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INITIAL PROPOSALS FOR THE IMPLEMENTATION OF THE PRODUCT-SERVICE SYSTEM AT THE UNIVERSIDADE DO ESTADO DO PARÁ (UEPA)

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ABSTRACT

The Universidade do Estado do Pará (UEPA) is a public university located in the city of Belém (Pará, Brazil). It has adopted the Product-Service System (PSS) for car use which has proved to be effective and has brought benefits such as discharging the institution from bureaucratic issues regarding vehicle ownership. The adoption of the PSS at the university contributes to the advancement towards a more sustainable society. The objective of this work is to generate initial PSS proposals for UEPA, which will be the first step for its implementation. In order to reach the objective, a brainstorming and analysis of the conceptual elements of the PSS found in the literature were performed, generating at the end seven PSS proposals that may be better studied, generating new research and, in the future, implemented.

Keywords: PSS, suggestions, public university.

1. RESEARCH PROBLEM/ GOALS

The transformations that the planet is suffering in the past few years are notorious: paucity of natural resources, high pollution rates coming from industrial waste and excessive consumption. For this reason, countless conferences, laws, international projects, and actions have been created, aiming to sustainable development.

In this sense, the Product Service System (PSS) emerged as an innovative alternative that changes the way of consumption, without taking the economic bias and focusing on social satisfaction and on the sustainable development potentialization.

In the Universidade do Estado do Pará (UEPA) is already running a PSS project, which consists of car rentals. The car, that was previously an institution possession and generated constant problems due to bureaucratic processes for its repair or substitution, became to be rented by a company, which maintains and replaces whenever it is necessary, making UEPA responsible just for paying a monthly fee.

It is believed that there are other possibilities of a PSS implantation on the institution. Therefore, the objective of this research is to propose initial discussions of PSS implementation in other sectors.

2. UNIVERSIDADE DO ESTADO DO PARÁ (UEPA)-CAMPUS V

The Universidade do Estado do Pará (UEPA) is a public higher education institution that has 15 campus; campus V is the Center for Natural Sciences and Technology, located in Belém, capital of Pará State-Brazil, where there is a total of 9 undergraduate courses.

UEPA is a public institution, and as all Brazilian public universities, it is totally sustained by the government with money coming from taxes paid by the population, in a way that the students do not have to pay for any fee. However, this results in a higher level of bureaucracy, which occasionally ends in delays of supplying some needs.

This campus was chosen as research local context for being easily accessible for researches that already have familiarity with this local, making the needs analysis more viable.

3. PRODUCT SERVICE SYSTEM (PSS)

According to Vezzoli, Kohtala, and Srinivasa (2018), the LeNS project defines the sustainable PSS as a model that joins products and services to accomplish the client demand, from innovative interactions between stakeholders, where the economic and competitive interest of providers search continuously new solutions that are both environmentally and social ethically beneficial.

The PSS is classified into three categories: product-oriented, use-oriented and result-oriented. Being considered an ideal solution for this work the result-oriented PSS, which is focused on the product, but customer and provider agree a result, which there is no predetermined product involved (Tukker, 2004).

These are some of the PSS benefits: allowing a closer relation with costumers; creating values to costumers; hampering imitation by competition; alternative to mass production, generating differentiation in supply; reducing environmental impacts through dematerialization; conducting companies to retake and give a correct destination to their products in the end of life (Mont, 2002).

Nevertheless, the hard work to insert a Product Service System depends on cultural, social and business behaviors of consumption and production, besides having social and technological deprivation (Vezzoli et al., 2018).

4. RESEARCH METHOD

To elaborate the initial proposals of PSS in UEPA, the brainstorming tool, proposed by Baxter (2000), was applied which is recognized as a “shaking” of ideas made in group to initiate possible resolutions of the proposed problem., being based on the principle of “the more ideas, the better”. Then, from the opportunities found, were elaborated the proposals that were refined through the application of two proposed initial questions by Yip, Phaal and Probert (n.d.), which are:

- What problem(s) the company is/are attempting to tackle with this new PSS?
- What values the new PSS aims to bring to the company’s customers and their customers’ customers?

Finally, the definitions of requirements of the PSS proposals were made as proposed by Beuren, Sousa-Zomer, and Cauchick-Miguel (2017). These authors affirm that the PSS can be developed, considering all the elements involved in the offer that are specific for each PSS type. In the conceptual elements analysis it was sought to generate only result-oriented PSS proposals, since, as in the case of the successful implementation of car rental, the objective is to reduce as much as possible the possession of the institution on products, saving it from managing them.

5. RESULTS AND ANALYSIS

Eight opportunities of PSS implantation were identified through brainstorming: rainwater harvesting; solar energy generation; buildings rental; furniture rental; air conditioning; computer; projector and printer.

The rainwater harvesting’s proposal consists of hiring a company that would be responsible for providing a PSS

that would guarantee the rainwater harvesting; the solar energy generation's proposal consists of hiring a company that would install and be responsible for the maintenance and/or supply of solar panels; the buildings rental proposal consists of hiring a company that would be responsible for building more classrooms and research laboratories and maintenance of some of the spaces of the institution, as a way to reach UEPA expansion; the furnitures rental proposal consists of hiring a company that, initially, would do the actual UEPA's furniture maintenance for a period of two years, after that, it would have the product ownership and be responsible for its maintenance and/or supply, and likewise would be the air conditioning, computer, projector and printer's proposal.

As answers to the first of the two questions proposed by Yip, Phaal e Probert (n.d.), about the problem that the PSS would solve, altogether, the proposals would be solving problems associated/related to costs, water and energy expenditure, bureaucracy and the consequent waiting of problems resolution, necessity of products and their destination in end of life. Regarding to the second question proposed by the authors, associated/related to the value offered to PSS costumers and to costumers of the costumers, generally, the proposal would show as value, mainly, reduction of costs and bureaucracy; image improvement of IES, reduction of environmental impacts, supply of adequate products and spaces.

In the final stage, definitions of requirements, it was aimed to make the ideals proposals; therefore, all of them were result-oriented. Regarding the conceptual elements proposed by Beuren, Sousa-Zomer e Cauchick-Miguel (2017), the defined requirements common to all proposals were: planning the payment for an outsourced activity (services); planning the product property belonging to providers of services; outsourcing a service in which the provider delivers an outcome; and meeting the consumers' offering personalized results without purchasing the products. These defined requirements helped to understand the application of a PSS.

In general, the application of the used methodologies aimed at meeting the needs of the university through the use-oriented PSS. Thus, it will be discussed with the university's management to verify which proposals arouse interest to be applied.

6. IMPACTS ON SUSTAINABILITY

The developed research intends to solve the current university problems also aiming sustainability. If some of these proposals are implemented by the university, this will serve as model and inspiration to other institutions and companies. However, it is necessary to in-depth develop the topics listed as possible PSS applications, because the study focus was restricted to only the analysis of requirements. In this sense, it is intended to give continuity to this work with extension projects to the effective and qualitative implementation of such a system, ensuring the resolutions of problems in the local of study and potentializing the search for a more sustainable future. It is suggested as future works the replication of this one in other national public institutions that have a similar reality to the one studied in this case.

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