



Australian Government

Department of Education, Employment and Workplace Relations

MSACMG703A Analyse process changes

Revision Number: 1

MSACMG703A Analyse process changes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	<p>This unit covers the quantitative analysis of past changes made in the manufacturing systems, process or environment to ensure the quantum of expected change has been achieved and that gains are maintained and are used as a basis for further gains.</p> <p>The unit includes statistical and other mathematical analysis of data, methods for capturing data on implemented changes (quantitative and qualitative) and producing useful information from this data. It includes consultation with stakeholders both for data validation and consensus decision making for future improvements.</p>
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Application of the Unit

<p>Application of the unit</p>	<p>This unit applies to team leaders, technical experts and people with a similar sphere of influence/scope of authority and responsibility who are already have a knowledge of statistics used in manufacturing and of process capability improvement and some knowledge of factorial design, the selection and analysis of appropriate metrics, and the discrimination between valid and invalid interpretations of data. Where this is not the case MSACMT450A Undertake process capability improvements and MSACMT452A Apply statistics to processes in manufacturing may be completed to supply the necessary statistical skills.</p> <p>If the unit is being applied to a complex change process or a complex manufacturing process, it may be an advantage to have completed MSACMT652A Design an experiment before completing this unit. Where this unit is being applied in a six sigma environment then knowledge and skill in six sigma techniques may also be an advantage. MSACMT653 Apply six sigma to process control and improvement can be completed to supply these skills.</p> <p>The unit applies to reviews of both intended and unintended consequences of change and the effectiveness of the implementation of the change. This unit is not intended to be applied to a technical or engineering review of a major capital expenditure or similar.</p> <p>This unit takes a largely quantitative approach to the review. For skills associated with a more qualitative review refer to MSACMG705A Undertake a qualitative review of a process change.</p> <p>This unit may also be applied to service organisations applying competitive manufacturing principles.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Analyse a change	1.1. Identify changes which have occurred 1.2. Select a change or group of related changes to analyse 1.3. Determine the initiation of the selected change 1.4. Identify relevant metrics and predicted values for these metrics 1.5. Gather data for these metrics prior to the change 1.6. Gather data and information on the implementation of the change 1.7. Gather data for these metrics after the change 1.8. Survey all key metrics and identify any where variations may correlate with the change being analysed 1.9. Discuss results of change with key stakeholders and identify other possible (qualitative or quantitative) results of the change 1.10. Analyse this data to determine the results of the change
2. Review results of change with stakeholders	2.1. Identify trends over time in all relevant metrics 2.2. Analyse correlated metrics to determine causal relationship 2.3. Audit health, safety and environment (HSE) impacts as a result of the change 2.4. Present information in a form understandable by stakeholders 2.5. Discuss analysed information with relevant stakeholders 2.6. Modify information based on stakeholder input as required 2.7. Develop a consensus view of the result of the change which is supported by the information available 2.8. Validate the consensus view with stakeholders
3. Identify future improvements	3.1. Discuss lessons learned from the change with stakeholders 3.2. Capture key knowledge in accordance with systems and procedures 3.3. Identify future improvements in collaboration with team members

ELEMENT	PERFORMANCE CRITERIA
	3.4. Validate identified changes with stakeholders 3.5. Obtain sign off from process/system owner 3.6. Start the process for implementing future improvements 3.7. Check that the planned improvements are occurring 3.8. Take action to sustain improvement by standardising

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- decision making
- communication at all levels
- interviewing skills
- statistics/mathematics
- situation analysis

Required knowledge

- competitive manufacturing principles
- organisational goals and processes
- continuous improvement and the workplace improvement processes and procedures
- statistical process control (SPC) and principles
- methods of determining the impact of a change using quantitative analysis of process data, including advanced statistical/mathematical analysis and basic qualitative techniques
- organisation metrics
- sources of data (actual and possible) within the organisation and the value chain
- range of typical metrics, their applications and limitations

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Demonstrates skills and knowledge required to:</p> <ul style="list-style-type: none"> • analyse process changes. <p>In particular look for evidence of:</p> <ul style="list-style-type: none"> • identification of changes • data and information gathering over a period and range that will provide a valid basis for analysis • selection and use of appropriate data analysis tools • presentation of information in a suitable form • obtaining a consensus view of the results of the change • determining the lessons to be learned and future improvements to be undertaken.
Context of and specific resources for assessment	<p>Assessment may occur on the job or in an appropriately simulated environment. Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p> <p>Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.</p>
Method of assessment	<ul style="list-style-type: none"> • Assessment must satisfy the endorsed assessment guidelines of the Manufacturing Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and

EVIDENCE GUIDE	
	<p>application.</p> <ul style="list-style-type: none">• Assessment may be applied under project related conditions (real or simulated) and require evidence of process.• Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.• Assessment may be in conjunction with assessment of other units of competency where required.
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

RANGE STATEMENT	
<p>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.</p>	
Codes of practice/standards	Where changes include areas covered by industry codes of practice, and/or Australian/international standards, the latest version must be used
Gather prior data	Where all suitable data was not collected prior to the change a suitable proxy will be needed
Health, safety and environment (HSE)	All changes implemented are expected to be at least neutral, or preferably beneficial, in their impact on health, safety and environment
Change	<p>Changes may:</p> <ul style="list-style-type: none"> • be to plant, procedures or practice • arise from continuous improvement (or an improvement event/project) or implementing new products, technology or systems • may have been intended to make an improvement or to implement new products, technology or systems • include the implementation of a change <p>Changes do not include an engineering review of a major capital expenditure or similar review</p>
Initiation of change	<p>Changes need to be identified as either:</p> <ul style="list-style-type: none"> • deliberately or not deliberately initiated <p>Where a change was not deliberately initiated then the causal factors for the change need to be identified</p>
Correlated metrics	Any metric which appears to show a chronological correlation with the change being analysed. These metrics need to be examined to determine if the change has a causal relationship or is simply coincidental

RANGE STATEMENT	
Presentation of information	Information may be presented: <ul style="list-style-type: none"> • in terms of graphs (or other appropriate visual forms) • verbally or other forms able to be understood and used by stakeholders
Stakeholders	Stakeholders include: <ul style="list-style-type: none"> • work team members, value chain members, as well as other stakeholders
Results of change	The change results may include: <ul style="list-style-type: none"> • an initial improvement followed by a return to previous performance • continued improvement • continued detriment or other variations over time
Improvements	Improvements may: <ul style="list-style-type: none"> • be to process, plant, procedures or practice • include changes to ensure positive benefits are maintained
Sustaining improvement	Improvement may be sustained by including it in: <ul style="list-style-type: none"> • standard procedures and work instructions • standard practice • other relevant documents and practices
Team leader	Team leader may include: <ul style="list-style-type: none"> • any person who may have either a permanent or an ad hoc role in facilitating the function of a team in a workplace

Unit Sector(s)

Unit sector	CM Graduate
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		