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Building Resilient Production Chains
In the United States Auto Industry

By

Dr. Allen L. Clark
East-West Center
Honolulu, Hawaii
1. The average age of an automobile in the United States is now **10.8 years**.

2. The combined U.S. market share of the "Big Three" American car companies fell from **70% in 1998 to 53% in 2008**.

3. In the year 2000, the U.S. auto industry employed more than **1.3 million** today, it employs about **698,000 people**.

4. The average auto worker in Germany makes **$67.14**. The Average auto worker in the US makes **$33.77** an hour. The average Mexican auto worker makes approx. **$4** an hour.

5. In 2000, **about 17 million** new automobiles were sold in the United States. During 2011 **<13 million** new automobiles were sold in the United States.

6. In 2010 the U.S. ran a trade deficit in automobiles, trucks and parts of **$110 billion**.


8. Ford motor company has reduced its **North American workforce** by approx. **50%**.
1. The geography of US motor vehicle parts production has changed little over many decades.
2. Facilities clustered around historic centers of the Midwest.
3. Parts sector footprint remains noticeably clustered/linked with assembly locations.
   a. Electronics are an exception - produced farthest away
   b. Increasingly imported from overseas (Asia, Canada, Mexico)
4. Foreign-headquartered motor vehicle assemblers extended “auto alley“ south in the 1990’s
   a. Suppliers with “distance-sensitive operations” followed.
   b. Disproportionate number of southern area suppliers are foreign-headquartered.
   I. Associated with foreign-headquartered assemblers

The trend of auto production the last 5 years has been increasingly “Southern” oriented.
Geospatial distribution of US Auto Assembly and Supplier companies
The "Post Recession" US Auto Industry

The US Auto Industry - General

1. Auto industry still a key component of the nation’s manufacturing base.
2. Autos accounts for about five percent of GDP
   a. Approx. 16 percent of all durable goods shipments.
3. Auto industry employed approx. 698,000 in 2012
   a. 5.8 percent of all U.S. manufacturing employees
   I. Employment in the automotive parts industry was
      462,300 jobs in 2010
      1. OEM production accounts for an estimated two-thirds to three-fourths of the total automotive parts production.
         However
         1. US industry consolidation has reduced the number of U.S. automotive suppliers by roughly one-half since 2000
            a. Approximately five-sixths since 1990
         2. Industry analysts predict that at least 500 of the remaining 5,000+ U.S. automotive suppliers will fail in the next few years.
Remaining Problems from the Recession

1. Many suppliers let their quality programs lapse or laid off so many workers
   a. Lack the capacity to now ramp up fast enough to take advantage of the recovery
   b. Can’t find employees with the right skills.

2. Shift of workers
   a. The Great Migration to warmer climates and new opportunities
   b. From mid-west (Ohio, Michigan, Indiana)
   c. To the south (South Carolina, Alabama)

What does the future Hold for US Auto SME’s

1. The strength and stability of the recovery rests on the shoulders of the supply-chain.
2. Supply disruption is a real threat
3. Access to capital is still a concern
Supply Chain Risk and Response (United States)

Ford Motor Company, finance chief Mr. Lewis Booth noted that “I don’t see us moving away from very disciplined supply-chain management....but there will be targeted changes”

These target changes will focus primarily on:

1. Single point failure analyses to identify critical dependencies e.g. dependency on a single provider of a critical component, which could result in a supply disruption and significant “knock on” effects within the company.

2. Scenario-based Business continuity plans (SBPC) that allow an organization both to (a) evaluate the risks and vulnerabilities of various supply chain disruptions and (b) put in place and test procedures and programs to either eliminate and/or develop alternative response scenarios.

3. Increased auditing of first, second and in some cases third tier suppliers to ensure that they are in compliance with their individual business plans and that they are integrated across suppliers in the supply chain.

4. Increasing and refining the role of insurance to offset losses associated with supply chain disruption, e.g., both the “shut-down and/or the “slow down” of production – normally the former is covered and the latter not covered.
Specific Targeted Changes

1. Targeted changes may include such activities as those proposed Jabil Circuit Inc. of St. Petersburg, Florida based who:
   (a) after the Tohoku disaster, met with its suppliers to encourage them to:
      I. Develop a comprehensive business continuity plan including:
         • Developing more than a single source for parts and raw materials
         • Reducing clustering of factories around headquarters locations
            o Practice puts multiple facilities at risk in case of a disaster.

2. Targeted changes are reflective of a major movement within US companies to develop (or enhance) and implement business continuity plans based on:
   a. Short to longer term reduction of the risk of supply chain disruptions
      I. Dual/Hybrid sourcing
      II. Near sourcing
   b. Managing proactively not reactively
   c. Including and planning for both the “expected” and the “unexpected”
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