

CHAPTER 1

INTRODUCTION

The constant need to lower manufacturing costs in order to be globally competitive is a major concern nowadays for every company. Particularly during the last quarter of the previous century, dozens of new manufacturing philosophies have been born in all the corners of the globe. However, not many of those have succeeded, for once because back then the communication process around the world wasn't as effective as it is today, making it harder to share thoughts and ideas with the required speed. Needless to mention, it wasn't until the last 10 to 15 years of the 20th century that people began to realize that worldwide cooperation was an increasing need, making joint efforts to achieve complex goals. This didn't only happen in the finance sector, but it actually went into every single aspect of the human life.

Since it was born globalization hasn't stopped evolving. After reading Chapter 2 one will understand why never more has the world seen isolated improvement efforts to succeed, and that is simply because maybe, at the other side of the world, there is a team made up of people from different cultural backgrounds working out the same issues, but paying strict attention to the different ways in which the same problem is perceived by the rest of the team members. This is synergy, and it is the engine that keeps the world turning nowadays.

For small, medium and large corporations around the world, the battle they fight every day to remain competitive is something that everyone, all the way from the CEO to the most newly hired shop floor worker must be perfectly aware of. A strong leadership is required in order to stay afloat. Precise direction, team-working, real-time information, etc.,

these are simply some of the most powerful weapons that corporations can go to the battlefield with. It is obviously a strategy battle, the winner may not be the biggest or strongest, but the wiser, the most clever, the one that gets to motivate the whole organization into actively participating in every single effort carried on to lead the business in the proper direction.

Chapter 3 seeks to give the reader a basic background of the socio-cultural panorama in which the state of Tlaxcala currently is, along with historical reasons for it. This will show how the way Tlaxcala's people behave nowadays can be traced back to before the time the Spaniards came to conquer their territory. Furthermore, the type of relationship that developed between the Tlaxcala people and the Spanish conquerors greatly determines the attitude one can still feel when dealing with them for business reasons.

To further understand what a multi-national company will have to work with in Mexico, Chapter 4 gives a brief but detailed description of the general characteristics of the Mexican worker. If this kind of companies wants to be successful in manufacturing systems implementation, they will need to recognize first all the strengths and opportunity areas that the Mexican working culture provides them with in order to find a way to adapt these systems and ultimately blend them into the existing culture.

The case of large multi-national corporations is quite interesting in the way they have decided to approach this competitiveness battle. Since they operate in many countries which possess different cultural, social, economical and political backgrounds, they have had to go and find a successful way to be understood by each and every one of the organization members in each of those countries. One of the ways they have determined to be useful is "standardization" as presented in Chapter 5. What it means is that no matter where in the world they do business, they try to do it in exactly the same way everywhere.

That's how they came to develop their corporate philosophies, their mission, values and principles, under which they operate every day either in Asia, Africa, Europe, North or South America, etc.

Along with this effort, they have incorporated some particular working philosophies that have proven effective here or there. This is the case of the Total Productive Maintenance or TPM as it is widely known, which is further explained also in Chapter 5. There is quite enough evidence around the world up to today that demonstrates that this philosophy is extremely useful to lower operating and manufacturing costs through a methodological approach to increase quality, safety and reliability both in the shop floor and in the administrative offices. One will see exactly what TPM is about in one of the following chapters and later see how to carry it on over a daily basis.

What this research project is about is to try and identify the cultural and technical factors that make it difficult for a company to successfully implement TPM principles that ensure the optimum performance of a new, and quite expensive, engineering project, as Chapter 6 describes. This is obviously just a tiny little share of the global effort to remain competitive. What will be tried to demonstrate along this discussion is that only when the standardization effort is really all-inclusive and affects every single part of the organization, such as the engineering and new initiatives departments, will the company be able to see consistent and long lasting results that will help it remain a fierce and powerful fighter in the global market battlefield. In this particular case, it will be studied how the region's own cultural traits prevent some of these standards to be easily implemented for several reasons that the company has got to understand to make its systems work as expected.

All along Chapter 8 what will be tried to uncover are the engineering projects' technical factors that really affect how the shop floor work is carried on. The analysis to be

made is greatly dependent on the fact that importing technology is not only a matter of shipping and handling difficulties, but it includes as well a series of cultural problems that make it harder to successfully implement a, let's say, German machine in a Mexican factory, or so to speak. The key elements to be considered in this cultural barrier issue for a successful technology transfer will be presented and discussed, along with a series of clear examples that show that design flaws can really become nightmares later on. Obviously, any problem in the shop floor, as tiny and harmless as it can seem, may represent potential economic losses to the company, a reason strong enough not to spare any efforts in the research, design, development, installation, construction and start-up stages.

The learnings of this research project will be wrapped-up in a case study in Chapter 9, in which a clear example will be given of how a new engineering project is vulnerable to cultural and technical factors that are rarely taken into account in the design stages. The case study is based in actual experience and seeks to be as concrete and easily understandable as possible in order for it to be able to be shared with engineering students.

Always being the purpose of this research project to establish a clear link between the cultural and technical factors upon which technology transfer processes are based in part, Chapter 9 will provide a series of recommendations that in the opinion of the author should have been considered during the mechanical design of the machine. As it can be seen through this chapter, there are many opportunity areas which can reduce considerable losses in quality defects, maintenance and repair time, safety hazards, etc.

Finally, a series of recommendations will be issued in Chapter 10 regarding action plans that the company may want to follow in order to reduce losses due to technical and cultural factors that prevent a smooth technology transfer process in the site where this research has taken place. The idea is to prove that upon completion of the action plans

stated, the company will see a rather impacting economic benefit that would justify taking the proper steps at the proper moments during such projects.

Through the development of this research work the reader will get to know a little bit more of the company itself, yet anonymous as it has to remain of course. One will see how it has decided to approach the global challenges and what particular steps has it decided to follow in order to be considered still as one of Fortune's 500 after more than a century of its foundation. This will maybe serve as a clear example that true entrepreneurship is not only a matter of capital, but more a matter of making strategic business decisions backed up by the organization as a whole whose members feel recognized, valued, trusted and always taken good care of.