

CONSUMER CASE STUDY

DATA ANALYTICS OPTIMIZES VENDING MACHINE PRODUCT ASSORTMENT



This company is one of the world's leading multinational businesses, and the market leader in more than 55 countries, with its brands sold in over 200 markets.

In Switzerland, where it employs more than 450 people and has a market share of over 40%, a network of around 6,200 vending machines is one channel through which the company sells its products.

DHL has been the company's partner in Switzerland since April of 2013.

CUSTOMER CHALLENGE

By their nature, vending machines have a limited amount of space in which to store products.

The challenge therefore faced by companies that use them is one of 'assortment management' – deciding which of its brands to place in the machine.

Since brands differ in popularity depending on venue and region, a vast assortment of customized brand combinations can be found across the machines.

CUSTOMER CHALLENGE:

- Huge number of vending machine assortments
- Balance volume with market share
- Meet contractual obligations

DHL SUPPLY CHAIN SOLUTION:

- Analysis of data pools
- Data model developed
- Created web-based, graphical simulation tool

CUSTOMER BENEFITS:

- Improved assortment optimization and slot management
- Simulation of effects of SKU changes
- Greater visibility of logistics costs
- Window into consumer behavior



The company balances two goals in making its assortment decisions: maintaining its target sales volume, and gaining market share by increasing sales of certain brands. To add to this complexity, there are also contracts in place to guarantee different manufacturers a percentage of distribution of their brands in the machines.

Another priority of the company is to avoid 'Out of Stocks,' caused by a brand selling out in the machine, and 'dead slots' – a column of the machine in which the featured brand does not sell.

Slot management is therefore essential in order to avoid wasting valuable space.

DHL SUPPLY CHAIN SOLUTION

DHL recognized that the data collected by each vending machine whenever it recorded a sale presented an opportunity.

To tackle the assortment challenges, DHL tasked its Data Analytics team with developing a 'decision support system,' which enables a simulation exercise that collects vital information for assortment optimization.

As a first step the team created a huge database, designing a data model which took into account all aspects of the many hundreds of assortments across Switzerland, and the interaction between the different data pools that were available.

They then created a web-based tool which allows simulations to be run, showing the effects of filling the machines with different assortments at each location. The tool shows the information graphically, for ease of use.

It calculates the expected sales of different assortments, and also verifies that no contractual obligations will have been broken by changing an assortment.

Based on the data, it can also provide insight into customer behavior by anticipating which brand would be a customer's second choice if the first choice is out of stock.

CUSTOMER BENEFITS

The project is an example of how an organization can use the power of data analytics to exploit relatively untapped data assets.

Using the tool, the company can now run user-friendly simulations that tell them how many sales they can expect to gain – or lose – with different assortments of their products in the vending machines.

It also enables them to determine whether they are able to save on logistics costs or whether these will increase as the result of certain assortments.

The data sheds light on consumer buying preferences, helping the company to better target the assortments at its customers in different venues and localities.

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