

Situation

According to a 2006 survey sponsored by the Milwaukee 7 [1], manufacturing remains the single largest sector of the regional economy in terms of employment, comprising more than 20% of employment in Milwaukee and its four adjoining counties. The question is, of course, *why*? With the global rush to low-cost off-shore manufacturing, how has manufacturing managed to survive in Southeast Wisconsin?

Even a cursory examination of area manufacturers quickly reveals the answer. Successful area manufacturers *simultaneously* offer:

- High quality,
- High flexibility,
- Rapid response time.

Of course, these are universal goals for all manufacturers, but successful Milwaukee manufacturers exhibit all of these characteristics *simultaneously at higher than typical levels*. This is the competitive advantage that has allowed manufacturing to survive in the Milwaukee area.

Response

The means to preserve this competitive advantage are discussed in a 2008 report by the Wisconsin Policy Research Institute [2]. The report cites the following five steps to moving the overall Milwaukee economy forward:

- Increase the flow of capable workers into high-end manufacturing,
- Increase the college-educated population,
- Increase the number of high-school graduates,
- Increase downtown Milwaukee population,
- Lower the crime rate in Milwaukee.

The report clearly identifies education at all levels as a general success factor, and this certainly applies to leveraging the existing competitive advantages of the manufacturing sector cited above. But what *specifically* needs to be taught in order to capitalize on the existing situation?

Focus

The Milwaukee 7 survey [1, p. 34] offers a specific answer to this question of: “education in *what*?” The following are survey results related to types of training needed by survey participants:

<u>Types of Training</u>	<u>% Responses</u>
Safety	13
Six Sigma/Quality Training	12
Lean Manufacturing	11
Internships/Education	6
Leadership/ Management	5
Equipment	5
In-house Training/ Specialized Curriculum	4
Language: for supervisors or employees	3
Apprenticeship/ On-the-job Training	3
Computer Training	3
Financial/Investment	3
Tuition Assistance	3
Health/Wellness	2
Environmental	2
Cross Training	2
Other: single mentions	25

According to the survey, educational needs are heavily-weighted toward safety, six-sigma/quality training, and lean systems. Not unexpectedly, six sigma and lean manufacturing form the basis for the quality, flexibility, and speed advantages of successful area manufacturers cited above. Interestingly, safety is typically considered an integral part of comprehensive lean manufacturing programs. These results indicate that area manufacturers have a clear understanding of what needs to be done to leverage their current competitive advantage, and that these needs fall mainly under the banner of “lean six-sigma”.

Proposal

The obvious conclusion is that the Milwaukee area could benefit significantly from a systematic, comprehensive approach to expanding and improving six sigma and lean education and application. It is proposed here that this goal could form the core of a Lean Six Sigma Institute composed of area manufacturers and educational institutions.

While the line of reasoning followed here is founded primarily on maintaining and improving the current strengths of the manufacturing sector, lean and six sigma principles are commonly applied in business, education, and health care fields as well. Thus, an additional goal of the Lean Six Sigma Institute would be application of these principles across the area’s major economic sectors.

Scope

The scope of the Lean Six Sigma Institute would include: 1) education; 2) application; and 3) communication. *Education* would include curriculum development and delivery from grade school through graduate school levels. Curriculum would be coordinated with international certification agencies (e.g., ASQ), thereby generating a “black belt” pool of lean six sigma experts and practitioners in the region. A lean six sigma “community of interest” would accelerate *application* through site visits and sharing of best/worst practices. As for *communication*, the Institute would stimulate awareness of lean six sigma benefits and Institute activities across all major elements of the regional economy, including manufacturing, business, education, and health care. Further, the Institute would stimulate awareness and benefits of this “core competency” to perspective local and global customers of the four economic sectors involved in the institute.

Educational Partners

Educational institutions capable of participating in a Lean Six Sigma Institute include Marquette University, the University of Wisconsin – Milwaukee, the Milwaukee School of Engineering, Milwaukee Area Technical College, and the Waukesha County Technical College. All of these institutions have a strong capacity to provide manufacturing-based lean six sigma training at all post-secondary levels. Expansion to business, education, and health care segments could be conducted through these and additional area institutions. Secondary school involvement could be approached by incorporating lean six sigma principles into Project Lead the Way activities.

Industry Partners

Initial Institute activities would focus on area companies that actually conduct manufacturing in the Milwaukee area. The Institute must be focused initially on rapidly facilitating substantive changes in the ways companies develop and manufacture products. Special emphasis would be applied to involving companies with local control over product and process development, thus insuring that changes could be implemented without involvement of extensive and remote approval chains. Expansion of Institute activities to business, health care, and educational areas would follow initial successes in the manufacturing sector.

Next Actions

The line of reasoning embodied here must be validated, and a next level of detail must be added based on specific stakeholder needs. The data forming the basis of this proposal was provided by efforts associated with the Milwaukee 7 organization. The Milwaukee 7 provides an excellent vehicle for validation and expansion of this proposal. It is suggested that the proposal be discussed with M-7 representatives, and then presented for public review through the M-7.

Conclusion

When examples of strong regional economies are cited, there is usually a widely-recognized “hook” that success is predicated upon. (“Everyone knows” that the success of the economy of Madison, Wisconsin is driven heavily by biotech). If Milwaukee is to have a strong economy, what will its hook be? It is proposed here that Milwaukee’s hook already exists, that it is the same hook that has driven Milwaukee’s economic success in the past, and that the hook is already recognized to the degree that it continues to drive the largest segment of the regional economy. The purpose of the institute proposed here is to help preserve and strengthen this critical natural resource.

Respectfully submitted by:

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References:

- [1] M7 Manufacturing Survey Results: An Analysis of the CEO Call Program 2006.
- [2] Moving the Milwaukee Economy Forward: The Five Steps Necessary for Success.