

# Research into the needs of an optimal package design for glass bottles of beer within the beverage industry

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**Subject:** An Analysis of the beverage industry in order to design an optimal package for glass bottles of beer

**Background information:** Commissioning party JK Ventures is a small investment company in Amsterdam that invests in promising ideas. They believe there is an opportunity to introduce a new form of packaging in the beverage industry which would improve the efficiency and sustainability throughout the supply chain. In recent years the dynamics in the supply have changed considerably in that the variety of beverages on offer has exploded and even so the drive to minimise the carbon footprint. The large variety of beverages has led to a lot of different types of packages which makes the beverage industry less efficient and which provides a great opportunity to get more coordinated.

**Main research question:** "Is there a need for a new packaging for glass bottles of beer within the beverage industry chain that improves the differentiation, sustainability and efficiency of the chain and thereby responds better to the consumer needs?"

**Approach with intermediate results:** In order to analyse the different packages of glass bottles and to find out about the offer on the market, a market- and patentresearch has been held in combination with an analysis of the beverage industry. Concepts have been made based on the market-and patentresearch and other findings are used in a questionnaire for interviews. There were held interviews with several brewers of different sizes, catering establishments and also with a large supermarket chain. This has resulted in requirements and wishes of each party and addresses the problems that influence their strategies at packaging of glass bottles. Based on these results there is considered which problems contain the most chances of improvement in the field of differentiation, sustainability and efficiency. This to the choice to investigate the improvement of the packaging for craft brewers. Nowadays the most brewers use a one way 33cl longneck bottle which is placed in a cardboard box for transport. The use of one way bottles is significantly less sustainable compared to a reusable bottle which is reused at least once. Thereafter cardboard boxes provides more waste compared to reusable crates. To implement these crates there is proposed to a crate pool system, in which an external party provides the services for the craft breweries.

**Results & Limitations:** The analyses, interviews and insights has led to the following results:

1. The design of an optimal crate: This crate is a sustainable alternative to replace the cardboard boxes which are used today. The crate is made foldable because it serves for the transport of oneway used glass bottles, so these crates return empty. The crate is designed to transport a 33cl longneck bottle, the most used bottle by craft beer brewers. To meet the requirements of the large supermarket chains and the preferences of the brewers, these boxes have a capacity of twelve bottles. The dimensions of the crate are determined to place exactly one layer of twenty crates on a pallet. The crates are made stackable both folded and unfolded.
2. Crate pool system: A system is proposed to improve the logistics by implementing the designed crate (see illustration below). These crates are only used during the distribution between the brewers and the retailers. This indicates that the crate will never reach the consumer. An external party provides the cleaning and transport of the crate to the distribution center and brewery. Here the brewery fills the bottles with beer, places them back in the crates and makes them ready for transport. Thereafter they arrive at a distribution center after which they are distributed to the retailers. If the crates are empty, they will return to the distribution centra where this external pool-party will collect and return the crates and clean them. Thereafter the cycle starts again.

**Conclusions & Recommendations:** Especially in the field of sustainability and efficiency in the craft beer industry there are opportunities to improve. To meet the requirements of the designed pool system, the new crate has to be reusable and foldable. Optimally they join the deposit system, however this takes a lot of modifications. This crate and pool system are conceived as a springboard which may induce the craft beer breweries eventually to let an external party execute some of their services. So craft beer breweries only need to focus on producing beer. Further research is necessary to decide if JK Ventures wants to continue this project. Consider a cost calculation, revenue model, business model, further development of the crate and calculation of the forces that apply.