BECOMING A SUSTAINABLE UNIVERSITY: “THE UNIVERSITY OF SONORA CASE-STUDY”

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Becoming a Sustainable University:  
“The University of Sonora Case-study”  
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Abstract
This paper describes the evolution of the strategy followed, from 1992 to the date, at the University of Sonora for becoming a sustainable university as way for helping Mexican society make the transition to sustainable life styles. Actually, the University of Sonora is seen in its region as an icon of sustainability and it is recognized as a pioneering institution in integrating the principles of Agenda 21 in Mexico. The strategy for becoming a sustainable university has continuously evolved throughout the years from a simple structure composed by individual and isolated projects to a systematic and integrative Sustainability Management System.

Introduction
Sustainability is a topic that has been present in the University of Sonora (UNISON) for at least fifteen years. However, in order to promote sustainability, it has been necessary to cope and break with several university paradigms. For this reason, the strategy for becoming a sustainable university has continuously evolved throughout the years from a simple structure composed by individual and isolated projects to a systematic and integrative Sustainability Management System. Thanks to this evolution, the University of Sonora has won a respectable reputation in the greater community and it is seen in the region as an icon of sustainability promoter. In this sense, the substantives functions of education, research, and outreach and partnership, which are considered supportive and integrative, have also evolved to play a key role not only for the success of sustainability initiatives but also for help university community to behave according to the sustainable
university that it is envisioned, which for us it is “A higher education institution, as a whole or as a part, that addresses, involves and promotes, on a regional or a global level, the elimination and/or minimization of environmental, economics, societal, and health negative effects in the use of their resources in order to fulfill its main functions of teaching, research, outreach & partnership, and stewardship among others as a way to helping society make the transition to sustainable life styles.” (Velazquez, 2006a)

In fact, this vision laid the foundation for the sustainability mission that guides current and future actions. Literally, the sustainability mission statement shows the commitment “to raise the levels of quality of life and improve the environmental, social and economic conditions in the planet through the promotion and implementation of the sustainable development philosophy not only on campus but also in the outer community.”

**University’s profile**

The University of Sonora is the biggest, most important and most prestigious university in both the city and the state of Sonora, at the northwestern region of Mexico. It is a public university with a 29,792 students in three campuses in the state (Dirección de Planeación, 2007). Its main campus is located in Hermosillo. In 2004, the university was evaluated as the best Mexican higher education institution by the Mexican Public Education Secretary (SEP) among other seventy-nine Public universities that participated in the Programa Integral de Fortalecimiento Institucional (La Gaceta, 2004). A year after, the SEP and the National Association of Universities and Higher Education Institutions (ANUIES) granted the national prize “Desarrollo y Fortalecimiento Institucional” to the UNISON (La Gaceta, 2005).

**Toward sustainability: the background**

Despite the fact that in the University of Sonora there were, in the eighties, some projects dealing with environmental issues, there was not until 1992 that the sustainability efforts were really initiated. It happened when the Sustainable Development Group was created in the Department of Industrial and Systems Engineering as a response to the need for adapting the industrial engineering curricula to (Velazquez, 1999). Nowadays, the sustainability development group is one of the strongest research bodies in the institution.
The strategy for institutionally fostering sustainability is illustrated in figure 1. Today, it is a complex structure that covers the substantive functions of the university as well as the administrative tasks that support them. Although professors and researchers in the Engineering College are the engine for many initiatives, usually, they engage in joint collaboration projects with a range of colleagues and partners. The metamorphosis of this strategy is described in following sections.

**Sustainability Education**

After defining the mission statement, raising sustainability awareness was the next priority because by 1992 sustainability was unknown among community members. Non-formal education events were conducted such as conferences, workshops, and cultural activities. These activities are kept on-going from then to now.

A critical step was taken in 1994, when a course in sustainable development was inserted in the Industrial and Systems Engineering curricula. At the extent of our knowledge, it was the first mandatory course formally incorporated into a Mexican engineering curriculum. In 1996, the course was improving when an educational model called “sustainable cell” was created, which took the campus as a very suitable place for implementation of sustainability initiatives (Velazquez, 2002). This complemented the theoretical part of the course with a practical approach. Currently, sustainability is taught at undergraduate and graduate programs. In the Engineering College, all students have to take a mandatory course named “Sustainability in the Engineering Sciences”, in addition, certificate, master, and doctoral degrees programs in sustainability are also offered.

**Sustainability Research**

As a research body, the main goal of the Sustainable Development Group is to increase knowledge in this field. Researchers usually perform applied science to solve practical problems in the region; however, basic research is also conducted in order to expand knowledge of how better to reach sustainability. They maintain two research lines; the first is aimed at encouraging cleaner production practices in the industry and the second at
promoting sustainability in educational institutions. These research lines include a great variety of topics, such as cleaner production, pollution prevention, global climate, toxic use reduction, industrial ecology, and design for environment, among others. There exist other individuals and research groups conducting sustainability research by their own. They are also important for reaching sustainability. Specifically, the Sustainable Development Group has conducted joint research projects with the groups of renewable energy and hazardous waste minimization (PISSA).

**Sustainability outreach and partnership**

The University of Sonora engages in sustainability regional initiatives by community outreach and partnership with several communities, organizations and agencies. The goal is to promote a system of sustainable production and consumption that protects the environment and labor and strength economic growth through more efficient production. Advising services, technical assistance, demonstration projects, and capacity building are often the outcomes of this avenue (Velazquez, 2006b).

**Greening of the campus: Sustainability Management System: ISO 14001**

As a way to greening the campus, it has been implemented and maintained, in the 2003, a Sustainability Management System (SMS) based on the ISO 14001 framework. This is aimed at preventing, eliminating, and/or reducing the negative environmental impacts generated when performed university substantive functions. The project fenceline is an area shared by the Engineering College and the College of Health Sciences. The university authorities have assumed responsibility to demonstrate the institutional commitment for helping Mexican society make the transition to sustainable life styles by issuing, in 2004, a sustainability policy that claims:

“The institution adopts a sustainability policy which fosters in the university community a culture for preventing, eliminating and/or reducing the negative environmental impacts generated when performed its substantive functions of teaching, research, and outreaching and partnership as well as its management operation tasks. Given as a result local and global initiatives into and outer of campus.” (Noticias USON, 2004)
Environmental aspects are aimed at making efficient the use of the water and energy, eliminate and/or reduce the risk to health and environment of the hazardous material in laboratories and facilities, and reduce, reuse, and recycle non-hazardous materials.

So far, the SMS has fulfilled the core elements of the ISO 14001 standard. However, the third party certification is still on debate because it is not clear its advantages in this specific case.

**International and National Networks**

To further improve performance, collaborative networks were built with foreign universities that are sustainability leaders in their countries. In 1999, a research agreement was signed with the University of Massachusetts Lowell (Velazquez, 2000); then in 2006, it was signed another agreement with the German University of Applied Sciences (Hochschule Zittau/Görlitz), and it is expected to add soon to this network to Erasmus University in the Netherlands. In Mexico, there is a formal relation with the Autonomous University of Baja California.

**Final remarks**

At this time, the University of Sonora is one of the first Mexican higher education institutions in having a formal sustainability policy in which the institution adopts the commitment to foster in the university community a culture for preventing, eliminating and/or reducing the negative environmental impacts generated when performed its substantive functions of teaching, research, and outreaching and partnership as well as its management operation tasks. However, it should not be taken for granted that becoming a sustainable university would be easier.

Today, there are four fronts to tackling unsustainability patterns, member of the EMS are adopting this sustainability management system with the hope that it brings positive attitudinal changes among the both university and the greater community and not merely to enhance the image of our university.

The adequate conditions for the successful implementation of sustainability programs do not exist. There are many obstacles preventing the success of sustainability initiatives. “Lacking of” is a common denominator; lack of awareness, support, time, funding, etc. The
achievements so far reached cannot be considered an overwhelming success (Velazquez, 2005). Perhaps the major success has been “surviving.”

The focus of this article has been on the fundamentals of becoming a sustainable university, details has been avoided. Lector interested in details is invited to read the articles referenced. Authors of this paper believe that the institution is on the correct way, but far, far away of being a sustainable university. Nevertheless, this does not represent the opinion of any other of the members of the university community.

References


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Professional Biographies

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