Eco-design for Brazilian competitiveness in the international market

Claudya PIAZERA*

* University of New South Walles – COFA - Australia
cpiazera@yahoo.com.br

Abstract: Nowadays the demand imposed by an ideal that is searching for the valorization of environmental preservation and natural resources in an age that values information as the key to knowledge, this causes us to believe that the development of a nation is strongly linked with the management of the productive process ecologically correct in relationship with international organizations. This article offers some parameters for the exploration of a responsible design models in Brazil in the sustainable development area. Information was collected through opportunities I had last year, conducted with the purpose of the participation involving different Brazilian Ecodesign success projects in the international market. ECODESIGN- different companies are interested in product development based on the certainty that this activity can make progressive advance ment on belief of the economy and the high standarts of the quality of life in Brazil. A detailed manual of Brazilian ecodesign is in its final stage of conception, listing the original materials obtained in Brazil, the industrial productive processes and also the analysis of the position of those products inside the national and international market in different productive sectors.

A different project, in this field, was taking form while I were working on this paper at the Center of Strategic Knowledge Management at the Ministry of Foreign Affairs (CGECOn/MRE). The intersection point of this project and my research since March of 2002, integrating the actors in different sectors of the Brazilian society, such as industry, science, technology and research, development of international commerce with the support of the universities. This is without a doubt a positive step in increasing the changes on the actual perspective of the Brazilian production pushing forward the entire economy in general.

Key words: Ecodesign, International business, Integration of Knowledge, Competitive advantage.

1. Introduction.

This report adopts new ways of sustainable behaviors in relation to natural resource consumption on industrial production. A thorough overview of the design principles, awarness of environmental needs, new-low impact development design objectives (ecodesign), economic benefits, social ecological goals and competitive intelligence to promote sustainable local development applied on protection/ restoration industrial goals.
These Cover strategic design (also called design management) planning, design, knowledge management in ecodesign and implementation, it offers an in-depth introduction to the new models of integrated, decentralized and distributed micro-scale controls for both conscious sustainable development and innovative industrial production process to meet the Brazilian competitiveness on the international market.

Low-impact development focuses on the design development of ecologically functional site designs that maintain or restore production of “bens de consumo” whilst preserving natural reserves on this planet. Ecodesign products are integrated into mass production controls by every ecological feature where run-off can be micro-managed in the local productive community. Using integrated sustainable development approaches means that natural resources can be designed to be multifunctional at social economic development levels.

These ideas, involve new technology, with multiple disciplines which have a far reaching impact for mass production management in ethic and modern patterns in the use of the land, natural resources protection, best management practices, environmental management and industrial production. Translated into results on the international market.

Topics to be considered include ecosystems-based principles and goals where they may be observed given the local dimension of the innovation on which the new demands are based. These are “invisible” at the global scale and through interesting sustainable solutions according to the limitations in conventional industrial technology regarding to social economical development. An overview of the possibilities and practices, planning principles, cases of success, social economical development of ecodesign products.

In comparison with the conventional design production and roadblocks to innovative low-impact technologies, this transition towards sustainability is large and contradictory in the social learning process and needs to be fed by experiences.

2. Design

The meaning of the design word, has different interpretations in different cultures. In a latin culture like Brazil, design is frequently associated to aesthetics, shape and form where in reality design a lot more complex. The roots of the word came from anglo saxon culture where design means creation, planning on a broad sense and not just style, color, aesthetics and external appearance. Subject considerations in general associated to the concept of design are just part of the real dimension of the word design.

In portuguese, design means also drawing, shape of objects, products and services. There are various types of design, graphic design, fashion design, product design, strategic design (also called design management), design based on principles ecologically correct (ecodesign) and so on.

Design is also related to use, brand, market, materials, stages of production, environmental aspects and a great extension of technical resources and specifications. Design is also defined as a course of actions, including a series of organizational activities necessarily to reach its development as stated by Peter Gorb and Angela Dumas (London Business School). The Centro Cultural de Belem in Portugal, relates that the concept
of design began to appear in the 1930’s expressing the simple idea that design would be the mass production of originalities.

One director of the Welsh Design Advisory service (WDAS) and of the Design Engineering Research Centre (DERC), Richard Bibb expanded this previous idea explaining that design means all the development process of a product even before its creation should reflect the strategy of the business.

For the Center of the Design of Parana in Brazil, the concept of design is a essential tool for the competitiveness in a market where technology itself does not make a difference in a competitive environment. The center incentives and the innovative posture offer ways to stimulate the practice of the new successful ideas instead of just copy existing models from the external market.

Therefore design is not simply aesthetics, design is an essential element when introduced into a market segment, to sustain its position and reach growth market. Excellence in design means to find and to exceed the clients expectations, enhancing the ways of production with better quality. In short, the appropriated process management should guarantee that the time spent on the development is reduced, also that the stage of production and costs can be optimized and reached in the necessarily time limit where the goals of the business are achieved in a way that produce excellence in that action of design.

3. Ecodesign

On a first level of comprehension, without a doubt, the word ecodesign is endowed with a self explained capacity, because the general significance is to stand out in a very immediate way from the two terms composing the word: ecodesign is a model of project oriented by ecological principles. But at the same time, ecodesign is one of those terms that, even given the idea of what it could be, is far away from fully representative of its exact significance.

In this specific case, its indetermination born exactly in the fact of joining two different and vasts semantic camps that are composed of the two terms (ecology and design) itself. What happened, is that even the expression having gained a broader use in environmental research and at the professional end. The use of these terms in documents presented by international organizations that use this terminology generally associates theorical precedents and camps of practical intervention that in most cases differentiate amongst them.

Therefore, the attention here would be restricted to the joint project activities more directly connected with the manufacture of industrial products. The area where industrial design term is included. This limitation on the observation camp, if from one side exclude other sectors is also important to the project activity, which maintains among itself a notable articulation and complexity present on the professional figures involved by the level of choice where the work is done as well for cultural reasons.

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1 Fonte: Tecpar – Centro de Design do Paraná
4. Ecodesign, Social Capital and ...

The theory of ecodesign requires an approach and a vision that have the tendency to invert the extreme importance of industrial production through increasing the use of machines to obtain levels excellence in the productive process as a landmark on the industrial age. The machinery are important without a doubt, but there are other important elements to be considered on the productive process also, to assure an optimal process.

An approach to the theory of ecodesign, locates the productive activities exercises in part valuation of workmanship with some essential components to the success and acceptance in the market of this production. Observing some features relative to the economic productivity dimension and “Productive Harvest”, there is to be considered an alternative relative to the social dimension.

In order follow this path, it is right to remember that a process of transition is required, in able to build a balanced socio-economic scenario. This can only be achieved if a large number of people recognize the proper transition and the impact of those changes on a collective scale. It is well-know that social capital is one of the fundamental elements explaining the so-called greater collective efficiency characteristic of the successful “cluster” models.

5. ...Responsible consumption (and not responsible)

The business opportunity offered by sustainable development has not yet fully penetrated the business world. In the last ten years, only a few successful case studies of green products that were economically beneficial have been disseminated amongst business.

There has been however a growing literature that shows the correlation between economic success and sustainable design, and the necessity of considering consumption according to new parameters, including the new direction in designing services rather than goods. This literature prompts a redefinition of the notion of innovation in our post-industrial period. To bring together demand and supply, we must recognize that we are in a period of adaptation, of coming to recognize the economic value of sustainable development and of the collaborative forms that it both generates and supports, and from which it ultimately gain.

Since the responsible design is being considered as the principal driving force behind this study, a wide range of expert knowledge, available through diverse channels, where to be processed. Numerous consultations with various industries and other interested parties have led to the proposal of a possible structure for effective collaboration in the domain of sustainable development.

To this extent while proper solutions that present a high quality environment can not do without and also social and cultural acceptable stimulating a responsible consumer. Inside this general reference there is born new ideas that create social and cultural appreciation where the consumer is responsible to carry out technically with the ecology necessary by a factor also important that the client the end will accept.

Direct in this process to chose a product in the market, across the responsible consumer factor, the final choice of the consumer stimulates the innovation of the products offered on the market on a very decisive way.
6. Competitive Advantage

Among the big issues of the world business interests, are the actions of conscious product manufacture for the development of a sustainable planet. (for a sustainable planet, first understand a durable world as said by the French designers), including the rational use of the natural resources without forgetting the importance of economical development. The strongest international organizations and the majority of the National State Governments discuss frequently the right course for the planet, therefore is not easy to reach the ideal point and sustainable development status.

The direction in which the planet was moving at the end of the XX century was marked by the ascension of an environmental wave, as mentioned by Manuels Castells in his book “O poder da identidade”, where he pointed out that in the late 90’s, 80% of the American population and plus 2/3 of Europeans could consider themselves environmentalists. With no doubt this tendency to environmental preservation produced new visions of what a better world could be for the political and social relations as well the cultural manifestations.

Nowadays, programs such as PNUMA (Programa das Nações Unidas para o Meio Ambiente – United Nations Program for the environment) defend the interests of a more developed planet in the sustainable sense. On the other hand, international organizations act in a convergent way to international political ideals and spread environmental concepts and methodologies at a global level without damaging the strong economical growth directly.

In Europe the sustainable development principles became a fundamental value on the integration process in the European community and also in the global community, the challenge for the competitiveness between Country - systems and between companies. What exists nowadays are clear manifestos together with protests against environmental crimes which have become very popular and have made a great contribution to bring to the attention “the science of rights” to take in consideration this new field of studies.

Ecology, therefore is the desired concept for humanity to live pacifically with the ecosystem in the light of a mature vision of the creation of the Universe. Extension of that concept also brings ways to live together with the laws of nature to inspire an awareness around a strategic position in the sustainable development of the environment.

The process of manufacture on industrial levels acts upon to eradicate some practices on industrial processes in use in favor of the environmental preservation. In many situations is not convenient to the business aspects of all interdependent and different specific sectors of the economy.

The reduction of residues of materials like the PET resin (Poli Tereflato de Etileno) that are not considered ecologically correct, for example, in Brazil it would be against the economical interest of the beverage industry. The PET resin was certainly a technological discovery that helped greatly the development in different sectors of the economy. As this occurred mainly in the beverage industry sector because the choice of this material is extremely resistant, light, cheap and easy to shape. To return to the use of glass for
example would increase costs dramatically for the production process and would also not be the best alternative for safety reasons as well as cooling down the economy of that sector.

The ABEPET (Brazilian Association of Producers of PET) worries about the ecologically correct aspect of the material and in this sense promotes campaigns to recycle the resin. Actions like this contribute to the ideal of a more durable world, but how to make actions like that even stronger?

I strongly believe that through ecodesign we can find the answer, on the direct correlation between design, environmental management and the concept of ecology. Having in mind the objectives of the design as a process to make real the idea through innovative solutions the ecology as a concept of an harmonic way for the human being to live together with the ecosystem. The role of design would be carried out by the combination of the management of the environment with the sustainable development aspects of this practice.

The environmental management applied to design, became what has been named ecodesign or ecologically design conception, defined as the creation of products, based on responsible design. Going back to the design issue as a link between the environmental management and sustainable development, to make sense of the use of the word ecodesign as an adequate terminology to express this idea.

It is relevant to show the important link between the environmental management and design as a competitive advantage of products on the commercial markets. It is possible to contextualize Brazil at this point of this study, demonstrating the development of actions as a possibility to create a strong competitive advantage for Brazilian products and services in the international market.

Generally analysing the situation of the industrial productive context that we are in at the moment; In a world preoccupied with environmental issues. This fact is moving the industrial sector in Brazil to look for a responsible economic development. Where societies with different backgrounds aim to preserve more and more the natural resources they now only try to explore what is really necessary in order to use those natural resources in a very efficient way.

According to research realized in the first semester of the year 2002 by the Association of Research Technological Institutions - ABIPTI, one of the strongest interest among the different thematic areas of its members is related to environmental management issues. On the consumption market the publicity took into consideration the certification of ISO 14000. This works as a plus on the differentiation in the industrial production in the market based on information captured by the “society of consumption”.

Just to illustrate another point, according with the IBGE (Instituto Brasileiro de Geografia e Estatística) day by day recycling has been steadily increasing within Brazilian urban cities. From 1993 to the year 2000 aluminium recycling raised around 30%, glass recycling raised 15% and PET resin around 6%.

Among the recycling processes we can also observe that the practice of sustainable development improves income for many low income families. This is being accelerated to balance social gaps. A good example is that different Brazilian designers had been developing and manufacturing various products using

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2 Fonte: Indicadores de Desenvolvimento Sustentável – Brasil 2002
recycled material within local low income communities in the states of Santa Catarina, Pernambuco, Amazonas, Alagoas and Tocantins among others in the Brazilian Territory.

This kind of work is joining together the low income local population of the urban cities, the design professionals and the industry that participates in the project. This promotes responsible design and real sustainable development. The low income community where the work takes place is responsible to collect and select the material to be used, the designer then applies his skill to their work to add value to the product created. The industry is then responsible to organize the mass production and commercialization.

On the international scenery, Brazil is considered as one of the greatest powers in natural resources on the planet, also rich in culture and human capital. All those Brazilian potencialities are not always properly explored and there is a strong motivation to use ecodesign as one of the viable solutions to conduct this issue to a positive answer to this question.

Heading in this direction, the Brazilian image Internationally is achieving a greater position lately. The Brazilian competitive advantage, however is strongly related to their cultural social and economic potentials. The ecodesign (design + environmental management) is the point of convergence of these potentials and brings sustainable development, incorporating the social values of the Country. The ecodesign is one of the competitive advantages of Brazil.

7. Brazilian Competitive intelligence at the International Market

Brazil has experienced significant changes over the past few years. After nearly a decade of profound macroeconomic instability, a successful stabilization program put the country back among other stable economies. The manufacturing industry showed a more uneven performance along the period. Brazil is a developing economy and its most outstanding feature is a widely diversified economic makeup: it has an impressive output in farming and livestock, a broad range of industries and a dynamic and strong tertiary sector of enormous potential for expansion.

Over the past few years, the sweeping reforms made have gradually changed the structure of the Brazilian economy. Side by side with a rethinking of the State’s own structure to render the government more efficient and focused on providing for the basic needs of the Brazilian export market, such reforms are starting to build a new society based on allocation efficiency.

The APEX (Agency for export promotion), presents representative data regarding to the acceptance of Brazilian products on the international market. A very good example are the results of the International Furniture Fair in Japan, where the products Made in Brazil, finished the year 2002 with an increase of 10% in furniture sales, in relation to the results of the year 2001, representing a total of more than half billion of dollars. Certainly this result is linked to national natural resources and design to add value on the products commercialized on the international market.

In this new setting, the prospects for economic growth are exceptionally bright. The new institutional framework will make better use of the Country’s potentials. Brazil is a continent-wide market, with a highly complex pool of natural resources and a size most suitable for economies of scale. Its society is remarkably
dynamic and the market is continuously growing. Ecodesign manufacture is been stimulated on the local market also facing positive results on the export market. Thanks to all these features, Brazil has the capabilities to absorb massive investments for the expected outstanding and long-term growth drive ahead.

8. Conclusion

The article specifically addresses the nature of industrial and social contexts and the premisses upon which the proposal of a collaborative design model rely. It offers a brief review of collaborative design process models. Finally, it offers a proposal for a responsible design model that relies on the identification of the necessary mutilevel expertise in both macro and micro context.

The opportunity study has uncovered the fact that industries in general have not yet identified the expertise needed to further the implementation of sustainable practices, nor have shown great confidence in the actual potential of sustainable development to enhance economic benefits. On the other side of it, the study has revealed that although a large body of information on sustainability is readily available to manufactures, most are faced with limited resources with with make sense of it.

The study reveals that responsible design is growing amongst the objectives in industries. Profound changes were accomplished by the Brazilian economy in recent years, led by the process of trade liberalization and the privatization program. But the major change was due to the stabilization plan that put the country among the stable economies. The Real Plan launched in 1994 in an unquestionable success. The country is now consolidating the touchstones for a new expansion cycle of the economy and I believe that ecodesign is one of the key stones. It is the conviction of Brazilian industrial entrepreneurs that Brazil is on the verge of a new and dynamic phase of economic development.

Showing that past and current collaborative efforts being made with regards to the development of sustainable products do not currently include all stakeholders who should be involved in exploring and contributing to new direction for innovation, the commercial success of products, a range of possible models of business competitiveness at both local and international levels and to the implementation of sustainable programs in industries.

9. References