

## **CHAPTER 2**

### **GLOBAL MANUFACTURING**

The human society is duly progressing everyday, simultaneously germinating and directing new requirements to the technological, economical and social environments around and within it (Moritz, 1997).

Today's competitive market requires manufacturing companies to use innovative tools and technologies designed to help them work quicker, smarter, and more effectively. In addition to the challenges of developing breakthrough products, many companies look for a competitive advantage through operational efficiency.

It wasn't that long ago that Mexican entrepreneurs started seeing a fierce competition in price and quality from foreign companies that massively invaded our country or from those that just exported their products to the Mexican market. Some of these entrepreneurs realized that they either started doing something about their traditional business practices or they better sold their companies to big multinationals that could smash them down any moment they wanted to. For those who thought that they really couldn't fight a huge foreign firm, selling out seemed rather easy, but perhaps they never really thought about the future of all the workers that were to be laid off. On the opposite, a big multinational that buys out a Mexican company usually finds lots of problems along the way. First and foremost, the way people work in Mexico is not at all similar to the way it is done abroad, the systems that are effective in Europe or Asia, may not be effective for Mexicans at all, at least not in the same way or with the same results. For instance, in Asia, the hierarchical nature of their social systems is based upon respect for the elder, who are considered the most experienced ones, while in most of the western world, the elder are

rarely taken into account because their innovative potential is considered almost extinct. The discipline that characterizes the Asian way of living translates itself into a highly disciplined working philosophy that accepts no defects or mistakes, this means that tolerance is not widely practiced when it comes to duty, while the western world praises tolerance as the basis for human interaction.

Therefore, this globalization attempt must be full of patience and rely upon thorough technological and socio-cultural analyses that will eventually lead to the results the company is looking for. Nowadays, industries face an absolute need to incorporate cultural aspects into modern production technology (Moritz, 1997). Globalization is not about “conquests” that resemble what was understood back in colonial times, it actually means “mutual cooperation”, which is the only way in which results will turn out to be the desired ones for everybody.

## **2.1 Definition**

One can hear about “global manufacturing” all the time, but most people may not really understand what it means. Global manufacturing is defined as the set of principles that guide the way things are planned and done at a manufacturing facility in order to get quality-compliant products, full customer satisfaction, flexibility in the production line, just-in-time manufacturing and a management style that continuously promote these characteristics (Maskell, 1991).

By no means has this been an easy task, it represents a drastic, usually 180° turn around for most companies in the way they have been doing business for the past 30 years or more. Yet, the only truth is that unless a fully productive environment is present at the

workplace, globalization instead of revolutionizing to achieve more challenging goals will rather make a company vanish into oblivion quite rapidly.

With the integration of a rapidly evolving global market, customers and consumers are constantly looking for better and more cost efficient ways to satisfy one need or another. The exchange of products around the world occurs at astonishing rates. What it took weeks to bring from Southeast Asia half a century ago now can be delivered through next-day air freight, it is amazing and it only keeps getting better. The information exchange that the World Wide Web (WWW) has enabled in almost real-time is one of the major bases for decision-making processes. The headquarters of a certain company that are located in let's say, Denver, may interact in real-time with the managers of one of their facilities in Paraguay and make business-strategic decisions upon which the future of a whole town may depend. The power of modern and ever improving Information Technologies is nurturing the globalization process as probably nothing else can do it.

A 'world class' approach to manufacturing requires that management focuses on fundamental issues and develop hereafter performance measurement methods that can effectively address these issues as they apply to a certain facility, but always doing it in the clearest and most straightforward way to avoid getting lost somewhere along the tremendous journey that is begun (Maskell, 1991).

When one hears about global manufacturing one must immediately realize that it means that the only way a manufacturing company is to survive is through radical changes in all aspects of the process, from design to production, to ultimately achieve top customer service that will ensure the continuance of the business. There are many ways of course in which a company can go global. First and foremost, it goes global when it exports, but it definitely doesn't end up here, this is only the first effort to jump across national

boundaries of the marketplace. It can go global when it starts an international exchange program for its employees with a similar company abroad; it may import technology starting what is known as a technology transfer process; it may establish subsidiaries in other countries to promote imports and exports, it may merge with someone else to start a really global approach to its business, etc. (Hofstede, 1997).

Not every globalizing effort may be successful, the competitiveness of the small, medium and big companies is higher everyday, the obstacles that they may find are as diverse as complex as one can think. They have to find ways to ease the process at the lowest possible cost.

Such an effort requires tools like Total Productive Maintenance to help make these changes possible at the workplace. It has proven to be effective in hundreds, perhaps even thousands of companies worldwide since its development. Global manufacturing is based upon systems that are consistent in both implementation and results aspects. A company may find it impossible to become a world-class company overnight, it first has to establish a clear vision of what it wants and then develop thoroughly thought strategies that will make it possible to get where and how it wants to. In the process, it is of absolute importance to consider the cultural characteristics that may help or hinder the attempt, otherwise, no results will be seen and frustration of both the employer and the employees is the only possible outcome.

As it was mentioned before, a global manufacturing company needs to be flexible. Flexibility means that the production lines have the shortest possible lead time, which is defined as the total time it takes to have a product ready to be shipped from the moment the process order is transmitted to the line (Maskell, 1991). This means that the plant has perfectly trained people that can manufacture a wide range of products with minimum

changeover periods. If the company can offer this to all its customers then it can be considered a highly competitive facility that is ready to fight in the global arena of modern supply and demand.

## **2.2 New Performance Measures**

As it was just mentioned, globalization requires radical changes. The way the performance of a company is measured needs to be changed to reflect the importance that all of a sudden, new issues that may guarantee higher competitiveness have acquired. Not that long ago, what really mattered was the volume of production achieved during a certain period of time. This number had a direct financial impact around which plenty, if not most, decisions were made. Brian H. Maskell states that the new performance measures that are required have seven characteristics in common, which are:

- 1) they are directly related to the manufacturing strategy
- 2) they primarily use non financial measures
- 3) they differ between locations
- 4) they change over time as needs change
- 5) they are simple and easy to use
- 6) they provide fast feedback to operators and managers
- 7) they are intended to foster improvement rather than just to monitor (Maskell, 1991)

The common denominator found among these seven measures is definitely that they are dynamic. They adapt, they change, they communicate, they help make decisions on a daily

basis and not just at the end of the fiscal year when all attempts to correct what was done wrong for twelve consecutive months will certainly fail.

In realizing that one cannot look forward to merely set policies and expect everybody to comply with them from day one, the corporation will be able to adapt the methodology and let the organization itself redefine its priorities according to the new business needs. A dictatorship will not work, it will only foster deep feelings of resentment that will halt all efforts to change the way the organization works. Communication is the basis for globalization, as stated earlier, it doesn't necessarily need to be from continent to continent, it needs to be done within a same production department emphasizing that the only way to survive is through continuous improvement, properly aligned with the highest expectations of the organization.

### **2.3 Global Manufacturing in Mexico**

Back when the NAFTA (North American Free Trade Agreement) was signed, Mexico knew that at some point would it find itself openly competing with American and Canadian companies in the industry as a whole. Unfortunately, it wasn't until it saw that the competition was preparing itself and getting closer to the feared dateline that the Mexican industry decided it was time to change. Tough cost abatement policies were implemented, which usually meant laying hundreds of employees, with no attempts done to reduce costs focusing on production losses.

As sad as it is to say it, the global manufacturing journey has been carried out mainly by foreign companies that own production facilities in this country. They know how to make a change and constantly strive to fight against some serious issues of the

Mexican culture as far as work is concerned. These foreign companies make their different facilities worldwide to compete among themselves and try to see where it is more attractive to operate and invest. A traditional Mexican company may not see this modern need to identify potential opportunities to improve their business results or share of the market. The Mexican entrepreneur doesn't want to accept that there is a way to make radical changes in the workplace, in their employees and ultimately in their results.

The main problem here is that all those new Mexican entrepreneurs that are just graduating from college may not really see the potential danger that not focusing on global manufacturing practices poses to their entrepreneurial efforts. Their professors may not be properly preparing them to face a globalized industrial world. It isn't uncommon to find young professionals that think that globalization is reduced to the internet. What can one expect them to fight with if they don't possess the very basic knowledge about global manufacturing practices?

## **2.4 Localization in Globalization**

As overwhelming as globalization seems to be nowadays, the world has seen already how not all globalizing efforts succeed. There are times when the local context has such an inertia that external stimuli seem not to be strong enough to make it change its course. Most of the times this is due to cultural factors that are closely related to traditions, family or religious values, language barriers, etc.

In its globalizing endeavor, a corporation may find it difficult to prepare all its products to compete effectively in the global market. Many times they may actually think

twice before starting such an attempt, mostly based upon self experience or that of somebody else.

Localization is also a globalization approach. This means that, giving the example of a product, instead of trying to fulfill the requirements of multiple markets, a product is to fully satisfy the needs of the place where it will be present in. The automotive world is a clear example of this. The same manufacturing facility in Mexico may produce the cars that will be both used for the domestic market as well as the export one. It may export not only to the United States, but Europe or South America as well. Even though the name of the car and even its shape is identical in all these countries, what is inside may not really be so. For instance, some countries regulations regarding emissions to the atmosphere are so much stricter than the domestic ones, so the catalytic converter to be used may be different. The level of comfort that the European requires varies considerably than that required by the American market, so the interiors will tend to be different to satisfy the local needs of the market. This is a clear example of how globalization is achieved through a localization approach.

In the case of A&B, the implications of localization have already been a matter of commercial disasters. A&B strongly believes that it should be able to offer, in general, all its products around the world under the same names and formats. This is due mainly to financial reasons. Doing so would mean that it could manufacture the same product that it sells in India or Chile in its same German facilities. The volume that the manufacturing site would achieve would be enormous and extremely attractive in terms of investment. At the same time, marketing-wise, it would be able to use the same campaigns in different places, perhaps just changing the language; this would save millions of dollars a year to the company. Yet, it isn't always possible to do this. In the case of soaps or detergents for

example, local regulations may differ considerably, a fragrance that is popular in Chile may not be so in India, making the volumes of one presentation to overwhelm another one. Finally, the Indian community would rather have one of their own in a TV ad instead of a blonde housewife, while the Chileans may not really care about it. As simple and frivolous as this example looks, it is just a tiny taste of the obstacles that globalization efforts may find when it comes to fighting the local context. Unless the corporations that operate worldwide understand this, their business strategies may perhaps prove to be economical disasters that are worth millions of dollars and thousands of employment opportunities.

Obviously, not only products can be localized, processes can be as well. Particularly when it comes to technology imports, the process to be set up needs to be adapted to the local needs. It might be a matter of changing the technical specifications of some motors to achieve the desired power supply or maybe change the diameter of the pipelines to allow a different flow rate to pass through, etc. The need to localize a process derives from either technical or cultural aspects as will be explained later on.

## **2.5 A Globalized Future**

Things won't get any better as far as worldwide business competition refers. A customer may have ten different alternate suppliers to obtain a good or service from, it all depends on who gets to sell best. A globalized manufacturing world requires not only to sell a product, but to actually sell a solution. Although it may not apply to all kinds of manufacturing industries, it can certainly make a difference in plenty of them.

Not that many years ago, when a manufacturing facility needed a new machine it just went through an industrial catalog and picked one. Today, what the same

manufacturing facility may require is not just a new machine but a solution to achieve the results it is expected to yield. A closer relationship of kin interaction is necessary to be established between the supplier of the new machine and the customer, which is the manufacturing facility. As they both may soon realize, working together from the beginning will solve lots of problems afterwards when they are trying to start it up, inspect it or fix it.

The future of global manufacturing requires cooperation among supplier, producer and customer in order to meet their particular needs and grow together. Teamwork is the base no matter if it is at firms' level or at the shop floor. Globalization knows no other way around (Ettlie, 1988).