SPM

Project Integration Management

Day 4: Project Integration Management

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Last Class We Discussed

- The 5 Process Groups in Project Management
- Process Groups Interrelation to the 10 PM Knowledge Areas
- Process Groups: Case Studies
- Process Group Approach Vs Agile Approach (Based on JWD Case Study)
- Creating Document Templates for each process group
- **WBS (Work Breakdown Structure)**
- **SCRUM (Systematic Customer Resolution Unravelling Meeting) in Detail**
- Agile Burndown Chart Vs EVM (Earned Value Management) Chart

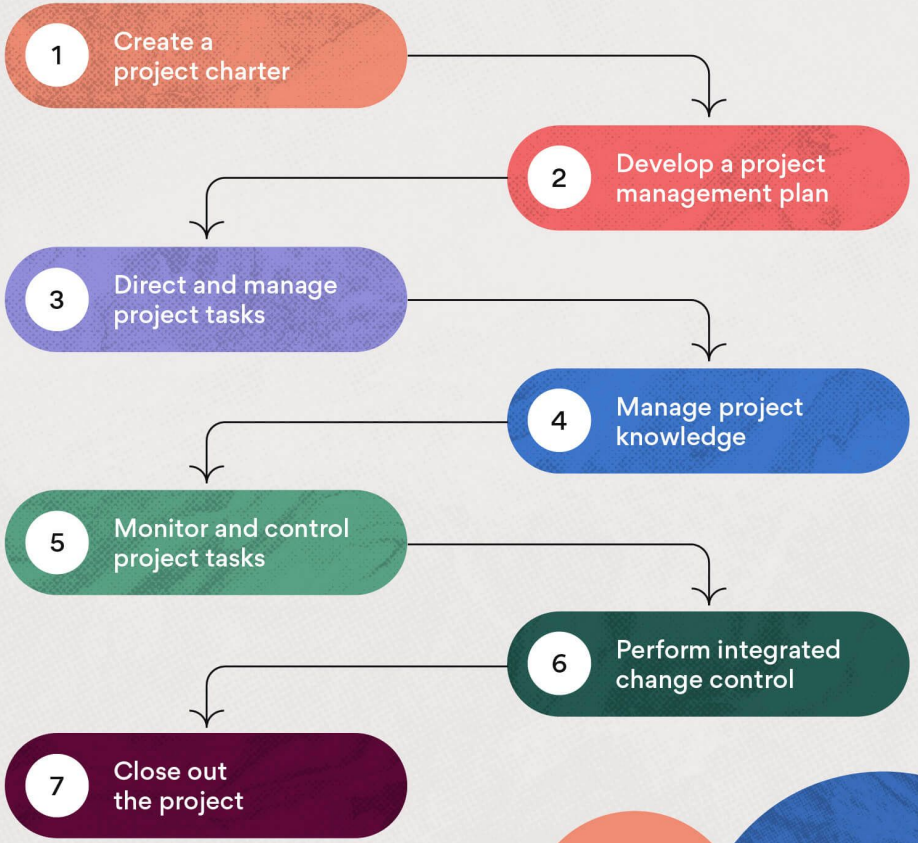
Today’s Learning Objectives

- The 7 Steps in Project Integration Management
- SWOT Analysis and SWOT Matrix
- Information Technology Planning Process
- Five methods for selecting projects
- Net Present Value (NPV)
- Return on Investment (ROI), IRR and Required Rate of Return
- Payback Analysis
- Weighted Score and Balanced Scorecard

The Key to Overall Project Success

- Is good Project Integration Management
- It is crucial to coordinate all other knowledge areas throughout project's life cycle
- It helps focusing on the big picture and should not be mistaken with software integration management
- This ensures all elements of a project come together at the right times to complete a project successfully

The 7 steps of project integration management



Project Integration Management Processes

1. Developing Project Charter: This involves working with stakeholders to create the document that formally authorizes a project - the charter.
2. Developing Project Management Plan: involves coordinating all planning efforts to create consistent, coherent document the PMP
3. Directing and Managing Project Work: carry out the PMP by performing the activities included in it.
4. Manage Project Knowledge: Use existing info or obtain new info to reach project goals.
5. Monitoring and Controlling: oversee activities to meet the performance objectives of the project
6. Integrated Change Control: involves identifying, evaluating, and managing changes throughout the project life cycle
7. Closing: involves finalizing all activities to formally close the project or phase

Develop Project Charter Process

Inputs	Tools & Techniques	Outputs
Project Statement of Work	Expert Judgment	Project Charter
Business Case	Facilitation Techniques	
Agreements and Contracts		
Enterprise Environmental Factors		

Develop Project Management Plan Process

Inputs	Tools & Techniques	Outputs
Project Charter	Expert Judgment	Project Management Plan
Outputs from Planning Processes	Project Planning Methodology	Supporting Detail
Historical Information	Stakeholder Skills and Knowledge	
Enterprise Environmental Factors	Project Management Information System (PMIS)	
Organizational Process Assets	Facilitation Techniques	
Constraints		
Assumptions		

Direct and Manage Project Work Process

Inputs	Tools & Techniques	Outputs
Project Management Plan	Expert Judgment	Deliverables
Approved Change Requests	Project Management Information System	Work Performance Information
Enterprise Environmental Factors	Meetings	Change Requests
Organizational Process Assets		Project Management Plan Updates
		Project Document Updates

Monitor and Control Project Work Process

Inputs	Tools & Techniques	Outputs
Project Management Plan	Expert Judgment	Change Work Requests
Work Performance Information	Analytical Techniques	Project Management Plan Updates
Enterprise Environmental Factors	Project Management Information System (PMIS)	Project Document Updates
Organizational Process Assets	Meetings	Work Performance Reports
Cost Forecasts		
Validated Changes		

Perform Integrated Change Control Process

Inputs	Tools & Techniques	Outputs
Project Management Plan	Expert Judgment	Change Request Status Updates
Work Performance Reports	Change Control Meetings	Project Management Plan Updates
Change Requests	Change Control Tools	Project Document Updates
Enterprise Environmental Factors		Change Log
Organizational Process Assets		

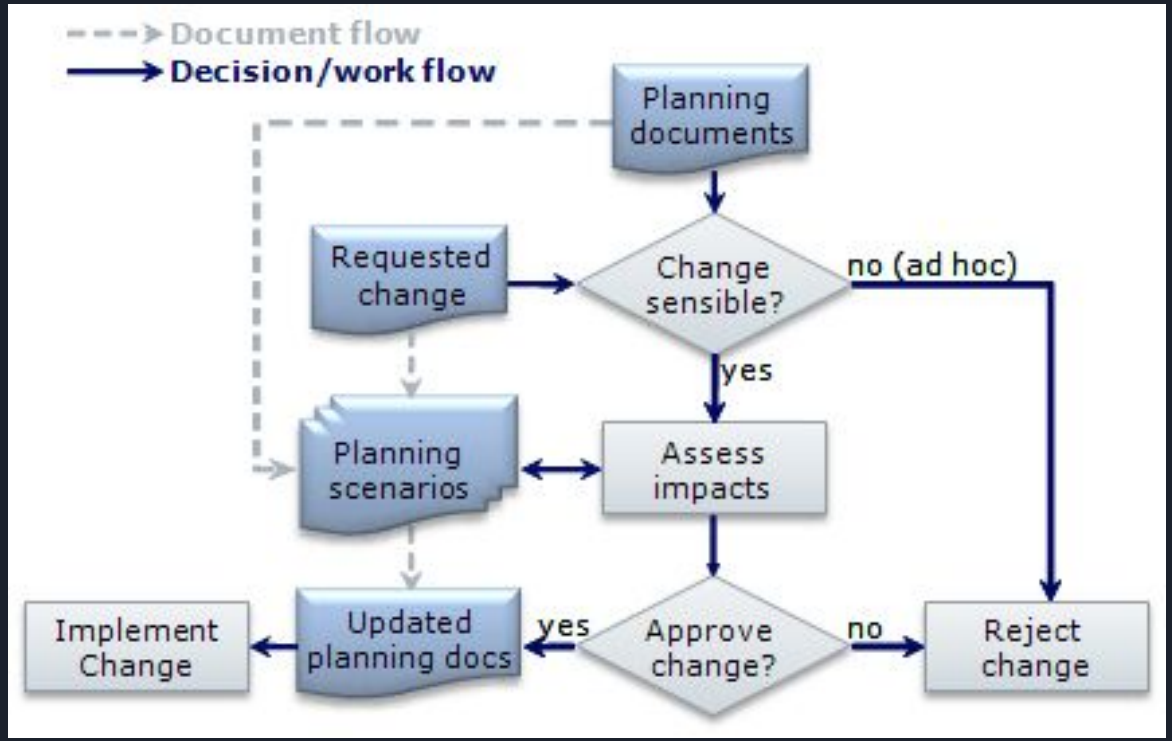
Objectives:

> Influencing the factors that create changes to ensure that changes are beneficial.

> Determining that a change has occurred.

> Managing actual changes as they occur.

Integrated Change Control Workflow



CHANGE REQUEST TEMPLATE

PROJECT NAME		CHANGE REQUEST NO.
PROJECT MGR.		

CHANGE REQUEST			
REQUESTOR NAME		DATE OF REQUEST	
REQUESTOR CONTACT		PRIORITY	
ITEM TO BE CHANGED			
CHANGE DESCRIPTION			

PREDICTED TIMELINE	ESTIMATED COSTS

CHANGE EVALUATION			
EVALUATOR NAME		DATE OF EVAL	

EXPECTED OUTCOME

WORK REQUIRED

AREA OF IMPACT	IMPACT DESCRIPTION	IMPACT LEVEL
SCOPE		
SCHEDULE		
COST		
QUALITY		

CHANGE REVIEW / APPROVAL			
REVIEWER NAME		STATUS	ACCEPTED / REJECTED
REVIEWER SIGNATURE		DATE OF REVIEW	

ADDITIONAL COMMENTS

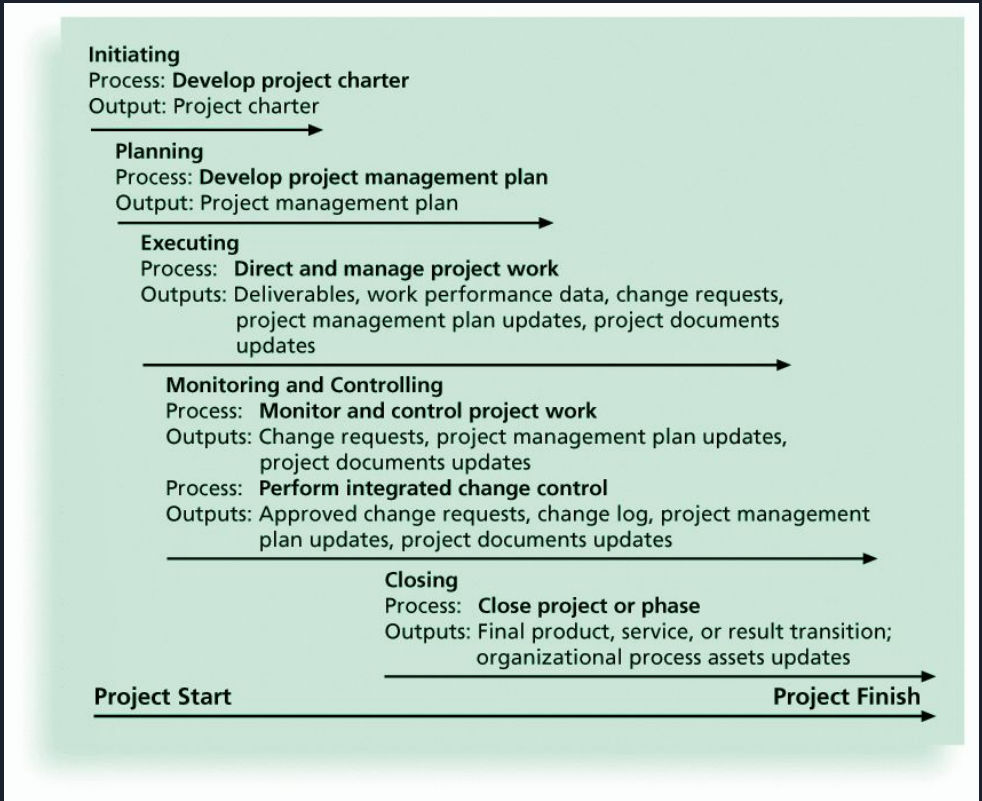
CHANGE TRACKING			
TRACKING AGENT		LAST UPDATED	
TRACKING AGENT SIGNATURE		VERSION NUMBER	0.0.0

ADDITIONAL COMMENTS

Close Project or Phase Process

Inputs	Tools & Techniques	Outputs
Project Management Plan	Expert Judgment	Final Product, Service or Result Transition
Accepted Deliverables	Analytical Techniques	Organizational Process Assets Updates
Organizational Process Assets	Meetings	

Project Integration Management Summary



Key points of PIM

- Someone must be responsible for coordinating all of the people, plans and work required to complete a project
- Someone must focus on the big picture of the project and steer the team accordingly
- Someone must have the authority and capability to make final decisions when conflicts occur among project goals or people
- Someone must communicate key project information to top management
- This ‘someone’ is ideally the ‘Project Manager’ whose primary means for accomplishing all above tasks is Project Integration Management

Case Study - What Went Wrong ?

Airbus A380 Megajet Project

2 YEARS behind schedule in October 2006.

Parent company was to face an expected loss of $6.1 billion over 4 years.

CAUSES:

- Severe integration management problem as showcases by - when pre assembled bundles containing hundred of miles of cabin wiring were delivered from outsourced German Factory to assembly line in France, the harnesses did not fit properly into the plane rendering the bundles useless.
- Assembly was almost halted as workers tried to pull the bundles apart and re-thread them through the fuselage
- Airbus had to go back to the drawing board and redesign the whole wiring system

Strategic Planning and Project Selection

Strategic planning involves

- determining long term objectives by analyzing strengths and weaknesses of an organization,
- studying opportunities and threats in the business environment,
- predicting future trends and projecting the need for new products and services.

Often achieved by performing a SWOT analysis i.e.

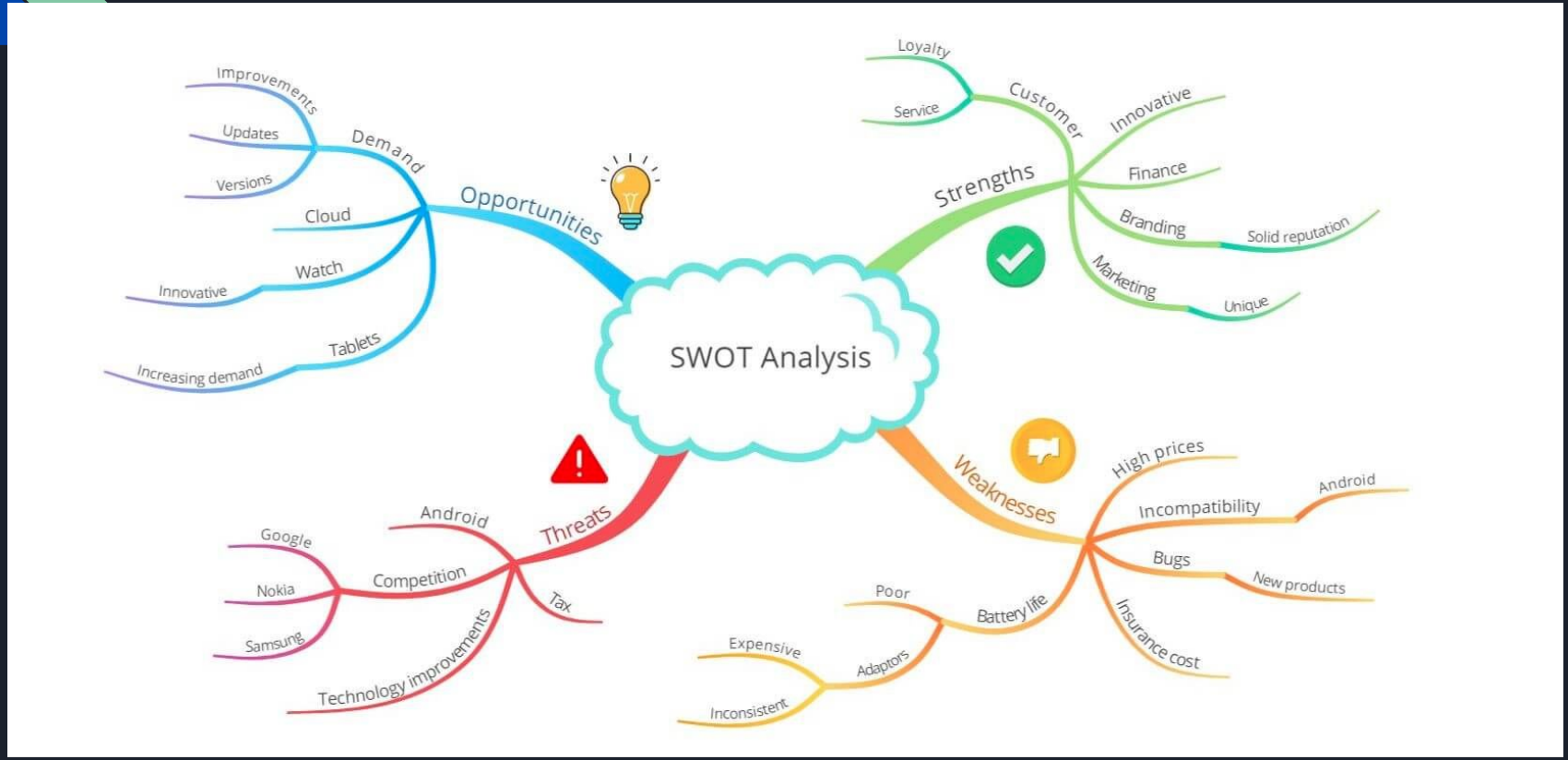
Analyzing Strengths, Weaknesses, Opportunities and Threats


S
STRENGTHS
Things your company does well
Qualities that separate you from your competitors
Internal resources such as skilled, knowledgeable staff
Tangible assets such as intellectual property, capital, proprietary technologies etc.
W
WEAKNESSES
Things your company lacks
Things your competitors do better than you
Resource limitations
Unclear unique selling proposition
O
OPPORTUNITIES
Underserved markets for specific products
Few competitors in your area
Emerging need for your products or services
Press/media coverage of your company
T
THREATS
Emerging competitors
Changing regulatory environment
Negative press/ media coverage
Changing customer attitudes toward your company
WordStream

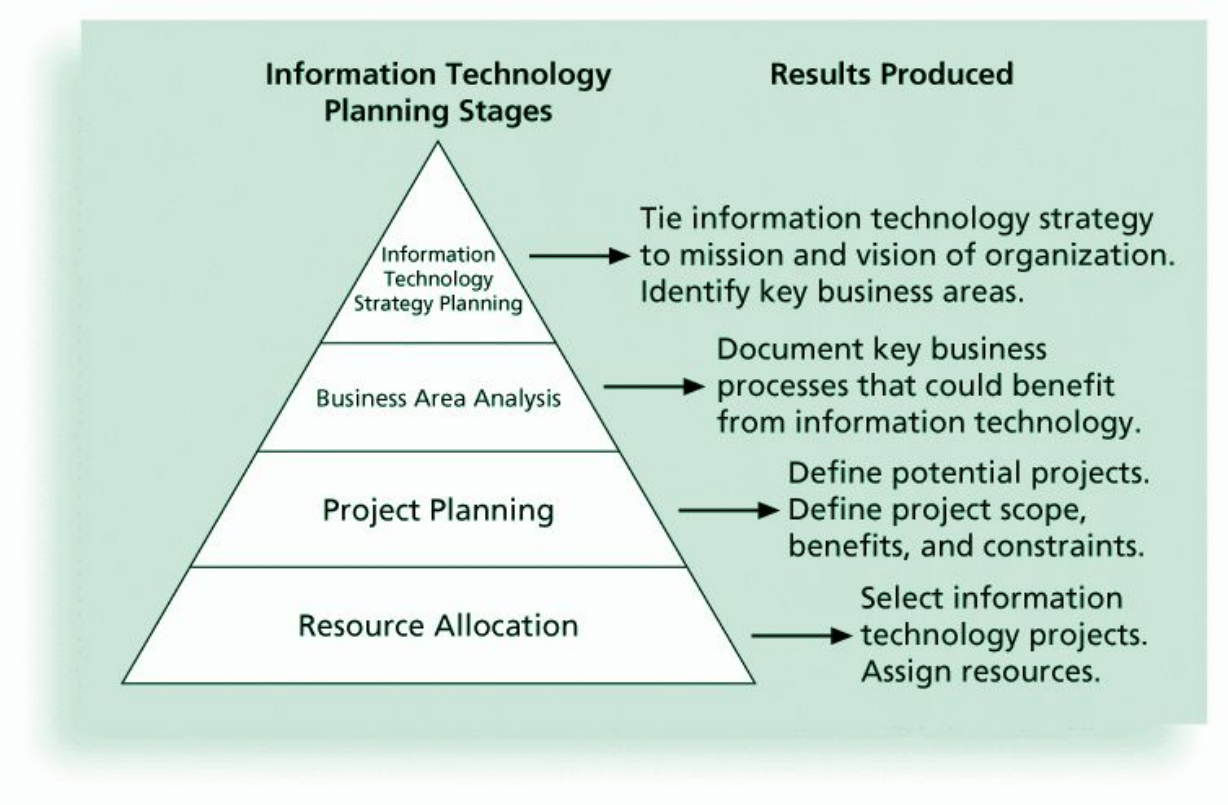
SWOT MATRIX


S
W
STRENGTHS
Use internal strength to exploit external opportunities
O
SO
WO
OPPORTUNITIES
Overcome internal weakneses by exploiting external opportunities
T
ST
WT
WEAKNESSES
Use internal strength to avoid or minimize external threat
THREATS
Overcome internal weaknesses to minimize threats

Mind Map of SWOT Analysis - an example



Information Technology - Planning Process



5 Different Methods for Selecting Projects

1. Focusing on broad organizational needs
2. Categorizing information technology projects
3. Performing net present value or other financial analyses (ROI)
4. Using a weighted scoring model
5. Implementing a balanced scorecard

1. Focusing on broad organizational needs

“It is better to measure gold roughly than to count pennies precisely”

Three important criteria for accepting a project:

NEED for the project

FUNDS for the project

STRONG WILL for the project success

2. Categorizing IT Projects

Based on :

What does it address ? - a Problem, an Opportunity or a Directive

How long will it take and When will it be needed ?

Overall Priority of undertaking the project.

3. Financial Analysis

Three primary methods for determining projected financial value of projects are as follows:

- Net Present Value (NPV) Analysis
- Return on Investment (ROI) Analysis
- Payback Analysis

3.a) Net Present Value (NPV)

It is a method of calculating expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time

Projects with positive NPV should be considered if financial value is a key criterion

The higher the NPV the better !

CALCULATIONS:

Determine estimated cost and benefits for life of project and products it produces

$$NPV = \sum_{i=1}^{n} \frac{R_i}{(1+r)^i} - \text{Initital Investment}$$

Where:

R_i is the estimated net cash flow for i^{th} period,

r is the required rate of return per period, and

n is the life of the project in months, years etc.

Examples:

	A	B	C	D	E	F	G
1	Discount rate	10%					
2							
3	PROJECT 1	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
4	Benefits	$0	$2,000	$3,000	$4,000	$5,000	$14,000
5	Costs	$5,000	$1,000	$1,000	$1,000	$1,000	$9,000
6	Cash flow	($5,000)	$1,000	$2,000	$3,000	$4,000	$5,000
7	NPV →	$2,316					
8		Formula =npv(b1,b6:f6)					
9							
10	PROJECT 2	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
11	Benefits	$1,000	$2,000	$4,000	$4,000	$4,000	$15,000
12	Costs	$2,000	$2,000	$2,000	$2,000	$2,000	$10,000
13	Cash flow	($1,000)	$0	$2,000	$2,000	$2,000	$5,000
14	NPV →	$3,201					
15		Formula =npv(b1,b13:f13)					
16							
17							

Note that totals are equal, but NPVs are not because of the time value of money

JWD Consulting NPV Example

Discount rate	**8%**					
Assume the project is completed in Year 0			**Year**			
	0	**1**	**2**	**3**	**Total**	
Costs	140,000	40,000	40,000	40,000		
Discount factor	1	0.93	0.86	0.79		
Discounted costs	**140,000**	**37,200**	**34,400**	**31,600**	**243,200**	
Benefits	0	200,000	200,000	200,000		
Discount factor	1	0.93	0.86	0.79		
Discounted benefits	**0**	**186,000**	**172,000**	**158,000**	**516,000**	
Discounted benefits - costs	(140,000)	148,800	137,600	126,400	**272,800**	← **NPV**
Cumulative benefits - costs	(140,000)	8,800	146,400	272,800		
		↑				
ROI →	**112%**					
	Payback In Year 1					

3.b) Return on Investment (ROI)

ROI is calculated by subtracting project costs from the benefits and then dividing by the discounted costs. Internal Rate of Return (IRR) is calculated by finding a discount rate that makes NPV equal to zero. RRR(Required Rate of Return) is minimum acceptable rate of ROI.

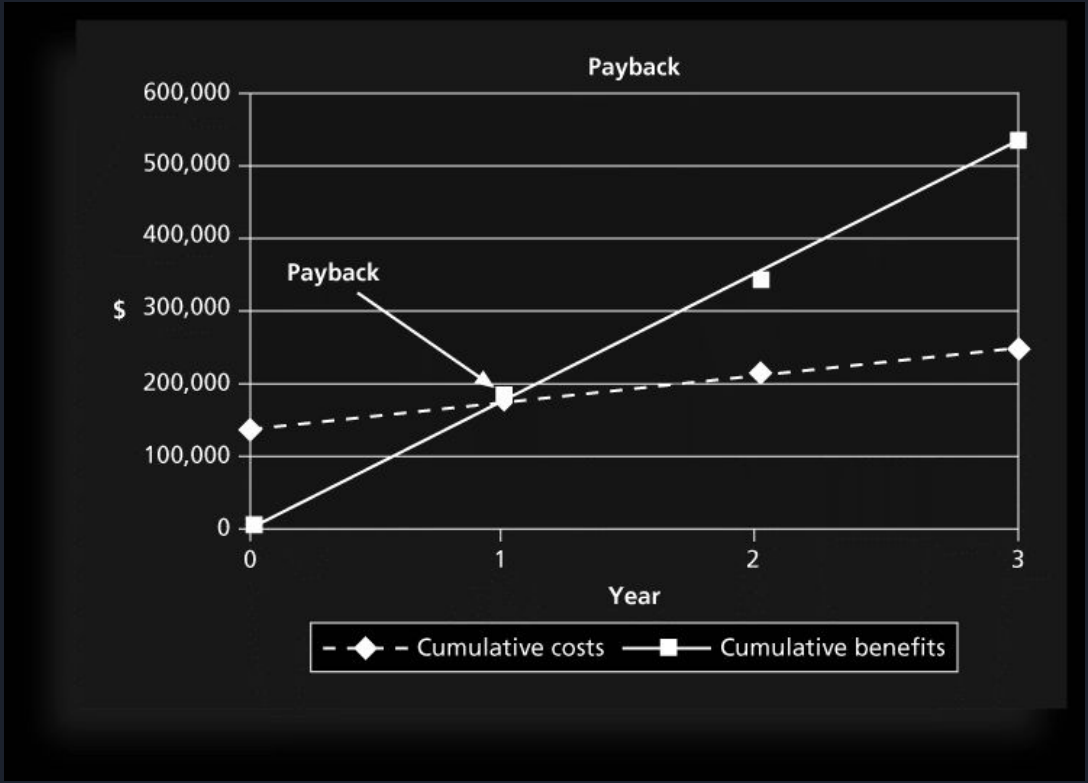
3.c) Payback Analysis

Payback Period is the amount of time it will take to recoup, in the form of net cash inflows, the total dollars/rupees invested in a project

Payback occurs when the net cumulative discounted benefits(amount spent) equals the costs

A short payback period is often desired by most organizations especially when it comes to IT projects.

Charting the Payback Period



4. Weighted Scoring Model

WSM is a tool that provides a systematic process for selecting projects based on many criterias

- Identify criteria important to project selection process
- Assign weights (%) to each criterion so they add up to 100%
- Assign scores to each criterion for each project
- Multiply the scores by th weights and get the total weighted scores
- The higher the weighted score, the better !

	A	B	C	D	E	F
1	**Criteria**	**Weight**	**Project 1**	**Project 2**	**Project 3**	**Project 4**
2	Supports key business objectives	25%	90	90	50	20
3	Has strong internal sponsor	15%	70	90	50	20
4	Has strong customer support	15%	50	90	50	20
5	Uses realistic level of technology	10%	25	90	50	70
6	Can be implemented in one year or less	5%	20	20	50	90
7	Provides positive NPV	20%	50	70	50	50
8	Has low risk in meeting scope, time, and cost goals	10%	20	50	50	90
9	**Weighted Project Scores**	**100%**	**56**	**78.5**	**50**	**41.5**
10						
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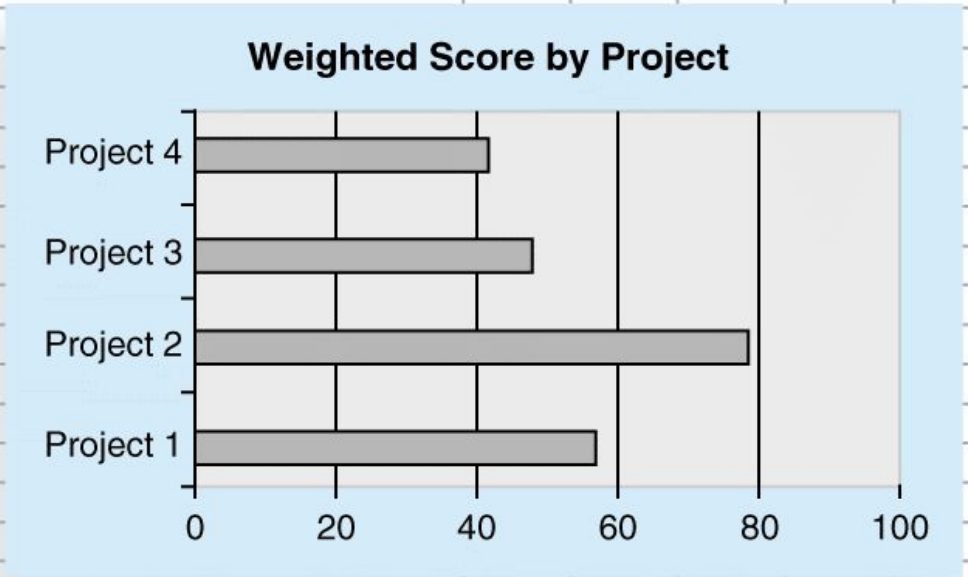
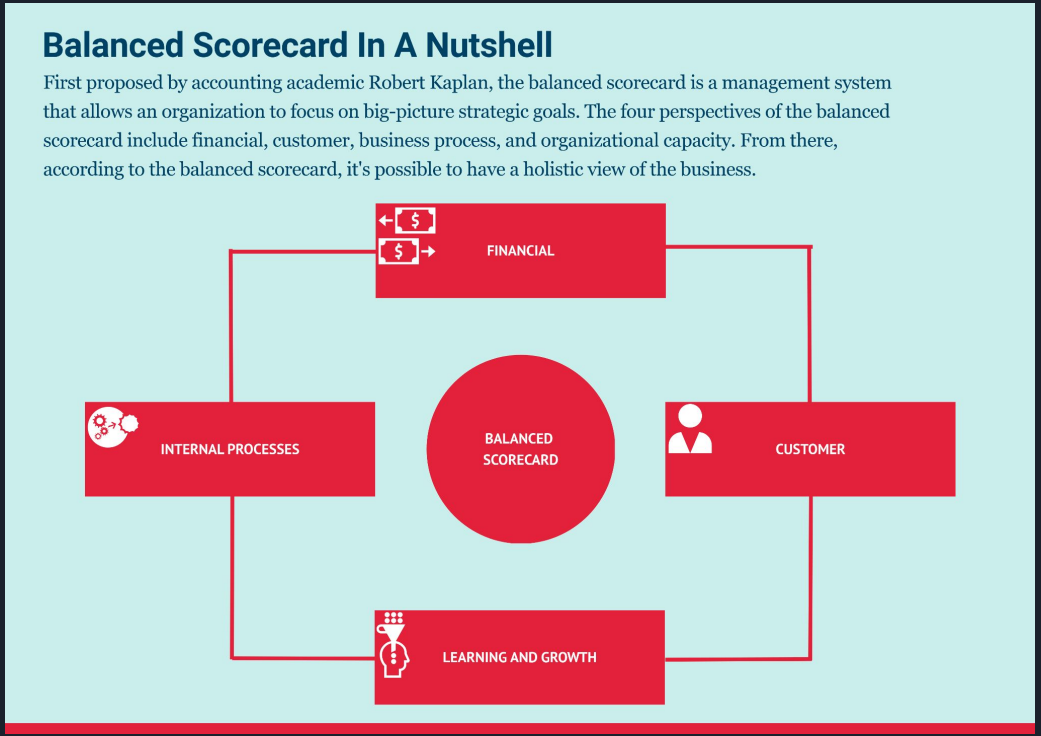


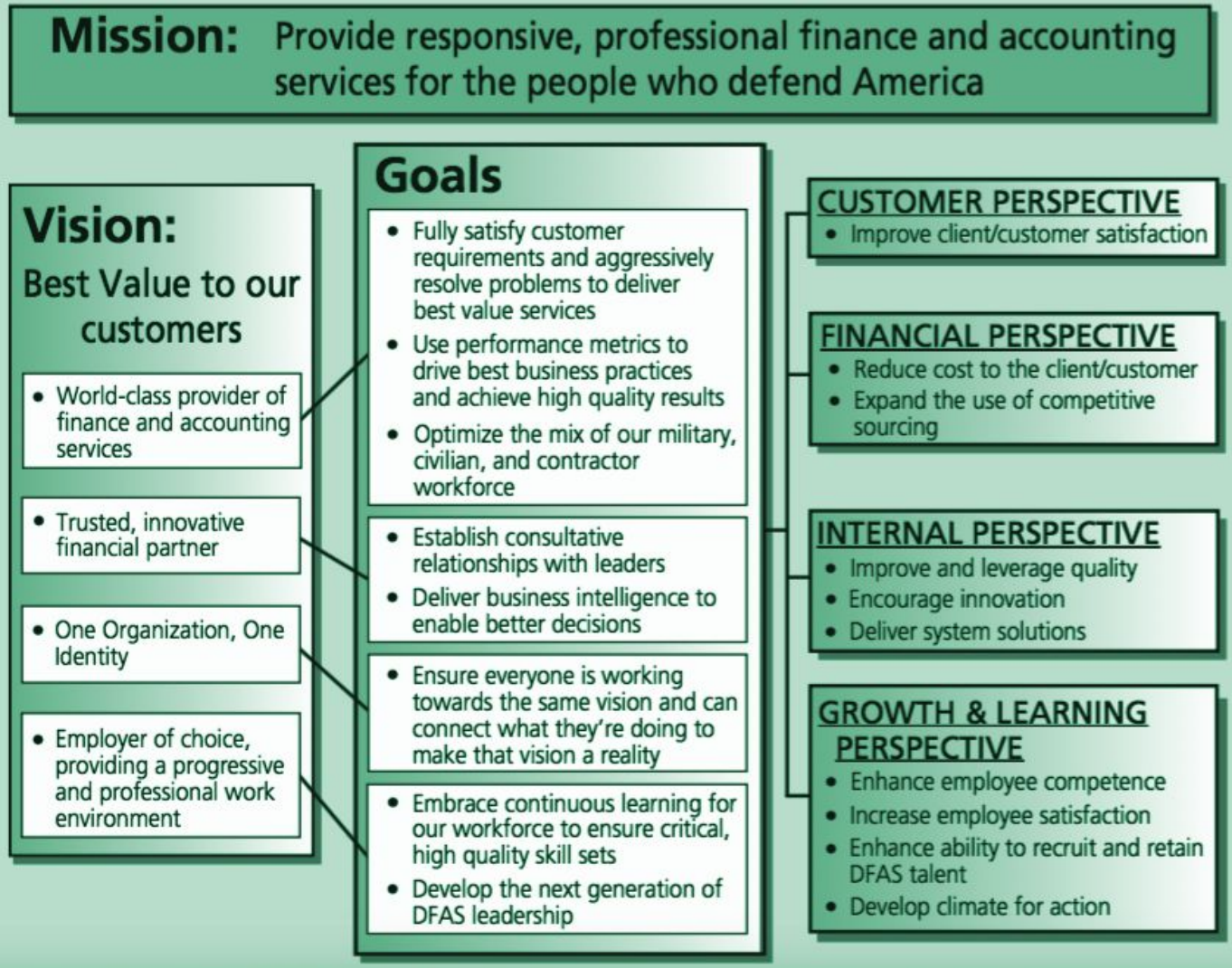
5) Balanced Scorecard

This approach was developed by Dr. Robert Kaplan and Dr. David Norton in order to help select and manage projects that align with business strategy

It is a methodology that converts an organization's value drivers, such as customer service, innovation, operational efficiency and financial performance, to a series of defined metrics.

Sample Example Case: U.S Defense Finance and Accounting Services (DFAS) uses this approach to measure performance and track progress in achieving it strategic goals. It focus on 4 major perspectives: Customer, Financial, Internal and Growth & Learning.




Mission: Provide responsive, professional finance and accounting services for the people who defend America
Vision:
Best Value to our customers
• World-class provider of finance and accounting services
• Trusted, innovative financial partner
• One Organization, One Identity
• Employer of choice, providing a progressive and professional work environment
Goals
• Fully satisfy customer requirements and aggressively resolve problems to deliver best value services
• Use performance metrics to drive best business practices and achieve high quality results
• Optimize the mix of our military, civilian, and contractor workforce
• Establish consultative relationships with leaders
• Deliver business intelligence to enable better decisions
• Ensure everyone is working towards the same vision and can connect what they're doing to make that vision a reality
• Embrace continuous learning for our workforce to ensure critical, high quality skill sets
• Develop the next generation of DFAS leadership
CUSTOMER PERSPECTIVE
• Improve client/customer satisfaction
FINANCIAL PERSPECTIVE
• Reduce cost to the client/customer
• Expand the use of competitive sourcing
INTERNAL PERSPECTIVE
• Improve and leverage quality
• Encourage innovation
• Deliver system solutions
GROWTH & LEARNING PERSPECTIVE
• Enhance employee competence
• Increase employee satisfaction
• Enhance ability to recruit and retain DFAS talent
• Develop climate for action

BALANCED SCORECARD

Fact Sheet and Statistics

BSC Designer

THE CHALLENGES

According to the **Balanced Scorecard Collaborative**

95%

95% of the typical workforce **does not understand** its organization's strategy

90%

90% of organizations **fail to execute their strategies** successfully

According to the

Global State of Strategy and Leadership Survey Report

54% of respondents reported **poor vertical alignment**

THE TOOLKIT

TOP 3
most popular business tools

- Balanced Scorecard
- Agile Management
- Advanced Analytics

According to **Management Tools & Trends by Bain & Company**

49% of executives describe their strategies with the **Balanced Scorecard**

Global State of Strategy and Leadership Survey Report

According to the
Annual Business/Balanced Scorecard Survey

67% of respondents use **spreadsheets**

44% of scorecards are used for **measurement** only

82% no **commitment** from departments

According to the
BSC Challenges report

30%

Motivational aspect is the reason for 30% of the challenges

According to Bain & Co:

50% of **Fortune 1,000** companies are using the Balanced Scorecard

70% of organizations had at least **partially implemented** a Balanced Scorecard

73%

73% of companies reported Balanced Scorecard as **extremely** or **very** helpful

According to the 2GC Balanced Scorecard usage survey

THE PITFALLS

THE RESULTS

References

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https://www.smartsheet.com/project-integration-management

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https://www.efinancialmodels.com/2019/06/10/how-simple-payback-analysis-can-improve-the-quality-of-your-financial-decision-making/

PS: If you haven't already started working on research assignment, it might be too late !

THANK YOU

happy weekends