

# CRAFTSMAN'S CRIBSHEET

NUMBER  
**14**

Miles Free – Director of Technology and Research



Technical



Regulatory



Quality



Management

## HOW SOCIETY DRIVES TECHNICAL INNOVATION IN PRECISION MACHINE SHOPS

The parts that we produce in our precision machining shops are usually embedded into other products which are sold. Seldom are the products of our shops sold as a final product. Typically we look at markets (automotive, aerospace, fluid power, off road) when we think about where our products are used. While this marketing focus has its commercial merit, a look at the forces driving demand can help us all better understand our role in the evolving world and what demands for our products and processes are likely to look like in the years ahead.

Seven megatrends that impact precision machining:

- Mobility
- Population growth
- Globalization
- Communication
- Health
- Aging society
- Urbanization

Changes and new developments in each of these areas can be seen in the products we produce. Decreasing mass and size of parts can be a result of the megatrends mobility (hand-held rather than desktop devices) and population growth (use less material to serve more people).

As our shops respond to meet these new demands, we adjust through our "technical innovation." PMPA technical member Horn USA shared the following graphic detailing "technical innovation."

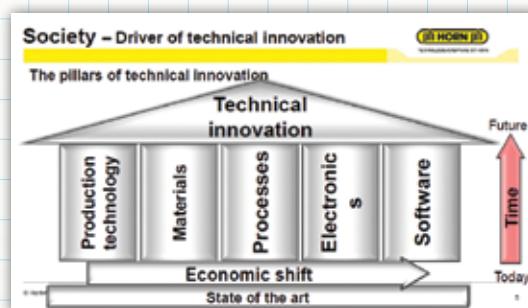
Precision machining involves each of the five columns in this graphic. We employ production technology, cam automatics through CNC Swiss; materials are changing in the jobs we quote today compared to those of just a few years ago. Processes today often involve poka-yoke, mistake-proofing, as well as 5-S and various Lean and Six Sigma process innovations including use of Production Cells rather than "departments;" Kanban and Kaizen may also be employed.

Increasingly electronics and software are tools for us to use to provide better shop management and control, as well as drivers of the component parts we make for the computer devices that they run on.

The graphic interestingly shows that "State of the Art" is the foundation for technical innovation. It isn't really innovation if the new thing you are implementing is just catching up to yesterday's state of the art.

When you look at the products that you produce in your shop, take a moment to think about which of the seven megatrends are driving demand for the products that require that component. How are you positioned to meet changes in those demands?

Is your shop more heavily invested or accustomed to serving needs of any one or two of those megatrends in particular? What does that mean for you in terms of commercial strategy? What new indicators should you be following based on your new recognition of the demand drivers of the markets that your shop serves?



All Craftsman's Crib sheets are available for viewing and download at [pmpa.org/knowledge-tools/craftsmans-cribsheets](http://pmpa.org/knowledge-tools/craftsmans-cribsheets)