

Business-improvement techniques (BIT)

These techniques are the latest collection of updated and developed practices that have been devised to facilitate making improvements in productivity of business and manufacturing organisations by applying the tools of continuous improvement and the most up-to-date

management thinking. In today's global economy, it is evident that in the long term, only the strong and efficient will survive: to do the minimum really means that the organisation will deteriorate and maybe demise in the future.

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Fundamentally, the implementation of the BIT programmes involve the company in focusing attention on improving its processes and practices by the identification and subsequent elimination of all forms of waste; that is to make the safest and most effective use of the resources and to minimise capital expenditure by making the best use of existing facilities. Waste can be described as anything, which does not add value to a process or is not required by a paying customer. Coupled with value added is the need to reduce product variation and preventing defects through managing quality and process flows.

Business improvement techniques (BIT) materials are available in courses with accompanying qualifications.

Business improvement awards Business improvement techniques NVQs are available at levels 2, 3, and 4. There are two pathways, one process, the other quality. The process pathway has an emphasis on lean manufacturing principles. The quality pathway focuses on defect elimination and variation through six sigma principles.

- The level 2 award covers employees who are involved in business improvement within a team and have had their competences assessed for certification purposes.
- The level 3 award has been designed to cover those people who are employed as supervisors and team leaders together with other staff involved in a more

in-depth understanding of business improvement practices.

- The level 4 award caters for those people who are in middle management and have got responsibilities in a business improvement environment.

Each level contributes towards the knowledge and understanding required for the related N/SVQ.

Each of the alternative streams (process improvement and quality improvement) at level 2 consists of two common mandatory units with two essential and two optional units for each pathway.

Levels 3 and 4 have a similar framework. Each level has two common mandatory units, and there are two or three essential units and a further

two optional units for each stream.

The Sector Skills Council SEMTA has been chosen by the Government to work with industry partners to develop a National Manufacturing Skills Academy. The NMSA was launched in September 2006, and one of the key areas of all areas of manufacture is in business improvement techniques. A major task for the NMSA is to standardise the delivery and assessment of NVQs in BIT

	Mandatory Units	
	Unit 1: Complying with Statutory Regulations & Organisational Safety Requirements	
	Unit 2: Contributing to effective Team Working	
Process Improvement Must cover:-		Quality Improvement-Must cover:-
Unit 4: Applying workplace organisation		Unit 18: Applying Six Sigma methodology to a project
Unit 5: Applying continuous improvement techniques (Kaizen)		Unit 19: Carrying out Six Sigma process Mapping
		Unit 20: Applying basic statistics
Optional Units can include:-		Optional Units can include:-
Unit 9: Creating Visual Management Systems Unit 13: Applying problem Solving Techniques (SPC)		Unit 14: Carrying out Statistical Process Control Procedures Unit 21: Carrying out potential Failure Modes and Effects Analysis (FMEA)

Business-Improvement Awards have been designed and introduced to industry and commerce to allow progression through each level, as is appropriate to the individual's circumstances.

At Level 2, the qualification is particularly suitable for production and semi-skilled workers in manufacturing industries; however, it does require a whole organisational approach to business improvement where individuals are trained to involve themselves, through effective team working in continuous improvement techniques. The BIT candidates will focus on how to eliminate waste, reduce variation and prevent defects through managing quality and process flows and thereby dramatically improve business performance. The NVQ award covers the most up-to-date management thinking, from the 5S method to the Kaizen approach.

Details of the content for level two bit. (mandatory and process improvement stream)

As explained previously, this level consists of six units :
Unit 1 – statutory regulations and organisational safety requirements

Health and safety at work is of vital importance. During the year 2002-3, in the UK, there were 226 fatal injuries, 28,426 major injuries and 126,004 injuries resulting in three day absences from work. Put this way, there were 0.5 fatal injuries, 113 major injuries and 501 three day injuries per 100,000 workers respectively. The major common causes of injury were slips, trips and falls, manual handling, falling from heights and being struck by moving vehicles. In addition to these recorded results, there were 2-3 million under three day injuries in 2003-4, which resulted in 33 million working days being lost. The most common reported causes of injury were musculoskeletal disorders and stress, depression or anxiety.

The unit concentrates on the seven important H & S at Work Regulations 1999, including risk assessments, temperature, lighting, and heating, standards for use at maintenance and inspection, handling of stocks, equipment and materials, protective clothing and equipment, Use of technical equipment and use of all lifting equipment over and above PUWER. It focuses on the roles and responsibilities of the individual and others in the workplace: the need to take reasonable care of one's own health and safety at work and others who may be affected by your actions or omissions at work.

Unit 2 – contributing to effective team working

The objects in this unit are to enhance the understanding of the effect of communications on team performance, the key roles in team working and the benefits of team working. A team is defined as a group of people who co-operate and work together to achieve a goal in such a way that they accomplish more than individuals working alone. Team Briefing is the passing on of information generated by management through the management chain: in practice, it is the simple but necessary procedure whereby everyone in the organisation gets briefed in teams of four to, say, fifteen, face-to-face by their boss, regularly and at least once per month. Team briefing frequently follows decision-making and the team are informed of the decision and the reasons why it was necessary to be made. Noticeboards and newsletters are important, but there is no substitute for face-to face methods when understanding is vital. Good working relationships with internal and external customers are essential in every organisation; without this environment, it is difficult to envisage a successful long-term future. Effective team working can be summarised as 'one plus one equals three'

Unit 4 – workplace organisation

Workplace organisation is defined the safe, clean and orderly arrangement of the workplace that provides a specific location for everything and eliminates anything that is not required. In particular, it puts order to the workplace and allows 'out of standard' conditions to be visible and makes daily tasks more comfortable, easier and less costly. This unit introduces the 5Ss and CANDO programmes. It aims to demonstrate that workplace organisation does contribute to all the company goals.

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Unit 5 – continuous improvement techniques

The unit highlights that standardisation is the key to creating a repeatable process, which in turn leads to consistent levels of quality and throughput: it is a process that ensures that everyone involved knows what to do and when to do it. Linked with standardisation are the systems of takt time/cycle time/ and line balancing that have been in the management services toolbox for many years. The standard operation sheet (SOS) or the standard operating procedure (SOP) is a prepared document that presents an activity in a structured, chronological format and contains all information required to perform a task.

Continuous improvement process is a process of discovering and eliminating waste in as little time as possible at the lowest cost. Any work carried out can be considered within one of three categories;

- Value added
- Non value added
- Waste

It is essential that any BIT exercise should focus attention on the elimination of the seven wastes (scrap, waiting, excess inventory/ motion/transportation, over production and over processing). There are also the six hidden losses which need attention and include breakdowns, set-up and adjustments, small stops, reduced speed, start-up rejects and production rejects.

Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognised as industrial leaders. This practice can result in identification of gaps in performance that can be bridged by improvements and result in significant and tangible benefits. There will always be clearly visible shortcomings and also hidden problems.

Unit 9 – visual management techniques

The unit demonstrates that through visual management techniques the workplace can be made into a showcase that can be easily understood by anyone at a glance. Within the

production environment, there are the usual visual controls that are red tags, kanban, lines on floor, min/max lines, hourly boards and the standard operation procedures. Visual management is a tool that if used and controlled correctly, will provoke a reaction that can lead to relevant remedial measures.

Unit 13 – applying problem solving techniques.

Problem solving tools are sometimes called quality/pictorial tools since they present information in a simple visual form. These tools introduced include tally charts, Pareto charts, control charts, cause and effect diagrams. The benefits of these techniques are that they help to identify and assist in analysing problems together with highlighting possible causes and subsequently suggesting solutions to anomalous situations.

Case study of a successful application of BIT

This is the project history of a Leicestershire based company that produced successful results over a three-year period. Initially there was concern of the poor delivery of products from the company; results indicated that only 15-20% of goods were on-time delivery. Some three years later, the company had moved to a cellular based manufacture supported by systems infrastructure and undertook a BIT programme which resulted in 70-100% on-time delivery. To drive forward these changes, there was an initial need for additional professional development of the team and cell leaders. These employees who numbered 25 of a shop floor workforce of about two hundred and fifty, participated in Certificate and Diploma Training programmes with the Institute of Operations Management.

In the past, team leader training had been common but it did not integrate skills into the workplace.

The team behaviour has been a contributing factor to the effectiveness of the team leader: in many ways, effectiveness was dependent on the tacit knowledge contained by the operatives. The management style has had to change to complement the team meeting style in order to avoid discontinuities. The issues were all inter-dependent. Overall, there was a need to standardise training.

An organisational development viewpoint needed to be taken to achieve the company objectives. A multi-point intervention strategy was required to give a coherent overall behaviour change. This did involve training, coaching and accreditation for the management group, cell/team leaders and the teams.

To achieve these ends, the company sought the support from government funding. The Leicestershire Learning Skills Council (LSC) was keen to develop a model of deploying funding effectively. A local college acted as an interface between the LSC and the selected training providers, who had a proven reputation in these fields.

For management development, there were ten half day workshops covering:

- Producing a 'balanced scorecard' approach to give clarity to the objectives and measures of performance
- Moving from a 'controlling' culture to a 'supportive' culture
- Refreshing the management skill set
- Reviewing the cell/team leader and team development programme.

For the cell/team leader development, it was assessed that a balanced skill set of both 'technical' and 'soft skills' were needed.

The 'technical skills' were developed using the Institute of Operations Management. The 'soft skills' were developed by a coaching programme consisting of six one day workshops and associated shop floor coaching together with additional job-based coaching to result in a BTEC level 3 award/NVQ level 2 for cell/team leaders and NVQ/BIT Level 2/3

The workshops were designed to address:

- Identifying and agreeing measures of performance

- Securing commitment to measures of performance
- Running action orientated daily team meetings
- Stimulating involvement by team members
- Transferring skills
- Motivating and influencing teams
- Hunting and reducing waste
- Solving problems
- Creating continuous improvement

Development of the team members was also addressed by seven half day workshops and associated shop floor coaching aimed at:

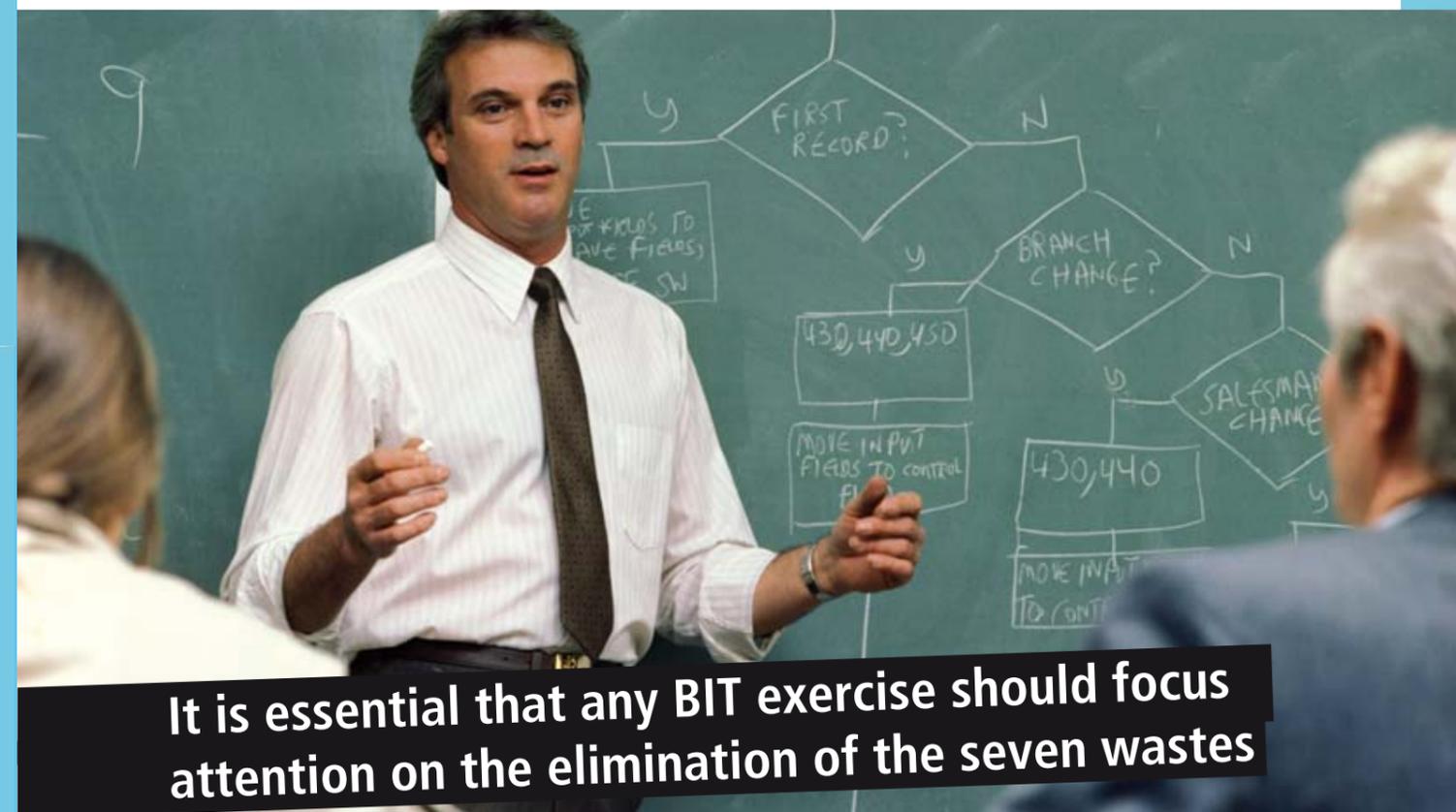
- Gaining commitment to measures of performance
- Responding in meetings
- Hunting waste
- Solving problems
- Presenting continuous improvement ideas
- NVQ Level 2 award in lean team working and NVQ/BIT Level 2

To capture the tacit knowledge of manufacturing, some cell/team leaders were trained as A1 assessors/V1 verifiers. There was formalisation of, and accreditation for existing skills together with a standardised approach to skills matrix development and associated training.

Overall, some 250 employees went through a team working/ business improvement and NVQ programmes with many gaining their first ever qualification. The total funding for the project was £80k from the company and approximately £320k of the ETP and core funding.

Conclusion

The project in Leicestershire was deemed to be a great success. There were measurable results that clearly show that economic benefits had been obtained at the company.



Linked with standardisation are the systems of takt time/cycle time and line balancing that have been in the management services toolbox for many years

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The BIT programme, when mixed with other relevant training approaches has demonstrated that improvements can be achieved. It was evident that to sustain continuous improvement, which is so vital to UK industry in this global environment, needs a continuous effort and application of the simple techniques.

Many experienced management services officers will claim that BIT is founded on good method study practice and is a modernised and expanded tool from their professional kit bag. The importance of the NVQ awards in BIT to the company develop from the fact that the training and assessment carried out for the awards highlight the value of input from workers at all levels, demonstrating the need for companies to take a committed holistic approach to continuous performance improvement.

References

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About the Authors

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