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SUST-570

Deep Dive Topic-Cradle to Cradle

Executive Summary

Cradle to cradle (C2C) design is a concept that was first introduced by William McDonough and Michael Braungart, and published in their groundbreaking book, Cradle to Cradle, Remaking the Way we Make Things, in 2002. This book set a foundation for what has evolved into a well-accepted standard of design and materials certification. The main principle of this idea is that the established system requires a design review, establishing new criteria for resource utilization, the manufacturing process, and reutilization of waste. This is further broken down into a technological cycle and a biological cycle. These cycles must be optimized for what should be a net zero or net positive outcome in terms of resources and environment, as well as production. After several years championing the idea as a private consultancy, the group partnered with then Governor of California Arnold Swarzenegger to form the Cradle to Cradle Products Innovation Institute. This not for profit organization is a third party certification entity for products that meet the criteria specified as adopted from the Cradle to Cradle text. Recent history is replete with examples of this design paradigm providing benefits to the environment, businesses, and the public.

Introduction

The current situation is one that exhibits an increasing demand signal while showing a net decrease in resource capital. In short, our way of life on earth as we know it today is untenable in the long run. C2C design incorporates the idea that in all systems there is the potential not just for optimization but to completely design all inputs in some fashion to allow their return as an input later after the main use of the product. A common term heard in discussions about C2C is "waste is food." There are two main cycles in C2C; biological, and technical. The biological cycle takes into account the resources taken from and the impact upon nature. The technological cycle looks more into how the products we make can be reutilized, recycled, upcycled, or otherwise put to use in a utilitarian way so that the net outcome is energy and resources positive.

Discussion

The C2C Products Innovation Institute provides certification to products that meet the requirements set forth in their specifications. These consist of five key elements of design:

- ➢ Material Health
- ➢ Material Reutilization
- ➢ Renewable Energy and Carbon Management
- ➢ Water Stewardship
- ➢ Social Fairness

These elements are further defined in a set of guidelines that a company may utilize when designing a product. A company may submit for review by the Institute any product that they would envision meeting these guidelines. This review will cost the company approximately $2000 and up. The end result is a score provided by the Institute, rating the product on a scale- Basic, Bronze, Silver, Gold, and Platinum, in each one of the above elements. This score may be then be used by the company to market their products.

There are several important reasons why a company should choose to market their products through the use of third party certifications. First, the core business will benefit from the business service concepts that come into play when designing C2C.

- ➢ Values of materials
    - o Closing the Material Loop
    - o Design, Engineering Products
    - o Manufacture Products
    - o Marketing of Products
    - o Take Back Concepts
- ➢ Customer relations
    - o Business to Customer Network
    - o Customer linked to Business
    - o Sharing common Values
    - o Beneficial Business, Environmental, Social Aspects
- ➢ Leasing, renting instead of selling
    - o Service Values
    - o Values over lifetime
    - o Financing
    - o Technical Investments

Second, the competitive advantages are numerous.

- ➢ Differentiation
- ➢ Cost savings through process optimization

➢ Drives innovative culture

Finally, the market trend is leading in the direction of C2C, and the company that leaps first in this arena is going to be well positioned to succeed in the future.

Conclusion

The Cradle to cradle design process may not be the final iteration of the necessary review to mankind's current production/use/waste paradigm. Several other refinements may be necessary to get this kind of systems thinking to play out at scale. However, currently, there are thousands of products from hundreds of companies that have achieved certification from the Cradle to Cradle Products Innovation Institute, with more applying each day. It is clear that there is a strong demand for third party certification of sustainable product design. It is also clear that there are few if any downsides to working towards certification for most companies. The innovative culture, increased core competencies, and direct cost savings potential make C2C design an obvious choice for the forward thinking, socially responsible, sustainable company.

References

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