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## Maintaining a lean production system

### 1. Introduction

A successful lean culture of continuous improvement is where a work environment in which a leader can walk away and empowered employees can sustain themselves in pursuing higher quality targets by implementing continuous process improvements.

### 2. Why many organisations fail to sustain lean?

Many organisations have tried to implement lean. However, a majority of them only achieved modest levels of success. For many of these organisations, they begin their lean transformation process with energy and resolve. However, they fail to sustain and complete the transformation to a lean organisation. The initial results post-lean implementation may be impressive; manufacturing lead times and inventories are reduced significantly, and on-time performance improves dramatically. While customers and management are happy, employees have overcome initial reservations and feel invigorated and eager to continue. However, it soon starts to fade. "The relentless focus on eliminating waste from the system seems more like lip service. The self-sustaining fire has cooled and the on-going improvement effort falters and seems about to stop. There are fitful attempts to continue or to restart the initiative, but these actions have no sustainable effect. For example, many companies begin their lean initiatives with the 5S programme, yet only a very small percentage ever achieves the fifth S, 'Sustain'. 5S becomes no more than a glorified housekeeping exercise and the value it can deliver to improved workflow and productivity remain unmined."

Reasons that are often cited as main factors for lean failures include: poor leadership; lack of concrete process or mechanisms; lack of clear targets or direction; lack of conducive environment; poor communication; staff resistance to change; and lack of learning that lead to poor understanding of lean. Thus, in order for lean to succeed and to reach that point of self-sustaining criticality, each company must have the proper methods directing, measuring, forcing and reinforcing lean activities on a daily basis at the most granular level of activities.

### 3. How to sustain lean programmes?

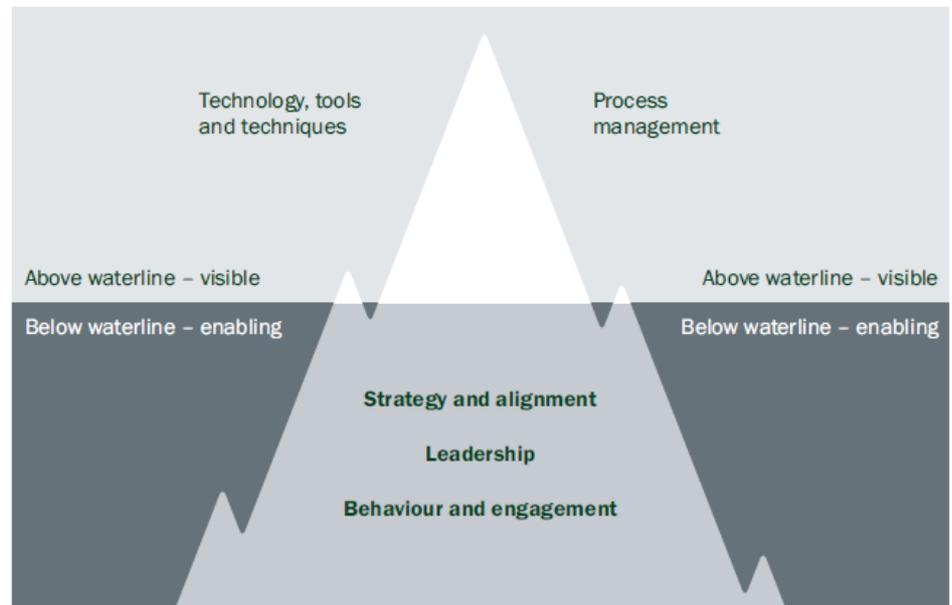
Almost all of the reasons why lean programmes do not sustain are related to people, their leadership and their engagement. This is often made worse by a pre-occupation with lean tools.

Below are 10 tips for staying lean.

- i) Think of lean as a philosophy for success rather than a series of tools and techniques.
- ii) Apply lean right across the organisation, not just in parts.
- iii) Focus on improving processes or value streams, not departments.
- iv) Link everything that is done to create value for the customers, the organisation and the people.
- v) Do not just copy others, instead think through the approach based on what the organisation is trying to achieve.
- vi) Make everyone aware of what is to be achieved and why.
- vii) Align communication and key performance measures to create and sustain a lean organisation.
- viii) Provide sufficient resources in terms of people and training across the organisation, not just the lean coaches.
- ix) Leaders need to go beyond just talking about lean; they need to demonstrate in their actions that they are serious.
- x) Ensure that finance, rewards and recognition systems appropriately encourage lean activities and motivates the people.

### 4. The Sustainable Lean Iceberg model

In addition to tools, techniques and process-based management, there are other areas that are more important and often overlooked. In the Sustainable Lean Iceberg model, there are three key areas under the “water”, which are all people-related.



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

The sustainable lean thinker needs to learn to see and act below the waterline as well as above it.

The items below the waterline are:

i) Strategy and alignment

Many businesses fail to establish coherent strategy, vision and purpose. However, even if the organisation does, this is not enough in itself. What is needed is a strategy that is fully communicated and deployed throughout the organisation. It needs to describe what the organisation wants to do and why this is important. This will guide the employees in how to focus their change activity.

The two questions below can be used to test if this is the case.

- Can all of the people in the organisation clearly articulate what the strategy is?
- Can they demonstrate what they are doing on their own in their normal job to help the organisation achieve this strategy?

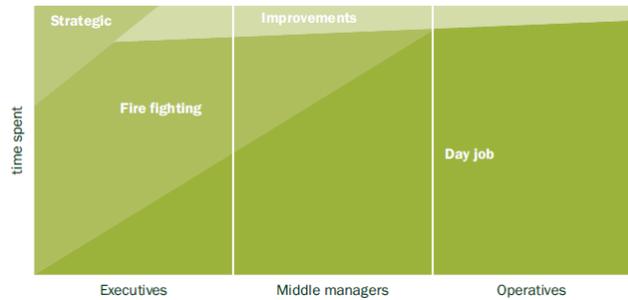
If the answers to the questions above are not clear, the organisation needs to pay greater attention to strategy and alignment.

ii) Leadership

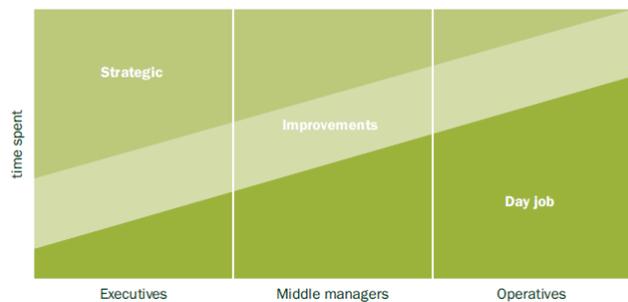
The second 'below the water' element is leadership. Leadership is often seen as the "holy grail of successful management". While many organisations possess good managers, they may not necessarily be good leaders. Leaders are normally characterised as having a guiding vision, passion and integrity. They foster change and create an environment where change is the norm. When leading change, they must have high energy levels, be innovative, focus on people, inspire trust, have a long-range perspective and challenge the status quo.

The role of the leader is to inspire with words, deeds and actions. This involves allowing everyone in the organisation to take part in the strategy planning process and encourage everyone to get involved in delivering the actual change and reducing "fire-fighting and non-value-adding work". A leader inspires his organisation to change from a typical organisation to a sustainable one.

The typical organisation



The sustainable organisation



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

### iii) Behaviour and engagement

The engagement of employees on a lean journey is essential. It will predict their behaviour and the organisation's ultimate success. There are many steps on the engagement journey, as seen below. However effective strategy, alignment and leadership are a good start. Other key elements are partly due to the characteristics of the individuals themselves, how they are communicated with and how they are trained. The general social norms of the organisation will also impact on the journey.



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

## Lean behaviours

Examples of lean behaviours include: trust, honesty, openness, consistency, respect, reflection, observation, objectivity, and listening. Wasteful behaviours include: blame, ego, distrust, cynicism, sarcasm, ambiguity, subjectivity, insincerity, self-imposed barriers and negativity.

Organisations can employ people that exhibit lean behaviour and then equip everyone with the right skills through training and develop. However, this is not always enough to achieve the right change in culture that is necessary to ensure it sticks.

The environment plays a big part in encouraging the right behaviours. Building an environment for sustainable lean involves examining all elements of the organisational structure with its policies, procedures, measures and rewards to see if any are acting as roadblocks and stifling progress. Changing behaviours involve changing the culture of the organisation.

## Organisational culture

In order to make change happen and to embed the changes in an organisation, it is key to understand the organisation, which means understanding its culture.

The culture of an organisation is "typically created unconsciously, based on the principles of the top management or the founders, and it exists where a group of people have been together long enough to

have shared problems and have had the opportunity to solve them”.

To make any significant organisational change such as lean stick, involves creating the right culture; the lean culture. Additionally, to facilitate any cultural change, the strategy has to be internally consistent with the secondary features of the organisation, its design and structure, systems and procedures, the physical layout of the workplace, the narratives, myths, and legends about the organisation and the formal expressions of policy and outlook.

## Engagement

Traditionally, organisations have concentrated all their efforts on the things that improve performance: productivity, profits and growth. They have undervalued the influence of their employees’ emotional attachment to the business as a driver of profitability and growth.

The biggest differentiator between great and less successful organisations is that great organisations create environments that allow their employees to excel. They also build connections between customers and employees that are emotionally driven. This is termed as ‘emotionally engaged employees’.

Below are 12 conditions that are necessary to create a workplace where employees can become engaged.

- Having clearly defined expectations.
- Having the right equipment.
- Being given the opportunity to excel.
- Receiving timely recognition or praise.
- Having line managers that care about the employees as individuals.
- Being given encouragement to achieve more.
- Having the employees’ suggestions and opinions taken seriously.
- Being part of the big picture.
- Having pride in delivering quality output.



## Productivity Link

- Mutual trust and supportive bonds with other employees and managers.
- Having the opportunity to regularly review progress.
- Having opportunities to learn and develop.

Communication is also key in engagement. People need to be aware of what needs to change and why. Everyone needs to be told the same story at the same time. Engagement does not wait for the ripple effect as news permeates the company. Another important mechanism for engagement is training.

## Case Study

### Cogent Power

[Cogent Power](#) is part of [Tata Steel](#). It is a global supplier of electrical steels, transformer cores and components. In 2003, the company began to implement lean, in its bid to improve its competitiveness in the marketplace and help turn around its financial performance. Four years later, the company has “transformed its approach, with a renewed customer focus that has led to exponential sales growth and a culture of continuous improvement”.

#### The road to lean

Electrical steels play an essential role in the generation, transmission, distribution and use of electrical power and are one of the most important magnetic materials produced today. Cogent power has its head office in the United Kingdom, and operates out of three major plants in the U.K., Sweden and Canada, which function as semi-autonomous business units. Each operating plant has its own management structure, commercial and financial responsibilities. An internal supply chain exists where the U.K. plant supplies the Canadian plant with some of the raw materials for further processing and conversion.

The union of the three plants occurred as a result of all being owned, or incorporated into, European Electrical Steels (EES) in 1991, before Cogent Power Ltd was formed as a joint venture out of the acquisition of Kienle + Spiess Group by EES in 2000. Before this, they had unique and individual company histories.

#### The challenge facing Cogent

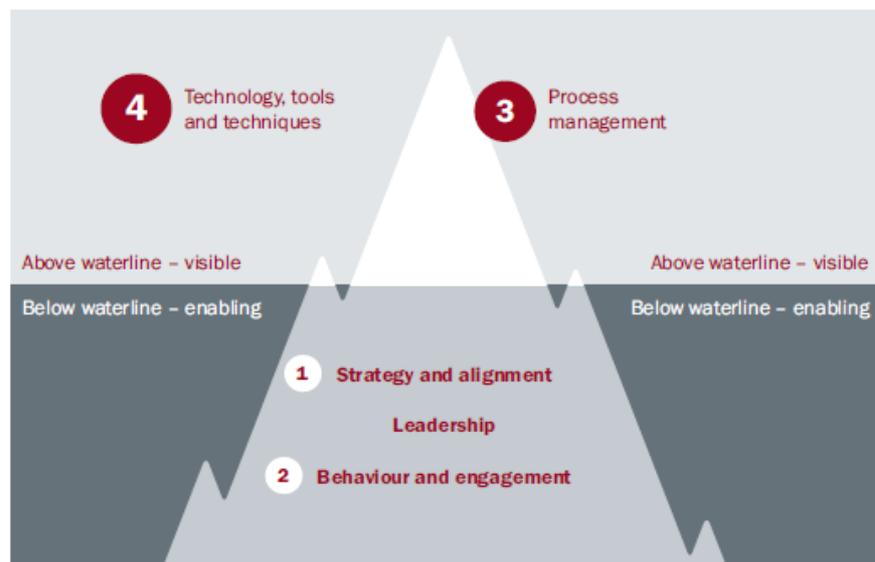
In 2003, the company was facing a number of challenges: substantial pre-tax losses from global operations; it was losing cash from a number of its operating plants; and a static order book with emphasis on lower margin products.

In order to meet these challenges, a new Managing Director, Marcel was appointed to lead the business turnaround. He put in place a new organisational structure, based around a head office in the U.K. and three operating divisions: Electrical Steels, Laminations and Transformers. In 2006 the Laminations Division was sold and a new structure, based around Electrical Steels and Transformers produced across three sites in the U.K., Sweden and Canada, was established.

In December 2003, Marcel announced his intentions to the management team, and the transformation programme was officially launched in January 2004. The programme aimed to stem the financial losses and make the company more productive. Progress was reviewed formally in July 2005, and despite making considerable advances, some concerns were raised regarding the pace and sustainability of change. As a result, the road map of the journey changed slightly, and more emphasis was put on what was recognised as the 'below the waterline' elements of a sustainable lean iceberg.

## The route they undertake

### Road map 1

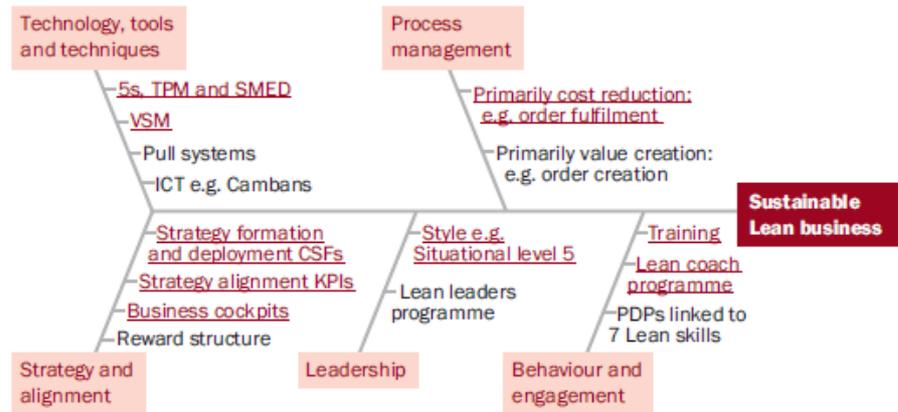


Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

The first phase of transformation took about 18 months to complete and it resulted in the establishment of an awareness of lean within the organisation. The training and communication programmes that were started in this phase involved many people, although they did not engage everyone totally in the transformation. There were still many sceptics and those who had 'seen it all before'. The emphasis at this stage was on getting the right management team together and applying lean tools and techniques to improve productivity. At this stage, it was mainly focused on order fulfilment.

This is illustrated by a fishbone diagram:

### Focus in roadmap 1



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). Staying lean: Thriving, not just surviving. Cardiff University.

Although there was considerable improvement in productivity and also sound progress in the financial turnaround, the senior managers were concerned about both the pace and scope of change; some sites and areas were seemingly progressing better than others. As a result, a lean assessment was conducted and a number of issues were identified.

Key theme	Key learning from Lean experience
Leadership, behaviour and engagement	The coaches who had been deployed to help drive the programme had become the real leaders of <b>Lean</b> and it was accepted that, in taking a top-down and bottom-up approach to the programme, the middle managers had been neglected. It was evident that they were not owning <b>Lean</b> and therefore not 'living the Lean lifestyle' which is so critical to sustainability.
Strategy and alignment	Although <b>KPIs</b> had been reasonably well deployed during the first round of deployment, a second round was needed to ensure that process teams and individuals were aligned with a full 'line of sight' to the business strategy.
Process management	In common with traditional businesses, customer value was perceived as merely quality, cost and delivery (QCD), and the business had not yet really captured the true voice of the customer. It was also agreed that not enough effort had been given to applying Lean tools to help improve the way non-manufacturing processes were managed.
Technology, tools and techniques	Key value streams needed to be strategically selected with more emphasis on 'bottom-line' improvement activity. The value stream mapping improvements had been focused on building internal stability and it was recognised that, to make a real impact, work was needed across the extended enterprise. The use of technology to better manage end-to-end supply chain 'pull' systems would make a difference.

Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). Staying lean: Thriving, not just surviving. Cardiff University.

There were also some other areas of concern:

- Some people were still identified as 'roadblocks' to progress and a formal process of confronting these people was needed.
- Organisational structures were still traditionally set by function and needed to be better aligned to value streams.
- Establishing what 'best practice' looked like for the business sector and setting new and improved standards for the Cogent Way would help visualise the goal for the operating units.

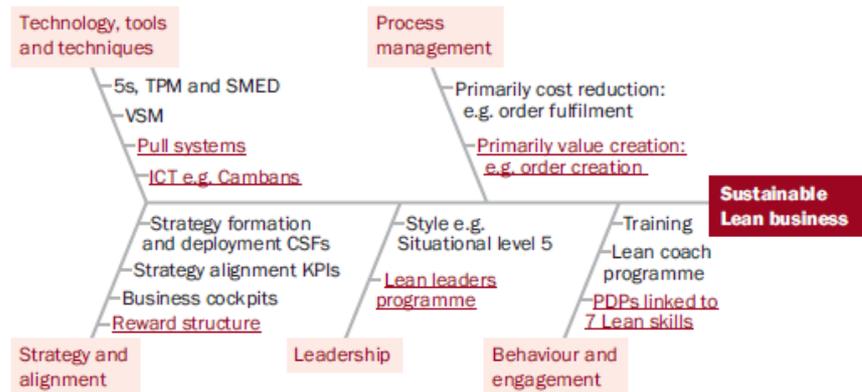
This is not unusual at this stage and it is often where many lean implementations stagger or stall.

The situation that is seen here is described as "a narrowing of iceberg beneath the waterline". It happens when emphasis has been placed on the activities above the waterline; the processes, technology, tools and techniques. In this case, due to the turnaround situation, this is the correct path but only for a certain period. This is the time when companies think that they have implemented lean. In reality, this is often when the implementation is in its most precarious and vulnerable state. To achieve sustainable results, the focus needs to be increasingly on what is below the waterline, to build strong foundations and to support and keep the business afloat. To Marcel, Frans (Technology Director) and Peter (HR Director), it signalled a need to refocus and address the shortcomings.

## Road map 2



## Focus in roadmap 2



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). Staying lean: Thriving, not just surviving. Cardiff University.

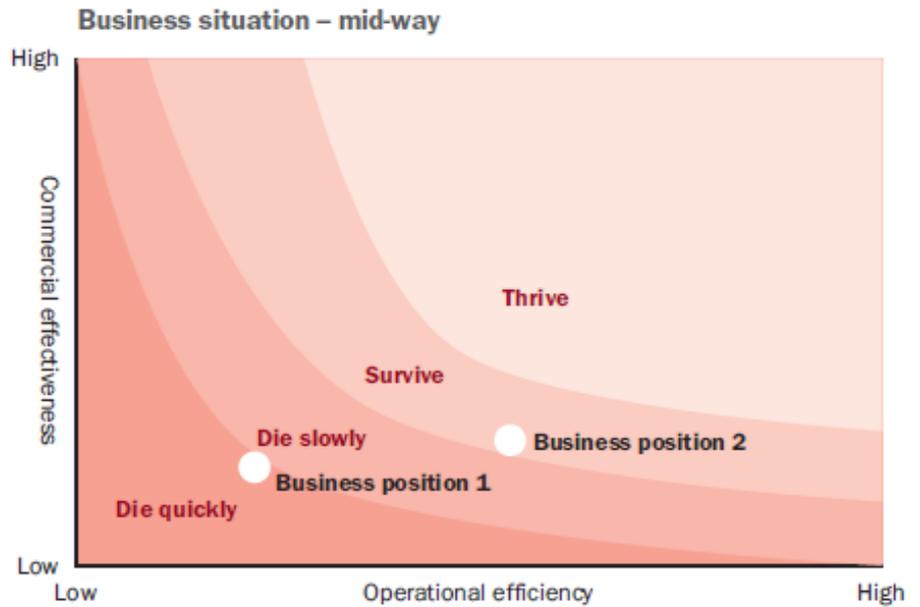
A key part of this second phase was focus on leadership, behaviour and engagement. There had been a lot of strategic lean work at senior management level as well as lean implementation at “shop-floor level”. However, this top-down meets bottom-up approach had left the middle community lacking in the skill, competence and motivation needed to take lean to the next level. Extra training was put in at the middle management level so that the line managers and team leaders were given skills that emphasised the change in roles and responsibilities that were expected of the entire leadership community going forward; helping individuals and teams to ‘lead the lean lifestyle’.

An integral part of the success was the recognition that the company needed to put into practice the first principle of lean and better understand what its customers, both existing and new, really valued in a supplier. The organisation needed to understand completely the true 'voice of the customer'. Again, the timing was right as by this stage, the company was in a position to act on its understanding. This is illustrated by the following graphs developed by Mark and John from Cogent Power (U.K.) with help from the consultant, Gary, to show their progress in improving operational performance (efficiency) and commercial effectiveness in a changing market environment.



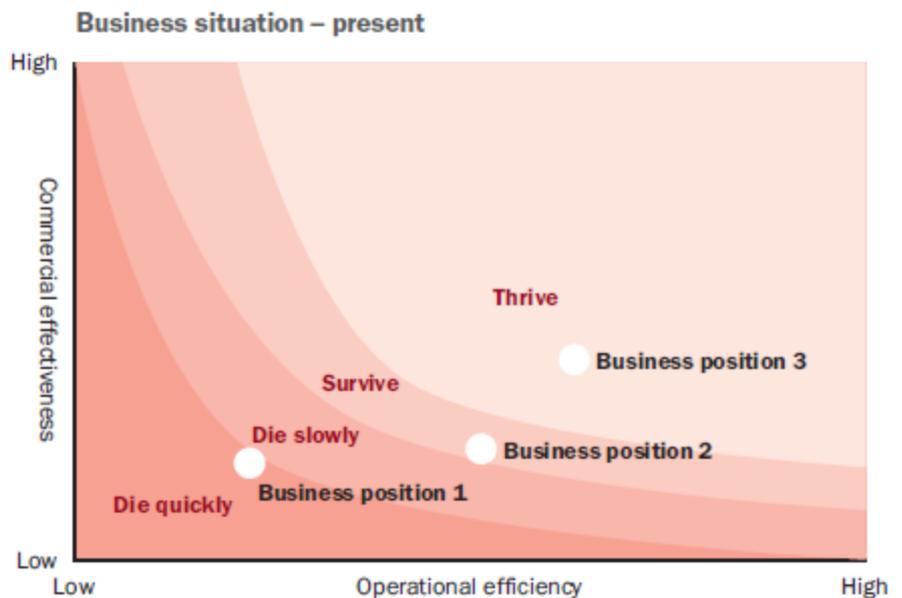
Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

Business position 1 was the starting point of the lean transformation, with little focused effort on operational efficiency and weak commercial effectiveness.



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

Business position 2 was mid-way through the programme. Operational efficiency had improved significantly but the external market had changed, making survival easier.

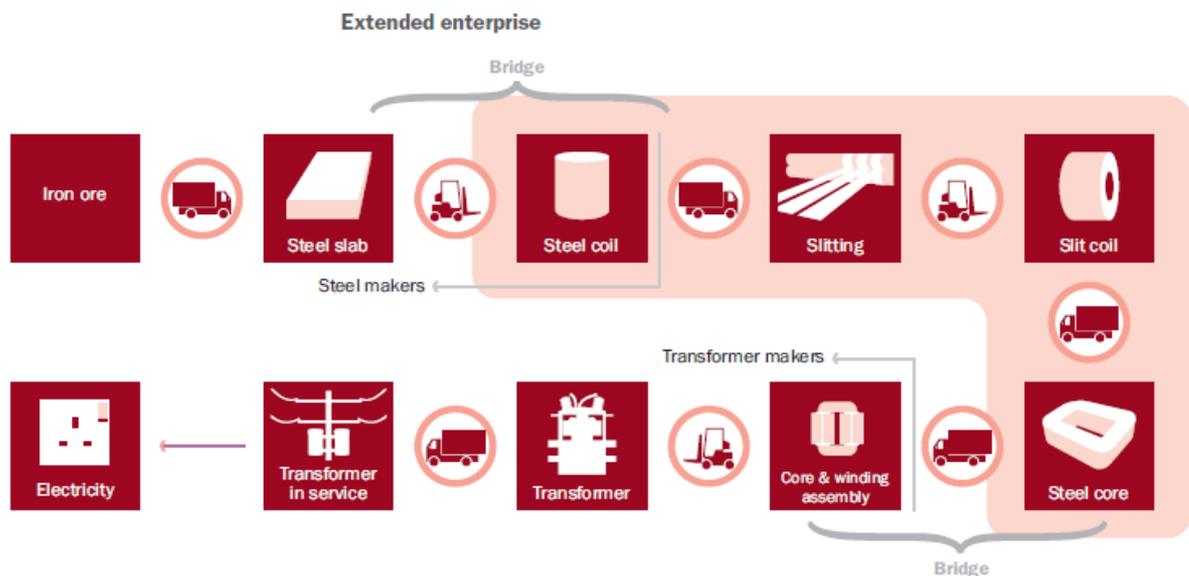


Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

Business position 3 showed the improvement in commercial effectiveness but the strong market conditions are enhancing the overall business performance. The challenge now is to continue the improvements to be able to thrive, survive, when the market for electrical steels returns to normal.

Addressing all elements of the iceberg helped to change the business, with the organisation becoming much more customer-focused. The financial turnaround was accelerated by the exponential increase in sales that was achieved at controlled costs, and the business is now underpinned with the capability to 'continuously improve the process of continuous improvement'.

As Cogent Power in Canada became more customer-focused, they changed the face of the company and moved up the value chain by taking on some processing for their customers. They were able to do this without adding extra internal costs due to the operational improvements they had made. In doing this, they were able to extend the supply chain out towards the customers.



Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

The challenge is now to take the understanding and learning and to achieve similar performance benefits across selected global supply chains, and to embed the changes for long-term sustainability.

At each stage of the Cogent Power journey, there were lessons to be learned. For real, sustainable lean, each element of the lean iceberg needs to be in place. If any

element is missing, the whole is at risk. This is summarised and illustrated below.

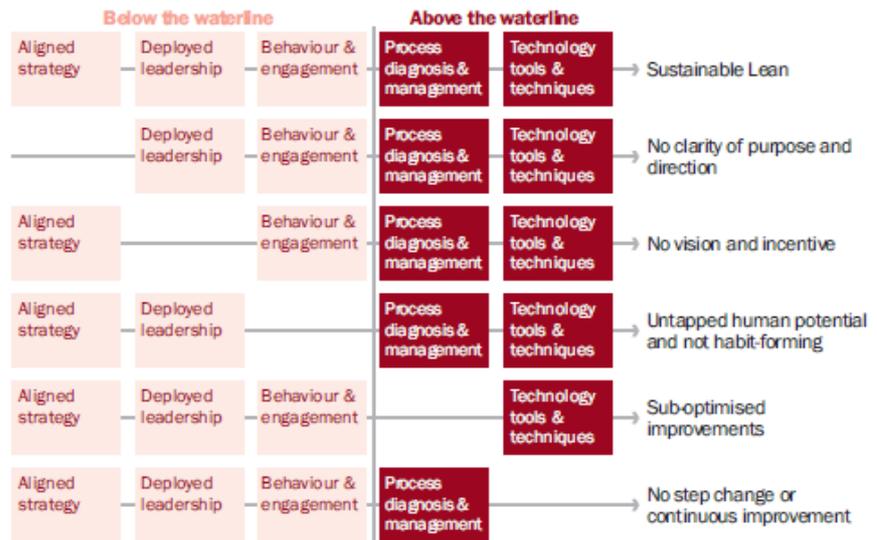


Diagram based on Tom Peters concept adapted by P. Found and G. Griffiths

Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

One of the key observations that was made was that organisational or 'double loop', learning was taking place. The result was that improvements which could not have been envisaged at the start of the journey were now not only feasible but also possible. Without organisational learning, many of the results would not have been achieved.

Following Cogent Power's lean journey has shown that delivering sustainable lean change is complex and not always achieved in a single journey. It requires focusing not only on the visible elements of lean – process management, lean tools and techniques – but more importantly, on the visible elements; strategy and alignment, leadership, and employee behaviour and engagement.

## Key lessons for staying Lean

Key theme	Lessons learned
<b>Strategy and alignment</b>	<ul style="list-style-type: none"> <li>Take time to define clear and stretching CSFs and build in a P-D-C-A cycle to improve the deployment process.</li> <li>Work to build up the capability of individuals and teams to self-manage the business cockpits at all levels.</li> <li>Deploy words and numbers to ensure full 'line of sight' is achieved, so that people know the business plans and their contribution to making them happen</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>Strong decisive leadership with Lean experience is needed in the early phase of the programme.</li> <li>Leaders must be prepared to review themselves and the process critically in order to push the business forward.</li> <li>Continually develop Lean leaders at all levels, on all shifts and within all areas of the business and adopt a 'leading the Lean lifestyle' programme.</li> </ul>
<b>Behaviour and engagement</b>	<ul style="list-style-type: none"> <li>To inject pace into the programme take experienced, motivated and multi-disciplined people to form an internal Lean team.</li> <li>Encourage sharing and learning throughout the programme, take every opportunity to get people together to discuss continuous improvement.</li> <li>Lean organisations need Lean people who are both competent and capable of pushing themselves and their teams out of the comfort zone and into the stretch zone.</li> </ul>
<b>Processes</b>	<ul style="list-style-type: none"> <li>The application of value stream mapping tools needs to focus on longer-term management, not just mapping.</li> <li>Senior management need to select strategic key value streams that need sustained improvement focus by addressing pillars and platforms.</li> <li>Continuously apply customer value analysis to inform and improve all other key business processes</li> </ul>
<b>Technology, tools and techniques</b>	<ul style="list-style-type: none"> <li>Early application of the basic tools and techniques needs an emphasis on self-sustaining systems of management.</li> <li>Use appropriate 'bundles' and 'combinations' of Lean tools &amp; techniques to achieve the specific value stream goals and bottom-line improvements.</li> <li>Use simple and proven technologies such as web cams and software to better manage and make the bridge between customer and supplier demand profiles</li> </ul>

Source: Hines, P., Found, P., Griffiths, G., & Harrison, R. (2008). *Staying lean: Thriving, not just surviving*. Cardiff University.

## Recommended Readings

Articles can be retrieved from  
NLB's e-Resources –  
<http://eresources.nlb.gov.sg>

Books are available at the Lee  
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<b>CPP</b>	<b>CPP (Retail)</b>
<p><b>Module 1: Understanding Productivity</b> (Duration: 1 day)</p> <ul style="list-style-type: none"> <li>• Introduction to Productivity and Quality Concepts</li> <li>• Factors Affecting Enterprise Productivity</li> <li>• Productivity Movement in Singapore</li> <li>• Productivity Promotion in Businesses</li> <li>• Productivity Challenges</li> </ul>	
<p><b>Module 2: Productivity Tools, Techniques &amp; Management Systems</b> (Duration: 3 days)</p> <ul style="list-style-type: none"> <li>• Business Excellence</li> <li>• Productivity Measurement &amp; Analysis</li> <li>• Process management: <ul style="list-style-type: none"> <li>▪ Cost of Quality</li> <li>▪ Lean Six Sigma</li> <li>▪ Process Mapping &amp; Analysis</li> </ul> </li> <li>• Integrated Management Systems</li> </ul>	<p><b>Module 2: Productivity Tools, Techniques &amp; Management Systems</b> (Duration: 3 days)</p> <ul style="list-style-type: none"> <li>• Delivering Service Excellence</li> <li>• Productivity Measurement &amp; Analysis</li> <li>• Process management: <ul style="list-style-type: none"> <li>▪ Cost of Quality</li> <li>▪ Lean Six Sigma</li> <li>▪ Process Mapping &amp; Analysis</li> </ul> </li> </ul>
<p><b>Module 3: Innovation &amp; Service Excellence</b> (Duration: 3 days)</p> <ul style="list-style-type: none"> <li>• Knowledge Economy &amp; Innovation</li> <li>• Service Excellence</li> <li>• Team Excellence</li> </ul>	<p><b>Module 3: Innovation &amp; Service Excellence</b> (Duration: 3 days)</p> <ul style="list-style-type: none"> <li>• Introduction to Service Excellence &amp; Sales Productivity</li> <li>• Store Management &amp; the Roles of a Store Manager</li> <li>• Minimising Operational Constraints &amp; Focusing on Sales</li> <li>• Setting Goals &amp; Analysing Statistics</li> <li>• Coaching &amp; Motivating Sales Staff</li> <li>• Service Behaviours that Encourage Business</li> </ul>
<p><b>Module 4: Critical Success Factors</b> (Duration: 1 day)</p> <ul style="list-style-type: none"> <li>• Management Commitment</li> <li>• Managing &amp; Sustaining Change</li> <li>• Overcoming Resistance to Change</li> <li>• Training and Education</li> <li>• Planning for Implementation and Control of Productivity Improvement Programme</li> <li>• Briefing on project assignment &amp; Role of Productivity Practitioner</li> </ul>	

As part of the CPP curriculum, participants are required to start a productivity improvement project upon completion of the in-class component. Project guidance will be provided by a professional consultant assigned for this purpose and is for a total of 2 man-days.

## **Funding & Payment**

The course is supported by the Singapore Workforce Development Agency (WDA). Funding is available at 70% and 50% of the course fees respectively for SMEs and MNCs/LLEs/Statutory Boards. Please find the prices payable in the net fee table below:

For All Entities:	Nett Fee:	Nett Fee (with GST):
All Entities (\$3950)	\$1,185	\$1,267.95

Here are the schedules for CPP:

### **CPP (Generic)**

April 2014		
Date	Module	Time
Tuesday, 8 April 2014	Module 1	9-5 pm
Thursday, 10 April 2014	Module 1 & 2	9-5 pm
Tuesday, 15 April 2014	Module 2	9-5 pm
Thursday, 17 April 2014		9-5 pm
Monday, 21 April 2014	Module 2 & 3	9-5 pm
Wednesday, 23 April 2014	Module 3	9-5 pm
Monday, 28 April 2014		9-5 pm
Friday, 2 May 2014	Module 4	9-5 pm

May 2014		
Date	Module	Time
Wednesday, 7 May 2014	Module 1	9-5 pm
Friday, 9 May 2014	Module 1 & 2	9-5 pm
Wednesday, 14 May 2014	Module 2	9-5 pm
Friday, 16 May 2014		9-5 pm
Monday, 19 May 2014	Module 2 & 3	9-5 pm
Wednesday, 21 May 2014	Module 3	9-5 pm
Monday, 26 May 2014		9-5 pm
Wednesday, 28 May 2014	Module 4	9-5 pm

## CPP (Retail)

April 2014		
Date	Module	Time
Tuesday, 8 April 2014	Module 1	9-5 pm
Thursday, 10 April 2014	Module 1 & 2	9-5 pm
Tuesday, 15 April 2014	Module 2	9-5 pm
Thursday, 17 April 2014		9-5 pm
Tuesday, 22 April 2014	Module 3	9-5 pm
Thursday, 24 April 2014		9-5 pm
Tuesday, 29 April 2014		9-5 pm
Friday, 2 May 2014	Module 4	9-5 pm

May 2014		
Date	Module	Time
Wednesday, 7 May 2014	Module 1	9-5 pm
Friday, 9 May 2014	Module 1 & 2	9-5 pm
Wednesday, 14 May 2014	Module 2	9-5 pm
Friday, 16 May 2014		9-5 pm
Tuesday, 20 May 2014	Module 3	9-5 pm
Thursday, 22 May 2014		9-5 pm
Tuesday, 27 May 2014		9-5 pm
Wednesday, 28 May 2014	Module 4	9-5 pm

## CPP (Food)

April 2014		
Date	Module	Time
Tuesday, 8 April 2014	Module 1	9-5 pm
Thursday, 10 April 2014	Module 1 & 2	9-5 pm
Tuesday, 15 April 2014	Module 2	9-5 pm
Wednesday, 16 April 2014		9-5 pm
Tuesday, 22 April 2014	Module 3	9-5 pm
Friday, 25 April 2014		9-5 pm
Tuesday, 29 April 2014		9-5 pm
Friday, 2 May 2014	Module 4	9-5 pm

May 2014		
Date	Module	Time
Wednesday, 7 May 2014	Module 1	9-5 pm
Friday, 9 May 2014	Module 1 & 2	9-5 pm
Wednesday, 14 May 2014	Module 2	9-5 pm
Thursday, 15 May 2014		9-5 pm
Tuesday, 20 May 2014	Module 3	9-5 pm
Friday, 23 May 2014		9-5 pm
Tuesday, 27 May 2014		9-5 pm
Wednesday, 28 May 2014	Module 4	9-5 pm

## Core Faculty Members

### **MR. LAM CHUN SEE**

**B. ENG IN INDUSTRIAL & SYSTEMS ENGINEERING (UNIVERSITY OF SINGAPORE)**

Chun see manages his own consultancy practice, Hoshin Consulting and is also an associate consultant/trainer to the PSB Corporation and Singapore Productivity Association. Prior to running his own practice, he has had years of experience as an industrial engineer with Philips, and trainer and consultant with the then National Productivity Board, APG Consulting and Teian Consulting. He was conferred the Triple-A Award in 1989 for helping to transfer Japanese know-how, particularly in the area of 5S, into local programmes and packages. Throughout his years of consultancy experience, Chun See has assisted many businesses in analyzing their productivity and quality objectives and performance; primarily through the application of the PDCA technique and basic QC tools.

### **MR. LEE KOK SEONG**

**M.SC. IN CHEMICAL ENGINEERING (IMPERIAL COLLEGE, LONDON UNIVERSITY), B.SC. IN CHEMICAL ENGINEERING (NATIONAL TAIWAN UNIVERSITY)**

Kok Seong has accumulated vast experience in the areas of productivity training and management consultancy throughout his 30 years of experience with the Standards, Productivity and Innovation Board (SPRING). He has provided consultancy assistance and training for numerous organisations both within and outside of Singapore in the areas of Productivity Management, Operation and Production Management, total Quality Management, Total Productive Maintenance, Shopfloor Management, Occupational Safety Management, Industrial Engineering Applications and Supervisory Management. He has also been greatly involved in the pinnacle Singapore Quality Award (SQA) initiative since its inception in 1993. His track records include the assessments and site visits of award recipients like Micron Semiconductor (formerly Texas Instruments), Motorola, Baxter Healthcare, Philips Tuner Factory and Teck Wah Industrial Corporation Ltd. Mr. Lee is currently a certified SQA Senior Assessor, as well as a resource person for Basic and

Advanced Training Courses for Productivity Practitioners, a position he has taken on since 2007.

### **MR. LOW CHOO TUCK**

**M.SC. IN INDUSTRIAL ADMINISTRATION (UNIVERSITY OF ASTON, UK); B.SC. IN PHYSICS (NUS); DIP IN QUALITY CONTROL INSTRUCTORS (INTERNATIONAL QUALITY CENTRE, NETHERLANDS); CERTIFICATE IN PRODUCTIVITY DEVELOPMENT (JAPAN PRODUCTIVITY CENTRE); CERTIFICATE IN ADVANCED MANAGEMENT DEVELOPMENT (INSEASD)**

Choo Tuck currently provides training and advisory services in productivity and quality management to businesses and government in the Asean region and Middle East. He was previously the Executive Director of the Restaurant Association of Singapore as well as the Singapore Productivity Association, and was also the Director for Strategic Planning in SPRING Singapore. During his many years of service with SPRING Singapore, he gained wide experience in productivity training, management consultancy and productivity promotion, and has helped more than a 100 businesses in improving productivity, quality control and business excellence, including organisations such as Cycle & Carriage, Motorola, PUB and DBS. On top of that, he has also served as an Asian Productivity Organisation (APO) expert on Productivity for several APO member countries, and was part of a team of experts engaged by the Singapore cooperation Enterprise to provide productivity expertise to the Government of Bahrain in 2007 and 2008.

### **MR. QUEK AIK TENG**

**B.ENG (HON.) IN MECHANICAL ENGINEERING (UNIVERSITY OF SHEFFIELD); DIP. IN BUSINESS EFFICIENCY (INDUSTRIAL ENGINEERING\_ (PSB-ACADEMY); CERTIFIED MANAGEMENT CONSULTANT (CMC); PRACTISING MANAGEMENT CONSULTANT (PMC); MEMBER, INSTITUTE OF MANAGEMENT CONSULTANTS (IMC) SINGAPORE**

Aik Teng currently manages his own consultancy, AT Consulting Services. One of his most recent projects includes being the LEAD Project Manager for the Singapore Logistics Association. Prior to running his own consultancy, he has been with SPRING Singapore for 20 years, and was the Head of the Organisation Excellence Department from 2004-05. He was also

SQA Lead Assessor and Team Leader up till 2008 and has been involved in the SQA initiative since its inception in 1993. tasked to start up the consultancy unit within the then Productivity & Standards Board (PSB) to provide training and consultancy services to organisations, his consulting team assisted close to 30 organisations during that period. He was also involved in a project coordinated by the Singapore Cooperation Enterprise (SCE) to assist the Bahrain Labour Fund in their Labour Reform strategy, which included helping the Bahrain government to initiate a Productivity Movement as well as develop the productivity of the local enterprises. In addition, he was appointed as Project Manager to assist the Government of Botswana to implement a national Productivity Movement, from 1994 to 2003. Botswana is currently held as a model of Productivity in the Pan-Africa region.

## **MR. WONG KAI HONG**

### **MBA IN STRATEGIC MARKETING (HULL), BSC (NUS)**

Kai Hong is a business consultant, management trainer and company director. He has spent almost 2 decades in the consumer products industry, having worked with retailers like Isetan, Metro, Royal Sporting House, The Athlete's Foot and Sunglass Hut; brands like Reebok and Doc Martens; and technology group Wearnes Technology. He has been involved with various functions including operations, business development, project management, human resource, training, marketing, logistics, budgeting and general management. He has developed businesses in Singapore and many Asian cities such as Seoul and Beijing.

***For registration or more information, write to us at***

***[CPP@spa.org.sg](mailto:CPP@spa.org.sg)***

***Alternatively, you could also contact our secretariat:***

***Ms. Angela Poh***

***DID: 6375 0938***