



The Toyota Way

(Shortened Abstract)

Jeffrey K Liker

Tata McGraw-Hill, 2004

Introduction

There is something special about Toyota. The Japanese automobile manufacturer currently has the fastest product development *process* in the world. New cars take 12 months or less to *design*, while other automobile manufacturers normally need two to three years. Toyota has very good quality levels that the other companies can only dream of. (...)

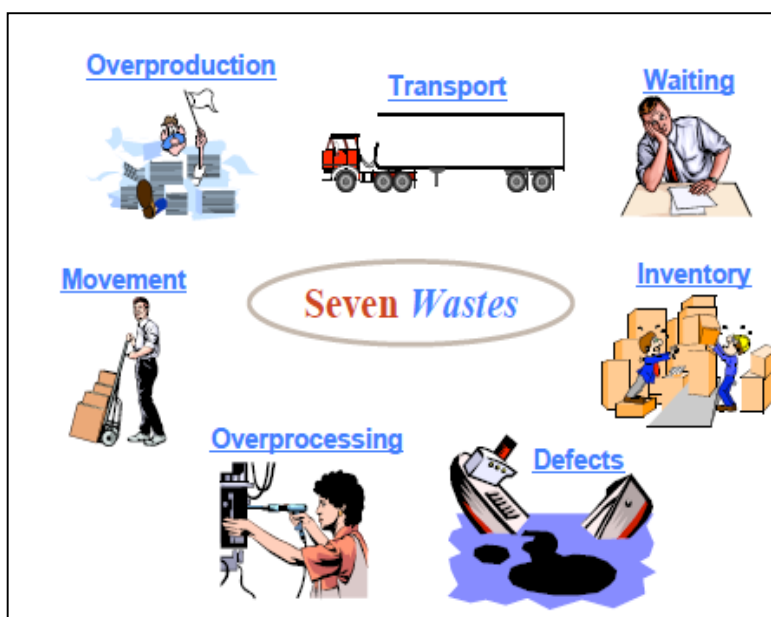
The Toyota Production System

Toyota developed the Toyota Production System after World War II. While *Ford and GM* used mass production (...) to produce as many parts as possible, as cheaply as possible, Toyota's market in post-war Japan was small. (...) Toyota made *lead times* short and concentrated on keeping production flexible. It realized it could actually get higher quality, better customer service, better productivity, and better use of *resources* and space this way.

In mass production a machine that is not working is *waste*. It is not making parts that could make money. Toyota did not think that way. Often the best thing you can do is to stop a machine and stop producing parts. If you produce too much, that is not good. *Overproduction* is a *waste* for Toyota. (...) It is not the most important thing in a company to keep the workers busy all the time and makes parts as fast as possible. Companies should produce what the customer needs. (...) If a company produces more than what the customer wants it has a lot of *inventory*.

Waste

The first question Toyota asks is always "What does the customer want?" This is value. (...) Toyota has identified various types of waste that do not help to produce what the customer wants:



1. Overproduction. Producing too much. Leads to inventory and costs

2. Waiting. Workers who are only standing next to a machine or are waiting for something to continue their work, because parts they need are missing

3. Unnecessary transport. Carrying products long distances

4. Overprocessing or incorrect processing. Too many or the wrong steps in

production. Also when the quality is higher than the customer really needs (costs), this is waste.

5. Too much inventory. Inventory sometimes hides problems (late *deliveries* from suppliers, defects,...)

6. Unnecessary movement. If workers have to move too much (because they are looking for something, something they need is far way, etc.)

7. Defects. Repair of defects is often expensive

(...) Just-in-time means having as little inventory as possible (...). (This) means that you see problems quickly.(...) You have to work with little inventory and stop production when there is a problem. (...) Workers must solve the problems immediately to continue production. Toyota's philosophy is to find defects when quickly stop production so that the problem can be solved. (...)

Supplier management

Toyota is a difficult customer. It has its own ideas and wants the *suppliers* and partners to be very reliable. But Toyota will also help partners to get better.

Toyota *invests* a lot of money in building good relationships with suppliers. (...) Without *reliable* suppliers, Just-in-time cannot work. (...)

Toyota gives new suppliers very small orders to start with. They must prove that they are reliable and provide what Toyota wants (good quality, at low cost and delivery on time). If new suppliers are reliable in the beginning, they get larger orders. Toyota will teach them the Toyota Way. Toyota tries to continue working with good suppliers for a long time. (...) And simply changing supplier because another supplier is a little cheaper is out of question. Suppliers want to work for Toyota for the prestige and because they know they will be able to learn and improve.

Toyota is very careful when deciding what to outsource and what to do in house. Like other Japanese automakers, Toyota outsources a lot, about 70% of the parts of the cars. But it still tries to keep some knowledge how to do even the parts it outsources. This way Toyota will not become too dependent on other companies. (...)

Vocabulary:

Customer=Kunde

Defect=Fehler

Delivery=Lieferung

To design= designen

Inventory=Lager

To invest=investieren

To improve=verbessern

Lead time= Lieferzeit

Ford and GM= Ford und General Motors, andere Autofirmen

Flexible=flexibel

Overproduction=Produktion von zu VIEL

Out of question=undenkbar

Process=Prozess

Repair=Reparatur oder reparieren

Reliable=verlässlich

Resources=Ressourcen

Supplier=Lieferant

Waste=Verschwendung

Questions on the text: “The Toyota Way”

1. What is so special about Toyota according to the text?
2. Compare the time Toyota takes to design a new car on average with other companies.
3. Describe the production strategies of Ford and GM after World War II.
4. Why did Toyota use a different strategy in the first place?
5. Describe Toyota’s strategy after World War II in one sentence.
6. What could Toyota achieve with this strategy?
7. Is machine downtime a good or a bad thing in mass production? Explain.
8. What is Toyota’s attitude towards machine downtime?
9. Name the seven types of waste described in the text, define them and explain why they are considered as waste. Use the following table:

Waste	Definition	Reason

10. How is just-in-time defined in the text?
11. How does Toyota deal with problems?
12. Why is Toyota described as a “difficult customer”?
13. Why can Just-in-time not work without reliable suppliers?
14. Describe Toyota’s strategy towards new suppliers. Why might this be a good strategy?
15. Does Toyota focus on long-term or short-term relationships with its suppliers? Explain how Toyota deals with suppliers.
16. Why do suppliers want to work for Toyota?
17. How much does Toyota outsource?
18. How does Toyota prevent becoming dependent on outsourcing companies?



Questions on the text: “The Toyota Way”

1. What is so special about Toyota according to the text?
fastest product development process in the world; Short time to design new trucks or cars; phenomenal quality levels that rivals can only dream of matching.
2. Compare the time Toyota takes to design a new car on average with other companies.
Toyota takes 12 months, while competitors usually take 2 to 3 years.
3. Describe the production strategies of Ford and GM after World War II.
They used mass production: producing as much as possible as cheaply as possible
4. Why did Toyota use a different strategy in the first place?
Because the Japanese market was small.
5. Describe Toyota’s strategy after World War II in one sentence.
Short lead times and keeping production lines flexible
6. What could Toyota achieve with this strategy?
higher quality, better customer responsiveness, better productivity, and better utilization of equipment and space
7. Is machine downtime a good or a bad thing in mass production? Explain.
A bad thing: a machine, which is not working, does not make any money
8. What is Toyota’s attitude towards machine downtime?
It can sometimes be good to idle a machine, because overproduction is a fundamental waste, Companies should produce at the rate of customer demand
9. Name the seven types of waste described in the text, define them and explain why they are considered as waste. Use the following table:

Waste	Definition	Reason
Overproduction	Produce more than needed by the customer	Overstaffing, storage, transportation costs
Waiting	Workers have nothing to do	Expensive
Unnecessary transport	Carrying WIP or finished goods unnecessarily	Costs time and money
Overprocessing or incorrect processing	Producing too much or the wrong parts	Waste of resources, time and money
Excess inventory	Too much inventory	Hides problems, expensive
Unnecessary movement	Wasted motion that workers have to do	Costs time and money
Defects	Production of defective parts	Repair or rework is expensive

10. How is just-in-time defined in the text?
Removing the inventory as much as possible
11. How does Toyota deal with problems?
Production is stopped automatically and workers must resolve the problem immediately to resume production
12. Why is Toyota described as a “difficult customer”?
Because it sets very high standards for its suppliers
13. Why can Just-in-time not work without reliable suppliers?
Because lead times are very short and inventory is small: If a supplier is not reliable and does not deliver on time Toyota cannot continue production

14. Describe Toyota's strategy towards new suppliers. Why might this be a good strategy?
It starts with very small orders. If suppliers prove reliable they get larger orders. This is a good strategy, because Toyota can get to know a customer without risking a lot.
15. Does Toyota focus on long-term or short-term relationships with its suppliers? Explain how Toyota deals with suppliers.
It focuses on long-term relationships by teaching them the "Toyota Way". An approved supplier will not be removed very easily. Switching supplier, because another supplier is a little cheaper is unthinkable.
16. Why do suppliers want to work for Toyota?
For prestige and because they know, they can learn a lot from Toyota
17. How much does Toyota outsource?
70% of the parts of the vehicle
18. How does Toyota prevent becoming dependent on outsourcing companies?
By keeping internal competences even on the parts that are outsourced