

Ecodesign: When the environment and the economy work together

Developing goods and services while preserving the environment is no utopian dream. More and more questions are being asked about the use of resources and the disposal of products when they reach the end of their useful lives. In this context, ecodesign is proving to be worthwhile and is contributing to the economy, both in Quebec and in other parts of the world. Given the explosion in the prices of commodities just prior to the recession, and the increasing scope of the effort required to extract them, is it not appropriate to re-think the way goods in particular, and services, are produced? Here is a brief economic glance at a different way of working and thinking, with a long-term vision.

DEFINITION OF ECODESIGN

Very simply, we can define ecodesign as “*designing a product (a good or a service) by improving its environmental characteristics for its full life cycle, without reducing its quality or its performance.*” However, it goes beyond improvement and can even extend as far as redefining how a need can be met. It also includes developing products made from recycled materials (100%, or in a smaller proportion). There are a large number of definitions which, in most cases, include the concept of “life cycle.”

Box 1 depicts the concept of life cycle to which nearly all the available definitions refer. Generally, the cycle consists of five steps: the extraction of raw materials, manufacturing, logistics (including transportation and warehousing), use and end of life. In layman’s terms, one could say that

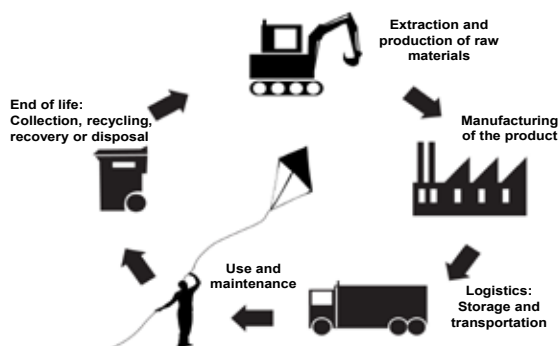
the basic idea is to go beyond the immediate response to a need when designing or improving a good or a service. It is a matter of taking into account the environmental repercussions of every decision leading to the design (or improvement) of a product (good or service). These choices range from the step of choosing raw materials, to disposing of the product at the end of its useful life.

Is Quebec a leader in the field? Not really, according to the experts; it lags behind the European countries (England, France and the Scandinavian countries in particular), which have been taking an interest in this for many years now. However, we believe that Quebec stands ahead of the United States.

Quebec has been trying out this way of working more and more for 20 years or so, and has formed public and private bodies that promote ecodesign and support businesses wishing to move forward in this direction.¹

Why do businesses decide to adopt this approach? For various reasons, ranging from the desire to increase the added value of a product or service, to reducing its environmental impact. These goals may go hand in hand with a desire to anticipate new environmental rules or to mobilize employees around an innovative and promising project.

Box 1 – Steps of the product life cycle



Sources: Institut de développement de produits and Ministère de l'Économie, de l'Innovation et des Exportations

¹ For a list of various organizations and firms in Quebec, see <http://www.idp-ipd.com/ecoconception/partenaires>

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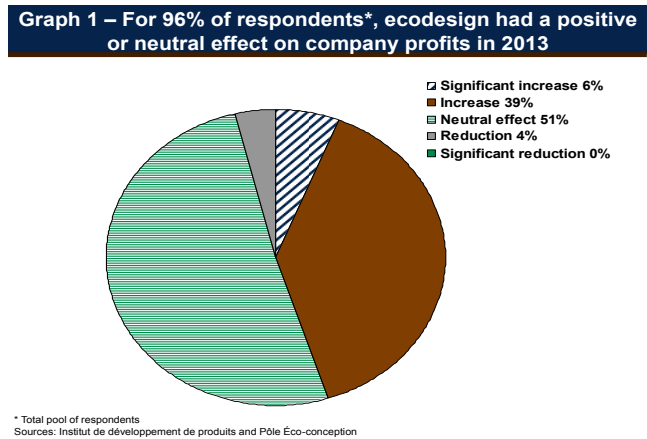
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MEASURING THE RESULTS

In 2013, the Institut de développement de produits (IDP), in collaboration with Pôle Éco-conception,² conducted a survey of 119 companies to find out how profitable ecodesign was.³ These included 49 French companies, 44 in Quebec and 26 in other parts of Europe. This survey was a follow-up to a previous survey of 30 companies that was carried out in 2008.

Based on the survey's results, it appears that ecodesign is more widespread now than it was in 2008. The largest number of achievements are found in the manufacturing sector (62% of the companies surveyed). Furthermore, ecodesign is not limited to large businesses; businesses with fewer than 250 employees made up 80% of the sample.

With respect to profits, 96% of the respondents believed that ecodesign has a neutral or positive effect on their company's profits, which matches the results found in 2008, but on a broader scale, given that the sample size was larger. Graph 1 shows that 51% of the businesses (42% in Quebec specifically) believed that the effect on profits is neutral, while 45% (51% in Quebec) observed an increase and 4% (7% in Quebec) reported lower profits.

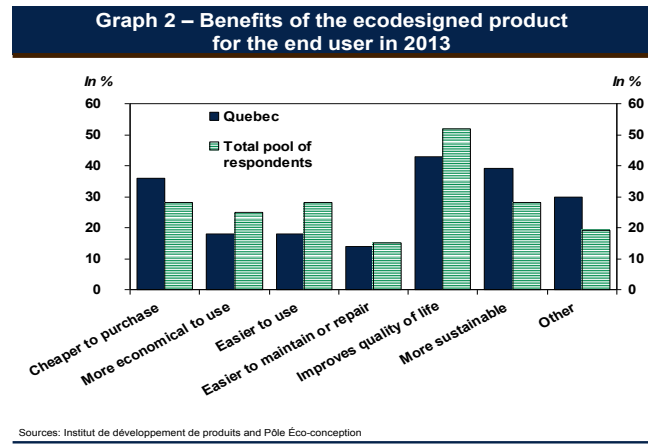


Did the businesses attach the same importance to each step of the life cycle? No: more of them worked on raw materials (93% of respondents), on manufacturing (76%) and on the end of life (67%). In Quebec specifically, the corresponding percentages were 93%, 61% and 68%.

² Pôle Éco-conception et management du cycle de vie is a French organization.
³ IDQ and Pôle Éco-conception, *La profitabilité de l'écoconception, une analyse économique*, January 2014, 56 pages. Available on request from the IDP. Highlights: http://www.idp-ipd.com/images/abook/books/files/IDP_profitabilite_faits-saillants.pdf

Beyond strictly economic repercussions, the businesses reported other benefits (table 1). These include improvements to the company's image and reputation (86% on average, 84% in Quebec), greater motivation or pride among employees (41% on average, 53% in Quebec), better relations with customers (36% on average, 47% in Quebec) and a greater ability to develop new products (32% on average, 33% in Quebec), among others.

And what are the perceived advantages of an ecodesigned product from the end user's point of view? In this regard, the businesses see many benefits. Looking at the total pool of respondents, the primary quality of an ecodesigned product in the eyes of 53% of respondents is that it improves the quality of life (graph 2). That benefit was mentioned by 43% of Quebec businesses. In the opinion of local firms, the second benefit is greater sustainability (39%), closely followed by the fact that such a product is cheaper to buy (36%); next comes a group of other functionalities that are not spelled out in detail.



In the area of environmental benefits, the top three are the replacement of pollutants or substitution for hazardous products (57% on average, 67% in Quebec), the reduction in materials used per unit produced (55% on average, 51% in Quebec), and the possibility of recycling or re-using the product or its components at end of life (52% on average, 58% in Quebec) (table 2). These are followed by reduced consumption of energy per unit produced (45% on average, 49% in Quebec), and, according to 44% of Quebec respondents, the reduction of the company's CO₂ emissions, less packaging and the recycling of waste, water or raw materials during production.

Such an analysis, based on a relatively limited sample that is not perfectly random, cannot be used to make comparisons over time, but it does provide some food for thought. And it does teach us some other lessons: that ecodesign goes far beyond good intentions; it is an organized process, supported

by tools. It is a responsibility shared among several entities within each business. Finally, in order for the adventure to be carried out, there must be a firm commitment on the part of senior management.

Table 1 – Other repercussions of the ecodesign approach in 2013

	<i>France</i> %	<i>Quebec</i> %	<i>European Union</i> %	<i>Total</i> %
Improvement to the company's image or reputation	92	84	81	86
Greater motivation or pride among employees	21	53	58	41
Better relations with customers	33	47	23	36
Greater ability to develop new products	29	33	35	32
Easier to recruit personnel	4	23	19	15
Better relations with financial backers, regulatory authorities or NGOs	8	12	19	12
Better interdepartmental collaboration	17	2	19	12
Other	4	9	4	6

Respondents could choose more than one answer.

Sources: Institut de développement de produits and Pôle Éco-conception

Table 2 – Nature of the environmental benefits of the product in 2013

	<i>France</i> %	<i>Quebec</i> %	<i>European Union</i> %	<i>Total</i> %
Replacement of polluting raw materials or substitution for hazardous products	61	67	31	57
Reduction in materials used per unit produced	47	51	77	55
Possibility of recycling or re-using the product or its components at end of life	55	58	39	52
Reduced consumption of energy per unit produced	39	49	50	45
Reduction of your company's CO ₂ emissions	43	44	35	42
Less packaging	35	44	42	40
Recycling of waste, water or raw materials during production	33	44	27	36
Reduced pollution of soil, water or air during production	35	30	12	28
Waste recovery	26	30	27	28
Reduction of energy required for transportation	20	30	35	27
Reduction of energy consumption during use	14	23	57	27
Reduction of emissions (water, air, soil) during use	20	21	23	21
Reduction of storage volumes	16	23	23	20
Other	4	14	15	10

Respondents could choose more than one answer.

Sources: Institut de développement de produits and Pôle Éco-conception

A GOOD IDEA IS FINE; TOOLS WITH WHICH TO IMPLEMENT IT ARE EVEN BETTER

A process like this cannot be improvised; that is why more and more private organizations and government agencies are offering assistance to support the efforts made by businesses. Some of them offer software for analyzing the life cycle of a product according to certain ISO⁴ standards, and which can even quantify the level of greenhouse gas emissions of a given product. Beyond that analysis, some software programs take into account the social and economic aspects of manufacturing a product.

There are also guides and courses providing an introduction to ecological product design. The IDP offers diagnostics, training and coaching to businesses in partnership with Éco Entreprises Québec.⁵ And the Ministère de l'Économie, de l'innovation et des exportations (MEIE) also offers training in ecodesign.

MUCH MORE THAN REDUCING THE QUANTITY OF PACKAGING

As we saw earlier, ecodesign can be applied to all the steps of a product's manufacture, and goes well beyond reducing packaging, which is one of the best-known aspects. There is no lack of examples of this in Quebec. In recent years, local companies have been working on various projects.

For example, an aquatic play structure company reduced the water consumption of its products by working on the closed-circuit filtration system and on the recovery and percolation tanks. Another has developed, and manufactures, street furniture made from 100% recycled post-consumer and postindustrial plastics. Another succeeded in developing flagstones for landscaping made from recycled glass and grocery bags. Another local firm improved its light fixtures to reduce their energy consumption, besides limiting manufacturing waste to a significant degree.

In the realm of packaging, a company has designed cardboard baskets for selling berries that have a cardboard handle instead of a plastic one. Another reduced the packaging of individual portions of yogurt, sold in groups of four, by reinforcing the bridges between the units, thereby eliminating the additional cardboard packaging that was

used to keep the four containers firmly together. Another developed a 100% recyclable container that can take the place of a tin can, and that can be shipped flat to the factory; this means that 20 times more containers can be shipped per truckload before they are filled, and once they are filled, they take up 33% less space. These are just a few examples of Quebec success stories that have proven themselves.

GREAT EXPECTATIONS: THE CIRCULAR ECONOMY

Is ecodesign the panacea for all ills? To say yes would be to attribute too broad a scope to it, a responsibility that it does not claim. Rather, it is one more tool to be used for working towards sustainable development. In that vein, we are increasingly hearing about a different way of looking at the economy, as a closed loop, so to speak. This idea, which is fairly new on this side of the Atlantic, is referred to as a "circular economy." It comprises more parameters, and the issue of managing end-of-life waste (in particular recovery and recycling) appears to be gaining even more importance.

In fact, the framework of the circular economy consists of four phases, with ecodesign being the first, "upstream" phase. As one might expect, the promoters of the circular economy are not satisfied with that; they would like to push the optimization of the use of resources (whether material, energy, human or other) to greater lengths.

THE BEST USE OF RESOURCES, AND MORE...

The spectacular increases in the prices of energy, metals and agricultural products at the beginning of the 2000s have shone a spotlight on several problems. First, it is increasingly expensive to extract or to produce these materials. Second, global demand for raw materials reached a peak before the recession, and it is becoming necessary to find solutions to manage them better. Third, we need to re-examine the methods currently used to produce goods and services, and the best use of resources. In that respect, ecodesign is a step in the right direction. Let's hope that eventually, all the economic players (consumers, entrepreneurs, governments, associations, etc.) will take a closer interest in the growing needs of the population and reconsider what is the best way to meet them, taking into account the scarcity of resources and the equilibrium of the planet.

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⁴ ISO: International Organization for Standardization which sets and publishes international standards.

⁵ Éco Entreprises Québec: "Éco Entreprises Québec (ÉEQ) is a private non-profit organization that was accredited by RECYC-QUÉBEC in 2005 under the Environment Quality Act. Éco Entreprises Québec (ÉEQ) is the organization that develops the Schedule of Contributions and collects company contributions, which are then redistributed to finance municipal curbside recycling services in Quebec."