

# REVITALIZING THE U.S. TOOL AND DIE INDUSTRY

## TIPS TO KEEP YOUR BUSINESS AT HOME

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**T**he U.S. tooling industry has received quite a bit of press in the past few years documenting its demise. Many people believe the rise of lower-cost tooling industries in foreign countries is the main culprit.

Unfortunately, it's not that simple. The U.S. tooling industry's future is precarious, but before we place the blame on globalization, let's consider how the industry arrived at its current state.

### UNDERSTANDING ROOT CAUSES

If offshoring has not been the sole cause of the industry's troubles, what has been, and what realizations must be faced as we move forward? Part of the decline in demand has been because of productivity improvements.

Unfortunately, over the last 20 years, productivity improvements were slow in coming, because the industry did not view them as required. Later in the decade, this perception changed as Tier 1 customers demanded supplier consolidation and improvement as they merged.

Four major factors have affected demand in the tool and die industry.

**1. Fewer or delayed product launches.** The automotive product cycle has changed significantly—changes are less frequent, and design

platforms are consolidated.

**2. Increased reliability and a reduction in redundant tooling.** As the automotive industry became more confident in the capability and reliability of its tooling, many OEMs reduced the quantity of their safety tools. In most cases, redundant tooling was completely eliminated.

**3. Part consolidation.** Combining multiple parts into one resulted in a reduction in the number of tools needed. While these tools may have become larger and more complex, overall the sum of the parts resulted in less tooling. Also, the use of common parts on more than one vehicle or vehicle platform resulted in less tool building.

**4. End-user productivity improvements.** While the tooling industry was increasing productivity, so were its end users. By increasing throughput at their facilities, OEMs were able to provide the same output with fewer tools.

According to **Figure 1a** and **1b**, by compounding demand reductions over the last 14 years, in 2004 the industry needed only 52 percent of the tooling that was needed in 1990. If the industry once again decreases demand by 2 percent in 2004, the demand in 2005 will fall to 51 percent of what was needed in 1990.

### IT'S TIME TO REORGANIZE!

To minimize the risk of offshore sourcing of tooling, U.S. tool- and diemakers

should consider taking these steps:

#### **Recognize the Need to Add Value.**

Shops must identify specific products or services their customers will view as value-added. Once these items are identified, the shop should evaluate realistically in-house capabilities. If there are value-added shortfalls, the shop must complete an analysis to determine whether it can obtain the required resources.

The difficult aspect of customer analysis is determining if customers understand the value of value-added services or products. When selling added value, shops should emphasize services such as product design, low-run production support, program management, and material development expertise.

**Shorten Lead-Times.** By significantly reducing lead-times, U.S. tool- and diemakers can create a competitive advantage that offshore competitors will find difficult to match. Offshore shops will be forced to expedite tooling, which increases their cost of doing business and raises their prices.

**Identify Productivity Improvements.** Any organization can make significant productivity improvements, which decrease costs. Many tool- and diemakers argue that concepts such as lean, one-piece flow, and cellular manufacturing are unworkable in the tooling industry. Not so.

How can a company reduce its lead-time by 50 percent without significant productivity improvements? For most

Year	Yearly Productivity Improvement (%)		Yearly Need Reduction (%)		Combined Effect (%)
1990	1	100	1	100	100
1991	1	99	1	99	98
1992	1	98	1	98	96
1993	1	97	1	97	94
1994	1	96	1	96	92
1995	2	94	2	94	89
1996	3	91	3	91	83
1997	4	88	4	88	77
1998	5	83	5	83	69
1999	6	78	10	75	59
2000	7	73	15	64	46
2001	8	67	15	54	36
2002	9	61	2	53	32
2003	10	55	2	52	29
2004	10	49	2	51	25

**Figure 1a**

This table shows the year-to-year cumulative effect of annual tooling productivity improvements and tooling need reductions.

companies within the industry, a 50 percent reduction in lead-time can be accomplished within three iterations of tooling. While the first tool may actually cost more, the savings realized by the second iteration reduces costs to become comparable with a normal delivery. By the third tool, costs are reduced, and the tool is delivered in half the time it took to create the first. Remember, time is money.

**Scrutinize Wages and Benefits.**


Although the tool and die industry has always been accustomed to ups and downs, when the demand was there, it knew it could count on good wages, regular overtime, and a good benefits package. Wages and benefits were good as companies competed to maintain a trained work force. With so many shops to choose from, employees knew that if one company didn't provide the overtime and wages desired, they could go down the street and get

them from another company.

Now the labor force must come to the realization that their livelihood is at stake. Significant changes are required to allow U.S. shops to compete on the world stage. Unfortunately, the labor force must share in these changes. New wage scales, new work rules, new benefits packages, skill enhancement, acceptance of change, and desire to compete will require all employees to modify the way they look at the industry.

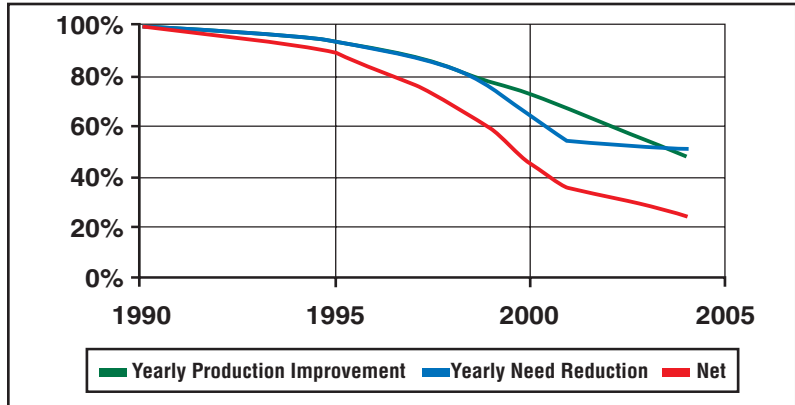
**Increase Demand.** How can tool-makers increase demand when the business environment seemingly is doing everything it can to push the industry into the grave? Unfortunately, they can't. By changing and changing significantly, improving productivity, adding value, reducing lead-times, restructuring labor costs, and, yes, reducing prices will the industry be able to slow the escalat-

ing offshore sourcing trend.

U.S. tool- and diemakers must start thinking differently. Those who have the wherewithal to step up and are willing to offer added value to their customers will succeed. 

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**Figure 1b**

This graph summarizes in a graphic mode the cumulative effects of tool improvements and decline in tooling demands.