championing guidelines.

You and your team are in the process of completing a brainstorming session and identifying solutions to recover (or abandon) a project. However, you must communicate and champion this information to your senior manager and convince him or her that this is the best approach.

Using the championing guidelines provided, you must convince the senior manager of the project recovery solution:

Guidelines

- Given the project read-out, in the accompanying record, plan your strategy on how you would like to deal with the project
- Explain why your senior manager should listen to what you have to say
- Shape the argument to your senior manager's style of learning and listening
- Assess your senior manager's technical knowledge
- Attempt to elicit support from others
- Cultivate and practice your communication skills

Topic 4: Developing a Heart-Burn List

Developing Heart-Burn List



Heart Burn



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(Graphic Source: The course script provides this graphic)

Heart-Burn List

A heart-burn is a list of factors that must be addressed by the recovery projects. These are **MUST DO** items and if not addressed the recovery project will not proceed.

This list can be generated from a number of different sources:

- the critical factors that are taken from a root-cause analysis
- examining frequency of occurrences of different factors (this is the outcome of the Pareto Analysis)
- experience from lessons learned on previous recovery projects
- opinions and judgments given on information and data gathering (i.e. modified Delphi technique)

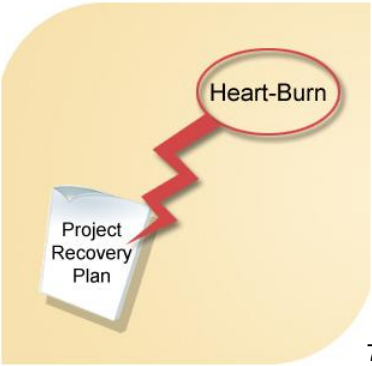
A **heart burn** is anything that causes immediate stress to a project recovery plan. How the data is gathered varies from project to project but the list is a key point of focus for each and every recovery team member.

Topic 4: Developing a Heart-Burn List (cont'd)

Developing Heart-Burn List



A **heart burn** is anything that causes immediate stress to a project recovery plan.



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(Graphic Source: The course script provides this graphic)

Heart-Burn List

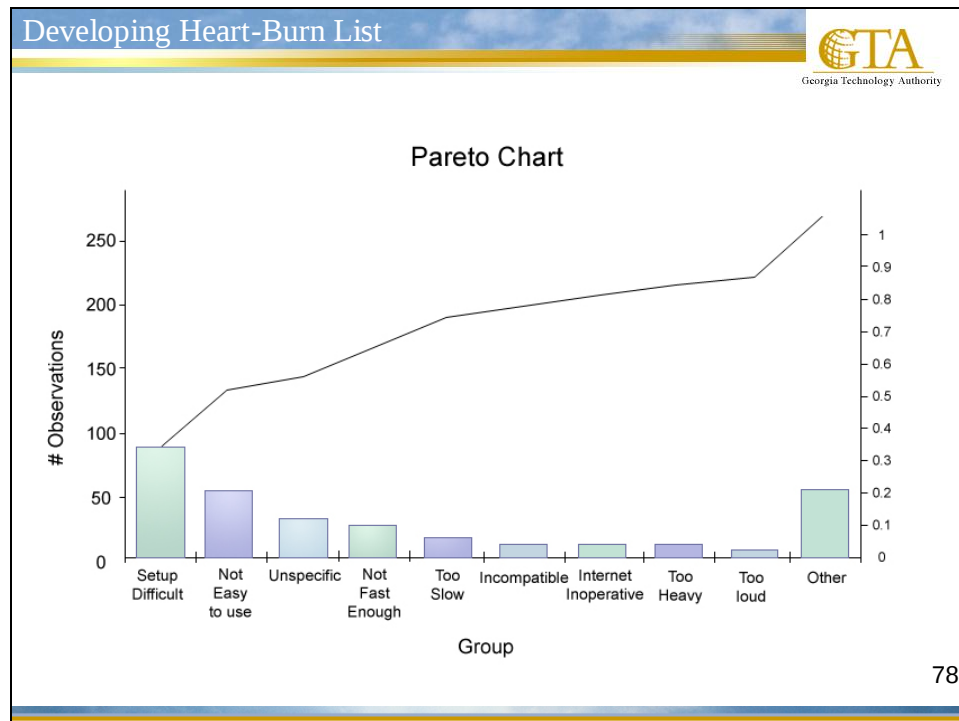
A heart-burn list sets out project failure causes that must be addressed immediately by the project recovery team if they are to make any progress.

Example of heart-burn factors include

- no support from senior management – there may be a noticeable lack of support from senior management, which is leading to mutiny within the project. If the recovery solution is to have any chance of succeeding, it must have support.
- project management systems ineffective – the guidelines that support the project management system are ineffective and should be removed immediately

Depending on the duration of the project, a heart-burn list may be created on a daily basis.

Topic 4: Developing a Heart-Burn List (cont'd)



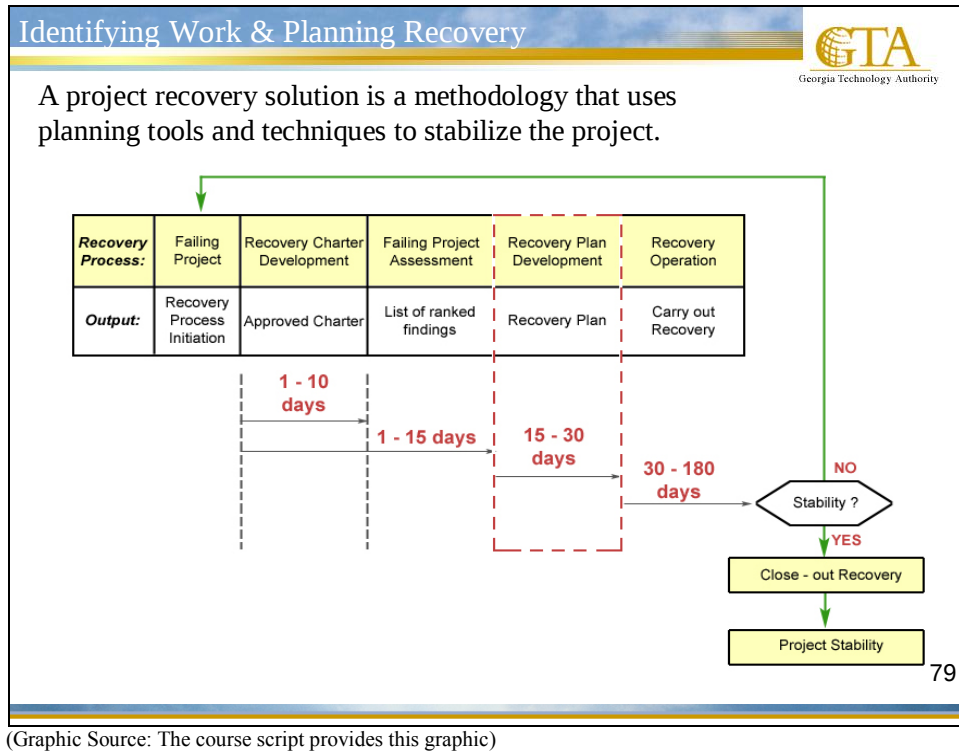
Pareto Principle

According to the Pareto Principle (also known as the 80/20 Rule) a small number of causes are responsible for a large percentage of the effect, in a ratio of about 20:80. Expressed in a management context, 20% of a person's effort generates 80% of the person's results. The corollary to this is that 20% of one's results absorb 80% of one's resources or efforts. For the effective use of resources, the manager's challenge is to distinguish the right 20% from the trivial 80%.

In a failing project there may be 20 percent of the causes dominating why a project is failing and 80 percent of the causes yielding 20 percent of the reasons for project failure.

It makes sense to direct the project recovery team's energy toward removing the 'show-stoppers' (or heart-burns) in an effort to expedite the recovery process. A heart-burn list should be created with the top 20% of factors determined using the Pareto Principle.

Topic 5: Identifying Remaining Recovery Work



Project Recovery Solution

When all roadblocks are removed a project recovery plan needs to be put in place that answers the following questions:

- should the project reduce functionality to recover?
- should the project be re-planned
- what deadlines can be met and will the budget be met?
- how is project recovery information going to be presented to stakeholders for agreement?

Once these decisions are made, the following tools and techniques should be used to aid with the project recovery solution:

- create work breakdown structure for recovery
- prepare recovery budget
- define control points

Topic 5: Identifying Remaining Recovery Work (cont'd)

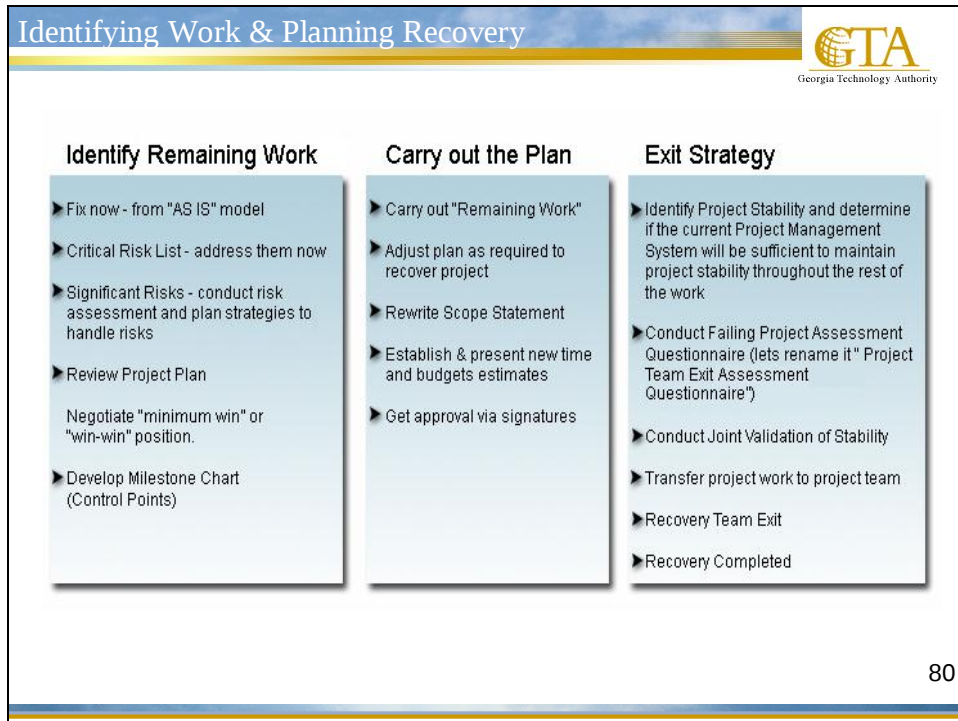
- baseline recovery work
- obtain approvals budget

A project recovery solution is the methodology that uses these planning tools and techniques to stabilize the project.

The project recovery solution will show how the root cause analysis outputs are mapped to the objective. Project recovery team members need to take ownership for sections of the recovery solution outputs and sub-plans to ensure that the solution is enacted and achieved.

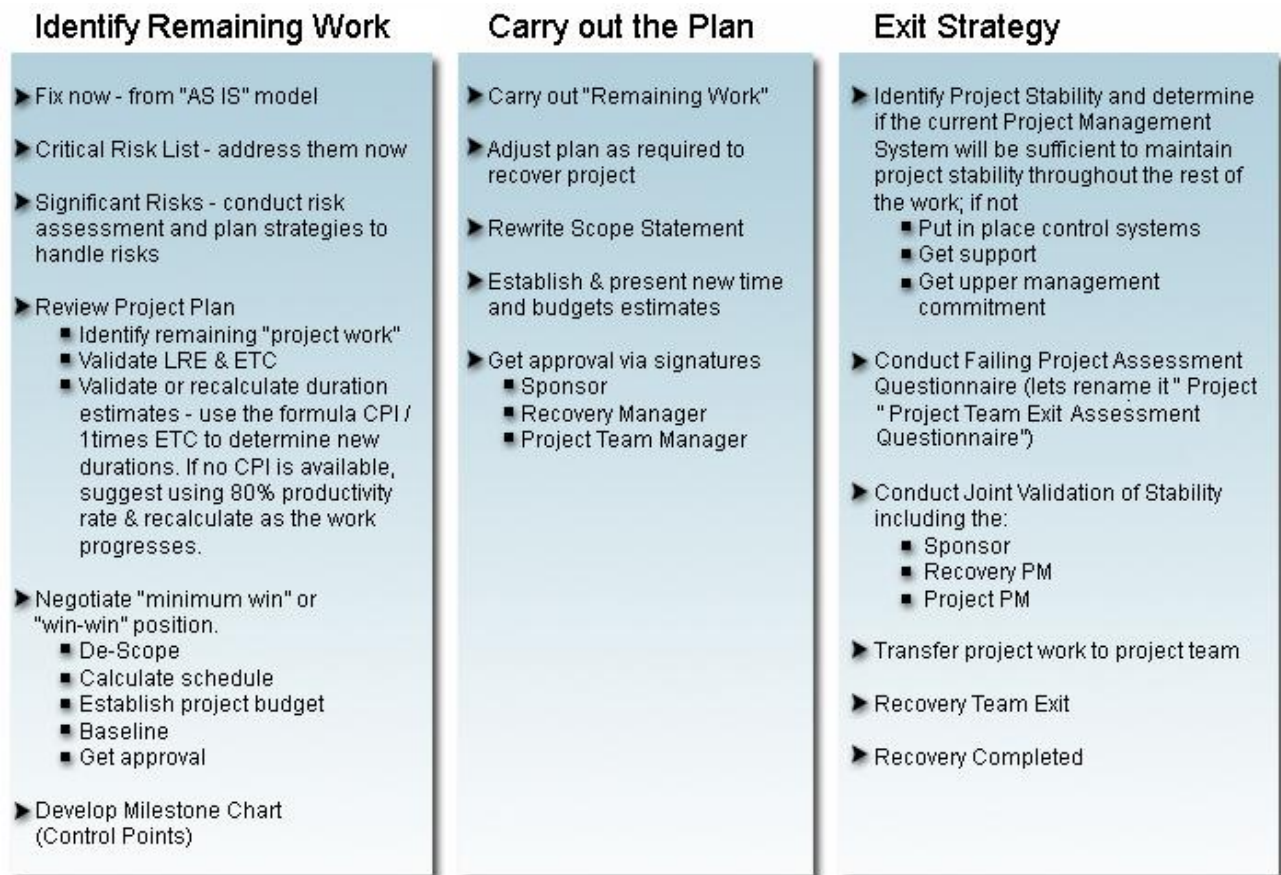
To avoid unnecessary work in the future, a project team member should be assigned to define and distribute a style template so that everyone applies the same look and feel to the work that is being carried out. The role of recovery owner (generally the project recovery manager) needs to be assigned. This person is responsible for reviewing solution outputs for consistency and compatibility with the overall objective and ensuring that the total solution 'works'.

Topic 5: Identifying Remaining Recovery Work (cont'd)



(Graphic Source: The course script provides this graphic)

Topic 5: Identifying Remaining Recovery Work (cont'd)



(Graphic Source: The course script provides this graphic)

Lesson 4: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: Recovery Team Formation

- General project management skills that are critical for successful project recovery include
 - communication skills
 - expediency
 - business and project management skills
 - decision skills
 - technical skills
 - process skills
 - organization and detail skills
- Specific characteristics a recovery project manager should possess include the ability to
 - speedily integrate into a project
 - gather data in a quick and precise manner
 - make decisions quickly and take effective action
 - manage people in a stressful environment
 - communicate information to senior management
- Project recovery teams determine the ultimate success of the recovery process. Project recovery managers must be able to quickly develop a cohesive team with a set of common values and a vision sufficient to bind them together and guide them in an appropriate direction to achieve the objective of project stabilization.

From this topic you should **take away** the following:

- an understanding of the skills required by an effective project recovery manager and team

Topic 2: Kick-off Meeting

- A kick-off meeting is one of the most valuable forums in which the project recovery manager can elicit initial information and deliver the precise objectives for the recovery process. Such meetings should be driven by a sharp and concise agenda.
- The kick-off meeting brings together the existing project team, the project recovery team, stakeholders, senior management, and others who need to officially recognize that the project is failing and needs to be recovered.
- After the meeting, all participants should have a clear view of
 - the course of action to recover the project
 - who the project recovery manager is
 - recovery roles and responsibilities and who the key project recovery team members are
 - the project recovery objective
 - the general schedule, budget, and activities
 - benefits that these groups will realize upon stabilization of the project
 - challenges to complete the project

Lesson 4: Summary (cont'd)

- the next steps in the project

From this topic you should **take away** the following:

- an understanding of the important role the project recovery kick-off meeting plays in the success or failure of project recovery

Topic 3: Detailed Recovery using Root Cause Analysis

- Root cause analysis is a tool for identifying factors that cause project failure and for alleviating these factors through a series of plans. It is a process that is part of the effort to build a culture of safety and move beyond the culture of blame. To be thorough, a root cause analysis must include
 - determination of human and other factors
 - determination of related processes and project management systems
 - analysis of underlying cause and effect systems through a series of why questions
 - identification of risks and their potential contributions
 - determination of potential improvement in processes or systems
- Tools and techniques that can be used in a root cause analysis include structured interviews and brainstorming using cause and effect diagrams. Cause and effect analysis uses diagramming techniques to identify the relationship between an effect and its causes. Cause and effect diagrams are also known as fishbone diagrams.
- Three other approaches for identifying cause and effect are
 - random method – list all major causes contributing to the problem at the same time and identify the possible causes related to each of the categories that result in project failure
 - systematic method – focus your analysis on one major category at a time, in descending order of importance. Move to the next most important category only after completing the most important one.
 - process analysis method – identify each sequential step in the process and perform root cause analysis for each step, one at a time
- As the project recovery team moves through the process of identifying and analyzing root causes and then addressing a project recovery plan, the question should be asked if the current project management system is working. There may be cases where the root cause of the failing project is the system and it is this that needs to be recovered, rather than anything in the project scope, schedule or budget.

From this topic you should **take away** the following:

- an appreciation of how root cause analysis is used in project recovery
- an understanding of specific root cause analysis techniques, such as cause and effect analysis

Topic 4: Developing Heart-Burn List

- According to the Pareto Principle (also known as the 80/20 rule) a small number of causes are responsible for a large percentage of the effect, in a ratio of about 20:80. To ensure effective use of resources, the manager's challenge is to distinguish the right 20% from the trivial 80%.

Lesson 4: Summary (cont'd)

- It makes sense to direct a project recovery team's energy toward removing the 'show-stoppers' (or heart-burns) in an effort to expedite the recovery process. A heart-burn list should be created with the top 20% of factors that are determined using the Pareto Principle.
- A heart-burn is anything that causes immediate stress to a project recovery plan. Heart burns can be identified using root-cause analysis or Pareto analysis. A heart-burn list sets out project failure causes that must be addressed immediately by the project recovery team if they are to make any progress.

From this topic you should **take away** the following:

- an understanding of how the Pareto Principle can be used to identify "heart-burn" issues

Topic 5: Identifying Remaining Work and Planning for Recovery

- A project recovery solution is a methodology that uses planning tools and techniques to stabilize a project. The project recovery solution shows how root cause analysis outputs are mapped to the objective.
- Planning the scope of the project is carried out once a high-level approach to the delivery of the project has been prepared. It involves defining the
 - phases/drops
 - software development processes
 - methods and tools
 - integration and testing strategy
 - implementation strategy
 - project organization
- These outputs map closely to the following sections of the project recovery charter:
 - introduction
 - project mission, goals, and objectives
 - scope
 - approach
 - project organization
 - project management, control, and reporting

From this topic you should **take away** the following:

- an ability to define project scope using the work breakdown structure and to link scope to the project recovery solution

Lesson 5: Executing the Recovery Solution

Topic 1: The Panoramic View of the Project

Topic 2: Carrying Out the Plan

Topic 3: Monitoring the Recovery Baseline

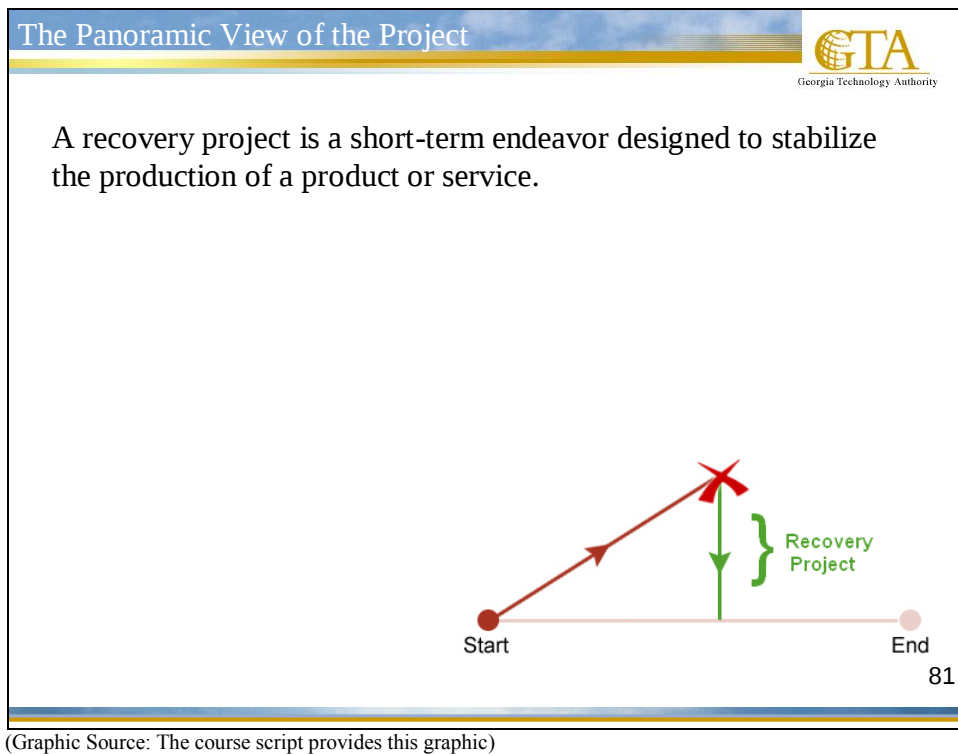
Topic 4: Stabilizing the Failing Project

Student learning objectives

After completing this lesson, you should be able to

- discuss the potential remedies for recovering a project and the elements in an effective project recovery plan
- describe the tools and techniques used both to carry out a project recovery plan and to monitor and control the performance of the project
- assess the stability status of a project before the project is returned to its original project team or to a new project team

Topic 1: The Panoramic View of the Project



The Big Picture

To define project recovery management, we first need to define a recovery project.

A recovery project is a short-term endeavor designed to stabilize the production of a product or service. For long term projects (e.g. greater than 2 years), short term could mean 3 to 6 months, but for shorter projects (e.g. 6 months), short-term could mean 4 to 6 weeks. In practical terms, it is an assignment or undertaking to create a deliverable that satisfies the mission of the organization.

A recovery project consists of a set of activities that are outside of day-to-day operations.

Recovery projects have budgets, deadlines, and an agreed set of requirements for the deliverable to be accepted as a 'stable project'.

Effective project recovery management is built on a solid foundation of planning. Once planned, the project team must then execute the work according to plan. And the project manager must control the work to ensure that the project plan was followed.

Topic 1: The Panoramic View of the Project (cont'd)

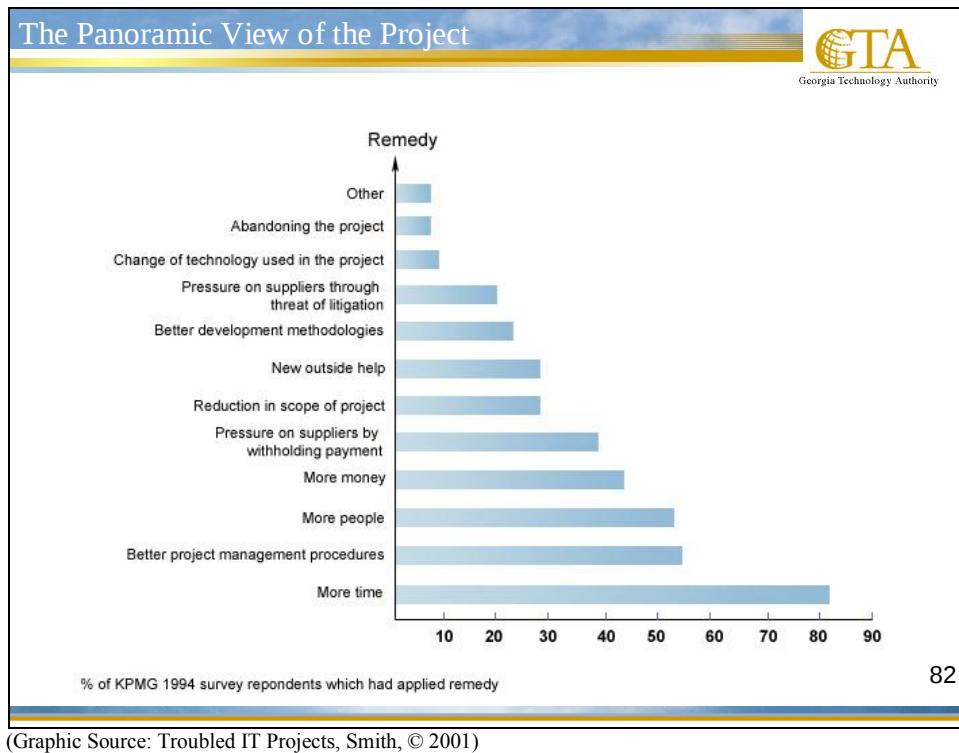
Specifically, the project manager should

- plan – prepare the items that need to be done on a daily/weekly basis
- act – empower the recovery project team to implement the plans
- check – ensure completed plans are reported on a daily basis to the project stakeholders
- react – if the objective is not getting completed, react or re-plan to ensure that it is

Project recovery management is about knowing where you're going, planning on how you'll get there, and then delivering on the promises within the plan.

Recovery projects, like all projects, have constraints. For example, you may inherit a failing project that has to be done by a given deadline or within a limited budget.

Topic 1: The Panoramic View of the Project (cont'd)



What is to be Accomplished?

When seeking to turnaround a failing project, project managers have a large number of options available. The slide displays responses to a 1994 KPMG survey that asked respondents which of a range of remedies they had applied to failing projects.

Three of the most popular remedies involved applying additional resources – money, people or time – to the project, without changing its processes in any way. Another two involved the buyer applying extra pressure on the vendor by threatening legal action or withholding payment. While litigation and abandonment are not actually remedies for failing projects, they do represent a form of exit strategy if no turnaround strategy can be found.

Of the remainder, the most popular remedy cited was the **introduction of better management procedures**, which was chosen by over 50% of respondents. Some examples of how this can be achieved include

Topic 1: The Panoramic View of the Project (cont'd)

- **drawing up contingency plans** – contingency plans cover the possibility that a project will not be implemented on time and as specified. The fact that a recovery solution is required for a project only emphasizes the need for a contingency plan to be in place.
- **including adequate slack time in the recovery solution** – it's important to recognize that technical problems can occur and team morale will already have suffered as a result of the project becoming troubled. To restore morale and allow for unforeseen circumstances, the milestones and deadlines set in a turnaround strategy must be realistic.
- **encouraging cooperation and dialogue** – a mature, productive relationship that fosters cooperation and dialogue between vendors and government agencies is crucial to the development of a successful turnaround strategy

Approximately 28% of respondents claimed that **reducing the scope of the project** was the best remedy to turnaround a failing project. As with better management procedures, there are many ways in which this can be done, including

- **involving end users** – consulting end users in the development of a project turnaround strategy is useful, as they are best placed to advise on what level of functional de-scoping is feasible for an initial release
- **implementing modular and incremental strategies** – this reduces the scope of a project by addressing the requirements of one functional area at a time. It is especially useful in IT projects, where it is often possible to provide an entry-level degree of functionality that can subsequently be expanded through further releases of the application.

Other popular remedies included

- **changing the technology used in the project**
- **employing new outside help**
- **improving development methodologies**

Topic 1: The Panoramic View of the Project (cont'd)

The Panoramic View of the Project



Earned value analysis has an important part to play in measuring the performance of the recovery solution.



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(Graphic Source: Troubled IT Projects, Smith, © 2001)

Monitoring the Recovery Baseline using Earned Value

Earned value analysis has an important part to play in measuring the performance of the recovery solution.

As we've learned, a project that measures its earned value must be capable of continuously monitoring **two critical performance variances** resulting from the following three points of measured data: planned value (PV), earned value (EV), and actual costs (AC) for the earned value.

These two variances are the **schedule variance (SV)** – the difference between the earned value and the planned value – and the **cost variance (CV)** – the difference between the earned values less the actual cost incurred to achieve the earned value. The formulae for SV and CV are displayed in the below table:

Variance	Formula
Cost variance	$CV = EV - AC$
Schedule variance	$SV = EV - PV$

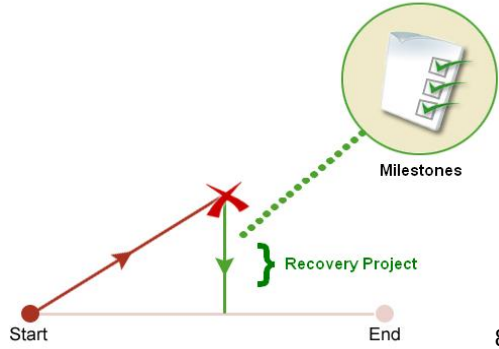
The cost variance and the schedule variance are the two most common measures used to determine whether or not project work is being achieved as planned.

Topic 1: The Panoramic View of the Project (cont'd)

Milestones



Milestones are invaluable in a recovery scenario, as they focus the project recovery team's attention on what needs to be done.



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(Graphic Source: Troubled IT Projects, Smith, © 2001)

Monitoring the Recovery Baseline using Project Milestones

A **milestone** is defined as a significant event in a project, usually the completion of a major deliverable. Milestones are used for long work packages and are typically placed between groups of functional activities.

In a recovery scenario, milestones are invaluable because they focus the project recovery team's attention on what needs to be done. Milestones can be generated on a daily basis in line with the resolution of whatever may be part of the daily heart-burn list.

For example, if the project recovery manager issues a bulletin of the daily items, or show-stoppers, that need to be resolved, the milestone is the resolution of these items and the communication of them to the project stakeholders.

If a milestone is missed, it can be determined that a critical time issue is appearing. If this is not addressed, it could have serious consequences for the success of the project.

Topic 1: The Panoramic View of the Project (cont'd)

Monitoring the Recovery Baseline using Risk Monitoring

Risk monitoring systematically tracks and evaluates the effectiveness of risk handling actions against established metrics. The process can also provide a basis for developing additional risk handling strategies, updating existing risk handling strategies, and reanalyzing known risks. The results of risk monitoring can also be used to identify new risks and revise some aspects of risk planning.

Risk monitoring establishes a cost, performance, and schedule management indicator system that provides early warning of potential problems to allow management actions. Risk monitoring is a proactive technique for obtaining objective information on a project's progress to date in order to reduce risks to acceptable levels.

Risk monitoring techniques include the following:

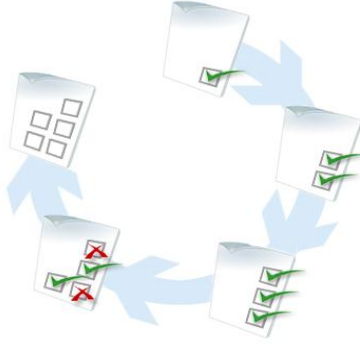
- **earned value (EV)** – uses standard cost/schedule data to evaluate a project's cost performance and provide an indicator of schedule performance
- **program metrics** – formal, periodic performance assessments of selected development processes. These evaluate the extent to which the development process is achieving its objectives.
- **schedule performance monitoring** – uses project schedule data to evaluate how well the project is progressing to completion
- **technical performance measurement** – a product design assessment that estimates the values of essential performance parameters of the current design, as affected by risk handling actions

Topic 1: The Panoramic View of the Project (cont'd)

The Panoramic View of the Project



Effective project document systems play an important role in determining why projects are failing and how they can be recovered.



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(Graphic Source: Troubled IT Projects, Smith, © 2001)

Presenting the New Plan

Developing effective project procedural document systems can play an important role in determining why projects are failing and how they can be recovered. A document system can include: -

- project recovery charter,
- recovery schedule,
- recovery management plan,
- recovery budget,
- archival of change requests,
- documentation of issues in a log
- risk management plan,
- staffing management plan,
- documentation of minutes of all meetings, and
- approval and archiving of all deliverables.

Topic 1: The Panoramic View of the Project (cont'd)

The project recovery plan becomes the essence of the recovery solution. The characteristics of a plan are

- **uniformity**
- **clear and effective communication of information**
- **standardized data formats**
- **a basis for analysis**
- **reduced conflict and confusion**

Despite these benefits, there are restrictions when dealing with failing projects:

- **overhead burden** – introducing enhanced organizational formality through policies, procedures, and forms can be costly, and may lose the essence of expediency
- **start-up delays** – requiring additional project definition before implementation may cause delays
- **stifled creativity and reduced individual responsibility** – the system is often perceived as stifling creativity and shifting project control from the responsible individual to an impersonal process

Effective documentation helps management to trace the causes of failing projects and thus develop an appropriate recovery plan.

Topic 1: Exercise – Viewing the Big Picture

Exercise



Exercise: Viewing the Big Picture



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(Graphic Source: Troubled IT Projects, Smith, © 2001)

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned, with current costs running at \$2.3 million.

Topic 1: Exercise – Viewing the Big Picture (cont'd)

After nine months, the state authority appointed you as project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

You have advised the state authority that the project should be recovered and a project recovery charter has been presented to formally indicate this. As project recovery manager, you want to be very clear on the success criteria, requirements, and measurements tools for the recovery project.

To present the big picture, you are to use the project recovery statement template to document the recovery project.

Topic 1: Exercise – Viewing the Big Picture (cont'd)

Project Recovery Charter																			
Project Recovery Information • Organization Name: - Georgia State Authority • Project Sponsor: - Georgia State Authority • Date: - 30-June-2004																			
Detailed Project Information • Project Objective ➤ Provide light-rail system within major urban areas that will facilitate professional and private commuters ➤ Provide a rail system between major urban areas that will facilitate professional and private commuters ➤ Provide a transportation system that will reduce the number of auto users ➤ Implement – in a seamless fashion – a new system that has minimal impact on current operations ➤ Educate public on transportation alternatives to ensure each individual understands new system ➤ Provide transportation system that is cost effective and geared toward profits • Start Date: - 01-Oct-2003 • Planned Completion Date: - 15-Jan-2006 • Budget: - \$2 million for initial construction phase • Project Information ➤ the CPI is 57% (which is 75% over budget) ➤ the SPI is 66% (which is 51% behind schedule)																			
Project Personnel • Existing Project Manager: - John Smith • Existing Project Team Members<table border="1"><tr><td>Name: Joe Smith</td><td>Role: - Lead Designer</td></tr><tr><td>Name: Holly Smith</td><td>Role: - Lead Architect</td></tr><tr><td>Name: Brittany Smith</td><td>Role: - Administrator</td></tr></table> • Contractors:<table border="1"><tr><td>Name: X Construct</td><td>Role: Primary Contractors</td></tr><tr><td>Name</td><td>Role</td></tr><tr><td>Name</td><td>Role</td></tr></table> • Suppliers:<table border="1"><tr><td>Name: Concrete Supply</td><td>Role: Sole Suppliers of Concrete</td></tr><tr><td>Name</td><td>Role</td></tr><tr><td>Name</td><td>Role</td></tr></table>		Name: Joe Smith	Role: - Lead Designer	Name: Holly Smith	Role: - Lead Architect	Name: Brittany Smith	Role: - Administrator	Name: X Construct	Role: Primary Contractors	Name	Role	Name	Role	Name: Concrete Supply	Role: Sole Suppliers of Concrete	Name	Role	Name	Role
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Name: X Construct	Role: Primary Contractors																		
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Name	Role																		
Name: Concrete Supply	Role: Sole Suppliers of Concrete																		
Name	Role																		
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Topic 1: Exercise – Viewing the Big Picture (cont'd)

- Project Recovery Manager:

Name: - 'Your Name'
Role: - Project Recovery Manager and liaison with contractors
Responsibility: - Manage all project and vendor activities

Assessment Methodology

Face-to-face interviews will be conducted to gather information with all individuals and team members represented in the section 'Project Personnel.'

Project Assessment

- Project Failing Indicators
 - The contractors do not have the necessary skills to complete the project
 - The project is not resourced adequately
 - The CPI is 57% (which is 75% over budget)
 - The SPI is 66% (which is 51% behind schedule)
- Psychological / Environment Failing Indicators
 - Stakeholders are not comfortable with the project recovery and are unwilling to release the project objective due to public exposure and pressure
 - The contracting team may be unwilling to identify the skill deficiency as their reputation may be affected.
- Assessment Outputs: -

Issues	Resolved (Yes / No)
Contractors do not have the necessary skills to complete the project	No

Key Milestones

- Recovery Milestone

Milestone: All project plans revised	Date 05-July-04
Milestone: Project scope confirmed	Date 10-July-04
Milestone: All project staff trained	Date 15-July-04

- Critical Milestones: -

Milestone: - Skill gap identified	Date 04-July-04
Milestone	Date
Milestone	Date

Topic 1: Exercise – Viewing the Big Picture (cont'd)

Data Requirements

- Current project plan
- Current risk response plan
- All project scope documentation

War room will be required with access to all project files

Approvals / Signatures

Project Sponsor: - Georgia State Authority
Senior Manager: - Georgia State Authority
Recovery Project Manager: - 'Your Name'

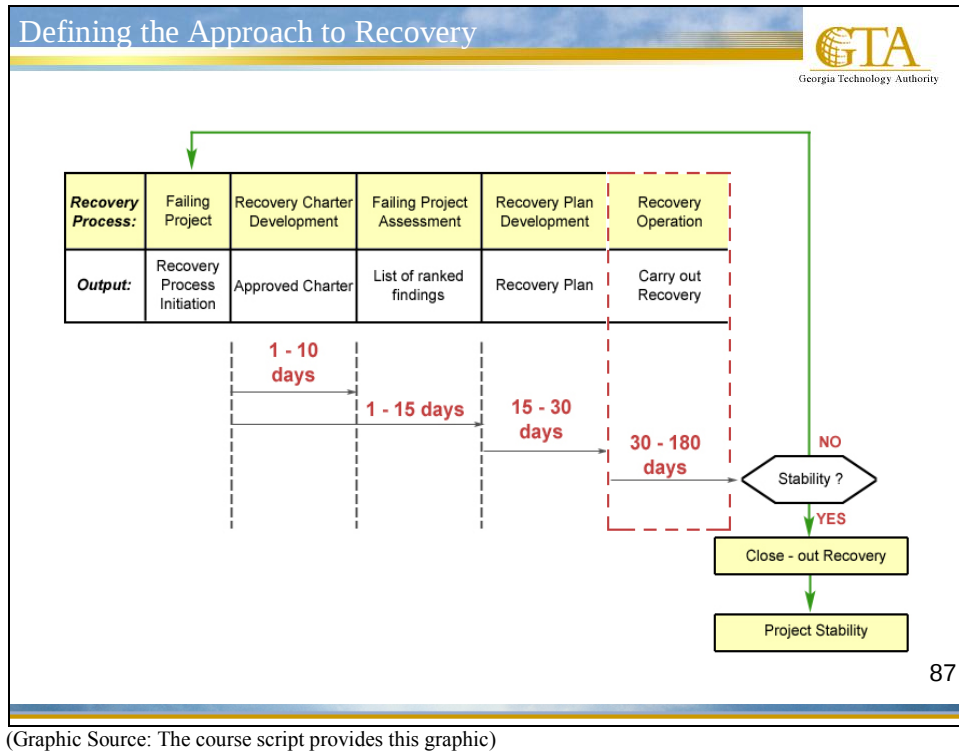
Topic 1: Exercise – Viewing the Big Picture (cont'd)

Sample template

Project Recovery Statement						
Purpose of the Recovery Project Provides an explanation of the purpose of the recovery project						
Recovery Product Description Provides a brief description of the recovery project with basic functionality						
Recovery Project Status Provides a list of the project control tools and techniques used to understand project recovery status and performance						
Recovery Team Description Describes the background and experience of the project recovery team participants						
Task Description & Milestones Identifies the meaningful tasks that are in progress and that need to be completed to recover the project. This section can be broken into two sections: - • Show-Stoppers Tasks: - The tasks that MUST be completed for the project recovery to stand any chances of success • Recovery Tasks: - The task that must be completed for the recovery to meet its objective						
Constraints Contains any factors that are limiting the recovery project						
Assumptions Contains any assumptions that have been made to initiate and progress the recovery plan						
Critical Success Factors Identifies the factors that must be met for the recovery to be successful						
Risk Identifies any risks that may be evident as part of the recovery and associating this with an event status(i.e. high risk, medium risk or low risk) <table border="1"><thead><tr><th>Risk</th><th>Event Status</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	Risk	Event Status				
Risk	Event Status					

Topic 1: Exercise Worksheet

Topic 2: Carrying Out the Plan



Defining the Approach

When a project recovery solution is drafted, the outputs need to be mapped to the desired outcomes, and any gaps must be identified. Recovery solution outputs that are not reflected in the proposal may be unnecessary, but it is more likely that the structure used to realize the recovery solution will need defined planning.

Once a high-level approach to the delivery of the project has been prepared, the scope of the project can be planned. This involves defining the

- phases/drops
- software development processes
- methods and tools
- integration and testing strategy
- implementation strategy
- project organization

These outputs map closely to the following sections of the project charter document.

- introduction
- project mission, goals, and objectives
- scope
- approach
- project organization
- project management, control, and reporting

Topic 2: Carrying Out the Plan (cont'd)

The level of detail required is a matter of judgment – but the objective is to obtain an overall picture of how the project will be managed and delivered. The detailed procedures can be added after the contract has been signed. The important thing is that there is a complete and cohesive framework in place on Day 1 of the project.

Topic 2: Carrying Out the Plan (cont'd)

Carrying Out the Plan



When decisions need to be made urgently, **best-guess estimates**, although very subjective, can be quickly obtained.



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(Graphic Source: The course script provides this graphic)

Best-Guess Estimates

As the recovery proceeds, performance estimates continually need to be generated. However, when decisions need to be made urgently, formal estimation techniques may take too long. Best-guess estimates however, although very subjective, can be quickly obtained.

A very basic approach is to

- look at the project recovery documentation to ascertain the degree and complexity of the functionality and the complexity of the interfaces
- use the experience gained on similar projects to develop a timescale for the project and establish an approximate size of the team

A far better approach is to generate early estimates from the requirements documentation. This is normally achieved using skilled personnel who specialize in the technical side of the project.

Guess-estimates can be based on some of the formal project management techniques:

- **bottom-up estimation** – accurate estimates depend on many factors, for example, the skill of the estimator, the quality of the requirements, or the project management system in use. Bottom-up estimation takes time and may not be a viable option for the project recovery team.
- **top-down approach** – this approach can be used as a cross check on an activity-based best-guess estimate. The top-down approach is viable for recovery projects, as it will use the information provided through the experience of the recovery team.

Topic 2: Carrying Out the Plan (cont'd)

One factor to be taken into consideration is that unique element of every recovery project; the environment in which it is been carried out. This will differ from project to project and may impact on the estimates.

Previous projects rarely match current opportunities very closely; application domains, environments, project management systems, and even team members can all differ from project to project

Topic 2: Carrying Out the Plan (cont'd)

Carrying Out the Plan



Some hints and tips that can help build an accurate project estimate include:

- use a spreadsheet or automated cost estimating tool
- categorize each function / requirement
- round up individual estimates
- assess average level of skills
- develop set of estimates independently
- commission independent estimates
- be conservative
- do 'sanity check'
- build contingency into the estimates



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(Graphic Source: The course script provides this graphic)

Hints and Tips on Estimating

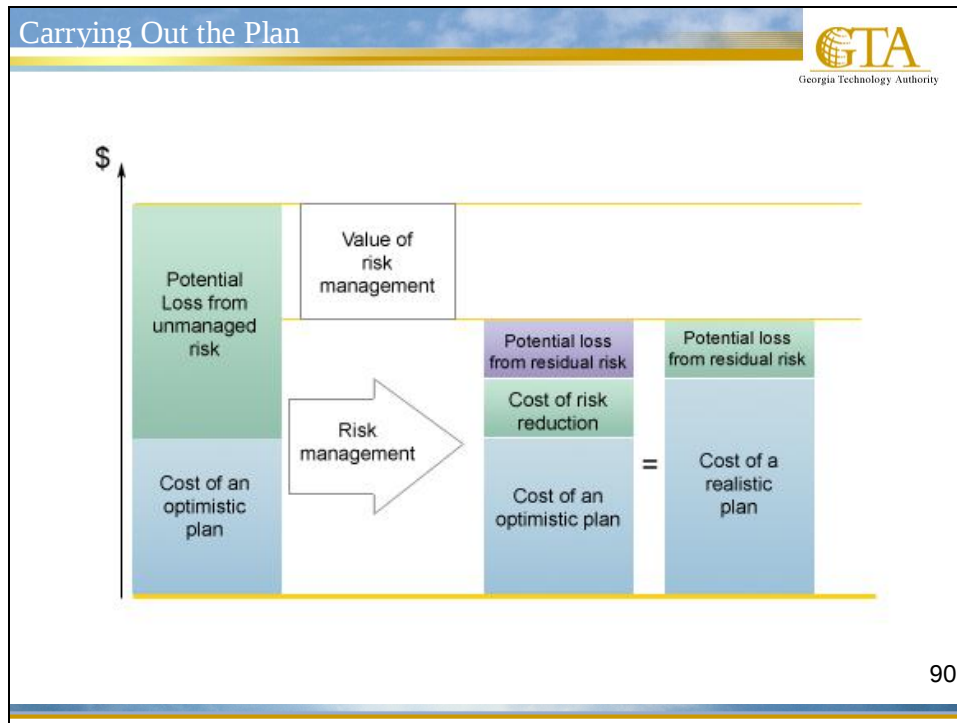
There are a number of hints and tips that can help build an accurate project estimate:

- use a **spreadsheet or automated cost estimating tool**, and retain each set of estimates; they provide a vital audit trail
- **categorize each function/requirement** on your functional decomposition as simple, average, or complex. Work through your WBS and for each activity, review the functional decomposition and estimate the effort associated with each function/requirement.
- **round up individual estimates** to the nearest day or hour
- estimate each activity and task, taking into consideration which team member will do the work. If you don't have this information, don't assume too much – **assess the average level of skill available in your recovery team**.

Topic 2: Carrying Out the Plan (cont'd)

- when you have prepared a set of estimates, put them away and go home. The next day, **develop a new set without referencing the previous one**. If they are very different, repeat the process until the correlation improves.
- **commission two independent estimates**, from experienced developers or development managers. Make sure they use the same tools, and when both are completed, arrange for them to get together and walk through their estimates, concentrating on differences until agreement is reached.
- **be conservative** about the degree of reuse which can be achieved using software assets from previous projects, and realistic about the effort required to modify them
- use an automated tool as a **'sanity check'** on manual estimates
- **build contingency into the estimates** at the line-item level, by defining best case, worst case, and likely case resource usage. This prevents blanket contingency from hiding the difference between new, complex tasks and more familiar, simpler ones. It will also enable you to run a Monte Carlo analysis on the plan.

Topic 2: Carrying Out the Plan (cont'd)



(Graphic Source: The course script provides this graphic)

The Value of Risk Management

All recovery projects are subject to generic, ever present risks, such as the risk that skilled staff might leave, and to more random, less predictable events, such as the appearance of a significant software bug in an IT project. Generally, the more likely a risk is to occur, the easier it is to foresee and manage.

The goal of risk management is to plan for these eventualities and, if they occur, to preserve the quality and integrity of a recovery by reducing escalation. While a risk may not impact on the immediate recovery solution, it may be a factor that should be considered for the future stability of the project. This is achieved by

- **identifying the foreseeable risks**
- **taking risk reduction actions** to reduce the likelihood of each risk
- **setting out a contingency plan** to be followed if each risk materializes

The overall cost of a project that manages its risks is lower than the cost if risks are unmanaged.

Risk planning is an ongoing activity, not something that is done at the beginning of a project only. Project managers should review and update the risk register on an ongoing basis.

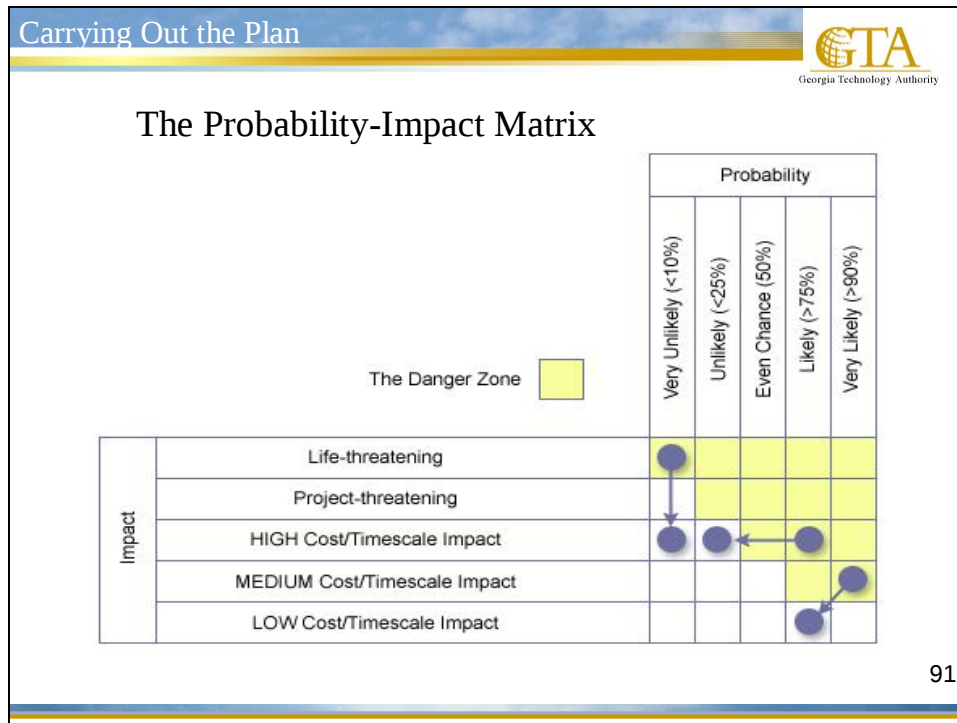
The purpose of **risk planning** is to define the most effective risk reduction/mitigation actions possible, in order to reduce the probability of each risk materializing, and the impact when it does. It also involves defining the actions to be taken if the risk does materialize, and what event should trigger the execution of a contingency plan.

Topic 2: Carrying Out the Plan (cont'd)

Issue planning focuses on understanding the root causes of the issue, its impact on the project, and how to deal with it cost effectively.

Opportunity planning is the process of determining what actions can be implemented to take advantage of available opportunities to improve a project's product or reduce its cost or timescale. Opportunities are risks worth taking, once the potential positive and negative consequences have been fully considered.

Topic 2: Carrying Out the Plan (cont'd)



Risk Identification as part of a Project Recovery

Risk identification should ideally be done in a workshop, where the project manager can take advantage of the project team's experience, and ensure that the identification process is as comprehensive as possible.

The objectives of risk identification are to

- **review and analyze** issues and risks
- **identify** risk reduction actions, ownerships, timeframes, and costs
- **consider** worst-case scenarios and strategic options
- **consider** likely scenarios and plan future milestones for progress (i.e. include risk as part of daily / weekly project review)

When analyzing the risks faced by a project, it is necessary to have a number of meaningful ways of expressing your findings.

It is generally agreed that there are five types of risk:

- **financial** – risk that causes unacceptable financial exposure or reduces business benefits and thereby prejudices the original business case
- **functional** – risk that the product will not meet user requirements due to incorrect requirement definition or changes in the environment and business needs
- **technical** – risk that the chosen technology will not support the system
- **project** – risk that the vendor will be unable to deliver against the contract
- **systemic** – risk that the system will have such a large impact that it will alter the environment and all assumptions about costs and benefits

Topic 2: Carrying Out the Plan (cont'd)

Analysis should also always identify the root cause, as this may prevent a recurrence of the risk on a future project. Risk analysis therefore requires a means of expressing risk probability and risk impact.

- **Risk probability** is expressed as a qualitative likelihood of the risk occurring (very likely, likely, unlikely, very unlikely) or as a quantitative percentage probability. Typically, the project manager will decide whether to use quantitative or qualitative measurements, based on his or her preference.
- **Risk impact** can be expressed as a qualitative scale ranging from 'negligible impact' to 'life threatening.' However, impact typically needs to be expressed more tangibly, in specific time and cost estimates. A project manager must generate the best estimate possible of the cost and timescale impact of each risk.

The project recovery team should initially target the very likely, high impact risks that exist on a project, with the objective of transforming them into less likely risks, or risks with a lower impact (or both).

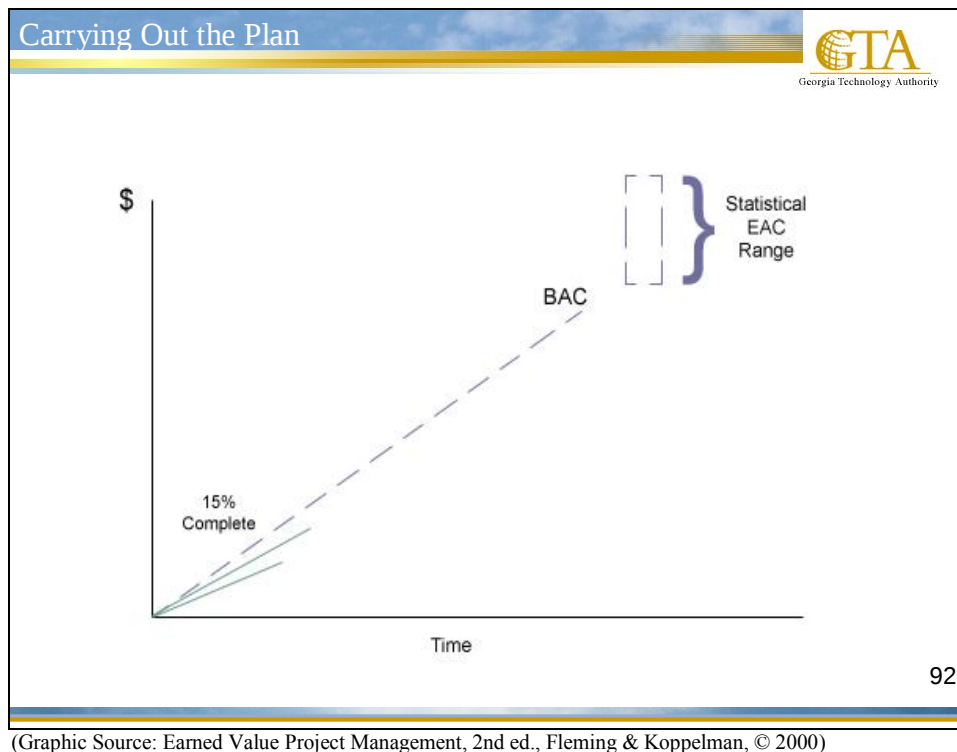
Each Probability-Impact Matrix contains a 'danger zone' – if risks fall within it, they become targets for risk reduction action planning. The danger zone itself differs between projects – an IT development project is very unlikely to contain any life threatening risks, for example, while a major construction project could easily contain such risk. The diagram on the slide (previous page) shows a Probability-Impact Matrix.

There are a number of ways that risk reduction can be achieved:

- **risk mitigation** – taking proactive steps to reduce the probability of the risk, or its impact
- **changing the process** – this can reduce the risk probability or impact
- **contractual transfer** – passing the risk to another party that is better able to handle it can virtually eliminate the risk, but can also be costly
- **contingency planning** – incorporating reserves to handle unforeseen events
- **reviewing lessons learned** from similar projects

It is important to note that all risk reduction actions cost money. Those undertaken prior to contract are classified as bid costs, while those that must be undertaken after the contract has been accepted should be costed and potentially built into the overall project price.

Topic 2: Carrying Out the Plan (cont'd)



Additional Work using Earned Value

Project recovery managers need to decide if additional work will need to be carried out to successfully complete the project recovery plan, and they frequently use **earned value** to make this call.

Earned value is the physical work accomplished plus the authorized budget for this work. Forecasting if the plan is being met and in turn the need for additional work with earned value requires that projects work to an integrated baseline, that is, the defined scope of the work must relate to the authorized resources, which are then set into a time frame for performance.

The benefit of using earned value is that it enables project managers to **forecast (probable) final cost from a very early stage of the project**. With earned value, the project manager does not have to wait until the project is 80% complete to know that there is a problem, but rather can forecast it from as early as the 15 percent completion point. At this early point, there is **still time to influence final results** if decisive action is taken.

Forecasting Additional Work using Earned Value

The example in the slide illustrates the benefit of using earned value forecasting. Although only 15% of the work has been completed, the project is not progressing well. Costs are higher than budgeted and the project is taking longer to complete than has been scheduled.

Earned value predicts final performance results, and provides a statistical range of values in time to take aggressive management actions. With an earned value baseline in place, the project can forecast **how much additional time and resources it will need** to complete the project.

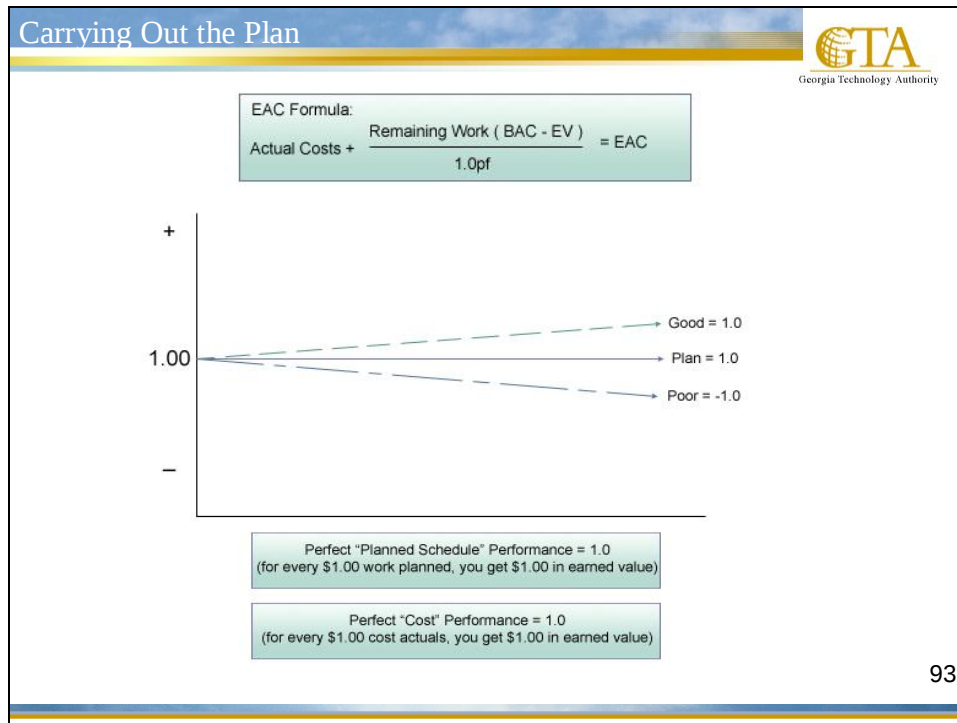
Topic 2: Carrying Out the Plan (cont'd)

Two performance indices resulting from earned value are needed to forecast the project's final cost and schedule results:

- the **Cost Performance Index (CPI)** represents the relationship between the value of the work physically completed and in process, related to the actual costs incurred for doing such work. If a project spends more money than is physically performed, the result is a performance 'overrun.'
- the **Schedule Performance Index (SPI)** measures the work accomplished to the baseline schedule

These two indices can be used collectively or individually to produce extremely accurate statistical forecasts.

Topic 2: Carrying Out the Plan (cont'd)



(Graphic Source: Earned Value Project Management, 2nd ed., Fleming & Koppelman, © 2000)

Forecasting Methodology

Any project employing earned value can continuously monitor its cost and schedule efficiency rates.

This is accomplished using two measurements:

- **actual performance against the planned schedule**
- **cost performance**

The first measurement is quantified and performed against a measurement of 1.0. In the above slide, perfect schedule performance is represented by one dollar of earned value accomplished for each dollar of work planned.

The second metric is also measured with a 1.0 performance standard, which represents the relationship of earned value accomplished against the actual costs incurred to do the work. This is also represented in the above slide.

Over time, numerous formulas have been developed for calculating the final Estimated Costs at Completion (EAC) on a project using earned value.

Topic 2: Carrying Out the Plan (cont'd)

It is possible to take three of the most widely accepted formulas and using them alone, quantify a reliable range of final values from which to display the final results. The process of statistically forecasting a range of final cost estimates is as follows:

- take the total of actual costs incurred to date
- determine the value of Work Remaining (WR), i.e. the budgeted value for uncompleted tasks expressed as the total Budget At Completion (BAC), less the earned value already accomplished
- divide the WR by a performance efficiency factor (e.g. the cumulative CPI)

With these three variables, it's possible to statistically forecast the final costs for the project using the EAC formula:

$$EAC = AC + ((BAC - EV) / CPI)$$

or

$$EAC = BAC / CPI$$

where CPI is the cumulative CPI.

An EAC is a forecast for the most likely total project costs based on risk quantification and project performance. The most common forecasting techniques are some form of

- EAC – Actual to date plus the remaining project budget (BAC – EV), modified by a performance factor, often the cumulative cost performance index (CPI). This approach is most often used when current vacancies are seen as typical of future vacancies.

Reviewing Completed Work

Three factors determine final project results:

- **quality of the baseline plan**
- **actual performance against approved baseline plan**
- **management determination to influence final results**

The **quality of the baseline** plan can vary greatly, depending on the personality and experience of the person who created it.

The environment in which the plan is implemented will also influence a project manager's strategy. For example, if the environment is competitive, the creators are more likely to want to take risks, which will appear in the final baseline plan.

The benefit of earned value is that it will measure performance to the baseline plan, whether the plan is realistic or not.

Topic 2: Carrying Out the Plan (cont'd)

Once a project plan has been approved and implemented, the **actual performance against the approved baseline plan** should be monitored and evaluated. Is the approved plan being met? Is it falling behind? Is it being exceeded? Both the CPI and SPI can be monitored for trends and used to statistically forecast the final results for any project employing earned value.

A third key issue in determining final project results is the **management's determination to influence final results**. Forecasted final project results can be altered, but only when decisive action is taken at management level. If earned value performance trends indicate that there are problems with a project, how likely is management to take such action to alter the final outcome?

Topic 2: Exercise – Identifying the Status of a Recovery Project

Exercise



Exercise: Identifying the Status of a Recovery Project



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The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned, with current costs running at \$2.3 million.

After nine months, the state authority appointed you as project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

You have advised the state authority that the project should be recovered and a project recovery charter and statement has been presented to formally indicate this.

On completion of recovery, the forecast is that the budget will be running at \$3.2 million (divided pro-rata over the duration of the recovery) and the recovery will be completed within 18 days with the following milestones:

- recovery start: - 01-July-04 (0% of work completed)
- skills gaps analyzed: - 04-July-04 (10% of work completed)
- project plans revised: - 05-July-04 (15% of work completed)
- current project designs revised: - 10-July-04 (40% of work completed)
- cost-saving design roll-out: - 11-July-04 (50% of work completed)
- training completed: - 15-July-04 (70% of work completed)
- design complete and project hand-over to existing team: - 19-July-04 (100% of work completed)

Topic 2: Exercise – Identifying the Status of a Recovery Project (cont'd)

The recovery has completed its first weekend of activity and the status is as follows on day 5 (5-July-04):

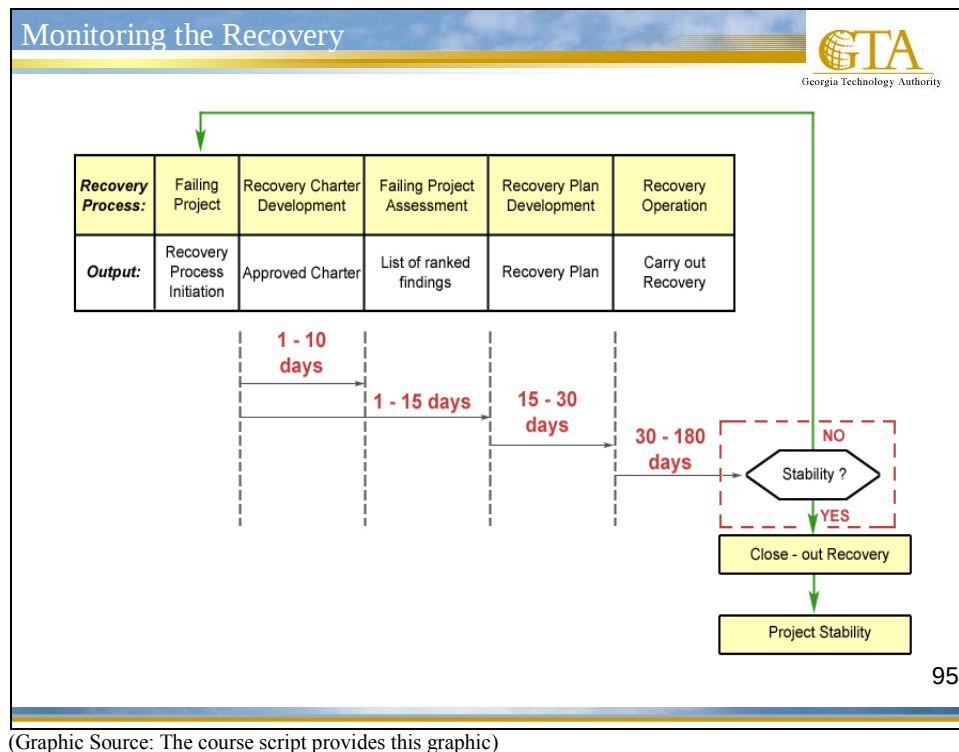
- budget running at \$2.6 million
- skills gaps have been analyzed, the inspection of the project plans are not completed (60% complete) and the lead designer is making good progress with the designs (20% complete)

Present this data to senior management using earned value and forecast the cost at completion (referenced as estimate at completion using **$EAC = AC + ((BAC - EV) / CPI)$**).

Topic 2: Exercise Worksheet

Topic 2: Exercise Worksheet

Topic 3: Monitoring the Recovery Baseline



Monitoring the Baseline with Project Dashboard

Any recovery project can be measured by deliverables in terms of milestones, budget, and scope and can be monitored via variance analysis. All recovery project managers can conduct variance analysis when assessing their recovery solution to ensure that deliverables are being completed to meet milestones, and that the ultimate objective of stability will be achieved.

Three main indicators used to monitor the recovery baseline are

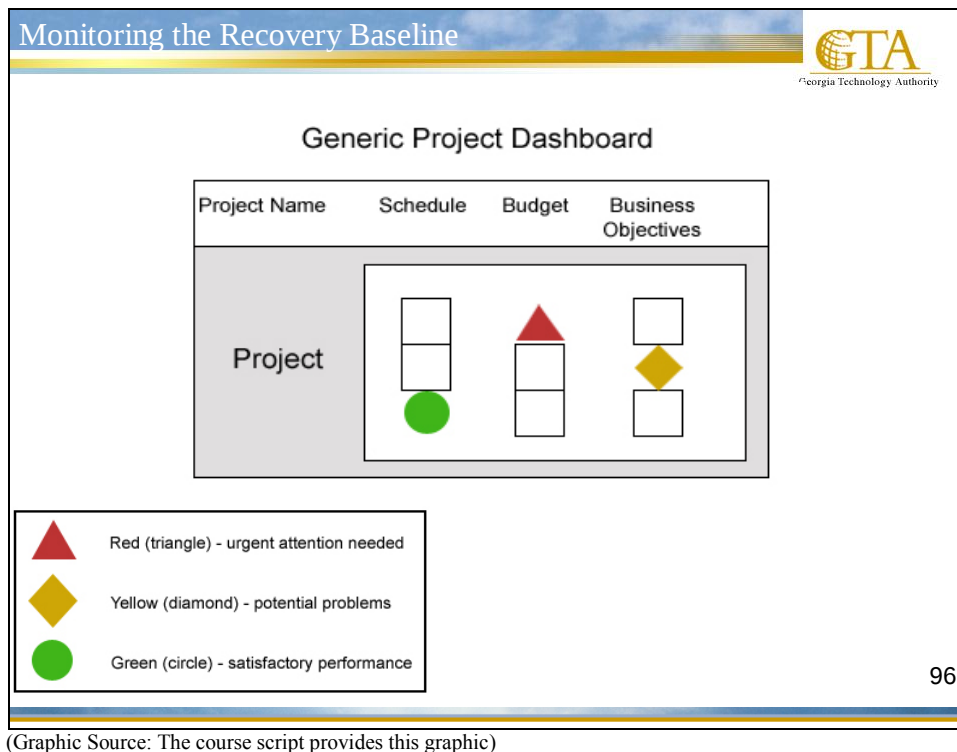
- milestones
- budgets
- requirements

In other words; will the recovery be on time, will it be within budget, and will it do what it set out to do?

These key indicators can be scored using the traffic light system of green (circle), yellow (diamond), and red (triangle):

- green (circular) indicator score – represents a healthy recovery project
- yellow (diamond-shaped) indicator score – represents a recovery project experiencing problems with one or more key indicators; project stability is in question
- red (triangular) indicator score – represents a recovery project experiencing major difficulties with one or more of the key indicators; project recovery will not be achieved

Topic 3: Monitoring the Recovery Baseline (cont'd)



Using the Project Dashboard

Various indicators (or project warning factors) can be used to establish a dashboard that will act as a project's early warning system:

- the **milestone key indicator** is a high-level measure of project progress and shows whether the key deliverables projected for completion are being met. The recovery team can report/act on these on a weekly /daily/hourly basis. The status for milestones can be reported as "not completed" or "completed." The milestone variance can be measured as:

➤ milestone variance = number of milestones missed / total number of milestones

Milestone can be scored using the following:

- green milestone variance – less than 10%
- yellow milestone variance – greater than or equal to 10% and less than 30%
- red milestone variance – greater than or equal to 30%

Topic 3: Monitoring the Recovery Baseline (cont'd)

- The **budget key indicator** assesses the ability to estimate and control recovery costs. The budget indicator measures the *actual* cost expended to the *planned* cost expended. This is a determination of whether the recovery is on track to meet its target budget for implementation using:
 - actual project-to-date cost – the total expenditures for the project, which have occurred through the end of the reporting period.
 - total remaining project cost – a projection of estimated dollars to complete the project, based on the approved scope.

To calculate the project budget score, the following formula is used:

- $\text{budget variance} = (\text{total project cost} / (\text{actual project to date cost} + \text{total remaining project cost})) - 1$

Budget score determination criteria include

- green budget variance – less than $\pm 10\%$.
 - yellow budget variance – between $\pm 10\%$ and 30%
 - red budget variance – greater than or equal to $\pm 30\%$
- The **requirements key indicator** assesses whether the recovery scope has remained stable and is being achieved. Scope management is concerned with whether new requirements have been identified that will impact the completion date, cost, or other success criteria. Scope change management is concerned with whether these changes have been formally approved.

Changes in project scope need to be managed through a well-defined process. Change management is concerned with identification and management of possible changes to the recovery.

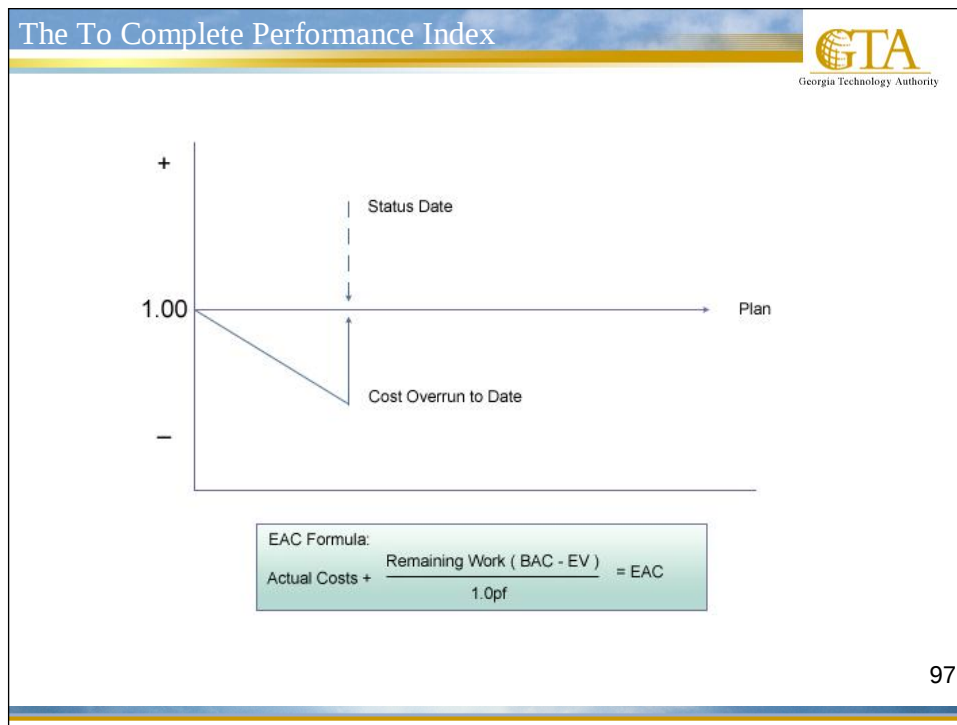
Scope score determination criteria include

- green – the project scope has not changed this period, or a project scope change has minimal impact on cost or schedule
- yellow – the project scope has changed this period, where it now impacts the cost or schedule baselines less than 10% and the project scope change has not been approved
- red – the project scope has changed this period and the change impacts the cost or schedule baselines greater than or equal to 10% and the project scope change has not been approved

The **overall project score** is determined as follows:

- green – all three key indicators are green, or one key indicator is temporarily yellow (i.e. for a short period of time)
- yellow – one or more key indicators are yellow for an extended period of time
- red – one or more key indicators are red for a short period of time

Topic 3: Monitoring the Recovery Baseline (cont'd)



(Graphic Source: The course script provides this graphic)

Monitoring the Baseline with Earned Value

A method used to monitor earned value performance data is the **To Complete Performance Index (TCPI)**. When displayed, it tells the recovery team precisely what performance factor must be achieved on the remaining work in order to stay within the financial goals of the project.

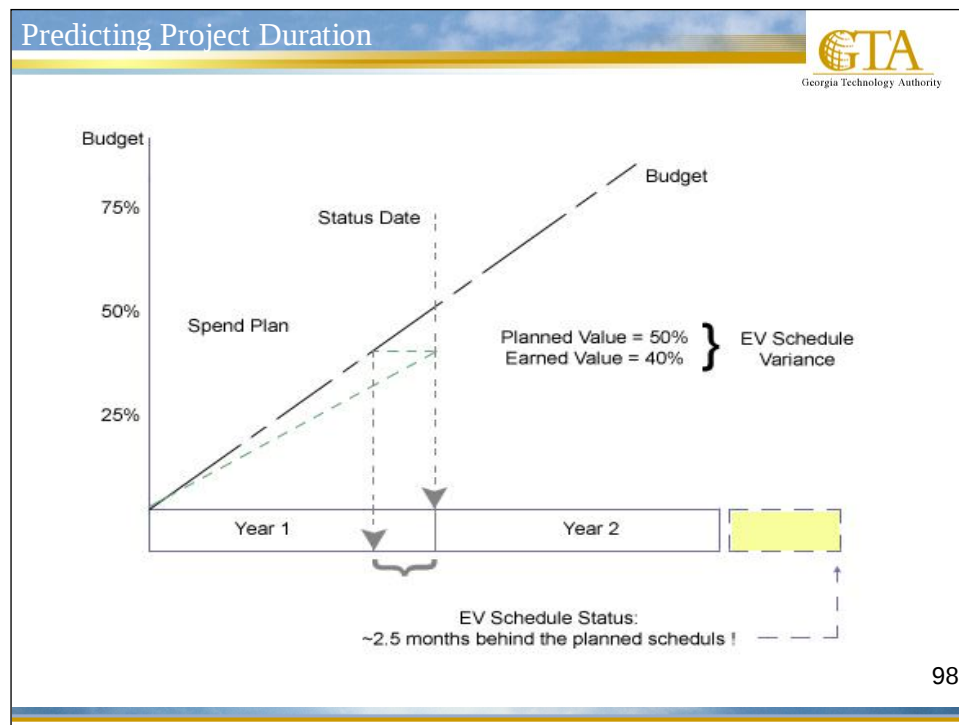
Examples of these financial goals include the original project budget or a ceiling for subcontracted services. The benefit of the TCPI is that it allows management to calculate and understand what performance factor is required to stay within budget goals at any point in a project's life cycle.

The TCPI takes the value of 'Remaining Work' and divides it by the value of the 'Funds Remaining.'

The formula is as follows:

$$\text{Work Remaining (BAC - EV)} / \text{Funds Remaining (BAC or EAC - AC)} = \text{TCPI}$$

Topic 3: Monitoring the Recovery Baseline (cont'd)



(Graphic Source: Earned Value Project Management, 2nd ed., Fleming & Koppelman, © 2000)

Predicting Project Recovery Duration

The amount of time it will take to complete a project is one of the primary concerns of any project manager.

By definition, a project will be completed within the outer parameters of its critical path, i.e. the longest sequential set of activities that are absolutely essential for completion of the project. The earned value **Schedule Variance** (SV) position can also be used, in conjunction with the critical path, as a method of emphasizing the forecasted date for project completion.

The following example, illustrated on the slide, demonstrates how the SV works.

The slide contains the two elements of earned value that deal with schedule performance: the planned schedule value and the earned value accomplished. Both are expressed as percentages.

The project in the example is scheduled to last two years and is currently halfway through that schedule. At this time, the plan had called for 50% of the work to be completed; however only 40% has actually been accomplished.

Topic 3: Monitor the Recovery Baseline (cont'd)

Using the graph, it is possible to predict how much the project is behind the planned earned value schedule by doing the following:

- take the point of intersection of the earned value accomplished with the status date
- trace it backwards to the planned schedule value line
- move downwards to the bottom time scale

It can be seen that the project is running approximately two and a half months behind schedule.

Comparing the earned value SV with the management of the critical path simply reinforces how long it is likely to take to complete a project. It is a useful calculation for project managers seeking to forecast the final completion date for a project.

Topic 4: Stabilizing the Failing Project

Stabilizing the Failing Project



The term stability can be defined as:

- the strength to stand firm
- the property of a body that enables it to restore balance and equilibrium
- resistance to change or to physical disintegration



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(Graphic Source: The course script provides this graphic)

Stabilization – A Definition

The term stability can be defined as:

- the strength to stand or endure (firmness)
- the property of a body that causes it – when disturbed from a condition of equilibrium or steady motion – to develop forces or moments that restore the original condition
- resistance to change or to physical disintegration

Topic 4: Exercise – Identifying Project Stability

Exercise



Exercise: Identifying Project Stability



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Stabilization – An Assessment

The following data is evident on day 18 of the ‘Georgia Light Rail’ project recovery:

Day 5		
	Formula	Value
PV		\$0.9 million
AC		\$0.8 million
EV		\$0.9 million
BAC		\$0.9 million
CPI	EV / AC	1.125
SPI	EV / PV	1

At this point, all contractors have completed their training. However, senior management still has concerns about their ability to carry out the remainder of the project.

Topic 4: Exercise – Identifying Project Stability (cont'd)

Identify the stability of the project with the following questionnaire

Failing Projects Assessment Questionnaire

Project Time Management		
	Statement	Degree of Agreement
1	The schedule was developed using the WBS.	Low 1 2 3 4 5 High
2	There is a graphical schedule for the project activities.	Low 1 2 3 4 5 High
3	The schedule clearly defines the start and end dates for the activities.	Low 1 2 3 4 5 High
4	The project end date was developed using bottom-up estimating process.	Low 1 2 3 4 5 High
5	The schedule was developed using predetermined dates.	Low 1 2 3 4 5 High
6	The lowest level of the WBS is measurable and within the 80 rule.	Low 1 2 3 4 5 High
7	The estimates are realistic.	Low 1 2 3 4 5 High
8	The critical path activities have been identified and communicated to the project team and stakeholders.	Low 1 2 3 4 5 High
9	The schedule takes non-working days into consideration.	Low 1 2 3 4 5 High
10	The schedule is dependent on limited resources.	Low 1 2 3 4 5 High
11	The schedule is detailed for the “near term” (30 – 90 days)	Low 1 2 3 4 5 High
12	The schedule is regularly updated.	Low 1 2 3 4 5 High
13	The schedule status reports are presented often.	Low 1 2 3 4 5 High
14	All completed activities are captured promptly in the schedule.	Low 1 2 3 4 5 High
15	The project team was an active participant in the development of the schedule.	Low 1 2 3 4 5 High
16	Time estimates were calculated at the work package level.	Low 1 2 3 4 5 High

Topic 4: Exercise – Identifying Project Stability (cont'd)

Project Cost Management		
	Statement	Degree of Agreement
17	The work packages are managed individually to a budget item expressed in terms of monetary units or hours.	Low High 1 2 3 4 5
18	The project team members were actively involved in the development of the budget.	Low High 1 2 3 4 5
19	The schedule played an important role in the development of the budget.	Low High 1 2 3 4 5
20	Other projects cost estimates were used in determining the project budget.	Low High 1 2 3 4 5
21	The project can be completed within the set budget.	Low High 1 2 3 4 5
Project Scope Management		
	Statement	Degree of Agreement
22	The project scope has been clearly defined	Low High 1 2 3 4 5
23	The WBS was validated to ensure it defines the entire project.	Low High 1 2 3 4 5
24	The WBS provides a clear hierarchical structure that defines the work to be accomplished, and the lower objectives support the overall project objectives.	Low High 1 2 3 4 5
25	The major milestones were identified.	Low High 1 2 3 4 5
26	Out of scope work is handled using a tightly-controlled change management process.	Low High 1 2 3 4 5
27	Operational requirements are communicated across the project team.	Low High 1 2 3 4 5
28	Deliverable requirements are communicated across the project team.	Low High 1 2 3 4 5
29	The acceptance criteria are well understood by the project team.	Low High 1 2 3 4 5
30	When a deliverable is completed, it is communicated promptly to the project team.	Low High 1 2 3 4 5
31	The overall project requirements have been affected by changes.	Low High 1 2 3 4 5
32	The project team has a clear understanding of the stakeholders/sponsor expectations.	Low High 1 2 3 4 5
33	External influences have been identified, documented, and monitored throughout the project execution.	Low High 1 2 3 4 5
Project Risk Management		
	Question	Degree of Agreement
34	A detailed process was used to identify risks in the project.	Low High 1 2 3 4 5
35	The top 10 risks are monitored and tracked.	Low High 1 2 3 4 5
36	Each identified risk has an associated response strategy.	Low High 1 2 3 4 5
37	The project team is aware of the existence of a Risk Management Plan.	Low High 1 2 3 4 5
38	Manifested risks are handled and tracked effectively.	Low High 1 2 3 4 5
39	Project personnel document and track additional identified risks effectively.	Low High 1 2 3 4 5

Topic 4: Exercise – Identifying Project Stability (cont'd)

Project Communications Management								
Question		Degree of Agreement						
40	There is an effective and efficient communications plan in place.	Low	1	2	3	4	5	High
41	Changes are communicated to the project team in a prompt and effective manner.	Low	1	2	3	4	5	High
42	Stakeholders' expectations have been clearly communicated to all project team members.	Low	1	2	3	4	5	High
43	Informal communications (the 'grapevine') has impacted project performance.	Low	1	2	3	4	5	High
Project Human Resource Management								
Question		Degree of Agreement						
44	Key functional expertise was identified at the start of the project.	Low	1	2	3	4	5	High
45	The staffing plan adequately meets the demand of the project.	Low	1	2	3	4	5	High
46	There is a high degree of dependence on single individuals.	Low	1	2	3	4	5	High

Project Management Area	Max. Score	Actual Score	Variance
Project Time Management	80		
Project Cost Management	25		
Project Scope Management	60		
Project Risk Management	30		
Project Communications Management	20		
Project Human Resources Management	15		
Total Pre Recovery Score	230		

Lesson 5: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: The Panoramic View of the Project

- When seeking to turnaround a failing project, project managers have a large number of options available. According to a 1994 KPMG survey that asked respondents which of a range of remedies they had applied to failing projects, the most popular remedies included
 - applying additional resources – money, people or time – to the project, without changing its processes in any way
 - applying extra pressure on the vendor by threatening legal action or withholding payment
 - introducing better management procedures
 - reducing the scope of the project
 - changing the technology used in the project
 - employing new outside help
 - improving development methodologies
- Earned value analysis, project milestones, and risk monitoring all have an important part to play in measuring the performance of a project recovery solution.
- Developing effective project procedural document systems can play an important role in determining why projects are failing and how they can be recovered. The project recovery plan becomes the essence of the recovery solution. The characteristics of a plan are
 - uniformity
 - clear and effective communication of information
 - standardized data formats
 - a basis for analysis
 - reduced conflict and confusion

From this topic you should **take away** the following:

- an understanding of the main project recovery solutions and the characteristics of an effective project recovery plan

Topic 2: Carrying Out the Plan

- When a project recovery solution is drafted, the outputs need to be mapped to the desired outcomes, and any gaps must be identified. Recovery solution outputs that are not reflected in the proposal may be unnecessary, but it is more likely that the structure to realize the recovery solution will need defined planning.
- As the project recovery proceeds, performance estimates continually need to be generated. Best-guess estimates, although very subjective, can be quickly obtained.

Lesson 5: Summary (cont'd)

- There are a number of hints and tips that can help build an accurate project estimate:
 - Use a spreadsheet or automated cost estimating tool
 - Categorize each function/requirement on your functional decomposition as simple, average, or complex.
 - Round up individual estimates to the nearest day or hour
 - Estimate each activity and task taking into consideration which team member will do the work
 - When you have prepared a set of estimates, put them away and go home
 - Commission two independent estimates
 - Be conservative about the degree of reuse which can be achieved using software assets from previous projects
 - Use an automated tool as a 'sanity check' on manual estimates
 - Build contingency into the estimates at the line-item level, by defining best case, worst case, and likely case resource usage
- While a risk may not impact on the immediate recovery solution, it may be a factor that should be considered for the future stability of the project. This is achieved by
 - identifying the foreseeable risks
 - taking risk reduction actions to reduce the likelihood of each risk
 - setting out a contingency plan to be followed if each risk materializes
- Project recovery managers need to decide if additional work will need to be carried out to successfully complete the project recovery plan, and they frequently use earned value to make this call. The benefit of using earned value is that it enables project managers to forecast (probable) final cost from at very early stage of the project.

From this topic you should **take away** the following:

- an understanding of the tools and techniques used to carry out a project recovery plan

Topic 3: Monitoring the Recovery Baseline

- Any recovery project can be measured by deliverables in terms of milestones, budget, and scope and can be monitored via variance analysis. All recovery project managers can conduct variance analysis when assessing their recovery solution to ensure that deliverables are being completed to meet milestones and ensure that the objective of stability will be achieved.
- Three main indicators used to monitor the recovery baseline are
 - milestones – a high-level measure of project progress that shows whether the key deliverables projected for completion are being met.
 - budget – assesses the ability to estimate and control recovery costs
 - requirements – assesses whether the recovery scope has remained stable and is being achieved

Lesson 5: Summary (cont'd)

- A method used to monitor earned value performance data is the **To Complete Performance Index** (TCPI). When displayed, it tells the recovery team precisely what performance factor must be achieved on the remaining work in order to stay within the financial goals of the project.
- The earned value **Schedule Variance** (SV) position can be used, in conjunction with the critical path, as a method of emphasizing the forecasted date for project completion.

From this topic you should **take away** the following:

- an understanding of the tools and techniques used to monitor and control the performance of a recovery project

Topic 4: Stabilizing the Failing Project

- The term stability can be defined as:
 - the strength to stand or endure (firmness)
 - the property of a body that causes it – when disturbed from a condition of equilibrium or steady motion – to develop forces or moments that restore the original condition
 - resistance to change or to physical disintegration

From this topic you should **take away** the following:

- an understanding of the critical role project assessment plays in determining the stability of a project

Lesson 6: Closing out Recovery

Topic 1: Concluding Recovery Activities

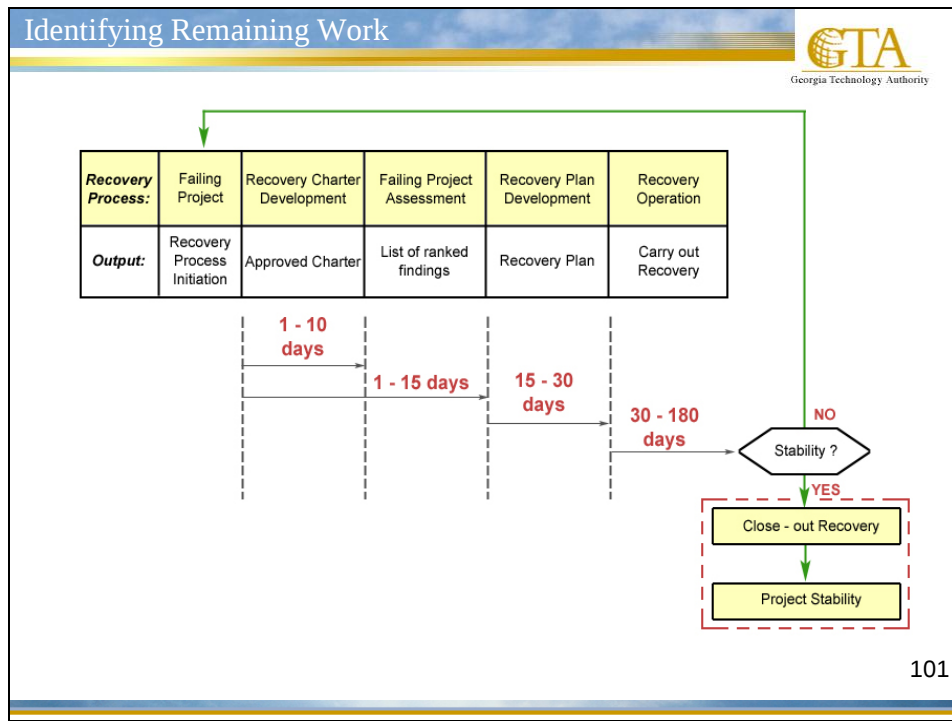
Topic 2: Conducting an Exit Interview

Student learning objectives

After completing this lesson, you should be able to

- identify the remaining work that needs to be completed as a recovery project approaches close-out and understand the knowledge that needs to be transferred to the incoming project team
- understand that, as a project recovery manager, the onus is on you to provide sufficient knowledge to the project team
- identify that exiting a recovery project has two main characteristics; project stability and knowledge transfer
- understand that communication skills are to the fore during project exit

Topic 1: Concluding Recovery Activities



(Graphic Source: The course script provides this graphic)

Recovery Closure

Recovery projects generally have short life cycles, so it is essential that a close-out plan is developed early in the project. The close-out plan should outline

- the expected life span of the project, and the conditions under which the project should initiate close-out
- provisions for closing the recovery project and re-commencing the original project
- details of how to dispose of materials and equipment that may have been used during recovery
- provisions for recovery staff transition and retraining of original or new project staff
- details about the production and dissemination of a final report that should include the lessons that can be shared from the recovery team's experiences

It is also a good idea to have a contingency close-out procedure if an emergency close-out (abandonment procedure) takes place due to unforeseen events, such as funding shortfall or lack of management support.

Topic 1: Concluding Recovery Activities (cont'd)

Identifying Remaining Work



Senior management must identify the most suitable project team members and the necessary resources required to continue the project once the recovery solution is complete.

New Project Team



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(Graphic Source: The course script provides this graphic)

Project Team

As the project recovery team nears the end of its recovery activities, senior management needs to decide who will carry the project forward to a successful conclusion. Options include the following:

- the original project manager, who has been part of the recovery team for learning purposes, takes control of the project
- a new project manager is recruited if the existing project manager does not have the necessary skills
- project recovery team members may stay with the project for a longer duration, to ensure stability and ease of transition
- existing or new project team members may be added to the project

Topic 1: Concluding Recovery Activities (cont'd)

Senior management also needs to decide what resources will be required to carry the project forward beyond recovery. This process involves

- updating the project mission/objective – during the recovery, the scope of the project may have been changed
- reviewing project history and the positive steps that have already been taken towards achieving the project intent
- recording in detail the current state of the project and identifying the steps required to achieve the project mission/objective
- reviewing all the alternatives, risks, and constraints
- identifying key resources and resource gaps that are required to carry the project forward to a successful conclusion
- filling resource gaps and reassembling a high performing project team
- holding interactive workshops to resolve toughest issues and begin the hand-over of the project
- identifying costs, time, schedule, and quality controls by developing and agreeing a project plan that includes
 - a developed work breakdown structure
 - estimates for remaining work
 - a new schedule with an agreed time and cost baseline
- obtaining approval for the baseline

Topic 1: Concluding Recovery Activities (cont'd)

Identifying Remaining Work



The project handover takes place when the recovery has reached a state of stability.



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(Graphic Source: The course script provides this graphic)

Project Handover

The project handover takes place when the recovery has reached a state of stability. At that point, the recovery team transfers the information and management of the project to the original project team or to a new project team.

Topic 1: Concluding Recovery Activities (cont'd)

The following table sets out the roles and responsibility for each of the recovery project stakeholders:

Role	Responsibility	When Action is Required	Steps
Senior Management	Overall responsibility for transfer of knowledge from project recovery team to project team	When the project is stable and the project team can pick up the project responsibility	Use project recovery manager's feedback
Project Sponsor	Sign-off of handover documentation	When project changes from recovery team to project team	Check content is complete/accurate Sign off the recovery documentation/lessons learned
Project Recovery Manager	Identifying what previous work has been completed and collating evidence of recovery work completed Reporting major changes to the project, update project plan and risk log	The recovery manager will identify the point at which closure/handover begins	Discussion with original executive team/project owner
Project Manager	Familiarization with project history (i.e. before and during recovery) Receive documentation from project recovery manager	Receive direction from senior management/ project owner to begin working with project recovery manager	Work with project recovery manager to absorb project recovery/failing knowledge

Project Recovery Handover Steps

An effective project recovery handover involves the following steps:

- project recovery manager obtains evidence that the project is stable and handover can begin
- project manager is identified who will carry the project until such time that the product/project can be successfully closed
- project recovery manager produces a brief status report and copies this to the project manager – this acts as the point of initiation for the resumed project
- project recovery manager begins knowledge transfer
- a copy of the full project documentation, including, but not limited to:
 - recovery project charter
 - detailed project plan
 - risk management plan
 - quality management plan
 - communication plan
 - budget (employees and contractors)
 - lessons learned

Topic 1: Concluding Recovery Activities (cont'd)

- names of work streams/projects should remain the same unless a significant change has occurred during the recovery

For project handover to succeed, a project handover checklist/template should be employed. An example template is presented below.

Project Recovery Handover Template	
Project Name	
Project Recovery Manager	
New Project Manager	
Previous Project Manager	
Project Owner	
Project Mission	
Recovery Project Details	Details of significant deviations that have occurred from the original mission/objective during the recovery process.
Knowledge Transferred Details	☐ Yes ☐ No Information about knowledge that has been transferred from the project recovery manager. This will complement the previous section and include specific items that happened during the recovery cycle.
Skills Transferred (where applicable) Details	☐ Yes ☐ No A list of the skills that have been transferred. This should state any 'on-the-job-training' that took place between recovery project members and new project members.
Document Archived Details	☐ Yes ☐ No A list of all documents (updated or created) during the recovery cycle with title, author, and location.
Signatures	Project Owner: _____ Project Recovery Manager: _____ New Project Manager: _____

Topic 1: Concluding Recovery Activities (cont'd)



(Graphic Source: The course script provides this graphic)

Lessons Learned

Lessons learned are an invaluable resource for any project, whether it is a recovered or successful, and are an on-going initiative from project inception to project close-out.

Post-recovery reviews generate feedback that can be invaluable as the new project team is getting underway. The review should be conducted in a constructive environment, with the objective of ensuring that the team and stakeholders learn from the lessons of the recovery.

Additionally, the project recovery team should **seek to explain the reasons for cost overruns and slippages**, and the ways in which changes to requirements were evaluated and authorized.

It is also crucial that the team know if there have been changes to the project management system, and sufficient time should be allocated to ensure the smooth introduction of new processes.

Appropriate training should be provided and there should be recognition that **teams will respond to training and change differently**.

Topic 1: Concluding Recovery Activities (cont'd)

After recovery has been achieved, the stakeholders should review how they might have avoided the project failing by looking at how they co-ordinate projects, **make use of spending power**, and **prioritize projects**. In addition, there may be room for fostering **greater professionalism in project management** and a need to appoint a senior management figure **to drive cross-departmental projects** and projects where costs lie in one department and benefits in another.

Topic 1: Concluding Recovery Activities (cont'd)

The table below outlines, under a number of headings, lessons that have been learned from previous government recovery projects.

Factor	Lessons Learned
Inception and design	Ensure that - the new system is based on a clear business need - the implications of any other changes that coincide with the introduction of the new system are considered - the project team is of a high quality and has clearly defined roles and responsibilities
Size and complexity	Consider if - the project schedule is realistic - the project is manageable – has each successive activity been considered in light of the outcome of the previous activity? - a sufficient number of regular milestones and deliverables with auditable business benefits have been defined. An incremental project approach, as opposed to a big bang implementation, ensures that problems are highlighted earlier and are easier to fix. - the overriding priority – time, cost, or a particular quality specification – has been established
Project implementation	Ensure that - project plans are flexible enough to accommodate the insertion of technological advances - a project specification reflects an organization's business needs and the end-users requirements. Failing to ensure this at the outset of a project can lead to significant problems later. Specifically, ➤ business cases should be based on a full analysis of requirements and priorities ➤ benefits of using the new system must be sold to staff ➤ desirable features, as opposed to core business benefits, should be kept out of specifications

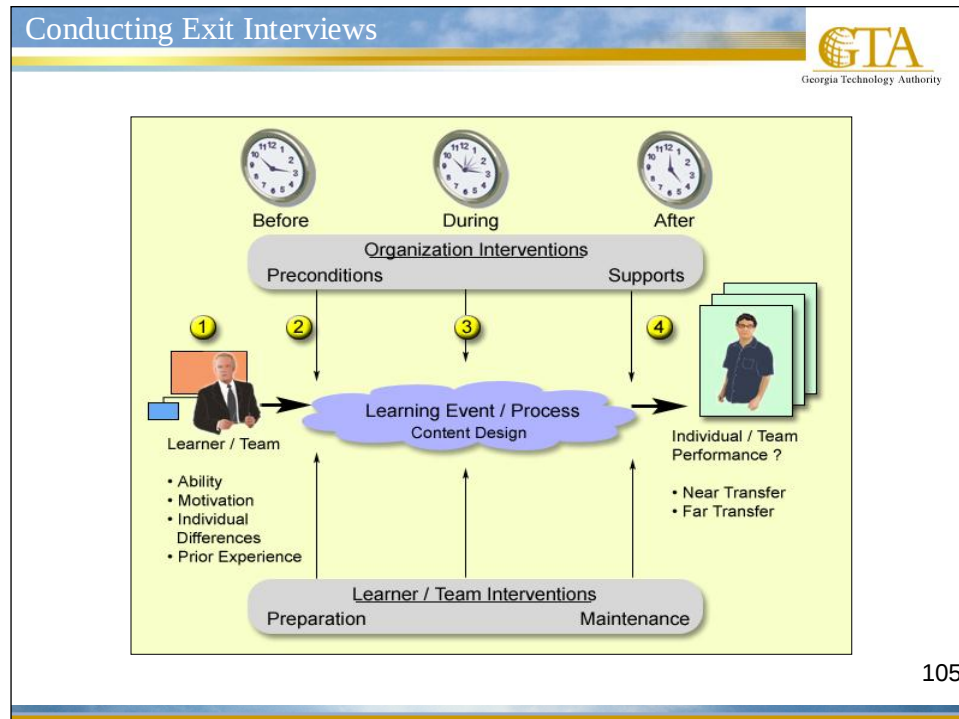
Topic 1: Concluding Recovery Activities (cont'd)

Factor	Lessons Learned
Senior management participation	Ensure that senior staff • create an environment within their organization in which project management can succeed • ensure that there is clarity about the aims and objectives of the project, and that the evaluation criteria are sufficiently defined • insist on regular feedback on the progress of projects • take the appropriate technical training so that they can understand and, if necessary, engage in risk management
Project management skills	Ensure that • the principles of good project management are understood and followed throughout government • there is sufficient reward for project managers who successfully deliver projects, so that they will be encouraged to remain and their experience can be used to benefit future projects • project managers are encouraged to flag risks to senior management, and engage in active management of project change
Risk management	Ensure that • all project decisions are based on a rigorous assessment of costs and benefits • project managers are experienced risk managers who can quantify and prioritize risks on an ongoing basis • risk assessments are carried out throughout the project, particularly in relation to the ongoing viability of the business case in light of actual costs incurred • a risk management framework is in place, empowering people to make decision on the cost, benefits, and risks

Topic 1: Concluding Recovery Activities (cont'd)

Factor	Lessons Learned
Contractual relationships	Ensure that • all parties have a clear understanding of their roles and responsibilities • while departments maintain a close relationship with suppliers, overall ownership of the progress required to achieve project goals is retained within the department • departments are satisfied that the prime supplier's methods of managing any sub-contractors are consistent with the main contract • all contracts signed with suppliers should be clear and unambiguous • at the outset, as much as possible is decided and included in the contract, in as much detail as possible. This prevents the undesirable scenario of key issues being left to be decided later. • there is an ongoing process of contract management to allow for any change requirements that arise • the business implications of time slippage are reflected in the incentives contained within the contract

Topic 2: Conducting Exit Interviews



(Graphic Source: The course script provides this graphic)

Knowledge Transfer

Knowledge transfer between the recovery team and the new project team enables the new team to pre-empt and avoid costly mistakes. The objective of the project handover is to detail the issues, risks, and problems that were encountered during recovery and share these with current participants.

The final step in project recovery closure is the exit interview; conducted to ascertain information about skills, knowledge, and documentation.

One way of accomplishing knowledge transfer during a recovery project is through on-the-job training. This is facilitated by an existing/new project team member working side-by-side with a recovery team member. While it may not be always appropriate given circumstances and project conditions, this has the benefit of reducing the time involved in knowledge transfer/learning at the later stages of the recovery cycle.

Topic 2: Conducting Exit Interviews (cont'd)

Conducting Exit Interviews



The exit interview is the final step of the recovery process, wherein knowledge is transferred to the project team.

Project Exit Interview Checklist	
Project Name	
Project Recovery Manager	
New Project Manager	
Previous Project Manager	
Project Owner	
Project Mission	
Attendees at the Exit Interview	Participants that are required: - Project Recovery Manager - Current Project Manager - Project Owner
Summary	- It should not be a list of work completed, but rather a list of recovery milestones and the achievement of them. - It should be an overview of the recovery work.
Future Milestone	- Identify the milestone period, which is the period of time after the recovery team leaves when the project they still have issues that could move it into a sustainable state. - Define the period in milestone terms and outline what needs to be achieved. - Include future project milestones (beyond the milestone period) and outline the required dates for their completion.
Exceptions	- This area should identify those parts of your recovery project that caused concern. - Current project concerns should be documented with any external influences that are impacting upon delivery.
Outlook	- This should be a short-term view of the project. - What is the project going to achieve during the "milestone period" and beyond? - The key objectives of the project should be covered here.
Major Risks	- Key risks and issues that are affecting the project and could impact on the future of the project. - The risk treatment action and an update of the status (if available) should be included.
Knowledge Transferred	☐ Yes ☐ No
Skills Transferred	☐ Yes ☐ No
Recovery Documentation Archived	☐ Yes ☐ No
New Plan in Place for Project	☐ Yes ☐ No
Has Project Handover been Completed?	☐ Yes ☐ No

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(Graphic Source: The course script provides this graphic)

Exit Interview Checklist

The recovery project exit interviews are used to gather information from the departing recovery team and transfer it to the new/current project team. The interview should cover issues such as

- current project scope
- current project situation
- impending risk, issues, constraints
- project opportunities
- quality and quantity of the workload
- relationships with co-workers and supervisors

Topic 2: Conducting Exit Interviews (cont'd)

An exit interview template should capture the level of knowledge that the current project team have and illustrate if any gaps exist in that knowledge. A sample template is provided below.

Project Exit Interview Checklist	
Project Name	
Project Recovery Manager	
New Project Manager	
Previous Project Manager	
Project Owner	
Project Mission	
Attendees at the Exit Interview	Participants that are required: • Project Recovery Manager • Current Project Manager • Project Owner • Project Team Member(s)
Summary	• This should be an overview of the recovery work • It should not be a list of work completed, but rather a list of recovery milestones and the achievement of these
Future Milestones	• Identify the incubator period, which is the period of time after the recovery team leave where the project may still have issues that could move it into an unstable state. • Define this period in milestone terms and outline what needs to be achieved • Include future project milestones (beyond the incubator period) and outline the required dates for their completion
Exceptions	• This area should identify those parts of your recovery project that caused concern • Current project concerns should be documented with any external influences that are impacting upon delivery.
Outlook	• This should be a horizon view of the project • What is the project going to achieve during the 'incubator period' and beyond? • The key objectives of the project should be covered here
Major Risks	• Key risks and issues that are affecting the project and could impact on the future of the projects • The risk treatment actions and an update of the status (if available) should be included
Knowledge Transferred	☐ Yes ☐ No
Skills Transferred	☐ Yes ☐ No

Topic 2: Conducting Exit Interviews (cont'd)

Recovery Documentation Archived	☐ Yes	☐ No
New Plan in Place for Project	☐ Yes	☐ No
Has Project Handover Been Completed?	☐ Yes	☐ No

Topic 2: Conducting Exit Interviews (cont'd)

Conducting Exit Interviews



In conclusion:

- preventing failing projects is not easy
- details to planning, execution and control are key



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Secrets to Prevent Failing Projects

The following are some traits / secrets that can be adopted in each phase of the project to counteract a project failing.

- Concept Phase:
 - Apply the principles of politics with all stakeholders
 - Use the Charter to create a vision
 - Agree on project “zone of tolerance” it’s impossible to manage to “0” variance
 - Know and understand the triple constraints + customer acceptance
 - Define required support via the Charter
 - Provide guidance, leadership and management to the team
- Planning phase:
 - Run your project as a small business; key is profitability
 - Define customer satisfaction requirements
 - Use PMBOK® tools as appropriate
 - Plan for the project closeout on day one
 - Build the team
 - Manage conflict to bring value to the project

Topic 2: Conducting Exit Interviews (cont'd)

- Execution phase:
 - Use the art of influencing (politics) to acquire the required resources
 - Build trust and exceed communications requirements
 - Use PMBOK® tools as appropriate
 - Manage pro-actively
 - Demonstrate and demand discipline
 - Get project team feedback often, act on it!
 - Manage your suppliers
 - Manage customer expectations
 - Reward your team, show appreciation
 - Negotiate and influence at all levels
 - Have FUN, life is not a dress rehearsal
- Close out phase,
 - Provide closure for your team
 - Publish lessons learned
 - Return all resources
 - Celebrate

Would your best project members fight to get back on your next project?

Lesson 6: Summary

The lesson is now completed and the following topics have been covered:

Topic 1: Identifying Remaining Work

- Recovery projects generally have short life cycles so it is essential that a close-out plan is developed early in the project.
- As the project recovery team nears the end of its recovery activities, senior management needs to decide who will carry the project forward to a successful conclusion.
- Senior management also needs to decide what resources will be required to carry the project forward beyond recovery.
- The project handover takes place when the recovery has reached a state of stability and the recovery team can transfer the information and management of the project to the original project team, or to a new project team.
- Lessons learned are an invaluable resource, whether for a recovered or a successful project.
- Post-recovery reviews generate feedback that can be invaluable as the new project team is getting underway. The review should be conducted in a constructive environment, with the objective of ensuring that the team and stakeholders learn from the lessons of the recovery.

From this topic you should **take away** the following:

- an understanding of the main steps that need to be followed as a recovery project nears completion

Topic 2: Conducting Exit Interview

- The recovery project exit interviews are used to gather information from the departing recovery team and transfer it to the new/current project team. The interview should cover issues such as
 - current project scope
 - current project situation
 - impending risk, issues, constraints
 - project opportunities
 - quality and quantity of the workload
 - relationships with co-workers and supervisors

From this topic you should **take away** the following:

- an understanding of the information that needs to be collected from a project recovery team in order to facilitate effective knowledge transfer to the incoming project team

Sample Answers

Lesson 1, Topic 2: Exercise – Distinguishing Failing Projects

Lesson 1, Topic 4: Exercise – Delivering Project Information

Lesson 2, Topic 2: Exercise – Identifying Failing Project Characteristics

Lesson 2, Topic 4: Exercise – Developing a Recovery Solution

Lesson 3, Topic 1: Exercise – Completing a Recovery Charter

Lesson 5, Topic 1: Exercise – Viewing the Big Picture

Lesson 5, Topic 2: Exercise – Identifying the Status of a Recovery Project

Lesson 1, Topic 2: Exercise: Distinguishing Failing Projects

Question

In this exercise, you are given six different scenarios and must order them according to the degree to which they are failing.

The project scenarios are as follows:

Scenario 1: The technical specialist in the project has left due to illness and is not being replaced.

Scenario 2: As project manager you notice that you have completed the scope verification of your product but the project has not completed, or even started, some key development activities.

Scenario 3: The project team decides to stop working overtime as morale is low.

Scenario 4: As project manager, your boss tells you that the project has delivered on certain objectives but it cannot support the current stream of activity.

Scenario 5: You are presenting to your stakeholders that the project is 27% over the budget.

Scenario 6: The client insists that the product is failing in a number of live-tests.

Sample answer

The project scenarios are correctly ordered / ranked below.

Ranking	Scenario Number	Scenario
1	Scenario 6	The client insists that the product is failing in a number of live-tests
2	Scenario 4	As project manager, your boss tells you that the project has delivered on certain objectives but it cannot support the current stream of activity
3	Scenario 2	As project manager you notice that you have completed the scope verification of your product but the project has not completed, or even started, some key development activities
4	Scenario 5	You are presenting to your stakeholders that the project is 27% over the budget
5	Scenario 3	The project team decides to stop working overtime as morale is low
6	Scenario 1	The technical specialist in the project has left due to illness and is not being replaced

Lesson 1, Topic 4: Exercise – Delivering Project Information

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you to become the project recover manager. The project sponsor is asking you to gather information, in the following template, for their inspection.

Failing Project Record
Project Planning
Project Resourcing
Project Monitoring and Control (Earned Value)
Financial Management and Control
Contract Management
Risk Management

Lesson 1, Topic 4: Exercise – Delivering Project Information (cont'd)

Sample answer

Failing Project Record
Project Planning The project planning seems to be appropriate given the fact that the project management team have adhered to the outline planning methodology. However, there is insufficient information to make any further conclusions.
Project Resourcing The team is not adequately resourced, given the fact that the contractor team have insufficient skills to meet the project demands
Project Monitoring and Control (Earned Value) From the data provided, the project is 3 months behind schedule (66%). Using Earned value the following information is present: Planned Value = \$2 million Actual Costs = \$2.3 million Earned Value (66% of the planned value) = \$1.32 million $\text{CPI} = \text{EV} / \text{AC} = \$1.32 \text{ million} / \$2.3 \text{ million}$ $= 57\%$ $\text{SPI} = \text{EV} / \text{PV} = \$1.32 \text{ million} / \$2 \text{ million}$ $= 66\%$
Financial Management and Control The CPI of 57% indicates that the project is 75% over budget ($1 - (1 / \text{CPI})$). As the contractors are not performing to the required level, they are being paid at the agreed price.
Contract Management The contract management has a number of issues relating to performance. It can be assumed that the contractors have no penalty clause regarding work performance as this is not being measured, and is causing blockages.
Risk Management The preferred state authority contractors have not worked on projects of the size of the Light Rail system before. While the current list of preferred contractors have a base skill set, it may not be sufficient for the Light Rail project. While the project management team are experienced in these projects, the functional expertise may require a learning curve during the pilot scheme which will result in cost and time over-runs.

Lesson 2, Topic 2: Exercise – Identifying Failing Project Characteristics

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you are to become the project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. The reasoning is that they have requested you to conduct a series of interviews with the lead contractors and current project management to assess the exact state and reasoning behind the project failing.

Part 1

Using the following tips on conducting face-to-face interviews, you decide to carry out a series of face-to-face interviews starting with the lead contractor:

- ask clearly open ended questions, such as
 - in your opinion what made this project fail? Why?
 - what are the factors that affect the schedule?
 - what are some of the factors that affect costs?
 - what are the factors that affect technical performance?
 - are there other segments of the organization influencing the performance of the project?
 - how do you perceive customer satisfaction?
 - are the vendors performing according to specified terms and conditions?
 - how are the assigned resources affecting the project?
 - are the materials (equipment) arriving on schedule?
 - is transportation a factor in the performance of the project? How?
 - are project team members affected by travel? How?
 - how is the quality management plan affecting the project? Why?
- stay focused during the interview
- take good notes, and ask for clarification if you require it
- offer only relevant information to your goals
- review your notes with the interviewee
- thank the interviewee for their time

Lesson 2, Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Part 2

Assessment questionnaires can be used as part of the face-to-face interview or as part of the Delphi technique. Use the following questionnaire to assess the reasoning behind the failing project

Failing Projects Assessment Questionnaire

Please answer the questions based on your personal knowledge and involvement in the project and the extent to which you agree with the statement presented.		
Project Time Management		
	Statement	Degree of Agreement
1	The schedule was developed using the WBS.	Low High 12345
2	There is a graphical schedule for the project activities.	Low High 12345
3	The schedule clearly defines the start and end dates for the activities.	Low High 12345
4	The project end date was developed using bottom-up estimating process.	Low High 12345
5	The schedule was developed using predetermined dates.	Low High 12345
6	The lowest level of the WBS is measurable and within the 80 rule.	Low High 12345
7	The estimates are realistic.	Low High 12345
8	The critical path activities have been identified and communicated to the project team and stakeholders.	Low High 12345
9	The schedule takes non-working days into consideration.	Low High 12345
10	The schedule is dependent on limited resources.	Low High 12345
11	The schedule is detailed for the “near term” (30 – 90 days)	Low High 12345
12	The schedule is regularly updated.	Low High 12345
13	The schedule status reports are presented often.	Low High 12345
14	All completed activities are captured promptly in the schedule.	Low High 12345
15	The project team was an active participant in the development of the schedule.	Low High 12345
16	Time estimates were calculated at the work package level.	Low High 12345

Lesson 2, Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Project Cost Management		
	Statement	Degree of Agreement
17	The work packages are managed individually to a budget item expressed in terms of monetary units or hours.	Low High 1 2 3 4 5
18	The project team members were actively involved in the development of the budget.	Low High 1 2 3 4 5
19	The schedule played an important role in the development of the budget.	Low High 1 2 3 4 5
20	Other projects cost estimates were used in determining the project budget.	Low High 1 2 3 4 5
21	The project can be completed within the set budget.	Low High 1 2 3 4 5
Project Scope Management		
	Statement	Degree of Agreement
22	The project scope has been clearly defined	Low High 1 2 3 4 5
23	The WBS was validated to ensure it defines the entire project.	Low High 1 2 3 4 5
24	The WBS provides a clear hierarchical structure that defines the work to be accomplished, and the lower objectives support the overall project objectives.	Low High 1 2 3 4 5
25	The major milestones were identified.	Low High 1 2 3 4 5
26	Out of scope work is handled using a tightly-controlled change management process.	Low High 1 2 3 4 5
27	Operational requirements are communicated across the project team.	Low High 1 2 3 4 5
28	Deliverable requirements are communicated across the project team.	Low High 1 2 3 4 5
29	The acceptance criteria are well understood by the project team.	Low High 1 2 3 4 5
30	When a deliverable is completed, it is communicated promptly to the project team.	Low High 1 2 3 4 5
31	The overall project requirements have been affected by changes.	Low High 1 2 3 4 5
32	The project team has a clear understanding of the stakeholders/sponsor expectations.	Low High 1 2 3 4 5
33	External influences have been identified, documented, and monitored throughout the project execution.	Low High 1 2 3 4 5
Project Risk Management		
	Question	Degree of Agreement
34	A detailed process was used to identify risks in the project.	Low High 1 2 3 4 5
35	The top 10 risks are monitored and tracked.	Low High 1 2 3 4 5
36	Each identified risk has an associated response strategy.	Low High 1 2 3 4 5
37	The project team is aware of the existence of a Risk Management Plan.	Low High 1 2 3 4 5
38	Manifested risks are handled and tracked effectively.	Low High 1 2 3 4 5
39	Project personnel document and track additional identified risks effectively.	Low High 1 2 3 4 5

Lesson 2, Topic 2: Exercise – Identifying Failing Project Characteristics (cont'd)

Project Communications Management		
Question	Degree of Agreement	
40	There is an effective and efficient communications plan in place.	Low 1 2 3 4 5 High
41	Changes are communicated to the project team in a prompt and effective manner.	Low 1 2 3 4 5 High
42	Stakeholders' expectations have been clearly communicated to all project team members.	Low 1 2 3 4 5 High
43	Informal communications (the 'grapevine') has impacted project performance.	Low 1 2 3 4 5 High
Project Human Resource Management		
Question	Degree of Agreement	
44	Key functional expertise was identified at the start of the project.	Low 1 2 3 4 5 High
45	The staffing plan adequately meets the demand of the project.	Low 1 2 3 4 5 High
46	There is a high degree of dependence on single individuals.	Low 1 2 3 4 5 High

Project Management Area	Max. Score	Actual Score	Variance
Project Time Management	80		
Project Cost Management	25		
Project Scope Management	60		
Project Risk Management	30		
Project Communications Management	20		
Project Human Resources Management	15		
Total Pre Recovery Score	230		

Your objective is to identify the reason, or at least what the lead contractor believes to be the reason, why the project is failing. You should note that as the interview is taking place, the project is continuing to fail; for this reason as the project recovery manager, you have a great deal to urgency for the need to recover is NOW.

Lesson 2, Topic 4: Exercise – Developing a Recovery Solution

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you to become the project recover manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

The state authority has requested your evaluation of whether the project should be recovered or abandoned by examining the following criteria:

- psychological factors – there may be an emotional attachment to the project, meaning that project stakeholders are unwilling to let go
- organizational factors – it may that there is pressure on the organization (from the market) to deliver the project. If so, organizational stakeholders may be unwilling to let go until there is no other possible alternative
- social factors – there may be internal rivalry between different project teams and while abandonment is the logical choice, there is a resistance as it may reflect poorly on the present project team
- re-visit the indices continually – to prove that the abandonment / recovery option is feasible.
- look at the alternative options being proposed by the stakeholders – measure them in a comparable manner (i.e. using indices) to show future performance.
- seek an outside/objective opinion – there may be cases where the stakeholder needs to hear the information from an source that is unattached to the project (in this case you the instructor as the outside source)

Lesson 3, Topic 1: Exercise – Completing a Recovery Charter

Question

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned with current costs running at \$2.3 million.

After nine months, the state authority is requesting that you to become the project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

The state authority have requested your evaluation of whether the project should be recovered or abandoned by examining the following criteria

- psychological factors – there may be an emotional attachment to the project, meaning that project stakeholders are unwilling to let go
- organizational factors – it may that there is pressure on the organization (from the voters, legislature, executive management, etc.) to deliver the project. If so, organizational stakeholders may be unwilling to let go until there is no other possible alternative
- social factors – there may be internal rivalry between different project teams and while abandonment is the logical choice, there is a resistance as it may reflect poorly on the present project team
- revisit the indices continually – to prove that the abandonment / recovery option is feasible.
- look at the alternative options being proposed by the stakeholders – measure them in a comparable manner (i.e. using indices) to show future performance.
- seek an outside/objective opinion – there may be cases where the stakeholder needs to hear the information from an source that is unattached to the project (in this case you the instructor as the outside source)

With the information, take from the project you have proposed to the state authority that the project should go through a recovery cycle. While the state authority agrees, they are anxious over the consequences if the recovery project fails. On hearing this, your re-iterate that some hard-decisions will have to be made, but if everyone is willing to co-operate the chances of success are good. As the project recovery manager, you and some subject matter experts of the state authority spend time drafting the project recovery charter.

You are requested to present this recovery charter using the template provided.

Lesson 3, Topic 1: Exercise – Completing a Recovery Charter (cont'd)

Sample Answer

Project Recovery Charter																			
Project Recovery Information • Organization Name: - Georgia State Authority • Project Sponsor: - Georgia State Authority • Date: - 30-June-2004																			
Detailed Project Information • Project Objective ➤ Provide light-rail system within major urban areas that will facilitate professional and private commuters ➤ Provide a rail system between major urban areas that will facilitate professional and private commuters ➤ Provide a transportation system that will reduce the number of auto users ➤ Implement – in a seamless fashion – a new system that has minimal impact on current operations ➤ Educate public on transportation alternatives to ensure each individual understands new system ➤ Provide transportation system that is cost effective and geared toward profits • Start Date: - 01-Oct-2003 • Planned Completion Date: - 15-Jan-2006 • Budget: - \$2 million for initial construction phase • Project Information ➤ the CPI is 57% (which is 75% over budget) ➤ the SPI is 66% (which is 51% behind schedule)																			
Project Personnel • Existing Project Manager: - John Smith • Existing Project Team Members<table border="1"><tr><td>Name: Joe Smith</td><td>Role: - Lead Designer</td></tr><tr><td>Name: Holly Smith</td><td>Role: - Lead Architect</td></tr><tr><td>Name: Brittany Smith</td><td>Role: - Administrator</td></tr></table> • Contractors:<table border="1"><tr><td>Name: X Construct</td><td>Role: Primary Contractors</td></tr><tr><td>Name</td><td>Role</td></tr><tr><td>Name</td><td>Role</td></tr></table> • Suppliers:<table border="1"><tr><td>Name: Concrete Supply</td><td>Role: Sole Suppliers of Concrete</td></tr><tr><td>Name</td><td>Role</td></tr><tr><td>Name</td><td>Role</td></tr></table>		Name: Joe Smith	Role: - Lead Designer	Name: Holly Smith	Role: - Lead Architect	Name: Brittany Smith	Role: - Administrator	Name: X Construct	Role: Primary Contractors	Name	Role	Name	Role	Name: Concrete Supply	Role: Sole Suppliers of Concrete	Name	Role	Name	Role
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Name	Role																		
Name	Role																		
Name: Concrete Supply	Role: Sole Suppliers of Concrete																		
Name	Role																		
Name	Role																		

Lesson 3, Topic 1: Exercise – Completing a Recovery Charter (cont'd)

- Project Recovery Manager:

Name: - 'Your Name'
Role: - Project Recovery Manager and liaison with contractors
Responsibility: - Manage all project and vendor activities

Assessment Methodology

Face-to-face interview will be used to gather information with all individuals and team represented in the section 'Project Personnel'

Project Assessment

- Project Failing Indicators
 - the contractors do not have the necessary skills to complete the project
 - the project is not resourced adequately
 - the CPI is 57% (which is 75% over budget)
 - the SPI is 66% (which is 51% behind schedule)
- Psychological / Environment Failing Indicators
 - Stakeholders are not comfortable with the project recovery and are unwilling to release the project objective due to public exposure and pressure
 - The contracting team may be unwilling to identify with the skill deficiency as their reputation must be considered.
- Assessment Outputs: -

Issues	Resolved (Yes / No)
Contractors do not have the necessary skills to complete the project	No

Key Milestones

- Recovery Milestone

Milestone: All project plans revised	Date 05-July-04
Milestone: Project scope confirmed	Date 10-July-04
Milestone: All project staff trained	Date 15-July-04

- Critical Milestones: -

Milestone: - Skill gap identified	Date 04-July-04
Milestone	Date
Milestone	Date

Lesson 3, Topic 1: Exercise – Completing a Recovery Charter (cont'd)

Data Requirements

- Current project plan
- Current risk response plan
- All project scope documentation

War room will be required with access to all project files

Approvals / Signatures

Project Sponsor: - Georgia State Authority
Senior Manager: - Georgia State Authority
Recovery Project Manager: - 'Your Name'

Lesson 5, Topic 1: Exercise – Viewing the Big Picture

Question

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned, with current costs running at \$2.3 million.

After nine months, the state authority appointed you as project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

The state authority realizes that the project is in trouble, but is shocked about the extent of the problem. They have identified you as the project recovery manager but want this appointment to remain quiet for the meantime. You have just completed a face-to-face interview with a lead representative of the project.

You have advised the state authority that the project should be recovered and a project recovery charter has been presented to formally indicate this. As project recovery manager, you want to be very clear on the success criteria, requirements, and measurements tools for the recovery project.

To present the big picture, you are to use the project recovery statement template to document the recovery project.

Lesson 5, Topic 1: Exercise – Viewing the Big Picture (cont'd)

Project Recovery Charter

Project Recovery Information

- Organization Name: - Georgia State Authority
- Project Sponsor: - Georgia State Authority
- Date: - 30-June-2004

Detailed Project Information

- Project Objective
 - Provide light-rail system within major urban areas that will facilitate professional and private commuters
 - Provide a rail system between major urban areas that will facilitate professional and private commuters
 - Provide a transportation system that will reduce the number of auto users
 - Implement – in a seamless fashion – a new system that has minimal impact on current operations
 - Educate public on transportation alternatives to ensure each individual understands new system
 - Provide transportation system that is cost effective and geared toward profits
- Start Date: - 01-Oct-2003
- Planned Completion Date: - 15-Jan-2006
- Budget: - \$2 million for initial construction phase
- Project Information
 - the CPI is 57% (which is 75% over budget)
 - the SPI is 66% (which is 51% behind schedule)

Project Personnel

- Existing Project Manager: - John Smith
- Existing Project Team Members

Name: Joe Smith	Role: - Lead Designer
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Name: Holly Smith	Role: - Lead Architect
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Name: Brittany Smith	Role: - Administrator
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- Contractors:

Name: X Construct	Role: Primary Contractors
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Name	Role
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Name	Role
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- Suppliers:

Name: Concrete Supply	Role: Sole Suppliers of Concrete
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Name	Role
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Name	Role
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Lesson 5, Topic 1: Exercise – Viewing the Big Picture (cont'd)

- Project Recovery Manager:

Name: - 'Your Name'
Role: - Project Recovery Manager and liaison with contractors
Responsibility: - Manage all project and vendor activities

Assessment Methodology

Face-to-face interviews will be conducted to gather information with all individuals and team members represented in the section 'Project Personnel.'

Project Assessment

- Project Failing Indicators
 - The contractors do not have the necessary skills to complete the project
 - The project is not resourced adequately
 - The CPI is 57% (which is 75% over budget)
 - The SPI is 66% (which is 51% behind schedule)
- Psychological / Environment Failing Indicators
 - Stakeholders are not comfortable with the project recovery and are unwilling to release the project objective due to public exposure and pressure
 - The contracting team may be unwilling to identify the skill deficiency as their reputation may be affected.
- Assessment Outputs: -

Issues	Resolved (Yes / No)
Contractors do not have the necessary skills to complete the project	No

Key Milestones

- Recovery Milestone

Milestone: All project plans revised	Date 05-July-04
Milestone: Project scope confirmed	Date 10-July-04
Milestone: All project staff trained	Date 15-July-04

- Critical Milestones: -

Milestone: - Skill gap identified	Date 04-July-04
Milestone	Date
Milestone	Date

Lesson 5, Topic 1: Exercise – Viewing the Big Picture (cont'd)

Data Requirements

- Current project plan
- Current risk response plan
- All project scope documentation

War room will be required with access to all project files

Approvals / Signatures

Project Sponsor: - Georgia State Authority
Senior Manager: - Georgia State Authority
Recovery Project Manager: - 'Your Name'

Lesson 5, Topic 1: Exercise – Viewing the Big Picture (cont’d)

Sample Answer

Project Recovery Statement																	
Purpose of the Recovery Project To recover the project to a state where the budget is stable and the functionality is intact. Currently the project is 75% over budget																	
Recovery Product Description A light-rail system to be piloted in one city. This system is to serve one route and based on the success will be deployed throughout the city and state. The recovery description requires that the original specification for the light-rail system be kept intact.																	
Recovery Project Status • Earned value to be used as the primary measure of project progress. • Milestone tracking to be established based on daily ‘show-stopper’ tasks. • Information to be reported to senior management team using dashboards that display project objectives measured using earned value and milestones. • Recovery team will use milestones as their method of tracking progress.																	
Recovery Team Description <table><tr><td>Name: Your Name</td><td>Role: - Recovery Manager</td><td>Responsibility: Recover Project</td></tr><tr><td>Name: Joe Smith</td><td>Role: - Lead Designer</td><td>Responsibility: Current Project Design</td></tr><tr><td>Name: Holly Smith</td><td>Role: - Lead Architect</td><td>Responsibility: Current Project Architect</td></tr><tr><td>Name: Brittany Smith</td><td>Role: - Administrator</td><td>Responsibility: Administrator</td></tr><tr><td>Name: Harry Smith</td><td>Role: - Lead Designer</td><td>Responsibility: Recover Design</td></tr></table>			Name: Your Name	Role: - Recovery Manager	Responsibility: Recover Project	Name: Joe Smith	Role: - Lead Designer	Responsibility: Current Project Design	Name: Holly Smith	Role: - Lead Architect	Responsibility: Current Project Architect	Name: Brittany Smith	Role: - Administrator	Responsibility: Administrator	Name: Harry Smith	Role: - Lead Designer	Responsibility: Recover Design
Name: Your Name	Role: - Recovery Manager	Responsibility: Recover Project															
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Name: Harry Smith	Role: - Lead Designer	Responsibility: Recover Design															
Task Description & Milestones <table><tr><td>Show-Stoppers</td><td> • Skills gaps to be analyzed. • Identify where over-spending is taking place. • Liaise with all suppliers to identify gaps in supplies and opportunities to make savings. </td><td> • 04-July-04 • 02-July-04 • 03-July-04 </td></tr><tr><td>Tasks</td><td> • Train all contracting staff. • Revise the design to see where costs can be saved without impacting on the scope. • Begin to implement the design changes. </td><td> • 15-July-04 • 10-July-04 • 11-July-04 </td></tr></table>			Show-Stoppers	• Skills gaps to be analyzed. • Identify where over-spending is taking place. • Liaise with all suppliers to identify gaps in supplies and opportunities to make savings.	• 04-July-04 • 02-July-04 • 03-July-04	Tasks	• Train all contracting staff. • Revise the design to see where costs can be saved without impacting on the scope. • Begin to implement the design changes.	• 15-July-04 • 10-July-04 • 11-July-04									
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Lesson 5, Topic 1: Exercise – Viewing the Big Picture (cont'd)

Constraints

- Scope cannot be altered from the original specification.
- Senior management require that the existing project team be part of the recovery project. This is to aid the learning and to ensure that they are fully capable of managing the post-recovery project.

Assumptions

- The senior management, contracting teams and suppliers are fully committed to recovery.

Critical Success Factors

- Project is within 10% of the budgetary targets.
- Scope of the project remains unaltered.
- The public perception is not tainted by the recent project problems. This is to be monitored with a survey with the capital of Georgia.

Risk

Risk	Event Status
Senior management are not fully committed to the project recovery	High
Resistance to the recovery lead designer is evident from the contractors	Med

Lesson 5, Topic 2: Exercise – Identifying the Status of a Recovery Project

Question

The state authority has sanctioned the Georgia Light Rail project. As a project manager, you have been alerted to the fact that the project is not proceeding as planned, with current costs running at \$2.3 million.

After nine months, the state authority appointed you as project recovery manager. You have presented the following information to the sponsor:

- the contractors do not have the necessary skills to complete the project
- the project is not resourced adequately
- the CPI is 57% (which is 75% over budget)
- the SPI is 66% (which is 51% behind schedule)

You have advised the state authority that the project should be recovered and a project recovery charter and statement has been presented to formally indicate this.

On completion of recovery, the forecast is that the budget will be running at \$3.2 million (divided pro-rata over the duration of the recovery) and the recovery will be completed within 18 days with the following milestones:

- recovery start: - 01-July-04 (0% of work completed)
- skills gaps analyzed: - 04-July-04 (10% of work completed)
- project plans revised: - 05-July-04 (15% of work completed)
- current project designs revised: - 10-July-04 (40% of work completed)
- cost-saving design roll-out: - 11-July-04 (50% of work completed)
- training completed: - 15-July-04 (70% of work completed)
- design complete and project hand-over to existing team: - 19-July-04 (100% of work completed)

The recovery has completed its first weekend of activity and the status is as follows on day 5 (5-July-04):

- budget running at \$2.6 million
- skills gaps have been analyzed, the inspection of the project plans are not completed (60% complete) and the lead designer is making good progress with the designs (20% complete)

Present this data to senior management using earned value and forecast the cost at completion (referenced as estimate at completion using $EAC = AC + ((BAC - EV) / CPI)$).

Lesson 5, Topic 2: Exercise – Identifying the Status of a Recovery Project (cont'd)

Answer

Current Status

Budget at Completion (BAC) is (\$3.2 million – \$2.3 million) = \$0.9 million

Planned Value (PV) at day 5

- It is stated that the budget is divided pro-rata across the duration of the recovery project:
 - PV (at day 5) = \$0.05 million * 5 days
 - PV (at day 5) = \$0.25 million

The budget at day 5 of the recovery is \$2.6 million. The **Actual Cost (AC)** at day 5 is \$2.6 million - \$2.3 million = \$0.3 million

The **Earned Value (EV)** at day 5 is 18% of work completed, which equates to \$0.3 million:

- skills gaps have been analyzed = 10% of work completed
- the inspection of the project plans are not completed (60% complete) = 3% of work completed (the inspection of the project plan constitutes 5% of the recovery work, as 60% of it is complete, the earned value is 5% * 60% = 3%)
- the lead designer is making good progress with the designs (20% complete) = 5% of work completed

To get the earned value at day 5, divide the earned value against the planned milestones (i.e. 15%) = 1.2. This is the factor that is multiplied against the day 5 budget of \$0.25 million, giving a currency figure of \$0.3 million

Day 5		
	Formula	Value
PV		\$0.25 million
AC		\$0.3 million
EV		\$0.3 million
BAC		\$0.9 million
CPI	EV / AC	1
SPI	EV / PV	1.2
EAC	AC + ((BAC – EV) / CPI)	\$0.9 million

Analysis

The report to senior management should be positive, as the recovery project is on track to meet the original recovery budget. It is also ahead of schedule and currently meeting budgetary expectations.