

IS YOUR FURNITURE FACTORY OBSOLETE?

One remedy is focused manufacturing - *matching your plant organization to your products and markets*

The conventional furniture factory attempts to compete by using an organization that is inconsistent with the single, critical factor on which its customers make buying decisions. A new organization, focused on the one key task that manufacturing must fulfill, is required to renew the factory's competitiveness. This organization is *the focused factory*. This article explores the causes of poor manufacturing effectiveness and introduces the link between a company's strategy and its plant floor.

Most furniture producers are faced with a complicated manufacturing puzzle as a result of changing market demands and economic factors. Customers are demanding fast delivery, perfect quality, design variety, and low prices. When combined with high material and labor costs, governmental demands for safety and a clean environment, high purchase costs for plant and equipment, and the risk of unsold inventory, the result is a lower-than-acceptable profit margin.

As a consequence, the typical furniture plant is performing well below the benchmarks established by so-called world-class manufacturers.

Furniture Manufacturing Metrics

<i>Performance Measure</i>	<i>Typical U.S. Plant</i>	<i>World Class</i>
Output per Ft ²	\$75	\$125
Travel Distance	5,200 ft	500 ft
Material Velocity	6 turns	12 turns
Work vs. Time	3%	30%
Set-Up Time	180 min	10 min
Output per Worker	\$80,000	\$150,000
Cycle Time	5 weeks	5 days
On-Time Delivery	80%	95%+

A major contributor to this poor performance is obsolete plant organization. A plant's organization consists of its *hardware* - the equipment, technology, plant layout, and overall capacity - as well as its *software* - the workers and managers plus the various systems and procedures that keep the process running. It is the sum total of all these elements that determines a factory's operational capability and its chance for success.

CAUSES OF OBSOLESCENCE

When first built, a factory and its organization are usually well conceived. Over time, however, an efficient operation often deteriorates from being a competitive asset to a detriment. What causes such a collapse? In general there are 4 broad reasons:

- Product Proliferation
- Incompatible Organization & Mission
- Misdirected Performance Measures
- Failure to Upgrade

Product Proliferation

All products eventually experience declining sales as their life cycles end. As the product line for which a plant is originally designed fades, new lines are added. Often these additions mean significant changes in the plant's process and the market that it serves.

In the area of process, new products can require new machinery and technology, add a different quality level, or employ new materials. When added to the elements of the initial process, these new ingredients complicate the plant's task and, more importantly, dilute the competence of the work force. The result is lower productivity.

New products frequently bring new markets - customers with a different set of demands from those originally served. Or, as has happened in furniture, the customers change their business strategy and demand faster delivery and less inventory at the retail level. If the plant was established to make large orders of a short product line, the process and management systems may be unable to cope with this new set of demands.

In an effort "to be all things to all customers", the plant now experiences high costs, large inventories, long throughput times, and poor delivery reliability. Management believes that the addition of more product is justified by "economies of scale" and "overhead savings". But in the end the plant cannot produce any of its products effectively. *And profit margins continue to sink.*

Incompatible Organization & Mission

A plant's organization consists of many key elements:

- *capacity*
- *process technology*
- *scope of process* - vertical integration and make vs. buy policy
- *workforce structure* - job design, supervision type, and compensation system
- *management systems* - production/inventory/quality control

As noted above, these factors combine to set a plant's capability in terms of cost, throughput time, quality, and other critical parts of its mission. The capability originally defined when the plant was built serves it well as long as products and markets remain unchanged. However, a plant's organization is typically inflexible. In the face of a gradual change in a plant's mission, many managers and workers continue "business as usual". The inability of a workforce to build different quality levels efficiently is a well-known example. Repair costs typically rise if the plant is forced to produce higher quality items. In a situation where quality standards are lowered, excess labor is expended making the product too good. *And profit margins continue to sink.*

Misdirected Performance Measures

Most furniture plants are managed by the profit and loss statement. Managers concentrate primarily on the cost and efficiency of their work force. In many cases complicated systems are installed to compare actual labor expended with some estimated time "standard". Workers and managers both are held accountable when actual labor hours exceed the "standard".

In most furniture plants direct labor cost is less than 15% of ex-factory price. A quick glance at your profit and loss statement will reveal, most probably, that total materials cost far exceeds labor. More critically, your plant's success probably does not depend on labor cost. Most plants do not compete wholly on price but rather sell their on-time delivery reliability, their ability to customize products for individual customers, or other factor important to the buyer. But the focus on labor cost continues. *And profit margins continue to sink.*

Failure to Upgrade

Every year woodworking machinery manufacturers introduce new machinery. Their faster set-up, multiple functions, accuracy, reliability, and output rates outclass machines only 2 to 3 years old. Yet many furniture producers continue to rely on inaccurate, 1960's-vintage machines with long set-up times.

The machine and sanding departments typically feature process-style layouts where like machines are grouped together. At best the parts processing operation is divided into a panel section for laminated components and a rail/moulding section for solid wood parts. Often new machines are located where power and dust extraction are readily available rather than where travel distances are minimized. The result is excessive materials handling that adds cost and not value to the plant's products.

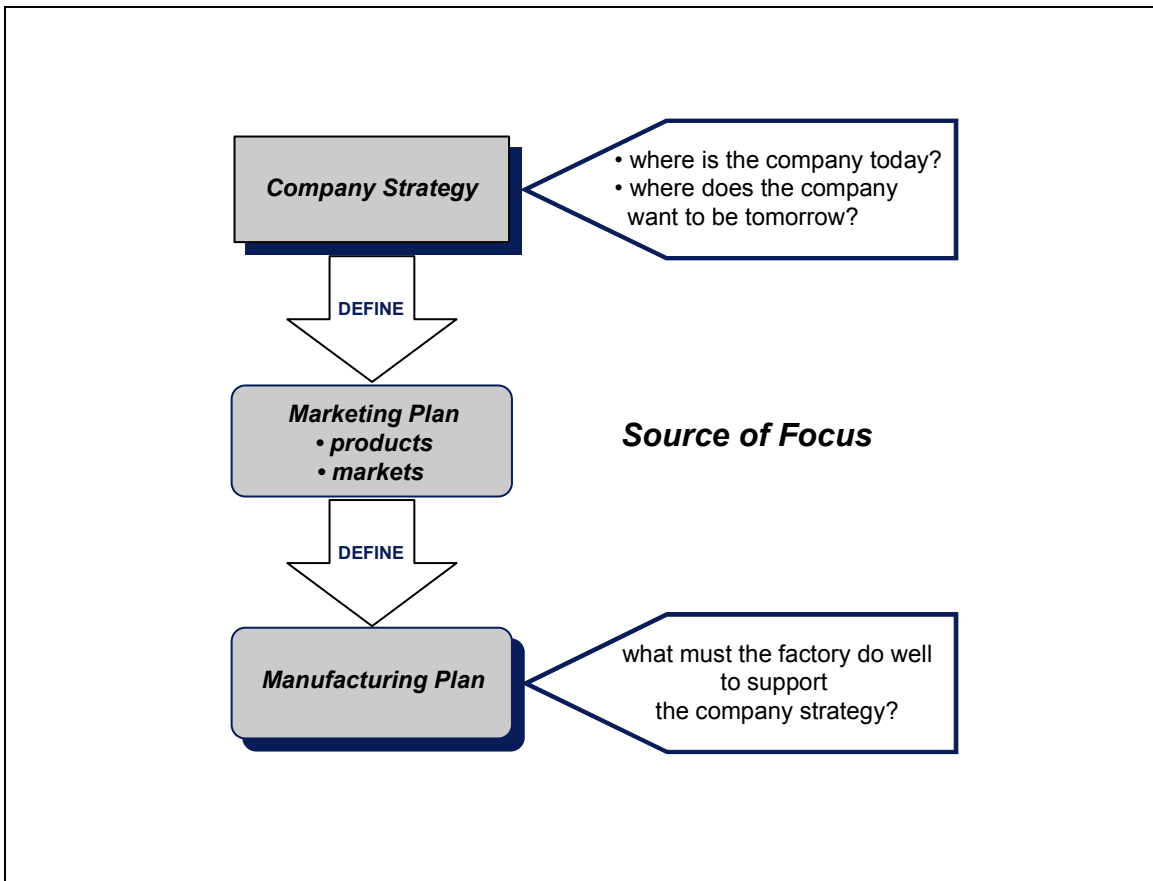
Management ignores the potential savings that can be achieved through reorganizing their plant floor to leverage the new processes, materials, and products. *And profit margins continue to sink.*

Like most industries furniture has shifted from being production-driven - factories making large batches of a short, simple product line - to being customer-driven with the retailers dictating product and pricing. To reverse the trend of sinking profits our industry must rebalance their production assets with their customers' demands.

THE SOLUTION

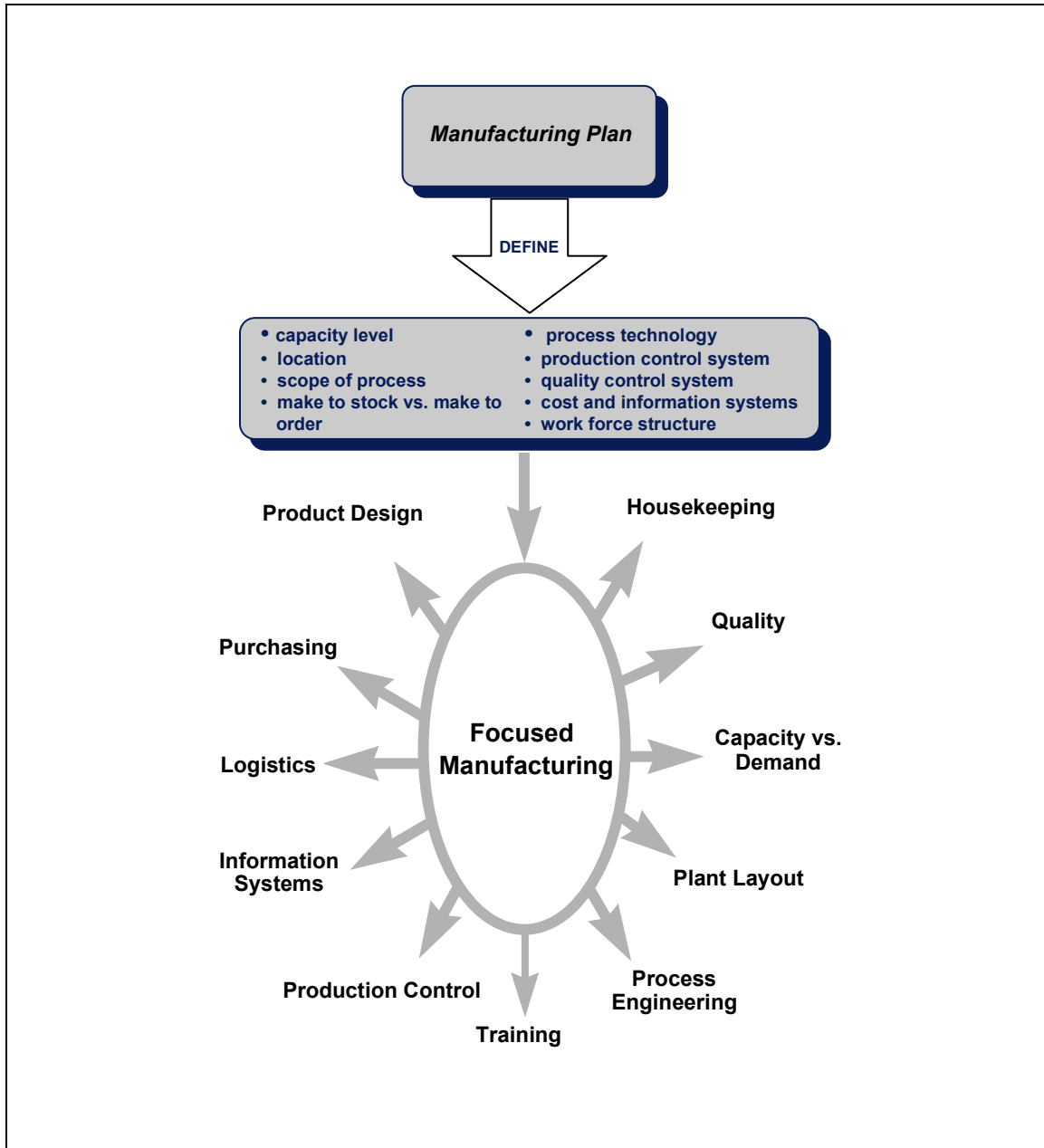
Factories can only accomplish a limited number of objectives. As Wickham Skinner, the father of the focused factory concept, noted, “A factory cannot perform well on every yardstick.” The conventional furniture factory attempts to achieve low labor cost, high quality, low inventories, fast delivery, and a broad product line. But fast delivery often means inventory of semi-finished or finished goods, and high quality usually requires spending a little more labor. If measured on all of the standard industry yardsticks, the plant will fail at all of its tasks.

The answer then is to set *one key manufacturing task* for a plant. That task must be linked through the company marketing plan to the company’s strategy...



The starting point for focusing your factory is your company's strategy

The critical question is “what must the factory do well to support the company strategy?”. From that answer you can define the correct organization of the various production disciplines...



The manufacturing plan must address all operational disciplines

Focused manufacturing is a proven concept. Focused factories can achieve the world-class performance levels like US\$125,000 output per worker and 12 inventory turns per year.

For a plant producing US\$25 million of furniture annually, achieving this performance means substantial savings...

- A 1-day inventory reduction is worth \$60,000.
- The cost of 1 production hour is worth \$4,500.
- A 10% improvement in productivity is worth \$1.25 million in added gross profit.

Isn't it time to reorganize your plant?

Art Raymond

A. G. Raymond & Company are consultants to the furniture and wood products industry with experience in the U.S. and 20 foreign countries including Malaysia, China, the Philippines, Vietnam, and Sri Lanka. More information on reorganizing your furniture plant can be obtained by fax at 1-919-831-0072 or by e-mail at info@raymondnet.com

NOTE ON LABOR PRODUCTIVITY

To compete in the U.S. market the ex-factory prices received by offshore producers are less than those achieved by U.S.-based manufacturers. In addition, factories in developing countries, with some exceptions, are not as productive as those in the U.S. and Europe. For these reasons output per worker in developing countries falls below the US\$80,000 shown in the Furniture Manufacturing Metrics table above.

Suppliers to the U.S. located offshore use their low wage rate as their primary competitive weapon. Managers of furniture plants in the Far East and elsewhere should not forget that *labor cost* is the product of output and wage rate. Because your wages are 10% of those paid in the U.S. or Europe, you cannot survive on labor productivity that is 10% of US\$80,000. You must capitalize on your lower wage rates by employing your labor efficiently and achieving a lower labor cost than your U.S. competitors. A chair, for instance, made in a well-managed, well-equipped factory in the Far East should require no more labor hours than would be employed in the U.S.

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