

## Summary

A liquid bulk terminal (LBT) transfers, stores and handles all sorts of liquids between different modalities. When designing a LBT it is hard to determine the right level of performance. To help with this challenge Tebodin would like to be able to express the performance in terms of the service level of a LBT. While literature is not rich on this topic, this report will investigate what can be used from current literature and what is additionally required to define the service level of a liquid bulk terminal. The LBT process is analyzed and the concept of service level is defined by using systems theory. The performance measurement from customer viewpoint is separated in four elements; methods, categories, measurement and presentation. For each element existing literature is assessed to see if this is useful for the LBT.

Service level is defined as the performance from the viewpoint of the customer. This performance is based on sacrifices (what the customers pay) and results (what the customers receive). For a LBT you would like to measure those attributes objectively; in quantities also measurable in the system. Most of the methods from literature do not comply with those criteria. The most useful method for a LBT is the conjoint choice method.

Performance exists of different aspects. In literature those aspects are covered by using a set of categories and measure performance per category. Most of the existing category sets are not very useful for objective measurement. Only sets specially designed for similar industries are also useful for the LBT service level. The most complete industry specific set is advised to use as a starting point, while it should still be adjusted to LBT characteristics.

The actual measurement of service level among customers brings challenges like whom to question and how to question those customers. The sample could be determined by using a schematic model of the LBT functions and connect this with the different customers. This will show which customers are interested in which functions and their performance. The questioning method is determined by the performance measuring method.

The presentation of most service level studies is very scientific and does not give clear and quick insights in what the outcome means for the LBT. A concept of presenting results for the conjoint choice method is provided.

It is clear that research on this topic is still very meager. For the LBT in particular the categories, different customer groups and presentation of results are topics which should be further studied before being able to determine the LBT service level.

To conclude, the research area of performance from customer viewpoint is mostly based on business to consumer markets and lack objective measurement tools. Only a few studies provide elements which can be used for LBT service levels and together those could be used as a start for a service level framework. When complementing this with the recommended studies a complete framework for LBT service level determination can be formed.