EPIC

Effective   Professional   Inspiring   Competent

Project Management

Fundamentals

Risk Management

Agenda

❖ **Risk Definition & Description**

❖ **Risk Responses**

❖ **Qualitative Risk Analysis**

❖ **Quantitative Risk Analysis**

Risk Definition & Description

Let us see which of these are Risks...

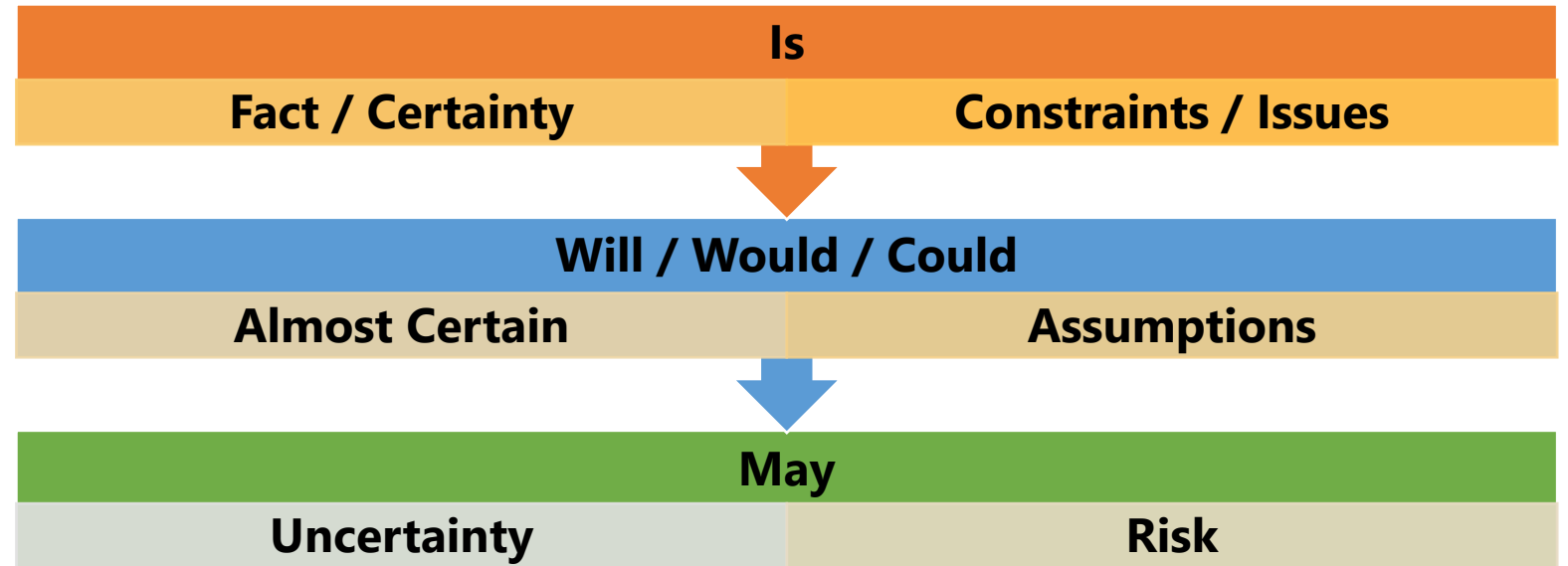| ✕	✕	✓
Team head count **is** less than the required count	Customer **will** ship the hardware by May-22	It **may** rain tomorrow
There **is** high attrition in the team	Software license **will** be available to the team from Jun-22	New team members **may** not experienced on the required skill set
✕	✕	✓

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What is Risk?

Is	
Fact / Certainty	**Constraints / Issues**

Will / Would / Could	
Almost Certain	**Assumptions**

May	
Uncertainty	**Risk**

WHAT IS RISK?

A Risk needs to talk about some ==uncertainty==

Is this a Risk?

There may be a Tiger in your vicinity.

Will you take any action right now?

WHAT IS RISK?

A Risk needs to have Context / back story, for it to be appreciated

Is this a Risk?

You are in a jungle.

There may be a Tiger in your vicinity.

Is it a risk if you are in a jungle safari?

A Risk needs to talk about Impact

Is this a Risk?

You are in a jungle. There may be a Tiger in your vicinity.
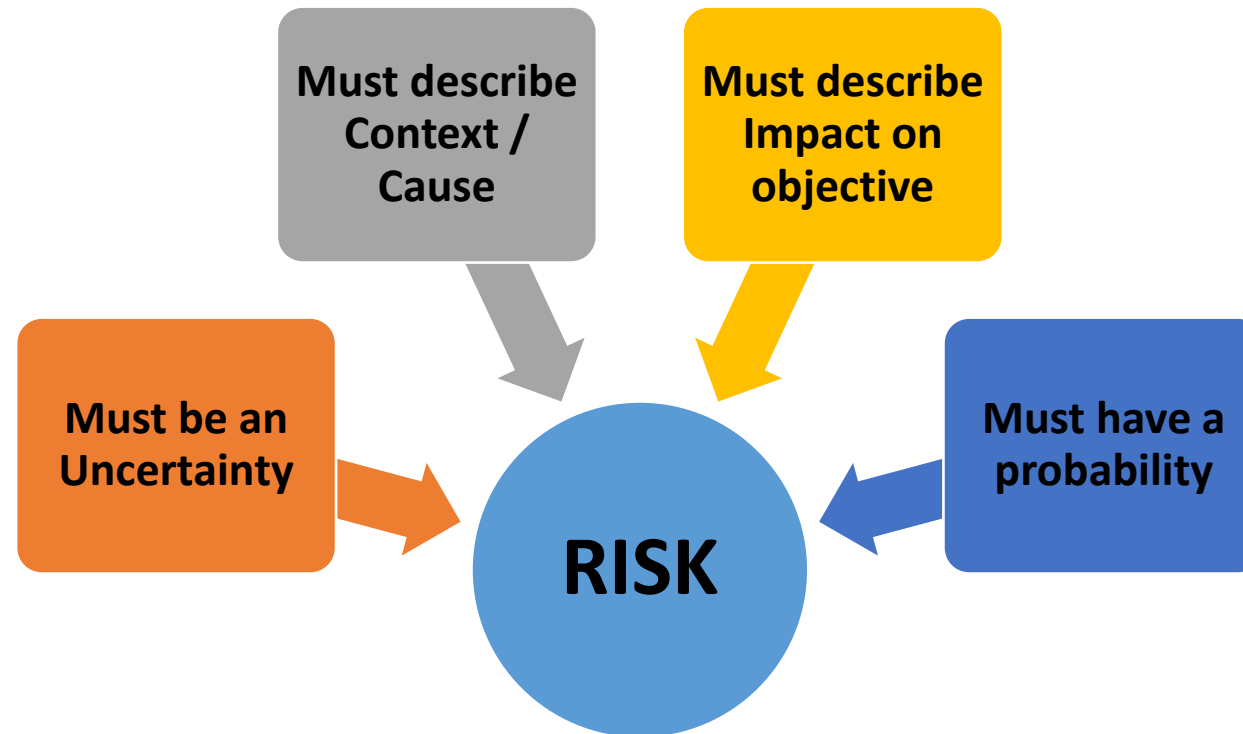**If it feels threatened, it may attack & kill you.**

What action will you take?

That depends on the **Probability**
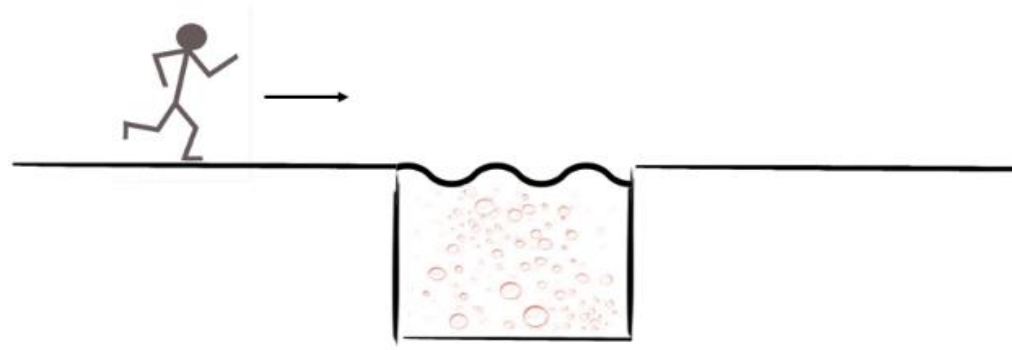of the occurrence…

Risk Description

The PMBOK® Guide describes **Risk** as, An **uncertain** event or condition, that if it occurs, has a positive or negative **effect** on a project's **objective**.

WHAT IS RISK?

Must describe Context / Cause

Must describe Impact on objective

Must be an Uncertainty

Must have a probability

RISK

Risk vs Issue

Risk

Issue

Summary

RISKS

- **Focused on the future**
- **Can be positive or negative**
- **Are documented in the risk register**
- **Response is called a "risk response"**

ISSUES

- **Focused on the present**
- **Will always be negative**
- **Are documented in the issue log**
- **Response is called a "workaround"**

Risk Responses

Negative Risk Responses

Risk

While surveying the road through the jungle, there may be a tiger in the vicinity, which may attack & kill the surveyor

Avoidance
- Do **Aerial Survey**

Transference
- Take a **Forest Officer** with you, who knows how to handle the tiger

Mitigation
- Play drums while doing the survey (**Reduce Probability**)
- Travel in a caged vehicle (**Reduce Impact**)

Contingency (Acceptance)
- Make tiger unconscious with a **tranquilizer**

Escalate
- **Inform your supervisor** that this risk is beyond your control

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Positive Risk Responses

Risk

You may complete your project in three months, and the government is about to float a similar project in two months, which can increase your revenue.

Exploit
- You take **every possible measure** to finish ahead of time so you can bid for the new project.

Share
- You **team up with another company** capable of doing this task and jointly bid for the project.

Enhance
- You **fast track your schedule** to complete your current project within 2 months so that you are able to bid for the new project

Accept
- You take **no action** to realize the opportunity. You leave it as is, and if it happens, you will benefit from it.

Escalate
- **Inform your supervisor** that they need to intervene to realize this opportunity

Summary

Risk Register

A **repository** or document which contains a list of the
most important risks to the project's completion.

Risk Description	Impact Description	Impact	Probability	Risk Score	Trigger Condition	Planned Response	Owner
Uncertainty Context Impact Probability	What will happen if the risk is not mitigated or eliminated	Rate 1 (LOW) to 5 (HIGH)	Rate 1 (LOW) to 5 (HIGH)	(IMPACT X PROBABILITY) Address highest first.	What indicates the risk will occur.	Action plan	Who's responsible

- **Add risks** raised during status **meetings**, **standups** or daily scrums, iteration **reviews**, **retrospectives** – or even **informally** – to the risk register

- **Update** newly identified and existing risks based on the current knowledge and situation

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Qualitative Risk Analysis

Identify Risks for the Wedding Project

	Risk	Probability	Impact
2	It may rain on the day of the ceremony, which will cause guests to come late	Medium	Medium
1	The decorator may not complete the decoration & set up on time, which will impact the schedule of the ceremony	High	High
3	There may be tiger in the vicinity which will scare the guests	Low	Medium

Which Risk needs most & immediate attention?

How did you decide that?

Qualitative Risk Analysis

Identification of which risks need Risk Response Plan

Probability	Rating	Risk Priority Number (RPN) = Probability Rating x Impact Rating				
Very High	5	5	10	18	20	25
High	4	4	8	12	16	20
Moderate	3	3	6	9	12	15
Low	2	2	4	6	8	10
Very Low	1	1	2	3	4	5
Impact Rating		1	2	3	4	5
Impact		Very Low	Low	Moderate	High	Very High

High Risk	RPN >= 15
Moderate Risk	10 >= RPN < 15
Low Risk	RPN <= 5

- Every organization decides its Risk Thresholds for Low, Moderate & High Risks.
- These thresholds can be changed based on the project's needs

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Risk Strategy

RISK APPETITE

- The **degree of uncertainty** an organization or individual is **willing to accept** in anticipation of a reward.
- How would you describe the organization/ project's risk appetite?
  - Risk-**seeking**?
  - Risk-**neutral**?
  - Risk-**averse**?

RISK THRESHOLD

- The **level of risk exposure** above which risks are addressed and below which risks may be accepted.
- The risk threshold is tied to individual and organizational risk appetites. Do you know:
  - Which risks are **too high** to accept?
  - Which risks are **low enough** to just be accepted?
  - What criteria determines inclusion in the **risk register**?

Quantitative Risk Analysis

Quantitative Risk Analysis

Simulations

- An **analytical technique** that models the combined effect of **uncertainties** to evaluate their **potential impact** on objectives.
- E.g. **Monte Carlo Simulation**: A risk management tool (mostly software), which project managers use to estimate the impacts of various risks on the project cost and project timeline.

Expected Monetary Value

- A **quantitative method** of calculating the average outcome when the future is uncertain.
- The calculation of EMV is a **component of decision tree analysis**.
- Opportunities will have positive values and threats will have negative values.
- **Multiply** the **monetary value** of a **possible outcome** with its **probability** of occurrence to calculate the EMV of each branch
- Select the optimal one

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Expected Monetary Value (EMV)

Expected Monetary Value (EMV) =
Monetary Value of Impact x % Probability

Work Package	Impact	Probability	EMV
A	- $50,000	10%	- $5,000
B	- $25,000	20%	- $5,000
C	- $10,000	50%	- $5,000

Total EMV of the Risk on the project is ?

- $15,000

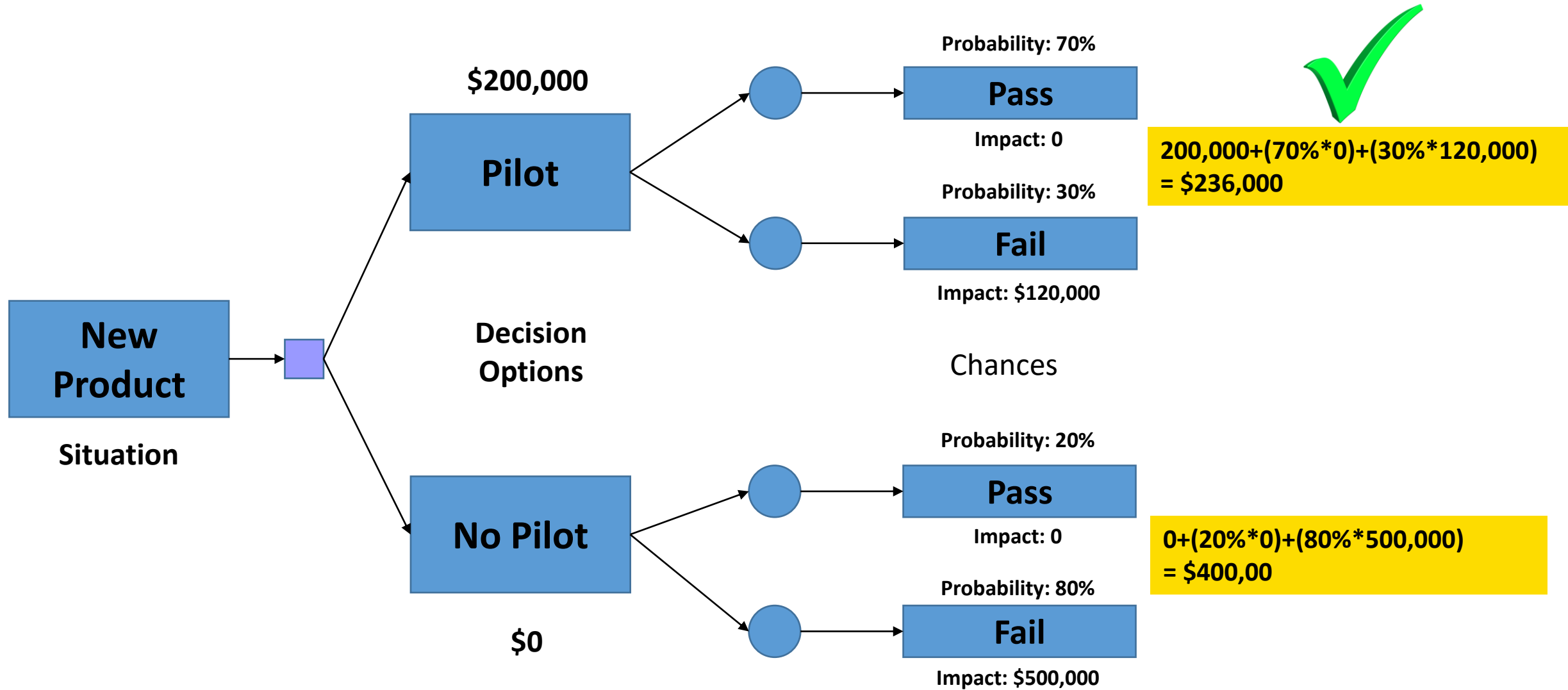Talent Academy
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Decision Tree Analysis

A **diagramming and calculation technique** for evaluating the implications of a **chain of multiple options** in the presence of uncertainty.
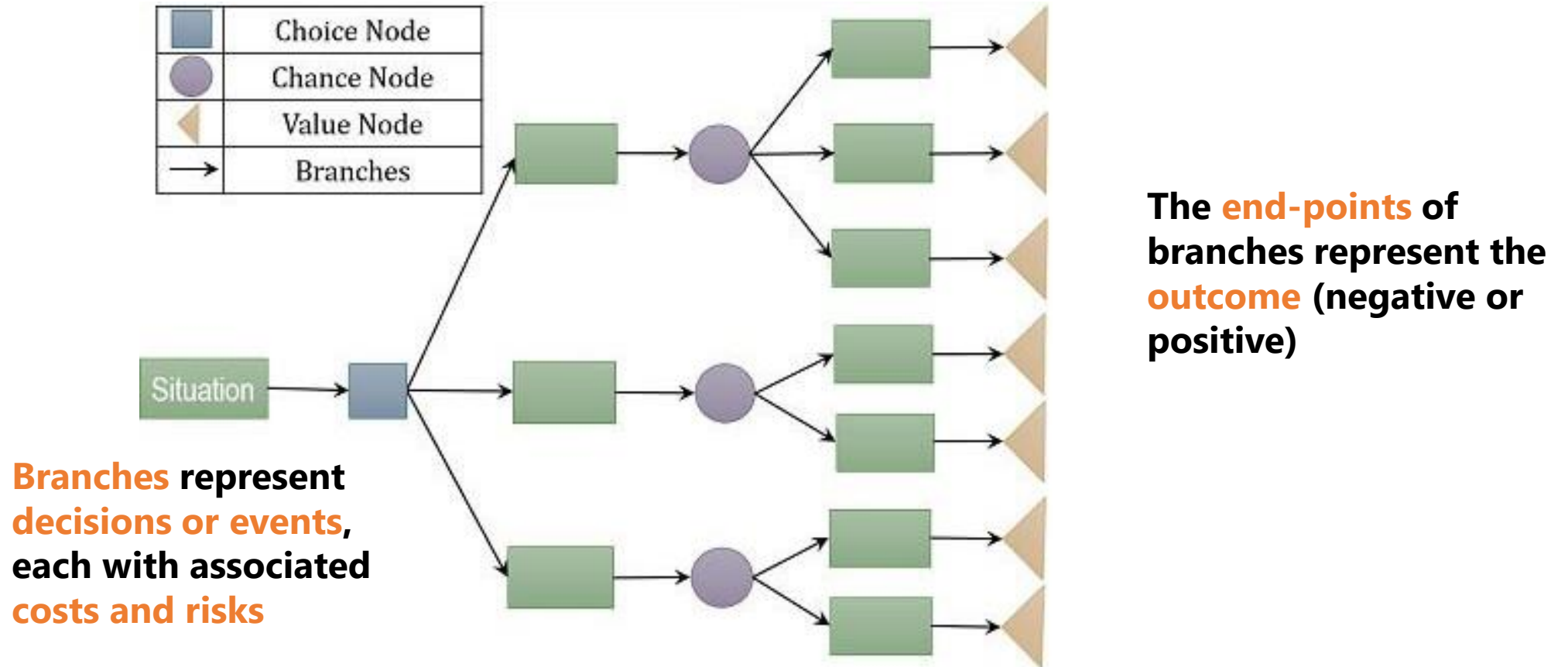
■	Choice Node
●	Chance Node
◀	Value Node
→	Branches

Situation

The **end-points** of branches represent the **outcome** (negative or positive)

Branches represent **decisions or events**, each with associated **costs and risks**

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Decision Tree Analysis

$200,000

Pilot

Probability: 70%

Pass

Impact: 0

Probability: 30%

Fail

Impact: $120,000

200,000+(70%*0)+(30%*120,000)
= $236,000

New Product

Situation

Decision Options

Chances

Probability: 20%

Pass

Impact: 0

No Pilot

0+(20%*0)+(80%*500,000)
= $400,00

$0

Probability: 80%

Fail

Impact: $500,000

Summary

Thank You

Collect Requirements for Planning a Trip

Discuss this topic in groups of four participants

Assign each person one of the following roles:

Writer
Documents the important points that will be presented at the end.

Presenter
Shares the group's information with the class.

Facilitator
Keeps all group members involved and generates discussion.

Timekeeper
Keeps the discussion at 5 minutes. Shares key time checkpoints.

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