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Experience of Recycled Paper Use in Certification Exams: on the Impacts of Convincing Suppliers to Improve Environmental Management

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Abstract

Paper-Based test application is a field in which environmental sustainability has a long path to improve before reaching desirable standards, especially at the light of techniques such as the Tree Savings Formula, whereby this Organizational Experience Report show a definite example of such statement. This paper presents a case study in which the organization that runs a countrywide test was able to convince the examination manufacturers, thereby increasing the environmental efficiency of the exam at a national scale. This result provides evidence that in persuading the agent responsible for the actual production of the exam's paper copies to use recycled paper the leading organization executive responsible for the test achieved its goal of enhanced sustainability, with several known general benefits.

Keywords: cleaner production, recycled paper, company culture.

1 Introduction

The present case concerns an alternative approach of sustainable management. Its implementation started at the end of 2006 involving two major players in Brazil: the organization running a widespread certification exam throughout the country and the third-party manufacturers of the paper material of the aforementioned exam.

The main concern leading to the implementation of the use of recycled paper in the production step of the test itself was to supply a short-run measure for improving the environmental efficiency of the whole examination process while being able to provide test takers with the same quality for the final product as before.

2 Case Study

Through the initiative of the executive in charge of the certification test at the institution running it, there was an arrangement between the two institutions to use recycled paper instead of the previously used type. As a way to assure that the use of the recycled paper would not impact the quality of the examinations, (neither alter its applicability characteristics) a control group was employed at one of the exam sites, chosen as to include a demanding sample of applicants, of approximately 2,000 candidates. Candidates from the control group who took the test evaluated the idea positively: responding to a simple survey regarding the new type of paper experiment, candidates evaluated no significant difference between normal paper and recycled paper.

3 Environmental and Social Benefits

After a successful experiment with the recycled paper test, its use was broadly incorporated at national scale thereafter. While maintaining all the desirable characteristics of regular paper for such a one-time usage application, we can now focus on the benefits provided through the use of a more social-conscious process for the exam.

On paper manufacture, wood is transformed in pulp. The rate of wastefulness is approximately 50% of discarded substances.

Tree Savings Calculation

According to Thompson (1992)

“1 ton of uncoated virgin (non-recycled) printing and office paper uses up to 24 trees”

A pallet of copier paper contains 40 cartons and weighs 1 ton. Therefore, 1 carton (10 reams) of 100% virgin copier paper uses .6 trees. So, we can perform the following calculation for the economy of natural resources: 1 tree makes 16.67 reams of copy paper or 8,333.3 sheets

The table below (table 1) shows the number of trees saved by not using regular paper on the manufacturing/production of the exam applied at countrywide scale.

Table 1: trees saved using recycled paper

Year	Numbers of Exams	Pages per Exam	Pages not wasted	Kg of paper	Trees saved
2006*	2,000	15	30,000	132	3,6
2006	10,000	15	150,000	660	16
2007**	40,000	15	600,000	2640	72

* control group (September)

** until July

From this table we can conclude that the gains from the use of recycled paper will be even greater since coming exams will be applied at a more frequent rate and at an ever growing set of applicants (as the need for a certification broadens its range through the whole country).

A fact worth mentioning is that the recycled paper does not directly use raw material from nature. Yet another advantage is that the colour saturation of the recycled paper, in natural tone, does not demand the process of whitening the paper, which contaminates the environment, further increasing the social beneficial from its use.

Other known advantages of recycling paper

- Reduction of raw materials costs: adopting used paper to produce recycled paper is cheaper than with cellulose.
- Water saving: while on manufacturing a ton of recycled paper 2,000 liters of water are required, in the traditional process this volume can reach over 100,000 liters.
- Energy saving: on average, half of the energy is saved.

Furthermore, there is a reduction in pollution and chemical products usage, because the critical phase of cellulose production has already been made, thus the recycling plant presents a lower harm to the environment. Moreover it uses residues that would otherwise end up as waste.

Another benefit would be at providing jobs: Specialists believe that fifteen time more job positions are created when recycled paper is adopted: five times more on production and ten times on recycling processes.

Last, but not least, it is worth mentioning the reduction in garbage volume: Each ton of normal paper recycled represents a reduction of a 3,2 m² area on waste lands.

4 Future action proposed

It is fundamental to disseminate the results of this case study, for two reasons: (i) to stimulate the public use of recycled paper in other examinations of certification and "official exams"; and (ii) to stimulate organizations to pressure its suppliers to use recycled material, as was the case at the studied situation,. Finally, this case study showed that it is possible to be successful in reducing the "enviromental footprint" if an organization includes this subject in its mission, demanding its suppliers and customers to do a rational use of environment resources.

5 References

Thompson, C., 1992. Recycled Papers: The Essential Guide. MIT Press, Cambridge.