

Lean Six Sigma Institute



Continuous Improvement

Train your Management to create more robust and more efficient Processes



Welcome to the Lean Six Sigma Institute

In a world of continuous change, what can we do to make our key processes more efficient? How can we regularly improve performance and protect market share?

Lou Giuliano, President of ITT industries, an American multinational of 45,000 people, asked himself these same questions in 2001 when his share price, at \$25, was at its lowest. He claims that thanks exclusively to *his* Lean Six Sigma programme, ITT Industries re-launched its four business divisions, and within three years, the company registered \$435 million in improved profits and, within five years, the share price grew fivefold.

Lean Six Sigma deployment is the only truly effective method today that offers fast, corporate-wide improvement to make *large* corporations stronger and more efficient. It's the synergy of two powerful methods of process improvement (Lean Manufacturing and Six Sigma,) both developed by world-class corporations.

Lean Manufacturing, invented by the Japanese, Toyota company, offers techniques to reduce cycle times to make processes faster.

Six Sigma, progressively developed in the United States by Motorola, AlliedSignal and General Electric, offers a way to target process variation and to reduce out-of-specification waste.

Since 1998, our "Master-Black-Belt" consultants have trained and coached thousands of employees to apply the Lean Six Sigma "toolset" to drive continuous improvement in their organisations, careful to ensure permanent transfer of their knowledge to our clients' workforces to avoid repeated, long-term reliance on external consultants.

Our Master Black Belts are men and women who enrich the theory in our training programmes with their own wide operational experience, helping organisations in all sectors: industrial; service; public, and others, to become lighter, faster and more competitive.

We're here to help; please contact us.

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General Manager

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Why choose the Lean Six Sigma Institute?

Lean Six Sigma Institute consultancy and training offers the synergy of the two foremost methods of process improvement, Six Sigma and Lean Manufacturing.

Our "Master-Black-Belt" trainers are men and women who have worked and succeeded in all types of industry; in the financial community; in pharmaceuticals; in the public sector; in healthcare and in business services. All are passionate about the effectiveness of Lean Six Sigma, and in a way have become "missionaries" of the method. Throughout their careers, these Master-Black-Belt trainers have been forged by resolving countless process problems and difficulties enriching the training they deliver.

They are not just teachers; they are also researchers, continually on the lookout for new process-improvement tools. The Lean Six Sigma Institute organises internal seminars to encourage exchange between its Master-Black-Belt consultants bringing together input from recent specialist publications, learning from business and engineering schools, from other practitioners and from universities with which the Institute co-operates.

Lean Six Sigma Institute training material is constantly evolving, recently including, for example, modules on complexity and on TRIZ. The training programme provides cutting-edge knowledge, and our techniques respect the learning patterns of new generations of managers. The programmes show the same level of excellence in all languages: internal quality control ensures that they are delivered worldwide with the same exceptional content, the same level of professionalism and the same quality of communication.

Developed, enriched and perfected through work conducted in Europe, in the United States, in the Middle East and in China, the Lean Six Sigma Institute's training methods provide the key change tools that drive organisations towards better performance and success.





Step-by-step Teaching

The Lean Six Sigma Institute course is built on successive knowledge steps ranging from "Yellow Belt" to "Black Belt" level. Each successful trainee is awarded a professional certificate; he or she can then improve his or her knowledge of complex areas with further training, and can even, if wished, become a "Master Black Belt." Those who are more interested in the operational challenge of getting change can train as "Champions."

We coach trainees during their certification projects to help them rapidly get experience and gain confidence in the tools; they will later manage projects alone or with a minimum of support. We supply trainee coaching as long as it is needed for the candidate to strengthen his or her team-project-management skills and to ensure quick results for the organisation. Lean Six Sigma Institute Master-Black-Belt consultants coach and support trainees through all types of improvement projects, carefully tailoring support to the needs of each candidate.

We assign a coach to all trainees to Green Belt or to Black Belt level; he or she ensures their progress and success throughout the programme, and remains available to help and to advise on future projects.

Lean Six Sigma Institute certificates are recognised worldwide; they attest to the candidates' professional competence as competent change agents; our Black Belts enter a global brotherhood who share knowledge and network internationally with each other throughout their career.



A certificate is awarded to the successful candidate



Six Sigma: reducing Variation

Motorola Corporation management believes that process variation is the key generator of wasted materials and resources, and they developed Six Sigma, an efficient continuous improvement method to eliminate it; they argue that each of the hundreds of individual components in their products would need to have less than 3.4 defects per million for any particular manufactured product to have an acceptable reject significantly less than 1%. The method is deployed by Six Sigma "Black Belts," a name given to its change agents by Motorola in the mid 1980s .

Six Sigma "DMAIC" uses five successive problem-solving steps called:

1. **Definition** of the process problem;
2. **Measurement** of the key process variables;
3. **Analysis** of collected process data;
4. **Improvement** using team based problem-solving;
5. **Control** by procedures to lock in long-term success of the improvement.

The Six Sigma method is fully supported by a "tool set" covering a wide range of techniques, spreading from team management to the correct use of statistics. The tools are structured to make them easily applied by the project team.

Six Sigma continuous improvement applies to all organisational processes, whether industrial or service based, and is designed over the long term to rely on the strength of the workforce and *not* on the skills of external Master-Black-Belt consultants.

Before any major deployment, we train the General Management team to understand how the method is deployed: this team identifies an annual programme of Lean-Six-Sigma improvement projects to translate its vision into effective action. Project management is the responsibility of supervisory management, which we train to interact directly with the Six Sigma project teams.

The key condition for success

General Management support is the key driver in successful Lean-Six-Sigma deployment; lack of General Management support is the most quoted reason in 80% of failures. Getting corporate-wide change is impossible without powerful top-down guidance. General Management must communicate the need for change and the sense of urgency during the first stages of deployment; it must show resolve, and be prepared to closely manage the method for a minimum of three years; thereafter, a change culture generally kicks in with little further need for close General Management attention.





Six Sigma Certification

Six Sigma change agents are certified to three skill levels of managing project teams to deliver significant results:

1. At the highest level, Black Belts are typically middle managers educated to university level, who manage process-improvement projects full time for three years following their training programme. They are trained to act at *all* levels in the organisation and generate, depending on context, between €500,000 and €1 million of annual gains.
2. Next come the Green Belts: they are typically of university or technician level and are trained to work projects part-time within their own areas of responsibility; they are valuable members of Black-Belt project teams, and typically generate annual gains of between €75,000 and €150,000.
3. Finally, come the Yellow Belts: all employees can benefit from this non specialist level of training, giving them understanding of Lean Six Sigma and preparing the trainees to participate in most continuous improvement teams.

Great care is taken in choosing Black Belts; it is best to put corporate change in the hands of gifted employees who are likely to become future leaders.

Lean Six Sigma deployment calls upon other very important players too:

1. *Champions* are the "guardians of the method," who take responsibility for diagnostics to identify improvement opportunities; they are often functional superiors of the Black-Belt team, and ensure smooth communications between the hierarchy and Lean-Six-Sigma progress teams.
2. *Sponsors* are "problem owners:" members of senior management, they help Lean-Six-Sigma project teams to resolve operational difficulties and problems throughout the organisation while they are working on the project.
3. *Master Black Belts* are the change agents in the workforce whom we train to replace external Master-Black-Belt consultants from the Lean Six Sigma Institute: they train and coach the future waves of Green Belts and Black Belts, and are the foundation to making the organisation autonomous in long-term deployment of Lean Six Sigma .





Lean (Toyota Production System:) reducing time and waste

During the tough years of post-war Japan, Toyota leaders rejected the Frederick Taylor's principles of Scientific Management and designed production lines to reduce wasted time and resources: the "Toyota Production System" (TPS) was the outcome. TPS process-improvement techniques are radically different from those chosen by Motorola for Six Sigma.

The search for continuous flow

The key progress idea of TPS is "*continuous flow*:" it implies that work units moving through a process should never stop; this avoids creation of *static* work in process, raw-materials and finished-goods inventory. The "father" of the method, Taiichi Ohno, outraged at the level of stocks found in post-war, US automobile factories, drew stocks on his "Value-Stream Maps" as *tombstones* to signify "dead" cash! He launched the idea of making only what the customer wants, in the quantity required and only when he needs it.

Management at Toyota leads a relentless war on waste, requiring operations to maintain continuous flow in an environment without the "safety" of work in process to fall back on.

Certain very successful automotive corporations have used TPS techniques to rotate their entire corporate inventory every 90 minutes, far from the 200 days of inventory rotation common in some high margin process industries!

Making errors impossible to commit

Reducing inventory and work in process to get continuous flow needs a lot of thought to be given to avoiding displeasing customers through outages; as a result, operating managers use special techniques to create a mistake-proof environment; Toyota's mistake-proofing, called "*Poka-Yoke*," is associated with stable production using "*Heijunka*," and with carefully standardised tasks using "*Jidoka*" to limit variation.





Toyota Production System and Lean: reducing time and waste

Training is a key enabler in the TPS learning organisation; Toyota expects all its professionals to have detailed work knowledge and a keen sense of duty. Training is given by "Sensei," a corps of experienced, older executives responsible for transferring corporate knowledge, values and methods to new employees.

A keen sense of duty

TPS is as much based on the quality of human behaviour as on pure task management: both management and employees are expected to unite in a common obsession to destroy waste.

In essence the TPS culture revolves around:

- ◆ employee empowerment in the Value Stream;
- ◆ individual performance of duty within the Japanese context;
- ◆ individual craftsmanship;
- ◆ involvement and presence of senior hierarchy at all levels within the operations;
- ◆ application by senior management of continuous pressure on operational efficiency.

Owing to its cultural and human dimensions, this approach can be long and complex to implement, and the Toyota Production System has been adapted to Western cultures under the different name of "Lean Manufacturing."





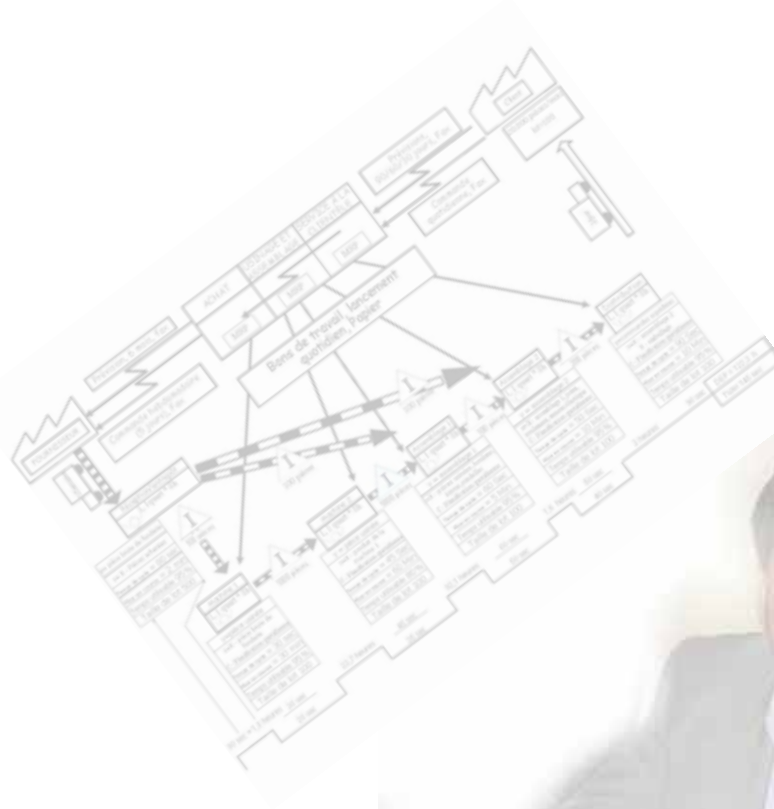
Lean Six Sigma: the synergy of both methods

Lean Six Sigma brings together Lean Manufacturing, which focuses on reducing cycle time and waste, with Six Sigma, which focuses on reducing process variation.

Whereas Lean Manufacturing looks at the Value Stream as a whole to identify, for example, process bottlenecks, Six Sigma focuses more on individual process performance. The advantage of Six Sigma lies in the pragmatism and effectiveness of DMAIC team-based problem solving and in its "sprinter" mentality. Most organisations find it to be the model of choice to launch a continuous improvement initiative; Six Sigma change management is dynamic, easily digested and free of major cultural constraints.

The key to the success of TPS, which is older and more complex, lies in its intolerance of waste and in its individual and collective behavioural model: TPS is more akin to a marathon than to a sprint, and it exhibits cultural difficulties for the non-Japanese. *Lean Manufacturing* has been developed to apply TPS to Western cultures.

Lean Six Sigma brings together the advantages of both approaches, while removing the cultural difficulties of the Japanese method. It drives change by applying both the process approach of Six Sigma and the Value-Chain approach of TPS; it offers all the methodology which has led to Toyota's past success, providing a far more complete toolset than Six Sigma on its own.





Training and Certification of Black Belts



Introduction

The Black Belt receives the highest level of training in Six Sigma and in Lean Manufacturing, and becomes the major vector of process transformation in his or her organisation. Black Belts are trained to use problem-solving tools and to lead improvement-project teams at all levels within the company including at General Management level: as such, they are autonomous in all aspects of the method. An organisation choosing to deploy Lean Six Sigma trains about 1% of its total workforce to be full-time Black Belts.

Who is this Training for?

Black Belts typically “fast track” through the organisation and are recognised for their exceptional operational competence. They are often earmarked for significant future responsibility. After certification, they typically spend 3 years full time leading corporate improvement-project teams.

Skills of the Certified Black Belt

Their mastery of the method and leadership style, fully qualify them to resolve key operational challenges to the business with their problem-solving teams. The approach and tools learned during Black Belt training stay with them throughout their career.

Content and Organisation of Training

The Black Belt is trained in:-

- ◆ the organisational diagnostic process;
- ◆ prioritisation of improvement-project opportunities;
- ◆ team leadership, team dynamics and coaching of others to certification level;
- ◆ the DMAIC problem-solving method and continuous improvement project management;
- ◆ the complete Six Sigma tool set, including Design of Experiments;
- ◆ the complete Lean Manufacturing tool set.

The course lasts 20 days divided into four blocks of five days; each of the four blocks is separated by five weeks during which the Black Belt works full-time on his or her first certification project; it is recommended that Black Belt training be held residentially.

Certification

The employee who has:-

- ◆ completed the course and successfully passed the final exam with a mark of at least 80%;
- ◆ successfully completed two process-improvement certification projects where he or she has led a team applying Lean Six Sigma methodology;
- ◆ coached at least three Green Belts to certification level,

is awarded the Lean-Six-Sigma Black-Belt certificate issued by the Lean Six Sigma Institute and co-signed by the CEO of the Black Belt's organisation.

Certification Project

Correct project selection is essential to successful Lean Six Sigma deployment. Only improvement projects for existing processes are adapted to the methodology; Lean Six Sigma is made to solve problems; it cannot be used to lead strategic projects or just to implement decisions: this is why Master-Black-Belt trainers are required to validate project proposals and to confirm correct project scoping and formulation.

Coaching

If the client wishes, qualified Lean Six Sigma Institute instructors can coach trainees through their certification projects.



Training and Certification of Green Belts

Introduction

The Green Belt receives the second level of training in Six Sigma and Lean Manufacturing techniques: he or she is trained to lead Lean Six Sigma project teams and Kaizen Events within the area of his or her direct responsibility. Green Belts are competent, continuous improvement team members and effective contributors to complex Black-Belt led projects. Typically 15% of the workforce is trained to Green Belt level in a full deployment.

Who is this Training for ?

Green Belts are typically middle management employees trained to lead process improvement teams themselves and in their own field.

Skills of the Certified Green Belt

The Green Belt's knowledge of Lean Six Sigma, his mastery of analytical techniques and his training in project management, make him the member of choice of all process-improvement project teams within the organisation.

Content and Organisation of Training

We train the Green Belt in:-

- ◆ DMAIC problem-solving;
- ◆ leadership of most Lean Six Sigma improvement projects, and of Kaizen Events;
- ◆ the most common Six Sigma and Lean Manufacturing techniques.

Training lasts 10 days and can be held residentially: it is split into two blocks of 5 days separated by a period of 5 weeks, during which the Green Belt works part-time on his or her first certification project.

Certification

The employee who:-

- ◆ fully completes the Green Belt course and passes the final exam with a minimum mark of 80%;
- ◆ completes a selected process-improvement certification project applying the method;

is awarded the Lean Six Sigma Green Belt certificate issued by the Lean Six Sigma Institute and co-signed by his CEO.

Certification Project

Correct project selection is essential to successful Lean Six Sigma deployment. Only improvement projects for existing processes are adapted to the methodology: Lean Six Sigma is made to solve problems; it cannot be used to lead strategic projects or just to implement decisions: this is why Master-Black-Belt trainers are required to validate project proposals and to confirm correct project scoping and formulation.

Coaching

If the client wishes, qualified Lean Six Sigma Institute instructors can coach trainees through their certification projects.



Training and Certification of the Yellow Belt and of the Lean-Kaizen Leader

Introduction

Yellow Belts are trained at the foundation level of Lean Six Sigma to become informed and competent members of Green-Belt continuous improvement teams.

Who is the Training for?

Training meets the needs of all employees who want to understand Lean Six Sigma and wish to assist in change projects within his or her departmental area.

Skills of the Certified Yellow Belt

Their understanding of the approach and of the way in which Lean Six Sigma projects are conducted, prepares them to participate in the organisational continuous process improvement initiative within their departments.

Content and Organisation of Training

The Yellow Belt is trained to understand:-

- ◆ the DMAIC approach;
- ◆ Lean Six Sigma as a continuous improvement method;
- ◆ the principles of process variation and of the role of Lean in reducing waste.

The course lasts three days and can be organised residentially.

Introduction

The *Lean Kaizen Leader* is specially trained to apply simple Lean methods using Kaizen Events, a fast, team approach used in TPS: it ensures fast gains due to full-time teamwork typically during 3 to 5 days.

Who is the Training for?

Any employee or manager wishing to use Lean to make very fast simple improvements within his or her area.

Skills of the Certified Lean Kaizen Leader

Combined training in Lean and in Kaizen methods prepare him or her to repeatedly lead rapid improvement projects within his or her functional area.

Content and Organisation of Training

The Lean Kaizen Leader is trained to:-

- ◆ understand the simpler techniques of Lean Manufacturing.
- ◆ implement the Kaizen-Event method while managing the stressful environment it creates;

The training course lasts five days and can be run residentially; thereafter the trainees participate in at least one Kaizen Event run by the Master-Black-Belt trainer before getting their certificates.





The Training of Champions

Introduction

Champions deploy Lean Six Sigma within the subsidiaries, divisions and departments of their organisation: "guardians" of the method, they act as a hub between the hierarchy and the community of Black Belts, Green Belts and their teams. They assist operational management to diagnose and to identify process-improvements opportunities, to scope projects and to prioritise them in preparation for their inclusion in the annual Operating Plan. With the community of Master Black Belts, Champions help to identify and to promote future generations of Black Belts.

Who is this Training for?

Champions are typically senior middle managers who are equipped to perform business diagnostics, and are able to intervene at all levels in the organisation to protect and to promote the change initiative. They are often called on to serve in the CEO's Lean Six Sigma Deployment Team.

Skills of the Champion

The Champion must have a reasonable knowledge of Lean Six Sigma; normally trained at least to Green Belt level, ideally he or she would be a certified Black Belt. As a professional, he or she would have good business knowledge and be a first-class communicator able to resolve challenges that the project teams cannot resolve themselves; a Champion with good contacts at all levels of the hierarchy is a powerful asset for his or her business unit or division.

Content and Organisation of Training

Champions are trained in:-

- ◆ leadership and coaching;
- ◆ business and process diagnostics;
- ◆ operational and financial analysis of continuous improvement projects;
- ◆ project prioritisation;
- ◆ project definition, including scoping and resourcing;
- ◆ project management, gate reviews and reporting using project trackers.

For champions already certified to at least Green Belt level, the training course lasts for three days and can be organised residentially.





Training and Certification of Master Black Belts

Introduction

The Master Black Belt is a recognised expert in Lean Six Sigma: he or she knows and has practised all of the tools, and, within the organisation or independently, has chosen to specialise in Lean-Six-Sigma consulting and Black-Belt training; he or she is invariably enthusiastic about the method, and often looks upon himself or herself as a "missionary." If he or she is an employee of the organisation, then his or her key objective is to replace external Master Black Belts as quickly as possible.

Who is this Training for?

The trainee must already be an experienced Black Belt showing a distinct talent for training and coaching others, excellent knowledge of the tools and overwhelming enthusiasm for the method.

Skills of the Master Black Belt

In addition to a taste for the technical content of the tools, the Master Black Belt shows great teaching qualities and communication skills. The candidate would have coached numerous Green Belts and Black Belts and have shown success in leading project teams in the past and getting results for his or her organisation. He or she would have kept up to date by attending specialist training seminars and would have a minimum of two years of full-time Black Belt experience.

Content and Organisation of Training

The Master Black Belt is thoroughly trained in:-

- ◆ the psychodynamics of adult vocational learning in classroom environments;
- ◆ the more complex and powerful techniques of Lean Six Sigma;
- ◆ identification, management and communication of Best Practices and maintenance of Best-Practice databases;
- ◆ business diagnostics, financial analysis of continuous improvement projects and project prioritisation.

The Master Black Belt training course lasts five days and can be organised residually. Before certification, the candidate is invited to present training modules in class conditions to the examiners and to present a record of successfully coaching Green Belts and Black Belts to certification level.





Training of Sponsors

Introduction

Usually, a member of the operational management team and the "owner" of the malfunction that the Lean-Six-Sigma team has been appointed to resolve, the Sponsor would have first worked with the Champion to diagnose, prioritise, define and scope projects in his or her area. The Sponsor represents the organisation for the purposes of the Lean-Six-Sigma team, and helps it to eliminate bottlenecks and to manage resistance: as the Lean-Six-Sigma team's client, the Sponsor manages team respect of milestones using project Gate Reviews and assumes, in this way, major responsibility, not just towards the team, but also towards the whole organisation for the team's progress.

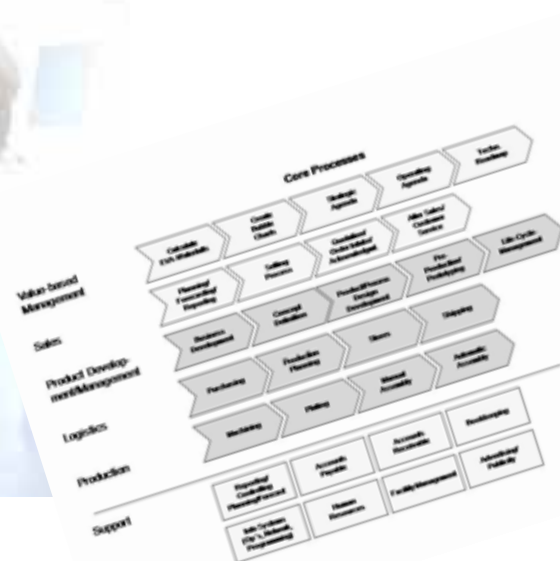
Who is this Training for?

Sponsors are typically executives or senior management, who "own" the operational problems: they are the ones who take the decisions to employ Lean-Six-Sigma teams to solve business malfunctions within the departments they manage.

Content and Organisation of Training

The course lasts three days and covers the following main themes:-

- ◆ understanding process complexity, variation and capability;
- ◆ identifying opportunity and leverage in business processes;
- ◆ understanding process cycle times, continuous flow and value-stream stability;
- ◆ understanding business waste;
- ◆ recognising and scoping Lean Six Sigma projects;
- ◆ the DMAIC problem-resolution approach and the principal tools applied;
- ◆ managing Lean Six Sigma project teams using gate reviews.





Training of General Management

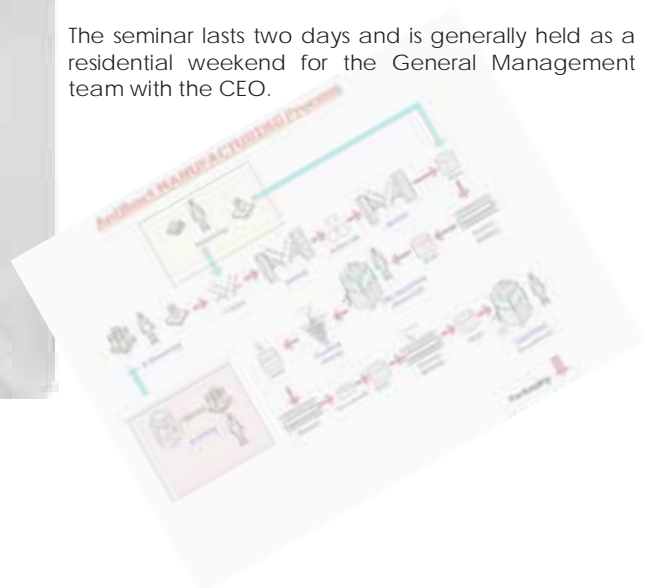
Lean Six Sigma deployment can't succeed without General Management determination, in fact, personal CEO commitment is mentioned in 78% of successful deployments: corporate officers must motivate the workforce around the sense of urgency and get commitment to their vision of change.

Four reasons commonly cause Lean Six Sigma deployments to fail, and *all of them concern senior management conduct*.

1. The first reason, cited in 87% of failures, is the failure to blend lean Six Sigma into "business as usual:" although General Management may buy into the vision, if it fails to manage its Lean-Six-Sigma project programme using annual corporate Operations Plans and procedures, it will fail.
2. The second reason given in 79% of failures results from lack of workforce buy-in to the need for change: this happens when General Management has failed to communicate the reason for change and its urgency.
3. The third reason is the impression within the workforce of a lack of commitment of key members of the CEO's team to Lean Six Sigma during the critical early stages of deployment.
4. The fourth reason is allowing the opposition to win; resistance is always very strong when deploying change: 80% of employees perceive it as a threat and not as an opportunity: management must identify the poles of resistance and convince these actors that they endanger the future, and possibly, the survival, of the organisation.

General Management training tests the top team's motivation; ensures a common vision; develops a shared sense of urgency; gets agreement on a common message; helps to identify and to remove poles of resistance, and to plan communications designed to arouse workforce enthusiasm.

The seminar lasts two days and is generally held as a residential weekend for the General Management team with the CEO.





Lean Six Sigma Best-Practice Seminars

Who is the Training for?

Best-Practice seminars for certified Black Belts and Green Belts provide tips and solutions from the world-class corporations to meet complexity and to counter operational challenges. The seminars can be conducted internally, or externally between trainees from various backgrounds and enterprises.

Typical topics are:-

Improving Prices and Margins

Buyers reduce purchase costs carefully analysing unit prices and volumes, manipulating credit terms and using consignment stocks, etc. to achieve cost objectives. Marketing organisations do not always benefit from using these same techniques to protect and to improve their pricing and operating margins: business-portfolio pricing and unit margin analysis identifies pricing leverage opportunities: Lean Six Sigma methods supply powerful tools to achieve this.

Reducing Direct Costs

Product functional analysis, the underlying technique of Value Analysis, forces the organisation to thoroughly evaluate its offering to ensure that product cost perfectly meets prices customers are willing to pay for the functions and features they perceive: Lean Six Sigma provides the Voice-of-Customer and Value-Added methodology to achieve this.

Inventory Reduction

Few organisations prefer stock to cash: Cash Flow finances materials, Work in Process and Finished Goods, but it must turn over as fast as possible to counter debt, obsolescence, overcrowding in premises etc. Value-chain managers know how complex it is to address an overall inventory-reduction objective because it is affected by all of the operations, from forecasting and procurement, to storage, scheduling, production, logistics and marketing. Compliance with national standards is often a further source of carrying cost: the opportunities for failure to reduce inventory are many. Lean Six Sigma project-team problem solving provides the most efficient approach to bringing such complexity under control and to ensuring effective stock reduction.

Respecting Delivery Times

Timely delivery is also difficult to achieve due to the complexity of value streams: trainees are taught to apply classical Lean Manufacturing techniques, such as the search for continuous flow, the elimination of non-value-add processes and the smoothing of loading using Heijunka: here again, Lean-Six-Sigma teamwork delivers excellent results.





Lean Six Sigma Specialisation Seminars

Who is this Training for?

Specialisation seminars are designed for certified Black Belts; they strengthen knowledge and mastery of the more complex Lean-Six-Sigma tools. The seminars can be conducted internally, or externally between trainees from various backgrounds and enterprises.

Among the many themes, the following are frequently requested:

Value-Stream Mapping, Kanban and Heijunka

Complex applications of Value Stream Mapping are reviewed with common problems met using the technique; typical future-state solutions are evaluated, and detailed calculations are taught for cellular manufacture, Kanban, and mix/volume smoothing using Heijunka.

Conducting Kaizen Events

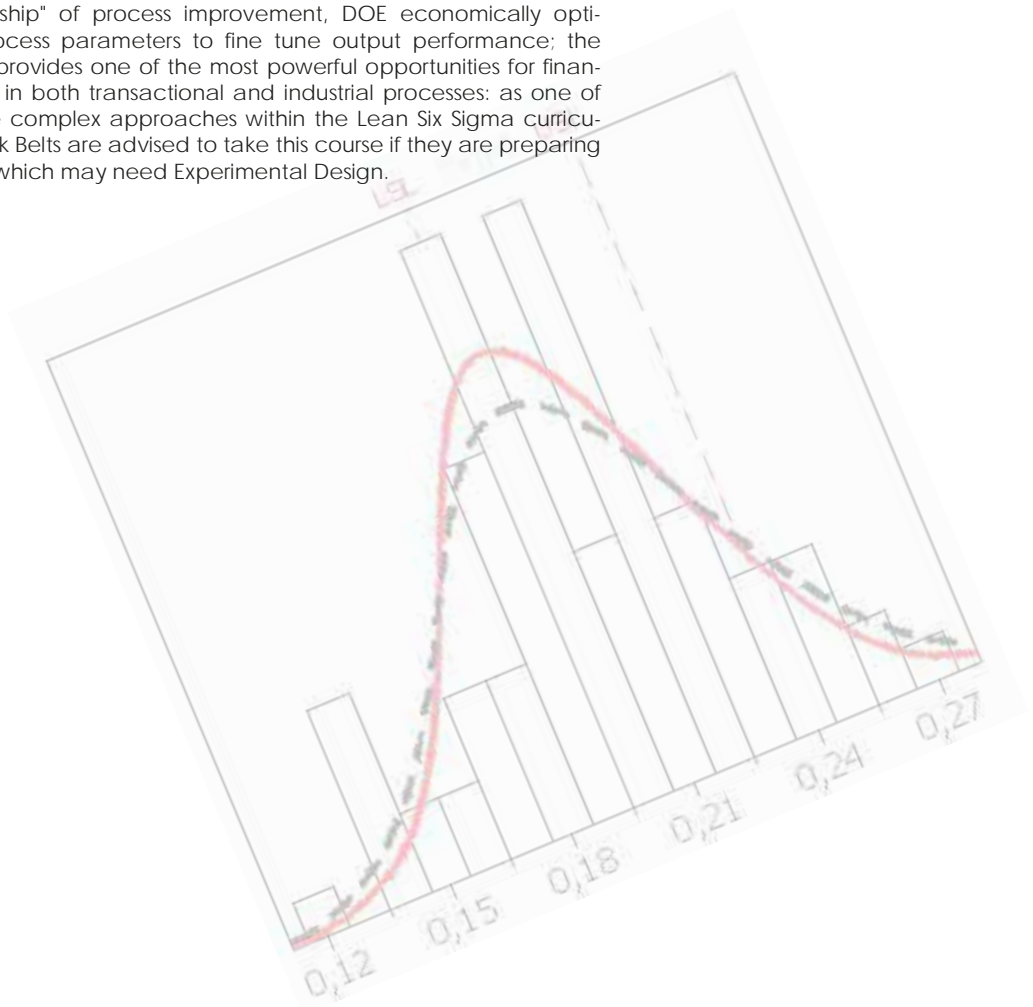
Running a full-time team for 3 to 5 days to fully evacuate a process problem is a stressful exercise needing discipline and effective teamwork. Successful Kaizen Events are the hallmark of talented Lean-Six-Sigma practitioners, and frequent, effective use of this approach accelerates grass-roots change within all organisations, from industrial production to hospital management.

Six Sigma Statistics, Capability and Measurement System Analysis

Statistics learnt during the Black Belt training weeks can be forgotten without repetition and constant practice of these tools; this module is designed to review this aspect of the curriculum in detail and to provide practice in using statistical software.

Design of Experiments (DOE)

The "flagship" of process improvement, DOE economically optimises process parameters to fine tune output performance; the method provides one of the most powerful opportunities for financial gain in both transactional and industrial processes: as one of the more complex approaches within the Lean Six Sigma curriculum, Black Belts are advised to take this course if they are preparing projects which may need Experimental Design.





DFSS: Design For Six Sigma and Development

Who is this Training for?

DFSS (Design For Six Sigma) training at the Lean Six Sigma Institute addresses the needs of certified Black Belts who already have an excellent knowledge of Lean-Six-Sigma DMAIC for *existing-process* improvement, and who need to create *new, immediately capable processes*. The seminars can be conducted internally, or externally between trainees from various backgrounds and enterprises.

Content of Training

In addition to a more detailed study of team-creativity methods, DFSS :-

- ◆ applies Lean to the design of efficient, Parallel-Engineering Development processes;
- ◆ bridges the innovation interface between Marketing's "Voice of Customer," and Production's "Voice of Process," applying "House of Quality" to translate requirements into functions and features;
- ◆ applies Design of Experiments and Capability analysis to significantly improve First-Pass Yield of new products and processes;
- ◆ applies TRIZ (Theory of Inventive Problem Solving,) a powerful technical creativity tool, to innovation; first developed by the Russian scientist Genrich Altshuller from 1946, TRIZ is based on research into over 2 million patents worldwide.





Lean Six Sigma and Health Care

Lean Six Sigma Institute

Our Institute trains hospital staff in these techniques to complete proficiency in continuous improvement and cultural change: this complex area links a unique relationship between a single patient and a variety of professional service providers: doctors; nurses; cleaning staff; laboratory staff; equipment operators; administrative staff; technical staff; psychologists; computer staff; kitchen staff; laundry staff; etc.

Our teaching consists of building blocks of knowledge from Lean Kaizen Leader or Green Belt level, to the highly skilled Black Belt; each step is certified. Trained staff become powerful change agents, who draw the maximum impact from Lean Six Sigma tools under an enthusiastic and supportive Hospital Management team. Our Master-Black-Belt trainers coach the first certification projects to ensure full understanding of the tools and immediate results for the organization. Once certified, the Lean Kaizen Leaders, Green Belts and Black Belts continue to lead improvement projects during subsequent years continuing to make ground-up progress throughout the organisation. In the hospital field for example, their projects address:

- ◆ Improving productivity to free up medical-practitioner hours;
- ◆ Reducing the cost of consumables;
- ◆ Reducing overhead;
- ◆ Improving waste handling;
- ◆ Reducing logistics costs;
- ◆ Reducing miles walked every day by nurses;
- ◆ Improving the utilisation of operating rooms and of capital equipment;
- ◆ Reducing emergency-department waiting time; at check out counters;
- ◆ Finding physical space;
- ◆ Finding bed capacity;
- ◆ Expediting patient discharge after treatment;
- ◆ Improving maintenance efficiency and responsiveness;
- ◆ Reducing treatment and care cycle times;
- ◆ Increasing patient and medical-staff safety;
- ◆ Accelerating medical testing;
- ◆ Reducing transfer time to emergency myocardial catheterization ;
- ◆ etc.





Terms and Conditions

1. Lean Six Sigma Institute's Obligations

1.1 Lean Six Sigma Institute shall provide services (the Services) relating to the training and development of client (the Client) employees and associates (the Participants) through Lean Six Sigma Institute programmes, to which a number of clients may send participants.

1.2 In supplying the Services, Lean Six Sigma Institute shall provide all stationery, programme material and visual aids.

1.3 Lean Six Sigma Institute shall not divulge, nor allow to be divulged, any confidential information relating to the business or affairs of the Client to any person without the Client's written authorisation.

1.4 Lean Six Sigma Institute shall reserve hotel rooms for the Participants, on the understanding that, in this respect, Lean Six Sigma Institute is acting as the Client's agent, and that any hotel charges or cancellation charges are the Client's responsibility.

2. The Client's Obligations

2.1 The Client by signing the Client Agreement Form agrees to the reservation of a place for the Participant(s) stated on a programme of the Services subject to these Terms and Conditions.

2.2 The Client shall pay the Fee to Lean Six Sigma Institute for the Services to be provided not less than 14 days before the starting date of the programme against Lean Six Sigma Institute's invoice. If the Client reserves a place for a participant less than 14 days before the starting date of the programme, the Client shall make payment of the Fee on presentation of Lean Six Sigma Institute's invoice. If the Client has not paid the Fee in full before the starting date of the programme, Lean Six Sigma Institute shall not allow the Client's participant(s) to attend the programme.

2.3 The Client accepts that copyright in all course material, case studies and working documents produced by Lean Six Sigma Institute in providing the Services shall remain the property of Lean Six Sigma Institute, and the Client shall not reproduce any such copyright material or pass it on to any other party without Lean Six Sigma Institute's written authorisation.

3. Substitution of Participants

3.1 If the Client requests the substitution of a participant, Lean Six Sigma Institute shall make no extra charge in respect of the new participant.

4. Transfers and Cancellations

4.1 If the Client requests in writing, at least 28 days before the start of an agreed programme, that a participant be transferred to an alternative programme of the Services which is to start less than 6 months after the starting date of the original programme, Lean Six Sigma Institute shall, where possible, comply with such a request, but shall charge the Client an administration fee of €60, which shall be payable on presentation of Lean Six Sigma Institute's invoice.

4.2 If the Client requests in writing that a participant be transferred to an alternative programme (or part of a programme) of the Services which is to start more than 6 months after the starting date of the original programme, Lean Six Sigma Institute shall treat such request as a cancellation.

4.2 Lean Six Sigma Institute shall not be obliged to agree to any request for transfers if the request is received less than 28 days before the starting date of the programme, and, in such circumstances, the full Fee shall be payable.

4.3 If the Client cancels the reservation of a participant to a programme in writing more than 28 days before the starting date of the programme, Lean Six Sigma Institute shall charge the Client 25% of the Fee.

4.4 Lean Six Sigma Institute shall not accept cancellations received less than 28 days before the starting date of the programme, and, in such circumstances, the full Fee shall be payable.

4.6 If the Client cancels the reservation of a participant to part of a programme, Lean Six Sigma Institute shall not be obliged to pro rate any reimbursements.

5. Value Added Tax

Fees and charges are quoted exclusive of Value Added Tax, but, if applicable, Value Added Tax at the applicable rate will be added to all sums invoiced.

6. Whole Agreement and Variations in Writing

6.1 Lean Six Sigma Institute and the Client accept that the Client Agreement incorporating these Standard Terms and Conditions constitutes the entire agreement between them, and neither Lean Six Sigma Institute nor the Client in entering into the Client Agreement has relied on any representation, arrangement or understanding (whether written or oral) not expressly set out or referred to in the Client Agreement.

6.2 Any variation of the Client Agreement (incorporating these Standard Terms and Conditions) must be made in writing and signed by a duly authorised representative of both Lean Six Sigma Institute and the Client.

7. Applicable Law

The Client Agreement (incorporating these Terms and Conditions) shall be subject to French Law.

8 Corporate Identity and Trademarks

The Lean Six Sigma Institute is a division of: La Rémige S.A.R.L.; capital 20.000 Euro

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"Lean Six Sigma" is a registered trademark of La Rémige S.A.R.L.

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