A Lean View of China’s Auto Industry

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China’s Auto Market Overview
My Observations
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Summary

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China’s Light Vehicle Sales

Light Vehicle = Passenger Vehicle + Light Commercial Vehicle (<6 Ton)

Source: JDPA Forecasting
Increased Competition

13 brand names in 2000 vs. 60+ in 2008

0.65 Million Units in 2000

5.60 Million Units in 2008

Source: JDPA Forecasting
The number of models in China’s passenger vehicle market has grown more than ten-fold in the last eight years, feeding the booming demand.
Total market sales expected to grow 6 percent in 2008.

Source: JDPA Forecasting
Fuel efficiency becomes an increasingly significant factor when purchasing a new car.

Toyota, Honda, and Nissan continue to grow sizable market shares in China.

Chinese new car buyers have higher expectations on vehicles quality and performance.

- Vehicle awareness and technical knowledge has been enhanced.

Source: JDPA Forecasting
My Observations

- China will remain a leader in the global auto market, at a growth rate close to China’s GDP
- It is a buyer’s market
  - JVs will continue to flood the market with new cars and technologies
  - Domestic car companies will dominate the entry level vehicles and truck market
- Fuel efficiency becomes significant due to higher gasoline price, but being “green” is not yet in the Chinese culture
- China’s auto market development path is unique as a reflection of China’s Socialist Market Economic System

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China’s Unique Auto Market

- Manipulation of the market by the central government’s macroeconomic policies
- Paternalism by local governments toward their own auto companies
- “Thirst for Power” rooted in the Chinese culture
  - Rather be a head of a small company than 2\textsuperscript{nd} in command of a large corporation
- Consolidating car companies would be a long and difficult process
- Government likes to see more national brand cars but consumers prefer foreign brand names

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Challenges Facing China’s Auto Companies

- Overcapacity causes severe competition
- Higher operation cost due to double-digit increases in material, labor, and logistic costs
- RMB appreciation
- Global economy meltdown significantly impacts Chinese consumers’ confidence
- Higher cost of living
- How to produce low volume and low cost vehicles?
- Speed to market
One Solution: Lean Thinking

- In competitive economies, companies succeed by supplying customers more value than competitors.
- Focus on internal process to eliminate waste and increase productivity, enhance capacity and profit.
- Creating values:
  - Bring outsourced work in house.
  - Provide contract manufacturing services to other companies.
  - Apply flexible manufacturing to develop low volume production process.

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Lean concept: Reduce investment

Background:
Due to an increase in demand, the capacity of the In-circuit tester is insufficient

Possible Solution (old mindset):
Purchase additional In-circuit testers at **US$250K** each that can test 1 unit at a time.

Lean Solution (innovation):
The In-circuit tester perform 2 functions: component test & flash programming. The flash programming can be done on a **US$80K** PXI tester which can program 4 units concurrently. So, the solution is to buy a PXI tester & decouple the flash programming

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In-circuit tester
(1 unit at a time)

PXI tester
(4 units at a time)
Lean concept: Reduce inventory

Before (Delphi Suzhou keep 1 week material)

Sharp Japan (supplier) \(\xrightarrow{\text{Sea}}\) Sharp USA \(\xrightarrow{\text{Air}}\) Shanghai Port \(\xrightarrow{\text{Weekly truck}}\) Delphi Suzhou

33 days 7 days 4 days (include custom clearance) 44 Days

After (Delphi Suzhou keep 1 day material)

Sharp Japan (supplier) \(\xrightarrow{\text{Sea}}\) Shanghai Port \(\xrightarrow{\text{Weekly truck}}\) WGQ Warehouse \(\xrightarrow{\text{Daily milk run}}\) Delphi Suzhou

14 days 4 days 1 day 19 Days

Inventory cash flow reduction $25,104
Lean Thinking

- A process is a set of steps which must be taken properly in the proper sequence at the proper time.

- Drives the basics at each step:

  - **Valuable**: Is it valuable for downstream users?
  - **Capable**: Is it able to produce quality products?
  - **Available**: Is the equipment ready to run when needed?
  - **Adequate**: Is there enough capacity?
  - **Flexible**: Can the production line be easily modified when the market changes?

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Lean is Problem Solving

- These steps need to be connected and
  - **Flow:** eliminating wait time and WIP inventory
  - **Pull:** producing only based on downstream needs
  - **Leveling:** minimizing fluctuation in production volumes

- The best way of learning is to practice

- Don’t be afraid to make mistakes and raise questions
  - No problem is the largest problem

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Lean Manufacturing in China

- Common misperception about lean:
  - Lean is mean
  - Lean is a set of tools: 5S and “Just-in-time”
  - We applied Lean in 2000 and are now looking for new programs
  - Lean is from Japan and it is not suitable for the Chinese workers and culture
- Do not have time for Lean when business is good

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Lean Manufacturing in China

- Many companies took different paths and now suffer
  - Equate “large” with success
  - Trust the advanced equipment/technology will resolve all problems
  - Seek out lowest cost suppliers

- Some companies have applied lean and they are better prepared for today’s tough economy
  - Better quality, higher productivity, and less inventory

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Lean Applications

- A misconception: Lean only works in production

- Other competitive advantages:
  - Lean product development to shorten the lead time from concept to launch and better designed products for customers
  - Lean supply chain to reduce material and logistic cost and to leverage suppliers’ know-how and resources to enhance technology and on-time-delivery
  - Lean car dealership to increase customer satisfaction and making rooms for more business

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How You Can Apply Lean

- Integrate Lean activities with business strategies
- Appoint Lean value stream managers looking over end to end processes
- Use a train-the-trainer learning process to develop local talents and build a lean core team
- Encourage managers to act as coaches/teachers
- Take a Gemba walk and “learning to see”
- Leverage cross functional teams to focus on total cost
- PDCA

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Lean Enterprise China (LEC)

- LEC, an affiliate of Jim Womack’s LEI at Boston, is a non-profit organization established in 2006
- Primary objective: to promote and educate Lean Thinking in China
- Our missions:
  - Help companies apply lean transformation
  - Provide on-site train-the-trainer (T3) process
  - Organize annual lean conference for sharing and learning
  - Translate and publish LEI lean books
- Located in Shanghai to support your lean journey in China

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Summary

- China is an important battlefield for global auto OEM and component companies
- China’s unique auto market development requires a long learning curve
- Lean is a key strategy to improve competitiveness
- Times of crisis are times to begin Lean journeys
- Lean leaders will motivate all functional groups to eliminate waste and continue improvement
- It is not too late to begin your lean journey

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Wish You A Successful Lean Leap in The Year of Ox