Australian Government

Department of Education, Employment and Workplace Relations

MSS407012A Lead a problem solving process to determine and solve root cause

Release: 1

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Modification History

New unit, superseding MSACMG712A Lead a problem solving process to determine and solve root cause - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to guide or lead a problem solving process to solve complex and/or unusual problems. The problem solving process will usually involve the use of either real or nominal groups to determine the root cause and propose the solution.

Application of the Unit

This unit will typically be undertaken by managers and/or technical experts who are confronted by a complex problem to which they need to develop a solution. The problem may be related to any area or process within the organisation or in the value stream and may have been formally presented to the individual for consideration or arise as part of other work. The person may or may not have the required technical expertise for the particular problem, although the problem will require technical expertise to be solved. The problem may be capable of being adequately defined at the beginning of the problem solving activity, or may be progressively defined through continued iterations of the problem solving activity.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Recognise complex problem	1.1	Identify a complex issue which needs to be addressed
		1.2	Undertake an initial investigation of the issue
		1.3	Determine initial areas of expertise and data which may be required to analyse the problem
		1.4	Develop an initial definition of the problem
2	Develop problem solving methodology	2.1	Draft a problem solving methodology
		2.2	Develop required approaches and protocols for obtaining required data and information
		2.3	Establish group to assist with problem solving
		2.4	Allocate tasks, responsibilities and reporting arrangements to group
		2.5	Develop arrangements for consultation with required people outside of group
3	Analyse problem	3.1	Apply methodology
		3.2	Obtain data/information
		3.3	Review problem definition

		3.4	Review methodology
		3.5	Obtain additional data/information as required
4	Identify root cause	4.1	Map causal links for the problem
		4.2	Determine indicators of the problem or the problem precursors
		4.3	Identify causes which can be controlled/brought under control
5	Develop a solution	5.1	Develop solutions for controllable causes
		5.2	Determine benefit/cost for proposed solutions
		5.3	Investigate proposed solutions for efficacy
		5.4	Select the best available solution
		5.5	Obtain necessary support and authorisations for proposed solution
6	Check problem is solved and standardised	6.1	Monitor indicators of problem/problem precursor
		6.2	Review problem solution/implementation as required
		6.3	Ensure appropriate solution is standardised

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- cooperating and working with others, both internally and externally to the work group
- researching and collating information from a variety of sources, including non-obvious sources
- analysing and planning in highly varied and/or highly specialised contexts
- quantitative and qualitative data interpretation and application skills
- communicating effectively (both receiving and sending communications)
- applying problem solving methodology, including:
  - cross-functional problem solving team
  - cross-functional nominal group (virtual team)
  - consulting and or brainstorming with members from outside the organisation on some basis
  - input from other members of the value stream
  - the use of known/proprietary problem solving approaches or some synthesis of methods
  - own or commissioned research either in whole or in part
- prioritising possible solutions on benefit/cost basis and value to the customer
- selecting solution and checking efficacy, including checking:
  - the solution breaks the causal tree
  - other causes are not able to cause the problem
  - benefit/cost ratio is acceptable
  - solution can be implemented
  - permanence of solution
- standardising solutions by:
  - checking that implemented solution solves the problem
  - solution can be applied to all relevant standards within the organisation, including:
    - standard operating procedures/work instructions
    - actual work practice
    - maintenance manuals and similar
    - product and/or process specifications

Required knowledge

Required knowledge includes:

- organisational goals, products and processes
- sources of data (actual and possible) within the organisation and the value stream
- understanding of the techniques and methodologies of formal problem solving
- data required for problem solving and alternative/proxy data sources
- benefit/cost analysis

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • undertake complex problem identification • establish appropriate methodologies, including establishing team responsibilities, to achieve root cause identification • prioritise solutions • recommend solutions and implementation procedures within the organisation and the value stream • evaluate implementation of solutions • standardise solutions.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment.

	Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • 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 Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector

Complex problem	A complex problem may be described as one which has several of the following characteristics:
	• requires going into the value stream for data/information
	• is wider than just applying to a single job
	• applies to less common solutions or problems
	• requires a higher level of knowledge and skill (which may or may not be possessed directly by the person solving the problem), such as:
	  • significant specialist knowledge
	  • significant specialist skill
	  • more theory/understanding of technology or process
	• data is not easily available and may need particular strategies to obtain, such as:
	  • overcoming resistance from people including employees, customers or suppliers
	  • extracting data not regularly reported from SCADA or similar systems

	• the problem and/or proposed solutions require reporting or authorisations from a Board or external authorities, such as licensing or regulatory bodies
• **Problem recognition**	The problem recognition may include: • an obvious and current complex problem • an intractable problem which has been known about and 'lived with' for some time • a complex problem which has not been previously recognised The problem may, or may not be capable of complete definition at the start of the problem solving process (so requiring an iterative process)
Group	Problem will be such that it is beyond the scope of an individual to solve and so a group is required. The group may be: • real (i.e. physical or face to face) • nominal (i.e. never meets and may not know who each other is) • or any combination in between

Unit Sector(s)

Unit sector Competitive systems and practices

Custom Content Section

Not applicable.