

Recapturing the Spirit of Lean: The Role of the Sensei in Developing Lean Leaders



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Abstract *Background:* In the late 70s and early 80s when Toyota started to develop its supplier network as well as its overseas plants in the West, European and American executives were taught the Toyota Production System and Total Quality Management in the form of visits from Toyota's own TPS experts, sometimes dubbed Sensei. Their style was highly unusual compared to that of the Western consultant. However, the results were often spectacular with unthinkable levels of quality and productivity improvement, not through data analysis and prescribed actions, nor through implementation of best practices, but through learning exercises that were designed for teaching TPS and TQM to the CEO and/or the company's executives. In most cases today, external Lean support is carried out by consultants, who typically attempt to either implement a fully developed "Operational Excellence" program or carry out a tools-based productivity analysis and suggest countermeasures in the form of a feedback report with recommendations. However, some managers still work with Sensei, where the onus is on challenging and teaching the thinking behind TPS,

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constantly looking for the next step for quality improvement, productivity improvement, lead-time reduction and cost-reduction. *Purpose*: Previously, research into Lean transformation has focused solely on the implementation of Lean as a set of best practices. In this paper we explore the workings of Sensei and the role they play in developing Lean leaders, who themselves lead the organization's Lean transformation. *Research*: We carried out several exploratory case studies in the form of interviews with executives who have worked with Sensei rather than following the classic consultancy-led best practice implementation program.

Keywords Leadership · Lean Thinking · Learning · Sensei · Consultant

1 Introduction

“You are no good” [1]. A typical statement from a so-called Lean Sensei. The first examples of the application of the Toyota Production System (TPS) outside of Japan were supported by Japanese TPS experts, many of whom had worked with Taiichi Ohno himself. Their style was completely at odds with the Western-style consultants or executive coaches, which is why they were often referred to as “Sensei”. These early Sensei would take executives to the Gemba and challenge them on their willingness to learn, and on their discipline [1]. Each Sensei typically had his own starting point. However, it was not uncommon to start with quality. Not accepting bad parts is after all an essential part of TPS. Some executives saw the strategic implications of what the Sensei was trying to teach them and in the early- to mid-1980s, the West's first Lean leaders began to emerge.

The stories of the pioneering Lean companies such as Danaher, Lantech and Wiremold were not studied by academics during the time at which the success stories unfolded. However, the stories of these companies can be found in the literature in the form of books. Most famously in “Lean Thinking” [2], but also in “The Lean Turnaround” [1], “Better Thinking, Better Results” [3] and “Leading the Lean Enterprise Transformation” [4]. However, when one looks at the subject of implementing Lean in the peer-reviewed scientific literature, there is an abundance of publications in leading international journals covering critical success factors [5, 6], barriers to implementation [7, 8], what to expect from corporate Lean programs [9] the impact of Lean implementation on workers conditions [10], the impact of Lean implementation on performance [11], frameworks for implementation [12], and so forth. Although some of these studies have considered the role which external consultants play in the lean implementation, few have discussed the difference between working directly with a Sensei as opposed to the traditional (internal or external) consultancy-driven program model. Womack and Jones [2] mentioned that Chihiro Nakao, with his “special Sensei treatment”, was instrumental in ten of the companies mentioned in “Lean Thinking”. Sisson and Elshennawy [13] also found that an external Sensei to guide the development of executives was a success factor at four well-known companies (Danaher, Boeing, UTC and Autoliv). A longitudinal study of lean implementation

in a Norwegian public service department [14] show how dominant project thinking is in the consultancy/host organisation symbiose. Even when the emphasis is on the development of people within the organisation implementing lean, it is still done based on a project methodology. Furthermore, [15] discuss how, like the consultant, the Sensei has no hierarchical power. However, unlike the consultant, the Sensei will have authority through the expertise and charisma. In the eyes of executives, the Sensei is a teacher while the consultant assumes a servant role.

In this paper, we present the results of interviews with a set of executives who have worked with Sensei in different eras. From the early days of Lean in the 80s and 90s, to the diffusion era of Lean in the 2000–2010s. Most of the executives had first worked with a consultancy-led implementation program, but later changed the approach to a Sensei-supported transformation.

2 Research Method

Our research design is driven by a lack of research in the extant literature that describes the Sensei-tradition. As such, we adopt an exploratory case-study approach. We draw on findings from a set of semi-structured interviews that have been conducted with executive managers who have worked first-hand with both Sensei and traditional Western-style consultants. Interviews with a Toyota veteran and his student were also carried out. In total, 6 interviews were conducted. The Sensei-executive relationships which form the units of analysis in this study are shown in Fig. 1.

The main aim of the interviews was to uncover the subtle differences between the Sensei-supported approach versus the consultant-driven approach, as well as any similarities in the practices of the Sensei. In addition, we consider the impact that working with a Sensei has had on the thinking and practice of the executives themselves.

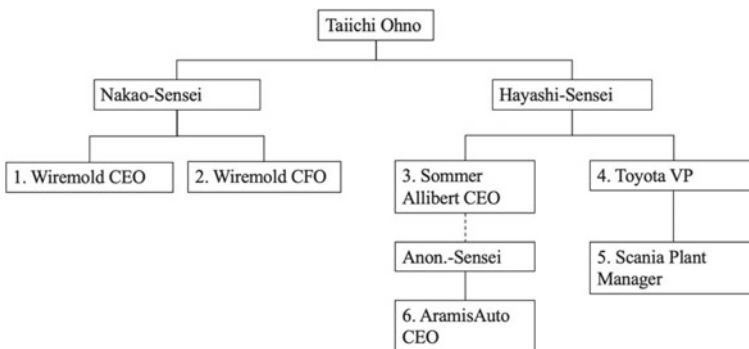


Fig. 1 Sensei lineage and interviewees/units of analysis

3 Findings

Each of the executives interviewed mentioned a common operational trait that separated the Sensei from the consultant. The consultants would often spend a lot of time gathering and analysing company data and come up with improvement suggestions in the form of feedback reports. In contrast, the Sensei would never write or present anything in report form. They all taught TPS through practical exercises. Some of them would also get actively involved in Kaizen activities, but not all of them. When they did it was to prove a point. For example, by moving a machine that had not been moved in many years in order to realize instantaneous productivity gains. The consultants that the executives had used were more concerned with data analysis and reports, or higher-level strategic thinking, completely disconnected from the specific realities on the production floor.

3.1 *Sensei Practices*

We can summarise our findings as four common practices that the Sensei would use to help the CEO and the organization better understand their own work and teach them how to solve their own problems. We suggest that the purpose of these practices is to stimulate “helicopter thinking”, helping the executives see the strategic significance of operational reality: (1) The Sensei would point to a *specific example* of something that the executives would have to explore deeper in order to better understand a core topic. (2) They trained the executives and their organisation to test hypotheses by systematically practicing *Plan-Do-Check-Act* (PDCA), often allowing the executives to fail, even though they knew beforehand that whatever they were doing was destined to fail. (3) They would *teach TPS* through practical exercises. And (4) They would always push the executives towards discovering and taking *the next step*, particularly when the executives could not see this for themselves.

3.1.1 **Specific, Practical Examples to Deeply Understand a Core Topic**

This could sometimes be quite dramatic. The executives we interviewed told the story of two Japanese men in suits and ties who were on the shop floor with pry bars moving a machine on their own. Another one told the story of when he showed the American Toyota Sensei the company’s state-of-the-art automated in-process warehouse, when the Sensei commented that it was so impressive it could easily be mistaken for something that adds value. In both of these cases, the Sensei was showing a detailed, practical example of something he wanted the executive to explore deeper.

3.1.2 Hypothesis Testing Through PDCA

The Sensei would not ask “why don’t you do this?” Instead he would ask questions that would allow the executives to clarify their current hypothesis and then test it by using the PDCA cycle. One interviewee reported that every time they were asked about what improvements they wanted to make, the Sensei would force them to identify up to seven different ideas of how they could achieve what they wanted to do.

3.1.3 Teaching TPS Through Practical Exercises

Since TPS is a complete system of production that consists of many different parts that can be both counter-intuitive and difficult to grasp, the Sensei would mostly teach the system through practical exercises. We found that the Sensei would generally start teaching straight away with no classroom presentations first, often setting what seemed like impossible targets to achieve to force people to think outside of the box. Or introducing tools such as takt-time, to make the executives think about balancing to avoid overburden.

3.1.4 Next Step Thinking

Even when the executives we spoke to had made good progress in between Sensei visits, the question was always what do you want to improve next? Who’s in the team? Where is the waste and what can we do about it? For example, we found that the Sensei would introduce what they thought their executive students were ready for and would sometimes play down what they thought was possible to achieve. When one of our informants asked what his Sensei thought was possible the Sensei answered 50% of everything. 50% cost-, lead time- and inventory reduction. However, The Sensei could already see the potential was far greater, but he thought that this was a big enough target for the executive to grasp. The executive of course thought his Sensei was crazy to suggest such massive improvement potential.

3.2 Consultancy Practices

In contrast to the Sensei approach, the executives we interviewed that had worked with consultants described the consultancy-led programs as costly and ineffective with regards to changing the way the company operated. However, the consultancies were often easily available to the executives when they were looking for external help to solve their problems. The executives described two main traits of the consultancy approach that they had experienced.

3.2.1 Report

The consultant would suggest carrying out an overall analysis of the performance of the company. A large team of consultants would come into the organisation, talk to everybody, gather heaps of data, tear it apart and write up a big report. The report would then be condensed into a PowerPoint presentation and presented in a meeting room with suggestions for improvements. The report would usually be very expensive, and it would not challenge the executives to change their own thinking.

3.2.2 Partner and Teams

The other approach reported was that of a senior partner working with a team of young consultants on one or two lines, machines or areas of the production. At first, the internal teams working on these isolated projects would be quite happy. However, there was often little progress, and any changes would often return back to its original condition after a short time. Again, several of our informants reported that the method did not change their own thinking. Instead they were putting pressure on the isolated projects to get results by setting high objectives for the teams. Regardless of whether the improvement work was carried out by external consultants or if the external consultants were supporting internal teams, any progress was usually slow and expensive.

3.3 Relationship

There also seemed to be a common type of relationship, one of mutual respect, between the Sensei and the executive based on trust of expertise, in contrast to the relationship one finds between executives and consultants, where the consultant often will be servant to the executive [15]. This special-type of relationship allows the Sensei to give direct and often controversial feedback to the executives at their own Gemba. For example, one interviewee was told to “*learn how to do your job properly,*” while another was told that “*everything was no good*”.

4 Conclusion

The “Lean Sensei” role most likely emerged when Toyota wanted to spread its management thinking and production practices to its suppliers and overseas plants [16]. Like most other practices within the company, the Sensei role was not designed. Rather, it evolved based on the practices of those who had worked with and under Ohno in production and possibly under Hasegawa in product development. Although the Toyota-style Sensei can in some instances be likened to a consultant, the findings

of this work make some very clear distinctions between the traditional Western-style consultant-led approach and the Sensei-supported approach to Lean implementation. It also points towards a specific set of practices when working with leaders:

1. The Sensei shows you a specific, practical example of something you will have to explore in depth to understand a core topic.
2. The Sensei will train you to test your hypothesis by systematically practicing the PDCA-cycle.
3. The Sensei will teach you TPS through practical exercises, allowing you to fail when necessary to better support the learning cycle.
4. The Sensei will always push you to take the next step, even if you cannot see it for yourself.

These 4 practices are possibly specific to how Japanese, American and European Sensei work in the West. Such an approach is in direct contrast to the alternative Japanese-style of “follow my orders” and the Western-style of “here are my findings, this is what you should do” consultant.

Another interesting finding which emerged from this research is how the old-time Sensei, those who had worked directly with Taiichi Ohno, would mostly discuss productivity, pushing their C-suite students to look for the causes of non-productivity, usually related to quality issues—and consider productivity improvements as human development exercises. In that sense, the Toyota Production System (TPS) enables productivity increases and cost reduction through encouraging people to learn and understand more deeply the causes of non-productivity. In the mind of the Sensei, the number one cost is a product that does not sell, and the number two cost is quality issues in manufacturing. For employees, the rationale is that cost reduction leads to more volume which means guaranteed employment. As Nampashi Hayashi puts it “*Cost Reduction is human resource development*” [17].

If we compare the approach of the Sensei to how our informants experienced their Western consultant counterparts, we found evidence of the program thinking as described by Holmemo et al. [14], before Lean was called Lean. In contrast, the Sensei teaches Lean through practical exercises, sometimes getting involved in the improvement work, sometimes pointing to deeper strategic lessons by highlighting detailed practical examples, challenging the executives to get a deeper understanding of the workings of their own companies. To quote the Toyota veteran we interviewed; “*TPS is a hard sell, it’s about getting people to take ownership in their work and then supporting them to successfully complete the work.*” On the other hand, several of our informants felt that with the Western-style consultancy-driven Lean program model it was impossible to create this type of ownership as the improvement work was not led internally, and the focus for improvement efforts was on short-term cost-cutting rather than long-term, sustainable improvements in quality and productivity. The methods of the consultancy firms our informants had worked with did not have an impact on the thinking of the executives. In contrast, the Sensei method challenged the thinking of the executives, sometimes to the point of conflict. As one of our executives put it, “*a good lean consultant has to be prepared to fire his client*”.

For practitioners, this has several implications. Firstly, the work reinforces the fact that the Lean transformation needs to be owned and led by the executive team, but it also suggests that an executive can significantly benefit from a Sensei relationship based on mutual respect and trust of expertise. The executives need to develop some practical knowledge and experience of TPS to truly understand its potential impact. And finally, the starting point should not be immediate cost reduction measures, but rather to develop a better understanding of how the company works, stimulated through teamwork and collaboration by creating a space for people to think, learn, and discover the next step.

5 Limitations and Suggestions for Further Research

As a first attempt to investigate the mysterious role of the Lean Sensei, this exploratory research has several limitations. However, given that the sample size is low, we have managed to consider Sensei-executive relationships from diverse geographical locations and industry sectors. For future research, we suggest a more in-depth, action learning research approach would provide a much more rich and robust data-set for further exploration of the Sensei-supported approach to Lean transformation.

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