

Lean in France

Preface to the second French edition of *Système Lean*

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This is the preface to *Système Lean. Penser l'entreprise au plus juste* (2005), the second French edition of *Lean Thinking* (1996, 2004) by Jim Womack and Dan Jones.
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'Shoichiro Toyoda, in the name of the Republic of France, I hereby declare you Commander in the National Order of the Legion of Honour'. With these words, pronounced during an official trip to Japan in 1998, French President Jacques Chirac bestowed one of his country's greatest honours on the CEO of Toyota Corporation, thus officially recognizing the Japanese firm's contribution to industrial progress in the world in general and France in particular. Toyota, the second largest car manufacturer world wide, created the 'lean' industrial system, otherwise known as the Toyota Production System (TPS), perfected over the past fifty years and considered to be a breakthrough in corporate management. How can Toyota's success be explained? On which methods, tools and values is it based? For the past quarter century Jim Womack and Dan Jones have been contributing towards the study of TPS. In *Lean Thinking* they share their discoveries so that other firms may also benefit from this achievement.

First published in 1996, *Lean Thinking* is still the most important management book of the last ten years. With hindsight, there is no doubt that running an industrial firm in Western Europe calls for the implementation of lean, in development, management and production. Lean is the only way of offsetting high Western European labour costs with productivity and quality gains. It furthermore enables firms to take advantage of the high quality training of European – and French – manpower, by translating this expertise into on-going improvements in labour processes. Jim Womack and Dan Jones' book is not only the best approach to the 'lean' world, it also proposes a tried and tested action plan to efficiently implement lean in practice: *define value, identify the value stream, achieve a flow, pull production and aim for perfection*. The authors offer us more than a theoretical or general approach; they illustrate the multiple facets of lean with concrete case studies of firms of different sizes in various sectors which apply lean practices. Several guidelines do of course emerge from these examples, but a field-focused approach highlights one of the essential aspects of lean: far more than a new industrial theory, it is a practice. As Toyota's lean experts have often noted, behind each successful implementation of lean there is a manager who was able to adopt it, develop it and gradually share it with all his or her colleagues. Owing to its in-depth understanding of lean practices, and to the

quality of its descriptions and explanations, *Lean Thinking* is the first step on the reader's path to the on-going improvement and development of lean.

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During our conversations with Jim and Dan, the authors of the book, they surprised us by suggesting that it would probably be possible to write the same book with examples drawn exclusively from French companies. According to them, the lean tradition in France is as respectable as it is in the US. In both cases there have been several spectacular success stories, as well as many disappointments encountered by those who thought they could implement the lean system without in-depth changes to their corporate management approach. Since we were sceptical, and in view of our knowledge of the lean situation in France – that we are studying in the 'Lean Enterprise Project' at Télécom Paris –, we chose, with the authors, to report in this preface on a trend that has contributed to the development of lean in France.

This took us back twenty years. In the early 1980s Renault and PSA were already partners in the MIT 'future of automobile' programme run by Jim Womack and Dan Jones. As they studied workshop plans during a visit to the Renault factory at Flins, the authors wondered for the first time about the way to construct a global benchmark for car factories throughout the world. The results of this benchmark, defined in MIT's 'international automotive programme', were published in the seminal *Machine That Changed the World* in 1990 (French translation, 1994). Owing to the outstanding international success of this first book the Toyota system became known to the public at large.

The situation has of course changed since the book first came out. Most car manufacturers today have adopted the precepts of lean and have integrated them into their own systems. Initially lean seemed to be confined exclusively to this sector and it was only in 1997, during a visit to a Valeo factory in Wales, that Jim Womack

and Dan Jones saw a French firm other than a car manufacturer applying lean. They were pleasantly surprised to note that lean was treated not simply as a toolbox used to introduce small local improvements, with an anecdotal rather than financial impact, but as a full-blown corporate management system designed to transform the Group's functioning and performance. Noël Goutard, then CEO of Valeo (currently Honorary Chairman and member of the Board) and instigator of the 'Five Axes System'¹, explains:

Valeo's *Five Axes* were born in the late eighties from a growth strategy that was crucial to the Group's future. Valeo had to free itself from French manufacturers which, with a 7% market share, guaranteed it neither security, nor innovation, nor internationalization, nor superior quality references, nor volumes, nor cost price and productivity optima.

The Group had to overcome these handicaps by starting with its own in-house cultural revolution. I was familiar with the quality approach of the precursors Deming and Juran in Japanese firms in the fifties and, having worked for Thomson, with the methods (and results) of the quality policy of the Japanese electronics industry and then, at Valeo, with those of Toyota. I was also aware of the unquestionable legitimacy, if not popularity, of an unconditional quality strategy among all the employees and trade unions. I even saw it as the cement binding a group whose growth was characterized by acquisitions in Europe, the US and even Asia, which enabled it to federate different cultures. Wanting to define an approach peculiar to Valeo, based on a detailed understanding of the Toyota Production System, I worked with Aimé Jardon and then mainly with Freddy Ballé on implementing the 'Valeo Production System' in all the Group's factories.

To re-conquer market shares from supplier oligopolies, often captives of the German, US and Japanese car manufacturing industry that accounted for 90% of the world market, Valeo had to offer innovative products of exceptional quality, at dumping prices (less 20 or 30%). That was the condition if we wanted corporate managers and purchasing departments, engaged for decades with their traditional suppliers, to even listen to us.

Constant restructuring, merging and rationalizing enabled the Group to achieve spectacular cost reductions and quality improvements. It was nevertheless the Five Axes, and especially Total Quality, that were the benchmarks enabling everyone to stay on course in a Group that had become one of the leading players on the international automobile scene. The methods, practices, training, materials, workshop configuration and benchmarks were thus standardized in some 150 firms with a total of 70,000 employees, in twenty countries on three continents.

The results for 1986 to 2000 (the period that concerns me) speak for themselves. Turnover was multiplied by five, from 1,800 to 9,100 million euros. International sales jumped from 15% to 85% of the turnover. Nothing would have been possible without the total commitment to the Five Axes of the CEO and the entire corporate management, of which Freddy Ballé was the tireless driver!²

¹ The 'five axes' are: total quality, constant innovation, integration of suppliers, production system, and employee involvement.

² The passages quoted here are drawn from interviews and correspondence with the authors in the autumn of 2004. We wish to thank our interlocutors for agreeing to share this information with us.

Freddy Ballé's career is representative of the history of lean in France. Along with Xavier Karcher at Citroën and a few others, he was one of the pioneers of lean in the French car industry. In the mid-seventies Ballé, then Strategic Planning Manager at Renault, discovered Toyota's incredible efficiency. After being appointed Production Technology Manager, he set out to copy certain aspects of Toyota's production. In this undertaking he was supported by Aimé Jardon, Renault's Deputy General Manager, an admirer of Japanese industrial techniques discovered during his years in Japan. These early experiences convinced Freddy Ballé that these were more than merely production 'techniques', and that lean could be considered as a complete management system. This conviction was reinforced by subsequent experiments with the industrial management of Renault Véhicules Industriels. His meeting with Noël Goutard, who wanted to translate his view of the 'Five Axes' into operational terms for Valeo, was at the origin of the famous *Système de Production Valeo* (SPV) that has since become a reference. At the time Valeo was a supplier of Toyota, which was then setting up in Europe. From 1994 Valeo's internal efforts were supported by Toyota which wanted to develop its suppliers' productivity and quality. Owing to this direct relationship, the team responsible for implementing SPV was trained at the source, by the *sensei* of Toyota's Operations Management Consulting Division, its internal advisory body. It was the concrete application of SPV that struck Dan Jones and Jim Womack three years later during their visit to the Valeo factory in Wales; this was the first time that they saw an application of lean as a system outside Toyota. This progressive generalization of lean and its tools clearly illustrates a key point that the authors repeatedly emphasize: lean can only be learned through experience.

Valeo's experience in the 1990s marked the lean landscape in France lastingly, in three respects. First, Valeo was one of the places in France where operational experts in lean received practical training. It also became a de facto 'lean school' during this period. In the world of car parts manufacturers, characterized by a high turnover of executive staff, with changes typically every three or four years, many managers have worked for Valeo at some stage of their career and have thus been familiarized

with lean from the inside. Without always knowing how to reproduce it, these managers have often become the spokespersons for lean in their firms and have embarked on the long road of TPS. Third, after the Valeo experience, Freddy Ballé demonstrated the strength of the 'system' dimension of lean at Sommer Allibert and then Faurecia. The notion of 'system' has been widely accepted and adopted by many French industrial groups that are currently building their own 'production systems'. Some, such as the car parts manufacturer Faurecia, have gone far in their wish to transform their management methods by introducing a system of excellence, as Pierre Lévi, CEO of the Group, explains:

By the end of a very rapid growth phase in which turnover increased fivefold in five years, Faurecia had become the world's number one car parts manufacturer specialized in key components like seats, cockpit and exhaust. At that stage, in 2001, it was also a mixed group, in a highly demanding business and with tricky financial equations.

It was to meet these challenges that the management team designed the *Faurecia Excellence System* (FES) by formalizing a single corporate approach in management, sales, development and, of course, production.

The FES was based on the best practices identified, and therefore largely on the principles commonly known as 'lean manufacturing'. This was a choice that seemed self-evident to the entire management team, considering their extensive experience in the industrial world. It clearly corresponded to the actual observation of reality in the field and the actions to be undertaken.

Implementing the system is a constant, long-term effort to establish best practice on 160 sites with 60,000 employees. These practices constantly have to be identified, formalized and applied. Faurecia gradually learned to solve problems in depth and to improve its efficiency.

In terms of results, quality is regularly improving: the PPM³ are cut by half every year, safety increases by a third, stock rotation regularly improves, and productivity is speeding up considerably, as are financial results. This is obviously essential.

But the fact of creating a common frame of reference, a single vocabulary, with its measuring instruments and training tools, has also constituted the founding approach for this young firm. It has thus boosted the teams' morale, which is still the real guarantor of future progress.

Alain Prioul, current Vice-Chairman of the Faurecia Production System, worked for Valeo on its experiments and then for Sommer Allibert, before joining Faurecia. With this experience he considers that setting up a lean system enables a firm to achieve manpower productivity gains of 30% in two years, to reduce the surface used by 30 to 40% in one year and to cut inventory by 40 to 50% in two years.

³ '(Defect) Part Per Million': the number of faulty parts per million parts produced.

The relevance of lean in France's car industry no longer needs to be proved. The past few years have even witnessed an acceleration of its development. For example, after its 1999 alliance with Nissan, Renault multiplied the speed with which it diffused lean practices throughout the Group, and is currently introducing a *Système de Production Renault*. Since 2001 Toyota has been producing cars in France at its Onnaing factory and expecting its suppliers to adjust fast. On 1 December 2004 PSA and Toyota revealed the three models that they developed together in the Czech Republic, as part of a strategic partnership concluded by the two groups in 2001. Owing to this partnership with the world's number one in lean, PSA can count on the learning effect that General Motors benefited from in its partnership with NUMMI.

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In France lean has been identified with the car industry for a long time. Yet things are changing. Lean is also developing in other sectors, probably as a positive result of the growth of international trade. French firms are having more and more contact with foreign partners, customers, suppliers or shareholders who are already converts and therefore encourage them to 'go lean'. The success of lean firms and especially Toyota is obviously a decisive argument for adopting the lean system. Many industrial groups in France have embarked on the lean path, from the railway sector (Alstom) to cosmetics (L'Oréal), via chemicals (Rhodia), flooring (Tarkett) and metallurgy (Alcan). Some of them have defined their lean strategy by means of global benchmarking. This is the case of Alcan, notes Jean-Yves Labastire, former Branch Industrial Manager at Valeo, now Vice-Chairman of the *Alcan Management System*:

It was the CEO of Pechiney, Jean-Pierre Rodier, who, after successfully carrying through a drastic cost-reduction programme (the Challenge Plan) from 1995 to 1998, embarked the group on the lean path in 1998, initially in the packaging sector. The objective was clear: organize and deploy an on-going improvement approach throughout the group around five main axes: customers, products, processes, staff, and performance. The lean benchmarks used by Pechiney were the car industry (Toyota, Valeo, etc.) and the world leader in aluminium, Alcoa (and its *Alcoa Business System*). After two years of pilot applications and validation (1999-2000), the *Pechiney Continuous Improvement System* was launched in 2001 and deployed throughout the

group. It is based on a common reference, *Roadmaps*, that integrates the lean toolbox adapted to the group's activities. Since January 2004, following Alcan's buy-out of Pechiney, this approach has been extended and adapted to the group's new perimeter.

Way beyond geographical or national considerations, my personal opinion is based on an observation: all activities (industrial, commercial, service delivery, etc.) are exposed to global competition. In this context, which is not going to change in either the medium or the long term, the lean model is the most rational and successful organizational model. The basic objective of lean is still to do better with fewer resources. As Auguste Detoeuf said in 1928, '*there isn't income on the one hand and expenditures on the other; there are income and useful expenditures on the one hand and useless expenditures on the other*'.

The Rhodia example combines several of the features identified above: recognition of lean as a way of improving productivity, with the car industry as a benchmark; introduction of a system of excellence; recruitment of lean experts from the car industry. This example also reveals a crucial element: the introduction of lean is far more effective when it corresponds to an engagement by line managers, rather than being limited to the action of a group of experts involved in a cross-divisional project. Nicolas Bènière, Group Director of Manufacturing and World Class Manufacturing at Rhodia, explains:

In 1999 Rhodia launched a programme of excellence for its manufacturing activities, based on inter-sectorial benchmarking that had identified the car industry as the reference. The group then recruited ten lean experts who set about adjusting these industrial precepts to the process industry world. This core team produced the *Rhodia World Class Manufacturing* (WCM) consisting of a panel of 20 indicators, self-evaluation tools for all the processes, a toolbox (5S, SMED, TPM, MIFA, etc.) and a reporting device. The WCM was based on a striving for excellence and was managed on the 165 sites of the 23 firms and the five divisions by WCM leaders who were distinct from the operational hierarchy. A training school was created.

This first stage ended in 2001. Rhodia then moved on to a more cost-oriented logic. The system was reorganized to increase the stress the organization is submitted to. Five axes were identified: *Kaizen* (projects, labour standards, 5S, etc.), Competitiveness (value stream accounting), Variability (*jidoka*, Six Sigma, SPC, etc.), Reliability (TPM), and Flexibility (flow, pull, *takt time*, *heijunka*, etc.). An audit device – Manufacturing Excellence – was set up. For each axis, an area of expertise was identified as the key pilot, and the WCM was gradually linked to the relevant divisions. The WCM leaders were mostly merged with the operations managers. The group's 200 or so value streams were analysed and classified A, B or C, depending on their profitability, competitiveness, market appeal, suitability of the site, and their score in the Manufacturing Excellence audit. The results obtained in the field are currently remarkable on the main indicators: at group level inventory has been cut by 30% and maintenance costs by 10%, while sites have been cleaned up and safety improved (one accident with stoppage per million hours). Those investments that were substantially reduced take into account the level of excellence attained by the sites and their ABC classification, which is another factor of motivation or tension.

Apart from the 'system' aspect, a key factor of success has been the fact that the operational divisions and the managers of the lean system were merged. This was instrumental in the

appropriation of lean because it allowed the articulation of Rhodia's economic and industrial objectives with methods of organization and improvement.

Lean is furthermore particularly well suited to the current characteristics of industrial markets. Patrick Marchand at Vibro-Meter comments: *'it's a matter of survival in the medium term – not only for France but for Europe. When we can't increase prices every year but actually have to cut the selling prices of our products, the only way to still make a profit is by reducing costs substantially'*. Firms have to meet their customers' rising expectations as regards quality and reactivity. Lean enables them to be closer to the customer demand and to differentiate themselves from competitors by offering a relevant product in a short space of time. That is why lean is spreading beyond large corporations to SMEs. Today, having a flexible production tool, reducing development time and being profitable with small series are all industrial demands that lean satisfies. As Fabrice Bonneau from Parkeon notes: *'contrary to many received ideas, lean is not only suited to mass markets like cars; it is also highly effective in medium and small series (like ours), where flexibility is crucial for survival'*.

Those who have adopted lean see it as the exact opposite of a management technique. It is fieldwork that necessarily has to be carried out over time. Lean is diffused primarily by managers who have tried it, have seen the results and are aware of the required efforts. There are more and more of these practitioners and their experience spreads throughout the industrial fabric as their careers unfold. In both SMEs and large groups, examples of the introduction of lean are increasingly frequent. When Evrard Guelton joined the industrial division at Tokheim, a French firm specialized in fuel distribution systems, he launched a lean programme. Guelton explains: *'In Tubesca, the company I was with before, lean allowed us direct productivity gains of over 10% for four years and a considerable improvement in quality. At Tokheim we launched the lean programme one year ago and the results have been similar'*. Likewise, when Pierre Vareille, former Director of the Business Group at Faurecia, took over a new industrial group, Wagon Automotive, he opted for lean as his main initiative:

Taking over the management of a firm is always an exciting adventure. But it's also a test because, apart from the difficulty of learning the culture, jargon and subtleties of a new field or company, one always wonders where to start.

As far as I'm concerned, I've always thought that launching a lean manufacturing initiative was an excellent, and perhaps the best, way of answering that question. Because this type of programme imposes its urgency in all operational sectors, because it is concrete and can therefore be communicated to all employees, because the results are visible to all, lean manufacturing allows not only an undeniable competitive advantage, but also constitutes a real strategic initiative capable of federating an entire firm around a common project.

As soon as I arrived at Wagon Automotive I put the launching of the Wagon Excellence System at the top of my priority list. Today, after a few months, I can only congratulate myself. All the managers and employees see it as a way to make a new start and have rediscovered the taste for ambition and success and the way there.

Yet, as Jim Womack and Dan Jones explain, successfully implementing lean is no easy matter, neither in France nor in the US. It is not enough to entrust a 'programme' to consultants, to set productivity targets for managers and to wait for the results. Lean is an industrial discipline that can be acquired only through practice and perseverance. It is not simply a matter of 'techniques' but of a comprehensive management approach that makes it possible to keep the firm under creative tension and thus to generate maximum value by eliminating waste. For those who have applied it with success, lean is as much an attitude as a type of know-how.

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Lean encompasses all the functions of a firm, as Jim Womack and Dan Jones show. The consequences for production are well known, but lean also transforms other areas: logistics, where it requires regular supply channels; methods, by demanding flexible lines where operators' posts are optimized; development, by requiring products with more added value, faster; procurement, by making it necessary to integrate suppliers and to level stocks; human resources, by implying the development of human organization of production; back-office processes, etc. As Jim Womack says, *'in the modern world these key processes in the plant account for only a small fraction of all the processes of a firm. [...] The activity of many lean specialists throughout the*

*world is reaching further out, from the factory towards the office and service providers*⁴. Hence, *Lean Thinking* is intended not only for production managers; it is urgently recommended for everyone in business.

That is why *Lean Thinking* is a reference, to read and reread. The authors' presentation – *defining value, identifying the value stream, obtaining a flow, pulling production, and aiming for perfection* – enables the uninitiated to easily apprehend the lean 'perspective', this new approach to industrial systems, while the informed observer is given an idea of the human dimension, essential to the success of a lean initiative. The situations considered realistically depict the ups and downs of implementation; the portraits drawn attest to the profound emotional engagement required by managers who aim for financial returns on their efforts. Finally, even for the experienced practitioner, *Lean Thinking* provides keys – especially in the chapters added to this second edition – on certain aspects with which most people are less familiar, such as the management of change and the 'policy deployment' needed to successfully move on from a few positive experiments to full-blown lean management. That is why, if you haven't read *Lean Thinking* yet, you really should make it your most urgent priority. And if you read it a few years ago, it's probably time to read it again!

⁴ Letter by Jim Womack, Lean Enterprise Institute, 24 March 2004.