



# Tailoring, Models, Methods, and Artifacts

SE423: Software Project Management

# Outline

- Tailoring
- Models, Methods, and Artifacts

# Tailoring

# Tailoring

- Tailoring is the deliberate adaptation of the project management approach, governance, and processes to make them more suitable for the given environment and the work at hand.
- In a project environment, tailoring considers the development approach, processes, project life cycle, deliverables, and choice of people with whom to engage.
- Many variables factor into the tailoring process, including the criticality of the project and the number of stakeholders involved.
- Using these variables as an example, it is evident that the rigor, checks and balances, and reporting required for a critical project (e.g., building a nuclear reactor) are much greater than those for building a new office building.

# Tailoring

- Tailoring involves understanding the project context, goals, and operating environment.
- Projects operate in complex environments that need to balance potentially competing demands that include, but are not limited to:
  - Delivering as quickly as possible,
  - Minimizing project costs,
  - Optimizing the value delivered,
  - Creating high-quality deliverables and outcomes,
  - Providing compliance with regulatory standards,
  - Satisfying diverse stakeholder expectations, and
  - Adapting to change.

# Why Tailor?

- Tailoring produces direct and indirect benefits to organizations.
- These include, but are not limited to:
  - More commitment from project team members who helped to tailor the approach,
  - Customer-oriented focus, as the needs of the customer are an important influencing factor in its development, and
  - More efficient use of project resources.

# What to Tailor?

- Project aspects that can be tailored include:
  - Life cycle and development approach selection,
  - Processes,
  - Engagement,
  - Tools, and
  - Methods and artifacts.

# What to Tailor?

- Project aspects that can be tailored include:
  - Life cycle and development approach selection,
    - Deciding on a life cycle and the phases of the life cycle is an example of tailoring.
    - Additional tailoring can be done when selecting the development and delivery approach for the project.
  - For instance, building a new data center could involve
    - (a) the use of predictive approaches for the physical building construction and finishing and
    - (b) an iterative approach for understanding and establishing the computing capabilities required.
    - Viewed from a project level, this combination of approaches represents a hybrid approach, but the construction team and the computing team may only experience a predictive or iterative development approach.

# What to Tailor?

- Project aspects that can be tailored include:
  - Processes,
    - Process tailoring for the selected life cycle and development approach includes determining which portions or elements should be:
      - Added
      - Modified
      - Removed
      - Blended
      - Aligned

# What to Tailor?

- Project aspects that can be tailored include:
  - Engagement,
    - Tailoring engagement for the people involved in the project includes:
      - People
      - Empowerment
      - Integration

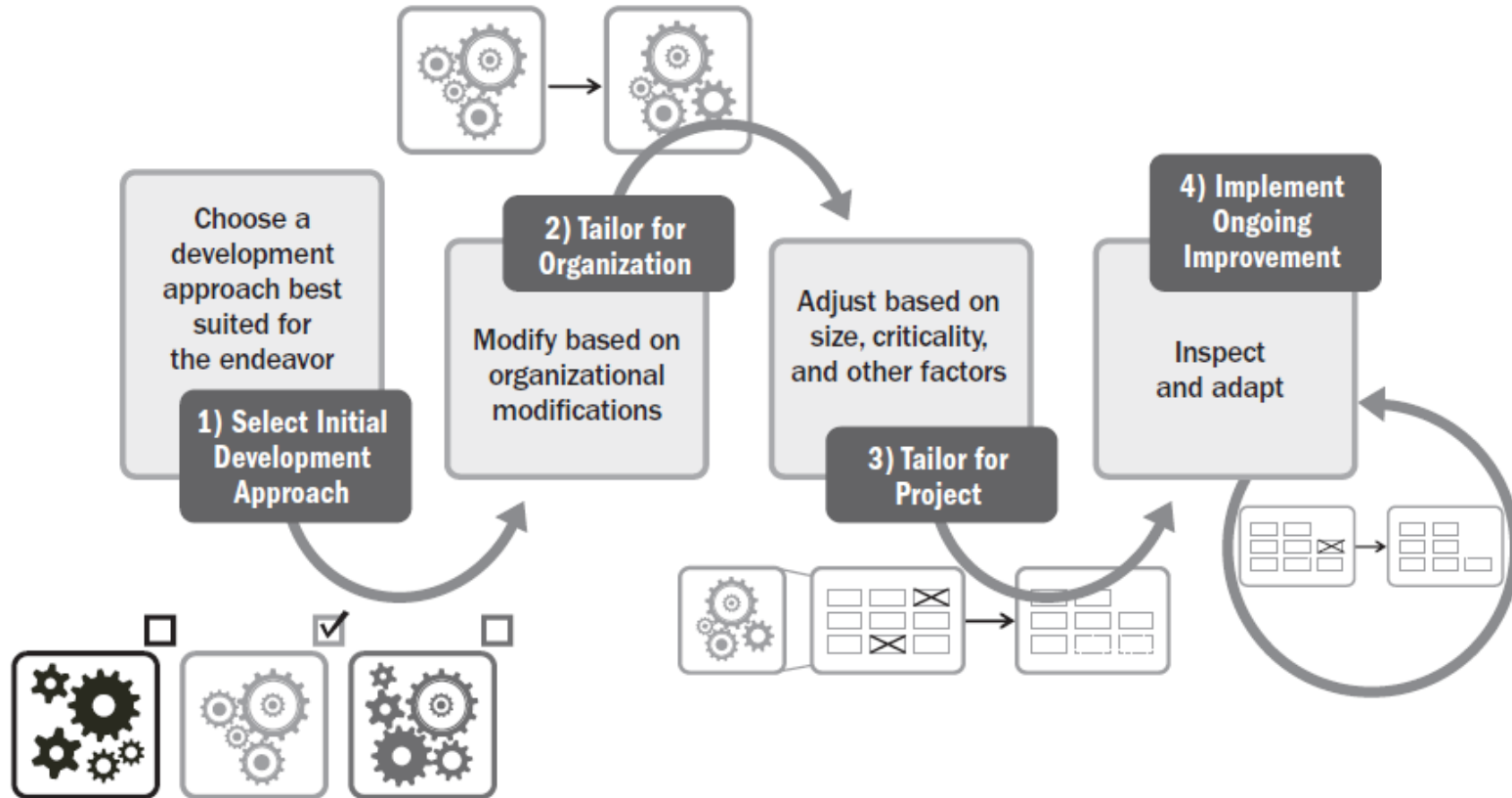
# What to Tailor?

- Project aspects that can be tailored include:
  - Tools
    - Selecting the tools (e.g., software or equipment) the project team will use for the project is a form of tailoring.
    - Often, the project team has the best insight into the most suitable tools for the situation, but those choices might need tempering based on the associated costs.
    - Additionally, organizational leaders can impose constraints that the project team cannot change.

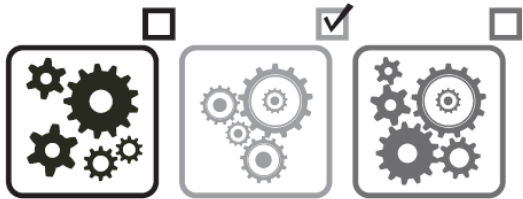
# What to Tailor?

- Project aspects that can be tailored include:
  - Methods and artifacts
    - Tailoring the means that will be used to achieve the project outcomes is performed so that the methods are suited for the environment and the culture.
    - Tailoring the documents, templates, and other artifacts that will be used on the project helps to make sure the artifacts are appropriate for the project and the organization.

# The Tailoring Process

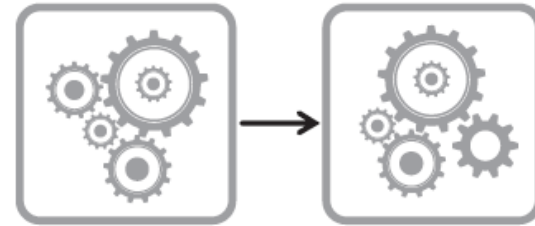


# Selecting the Initial Development Approach

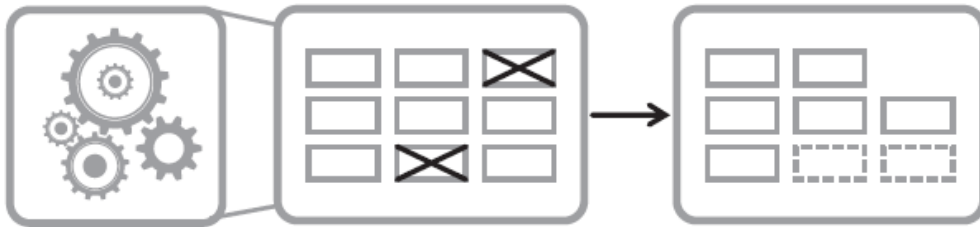


Selecting the Initial Development Approach

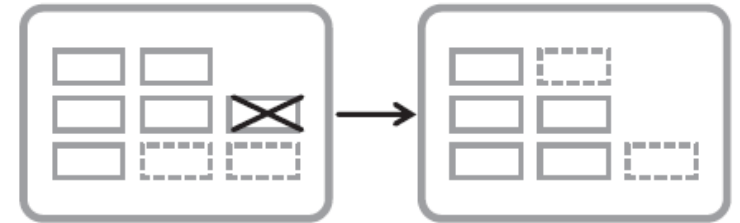
*ex. agile, waterFall*



Tailoring the Approach for the Organization

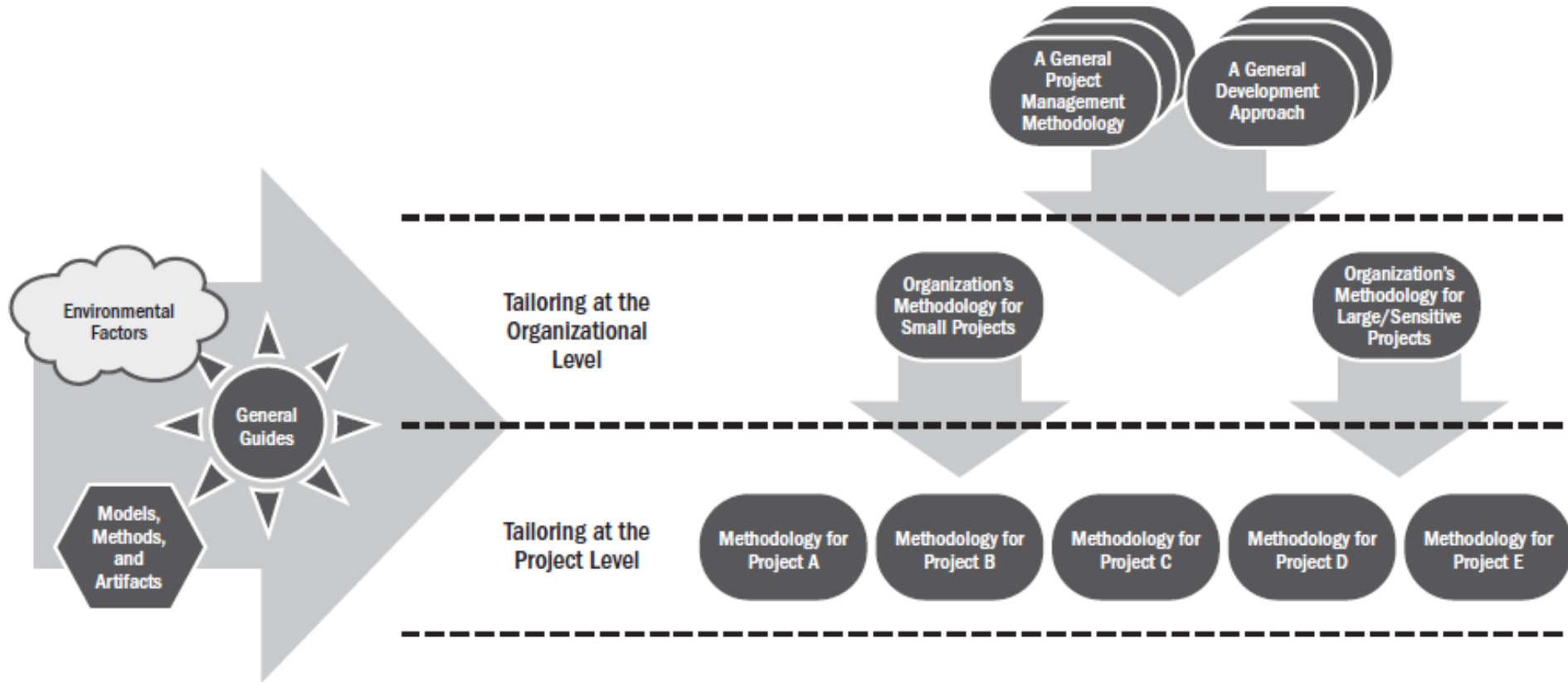


Tailoring the Approach for the Project



Implement Ongoing Improvement

# Assessing the Organizational and Project Factors When Tailoring



# Tailoring for the Project

- Many attributes influence tailoring for the project.
- These include, but are not limited to:
  - Product/deliverable,
  - Project team, and
  - Culture.

# Tailoring for the Project

- Product/Deliverable

- Attributes associated with the product or deliverable include, but are not limited to:
  - Compliance/criticality
  - Type of product/deliverable
  - Industry market
  - Technology
  - Time frame
  - Stability of requirements
  - Security.

# Tailoring for the Project

- Project Team
  - Project team considerations include:
    - Project team size
    - Project team geography
    - Organizational distribution
    - Project team experience
    - Access to customer

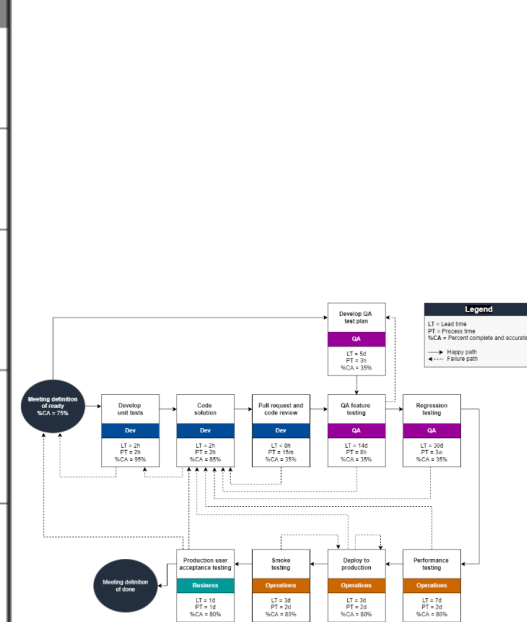
# Tailoring for the Project

- **Culture** (refers to the shared norms, beliefs, and practices within a company.)
- When tailoring a project, you assess how the project management approach fits with this culture—whether it's formal and hierarchical, agile and collaborative, risk-averse, or innovation-driven.
  - Evaluating the culture includes considerations regarding:
    - Buy-in (gaining support and commitment from key stakeholders, especially those who influence or are affected by the project)
    - Trust
    - Empowerment
    - Organizational culture

# Implement Ongoing Improvement

- The process of tailoring is not a single, one-time exercise.
- During progressive elaboration, issues with how the project team is working, how the product or deliverable is evolving, and other learnings will indicate where further tailoring could bring improvements.
- Review points, phase gates, and retrospectives all provide opportunities to inspect and adapt the process, development approach, and delivery frequency as necessary.

Situation	Tailoring Suggestion
Poor quality deliverables	Add more feedback verification loops and quality assurance steps.
Team members unsure of how to proceed or undertake their work	Add more guidance, training, and verification steps.
Long delays waiting for approvals	Try streamlining approval decisions through fewer people authorized to make decisions up to certain value thresholds.
Too much work in progress or high rates of scrap	Use techniques like value stream mapping and kanban boards to visualize the work, identify the issues, and propose solutions.
Stakeholders are not engaged or share negative feedback	Evaluate whether sufficient information is being shared with stakeholders; feedback loops are present and working; and deeper engagement may work better than simply communicating.
Lack of visibility and understanding of project progress	Check to ensure appropriate measures are being collected, analyzed, shared, and discussed during team and stakeholder meetings; validate agreement with the measures within the team and with stakeholders.
Issues and/or risks for which the team is unprepared continue to surface, requiring the team to react rather than progress work	Explore root causes to identify whether there are related gaps in project processes or activities.



# Summary

- Tailoring involves the considered adaptation of approach, governance, and processes to make them more suitable for the given environment and the project at hand.
- It involves the analysis, design, and deliberate modification of the people elements, the processes employed, and the tools used.
  - The tailoring process involves four steps:
    - Select initial approach
    - Tailor for the organization
    - Tailor for the project
    - Implement ongoing improvement

# Models, Methods, and Artifacts

# Models, Methods, and Artifacts

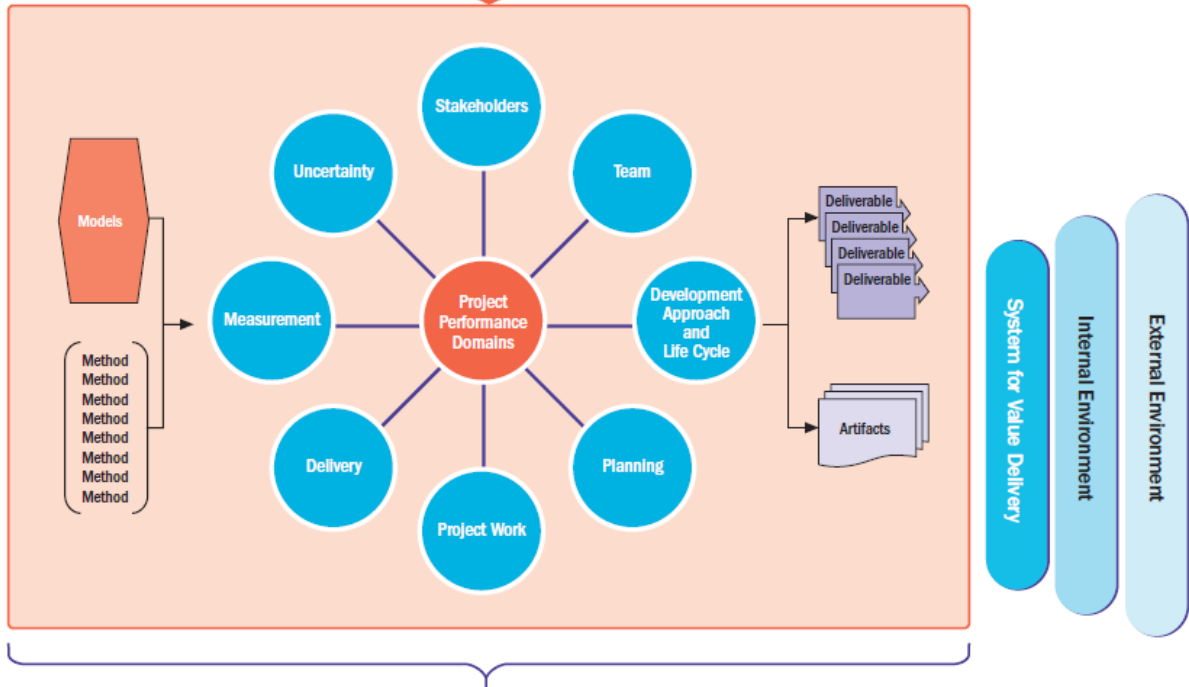
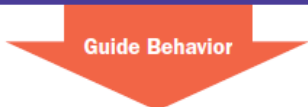
- This section provides a high-level description of some commonly used models, methods, and artifacts that are useful in managing projects.
- The items listed in this section are not intended to be exhaustive or prescriptive, but rather to help project teams think about the options available to them.

# Models, Methods, and Artifacts

- Model
  - A model is a thinking strategy to explain a process, framework, or phenomenon.
- Method
  - A method is the means for achieving an outcome, output, result, or project deliverable.
- Artifact
  - An artifact can be a template, document, output, or project deliverable.

*"Project deliverable is a Good example"*

Principles of Project Management			
Be a diligent, respectful, and caring steward	Create a collaborative team environment	Effectively engage with stakeholders	Focus on value
Recognize, evaluate, and respond to system interactions	Demonstrate leadership behaviors	Tailor based on context	Build quality into processes and deliverables
Navigate complexity	Optimize risk responses	Embrace adaptability and resiliency	Enable change to achieve the envisioned future state



Tailor to fit the project context

# Models, Methods, and Artifacts

- As with any process, the use of models, methods, and artifacts has associated costs related to time, level of expertise/proficiency in use, impact on productivity, etc.
- Project teams should consider these implications when deciding which elements to use.
- As much as possible, project teams should avoid using anything that:
  - Duplicates or adds unnecessary effort,
  - Is not useful to the project team and its stakeholders,
  - Produces incorrect or misleading information, or
  - Caters to individual needs versus those of the project team.

# Commonly Used Models

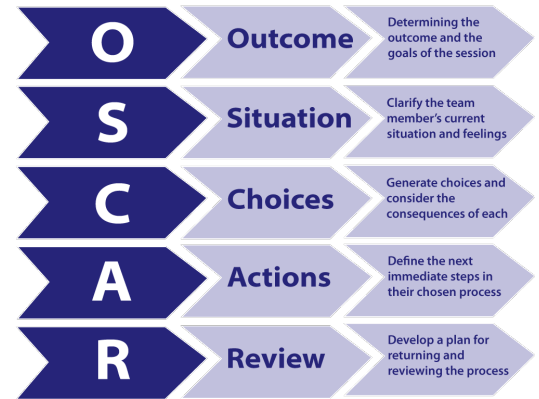
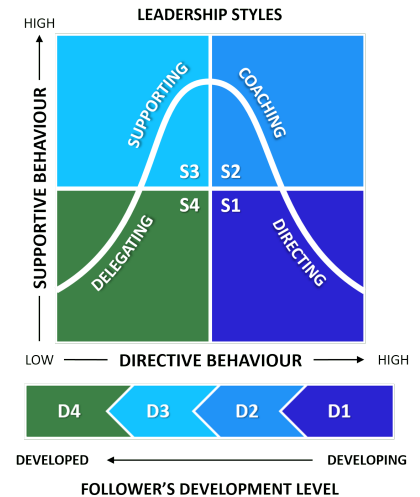
*don't memorize, understand.*

- Situational leadership models

- **Situational Leadership® II** (helps project managers adapt their leadership style based on the development level of their team members)
- **OSCAR Model** (useful in project management for guiding conversations, solving problems, and supporting team development)

- Communication models

- **Cross-Cultural Communication** (set of principles that help people from different cultural backgrounds communicate effectively)
- **Effectiveness of Communication Channels** (Clarity, Speed, Richness, Recordability, Accessibility, Suitability)
- **Gulf of Execution and Evaluation** (a concept from UX that focuses on the gap between a user's goal and the system's ability to help them achieve it and the gap between the system's response and the user's ability to interpret it)



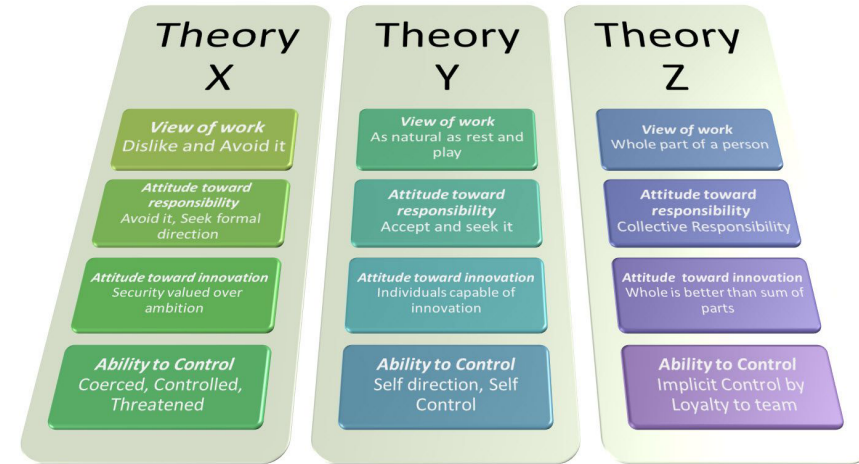
# Commonly Used Models

- Motivational models

- Hygiene and Motivational Factors (Hygiene: salary, benefits, working conditions, company policies, job security, etc. Motivational: Achievement, recognition, advancement, responsibility, the work itself, personal growth)

- **Intrinsic** (to the work itself) versus **Extrinsic Motivation** *e.g. the team exiles you.*

- Theory of the hierarchy of Needs (physiological->safety->love/belonging->esteem->self-actualization)
- Theory X, Theory Y, and Theory Z (These psychology of management styles models describe different assumptions about employee motivation and behavior)



# Commonly Used Models

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- Change models

- ADKAR® Model (focuses on **individual transformation**)
- The 8-Step Process for Leading Change (Create a Sense of Urgency -> Build a Guiding Coalition -> Form a Strategic Vision and Initiatives -> Enlist a Volunteer Army -> Enable Action by Removing Barriers -> Generate Short-Term Wins -> Sustain Acceleration -> Institute Change)
- Virginia Satir Change Model (is a psychologically grounded framework that explains how individuals and organizations emotionally respond to change. )
- Transition Model (a powerful framework for understanding the **emotional and psychological journey** people go through during change)

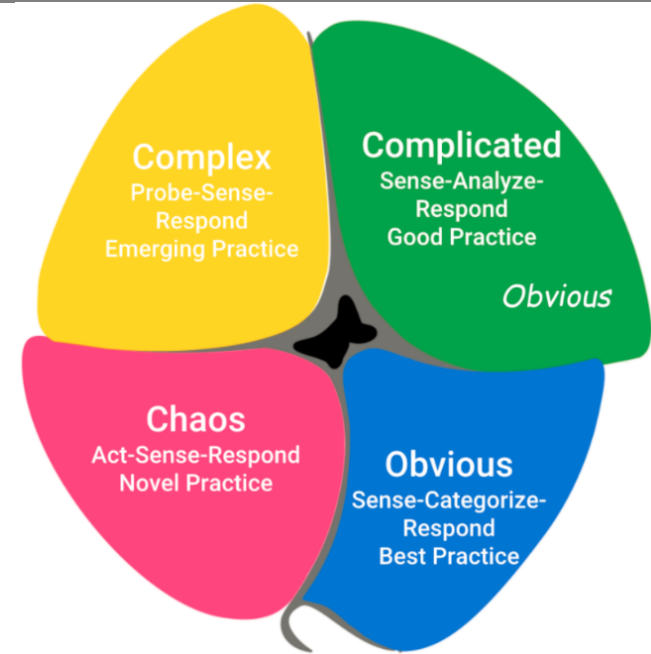
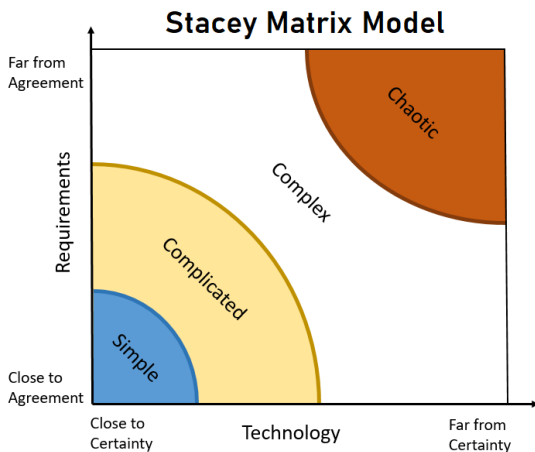


# Commonly Used Models

- Complexity models

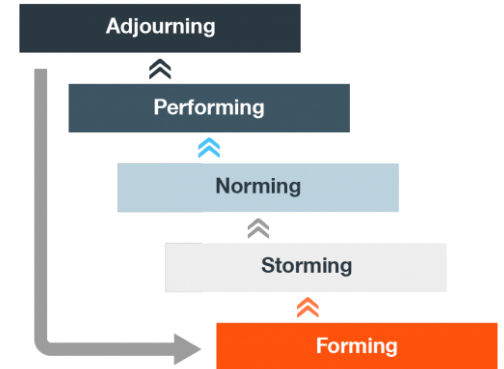
- Cynefin Framework (help PMOs and project leads avoid applying rigid processes to unpredictable projects)

- Stacey Matrix (Helps determine whether to use Waterfall or Agile or hybrid approaches.)



# Commonly Used Models

- Project team development models
  - Tuckman Ladder (a classic model for understanding how project teams evolve over time.)
  
- Drexler/Sibbet Team Performance Model (is a comprehensive framework that maps out the **seven predictable stages** teams go through: orientation -> trust building -> goal clarification -> commitment -> implementation -> high performance -> renewal)



# Commonly Used Models

- Other models
  - Conflict Model
  - Negotiation
  - Planning
  - Process Groups
  - Salience Model (is a stakeholder analysis tool used in project management to **prioritize stakeholders** based on how much attention they should receive)

Model	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
<b>Situational Leadership Models:</b>								
Situational Leadership® II	X				X			
OSCAR	X				X			
<b>Communication Models:</b>								
Cross-cultural communication	X	X		X	X			
Effectiveness of communication channels	X	X		X	X			
Gulf of execution and evaluation		X				X		
<b>Motivation Models:</b>								
Hygiene and motivation factors	X			X	X			
Intrinsic versus extrinsic motivation	X			X	X			
Theory of needs	X			X	X			
Theory X, Theory Y, and Theory Z	X			X	X			
<b>Change Models:</b>								
Managing Change in Organizations		X		X	X			
ADKAR®		X		X	X			
8-Step Process for Leading Change		X		X	X			
Transition		X		X	X			
<b>Complexity Models:</b>								
Cynefin framework			X	X	X	X		X
Stacey matrix			X	X	X	X		X
<b>Project Team Development Models:</b>								
Tuckman Ladder	X				X			
Drexler/Sibbet Team Performance	X				X			
<b>Other Models:</b>								
Conflict	X	X			X			
Negotiation		X		X	X	X		
Planning			X	X	X			
Process Groups				X	X	X	X	
Salience		X		X	X			

# Commonly Used Methods

- Data gathering and analysis
- Estimating
- Meetings and events
- Other methods

Method	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
<b>Data Gathering and Analysis Methods:</b>								
Alternatives analysis				X	X	X		X
Assumptions and constraints analysis				X		X		X
Benchmarking						X	X	
Business justification analysis				X			X	
Payback period			X	X			X	
Internal rate of return				X			X	
Return on investment				X			X	
Net present value			X	X		X	X	
Cost-benefit ratio				X			X	
Check sheet						X	X	
Cost of quality				X		X	X	
Decision tree analysis				X				
Earned value analysis				X			X	
Expected monetary value				X				
Forecasting							X	
Influence diagram				X				
Life cycle assessment				X				
Make-or-buy analysis				X	X			
Probability and impact matrix				X				X
Process analysis				X	X	X	X	
Regression analysis				X			X	
Root cause analysis					X	X		
Sensitivity analysis				X	X	X		
Simulation				X			X	
Stakeholder analysis		X		X	X			
SWOT analysis				X				X
Trend analysis							X	
Value stream mapping				X	X	X		
Variance analysis							X	
What-if scenario analysis				X				X

Method	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
<b>Estimating Methods:</b>								
Affinity grouping				X				
Analogous estimating				X				
Function points				X				
Multipoint estimating				X				
Parametric estimating				X				
Relative estimating				X				
Single-point estimating				X				
Story point estimation				X				
Wideband Delphi				X				
<b>Meeting and Event Methods:</b>								
Backlog refinement		X		X	X	X		
Bidder conference		X		X	X			
Change control board					X	X		
Daily standup				X	X			
Iteration review		X			X	X		
Iteration planning		X		X	X	X		
Kickoff	X	X			X			
Lessons learned		X		X	X	X		
Planning				X				
Project closeout	X	X			X			
Project review		X			X	X	X	
Release planning		X		X				
Retrospective	X			X				
Risk review					X			X
Status					X		X	
Steering committee		X			X			
<b>Other Methods:</b>								
Impact mapping	X	X		X		X	X	
Modeling						X		
Net Promoter Score®		X					X	
Prioritization schema		X			X			
Timebox			X	X	X	X	X	

# Commonly Used Artifacts

- Strategy Artifacts (Ex: Strategic Plan, Vision & Mission Statements, Roadmaps, Business Case)
- Logs and registers (Ex: issues log, risk analysis excel sheets, communication logs)
- Plans
- Hierarchy charts
- Baselines
- Visual data and information
- Reports
- Agreements and contracts
- Other artifacts

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
<b>Strategy Artifacts:</b>								
Business case		X		X				
Project brief		X		X				
Project charter		X		X				
Project vision statement		X		X				
Roadmap		X	X	X				
<b>Log and Register Artifacts:</b>								
Assumption log				X	X	X		X
Backlog				X	X	X		
Change log					X	X		
Issue log					X			
Lessons learned register					X			
Risk-adjusted backlog				X				X
Risk register				X	X	X		X
Stakeholder register		X		X				
<b>Plan Artifacts:</b>								
Change control plan				X	X	X		
Communications management plan		X		X	X			
Cost management plan				X				
Iteration plan				X				
Procurement management plan				X	X			
Project management plan		X		X	X			
Quality management plan				X	X	X		
Release plan				X		X		
Requirements management plan				X		X		
Resource management plan				X	X			
Risk management plan				X	X			X
Scope management plan				X		X		

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Schedule management plan				X	X	X		
Stakeholder engagement plan		X		X				
Test plan				X	X	X	X	
<b>Hierarchy Chart Artifacts:</b>								
Organizational breakdown structure	X	X		X				
Product breakdown structure				X		X		
Resource breakdown structure	X			X	X		X	
Risk breakdown structure					X			X
Work breakdown structure				X		X	X	
<b>Baseline Artifacts:</b>								
Budget				X	X		X	
Milestone schedule			X	X	X		X	
Performance measurement baseline				X	X	X	X	
Project schedule				X	X		X	
Scope baseline				X	X	X	X	
<b>Visual Data and Information Artifacts:</b>								
Affinity diagram				X	X			
Burn chart				X		X	X	
Cause-and-effect diagram					X	X		X
Cycle time chart						X	X	
Cumulative flow diagram						X	X	
Dashboard					X		X	
Flow chart				X	X	X		
Gantt chart				X	X		X	
Histogram							X	
Information radiator					X		X	
Lead time chart						X	X	
Prioritization matrix		X			X	X		

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Project schedule network diagram				X	X			
Requirements traceability matrix				X		X	X	
Responsibility assignment matrix				X	X			
Scatter diagram					X	X	X	
S-curve				X			X	
Stakeholder engagement assessment matrix		X		X	X			
Story map				X		X		
Throughput chart						X	X	
Use case				X		X		
Value stream map					X	X	X	
Velocity chart						X	X	
<b>Report Artifacts:</b>								
Quality report					X	X	X	
Risk report					X			X
Status report					X			
<b>Agreements and Contracts:</b>								
Fixed-price		X		X	X	X	X	X
Cost-reimbursable		X		X	X	X	X	X
Time and materials		X		X	X	X	X	X
Indefinite time indefinite quantity (IDIQ)		X		X	X	X	X	X
Other agreements		X		X	X	X	X	X
<b>Other Artifacts:</b>								
Activity list	X	X		X	X			
Bid documents		X		X	X			
Metrics				X		X	X	
Project calendars	X			X	X			
Requirements documentation		X		X		X	X	
Project team charter	X				X			
User story		X		X		X		