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Excerpt from Lesson 4

Philosophy Before Strategy

If we knew *nothing* about traditional manufacturing, e² would be so much easier to understand and apply. But most personal and corporate histories more closely align to Lucy in the chocolate factory than to the 9 year-olds from chapter 2 who are learning to play soccer. For the most part businesses have previously adopted strategies patterned after the early Ford system, and have had decades of practice installing and implementing these. In other words, “If you practice a bad golf swing long enough, you’ll get very good at swinging the club poorly.”¹

Now, if we decide to change our strategy – or more accurately reverse our strategy – our senses deceive us. Most companies who have resolved to implement e², simply do not dig deep enough into the roots of their systemic problems, and therefore make the big mistake that the current system is fine, only new tools are needed. Taiichi Ohno, reflecting on his company’s success with TPS, notes that strategy is based upon a deep rooted philosophical foundation: Why are we here? What is most important?

Companies that take time to understand and practice the TPS philosophy will readily understand everything that follows from it. **But for those who do not understand the foundations of e², nothing will make sense. This is why companies fail.** Study the next section hard. Think hard about each of the four philosophical points of TPS. This is a thinking people system, and the following four points are **non-negotiable**.



Ohno Reflects on Toyota’s Approach

Taiichi Ohno studied Henry Ford’s system and copied a great deal from it. However, Ohno also discovered specific weaknesses which enabled Toyota to adapt to the rapidly changing social and economic conditions of the second half of the 20th century. Ohno articulated these as four philosophical points², perhaps better thought of “Ohno’s Rules” since they are the non-negotiable foundation of TPS. Bear in mind as you consider these points that Ohno was not suggesting “how” to follow this philosophy, but rather insisting that we must find a way to follow it. Also, consider as you read these four points, how diametrically opposed they are to current policy, organization and daily practice. They are often referred to as “counter-intuitive” but would perhaps better be described as “counter-traditional.”

1 Ryuji Fukuda, *Managerial Engineering: Techniques for Improving Quality and Productivity in the Workplace* (Stamford: Productivity, Inc., 1986), 10.

2 Taiichi Ohno, *Toyota Production System: Beyond Large-Scale Production* (Portland: Productivity Press, 1988)

1. Customer First

Ohno made several observations in his 1978 book regarding weaknesses in Ford's system that signaled a critical shift in thinking regarding the customer. His observations and responses are shown below:

Weakness 1: AQL Thinking.

Ohno observed first that the Ford system either passed defects along from process to process or alternatively pulled them from the line to fix. Workers were no longer seen to be responsible for quality. Problems were band-aided or ignored rather than fixed. Ohno responded to this weakness in the Ford system as follows:



The only acceptable level of quality from the customer standpoint is zero defects, that is.

$$AQL = 0.$$

- a. It doesn't matter whether the product is a parachute or simply a dozen eggs. The customer *expects* perfect quality. This could be the outside customer who buys the product or service, or the "internal customer" who is the downstream operation. The traditional concept of AQL (acceptable quality level) assumes that there is some level above zero which *will* be accepted by the customer. AQL thinking as it is sometimes called, allows a level of defects to pass from supplier to customer. However, Mr. Ohno observed in his own factory as well as Ford's that these unchecked defects created instability and unpredictability in the process. Much time was spent on in-process and final inspection to trap and sort defects, and too little information regarding problems was feeding back to the process. For many problems, the trail was cold before the problems were noted. The effect of $AQL > 0$, caused old problems not to be addressed while new ones were added every day.
- b. When Ohno lowered the bar for AQL to zero, he created the need to identify a problem at the source, and fix problems instantly. All employees were authorized and required to stop production if a defect was discovered.

Excerpt: Practice Exercise Lesson 4



Practice Exercise

Within your own factory or department, where are the areas where defects are created? What would happen if the line were stopped whenever a defect was noted? List your answers below:

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