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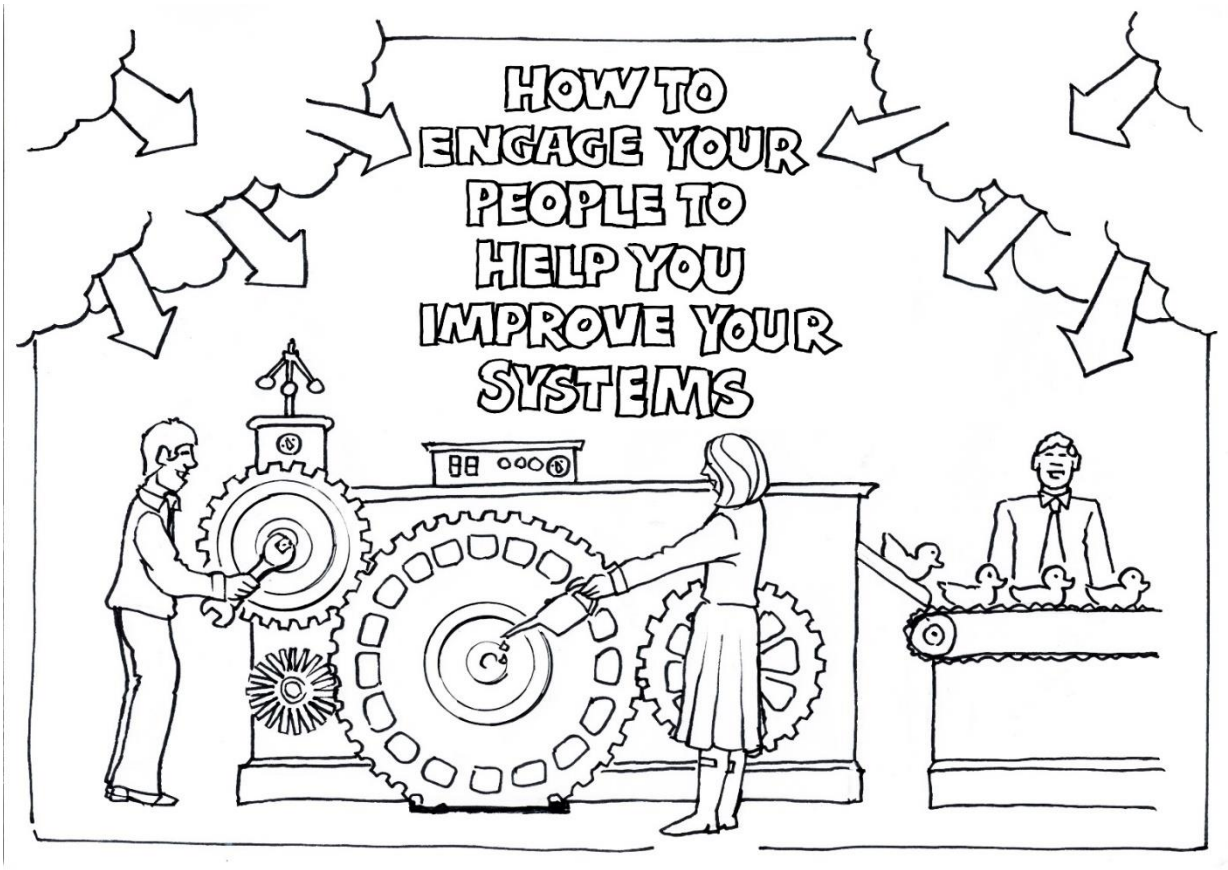


And deliver real, quantifiable process improvement and to

predict the future

"The people work IN a system.

The manager should work ON the system, to improve it, with their help"

Dr Myron Tribus

Organisational theorist and director of the Centre for Advanced Engineering Study at MIT

Introduction

This handbook is designed to help you to improve your processes; to help you improve the way in which your work works.

It will change the way you think about process improvement and it will provide a number of useful tools and techniques.

The aim is to provide a robust and systematic guide which will help you to identify and eliminate waste. Using the ideas enclosed you will be able to:

1. Apply a structured approach to reduce and eliminate waste
2. Ensure processes are effective and efficient
3. Prove that the changes made are indeed improvements
4. Predict the future performance of your processes

Yes, predict the future performance of you processes…

Contents

How will we know a process has really improved?

Given the right kind of tools this is actually quite easy…and the right kind of tools were actually invented nearly 100 years ago by a guy called Walter Shewhart. He called them Control Charts…we prefer to call them Process Prediction Charts™.

They have a number advantages over traditional methods, they:

- Allow you to see **the whole picture over a period of time;** all of the data, not just isolated data points - this month, last month and this time last year
- Allow you differentiate between data points that are "**signals**" and others that are just "**noise**"
- Allow you to know **when a change really is an improvement**

And possibly most importantly… they allow you to **predict the future.**

Yes, you really can **predict the future**. You might not like the results… which means you need to work on further process improvements …but you can predict the future.

Variation

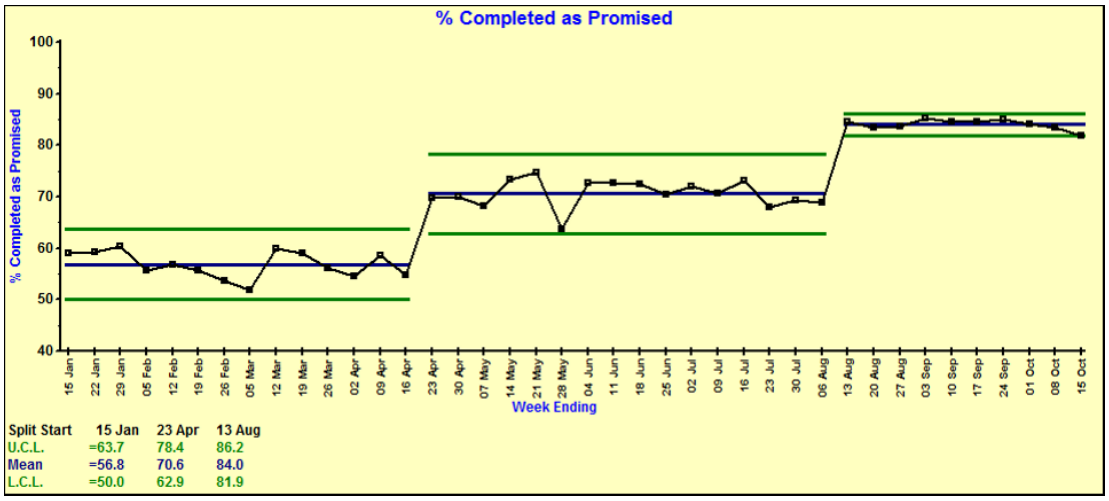
Variation occurs over any time-based data, that is data recorded and "analysed" by the second, hour, day, week, month or any other time based dimension. It is impossible to spot trends and see data over time, or understand variation, unless all data over the period you are interested in is plotted; this is a time-series chart, essentially a diary of events which uses numbers instead of words, as shown in the examples below.

Let's look at real process improvement

All too often managers make a change, get a better result for the next few periods and then declare the change to be a success, when in actual fact they just got lucky…

We are now going to explore a number of different examples of where performance improvement thinking and the associated tools and techniques have led to demonstrable, quantifiable and real improvements.

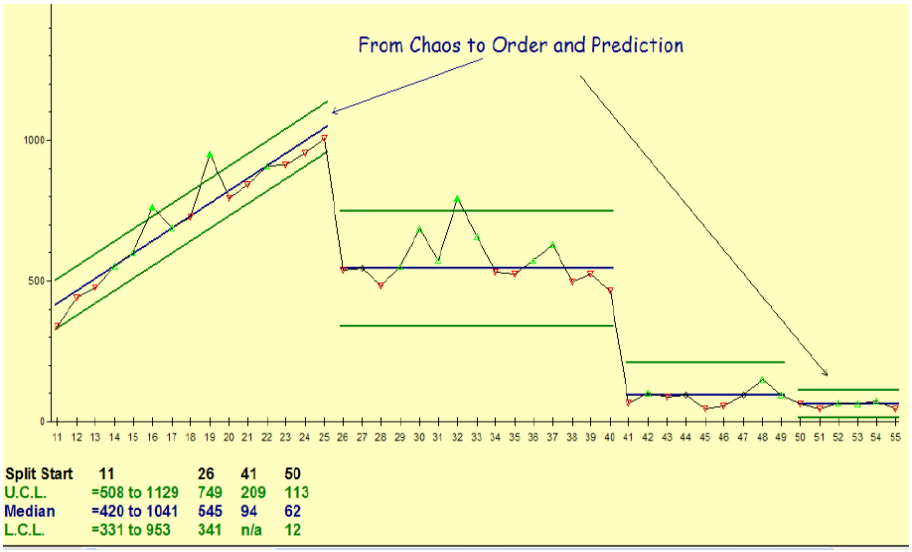
The first example is taken from a large construction company who undertook major building contracts for major retailers. In this instance, we were tracking the number of programmed jobs completed as promised per week.



In the first third of the graph an average (middle blue line) of just 56% of the jobs promised were getting completed. However, the variation in the data shows us that this could be as low as 50% (the lower green line) or as high as 63.7% (the higher green line)*. Action was taken using the thinking and tools and techniques outlined in this booklet and the average number of completed jobs increased to 70.6%. A further round of improvement was undertaken and the weekly number of jobs completed increased to 84% …but this time the range of variation reduced significantly making the process significantly more predictable which means the site is much easier to manage!

Note *The detail of the science behind these charts how the various limits are calculated is available separately.

The second example shows the time taken to process orders.



The left hand portion of the above chart (orders 11-25) shows the cycle time increasing as each new order is taken. The system is in chaos. As each order is received it takes longer to process than the last. An improvement plan was drawn up by the team studying the data and a number of changes were made.

The second, middle, section on the chart (orders 26-40) shows the first improvement after these changes. The process is now stable but, by repeating the improvement cycle (orders 41-49 and 51-55), the process is, without any capital investment, significantly improved yet again.

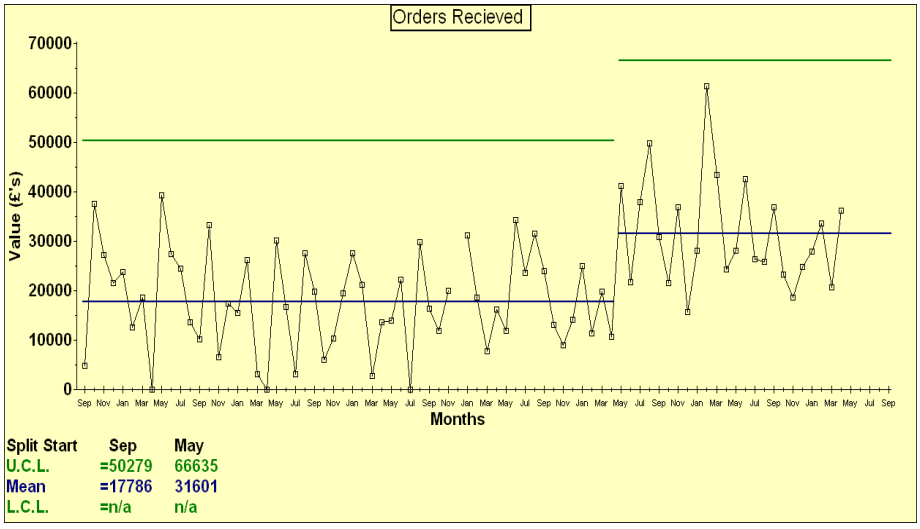
The result is significant: the capacity has been massively increased. The time taken to process an order initially varied between about 400 and 1000 seconds. At the end of the continual improvement process, the time taken to process an order was typically 62 seconds. The implications are profound: approximately 10 times as much work can be achieved with the same staff levels, staff can be re-deployed to more value adding jobs, a completely new level of service can be provided. “Waste” has been removed from the process.

The third example shows the monthly value of orders received for a particular product line over a period of 5 years or so.

Various sales approaches had been used tele-sales: tele-sales, direct sales, web sales etc but the “natural variation” in the value of orders received varied between zero and just over £50k per month and the long-term monthly average sales were just short of £18k (the first 2/3^{rds} of the chart)

So, despite many changes nothing had *actually* changed …in 5 years! An improvement team was created and they set about demonstrably improving the process.

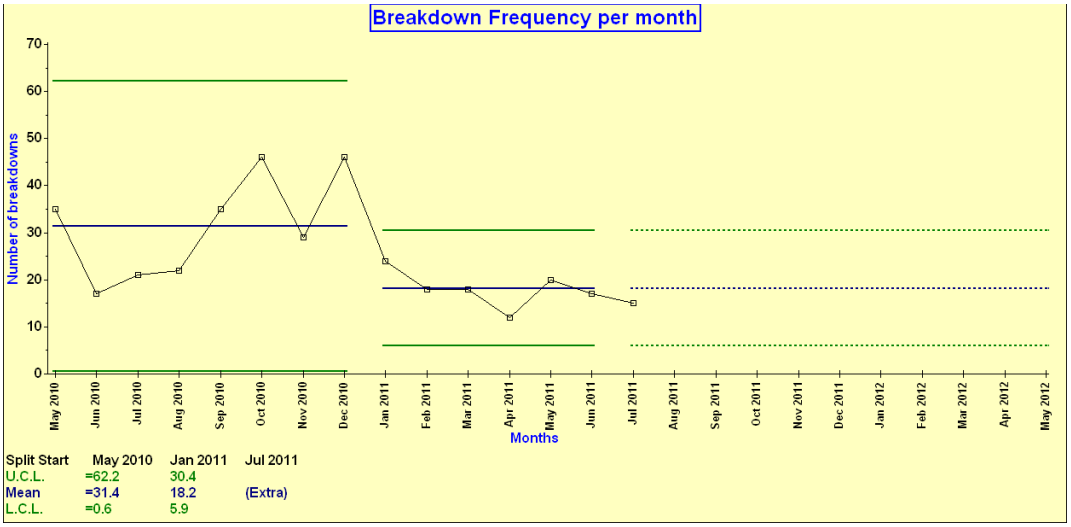
As can be seen from the final 1/3rd of Performance Prediction Chart™ below, these changes have had a long, lasting and significant effect. For the following year, the value of orders received remain well above the previous long-term average for all but one month **and** the monthly average rose to £31,601: a rise of nearly 80% on the previous average.



Predicting the future

The final example investigates the breakdown “rate” of safety critical mechanical / electrical equipment. In this instance, the number of call outs for 30 machines is plotted for 8 months prior to the changes made as part of the improvement process. During this time the average call out rate for the machines is 31.4 per month which equates to, roughly, one a month for each of the 30 machines.

However, the green lines show the limits of (natural) variation; that is, the highest and lowest number of visits that would normally be expected in any one month. The variation is huge: the number of visits could be as high as 62 or as low as one!



The work of the improvement team resulted in the average number of call outs dropping to 18.2 per month (I can go into some maths here but, for the moment, take it from me this is a statistically significant drop) - Statistical evidence of a real improvement.

Additionally, the range of predictability has also reduced significantly. Now there might be between 6 and 30 call outs per month. Not perfect, but a lot easier to plan and mobilise resource for than 1 to 62!

What we can now say is that we would expect all further results to fall within the dotted green lines; hence our term for these charts - the process prediction chart. In order to further improve the process, we need to make another set of changes to the way in which the work works.

All the above charts show real, quantifiable, scientific and statistical improvement.

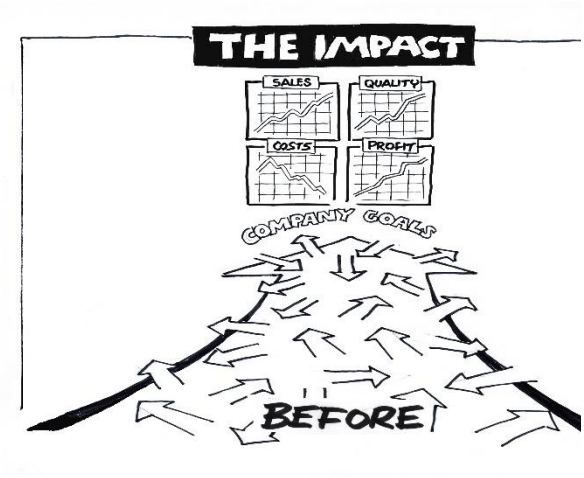
The goal

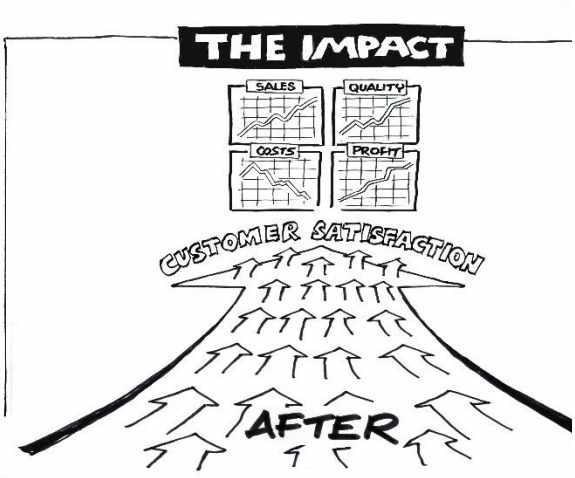
The goal of process improvement is to reduce waste and increase value to the customer.

Value is the client's perception of the worth of a product or service compared to the price. World-class organisations strive to eliminate anything that does not add 'value' to the final product or service that the client requires. Activities that contribute to the end service are said to be '*Value Adding'* (VA). Activities that do not contribute to the end product are said to be '*Non-Value Adding*' (NVA) – often known as *waste*.

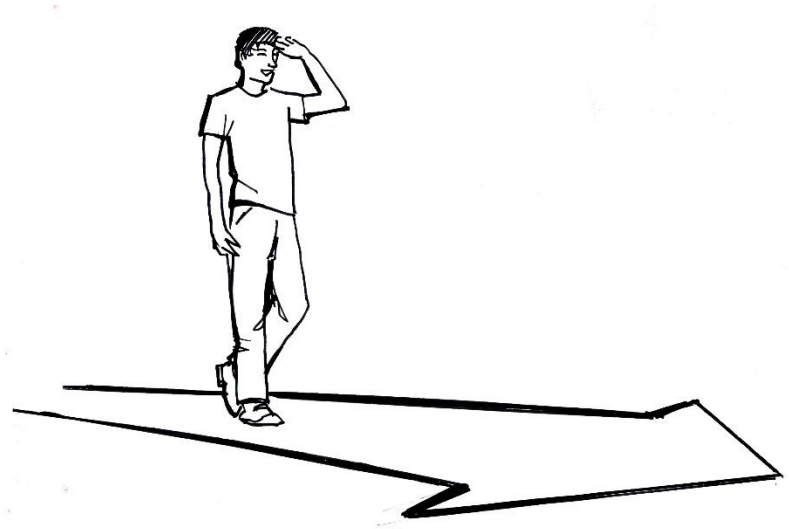
However, a word of caution; there will be a number of usually supporting activities in any organisation that are not directly value adding but are also not waste; managing the buildings and facilities, managing people and their development, managing accounts and finance. These activities need to be undertaken but don't add direct value to the customer.

Waste within the value adding activities is anything the client is not willing to pay for, and relates to any task that does not directly contribute to what a client views as adding value to deliver their requirements. There can also be waste in the supporting activities. Reducing waste increases value creation for clients, decreases costs and increases profit for your organisation.





In essence we want to get to a position where the effort of all people and all processes are directly focused on the company goals in the most effective and efficient manner.



Your purpose

Given that the priority is to focus on the value of the products and services delivered to clients and customers, we need to ask first what are the "*benefits*" and the "*capabilities*" delivered to clients and customers.

This is different to "what you do" and examples to illustrate the point might help:

Organisation	Purpose; *the benefits and capabilities delivered to customers* The "WHY"	What we do
School	We want to inspire a quest for lifelong learning …we help each student find their passion	We teach children (to pass exams)
Library	We satisfy the desire for literature and learning	We loan books (and other items)
Security company	People and assets are protected	We provide security services
Kodak	… memories are captured and shared	We provide cameras and film
Blockbuster video	…customers get entertainment and education delivered to them at a time of their choosing on a platform of their choosing	We rent videos and DVDs

What is a Process?

Most businesses adopt a traditional *functional organisation view*. This means that work is contained within departments, rather than actually going from the start to the end of an activity.

The traditional functional approach to management leads to isolated working with departments striving to achieve internally set targets…usually at the expense of focusing on the customer.

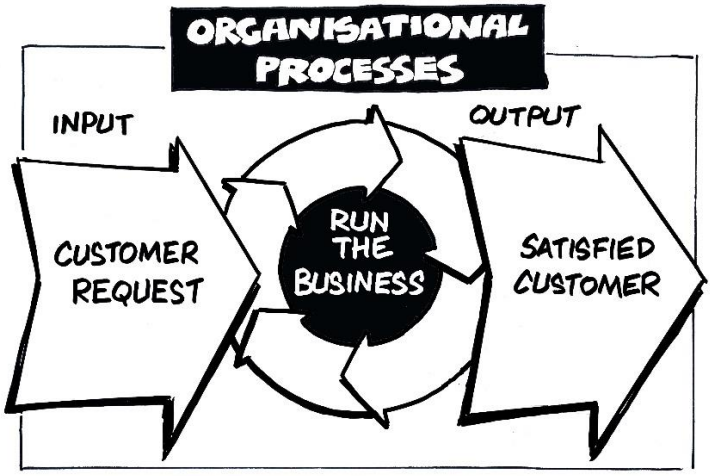
Great businesses use a *process view*. This involves looking at the end-to-end process from the first point of contact, right through to the delivery of your product or service and a satisfied, or preferably delighted, customer. Having a process view helps to focus the business on the critical activities that are required to deliver value to the customer, and to identify activities that aren't contributing. This focuses on how work is done, rather than just what is done.

By adopting a process approach the focus is on the "flow" of work through the organisation. The quicker the flow the quicker the cash to cash cycle.

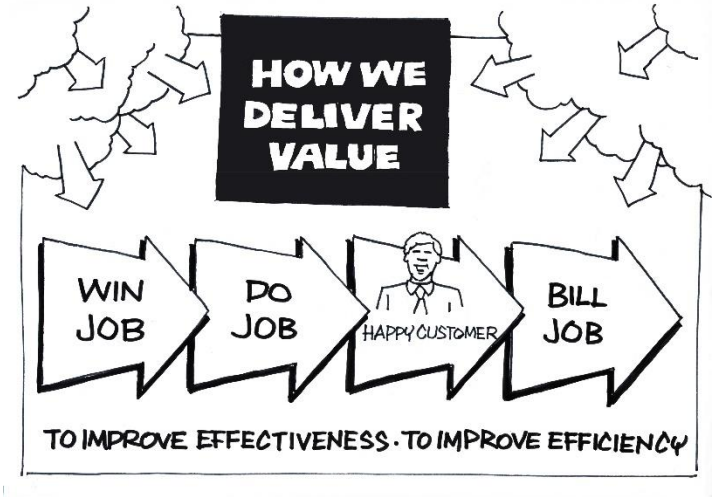
By using a process approach you can take action to stop unhelpful activities. This means people become more productive at work.

Process View	Functional View
Creates focus on work output and reduces inefficiency	Focus on skill and resource utilisation rather than output
Transparency of how individual work contributions fit into bigger picture	Rewards functional units, not overall business
Encourages involvement and empowerment	Encourages an "us vs them" mentality
Breaks down department barriers	Creates "firms within the firm" where each departments has their own agenda

At the very top level the inputs and outputs to a process might be defined as follows:

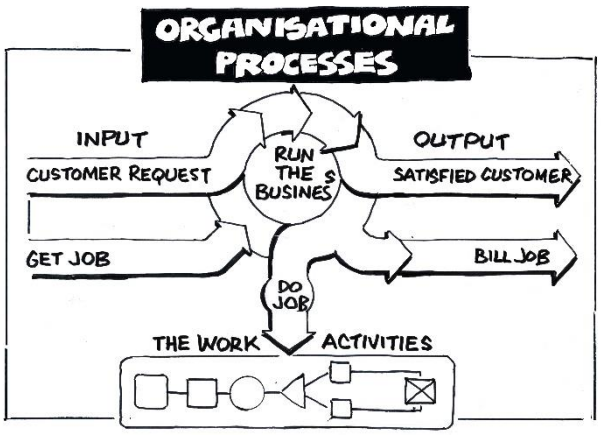


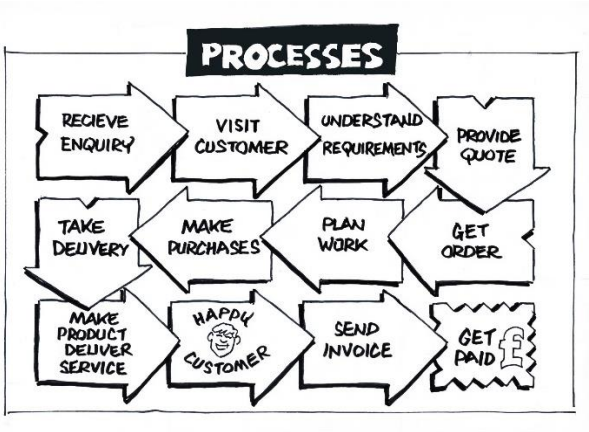
Drilling down into the “run the business” activity, we find that most organisations have three core processes…it’s often more complicated than this but for the moment let’s start here.



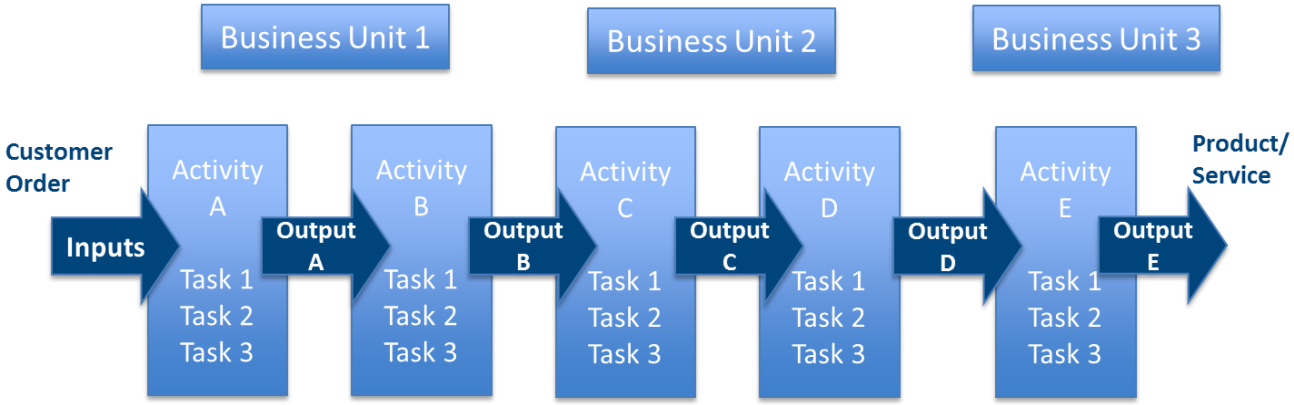
A more detailed process view

Developing the win job, do job, bill job concept in more detail, you can imagine a set of processes flowing through an organisation that might follow a route similar to the one outlined below.





Essentially the process view cuts a line horizontally through the traditional organizational chart of a family tree. More formally it might look like this:



***"The process is not just the sum of the parts."* W Edwards Deming**

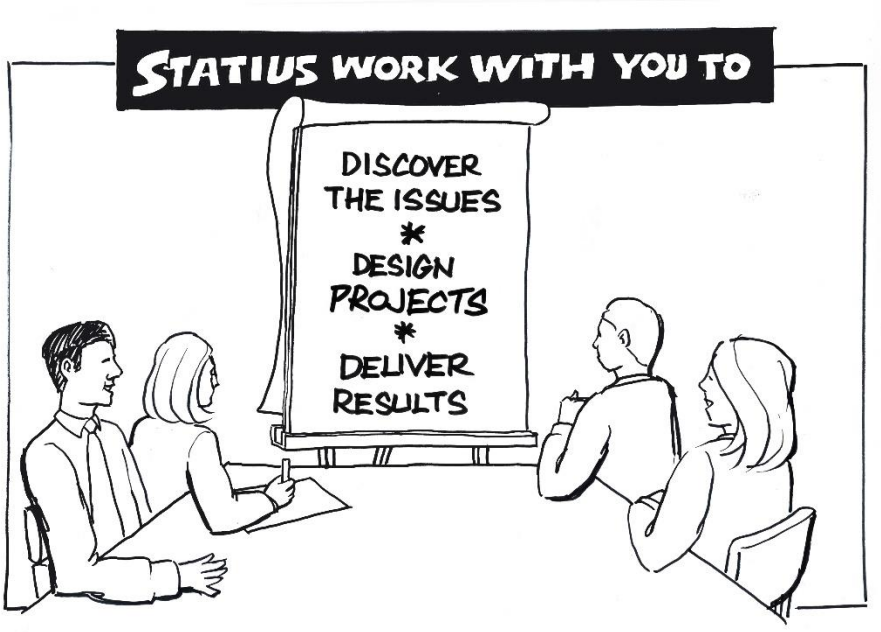
However…in the words of the London Underground announcements …"mind the gap". The big pitfall is that when a part leaves one process and moves to another the handover is usually very poor. Many managers don't give a fig about the next part of the process as long as they have made their numbers…most managers would be better employed as handover managers rather than silo managers …things would improve rapidly!!

The problems occur between the "gaps" not in the departments.

Where processes can go wrong

The complex nature of business processes means that things can very easily go off track and work becomes unintentionally focused on things that aren't important rather than what the customer needs and values. Here are some examples of what can happen…

- Processes tend to start simple but are made more complicated as steps are introduced to fulfil different stakeholders' needs.
- By adding on new steps the process can become inefficient and more waste can be built in.
- The wrong people can be carrying out activities.
- The wrong decisions can be made (due to lack of the right information).
- The process can take too long …often because people don't realise others are waiting for their output.
- What gets measured gets done – if you measure the wrong thing then the effort is directed to achieving the wrong thing!
- Internal MI (management information) requirements can heavily skew the focus of the process away from the customer needs.



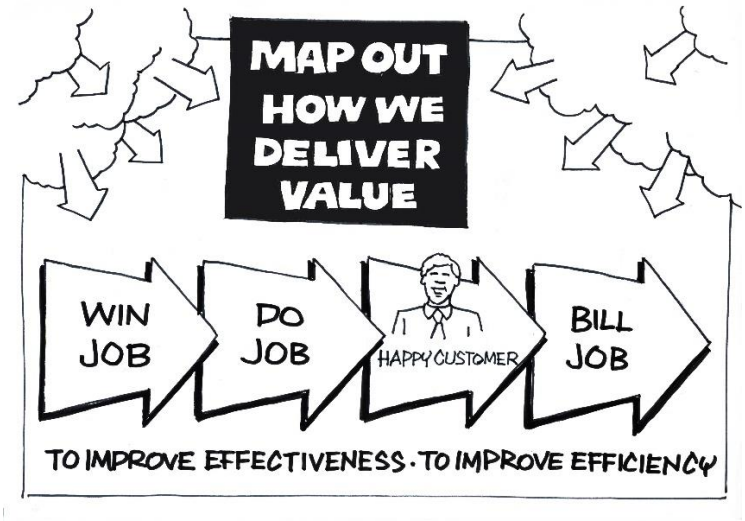
Applying a process view: The Core Activity Map™

Product and service delivery processes will be different for different organisations, and even different organisations within the same sector may have both subtle and significant differences in the way in which their work works.

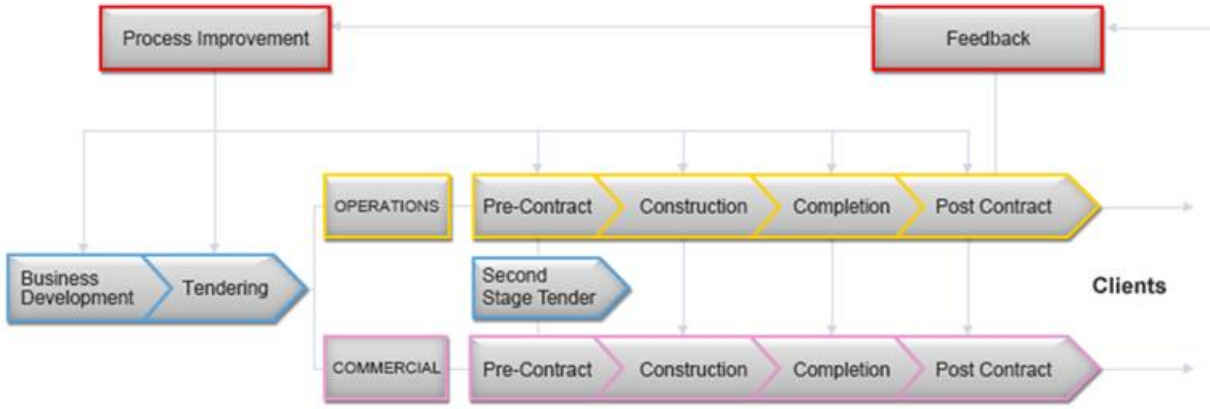
The value adding process flow, which we call the Core Activity Map™, represents the flow of activities that delivers service directly to the external customer.

The cyclical nature of some processes e.g. re-engaging with clients to secure follow on contracts, is not represented in the Core Activity Map™ but this is acknowledged as a fundamental aspect within the structure of the operations.

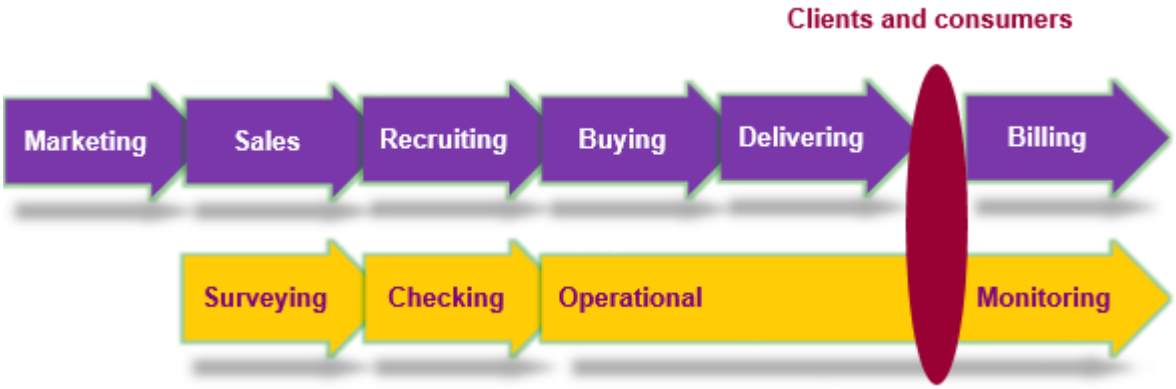
As we have discussed at the simplest level we use the following model:



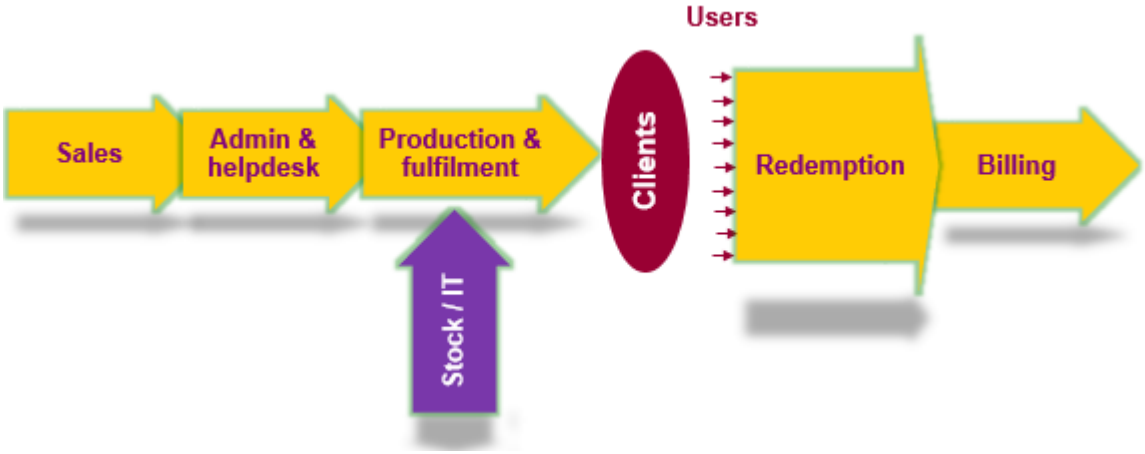
So let's now look at some real life examples…



Example 1: A construction company



Example 2: A manned guarding security company



Example 3: A voucher processing company

In this example the, unusually, the customer is found in the middle of the process as activities occur after the customer has used the voucher

The key is to make the diagram look like how your work works

PROCESS EFFECTIVENESS AND PROCESS EFFICIENCY

In managing processes there is a subtle yet significant difference between effectiveness and efficiency that needs to be accounted for:

- When looking at effectiveness we ask the question - "Are we doing the right things?" - a check to ensure that the activities undertaken are appropriate for the job
- When looking at efficiency we ask the question - "Are we doing things right?" - a check against the activities to ensure we say what we do and do what we say

The rationale behind this differentiation is that if you do the right things you can worry about doing things right. If you do the wrong things then it doesn't much matter how well you do them!

PROCESS EFFECTIVENESS

Process effectiveness is about the ***customer.*** Does the process deliver what the customer wants? If the answer is no, then the process is not effective. An activity that delivers the customer's need is '*value adding'*.

Examples of value adding activities are:

- Planning
- Execution
- Prevention

For the customer, processing problems, snags, defects (whatever you call them) is a '*non-value adding'* activity as, clearly, it is not meeting their needs.

If process effectiveness is not addressed the customer will become dissatisfied receiving products and services that do not fulfil their needs.

PROCESS EFFICIENCY

"Process efficiency leads to a lower cost base to deliver the product or service"

Process efficiency is about reducing ***internal*** business process waste. The process should minimise non-value adding activities which in turn will reduce waste. Waste can manifest itself in wasted resource (wasted time spent), waste in materials (stock for example) and documentation and data that is not required.

Examples of non-value adding activities are:

- Re-keying data into different systems
- Waiting to receive documents before you can progress
- Documents being sent to multiple places unnecessarily
- Unnecessary hand-overs between different people

If process efficiency is not addressed processes can become over complicated and make any output difficult to achieve. Staff may become demotivated as they don't feel they add value, and errors and defects are likely to creep in.

Waste, whether generated from low efficiency or effectiveness, creates higher costs and will lead to a loss of profit for the business.

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In a process, look out for these key words to determine whether a task is value adding;

- **Value adding activities cover planning, execution and prevention activities.**

  Assemble, Calculate, Complete, Create, Define, Design, Determine, Develop, Execute, Implement, Process, Order (submit), Produce, Plan, Prioritise, Manage, Assess, Identify, Investigate.

- **Non-value adding activities cover preparation, control and processing defects and waste.**

  Classify, Collate, Collect, Copy, Gather, Check, Approve, Expedite, Input, Re-submit, Sort, Record, Update, Validate/verify, Adjust, Correct/Modify, Reconcile, Rework

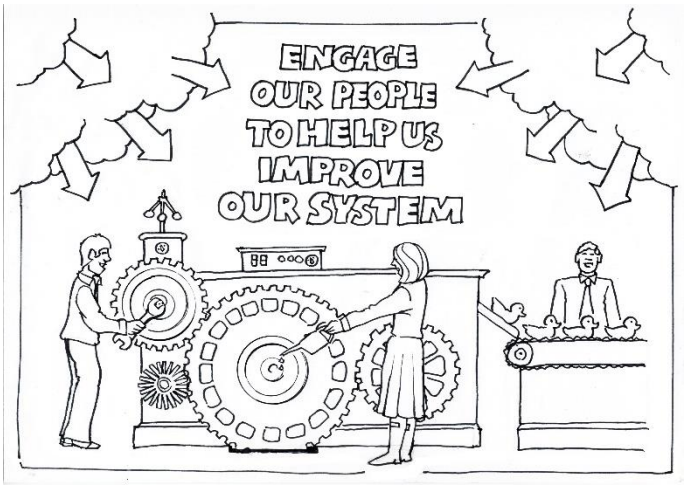
.

Process Improvement

"The world we have created is a product of our thinking; it cannot be changed without changing our thinking." Albert Einstein, Physicist

Process improvement is about finding where processes are wasteful and rethinking how processes can be undertaken in better ways. The people involved in the process are best placed to make improvement suggestions, but they often need support to ensure that they are not creating new waste. Improvement will still allow the opportunity to customise the service to different needs of different clients, but will also improve timeframes and quality, as well as reducing overall cost so that clients get a better deal all round and the company improves its profit margin too!

Ultimately processes that work better result in people who are more engaged in their tasks as they see the benefit and the value of what they do. People that feel valued will do a good job!



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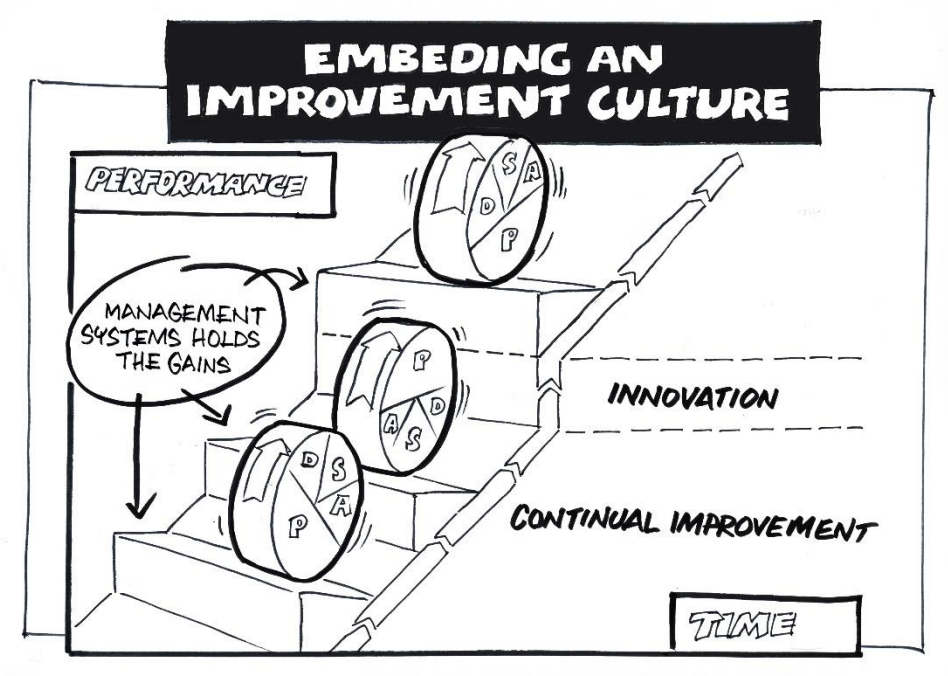
There are some key questions to have in mind when reviewing processes;

- Are they scalable?
- Can we enable our people to add more value?
- Can we simplify how we do things?
- Can we streamline information flows?
- Can we use technology or integrate systems to reduce human effort (waste)?
- How can we ensure key knowledge about the client is accessible for all?
- Can we spot opportunities to simplify processes by ‘standardising’?

The Process Improvement Framework

Process Improvement is best delivered through the application of 5 standard steps which are together known as the Process Improvement Framework.

This a simple step by step approach, to help guide a project team through an improvement project to deliver a better process. It involves the application of relevant tools and techniques to help identify process inefficiency and help generate ideas for ways to solve these issues. These ideas are then assessed to decide the best way forward. This is then defined within the ‘To-Be’ process.



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Plan

The process is first studied to obtain a detailed understanding of the current 'As Is' situation. Then, based on an understanding of the organisation's purpose, its customers' requirements and current and past data, process measures and an improvement plan are formulated.

Do

The changes are made as detailed in the improvement plan. A pilot programme on a small scale is recommended as a first step, if possible. (Large, unstudied changes can lead to large consequences - good and bad!)

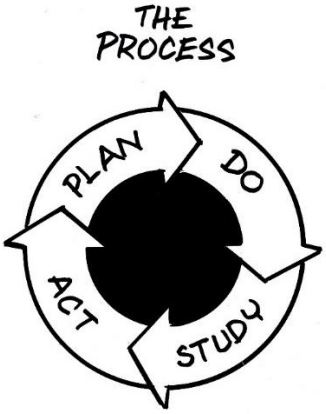
Study

The results obtained are compared with the desired results in order to learn from them; the significant difference between a "change" and an "improvement" being seen easily on a process prediction chart™.

Act

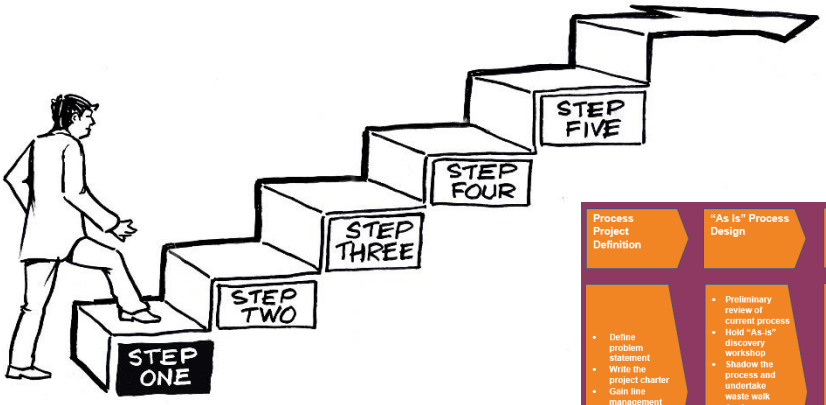
Take advantage of what you have learned. Decide what you will try next. The question at this point is: Do you continue to improve? If so, go around the cycle again. If not, standardise the new process, for instance, by locking the gain into any documented operating procedures. Then plan again, but for a different improvement project.

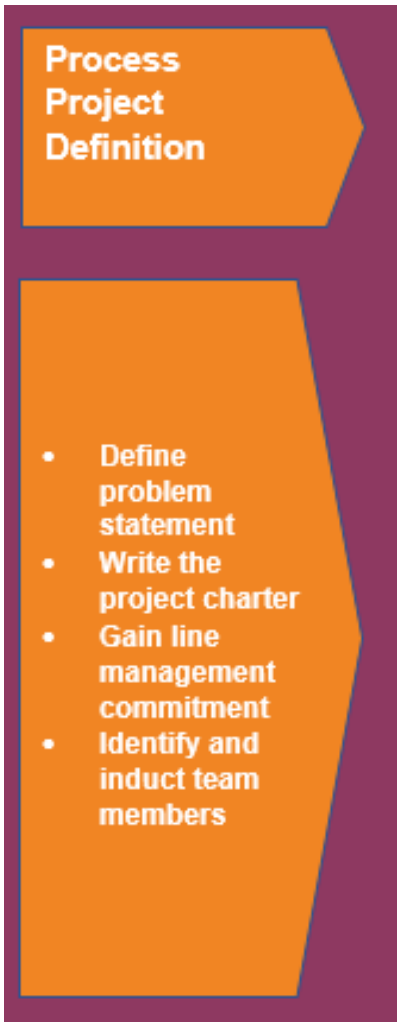
The PDSA framework above is used in conjunction with the 5 step processes below.




Process Project Definition
"As Is" Process Design
Solution Generation & investigation
"To be" Process Design
Implementation
• Define problem statement
• Write the project charter
• Gain line management commitment
• Identify and induct team members
• Preliminary review of current process
• Hold "As-is" discovery workshop
• Shadow the process and undertake waste walk
• Apply TIMWOOD to identify waste
• Determine the current (baseline) process performance
• Undertake root cause analysis on waste
• Apply SECAR to generate possible improvements
• Undertake impact analysis on potential solutions
• Undertake solution investigation
• Select most appropriate solutions
• Develop "to be" process documentation (procedures, task guides, video's)
• Define requirements for system developments
• Develop implementation plan
• Prepare briefings / training
• Rollout delivery plan
• Communicate to all stakeholders
• Measure process performance and compare with baseline
• Review process performance and adjust if necessary
• Celebrate success

Step 1: Process Project Definition



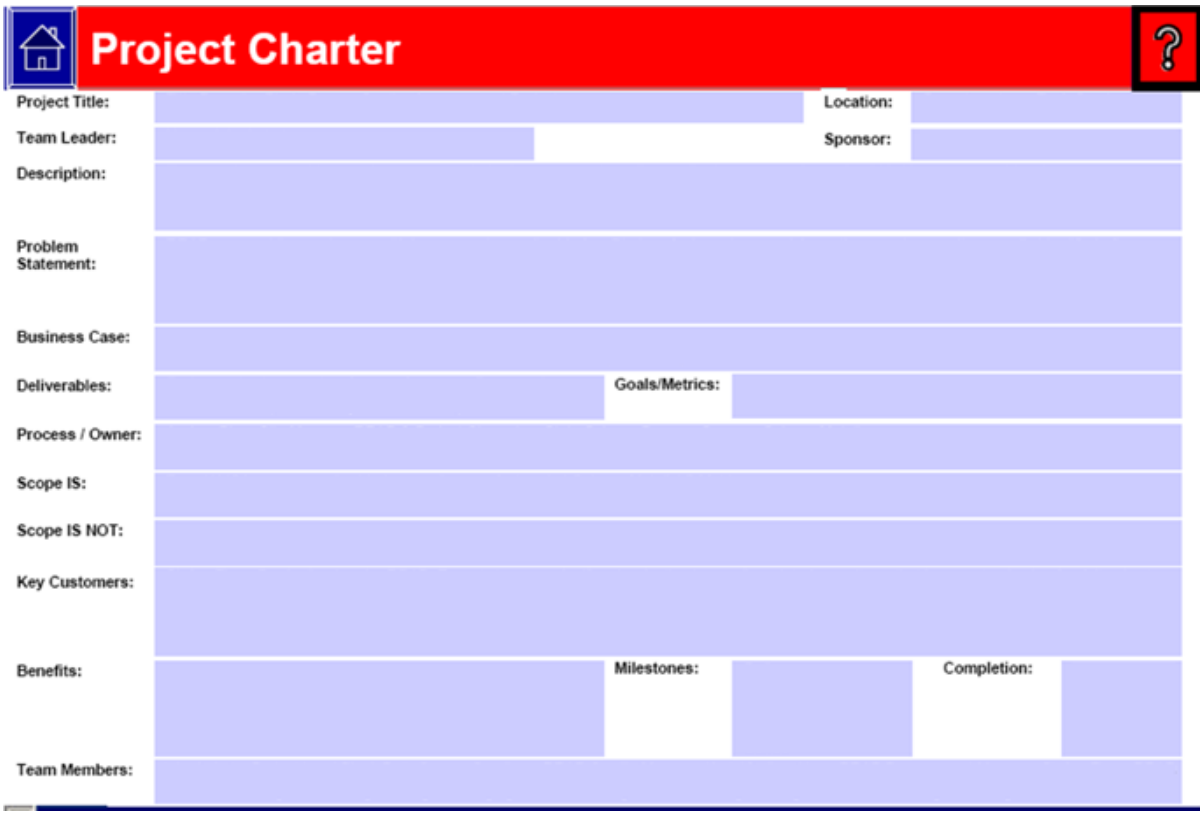


What does this step involve?

The following activities are required to be undertaken to complete Step 1 of the Process Improvement Framework:

1. Create a ‘Problem Statement’ for the process improvement project
    i. This will identify the key issue that is being experienced in the current broken process and is likely to identify the forms of waste that the process is experiencing.
2. Complete the ‘Project Charter’
    i. Define the scope of the process, identifying the start and end points of the process.
    ii. Define the scope/boundaries of the improvements to be considered e.g. Technology functionality changes and interactions with external parties and other issues may be out of the scope for change.
    iii. Define SMART objectives e.g. To save 4 hours per week of accounts’ coordinator time by September or to save 20% of resource time spent on the process.
3. Identify the team members to be involved in the Process Improvement Project
    i. The people involved in performing the process itself are the subject matter experts; these should be a core part of the team.
    ii. Line management and/or customers and or suppliers may also be part of the process.
4. Ensure line management are fully supportive of the project and will be actively involved to support the implementation.
    i. If appropriate a sponsor for the project can be identified, this would normally be the process owner.

A process project charter template is available to be completed as part of step 1:



Project Charter

Project Title:				Location:	
Team Leader:				Sponsor:	
Description:					
Problem Statement:					
Business Case:					
Deliverables:		Goals/Metrics:			
Process / Owner:					
Scope IS:					
Scope IS NOT:					
Key Customers:					
Benefits:		Milestones:		Completion:	
Team Members:					

Giving sufficient thought to the charter up front is critical to the success of the improvement project.

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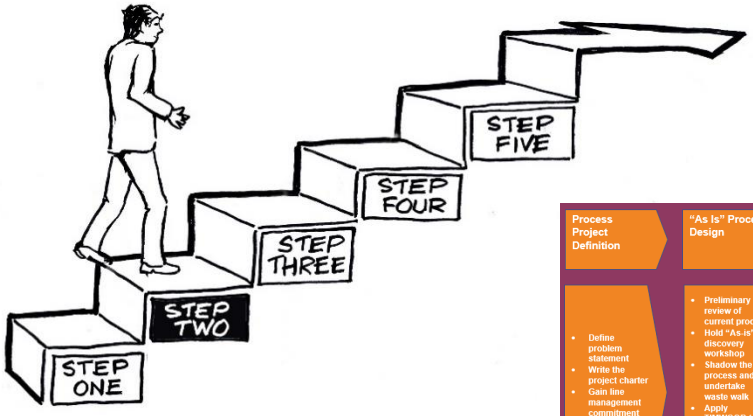
The Charter requires SMART objectives to be set for the project:

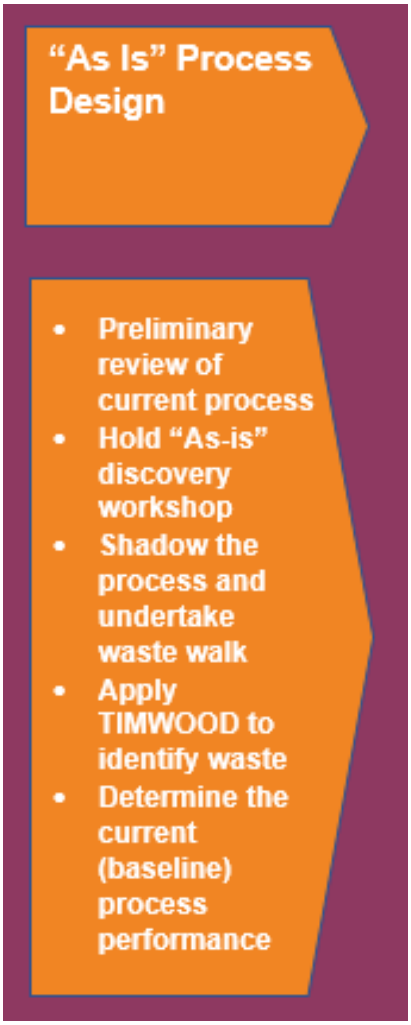
- **S** – Specific: In absolute terms, what will the project achieve (e.g. X% increase in sales, Y% increase in customer satisfaction, Z% reduction in costs)?
- **M** – Measurable: Must have a measurable element (%, time, units)
- **A** – Achievable: Is the project realistic? Can you see how it may be achieved? What needs to be in place for the project to succeed? What are the risks or foreseeable difficulties?
- **R** – Reasonable: Is the team able to do this, does it have the necessary authority/reach and sufficient budget?
- **T** – Time: When will the project start and finish, when will the benefits be realised, can the benefits be tracked?

The initial management / senior stakeholder review within this step should cover the following:

- Is the scope of this process clearly defined?
- Does the problem statement clearly articulate the issue(s) with this process? Anything to add?
- What comments do you have about the scope of this improvement project (as defined in the Charter)?
- At a first glance, what do you see as the main opportunities for improvement to this process?
- As a key stakeholder, what are your requirements of output from this process?
- Do you agree with the suggested team members and their time commitment forecast for this improvement project?
- Are there any other stakeholders that need to be involved?
- What do you see as being the main benefits of having an improved process? – for you in your role and for the business overall?

Step 2: ‘As-Is’ Process Discovery





What does this step involve?

The following activities are required to be undertaken to complete the “as is” process discovery stage:

- Conduct an initial high level review of the process to get an appreciation of the types of issues that exist.
    - This will help with preparation for the discovery workshop (see later).
- The main activity in this step is to run an ‘As-Is’ process discovery workshop.
    - This may need to be multiple sessions depending on the level of understanding of the current process and the degree to which the current process is already mapped.
    - TIMWOOD (see later) is applied to identify waste.
    - It is not necessary to record the ‘As-Is’ process if it is not already there as this project will soon be defining a new ‘To-Be’ process!
- Carrying out a ‘waste walk’ or ‘role shadowing’* provides a good opportunity to gain further detail on the waste that has been identified in the discovery workshop.
- Measuring the ‘As-Is’ process performance is critical so that a baseline performance is known before changes are implemented. Without measuring the ‘As-Is’ processes we’ll never know if improvements have been made.
- The Charter will define SMART objectives which will need to be measured. This will often require a ‘time analysis’ where the roles involved record the time it takes to undertake the specific activities being considered for change.

The ‘As-Is’ process discovery workshop

Why is a discovery workshop necessary?

Getting everyone involved in the process together to discuss the process (and in particular the hand-overs between departments or teams) can help everyone to:

- Understand the objectives of the process.
- Understand what the important steps are and what is done with the output.
- Understand which steps are not adding value.
- See how the whole process fits together.
- Understand the different roles/teams involved in the process.
- See the full timeline of delivery.
- Understand the history of how the process developed.

This leads to:

- Identifying process issues – where the process doesn’t work (possibly exceptions and how they are treated).
- Identifying process gaps – where situations end up at a dead end.
- Identifying if there are opportunities to improve delivery timescales.
- A view on whether the process is complied with.
- Greater awareness of where waste exists.

The objective is not to plaster over the cracks … but to make changes that demonstrably and sustainably improve the process

“Stamping out fires is a lot of fun, but it is only putting things back the way they were.”
W Edwards Deming

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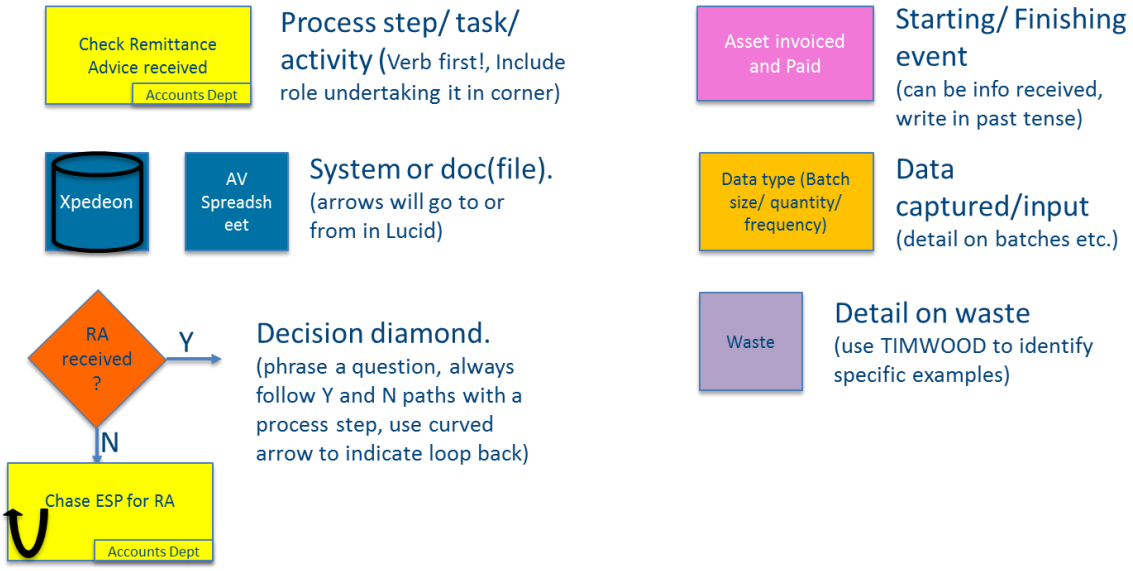
’As-Is’ discovery workshop – preparation and method

The idea of this session is to map the ‘as-is’ process only – you should be aiming to map what is currently happening and not what should be happening!

- Relevant staff undertaking and managing the process should be invited to attend the session, as they are the key people that know how the process works. They may be directly involved, or may oversee the process from a management view.
- Make sure a big enough room is booked – you’ll need to map the process out on the wall so it’s visible to everyone. Ideally a roll of brown paper, or flip chart paper should be used as a base to stick post-it’s to.
- Post-It notes might seem basic, but using the different colours makes each item very clear, plus you can easily move these around if something is in the wrong place. You’ll likely find that when running through, basic steps or entire roles will be missed out, usually because it’s been mapped from a functional perspective previously. This is also why you shouldn’t add arrows until the end – post-its will move!

Using the coloured Post-Its that you have available, specify a key for the following:



You may wish to have a different coloured Post-it for 'Issues' too.

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BASIC RULES

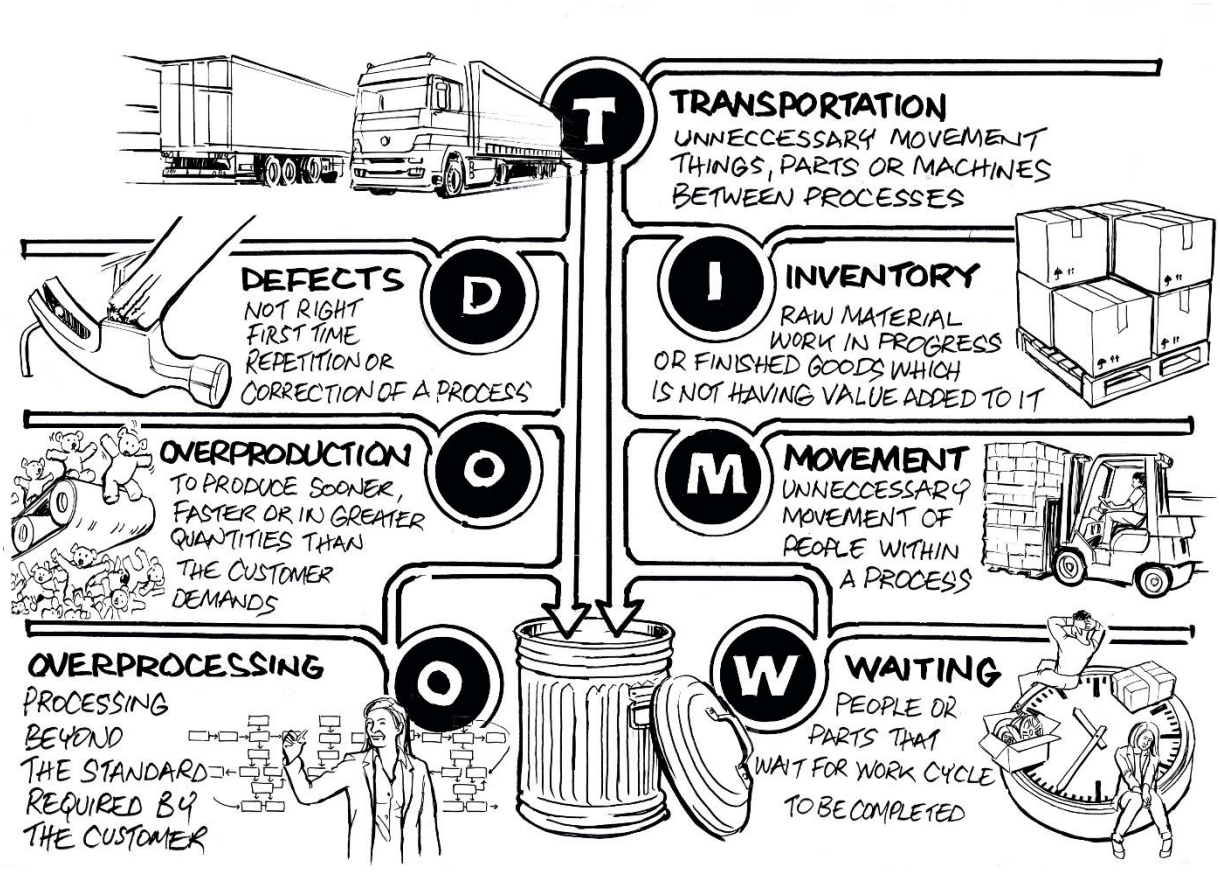
- *Go from left to right, and don't draw arrows until complete!*
- *Make sure you determine the start and end points (these may be other processes)*
- *Map out the process and decision steps. Make sure to look out for small steps such as checking!*
- *Capture any systems used, and any data captured*
- *Once that's all done – it's time to identify the waste…..*

TIMWOOD – the waste hunter

TIMWOOD is an acronym for

- Transportation
- Inventory
- Movement
- Waiting
- Overproduction
- Over-processing
- Defects

All of which are activities that lead to waste. So we use TIMWOOD as our waste hunter…we want him working hard for us improving our processes.



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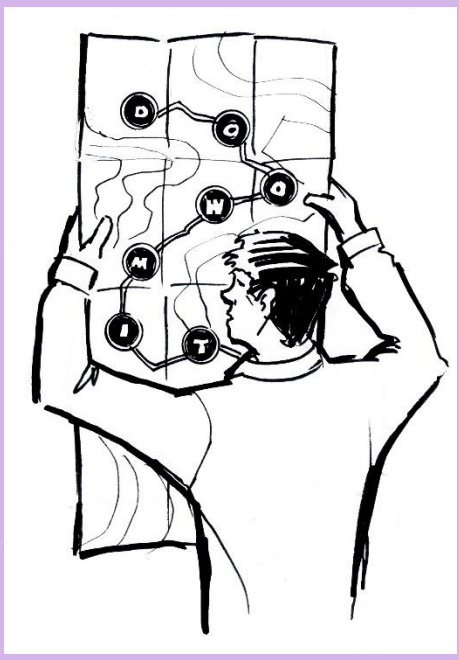
Identifying waste from the process map

So once we have our process map we can use TIMWOOD to review it.

We can also use the following typical questions:

- Where does the process go wrong? Why does it go wrong?
- Why isn't the process followed?
- Who doesn't comply?
- Who doesn't understand the process?
- Are process aids too complicated eg. Forms?
- What are the implications of not following the process?
- Why is this process not sustainable?
- Is the process scalable to meet the needs of our growing business?
- Where is value added in the process?
- Where are the non-value add activities?
- What waste is present?
- Why has the waste developed?
- How frequently is waste encountered?
- What sort of waste is it?
- How much does the waste cost when it is encountered?
- How does information flow through the process?



It is also useful to refer back to the list of value add / non-value add verbs.

However, remember, you are only identifying the waste, not the solutions

The waste walk

Another approach is to take a “waste walk”. In its broadest sense this is a walk through the steps of the process from the start, right to the end, with the objective of identifying waste within each process step. This is best achieved using a process map as an aid to the overall process and walking around the areas of the business where the physical activities take place.

How to make your waste walk a success:

- Be clear about your objectives for the waste walk – are you investigating a specific part / all of the process or a specific type of waste? Do you want to capture specific data / evidence to build case for action?
- Gain the buy-in of the team by getting them to identify the examples of waste that they believe exists.
- Focus on wastes which are the ‘big issues’, the areas that are the real pain points in the process.
- Plan exactly what questions you should ask to uncover the waste that exists within the process. Make sure you are clear on timelines, teams, handovers and volumes.
- Where are the value added and non-value added activities?
- Take key members of the team through the waste walk with you
- Use the TIMWOOD acronym to help to identify the waste.
- The output of your waste walk should be a list of the waste that exists within the process, mapped against the process steps that detail the issue and; frequency of occurrence, how much time it takes, what resource is consumed etc.

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Typical questions asked during the waste walk might include:

- Describe their role in the process – do they understand how they contribute to the overall process flow?
- Where do they get their information from?
- Where does what they produce go? Does it meet customer requirements (internal or external)
- What's the target timeframe for their step? How much time does it actually take?
- Do they believe the client has a timescale requirement in this step?
- What gets in the way of delivering to timescale?
- Where are the handovers? Why are they needed? Does this create any delay?
- Are they utilising their skill or knowledge?

Measures and Metrics

Don't collect data so you know batting averages… but don't know how to hit the ball better.

"Managing by results is like looking in the rear-view mirror." W Edwards Deming

Why Measure Process Performance?

What gets measured gets done – and then gets done better!

By measuring process performance, we can understand how well we are doing as a team, and also how we are performing within the wider business setting. When carrying out a process improvement initiative, it also gives us a baseline to measure from, and can help inform decisions going forwards. It gives the management team visibility of the health of the business, and enables them to spot potential areas for improvement, before serious corrective action is required. It can also help to discover who is performing well in the business, both on an individual and team basis which allows good practice to be shared and applied to other areas and/or individuals.

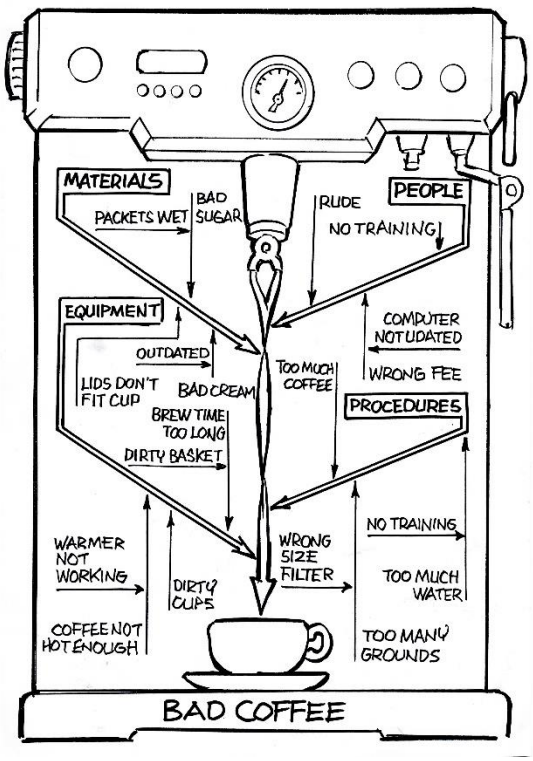
Only by measuring now using the spc chart will we know we have improved

Step 3: Solution Generation and Investigation

What does this step involve?

The following activities are required to be undertaken to complete the solution generation and investigation step of the process improvement framework:

- Run a 'Solution Generation Workshop' with the team
  - If relevant draw out a cause and effect diagram to identify the root causes of the waste.
  - Use SECAR* (see overleaf) to help generate ideas of ways the waste can be eliminated or reduced.
- Undertake further investigation into the possible options to be implemented to assess their suitability to being deployed.
  - If alternative solutions exist to address a waste then it may help to undertake an impact analysis on the activities within the process and external to the process.
  - Selection criteria can be used to assess suitability using weighted scoring.
- At this stage the time analysis for the baseline measures may need to be revisited to ensure appropriate measures are being recorded in line with the suggested solutions.
  - This will ensure strong evidence for the process improvement in terms of quantifiable measures of performance improvement.
- Solution selection is carried out at this point.



Solution generation and investigation

Techniques such as the 5 Whys and Cause and Effect Diagrams, can be applied to help understand issues and select the best solutions without being swayed by politics, emotions or false assumptions.

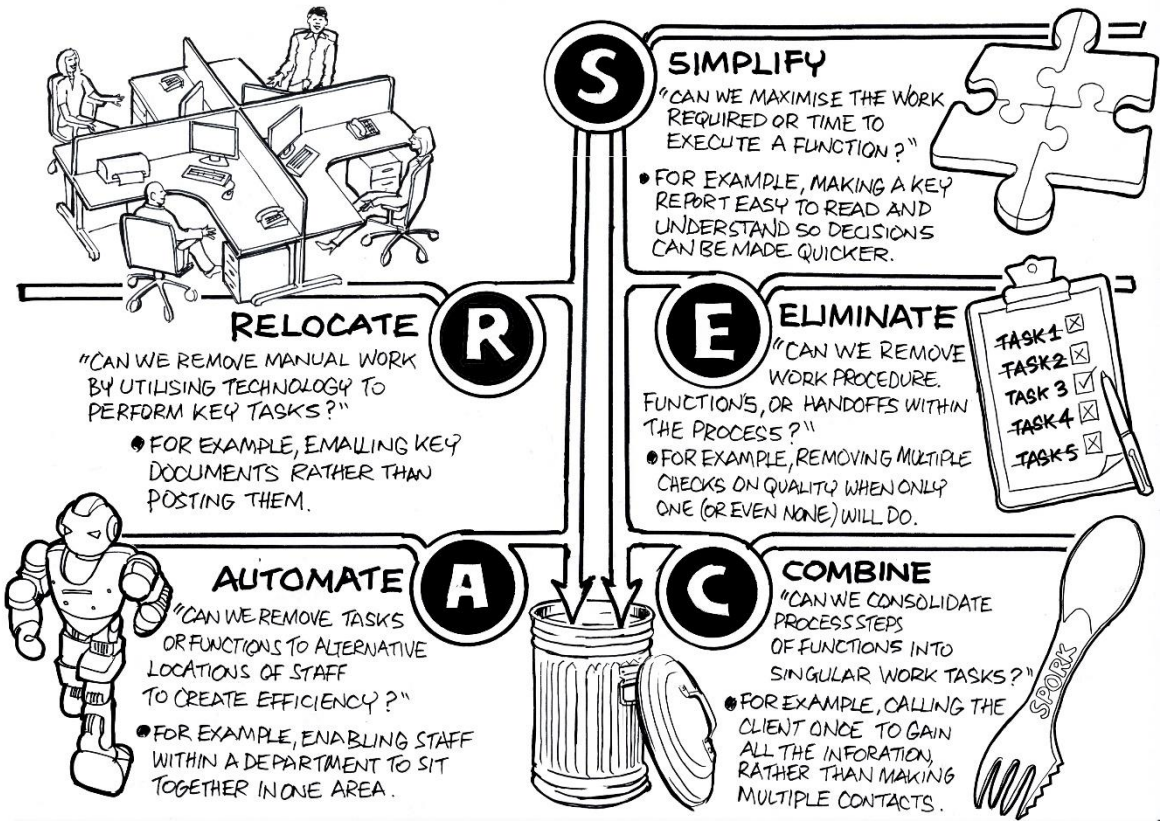
Five Why's

This is as simple as it sounds! The idea is to just keep asking why, to identify where the waste originates from. Generally, the answer is found with 5 Whys, but no harm in getting to numbers higher than this! It might be that when asking 'why' you get several answers – these should be investigated separately as there may be a series of contributory causes.

SECAR

Where TIMWOOD helped identify waste, SECAR helps to deal with it.

The idea is to work down the list for each waste – start with simplify, and if you can't do that, move to eliminate and so on. In order to avoid coming to a solution that may not work for others this part of the process should be tackled as a team rather than as an individual, so running a workshop is a good way of involving the whole team to identify the best ways of reducing waste.



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SECAR is an acronym:

- **S**implify "Can we minimise the work required or time to execute a function?"
    - For example, making a key report easy to read and understand so decisions can be made quicker.
- **E**liminate "Can we remove work procedures, functions, or hand-offs within the process?"
    - For example, removing multiple checks on quality when only one (or even none) will do.
- **C**ombine "Can we consolidate process steps of functions into singular work tasks?"
    - For example, calling the client once to gain all the information, rather than making multiple contacts.
- **A**utomate "Can we remove manual work by utilising technology to perform key tasks?"
    - For example, emailing key documents rather than posting them.
- **R**elocate "Can we remove tasks of functions to alternative locations of staff to create efficiency?"
    - For example, enabling staff within a department to sit together in one area.

Processes need to be future proofed by stripping out complexity (simplifying) and ceasing tasks which add no value (eliminating steps). As a company grows, more opportunities to combine and automate activities become possible. However, automation is only truly effective when we have already created a simple and effective way of working, which is why they are last.

Carry out an impact analysis

Once you have the solution to your waste (or possibly a few options!), it's important to carry out an impact analysis. Any changes on the process you are looking at may impact others upstream and downstream, so key stakeholders need to be made aware of potential changes and their consequences. Remember, we are working from a process view, not a functional view.

It's possible that stakeholders will want to see a suite of options, rather than just one. The time analysis carried out in Stage 2 may also need to be re-visited to ensure that the appropriate measures are being collected in line with suggested solution.

Once all of that is done – it's time to select the solution(s) and start developing the 'To-Be' Process.

Step 4: ‘To-Be’ Process Design

Process Project Definition	“As Is” Process Design	Solution Generation & investigation	“To be” Process Design	Implementation
• Define problem statement • Write the project charter • Gain line management commitment • Identify and induct team members	• Preliminary review of current process • Hold “As-is” discovery workshop • Shadow the process and undertake waste walk • Apply TIMWOOD to identify waste • Determine the current (baseline) process performance	• Undertake root cause analysis on waste • Apply SECAR to generate possible improvements • Undertake impact analysis on potential solutions • Undertake solution investigation • Select most appropriate solutions	• Develop “to be” process documentation (procedures, task guides, video’s) • Define requirements for system developments • Develop implementation plan • Prepare briefings / training	• Rollout delivery plan • Communicate to all stakeholders • Measure process performance and compare with baseline • Review process performance and adjust if necessary • Celebrate success

“To be” Process Design

- Develop “to be” process documentation (procedures, task guides, video’s)
- Define requirements for system developments
- Develop implementation plan
- Prepare briefings / training

What does this step involve?

The following activities are required to be undertaken to complete the 'to-be' step of the process improvement framework:

- During this step the selected solutions and resultant changes to process will be captured in the 'To-Be' process design.
- A workshop can be held to run through the new process and check for further enhancements and allocate action points to the team to progress the preparation for the implementation.
- Process aids such as procedure documentation and task guides should be written.
- The 'To-Be' process performance measurement system needs to be defined. This will involve identifying which process measures will be used and how the measurements will be taken and reviewed.
- Develop the implementation plan
- Communication to all stakeholders is a key part of roll-out.
- Training and briefings may be required to be planned/prepared.
- If a pilot / trial is required then this should be delivered, with appropriate measurement and feedback to assess its success.
- If the defined scope restricted the possible solutions for short term implementation, then it may be necessary to prepare any system change requirements to be submitted.
- A system enhancement may be to automatically produce a management information report format instead of creating the report manually.

Mapping the ‘To-Be’ Process

Now that waste has been identified, and solutions generated, the next step is to map the agreed process.

If there are still a few options to consider, then it may be helpful to use the Post It method again so a direct comparison with the ‘As Is’ can be made. At this stage the ‘To-Be’ process map should look much simpler and have fewer steps than the original ‘As-Is’ process map!

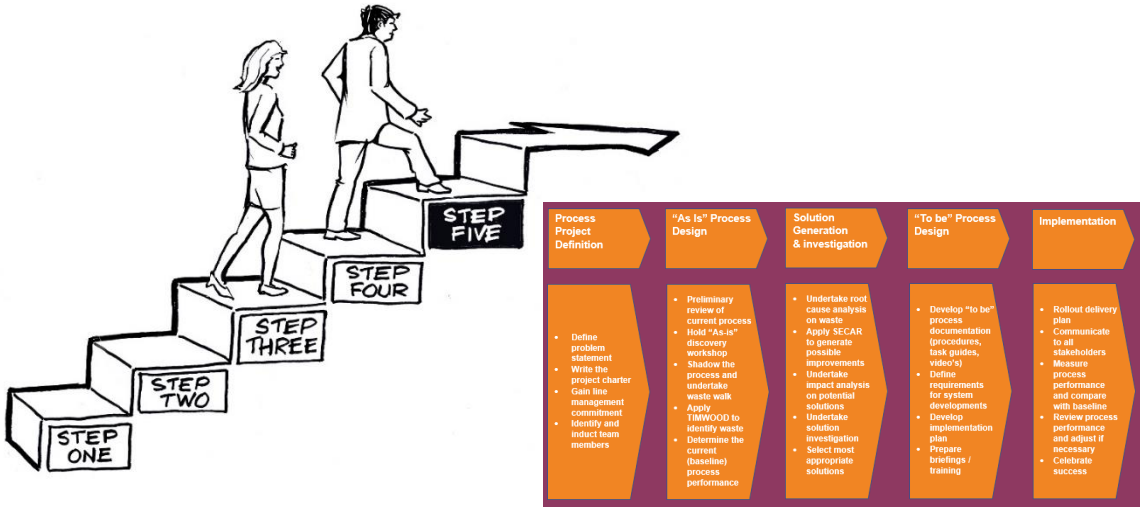
A plan of implementation also needs to be developed, this would typically include:

- The development of new forms and databases
- The development of new documented procedures and any guidance notes
- The training and briefing regime that will need to be put in place

Remember that this stage may meet some resistance so it will need significant stakeholder involvement.

Communication is key!

Step 5: Implementation of 'To-Be' Process



What does this step involve?

The following activities are required to be undertaken to complete the implementation stage of the process improvement framework:

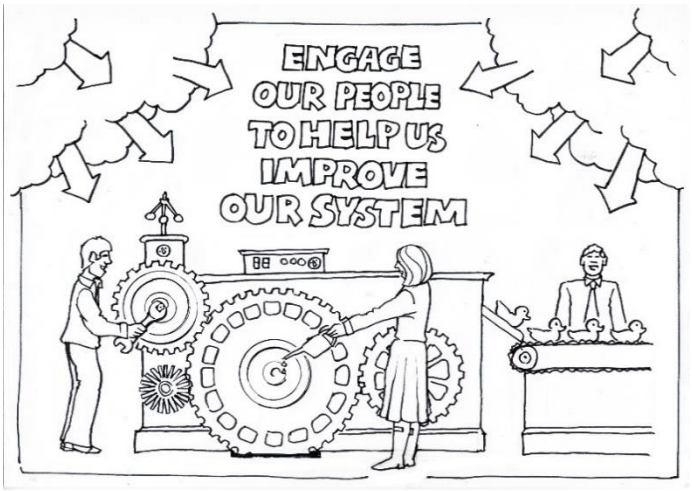
- Changes to the process are rolled out
    - In accordance with the implementation plan
    - In association with the training / briefing plan
- Once the new process steps are in place then the relevant process performance measures can be taken
    - Compare the measures with the baseline measures to assess whether the SMART objectives defined in the Charter have been achieved.
    - Allow enough time for people to become proficient in the new process before measuring as it can takes a while to get used to new ways of doing things.
- The process performance needs ongoing review and the team needs to take ownership of any additional changes required to make the process run even more smoothly.
- Ongoing communication to all stakeholders
    - Explain the changes and their impacts on the wider business.
    - Reinforce the benefits of the changes that have been implemented by providing evidence from the process performance measures and qualitative quotes from the people involved e.g. “My job is so much easier now I don’t have to rekey the payment details into the Debt Report, it has stopped all that wasted time reconciling and looking for errors”.
- Establishing ongoing process performance measures will also be an activity undertaken at this point.
    - These will report on the key areas of performance of the process and can be quite different from the measures taken to compare with the baseline.

Lastly celebrate success!

Some last thoughts … it's about teamwork and communication

The key to delivering real, quantifiable, robust and lastly, sustainable, change is to involve the people actually performing the activities in the design of those changes.

Changing the way things are done is not an easy thing to do as people will be comfortable with what they already do, they may be frightened of the unknown and they may be concerned that it will be difficult for them to get used to the new ways of doing things.



Everyone involved in the process needs to fully understand the reasons for the changes that have been made and they need to see the benefits that the new ways of doing things will help them as individuals and the business as a whole. They need to see that their life will get easier not harder! Reducing internal waste is all about making everyone's jobs easier and more worthwhile.

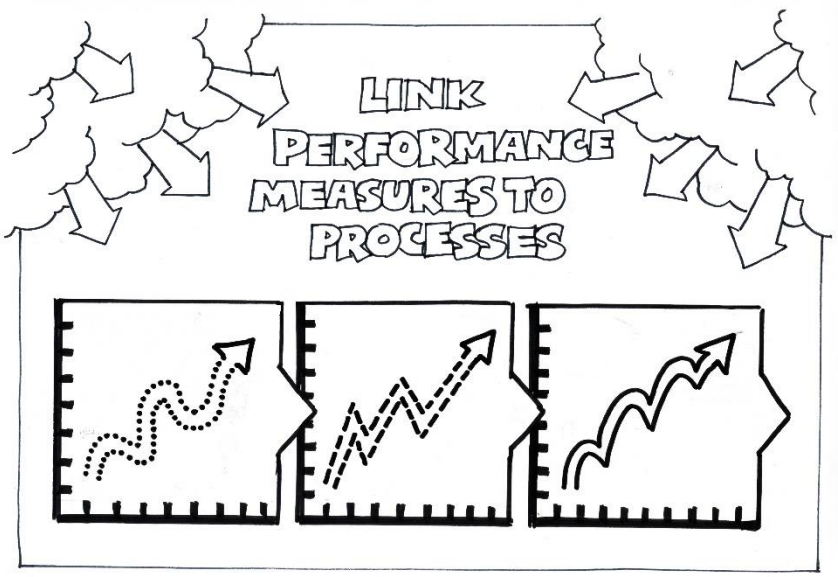
Implementation should involve training people on how to use the new systems /forms/process aids that are to be used, briefing people on the changes to existing systems/applications, and where possible, demonstrating how tasks are performed so it's clear for all.

People need to be given the chance to try out the new ways of doing things, to test it out and to provide feedback on how things go. They can be involved in smoothing out any teething problems by suggesting how things can be made to work even better. These changes need to then be communicated to others performing the same tasks so that consistency is achieved.

Teamwork and communication to all is key – summarise the changes, impact and benefits to the wider business. And celebrate success!

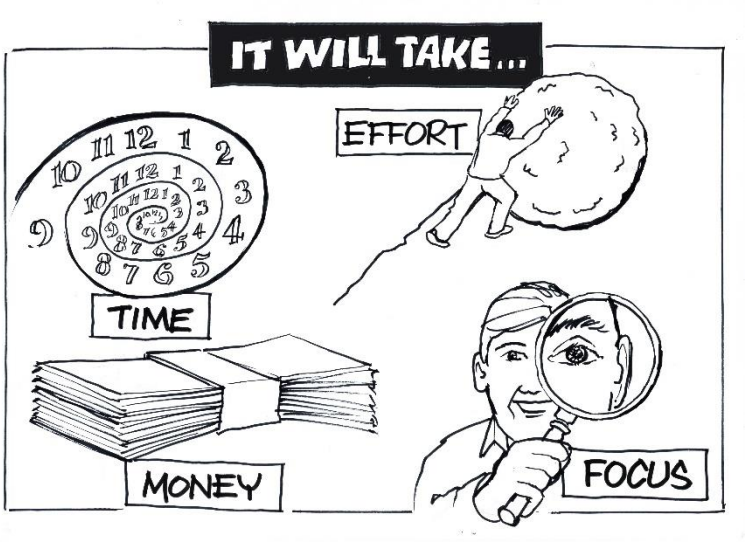
Realising the benefits

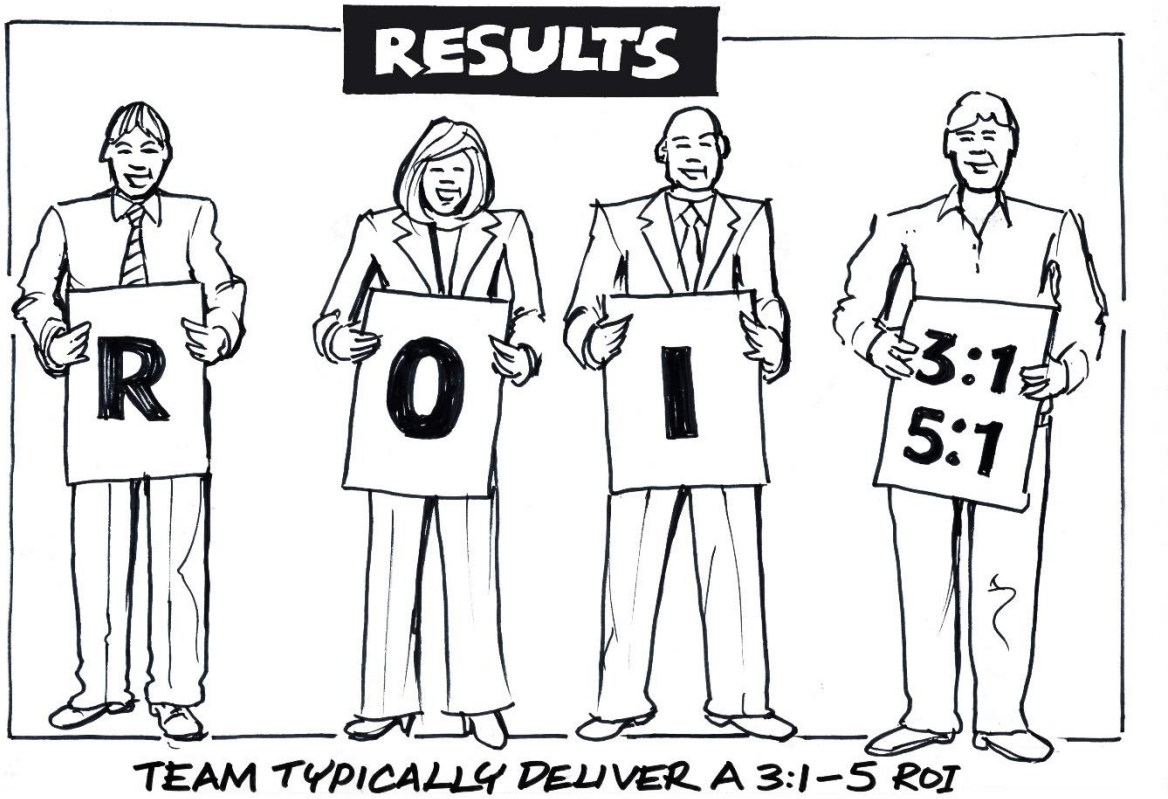
Once the ‘To be’ has been fully accepted, it’s time to take more measurements so a direct comparison can be made between the ‘then and now’. This will also show you if the SMART objectives in the Charter have been achieved.

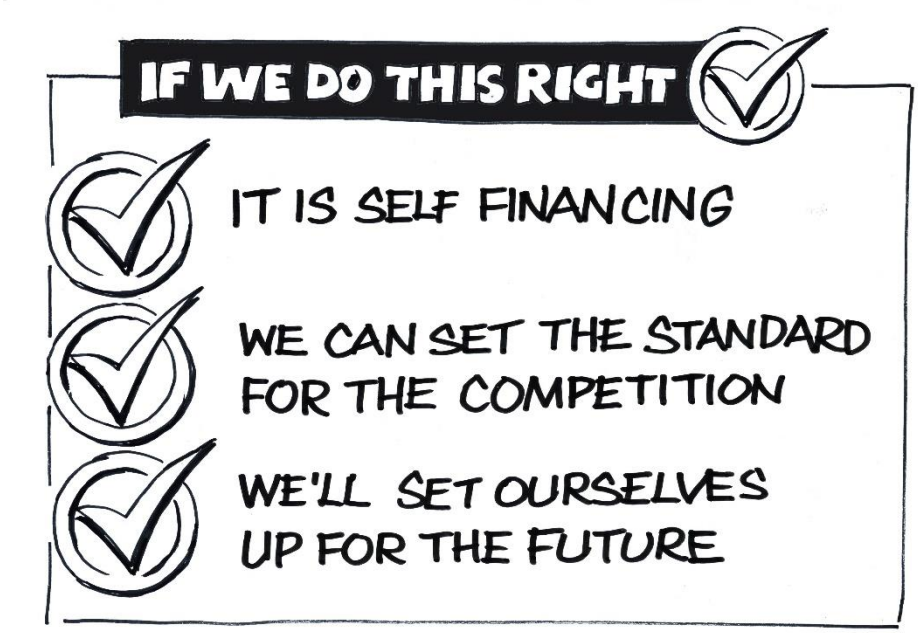


Process performance measures will need to be monitored on a regular basis using a defined reporting template

- Identify process measures across as many of the measurement dimensions as is relevant (quality, cost, delivery timescale, safety).
- Clearly define the method of measurement including source data location, frequency of measurement, conditions for measurement.
- Capture the purpose of the measurement (what insight does it provide).
- Capture results on the Process Prediction Chart™ so you can know if the results are drifting out of control
- Set targets for performance levels.
- Agree with the report audience what format of report works best for them.
- Ensure the timing of the measurement capture is optimised for the management reporting purpose of making timely decisions.
- Ensure that the process of reporting delivers an efficient method for reviewing the process performance.


IT WILL TAKE...
EFFORT
TIME
MONEY
FOCUS


RESULTS
R
O
I
3:1
5:1
TEAM TYPICALLY DELIVER A 3:1-5 ROI


IF WE DO THIS RIGHT
IT IS SELF FINANCING
WE CAN SET THE STANDARD FOR THE COMPETITION
WE'LL SET OURSELVES UP FOR THE FUTURE

Appendix 2 : The Process Maturity Model

Appendix x – Glossary of terms

- 5 Whys: A simple but effective method of analysing and solving problems by asking ‘why?’ 5 times to find the root causes.
- ‘As-Is’ process map: Process map of the current process and sources of waste.
- Cause and effect diagram: A problem solving tool used to identify relationships between effects and multiple causes (also know as Fishbone diagram).
- Internal Customer: A customer that a process delivers output to that is inside the business itself.
- Key performance Indicator (KPI): A measure of performance critical to a process. A piece of data that is needed in order to understand the performance of the process and the factors affecting performance.
- Non-value add (NVA): Activities that do not add value as defined by the Client.
- Process: A sequence of actions and decisions made in order to deliver a service, or a component of a service to the customer.
- Process Map: A visual representation of a process to understand how it is performed.
- Root cause: The most basic underlying reason for a condition. The root cause is where action should be taken to prevent reoccurrence.
- SECAR: Simplify, Eliminate, Combine, Automate, Relocate. Use as a guide to improve a process.
- SMART: Acronym for writing good objectives which need to be Specific, Measurable, Achievable, Relevant and Time-bound.
- TIMWOOD: An acronym for the types of internal waste; Transportation, Inventory/Intellect, Motion, Waiting, Over-production, Over-processing, Defects (errors).
- ‘To-Be’ process map: Process map of the future process which is designed as part of a Process Improvement Project to eliminate/reduce internal waste.
- Value: What the client would be willing to pay for.
- Waste: Work activities that do not provide value as determined by the Client.

Question list to identify process improvements

Test timelines	• How did the timeframe get established? • How easy is it to fulfil? • Does the timeframe result in additional waiting time after the activity is finished?
Criticise the critical path	• Is there a critical path? • Is it relevant? • Are there activities that can be undertaken in parallel? • What is the critical path? • Is it usually met? • Is it understood?
Reassign roles and responsibilities	• Are decisions taken by the people in the right position? • Do the right people undertake the tasks? • Does the task fit with the job role? • Do people have the necessary skills to perform the task well?
Delete the delay	• What causes the delay? • How long are the delays? • Can the delay be eliminated or reduced?
Decipher decision points	• Are the decisions, noted in the process flow, actually made by the relevant person? • Are decisions actually decisions or just checking points? • Can any checking points be eliminated? (increased training/automation)
Dematerialise documentation	• Can documents be replaced by electronic documentation? • Are additional problems caused with multiple copies? • Can documentation be replaced with a shared database?
Look for loops	• Why is the loop here? • Would there need to be a loop if there were no problems?
Consider process steps	• Does this step add value? • What is the value of the step relative to the cost? • Is the activity necessary? • Could it be undertaken by someone at a lower level?
Handle hand offs	• Why is there a hand off? • Is the extra information flow that results worth the advantages gained from handing to another party?

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