

## Book Review: Toyota Kata- Managing People for Improvement and Superior Results

Ashwini Tapase<sup>1</sup>

### Introduction

Toyota Kata, authored by Mike Rother, is another seminal write-up focused on the thinking behind the lean philosophy and not how Toyota practices it in the specific domain of the automotive industry, or in Japan for that matter. This title joins previous ones such as *The Machine That Changed the World: The Story of Lean Production* (1990; James Womack, Daniel Jones, and Daniel Roos) and the *Toyota Way: 14 Management Principles from the World's Greatest Manufacturer* (2004; Jeffery Liker). Rother reveals the tools which allowed Toyota to sustain and grow in a market full of fierce competitors whereas others struggled and incurred losses. It portrays how Toyota functions as an organization and what gives them an edge over the others. It answers a very important question of why other companies struggled even after implementing Toyota-style techniques and what can be done to incorporate their mantra of success in an organization. The book describes the approach with facts, evidences and case studies of real factory and managerial settings.

“Kata”, a Japanese word mainly used in martial arts, means detailed choreographed patterns of movements practiced either solo or in pairs. For Toyota, it stands for their unique improvement and leadership routines. This book describes two such routines- Improvement Kata and Coaching Kata. These katas encapsulate the working culture, which includes the problem solving approach and ways they are taught to the entire workforce. This is true for all Toyota facilities around the world. The author emphasizes the way of thinking described in the book extends beyond the manufacturing and business world. It shows a scientific, systematic and constructive way of dealing with problems, uncertainty, and change.

According to Rother, Toyota’s success has been a major topic of discussion among industry professionals for the last 40-50 years. And this is logical given Toyota has been the leader in sales growth, profit margins, market capitalization and sales rank within the automotive industry. Other companies have tried to emulate Toyota by adopting their tools and practices but have been unsuccessful. The author mentions that apart from the visible tools and practices that Toyota uses, the critical aspect of management and leadership thinking and routines are invisible and are missed by the companies trying to benchmark Toyota. Mere reverse engineering may work for a while but is not sustainable in

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<sup>1</sup> Process Improvement Analyst, Lean Performance Unit, Division of Residential and Hospitality Services, Michigan State University, East Lansing, MI, USA [tapaseas@msu.edu](mailto:tapaseas@msu.edu)



the long run. The changes made in the processes erodes overtime, not because of the lack of discipline of workers but because of interaction effects and entropy which states that an organized process will naturally tend to a chaotic state if we leave it alone. Toyota believes in continuous improvement and adaptation, which means the ability to move toward a new desired state through an unclear and unpredictable territory by being sensitive to and responding to actual conditions on the ground. It considers ground reality as an ever changing and evolving condition. This condition requires an ever changing and adaptive mindset and processes to deal with day-to-day challenges. Hence, Toyota relies majorly on continuous small incremental improvements instead of relying solely on technical innovations and workshops for survival and growth. Traditionally, companies have been working under implementation mode, i.e., they know the solution or have chosen one, rather than problem solving mode.

## Improvement and Coaching Katas

Continuous improvement and adaptation are essential success factors and tend to take place at the process level. Rother observes that various organizations have attempted process improvement approaches by employing tools and methods such as workshops, value-stream mapping and action-item lists. The most widely used is the action-item lists. However, it is more of a scatter shot approach. It leads to the misconception that more items on the list lead to more improvement. It is quite the contrary. This approach focuses on fixing problems without any concrete solutions instead of focusing on processes that created those problems. Without a sense of direction, organizations tend to use short-term cost/benefit analysis to decide and choose on a case-by-case basis whether something should be done rather than working through obstacles to achieve new levels of performance. Toyota prefers single factor experiments and see the effect of one change before moving on to the next. This process also requires checks as soon as possible rather than waiting for the weekly or biweekly review cycle.

Before going in-depth into the two katas to explain Toyota's approach, Rother sheds some light on the origins of our current management approach. He focuses on two giants, the Ford Motor Company and the General Motors Corporation. Ford's approach focused on the production flow ideal condition, which was driven by the high demand for the Model T at the time. This was brought about by sequential flow and moving assembly line layout. Ford tried to connect all processes in one contiguous flow from raw material to finished product at its Highland Park six-story buildings. However, these flow experiments did not sustain at the time due to two new demands from the factory of higher variety and shorter product life spans. General Motors on the other hand had a new management approach, which became the company to emulate in that era. GM's approach was largely based on following methods, namely: Rate-of-return for decision-making, maximizing output of individual processes and centralized planning & control based on managerial accounting data. This approach worked until the 1970s due to limited international competition and occasional improvements were good enough. This process wasn't sustainable and was proved with Toyota's success in the later part of 20th century. Major lessons we have learnt from history is that basic attributes of factory flow didn't change since Model T era due to management style approach. Most companies are being managed with logic that originated in 1920s and 1930s. The logic was developed in an era with low competition and is not sustainable in today's time. On the other hand, Toyota relies on continuous

improvement and adaptation to achieve target conditions. Toyota recognized that the main source of low cost is uninterrupted flow of parts from one process to next with little waste in between.

Rother explains the continuous improvement and evolving routine of Improvement Kata starting with an overall sense of long-term direction, vision or future state which may represent an ideal state that might not ultimately be achievable. This is followed by a firsthand grasp of current condition, definition of next target condition on the way to the vision and then to strive to step-by-step move toward that target condition. The long-term direction or vision is like a guiding star at Toyota. For a human organization to be constantly adaptive and decisive, it helps to give a long-range vision to strive for. Toyota has been pursuing a long-term vision that consists of: zero defects, 100 percent value added, one-piece flow, in sequence, on demand and security for people. As illustrative cases of how to develop target conditions, examples of lean techniques such as Takt time, 1x1 production flow, Heijunka and Kanban are provided.

Takt time is a ratio of effective operating time of a process (per shift or day) to the quantity of item customer require from that process. It helps us develop a target to strive for. For example: Trying to produce consistently to planned cycle time and trying to move planned cycle time to Takt time. This will eventually lead to a stable process. 1x1 flow depicts a process where work pieces move from one processing step directly to next without any buffers inventories between them. It ensures the right amount of resources are allotted for a particular process without any need to buffer. Toyota prefers 1x1 flow since it reveals obstacles and show us what to focus our attention on for continuously improving. It is considered negative to have a flexibility arrangement and work around the problems just to meet target output. The next technique is Heijunka which in simple terms mean levelling an assembly process. Kanban cards which are used for scheduling the assembly process are not sent directly to assembly process after a customer pulls an item from an inventory of finished goods. Rather, it is routed via a sorter to level the mix and the quantity. What heijunka levelling sequence provides is a pattern of intended sequence and maximum lot size specification, which is then considered as a target condition. If the intended sequence cannot be met, deviation is possible while working on the problem preventing this sequence and getting back to the intended sequence as quickly as possible. The last technique used for setting up a target condition is Kanban. The visible purpose of Kanban is to provide way of regulating production between processes that results in producing only what is needed when it is needed. The invisible purpose of Kanban is to support process improvement, to provide a target condition by defining a desired systematic relationship between processes, which exposes need for improvement. Kanban system does not cause problems, it only reveals them. At Toyota, target is an outcome and target condition is a description of a process operation in a way required to achieve the desired outcome. Once the target condition is established, next step is to move towards this target condition.

According to the author's observation, the path to the target condition is usually unclear and that is how it is supposed to be. If the path is known, we are operating in implementation mode rather than problem solving mode, which Toyota discourages. Rother mentions that while the path to the target condition is unclear, the next step is not. He describes a way to find that path by experimenting using the scientific method, which consists of formulating hypothesis and then testing them with information obtained from direct observation on field. He summarizes these steps of experimentation using the



popular Plan-Do-Check-Act (PDCA) cycle. Toyota uses PDCA cycle in a different way than other companies do. Instead of one PDCA cycle to target condition, Toyota considers every small step towards the target condition as a PDCA cycle. With shorter PDCA cycles, continuous improvement, problem solving, and adaptation can be done effectively. Shorter PDCA cycles also enables Toyota to do frequent checks thereby discovering problems at an early stage.

At Toyota, problems are considered jewels. They show them the way forward. Improvement Kata is not just a routine to continuously improve processes but to manage people as well. It gives people a means for working together. It is important that everyone in the company learns and follows Improvement Kata to ensure that the company is continuously improving and adapting. Toyota ensures this with the help of the Coaching Kata.

The second routine that the author describes in this book is the Coaching Kata. Its purpose is to teach the Improvement kata and bring it into the organization. According to the author, based on his observations from Toyota shop floors, the team leaders, group leaders, superintendents, and various levels of manufacturing engineers are the primary people who apply, and train application of the Improvement Kata to production processes. They are called mentors. Everyone at Toyota has a mentor. Coaching kata at Toyota is basically a mentor/mentee dialogue. One key element of this dialogue is for the mentee to figure things out for him or herself under mentor's guidance. This dialogue usually begins with a vague assignment to the mentee where he/she is asked to propose a next step to a problem. Based on mentee's input, the mentor discerns how the mentee is thinking and decides the next step. This can go back and forth several times through which mentee's proposal and analysis becomes progressively more detailed. After the satisfaction of the mentor that the current situation is appropriately analyzed and target condition defined, mentee is tasked with planning and carrying out PDCA cycles. Through this process, the mentee is learning by personally gaining insight. The mentor should not give solutions to the mentee. Mentee is the person who works on the problem, whereas the mentor's task is to keep the mentee engrossed in the Improvement Kata routine. If the mentee sufficiently solves the problem in a way that meets the target condition, then the mentor must accept it. This approach provides focus, direction, and control but with a considerable amount of freedom that helps people develop their own capability. At Toyota, the mentor/mentee dialogue are documented on a one-page document called A3s. An A3 helps to keep coaching focused and efficient. It creates a neutral, no-blame situation by giving both mentor and mentee a focal point. Any important issue, question, or lesson learned are documented in the A3.

## Final Remarks

In the last chapter, the author provides ways in which these katas can be incorporated in other organizations. He proposes that the senior level management need to start practicing the improvement kata first. Without practicing, one will not be able to coach their subordinates. The author also proposes creating an advance group who would lead this approach in an organization. As they gain experience during the process, they would get opportunities to coach few internal coaches who would take the process forward.

This book is a good read for lean practitioners, upper management, leaders of organizations striving to keep their company sustainable by continual improvement in a competitive environment. The book emphasis on the approach implemented by Toyota utilizing Improvement and Coaching Kata. Rother explained Improvement Kata in a very detailed manner with each chapter progressing to the next step in the process. The Coaching Kata was only explained at a higher level, and lacked the detailed treatment provided for the Improvement Kata. A coaching example is shared from the Toyota Factory floor that illustrates a Mentor-Mentee relationship. No other practical examples of growing and implementing the Coaching Kata are provided. The highlight of the book is the illustrative examples of different companies in the same industry and their causes of failures. The primary reason being the focus on production output rather than the process and improvement. One of the key lessons was the idea of changing one variable at a time, while applying PDCA cycle, implementing multiple such rapid cycles and continuing until the target condition is reached. This path will identify the problems hidden below the surface and help in continuous improvement and adaptation.

Mere application of lean tools or either kata will not help an organization until they examine and spend time to determine their current condition. At times, this may be discouraging as the immediate results might range from little to none. To be able to adapt what Toyota does to your organization, irrespective of your domain and specialty, the focus needs to be on the mindset and approach that Toyota leadership and management embraces and employs - that is continuous improvement and adaptation. This approach cannot be implemented overnight; it needs long-term commitment and embracing the culture by all team members starting from the senior leadership and upper management.

## References

Rother, Mike (2009) Toyota Kata: Managing People for Improvement and Superior Results, McGraw Hill Professional Publishing, New York

