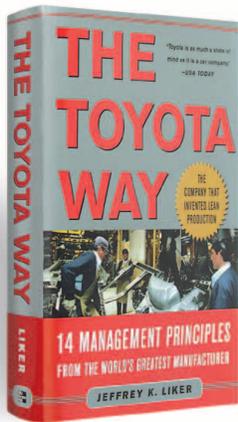


SOUNDVIEW Executive Book Summaries®

FILE: MANUFACTURING



By Jeffrey K. Liker, Ph.D.

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Fourteen Management Principles From the World's Greatest Manufacturer

THE TOYOTA WAY

THE SUMMARY IN BRIEF

Toyota is the world's most profitable automaker. Its "secret weapon" is lean production — the revolutionary approach to business processes that it invented in the 1950s and has spent decades perfecting. Today, businesses around the world are trying to emulate Toyota's remarkable success by working to implement the company's radical system for speeding up business and service processes, reducing waste, and improving quality. It is a system that is derived from balancing the role of people in an organizational culture that expects and values their continuous improvements, with a technical system that is focused on high-value-added "flow."

To help other companies learn to continually improve on what they do, Professor of Industrial and Operations Engineering at the University of Michigan Dr. Jeffrey K. Liker describes the results of his year-long research into Toyota and its managers, executives, suppliers and training centers. While detailing the company's culture, processes and people, Liker provides readers with a management model that can be used to transform business across industries, and the key principles that drive the techniques and tools of the Toyota Production System and the management of Toyota in general. These principles embody the long-term philosophy, processes, results, people, partners and problem solving that drive the organizational learning at Toyota, and can make the Toyota Way work for any organization.

What You'll Learn In This Summary

- ✓ How to foster an atmosphere of continuous improvement and learning.
- ✓ How to satisfy customers and eliminate waste at the same time.
- ✓ How to get quality right the first time.
- ✓ How to groom leaders from within rather than recruit them from the outside.
- ✓ How to teach employees to become problem solvers.
- ✓ How to grow together with suppliers and partners for mutual benefit.

THE TOYOTA WAY

by Jeffrey K. Liker, Ph.D.

— THE COMPLETE SUMMARY

PART ONE: THE WORLD-CLASS POWER OF THE TOYOTA WAY

Using Operational Excellence As a Strategic Weapon

Toyota first caught the world's attention in the 1980s, when it became clear that there was something special about Japanese quality and efficiency. Japanese cars were lasting longer than American cars and required much less repair. By the 1990s, it was apparent that there was something even more special about Toyota compared to other automakers in Japan. It was the way Toyota engineered and manufactured the autos that led to unbelievable consistency in the process and product.

Toyota designed autos faster, with more reliability, yet at a competitive cost, even when paying the relatively high wages of Japanese workers. Equally impressive was that every time Toyota showed an apparent weakness and seemed vulnerable to the competition, Toyota fixed the problem and came back even stronger.

Today, Toyota is the third-largest auto manufacturer in the world, behind General Motors and Ford, with global vehicle sales of over 6 million per year in 170 countries. Auto industry analysts estimate that Toyota will pass Ford in global vehicles sold in 2005, and if current trends continue, it will eventually pass GM to become the largest automaker in the world.

Quality Reputation

Much of Toyota's success comes from its astounding quality reputation. In 2003, Toyota recalled 79 percent fewer vehicles in the United States than Ford and 92 percent fewer than Chrysler. According to a 2003 study in *Consumer Reports*, 15 of the top 38 most reliable models from any manufacturer over the last seven years were made by Toyota/Lexus.

The Toyota Production System is Toyota's unique approach to manufacturing. It is the basis for much of the "lean production" movement that has dominated manufacturing trends for the last 10 years. Lean manufacturing is a five-part process that includes defining customer value, defining the value stream, making it "flow," "pulling" from the customer back, and striving for excellence. To be a lean manufacturer requires a way of thinking that focuses on making the product flow through value-adding

processes without interruption (one-piece flow), a "pull" system that cascades back from customer demand by replenishing only what the next operation takes away at short intervals, and a culture in which everyone is striving continuously to improve. ■

How Toyota Became The World's Best Manufacturer

The most visible product of Toyota's quest for excellence is its manufacturing philosophy, called the Toyota Production System (TPS). TPS is the next major evolution in efficient business processes after the mass production system invented by Henry Ford.

Although Toyota now has more than 240,000 employees around the world, in many ways it is still a large "family business" with considerable influence still exercised by the founding Toyoda family. To understand TPS and the Toyota Way, and how the company became the world's best manufacturer, it is helpful to understand the history and personalities of the founding family members who left an indelible mark on the Toyota culture.

Sakichi Toyoda was a tinkerer and inventor who grew up in the late 1800s and invented a sophisticated automatic

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How Toyota Became The World's Best Manufacturer

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power loom. In 1929, Sakichi sent his son, Kiichiro, to England to sell the patent rights to his “mistake-proof” loom. With that money (100,000 English pounds), he started the Toyota Motor Corp., and tasked Kiichiro with building the car business. After studying mechanical engineering and engine technology at the Tokyo Imperial University, he built the company on his father’s management approach, but added his own innovations. As his father had driven his success with *jidoka* — automation with a human touch, or “mistake proofing” — Kiichiro contributed the second pillar of the TPS: Just-in-Time, a system based on the U.S. supermarket system of replacing products on shelves just in time as customers purchased them.

TPS evolved to meet the particular challenges Toyota faced as it grew as a company. It evolved as Taiichi Ohno, Toyota’s plant manager who was assigned to improve Toyota’s manufacturing process in 1950, and his contemporaries put these principles to work in the shop through years of trial and error. Out of the rubble of WWII, they accepted the challenge of matching Ford’s productivity “with a creative spirit and courage,” solved problem after problem, and evolved the new production system. Infused with the teachings of American quality pioneer W. Edwards Deming, TPS became a powerful philosophy that all types of businesses and processes could learn to use. ■

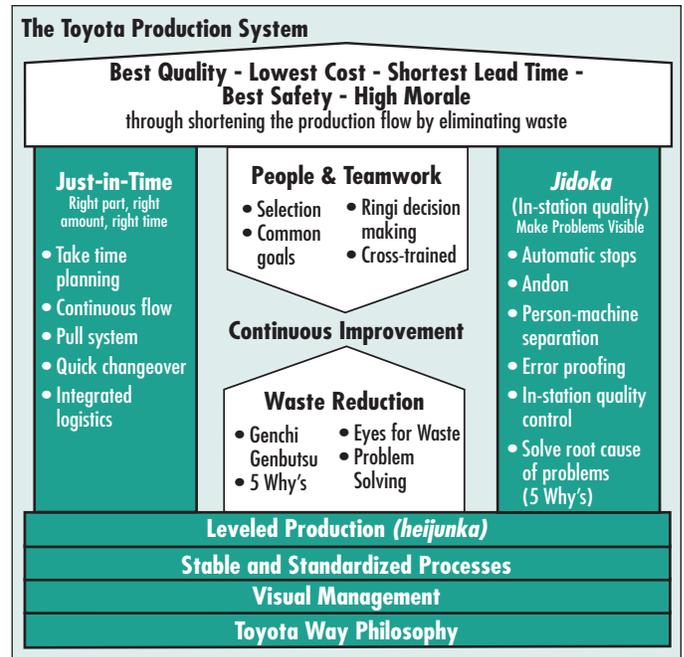
Eliminating Waste

The Toyota Production System is *not* the Toyota Way. TPS is the most systematic and highly developed example of what the principles of the Toyota Way can accomplish. The Toyota Way consists of the foundational principles of the Toyota culture, which allow TPS to function so effectively. Though they are different, the development of TPS and its success are intimately connected with the evolution and development of the Toyota Way.

When applying TPS, you start with examining the manufacturing process from the customer’s perspective. The first question in TPS is always “What does the customer want from this process?” This defines value. Through the customer’s eyes, you can observe the process and separate the value-added steps from the non-value-added steps. You can apply this to any process — manufacturing, information or services.

Toyota has identified seven major types of non-value-adding waste in business or manufacturing processes, and an eighth has been added. These are:

1. Overproduction. Producing items for which there are no orders, which generates overstaffing and storage and transportation costs because of excess inventory. Ohno



considered this to be the fundamental waste because it causes most of the other wastes.

2. Waiting (time on hand). Workers merely serving to watch an automated machine or having to stand around waiting for the next processing step, tool, supply, part, etc., or having no work because of stockouts, lot processing delays, equipment downtime, and capacity bottlenecks.

3. Unnecessary transport or conveyance. Carrying work in process (WIP) long distances, creating inefficient transport, or moving materials, parts or finished goods into or out of storage or between processes.

4. Overprocessing or incorrect processing. Taking unneeded steps to process the parts. Inefficiently processing due to poor tool and product design, causing unnecessary motion and producing defects. Waste is generated when providing higher-quality products than are necessary.

5. Excess inventory. Excess raw material, WIP, or finished goods causing longer lead times, obsolescence, damaged goods, transportation and storage costs, and delay. Also, extra inventory hides problems such as production imbalances, late deliveries from suppliers, defects, equipment downtime, and long setup times.

6. Unnecessary movement. Any wasted motion employees have to perform during the course of their work, such as looking for, reaching for, or stacking parts, tools, etc. Also, walking is waste.

7. Defects. Production of defective parts or correction. Repair or rework, scrap, replacement production, and inspection mean wasteful handling, time and effort.

8. Unused employee creativity. Losing time, ideas, skills, improvements, and learning opportunities by not engaging or listening to your employees. ■

PART TWO: THE 14 BUSINESS PRINCIPLES OF THE TOYOTA WAY

Long-Term Philosophy

Toyota's biggest contribution to the corporate world is that of providing a real-life example that a modern corporation can thrive in a capitalistic world and be profitable while doing the right thing, even if it means that short-term profits are not always the first goal.

Every person interviewed in Toyota's engineering, purchasing and manufacturing departments, in Japan and the United States, has a sense of purpose greater than earning a paycheck. They feel a greater sense of mission for the company and can distinguish right from wrong with regard to that mission. They have learned the Toyota Way from their Japanese mentors and the message is consistent: *Do the right thing for the company, its employees, the customer, and society as a whole.* Toyota's strong sense of mission and commitment to its customers, employees and society is the foundation for all the other principles and the missing ingredient in most companies trying to emulate Toyota.

● **Principle 1: Base Your Management Decisions on a Long-Term Philosophy, Even at the Expense of Short-Term Financial Goals.**

The purpose of Toyota is *not* to make a quality product that will sell well and make money for owners. That is a requirement in order to achieve the mission. The true mission, according to its North American Mission Statement, has three parts:

1. *Contribute to the economic growth of the country*

Guiding Principles at Toyota

1. **Honor** the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen of the world.
2. **Respect** the culture and customs of every nation and contribute to economic and social development through corporate activities in the communities.
3. **Dedicate** ourselves to providing clean and safe products and to enhancing the quality of life everywhere through all our activities.
4. **Create** and develop advanced technologies and provide outstanding products and services that fulfill the needs of customers worldwide.
5. **Foster** a corporate culture that enhances individual creativity and teamwork value, while honoring mutual trust and respect between labor and management.
6. **Pursue** growth in harmony with the global community through innovative management.
7. **Work** with business partners in research and creation to achieve stable, long-term growth and mutual benefits, while keeping ourselves open to new partnerships.

in which it is located (external stakeholders).

2. *Contribute to the stability and well-being of team members (internal stakeholders).*

3. *Contribute to the overall growth of Toyota.*

The poignant message is that the company must enhance the growth of society or it cannot contribute to its external or internal stakeholders. Toyota challenges its workers to contribute to Toyota and make a place in its history. Toyota genuinely wants its associates to grow and learn, to invest in long-term technologies, and create lasting customer satisfaction with the goal of getting repeat business for life.

The Toyota Way is about adding value to customers, employees and society. It provides a framework for Toyota to make short-term and long-term decisions, and it rallies employees around a shared purpose that is bigger than any of them. ■

The Right Process Will Produce the Right Results

Toyota leaders truly believe that if they create the right process the results will follow. Within the next six principles are most of the TPS tools for improving manufacturing processes as well as the more routine processes for product development and service organizations. Important and powerful as these tools and processes are, they are only the tactical or operations aspects of the Toyota Way and becoming lean. These tools are far more effective when they are supported by a company-wide, long-term management philosophy.

● **Principle 2: Create Continuous Process Flow to Bring Problems to the Surface.**

A good place for any company to begin the journey to lean is to create continuous flow wherever applicable in its core manufacturing and service processes. Creating flow means linking together operations that otherwise are disjointed. When operations are linked together, there is more teamwork, rapid feedback on earlier quality problems, control over the process, and direct pressure for people to solve problems and think and grow.

Flow is at the heart of the lean message that shortening the elapsed time from raw materials to finished goods or services will lead to the best quality, lowest cost, and shortest delivery time. Flow also tends to force the implementation of many of the other lean tools and philosophies, such as preventive maintenance and built-in quality (*jidoka*).

● **Principle 3: Use “Pull” Systems to Avoid Overproduction.**

The Toyota Way is not about managing inventory; it is

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The Right Process Will Produce the Right Results

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about eliminating it. Very early on, Toyota started thinking in terms of pulling inventory based on immediate customer demand. In the Toyota Way, “pull” means the ideal state of just-in-time manufacturing: giving the customer what he or she wants, when he or she wants it, and in the amount he or she wants.

● Principle 4: Level Out the Workload (*Heijunka*).

Fujio Cho, the president of the Toyota Motor Corp., said: “In general, when you try to apply the TPS, the first thing you have to do is to even out or level the production. And that is the responsibility primarily of production control or production management people. Leveling the production schedule may require some front-loading of shipments or postponing of shipments, and you may have to ask some customers to wait for a short period of time. Once the production level is more or less the same or constant for a month, you will be able to apply pull systems and balance the assembly line. But if production levels — the output — varies from day to day, there is no sense in trying to apply those other systems, because you simply cannot establish standardized work under such circumstances.”

● Principle 5: Build a Culture of Stopping to Fix Problems, to Get Quality Right the First Time.

Quality (*jidoka*) should be built in. This means that you need a method to detect defects when they occur and automatically stop production so an employee can fix the problem before the defect continues downstream.

Jidoka is also referred to as *autonation* — equipment endowed with human intelligence to stop itself when it has a problem. In-station quality (preventing problems from being passed down the line) is much more effective and less costly than inspecting and repairing quality problems after the fact.

● Principle 6: Standardized Tasks Are the Foundation for Continuous Improvement and Employee Empowerment.

Whether your employees are designing intricate new devices, styling new attractive products, processing accounts payable, developing new software, or working as nurses, they are likely to respond to the idea of standardizing their work in the same way: “We are creative, thinking professionals and every task we do is a unique project.” If you are not in manufacturing, you may be surprised to learn that even workers on the assembly line believe they have a knack for doing the job best their own way and that standards will simply set them back. But some level of standardization is possible and is the backbone of the Toyota Way process.

What can be perceived as negative or ineffective becomes positive and effective within the Toyota Way and

The Three M’s

The Toyota Way document refers to the “elimination of *Muda*, *Muri*, *Mura*.” The three M’s are:

✓ *Muda* — *Non-value-added*. The most familiar M includes the eight wastes mentioned earlier. These are wasteful activities that lengthen lead times, cause extra movement to get parts or tools, create excess inventory, or result in any type of waiting.

✓ *Muri* — *Overburdening people or equipment*. This is in some respects on the opposite end of the spectrum from *muda*. *Muri* is pushing a machine or person beyond natural limits. Overburdening people results in safety and quality problems. Overburdening equipment causes breakdowns and defects.

✓ *Mura* — *Unevenness*. In normal production systems, at times there is more work than the people or machines can handle, and at other times there is a lack of work. Unevenness results from an irregular production schedule or fluctuating production volumes due to internal problems, like downtime or missing parts or defects. *Muda* will be a result of *mura*. Unevenness in production levels means it will be necessary to have on hand the equipment, materials and people for the highest level of production — even if the average requirements are much lower than that.

builds collaborative teams rather than conflict between employees and management. Standardized work was never intended by Toyota to be a management tool to be imposed coercively on the work force. On the contrary, rather than enforcing rigid standards that can make jobs routine and degrading, standardized work is the basis for empowering workers and innovation in the workplace.

The critical task when implementing standardization is to find that balance between providing employees with rigid procedures to follow and providing them the freedom to innovate and be creative to meet challenging targets consistently for cost, quality and delivery. Standards have to be specific enough to be useful guides, yet general enough to allow for some flexibility.

● Principle 7: Use Visual Control So No Problems Are Hidden.

Visual control is any communication device used in the work environment that tells us at a glance how work should be done and whether it is deviating from the standard. It helps employees who want to do a good job see immediately how they are doing. It might show where items belong, how many items belong there, what the standard procedure is for doing something, the status of work in process, and many other types of information critical to the flow of work activities. In the

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For Additional Information on visual control and eliminating wastes, go to: <http://my.summary.com>

The Right Process Will Produce the Right Results

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broadest sense, visual control refers to the design of just-in-time information of all types to ensure fast and proper execution of operations and processes.

Visual control goes beyond capturing deviations from a target or goal on charts and graphs and posting them publicly. Visual controls at Toyota are integrated into the process of the value-added work. The *visual* aspect means being able to look at the process, a piece of equipment, inventory or information, or at a worker performing a job and immediately see the standard being used to perform the task and if there is a deviation from the standard.

● Principle 8: Use Only Reliable, Thoroughly Tested Technology That Serves Your People and Processes.

At Toyota, new technology is introduced only after it is proven out through direct experimentation with the involvement of a broad cross-section of people. This does not exclude new or cutting-edge technology. It means the technology has been thoroughly evaluated and tested to ensure it provides added value. Before adopting new technology, Toyota will go to great lengths to analyze the impact it may have on existing processes.

First, it will see firsthand the nature of the value-added work being performed by the workers for the process. Toyota will then use a pilot area to improve the process with the existing equipment, technology and people. If it determines that the new technology can add value to the process, it is then carefully analyzed to see if it conflicts with Toyota's philosophies and operating principles. If the new technology is acceptable, the guiding principle is to design and use it to support continuous flow in the production process and help employees perform better within Toyota Way standards.

Ideally, the new technology will be used right where the work is being done so it does not require a person in an office to input the data. The important principle is to

The Disappearing Taurus

The Donnelly Mirrors (now Magna Donnelly) Grand Haven plant, which produces exterior automotive mirrors, was so disorganized when management began implementing lean manufacturing that no one could see much of anything except waste. One day a Ford Taurus mysteriously disappeared. It had been in the factory so they could try fitting it with some prototype mirrors. When it vanished, they even filed a police report. Then it turned up months later. Guess where it was. In the back of the plant, surrounded by inventory. Donnelly associates now tell this story to illustrate how far they have come since implementing lean.

find ways to support the work process while not distracting people from the value-added work. ■

Add Value by Developing Your People and Partners

It seems the typical U.S. company regularly alternates between the extremes of stunningly successful and borderline bankrupt. The solution to severe problems is often to bring in a new CEO who will take the company in a radically new direction. This roller-coaster ride is exciting and even works in bursts. Then, when something goes wrong, someone else preaching a still newer direction replaces him or her.

In contrast, Toyota's President Fujio Cho grew up in Toyota and was a student of Taiichi Ohno. He and Ohno provided a theoretical basis for the Toyota Production System (TPS) and the Toyota Way principles in order to teach them throughout the company. Cho was the leader of the Georgetown, Ky., plant — Toyota's most important venture in the United States. He was a board member and came into his new role when the company was already successful. At Toyota, the new president or CEO does not need to come in and take charge to move the company in a radically new direction to put his or her imprint on the company. The leadership role of Cho focuses on something entirely different.

● Principle 9: Grow Leaders Who Thoroughly Understand the Work, Live the Philosophy, and Teach It to Others.

Even when Toyota promoted someone from an unusual part of the company to save it from impending doom, there has never been a sudden change of direction. Perhaps this is the concept of eliminating *mura* (unevenness) at work at the executive level. Throughout Toyota's history, key leaders have been found within the company, at the right time, to shape the next step in Toyota's evolution.

Another important leadership tenet of the Toyota Way is the effort leaders make to support the culture year after year so it can create the environment for a learning organization. In W. Edwards Deming's terms, Toyota uses "constancy of purpose" throughout the organization, which lays the groundwork for consistent and positive leadership as well as an environment for learning.

● Principle 10: Develop Exceptional People and Teams Who Follow Your Company's Philosophy.

First, look at the system dynamics of your organization. Building excellent people who understand and support your company's culture is not a matter of adopting simple solutions or an afterthought for applying motivational theories. Training exceptional people and building individual work groups need to be the backbone of your

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Add Value by Developing Your People and Partners

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management approach, an approach that integrates your social systems with your technical system. You need a social system and a culture of continuous improvement to support positive problem-solving behaviors and motivate people to improve.

● Principle 11: Respect Your Extended Network of Partners and Suppliers by Challenging Them and Helping Them Improve.

Auto industry suppliers consistently report that Toyota is their best customer — and also their toughest. We often think of “tough” as difficult to get along with or unreasonable. In Toyota’s case, it means the company has very high standards of excellence and expects all its partners to rise to those standards. More importantly, it will help its partners rise to those standards.

One way that Toyota has honed its skills in applying the TPS is by working on projects with suppliers. Toyota needs its suppliers to be as capable as its own plants at building and delivering high-quality components just in time. There are many methods Toyota uses to learn with its suppliers and, in the Toyota Way style, these are all “learning by doing” processes, keeping classroom training to a minimum. The important learning happens through real projects on the shop floor. ■

Continuously Solving Root Problems Drives Learning

You cannot be sure you really understand any part of any business problem unless you go and see for yourself firsthand. It is unacceptable to take anything for granted or to rely on the reports of others. Tables and numbers might measure results, but they do not reveal the details of the actual process being followed every day.

● Principle 12: Go and See for Yourself to Thoroughly Understand the Situation (*Genchi Genbutsu*).

Literally translated, *genchi* means the actual location and *genbutsu* means the actual materials or products. But *genchi genbutsu* is interpreted within Toyota to mean *going to the place to see the actual situation for understanding*. *Gemba* is a term that has become more popular. It refers to “the actual place” and means about the same thing as *genchi genbutsu*. The first step of any problem-solving process, development of a new product, or evaluation of an associate’s performance is grasping the actual situation, which requires “going to *gemba*.”

Toyota promotes and expects creative thinking, and innovation is a must, but it should be grounded in thoroughly understanding all aspects of the actual situation.

This is one of the behaviors that really distinguish someone trained in the Toyota Way — they take nothing for granted and know what they are talking about, because it comes from firsthand knowledge.

There is a surface version of *genchi genbutsu* and a much deeper version, which takes many years for employees to master. What the Toyota Way requires is that employees and managers must “deeply” understand the processes of flow, standardized work, etc., as well as have the ability to critically evaluate and analyze what is going on.

● Principle 13: Make Decisions Slowly by Consensus, Thoroughly Considering All Options; Implement Decisions Rapidly (*Nemawashi*).

For Toyota, how you arrive at the decision is just as important as the quality of the decision. Taking the time and effort to do it right is mandatory. In fact, management will forgive a decision that does not work out as expected, if the process used was the right one. A decision that by chance works out well, but was based on a shortcut process, is more likely to lead to a reprimand from the boss.

Toyota’s secret to smooth and often flawless implementation of new initiatives is careful, upfront planning. Underlying the entire process of planning, problem solving, and decision making is careful attention to every detail.

This principle includes the important process of *nemawashi*: *Make decisions slowly by consensus, thoroughly considering all options; implement rapidly*. The process of *nemawashi* is often used to describe how junior people build consensus by developing a proposal and circulating it broadly for management approval. In the *nemawashi* process, many people are giving their input and this generates consensus. By the time the formal proposal comes up for a high-level approval, the decision is already made.

● Principle 14: Becoming a Learning Organization Through Relentless Reflection (*Hansei*) and Continuous Improvement (*Kaizen*).

Toyota is an outstanding learning organization because it sees standardization and innovation as two sides of the same coin, melding them in a way that creates great continuity. For example, Toyota has judiciously used stability and standardization to transfer individual and team innovation into organization-wide learning. It is one thing for individual employees to come up with innovative ways to do things. But to be transferred to organization learning, the new way must be standardized and practiced across the organization until a better way is discovered. This is the Toyota Way of learning — standardization punctuated by innovation, which gets

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For Additional Information on five elements of decision making, go to: <http://my.summary.com>

Continuously Solving Root Problems Drives Learning

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translated into new standards.

The philosophy of Toyota and its experience support the belief that if it focuses on the process itself and continual improvement, it will achieve the financial results it desires. Continuous improvement (*kaizen*) can occur only after a process is stable and standardized. When you make processes stable and have a process to make waste and inefficiencies publicly visible, you have an opportu-

nity to learn continually from your improvements.

A key to learning and growing, not only within Toyota but in Japanese culture, is *hansei*, which roughly means “reflection.” According to George Yamashina, who runs the Toyota Technical Center, *hansei* had to be introduced to U.S. managers because: “Without *hansei* it is impossible to have *kaizen*. In Japanese *hansei*, when you do something wrong, at first you must feel really, really sad. Then you must create a future plan to solve that problem and you must sincerely believe you will never make this type of mistake again. *Hansei* is a mind-set, an attitude. *Hansei* and *kaizen* go hand in hand.” ■

PART THREE: APPLYING THE TOYOTA WAY IN YOUR ORGANIZATION

Using the Toyota Way to Transform Technical and Service Organizations

As companies experience extraordinary improvements on the shop floor, it is natural to ask how this can apply to technical and service operations. Many service companies that initially look at Toyota are attracted most by the technical TPS principles of flow and how they can apply them to a highly variable and often chaotic process.

Creating lean flow is the technical backbone of the TPS in both technical and service organizations. There are five steps to creating flow in technical and service organizations. They are:

1. **Identify who the customer is for the processes and the added value they want delivered.**
2. **Separate out the repetitive processes from the unique, one-of-a-kind processes and learn how you can apply the TPS to the repetitive processes.**
3. **Map the flow to determine value added and non-value added.**
4. **Think creatively about applying the broad principles of the Toyota Way to these processes using a future-state value stream map.**
5. **Start doing it and learn by doing using a Plan-Do-Check-Act (PDCA) cycle and then expand it to the less repetitive processes.**

The key to applying the TPS in any environment is to focus on the value-added operations and work to eliminate waste. This is more challenging for service operations, because defining the customers and understanding their needs can be tricky. But with extra effort, it can be done.

It is impossible to define value in a service operation without first understanding its *core value stream*. Once you define the core value stream, then all support service operations must view their roles as supporting the core value stream. The leaner the core value stream, the lean-

er the support operations can be. Generally, it is recommended to start by applying the TPS to the core value stream and then branch out to the support functions. ■

Build Your Own Lean Learning Enterprise

If there is anything to learn from Toyota, it is the importance of developing a system and sticking with it and improving it. You cannot become a learning organization by jumping willy-nilly from fad to fad.

The Toyota Way model was intentionally built from the ground up, starting with a philosophy. And the philosophy starts with the chief executives of the organization. Their goal should be to build an enterprise for the long term that delivers exceptional value to customers and society. This requires long-term thinking and continuity of leadership. It might take decades to lay the foundation for radically transforming the organization’s culture. Here’s what we know about changing a culture:

1. **Start from the top — this may require an executive leader shakeup.**
2. **Involve from the bottom up.**
3. **Use middle managers as change agents.**
4. **It takes time to develop people who really understand and live the philosophy.**
5. **On a scale of difficulty, it is “extremely” difficult.**

Understanding and Commitment

A prerequisite to change is for top management to have an understanding and commitment to leveraging the Toyota Way to become a “lean learning organization.” This understanding and commitment extends to building the lean systems and culture and, the most difficult for Western companies, sustaining and constantly improving the system. ■

For Additional Information on top leadership’s “commitment to lean” journey, go to: <http://my.summary.com>