# I. Executive Summary

The current economic problems facing the tool and die industry are significant:

- 30% - 50% overcapacity,
- increased foreign competition,
- technology improvements that lower the barrier for others to enter the market,
- lower demand from the automotive companies due to reduced number of new vehicles, greater part integration, and increased part carryover,
- increased customer demands to provide more services and lower price by 5% annually.

Although some of these factors have come and gone before, this economic downturn is considered to be different from previous downturns, because there has been a fundamental change in the manner in which the automotive industry operates. Both OEMs and their suppliers are under intense foreign competition and must cut costs and change the way they do business, both internally as well as between one another. The above factors are permanent and not going to disappear as the automotives compete; hence the industry needs to restructure and develop new business models, such as the coalition approach.

Benchmark data shows the foreign competition can make dies at one-third the cost in approximately one-half the time. These differences can be attributed to three basic reasons: lean operations, simpler part designs from their customers, and closer supplier-customer relationships. This latter factor is particularly important as it drives, in part, the simpler part designs, and because it enables both parties to identify system level cost reduction opportunities, such as functional build.

It is imperative that T&D shops adopt lean practices. These practices have been shown to result in lower cost and improved manufacturing performance. The benchmark data clearly shows that lean practices lower time and cost in the manufacturing functions, i.e., die machining, assembly, and tryout. The state-funded Michigan Manufacturing Technology Center (www.mmtc.org) offers numerous training classes and implementation support for lean practices.

The T&D shops must learn to collaborate with one another and with their customers. For example, they can form coalitions that offer a broader range of services to their customers including project management and functional build. Collaborative efforts can drive tooling costs down by 40% through the following:

- Manufacturing and Engineering Efficiencies – 10%
- Coalition Efficiencies – 5%
- Product Design Input – 10%
- Lean Tool Standards – 5%
- Functional Build – 10%

The OEMs must entertain such coalitions as viable options. They can only succeed if the OEMs learn to work with the coalitions to reap the benefit of the system cost savings. These cost savings will require early design input, the creation of lean die standards, changing the part approval process (PPAP), and the implementation functional build processes at the supplier's and potentially at the customer's site.

The local, state, and federal government can support the coalition model by

- Funding the creation of coalitions or initial development into the structure of coalitions for various industries or customers (automotive, furniture, etc.),
- Creating investment tax credits and faster depreciation schedules to enable T&D shops to keep pace with the changes in technology,
- Changing laws to allow coalitions to purchase group healthcare coverage,
- Providing more funds for the education and adoption of lean manufacturing methods,
- Providing funds to support coalition cost reduction initiatives.