Module 7: Systems Thinking and Beyond (STAB) tools and applications in project management

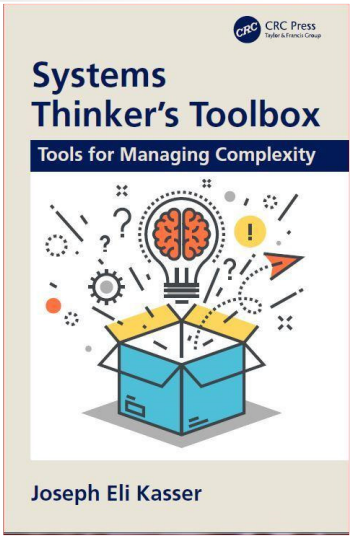
Rev. 1.5.7

Objectives

1. To show how systems thinking and beyond (STAB) tools can improve project management
   - Increase probability of a successful project
2. To explain a few STAB tools for project management

Knowledge

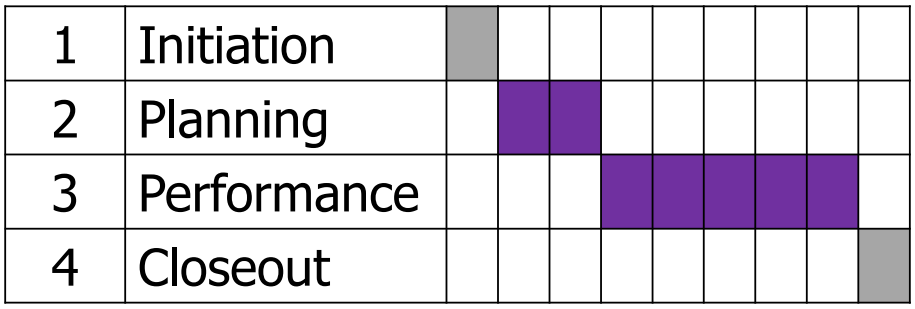
- Lecture
  - Overview and summary of tools
- Readings/Videos
  - 0790 The Systems Approach to Planning, 2015, https://www.youtube.com/watch?v=JNT4Rc7R8xg
  - 0791 Improving project status reporting with Enhanced Traffic Light (ETL) Charts, 2016, (STT Section 8.16.2) https://www.youtube.com/watch?v=fwM_9otO0F0
  - 0792 Improving monitoring of technical performance by using Categorized Requirements in Process (CRIP) charts, 2015, (STT Section 8.1) https://www.youtube.com/watch?v=5AUafacJ5AU
- Exercise



Topics

- **The project lifecycle**
- The Systems Approach to Planning
- Systems approach to monitoring and communicating
- Enhanced Traffic Light (ETL) Charts
  - Improving project status reporting with Enhanced Traffic Light Charts
- CRIP charts
  - Improving monitoring of technical performance by using CRIP charts
- Exercises
- Summary

The 4-state project lifecycle



Project planning state (notional)

- Defines how the project will meet its goal
- Produces the draft project plan (PP)
- Terminates at a milestone which reviews the information in the draft PP and provides consensus to proceed with the project.
- Uses planning tools
  - E.g. PAM charts, timelines, Work Breakdown Structures, Gantt charts, PERT charts, 3 streams of activities, risk prevention, Work Packages, etc.

Project performance state (notional)

- The longest state in the project
- Produces the products or product that will remedy the undesirable situation using the System Development Process.
- Uses project management (and reporting tools) tools
  - E.g., Earned Value Analysis, Gantt charts, CRIP charts, ETL charts

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- **The Systems Approach to Planning – in video**
- Systems approach to monitoring and communicating
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The Systems Approach to Planning

- Three streams of activities (STT 8.1.4)
- Working back from the solution (STT 11.8)
- Product-based planning
- Work packages (STT 8.19)
- PAM Charts (STT 2.14)
- PAM Networks (STT 2.14.2)
- Number in threes
- Prevention – risk management

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Systems project management (and reporting tools)

- *Operational* HTP
  - Used together with non-systems tools, not instead of
- *Functional* HTP
  - CRIP and ETL charts add time dimension to non-systems paradigm static information
- *Generic* HTP
  - Time dimension is similar to differentiation in mathematics
    - Trigonometry vs. calculus

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Later version of ETL Chart (almost)

#	Projects	Last time	Current		Next
			Expected	Actual	
1	Project Ho-hum	Green	Green	Green	Green
2	Project Oh oh	Yellow -PB	Green	Yellow -P	Red -P
3	Project Catching up	Yellow -P	Yellow -P	Yellow -P	Green
4	Project Replace manager	Red -BS	Red -BS	Red -BS	Red -BS
5	Project Very happy customer	Green	Blue	Blue	Blue
6	Project Completed	Green	Green	Green	N/A
7	Project Promote manager	Red -P	Yellow -P	Green	Green
8	Project Watch this person	Yellow –BS	Green	Green	Blue
9	Project No risk management	Green	Red -P	Red-P	Red -P
10	Project Took course in risk management	Green	Green	Green	Yellow -P
11	Project Manager doing risk management	Yellow -P	Yellow -P	Yellow-P	Yellow -P

Colours are labelled for educational purposes (book is in black and white)

* Systems Thinker's Toolbox Figure 8.24, added since presentation

Later version of ETL Chart

#	Projects	Last time	Current		Next
		(Current)	Expected	Actual	
1	Project Ho-hum				
2	Project Oh oh	P B		P	P
3	Project Catching up	P	P	P	
4	Project Replace manager	B S	B S	B S	B S
5	Project Very happy customer				
6	Project Completed				N/A
7	Project Promote manager	P	P		
8	Project Watch this person	B S			
9	Project No risk management		P	P	P
10	Project Took course in risk management				P
11	Project Manager doing risk management	P	P	P	P

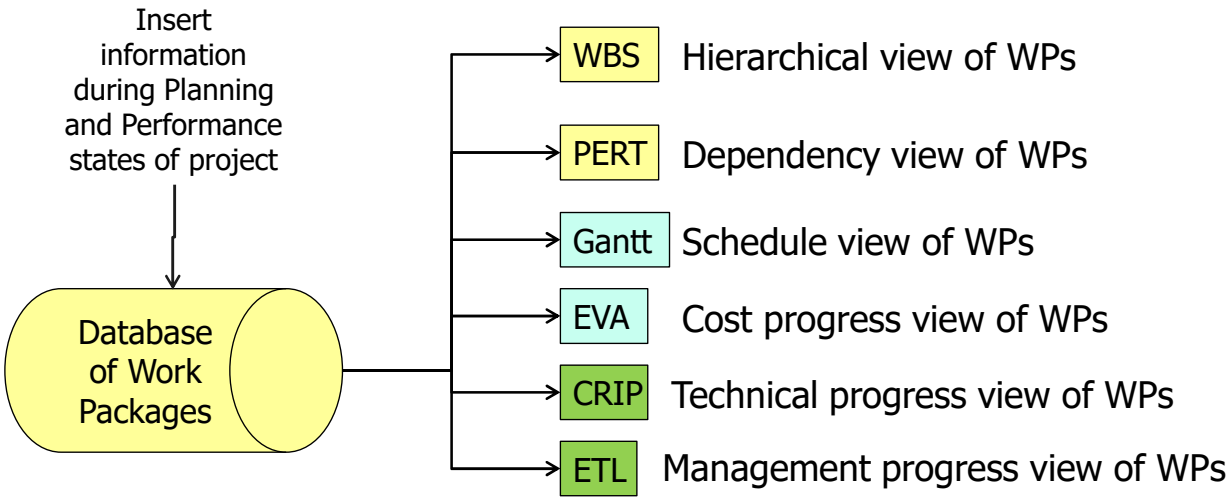
* Systems Thinker's Toolbox Figure 8.24, added since presentation

Current Enhanced Traffic Light Chart*

#	Projects	Last time	Current		Next
			Expected	Actual	
1	Project Ho-hum				
2	Project Oh oh	T B		T S	T S
3	Project Catching up	S	S	S	
4	Project Replace manager?	B S	B S	B S	B S
5	Project Very happy customer				
6	Project Completed				N/A
7	Project Promote manager	P S	P S		
8	Project Watch this person	B S			
9	Project No risk management		T B S	T B S	T B S
10	Project Manager took course in risk management?				T
11	Project Manager doing risk management? (no effect on B and S)	T	T	T	T

* T added to explicitly identify technical problems (Suggested by Pascal Bohulu Mabelo), P remains for personnel problems

Views of project data



Topics

- The project lifecycle
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- Systems approach to monitoring and communicating
- Enhanced Traffic Light Charts
  - Improving project status reporting with Enhanced Traffic Light Charts
- **CRIP charts – in video**
  - Improving monitoring of technical performance by using CRIP charts
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Exercise 7-1

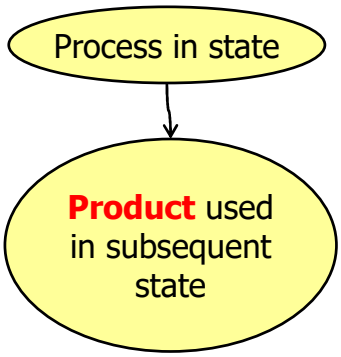
1. Prepare a <5 minute presentation containing:
   1. This slide and version of lesson
   2. Problem formulated according to the problem formulation template
   3. How the STAB tools discussed in this session are used together in the different parts of a project lifecycle
   4. How the STAB tools discussed in this session are used together with conventional (non-STAB) project management tools
      - Minimum WBS, EVA, Gantt, spreadsheets (or equivalent in project management tool)
   5. Lessons learned from the exercise
   6. Compliance matrix for meeting the requirements of the exercise
2. Save as a PowerPoint file as Exercise7-1-abcd.pptx
3. Post in the asynchronous group as instructed

- Hint: see next slide

Exercise 7-11 Hint

- Together?
  - Relationships and dependencies between tools in a state
  - Relationships and dependencies between tools across/between states
  - See Slide 10-18
- Key question
  - What is relationship based on?

Initiation			
	Planning		
		Performance	
			Closeout



Knowledge reading exercise 7-2

1. Prepare a brief on two main points in reading 0790 (< 5min)
2. Presentation to contain
    1. A summary of the content of the reading (<1 minute)
    2. The compliance matrix
    3. The problem formulated per the problem formulation template
    4. This slide and lesson version number
    5. A list of the main points
    6. The two briefings
    7. Reflections and comments on reading (<2 minute)
    8. Comparisons of content with other readings and external knowledge
    9. Why you think the reading was assigned to the module
    10. Lessons learned from module and source of learning e.g. readings, exercise, experience, etc. (<2 minutes)
3. Save as a PowerPoint file as Exercise7-2-abcd.pptx
4. Post/email presentation as, when and where instructed
5. Brief on one main point

Knowledge reading exercise 7-3

1. Prepare a brief on two main points in reading 0791 (< 5min)
2. Presentation to contain
    1. A summary of the content of the reading (<1 minute)
    2. The compliance matrix
    3. The problem formulated per the problem formulation template
    4. This slide and lesson version number
    5. A list of the main points
    6. The two briefings
    7. Reflections and comments on reading (<2 minute)
    8. Comparisons of content with other readings and external knowledge
    9. Why you think the reading was assigned to the module
    10. Lessons learned from module and source of learning e.g. readings, exercise, experience, etc. (<2 minutes)
3. Save as a PowerPoint file as Exercise7-3-abcd.pptx
4. Post/email presentation as, when and where instructed
5. Brief on one main point

7

Knowledge reading exercise 7-4

1. Prepare a brief on two main points in reading 0792 (< 5min)
2. Presentation to contain
    1. A summary of the content of the reading (<1 minute)
    2. The compliance matrix
    3. The problem formulated per the problem formulation template
    4. This slide and lesson version number
    5. A list of the main points
    6. The two briefings
    7. Reflections and comments on reading (<2 minute)
    8. Comparisons of content with other readings and external knowledge
    9. Why you think the reading was assigned to the module
    10. Lessons learned from module and source of learning e.g. readings, exercise, experience, etc. (<2 minutes)
3. Save as a PowerPoint file as Exercise7-4-abcd.pptx
4. Post/email presentation as, when and where instructed
5. Brief on one main point7

Summary

- The project lifecycle
- The Systems Approach to Planning
- Systems approach to monitoring and communicating
- Improving project status reporting with Enhanced Traffic Light Charts
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- Exercises

Meeting the objectives

1. Showed how systems thinking and beyond (STAB) tools can improve project management
   1. Increasing probability of a successful project
2. Explained a few STAB tools for project management

Any questions ?

1. Best
2. Worst
3. Missing

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Subject: <class title> BWM Session #