

## Service as one of the tools to achieve Sustainability in Product Design

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### **Abstract:**

Attention to the environment has become radical with the need to look for non-traditional environmental solutions and treatments. Therefore, this need arises to search for tools to achieve sustainability, particularly in the product design field. Accordingly, this study addresses the service as one of the tools that help achieving sustainability thru the product design processes, and its application of most up-to-date techniques in designing products and services which are environment friendly. That will lead to a more environment sustainable processes through the integration of service in product design to increase the added value provided by the product; either by adding service to the functionality of the product; or by delivering a service component as an added value, when providing products (Servitization). This would substantiate the important role played by the service within the processes of product design and development, in order to achieve sustainability in design, and that the service is considered one of the tools that help to do so.

These considered solutions and treatments are performed on environment friendly product designs, both during designing or re-designing, and the developed environmentally treatments that are made on the products after the end of its useful life. For instance, reuse; remanufacturing or recycling are not sufficient to fully achieve sustainability, as they only work to reduce the negative environmental impact of the product, but not prevent it. Thus, the attention to a service design solutions that add value to products and seek to make it more sustainable, has resulted in a new trend for designers to try to find innovative solutions as well as resourceful methods in design to achieve more sustainability in products and services. Over and done with the integration of design service in the process of designing the product, aimed at a higher value of the designed products, to add the service to the product; or a product replacement service.

Hence, the validation of the research problem is to bring attention to service as one of the environmental considerations in designing products that would help to achieve sustainability. The importance of study is to confirm the proposed design concept of service during the process of product design and development to achieve sustainability of those products, whether adding service to product design or product replacement service.

This study aims to confirm the concept of sustainability in product design by providing solutions and functionality rather than providing products, and also to address the environmental problems by replacing the products or some of its functions to services or add services to the products. An inductive approach has been deployed to conduct this study.

**Keywords:** Sustainability; Servitization; Service Design; De-materialization.