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WHITE PAPER

# ***OAKLAND*** **CONSULTING**

## **Lean in Government**

*Tips and trips*

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### **Reference**

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## Executive Summary

This paper examines the adoption of lean improvement techniques in Government. It is part of a research project we are conducting into the adoption of improvement techniques, including lean, into both public and private sector organisations. To take part in this research, please [contactus@ecforbe.com](mailto:contactus@ecforbe.com).

Lean is perceived to be 'the new kid on the block'. But there have been many sons (and daughters) before it. What is true is that its application to Government is in its relatively early days and there is a lot to lessons that may be shared where people have succeeded and where there have been problems. We have captured some of these in this report - *Tips and Trips!*

Although relatively new to Government, the indications are that lean has a lot to offer with reduced lead times, improved quality and costs being reduced as a result of the improvements. But as you will read, lean is more than the tools and techniques and through a combination of research and experience a number of 'building blocks' have been identified. These include the need for a pragmatic improvement approach, which will soon be the subject of its own research report ([contactus@ecforbe.com](mailto:contactus@ecforbe.com) to receive your copy when it is available).

The final two areas covered in this report deal with the very important people issues and the long-term positive effects on the organisation. People like to change and not be changed, so unless people are engaged during the change process there are going to be problems. A recent research study found that males and females perceive the success of lean differently. This is a vital consideration for Government organisations with a high female population. If the lean intervention is managed well it will leave a number of positive marks on the organisation. This is one of the real benefits of a lean approach so if you want to know more, read on.

## Contents

Executive Summary .....	3
It's different - but it's not new .....	6
What you should expect to achieve .....	6
It's not going to be all plain sailing .....	8
So there's more to it than just improving work activities .....	10
Leadership and direction .....	10
Planning and project selection .....	11
People capability .....	11
Customer serviced culture .....	11
Sustainability .....	12
Pragmatic improvement approach .....	13
Never forget you're dealing with people .....	15
Lean should leave a permanent mark on your organisation .....	17
Appendix 1: Glossary of terms .....	18
Bibliography .....	20

Table 1: Example savings in government organisations.....	8
Table 2: Common factors for failure.....	9
Table 3 : Factors influencing short-term outcomes and long-term sustainability .....	12
Table 4: Eight cause of waste in Government operations.....	14
Table 5: Tips and trips related to improvement projects .....	15
Figure 1: On-time, on-quality, on-cost.....	7
Figure 2: Building blocks for success.....	10
Figure 3: The DRIVER® improvement approach.....	13

## It's different - but it's not new

Henry Ford knew about lean in 1926 when he said, *“One of the most noteworthy accomplishments in keeping the price of Ford products low is the gradual shortening of the production cycle. The longer an article is in the process of manufacture and the more it is moved about, the greater its ultimate cost”*. Typically, 95% of total throughput time or “lead time” is not value added. Collapsing the lead time closer so that it becomes closer to the actual processing time by squeezing out non value added time and tasks results in both cost and cycle time reductions. It also improves quality and the service given to customers.

But what do we mean by 'lean'? There are far too many definitions and descriptions of lean systems for all of us to be speaking the same language. Some believe lean is merely a collection of tools, such as 5S, just-in-time, and so on. Others have described lean as working people harder, working people smarter, Kaizen, or Total Quality Management. Some of these definitions are just plain wrong and some are merely inadequate.

Much of what we can learn about lean comes from the Toyota Production System (TPS). Through more than 50 years of learning and experimentation, Toyota has driven deep into the systematic elimination of waste and has created a system that learns and adapts better than any other company. Its reputation for management and manufacturing excellence extends well beyond the automotive industry and truly serves as a benchmark for all operations and manufacturing companies. This is now being extended to service organisations, including the public sector.

Toyota has either invented or led in the development and implementation of many lean tools over several generations. Some of these tools have been applied with rigor by many companies, and some success is often found through the application and adoption of lean tools. Tools are attractive because of their visibility, measurability and immediacy. We will see later in this paper that the focus must be on more than just the tools and techniques, although these do play an important role.

## What you should expect to achieve

Lean is rooted in manufacturing, but there is acceleration in its application to service organisations, and government organisations in particular. The pioneering area within Government has been healthcare providers, with the NHS in the UK and private organisations in the USA.

Researchers have found that the Toyota product System is transferable to other industries but, depending on the nature of customer need, the level and to what extent the sub-concepts and practices are applied will differ. Work by Warwick Business School indicated that in the public sector lean has a much narrower focus than in manufacturing, and several authors have noticed that organisations are developing their own terms to replace 'lean jargon', but the approaches are essentially the same.

There are a number of reasons why service organisations are seeking to improve. These include:

- Rising citizen and customer expectations;
- Budget and revenue pressures;
- Increasing expenses;
- Government and regulatory pressures;
- Competitive and peer group pressures.

All these may be summarised by three basic needs:

1. The need to reduce processing time
2. The need to achieve or even exceed the required quality requirements  
and as a consequence of meeting these two needs
3. The need to reduce costs

Any improvement approach needs to be constructed around proven approaches that generate improvements in On-Time, On-Quality, On-Cost Delivery of Service. The approach must develop a specific set of skills and knowledge which need to be learned and practiced to support sustainable performance improvement. This concept is captured in Figure 1.

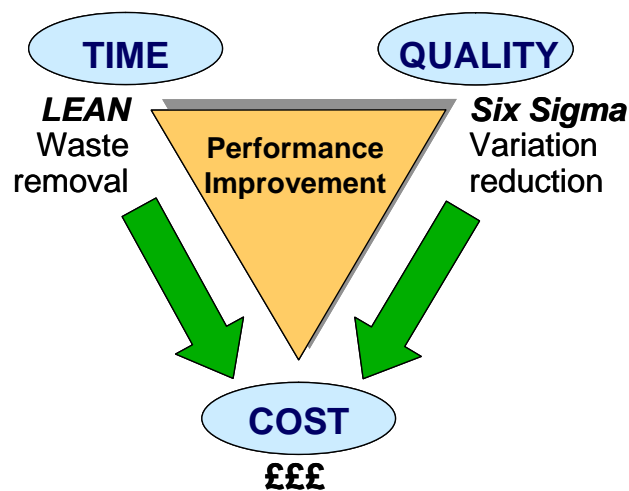


Figure 1: On-time, on-quality, on-cost

So how successful have government organisations been achieving these objectives? More and more examples are appearing in the literature and some of these have been included in Table 1. It is clear that a lean improvement approach can offer significant benefits to Government organisations.

**Table 1: Example savings in government organisations**

Type of Organisation	Benefits Achieved
Licensing department	Customer wait time reduced from 48 days to 10 days within 10 months
Park department	Water main leaks realised £30K per year savings
Hospitals	50% reduction in injuries  Out of a total of 147 days in the healthcare system, an out patient received approximately 14 days of treatment. Loss in this case was due to queuing and the time gaps between differing specialist groups.  Patients coming into A&E with problems such as broken hips. The results were dramatic, with almost 80% of the steps in the process potentially being eliminated and the number of times a patient was transferred from one carer to another almost halved. The amount of contact time needed to treat patients was also halved.
Finance department	Cheque processing reduced from 77 to 23 days
Social housing	Time taken to process repairs cut by 80%  Time taken to collect first rental payments reduced by 40%  50% reduction in the number of steps needed to re-house and by 50% void time. This was all achieved with both significant cost reduction and improvement of the customer experience.
Placing Government contracts	Process reduced from 19 to 11 months

Sources: Barker and Broadhouse (2005); Radnor and Walley (2006); Bane (2007)

## It's not going to be all plain sailing

Like many change initiatives lean initiatives are highly prone to failure. Perhaps not surprisingly, many of the factors cited by researchers are unrelated to the lean tools and techniques that form the main focus in any approach. A review of research identified a number of common factors that need to be taken into consideration. These are clustered into a number of categories in Table 2.

**Table 2: Common factors for failure**

<b>Category</b>	<b>Examples</b>
Lack of leadership	Lack of leadership support and management commitment Failure to recognise the need to develop a continuous improvement culture
Lack of alignment	Failure to align the improvement effort with the capacity building strategy Misalignment between the improvement activities and the Human Resource systems
Lack of commitment at all levels	Resistance by management and/or employees Lack of ownership of the activity after a rapid improvement event Lack of commitment to the change process at all levels
Lack of experience	The lack of lean expertise and know-how Lack of experience managing change and especially the ability to build multi-disciplinary teams across traditional organisational barriers Inadequate preparation and planning Failure to test solutions on a smaller scale Difficulty in collecting data to support the improvement efforts Lack of appreciation on how an improvement in one area can cause deterioration in performance in another Failure to embed the improvement approaches leading to a lack of sustainability
Lack of resources	Lack of resources to implement changes
Lack of understanding	Use of lean jargon – not putting the terms in the organisation's own language Inappropriate education and training Lack of understanding of the organisation's core processes
Lack of urgency	The slow pace of change in the public sector

Many of the failure factors relate to leadership, culture and people issues. So how can we describe lean systems? At a very high level, lean systems give people at all levels of the organisation skills and a shared way of thinking to improve through designing the systems of activities, connections, and flows. Cultivating the skills of a learning organisation, and creating an environment of real-time learning nearest to the problem or point of impact, allows all employees an opportunity to contribute to

the robust success of the organisation. This definition of lean broadens the scope and required skill set beyond traditional views of being a ‘tools only’ technique and it is clear that a successful lean initiative will have a profound impact on the culture of the organisation.

## So there’s more to it than just improving work activities

From research and our own experience, we have identified a number of ‘building blocks’ for success (Figure 2). Each of these will be briefly described, leaving the Pragmatic Improvement approach until last as we will cover this in more detail in the next section. The purpose here is simply to provide an overview.

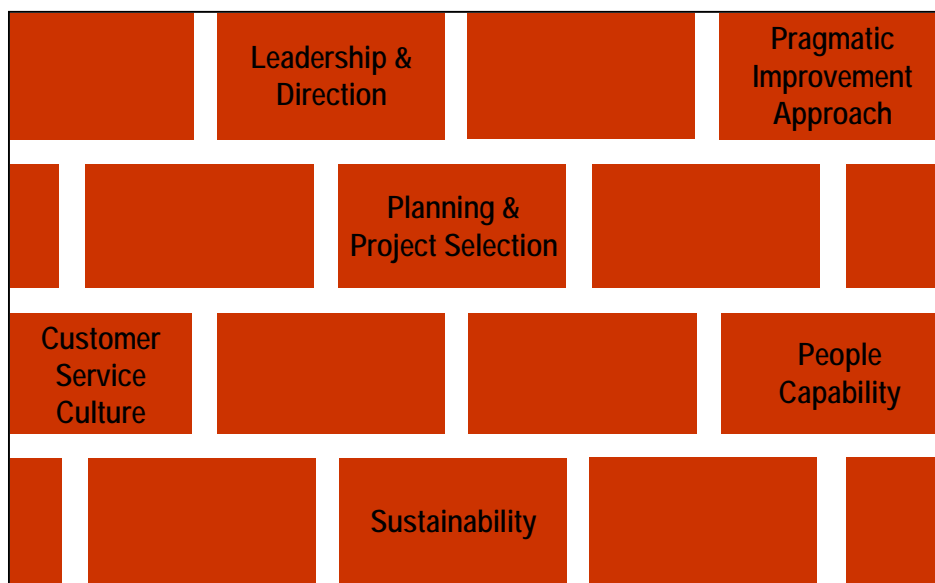


Figure 2: Building blocks for success

### *Leadership and direction*

Read any research on managing change and the number one requirement for any improvement approach will be leadership and management commitment. This leadership and commitment is demonstrated by the behaviour of the leaders and in particular their level of involvement and the decisions that they make.

Understanding the drivers of change, including personal drivers, is another leadership key activity. In previous research on the Successful Drivers of Change we found that this was very important in establishing change initiatives (report downloadable from [www.ecforbe.com](http://www.ecforbe.com)).

Leaders also have the responsibility to cascade the organisation’s objectives down through the organisation. Without such communication employees can only second guess what activities must be improved for the organisation to meet its objectives.

### *Planning and project selection*

As mentioned above, understanding the drivers for change in our organisation and the strategic choices that make these are important. This leads to the definition of a number of performance objectives for improvements in the service delivery areas, and a first planning activity is to identify and focus on the key processes that need improving. As a consequence a number of improvement projects with clear deliverables and realistic timeframes for team efforts. Such projects are best selected using an 'Effort' versus 'Impact' weighting system.

One consideration is the 'type' of lean improvement that is being sought and this is not as straight forward as it sounds. The same proven plan-do-check-act methodology can be used for deploying improvements whether they are incremental or larger scale radical breakthrough improvements. But the way this is achieved can vary. For example, the organisation may be planning a full implementation of lean or a series of controlled scale 'Kiazen Blitz' events. The latter are attractive, but there are question marks over sustainability due to lack of integration. The work of Warwick Business School found that these Blitz events were very common in the public sector.

Whatever the case, there is a need for programme management, keeping track of the overall progress towards the strategic objectives and the progress of individual projects. What is very important is that improvement projects are completed as intended.

Establishing the support infra-structure is also an important planning activity. Completing projects to achieve the required objectives on time will be dependent on the ability to get the right resources onto the projects. A major part of developing the right resources will be the training and coaching that they received. This is an area where approaches such as six sigma have cornered the market with the well known 'Master black belt', 'Black belts' and 'Green belts' support structure.

### *People capability*

Open any magazine offering opinions on lean and you will find many consultancies offering training in lean tools and techniques. Developing the capability in the people to bring about the change is clearly important as an organisation seeks to create skilled improvers and improvement teams. Circulation of this talent within the organisation is a good way to increase this capability.

You shouldn't lose sight of the benefits the experience has on the improvers themselves. High potential employees are often chosen to take up key positions in the support infrastructure as project leaders or experts. This gives additional skills as well as exposure around the organisation.

### *Customer serviced culture*

A lean approach will, over time, develop a widely shared continual improvement culture. Organisations often make the mistake that such a culture can be developed overnight, which it cannot. Even worse, they fail to recognise the need for this type of culture before any change initiative can get into top gear. The right culture will develop internal capability, both in terms of empowering staff to work on process improvements, and in motivating staff to "own" their working environment. It will help to transform your organisation into a learning organisation.

Leaders play a key role in establishing the culture. Their actions and decisions will be scrutinised by all employees seeking a chink in the armour fuelling the dismissal of the change initiative as '*the latest fad that won't last five minutes*'.

But leadership is not the only contributing factor. People resist being changed and they have to be allowed to change themselves. Involving them in improvement activities will help achieve this. The HR support systems will also support the evolution of the culture. Think about your own organisation. How are employees recognised and rewarded, and what for? Can you be selective in the way that you recruit staff? How do you develop your talent? These are all questions that you need to ask yourself.

### *Sustainability*

As we have seen many times, introducing lean is not an overnight activity. It requires working on complex bundles of interrelated practices, a solid foundation before its introduction, both cultural and political change, and a long time to implement. Sustainability is therefore an important consideration as you are going to be in for a long-haul.

Research at the London Business School sought to uncover the factors that influence both the short-term outcomes and long term sustainability of a lean intervention. The findings identified three common themes: Intervention context and strategy – why the organisation is introducing lean and how well equipped it is, Managing the intervention – how lean projects are managed, and Use of consultants and facilitators –the support that is provided. The detail behind each of these themes is given in Table 1.

**Table 3 : Factors influencing short-term outcomes and long-term sustainability**

<b>Theme</b>	<b>Detail behind Theme</b>
Intervention context and strategy	<ul style="list-style-type: none"> <li>• Strategy &amp; objectives</li> <li>• Organising and human resources</li> <li>• Organisational (cultural and political) readiness for change</li> <li>• KPIs for measuring impact</li> <li>• Reward and recognition</li> <li>• Managing portfolio of change projects</li> </ul>
Managing the Intervention	<ul style="list-style-type: none"> <li>• Scoping and tailoring</li> <li>• Planning</li> <li>• Prepare &amp; finish</li> <li>• Coherent roll out</li> <li>• Stakeholder management</li> <li>• Developing champions</li> </ul>
Consultant/Facilitator	<ul style="list-style-type: none"> <li>• Consultancy approach</li> <li>• Lean skills</li> <li>• Business skills</li> <li>• Ongoing support</li> </ul>

Source: Rytter, Done et al. (2007)

The researchers found that the interventions studied had many design features to address short-term improvement and long-term deployment. Despite good intervention design, few were able to succeed in the longer term. A well conducted intervention and competent consultant increases the likelihood of short term outcomes and long term sustainability. For long term sustainability a Lean strategy, supportive context factors and ongoing consultancy support are also required. Many of the key actions to ensure long term deployment take place prior to the short-term intervention. Financial support did not impact outcomes and sustainability.

### *Pragmatic improvement approach*

A pragmatic fact-based methodology yielding rapid results is an important feature of a lean approach. A not so perfect solution implemented today is better than a perfect solution that is late. Just do it now! Such a flexible improvement approach is DRIVER<sup>®</sup>, which is shown schematically in Figure 3. In this section, we are concerned with the main principles behind lean improvement. More information on DRIVER<sup>®</sup> is available from [contactus@oaklandconsulting.com](mailto:contactus@oaklandconsulting.com).



**Figure 3: The DRIVER<sup>®</sup> improvement approach**

There are many basic principles to lean. It uses systematic problem solving where the project team directly observe work in order to reduce variation and eliminate waste. In a government organisation there are many cases of such variation and waste:

- Poor layout;
- Long change-over times where different systems have to be loaded;
- Poor workplace organisation;
- Poor equipment maintenance;

- Inadequate training;
- Use of improper methods;
- Statistically incapable processes;
- Not following procedures;
- Instructions or information unclear;
- Poor planning;
- Supplier quality problems;
- Poor work environment (for example, light, heat, humidity, cleanliness and clutter).

But what are the types of waste that are so often seen. The main ones are listed in Table 4.

**Table 4: Eight cause of waste in Government operations**

1. **Overproduction:** making more, earlier or faster than required by the next process;
2. **Inventory waste:** any supply in excess of a one-piece flow (make one batch and move one batch) through the service process, whether it is unprocessed work, work in process or completed work. Inventory is not an asset, but a cost or waste;
3. **Defective work:** work requiring inspection, sorting, scrapping or reworking;
4. **Over processing:** Extra effort that adds no value to the service from the customer's point of view;
5. **Waiting:** idle time waiting for such things as manpower, materials, equipment, measurement or information;
6. **People:** not fully using people's mental and creative skills and experience;
7. **Motion:** any movement of people, tooling and equipment that does not add value to the service;
8. **Transportation waste:** transporting work around the office.

One principle particularly important to government work is the principle of '*Creativity before capital*'. In lean, team brainstorming of ideas and solutions is emphasised instead of spending large sums of money on capital expenditures. People working in the process are brought together to tap into their experiences, skills and brainpower to generate a plan for waste reduction and process improvements.

In bringing people together, high level agreement is achieved in the way the process is being conducted and what needs to change to improve its performance. This is where the tools and techniques that receive so much attention come into their own. The tools and techniques used to introduce, sustain and improve a lean system are sometimes referred to as the lean building blocks. Many of these building blocks are interconnected and can be implemented in tandem. For example, 5S, visual controls,

point of use storage, standardized work, streamlined layout, working in teams and autonomous maintenance (part of total productive maintenance) can all be components of a planned implementation effort. An explanation of these building blocks is provided in Appendix 1.

Years of experience have lead to a number of mistakes that organisations make when implementing lean. Some of these are mentioned in Table 2, but other common mistakes specifically related to improvement projects are given in the following list of Dos and Don'ts.

**Table 5: Tips and trips related to improvement projects**

Tips	Trips
<p>Have an expert lead the first few events</p> <p>Map the 30,000 foot map first to see the whole value stream.</p> <p>Ensure you determine the Process Family correctly</p> <p>Consider items that don't necessarily show up on the process map (Change Management, training, communication, Teams, 5S, etc.)</p> <p>Set ground rules for the team to make sure they stay system focused.</p> <p>Make sure you get the right people involved to cover interests of each area.</p> <p>Bring in an outsider to ask the questions you might not see so close to the process.</p> <p>Keep it visual and posted so people to see how future state will affect them.</p> <p>Have the right detail on the map – too much and lose big picture and too little can not see all the connections.</p> <p>Get to know the people on the team so your can work better together to eliminate so of the personalities associated with the silo approach.</p>	<p>Create a process map using a “team of one”</p> <p>Forget to frequently update the process map</p> <p>Forget to follow the project plan</p> <p>Fail to communicate the Value Stream Maps</p> <p>Rely on software alone to create process maps</p> <p>Try to collect too much data or not enough data</p> <p>Use non rigorous financial data in project scoping</p> <p>Go ahead without a good understanding of the core processes</p> <p>Plough ahead if you realise that the process selection was poor</p> <p>Forget to take into account the internal and external constraints on the process (OSHA, Procedures, accounting requirements, etc).</p>

## Never forget you're dealing with people

One of the Toyota production workers once passed a comment about working within the Toyota production System. According to this worker, working within the system was soul destroying as all the thinking was taken away from him. Although waste may be unproductive, solving problems can be a lifesaver when faced with a life of monotony.

The reason for mentioning this here is simple. One of the most common complaints we come across is when an organisation commissions a consultancy to introduce lean, and then they do it in away that takes not account of the people. In the case of a well-known internet bank people who expressed an interest in the lean project were told that it was none of their business. As consequence this organisation rarely uses consultancy support such was the damage that was done.

Organisations are jumping on the lean bandwagon and making similar mistakes to those experienced with the TQM programs in the 1980s. There is a need to adopt an approach that engages the organisation's people and is consistent with the culture. Such an approach as DRIVER<sup>®</sup> often includes the following features:

- Design the preliminary technical solution. This is the logical 'to be' process that is proposed as an outcome of the 'analysis stage;
- Test this solution against the existing social system to check that anticipated changes can be implemented. This includes several potential roadblocks such as a mass production mind-set, peoples' need for autonomy, a lack of real-time information for office activities and work in progress management, any bonuses that create spikes in the system, other reward systems, feelings of status among technical specialists, a full utilisation mind-set or belief that people must always be busy, any other barriers such as a competitive spirit, etc.
- Design the final solution taking into account the potential roadblocks;
- Assemble and place all the changes to the technical and social systems into an implementation plan after the new sociotechnical system is complete.

Failure to take into account the social system will delay or derail any improvement activity. Understanding the people in the system is vitally important. A fascinating recent study examining the implementation of lean in a Hungarian automotive supply found that the most important factors influencing the perception of managers were explaining the reasons of implementation, encouragement (regard, personal commitment in lean projects, explicit and implicit expectation from CEO), assessment (financial initiatives, e.g. salary-raise connected to productivity improvements or quality) tolerance (kaizen defects won't be punished) and learning (the importance of learning at the company).

This study was unique as it also examined the perceptions of the workers in two work areas: one predominately male and the other female. The researchers found that belief, commitment, work method and communication all had considerable effect on workers' perceptions of lean success. However, the effects were very different by gender. Males' perception was affected only by commitment and work method, while females' perception was affected by belief and communication. Thus, on the basis of the results, only females need the necessary knowledge about the reasons and timetable of lean transformation in order to believe that the system works. Although they have the feeling of involvement it does not have either positive or negative impact on the feeling of lean success. The consequence this is that when implementing lean males have to be involved whereas females have to be educated.

## **Lean should leave a permanent mark on your organisation**

Implementing lean should have many benefits over and above the improvement in performance. Benefits should be observed in the areas of culture, strategy focus, people development, and of course process design.

An organisation's culture should be transformed as the focus on people and value elevates the human spirit. A problem solving ethic should also pervade the organisation, creating purposeful and high energy interactions.

Organisational purpose and strategy will achieve higher levels of focus due to the central positioning of the customer. In common with other culture change programmes such as TQM and Business Excellence, this change in culture will support the organisation becoming more strategically "agile."

People will see themselves as central to the organisation's success, making it easier to subordinate individual gain to the overall good of the organisation. Finally, organisational processes will be better aligned to the strategy and become more effective and efficient. Overall lean in government will be a very good thing.

## Appendix 1: Glossary of terms

**5S.** The five steps that go into this system for workplace organisation and standardization all start with the letter S in Japanese (seiri, seiton, seison, seiketsu and shitsuke). These five terms are loosely translated into English as sort, set in order, shine, standardize and sustain.

**Analysis of internal overall equipment effectiveness and losses.** A Pareto chart of these losses will identify the biggest bang for the buck and indicate where to start the lean journey.

**Batch size reduction.** The best batch size is one-piece flow. If one-piece flow is not appropriate, reduce the batch to the smallest size possible.

**Cellular or flow.** The aim of one-piece flow is to physically link and arrange manual and automatic process steps into the most efficient combination, thus maximizing value added content while minimizing waste.

**Change management.** Align the organisation's strategies and employee goals; then change the culture from the traditional push activities to lean pull. This should eventually result in a philosophical change in how daily work life is viewed.

**Lean baseline assessment.** Using interviews, informal flowcharting, process observations and analysis of reliable data, an "as is" situational report can be generated from which the lean improvement plan flows, based on the identified gaps.

**Mass training.** After training in lean is provided to a critical mass of employees in teach-do cycles, lean should be immediately implemented.

**Pilot project.** Choose a bottleneck or constraint area for breakthrough lean improvement using the Kaizen Blitz approach for breakthrough improvements. Then, using the lessons learned, migrate lean implementation to other areas.

**Point of use storage.** Unprocessed documents, office supplies, information, equipment, work standards and procedures are stored where they are needed.

**Pull and kanban.** Under this system of cascading activities and delivery instructions from downstream to upstream activities, the upstream supplier does not produce until the downstream customer signals a need, using a kanban system.

**Quality at the source.** Inspection and process control is carried out by the employees so they are certain the work passed on to the next process is of acceptable quality.

**Quick changeover.** The ability to change equipment and fixtures rapidly (usually in minutes) allows for smaller batches that can be run on the same equipment.

**Streamlined layout.** Office layout is designed according to optimum operational sequence.

**Standardized work.** Performance of a task is consistent according to prescribed methods, without waste and focused on human movement (ergonomics).

**Teams.** In the lean environment, the emphasis is on working in teams, whether improvement teams or daily work teams.

**Total productive maintenance.** This lean equipment maintenance strategy maximizes overall equipment effectiveness.

**Value stream mapping (VSM).** VSM studies the set of specific actions required to bring a service family from unprocessed work to finished work per customer demand,

concentrating on information management and physical transformation tasks. A service family would constitute processing different types of work. For example, there could be an 'Application' process family that covers the activities related to processing different types of application form. Many of the steps will be similar, for example, 'Open Post' and 'Log Receipt', but 'Process Application' may be different.

The outputs of VSM are a current state map, future state map and implementation plan for getting from the current to the future state. Using VSM, you can drastically bring the lead time closer and closer to the actual value added processing time by attacking the identified bottlenecks and constraints.

The implementation plan serves as the guide. Bottlenecks addressed could include long setup times, unreliable equipment, unacceptable first pass yield, or high work or process inventories.

**Visual controls.** All documents, work activities, equipment and indicators are in view so everyone involved can understand the status of the system at a glance.

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