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# GUIDE TO PRODUCTIVITY IMPROVEMENT

THIS GUIDE GIVES A HANDY SUMMARY OF THE MOST POPULAR PRODUCTIVITY IMPROVEMENT METHODS USED TODAY.

**A**mong the most commonly-used change and improvement methodologies are Lean, Six Sigma, Process Reengineering and hybrid methodologies. This overview is intended to guide executive decision-makers through the advantages and disadvantages of each, and the particular circumstances in which they are best deployed.

## LEAN

**What is it?** Lean methods have a focus on waste reduction and cycle time improvement. An end-to-end process view helps identify waste for elimination. The result is a simpler process, where each step adds value to the customers. It has five key principles:

1. Specify value: the value of the product can only be determined by the end consumer.
2. Identify the value stream: this will expose waste.

3. Create flow: do not process large batches.
4. Enable customer pull: demand should pull the product through the value stream, meaning you produce only what the customer has ordered.
5. Seek perfection: continuously improve quality and eliminate waste.

**How do I do it?** Lean methodologies have several commonly used frameworks, for example: single piece flow; targeting eight forms of waste; Kaizen Blitz; 5S; and visual controls.

Single piece flow is one of the most profound Lean approaches. It presumes that creating large batches of products before moving them on to the next process step can create delays, and can reduce productivity.

Essentially, Lean practitioners look for instances where batching-up activity actually adds to the cycle time and, ultimately, damages customer service. In many instances it can be quantitatively demonstrated

that costs, time and service can be improved through the reduction of batches or the flowing of products through a process one piece at a time. This equally applies to transactions as to physical product. This is driven by a number of factors, including:

- lower work-in-progress
- earlier identification of errors
- fewer enquiries.

**When should I use it?** Lean methodologies can be applied to a broad range of projects, from manufacturing to service industries.

Compared to other methodologies, there is generally a manageable investment in training and development (which is less expensive than the other approaches discussed). However, analytical techniques can be 'lighter' than Six Sigma, there is less detail than in Process Reengineering, and Lean does not have a rigorous approach to managing restructures.

However, organisations can expect simpler, more efficient processes and lower cycle times. This can occur quickly, particularly if managers adopt change ideas without the full and robust quantification provided by other methods.

**Success stories?** Lean methodologies were pioneered by Toyota in Japan. They have since been adopted by other manufacturing enterprises, and in other industries such as finance and health. Indeed, there are very few industries that have not embraced at least some Lean approaches.

Cycle-time improvements can range from 15 to 80 per cent, depending on the health of the original process. Some of the most significant changes are in the financial services sector, but improvements have been seen in other service industries, including health and general government sectors.

## SIX SIGMA

**What is it?** Six Sigma is both the name and the goal: improve quality so that the error rate is reduced to 0.3 parts per million. The philosophy has two broad aims:

- creating an in-house capability for quality improvement
- using this capability to rigorously analyse business processes to produce high quality products with minimal variations.

The causes of variation in performance outcomes are assessed to find ways to effectively control processes. **How do I do it?** On a Six Sigma project, there are five well-defined steps: define, measure, analyse, improve and control.

To the problems, each step applies sophisticated statistical and qualitative problem-solving techniques. Each has a specific objective, with an overall aim to identify and remove the causes of variation.

Six Sigma does not traditionally have a rapid implementation focus; results are delivered over a longer timeframe. Other implementation techniques may need to be applied in conjunction with Six Sigma to ensure benefits are fully realised.

**When should I use it?** Six Sigma is best applied to high-volume processes, where the consistency and quality of the end result is crucial.

On smaller projects, the level of governance and analysis can become costly overheads. It is often applied after Lean or Process Reengineering to remove some of the more fundamental waste.

A Six Sigma project is dependent on having highly-qualified practitioners. Organisations aiming to develop this internal capability need to invest significant time and money in training staff. They also require a supportive management philosophy. **Success stories?** It is no surprise that Six Sigma arose in an industry where producing high-tech products for a large market was crucial: the telecommunications industry.

Motorola successfully developed and applied the techniques to the production of mobile phones. The methodology has been successfully applied in many other contexts particularly high volume process areas, such as call centres and back offices.

**PROCESS REENGINEERING**

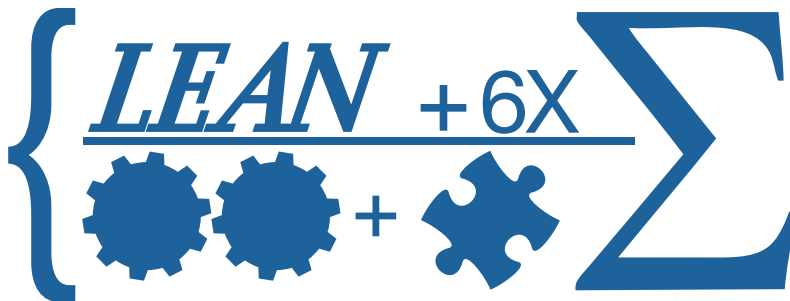
**What is it?** Process Reengineering is a series of tools and principles to map processes and generate improvements ranging from incremental to radical.

Incremental change may involve standardising inputs such as customer forms, while radical change looks at the underlying principles of the process and how it relates to organisational structure. Changing these will totally redesign the process.

Like Lean methods, Process Reengineering looks at the end-to-end processes, however, a greater level of detail is collected. Whereas Lean may capture dozens of steps, Process Reengineering will capture hundreds, sometimes thousands of steps.

**How do I do it?** Process Reengineering begins with process mapping. It then applies reengineering techniques to:

- eliminate unnecessary process steps
- reduce hand-offs
- reduce duplication
- reduce errors
- improve cycle times.



The high level of detail collected provides the opportunity for quick wins and the ability to quantify the solutions' benefits. This does mean that more time and resources are required when compared to Lean.

**When should I use it?** Process Reengineering is best utilised for major process projects with the potential for radical change. It has also been associated with major systems design and implementation. The Process Reengineering tradition has developed process management tools which, while not actually methods, are useful for integrating process and data.

**Success stories?** This approach has been used successfully in all manner of contexts, from finance to health services through to government agencies.

**HYBRID METHODOLOGIES**

**What are they?** Increasingly, hybrid methodologies are becoming formalised and more frequently used. The most common is Lean Six Sigma, which overcomes the statistically light nature of Lean,

and brings the 'quick wins' and implementation focus of Lean to Six Sigma. However, as the training programs offered are often heavier on Six Sigma and lighter on Lean, it pays to check the course content.

One of the challenges of traditional methods is that they are weak on the structural side. Partly to address this weakness, many projects benefit from a hybrid methodology, which draws on multiple schools of thought. One example we use at Bevington merges the best of Process Reengineering and Lean to create a seven-step Organisational Redesign (XeP3).

The methodology is supported by technology that gathers the detailed process steps, provides a fast, visual and structured understanding of the opportunities, an integrated implementation plan, and a benefits tracking tool for managers.

This technique enables a full business model redesign of process, systems and structure. It is perhaps the only approach that robustly addresses both process and structure.

**How do I proceed?** The XeP3 methodology is applied in a way which:

1. interviews staff to collect detailed process steps
2. enables robust analysis to understand the processes
3. delivers quantified summaries of key opportunities for change
4. engages staff to generate improvement solutions that address process and structure
5. quantifies the benefit
6. implements changes, supported by accountability and tracking
7. measures the change.

**When should I use a hybrid?** The component parts of Lean Six Sigma methodology should be applied as appropriate for the Lean and Six Sigma elements.

The Organisational Redesign approach of XeP3 should be considered when you need to address structure, role and process. It is also highly applicable to transformational systems implementations. Where the change is multi-dimensional (process, system, role and structure), then more sophisticated methods such as XeP3 should be applied.

**Success stories?** The Organisational Redesign method (XeP3) has one of the richest case study sets available. It has been applied in almost all industries.

**SUMMARY**

Each of the methods discussed has its strengths and weaknesses. No single method is appropriate to all challenges, but a correct choice can lead to positive results for your enterprise and your customers. [VI](#)

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