

Exploring The Design Options For The Valorisation Of Local Twickel Milk Towards The Consumer

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Exploring and conceptualizing a design solution for the valorisation of local milk, with a “user acceptance framework”.

Stichting Twickel is a middle-large organisation that manages multiple estates in various places, but its centre is located in Delden, with 4.300 hectare of land centred around their castle. With several departments, their main objective is to preserve the estates and all its cultural and historical value in full glory. They rent much of their land out to farmers and regular tenants and the rest of the land is meant for recreational use, such as hiking or cycling.

They have a separate commission for the future of their agriculture, consisting of a selection of farmers from the estate and several members of Twickel’s management. Their goal is to increase valorisation on their local estate products for both the ‘producing’ tenants/farmers and the organisation. From this problem of undervalue of local products, the focus of this research arose. The question of how to achieve this local product valorisation towards the consumer has become the research question.

The valorisation converted to one product in particular; milk. This product was chosen due to its high potential of additional valorisation and the large number of farmers that will benefit from this valorisation. This development will also be beneficial for Twickel, because they will

serve as overarching brand and can obtain a margin of the sales price.

The approach to reach this valorisation, was making the product stand out in the local food market. This also involved creating unity and uniqueness in an embedded Twickel brand, involving the local community values and considering the internal production possibilities for Twickel. All of which were researched in the analysis.

Going back to the research question, how to valorise the estate milk towards the consumer, the choice was made to solve this issue with an additional service around the product. This was based on Twickel’s embedded brand and the need for uniqueness in a large competitor field. In this competitor analysis and consumer survey it also became clear that local dairy lacks the accessibility that normal dairy does have. This bottleneck resulted in the idea of a service: bringing the milk to the consumer, instead of the consumer to the farmer, with the use of a product service system.

After this analysis, another choice to increase the valorisation was to make a derivative product *next to* the milk. This strategy not only enhances the price per litre milk, it also avoids the regional oversupply of milk to some extent. One of the first things that became clear, is that the

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product should be produced internally in order to create the most valorisation.

For the conceptual design of the service product, the model from Dong Lu & Al. (2019) was used as the base of the theoretical framework. This model explains the intention of use of smart product service systems, but remains quite abstract and does not take notice of brand image. This model was extended with an emotional branding aspect and concretized with actual design implementations, to derive the actual design guidelines for the system and service product. This emotional aspect was important, since this is believed to be an important factor with local products.

The conceptual design of the system and service product were based on this framework's guidelines (see figure 1). The mobile service product was made for both liquid (milk) and solid dairy products (see figure 2).

This framework consisted of two important factors to support user acceptance, of which one (Perceived Usefulness) was validated with a consumer survey. This survey seemed to support almost every concretized design implementation of the framework regarding the perceived usefulness.

The design guidelines concerning the perceived ease of use, the rest of the framework, could mainly be implemented in the virtual interfaces of the system. These were tested with 20 users to validate some part of this theoretical framework. The ten hypotheses concerning the perceived ease of use from the user's perspective, were either tested or questioned.

The test results seemed to support some hypotheses. Most of the ones it did not support, were explainable in terms of testing methods. The overall results were positive and the non-validating results were used to make (minor) changes. As for the design result, one liability is that the cost estimation still depends on Business2Business sales for a large part as well, which is less beneficial per unit than consumer sales. Nevertheless, this will still generate at least regular income and expanding the consumer region is possible, because the scale of litres to start with can be adapted to fit the shifting demands.

The valorisation of local milk towards the consumer has been solved with a smart product service system on a conceptual level, supported by the theoretical framework. However, additional research is needed in terms of legislations and actual user scenarios should be tested. For that multiple specialists are needed to realise the software, service product itself and the data structure.

References

- Dong Lu & Ivan Ka Wai Lai & Yide Liu, 2019. "The Consumer Acceptance of Smart Product-Service Systems in Sharing Economy: The Effects of Perceived Interactivity and Particularity," Sustainability, MDPI, Open Access Journal, vol. 11(3), pages 1-22, February.

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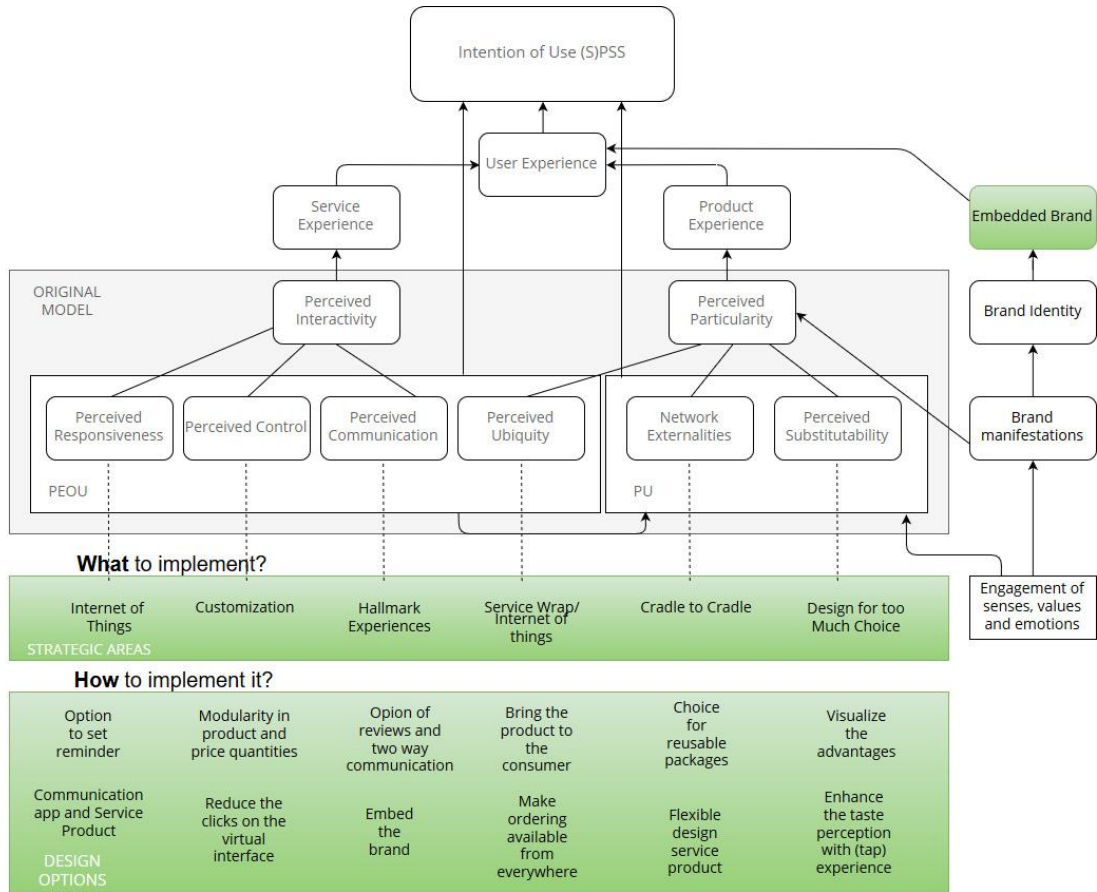


Figure 1. Theoretical Framework



Figure 2. Mobile Service Product