

Introduction

Manufacturing Realities

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Manufacturing, after years of inattention, is experiencing intensified interest among senior general management at many corporations. Executives who once viewed manufacturing as an operational component that paled against other functions in the enterprise are paying close attention to it again. They realize that the success of the organization is increasingly determined by strategic decisions they make about manufacturing.

But extracting real and sustainable value from manufacturing now requires extraordinary skills: It's essential to confront the realities of manufacturing today and break the boundaries of conventional practice — to turn fossilized plant footprints into virtual networks, to convert confrontational worker relationships into constellations of joint interest, to transform fragmented supply chains into clearly defined, mutually beneficial arrangements, and to retrofit stolid old factories into showcases of lean manufacturing. Because manufacturing has been under the radar, few companies are blessed with the superior capabilities to successfully tackle these issues; many are striving to develop them quickly.

To understand how we arrived at the promise of today's manufacturing realities, consider what manufacturing has been through in the past 50 years.

Five decades ago, the typical Western company took manufacturing basically for granted. Most corporations satisfied the need for growth by building assets, not by improving manufacturing. Indeed, manufacturing management was a fledgling discipline at best. In the 1970s, when Western manufacturers faced their first real global challenge from a wave of low-cost Asian competition, old-line industrial companies were often at a loss for how to respond to the changed landscape. So they did relatively little and hoped for the best.

Ten years later, an answer emerged from Japanese rivals, which had pioneered streamlined assembly processes and methods for capturing quality gains. Playing

catch-up, Western companies tried to copy these lean production systems. Suddenly, manufacturing was all the rage.

That didn't last long, though. Frustrated by meager gains from lean manufacturing, throughout the 1990s many Western companies began to wonder whether they needed to make their own products at all anymore. In the context of the suddenly-in-vogue economic value added (EVA) metrics, factories and production systems were viewed as a poor use of limited capital. The turn-of-the-millennium belief that idea generation was more valuable than actually making something sullied manufacturing's image even further. As a result, outsourcing and offshoring were embraced in wholesale fashion.

And now? Manufacturing is at the top of many corporate agendas again. Companies have begun to understand that manufacturing is a core component in providing value, and they've learned that plant resources can be an extremely important contributor to improvements in earnings. Additionally, it's becoming increasingly clear that divesting factories in the hopes that others will run them better and more profitably can be an illusion. Quality, timeliness, and cost efficiency are what customers pay for. And that realization has led companies to take very seriously decisions about whether to make items in-house or to buy them (or more and more of their components) from third-party sources; depending on the circumstances and the arrangements, either option can bring significant benefits.

For many companies, the increased significance of manufacturing has been matched by increased confusion about how to manage manufacturing in a complex business environment. Wherever we look, at all the clients that we work with, manufacturing functions are under severe pressure. Pharmaceutical companies are struggling to deliver more cost savings to fuel R&D. Electronics and durable consumer goods firms are desperate to fend off low-cost competition. Automobile manufacturers still face many of the same issues that confronted them when the Japanese first arrived on the scene. And aerospace companies are fighting to keep their increasingly complex supply chains on schedule for new launches. Moreover, because manufacturing often represents significant personnel costs, the labor issues involved are so sensitive that sorting them out demands a much wider commitment of an organization's management and resources.

Yet, despite the challenges, it is becoming obvious that for many more companies, manufacturing must become an essential part of what distinguishes them from their rivals. But why are so many companies unable to achieve this? We believe that the answer is that these companies suffer from what Booz Allen Hamilton calls "manufacturing myopia."

These are some of the symptoms: Executives seem to do all the right things to

improve operations, but somehow get outperformed on cost, quality, or delivery. They may turn to benchmarking exercises, but those are rarely meaningful. Low-cost competitors appear with prices that can't be completely explained by lower factor costs. Rising warranty expenses or dramatic product recall levels indicate the ongoing erosion of quality in increasingly complex products. As a last resort, they outsource production, and thus further erode their own company's manufacturing competence.

Making matters more challenging, what used to be a neatly defined, albeit insular, role for manufacturing executives has over time become broader and broader. Not only are most senior operations executives now responsible for a whole suite of supply chain functions — procurement, planning, logistics, warehousing — but they also frequently inherit jobs that at first sight could be placed under any executive, such as order capture, sales forecasting, technical services, and so on. Add to these duties the task of responding to the latest corporate initiatives, including ERP implementation, Six Sigma programs, and waves of sourcing initiatives.

Diagnosing manufacturing myopia is easier than treating it. In our view, however, it can be overcome. A successful manufacturing operation requires not only keen perception and smart strategies, but also a clear view of its own cost structures and its core competencies, astute knowledge of its competitors' operations, and close cooperation among plant communities and companies. It also invites companies to reduce the gap between the CEO's floor and the shop floor. In other words, it requires that manufacturers have the foresight to embrace current manufacturing realities. Step change in manufacturing is not immediate; it can take years. It can be created and produce sustained improvement only by strategic relevance, persistence over time, the diligent transformation of corporate functions, the meticulous development of an intelligent manufacturing footprint, and novel methods to reengage the work force.

In *Manufacturing Realities: Breaking the Boundaries of Conventional Practice*, we present fresh ways to understand manufacturing: its costs, its hidden value, and its opportunities. We provide frameworks for step change and proven methodologies to gain deep insights into competitors' activities as well as your own. We offer practical recommendations for becoming a world-class manufacturer. And perhaps most important, this book illustrates the ways in which innovative manufacturers have managed to improve their results and treat myopia.

Chapters in the book are:

Manufacturing Myopia — an examination of the condition that afflicts many manufacturers today and a detailed improvement recipe.

ISSR: What Drives (Your) Manufacturing Cost Competitiveness? — a blueprint for analyzing — and understanding — manufacturing cost drivers and the resulting differences in production costs among manufacturing rivals.

Make Versus Buy: A Decision Framework — a tool for assessing whether to manufacture products in-house or outsource their production.

Relocate? Transform? Which Option Is Right? — a guide for those deciding whether to transform brownfield (existing) facilities or construct greenfield (new) sites in lower-cost regions.

Brownfield Transformation: 25 Years on, Fulfilling the Promise of Lean Manufacturing — a discussion of typical myths about lean manufacturing that must be confronted in order to implement sustainable manufacturing excellence in Western plants.

Taking the Right Steps: Manufacturing Footprint Design as a Competitive Imperative — an approach for creating an agile network of plants by constant surveillance and modeling of supply chain economics.

Unraveling the Chinese Puzzle: A Practical Approach for Manufacturers — an examination of the opportunities and risks manufacturers face from operating in China and other low-cost nations, and an update on the needs — and potential complexities — of setting up plants in China.

The Manufacturing Organization: Integrated, Visionary, and Accountable — an appreciation of the delicate balance that must be struck between the assembly line, the factory, and the manufacturing network to create a world-class manufacturing organization.

Who Manages Manufacturing? — survey results offering a sometimes surprising portrait of manufacturing heads in the modern corporation and what their greatest challenges are.

It certainly is true that the last 50 years has been a period of turmoil and confusion for the manufacturing function. And over time, from a corporate perspective, the appreciation of the blunt realities of operating a network of plants has slipped away. Our hope is that this book will serve as a practical guide to making the next 50 years easier, and that it will be a launching point for discussions about improving factories and plant performance — a set of ideas and tools for addressing the new manufacturing realities that will guide the direction of global industry well into the future. +