



Australian Government

MSS405024 Apply the theory of constraints

Release: 1

MSS405024 Apply the theory of constraints

Modification History

Release 1. Supersedes and is equivalent to MSS405024A Apply the theory of constraints

Application

This unit of competency covers the skills and knowledge required to apply the theory of constraints. This unit applies to individuals who as part of their work role need to apply the theory of constraints to assist their organisation to maximise output from a capacity constrained process or system. The unit will normally be applied as part of an organisation's improvement strategy and in conjunction with other competitive systems and practices units.

The person will typically be a technician, manager or other person who works with others in the bringing of change to an organisation as part of a formal team or otherwise. The unit includes liaison and communication with others, as required.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|--|-----|--|
| 1 Identify the system constraint and throughput | 1.1 | Identify goals and objectives of the organisation. |
| | 1.2 | Identify systems, processes and products to be examined. |
| | 1.3 | Determine throughput of steps within the system. |
| | 1.4 | Identify the capacity constrained process. |
| | 1.5 | Determine optimum throughput of capacity constrained |

- process (drum).
- 1.6 Determine maximum system throughput based on the capacity constrained process.
- 2 **Optimise constraint throughput**
 - 2.1 Determine optimum accumulation (buffer) before capacity constrained process.
 - 2.2 Determine appropriate supply schedule and trigger (rope) for buffer.
 - 2.3 Implement buffer and rope to match drum.
 - 2.4 Monitor capacity constrained process and system to ensure optimum throughput.
 - 2.5 Take required actions to minimise non-productive rate at capacity constrained process.
 - 3 **Prioritise processes and resources to maximising output at the constraint**
 - 3.1 Ensure operations and individuals in non-constrained locations protect buffers and prevent build-up of work in process except at buffer locations.
 - 3.2 Identify operations that conflict with maximising constraint performance and replace with measures that help maximise throughput.
 - 4 **Determine strategy to reduce capacity constraint**
 - 4.1 Examine causes of the constrained capacity.
 - 4.2 Develop possible ways of increasing system capacity.
 - 4.3 Analyse and rank possible alternatives for increasing capacity.
 - 4.4 Draft a strategy for increasing capacity of system.
 - 4.5 Obtain required approval for response strategy.
 - 5 **Implement a process of on-going improvement as**
 - 5.1 Develop an implementation plan appropriate to the organisation.
 - 5.2 Implement plan, as appropriate.

- appropriate**
- 5.3 Monitor implementation.
 - 5.4 Modify implementation plan, as appropriate.
 - 5.5 Identify next capacity constrained process and take action.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- Competitive systems and practices include one or more of:**
- lean operations
 - agile operations
 - preventative and predictive maintenance approaches
 - statistical process control systems, including six sigma and three sigma
 - Just in Time (JIT), kanban and other pull-related operations control systems
 - supply, value, and demand chain monitoring and analysis
 - 5S
 - continuous improvement (kaizen)
 - breakthrough improvement (kaizen blitz)
 - cause/effect diagrams
 - overall equipment effectiveness (OEE)
 - takt time
 - process mapping
 - problem solving
 - run charts
 - standard procedures
 - current reality tree.
- Constraint**
- internal or external to the organisation

- (something that prevents or makes it harder for the organisation to achieve improved performance) includes one or more of:**
- physical (e.g. equipment or material-based)
 - process-based (e.g. inefficient or wrong processes/policies/logistics)
 - people-based (e.g. poor training, communication)
 - market-based (e.g. lack of demand).
- Non-productive time includes one or more of:**
- quality losses
 - downtime
 - other availability losses.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>