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Learning to Lead at Toyota

Key ideas from the Harvard Business Review article By Steven J. Spear

The Idea in Brief

Many companies try to emulate Toyota's vaunted production system (TPS), which uses simple real-time experiments to continually improve operations. Yet few organizations garner the hoped-for successes Toyota consistently achieves: unmatched quality, reliability, and productivity; unparalleled cost reduction; sales and market share growth; and market capitalization.

Why the difficulty? Companies take the wrong approach to training leaders in TPS: They rely on cursory introductions to the system, such as plant walk-throughs and classroom orientation sessions. But to truly understand TPS, managers must live it--absorbing it the long, hard way through **total immersion training**.

The keys to total immersion training? Leadership trainees directly observe people and machines in action--watching for and addressing problems as they emerge. Through frequent, simple experiments--relocating a switch, adjusting computer coding--they test their hypotheses about which changes will create which consequences. And they receive coaching--not answers--from their supervisors.

Total immersion training takes time. No one can assimilate it in just a few weeks or months. But the results are well worth the wait: a cadre of managers who not only embody TPS but also can teach it to others.

The Idea in Practice

The keys to TPS total immersion training:

Direct Observation

Trainees watch employees work and machines operate, looking for visible problems.

Bob Dallis, a talented manager hired for an upper-level position at one of Toyota's U.S. engine plants, started his training by observing engine assemblers working. He spotted several problems. For example, as one worker loaded gears in a jig that he then put into a machine, he often inadvertently tripped the trigger switch before the jig was fully aligned, causing the apparatus to fault.

Changes Structured as Experiments

Learners articulate their hypotheses about changes' potential impact, then use experiments to test their hypotheses. They explain gaps between predicted and actual results.

During the first six weeks of his training, Dallis and his group of assembly workers proposed 75 changes--such as repositioning machine handles to reduce wrist strain--and implemented them over a weekend. Dallis and his orientation manager, Mike Takahashi, then spent the next week studying the assembly line to see whether the changes had the desired effects. They discovered that worker productivity and ergonomic safety had significantly improved.

Frequent Experimentation

Trainees are expected to make many quick, simple experiments instead of a few lengthy, complex ones. This generates ongoing feedback on their solutions' effectiveness. They also work toward addressing increasingly complex problems through experimentation. This lets them make mistakes initially without severe consequences--which increases their subsequent willingness to take risks to solve bigger problems.

During his first three days of training at a Japanese plant, Dallis was asked to simplify a production employee's job by making 50 improvements--an average of one change every 22 minutes. At first Dallis was able to observe and alter obvious aspects of his workmate's actions. By the third day, he was able to see the more subtle impact of a new production layout on the worker's movements. Result? 50 problems identified--35 of which were fixed on the spot.

Managers as Coaches

Learners' supervisors serve as coaches, not problem solvers. They teach trainees to observe and experiment. They also ask questions about proposed solutions and provide needed resources.

Takahashi showed Dallis how to observe workers to spot instances of stress and wasted effort. But he never suggested actual process improvements. He also gave Dallis resources he needed to act quickly--such as the help of a worker who moved equipment and relocated wires so Dallis could test as many ideas as possible.

- Purchase the full-length Harvard Business Review article here.
- Visit Harvard Business Online.
- See more on Leadership and Managing People at Harvard Business Online.

Further Reading

Articles

Decoding the DNA of the Toyota Production System

Harvard Business Review

September-October 1999

by Steven Spear and H. Kent Bowen

In addition to learning how to conduct experiments to address problems, Toyota leadership trainees master the four unwritten rules that make TPS successful: 1) Employees follow a rigidly defined sequence of steps for a particular job. This specificity makes deviations immediately visible, encouraging continual improvement. 2) Workers needing parts or assistance submit requests to specific individuals, who must respond to requests within specified periods of time. Failure to fulfill specifications signals a search for causes--such as ambiguous request signals. 3) All goods and services flow to specific persons or machines--not the next available one. If this rule is broken, people determine why the designated supplier or apparatus was unnecessary, and redesign the flow path. 4) Frontline workers make improvements to their own jobs. Supervisors provide direction and assistance as teachers.

Beyond Toyota: How to Root Out Waste and Pursue Perfection

Harvard Business Review

September 1996

by James P. Womack and Daniel T. Jones

This article presents case examples of companies that have adopted techniques characteristic of TPS--such as continuous improvement and just-in-time delivery. The authors identify five critical practices for knitting these techniques together into a coherent system: 1) Define value from your end customer's perspective: a specific product with specific capabilities offered at a specific price and time. 2) Identify the specific actions needed to bring a product from concept to launch, order to delivery, and raw material to finished product. Anything beyond the specified actions is waste--including unnecessary steps, backtracking, and scrap. 3) Work on each design, order, and product continuously (versus in batch mode), so there is no waiting, downtime, or scrap within or between steps. 4) Provide what your customer wants only when he wants it; you'll avoid waste in the form of obsolete designs and remaindered goods. 5) Continually strive to reduce effort, time, space, cost, and mistakes.

About the Author

Steven J. Spear is an assistant professor at Harvard Business School in Boston. He is the author, with H. Kent Bowen, of "Decoding the DNA of the Toyota Production System," which was published in the September-October 1999 issue of HBR.