

Case Study

Rule Technology: Tariff & Logistics Optimization for the ‘Last Mile’

The US postal market has its own set of rules: USPS continues to hold a monopoly on all mail delivered to private mailboxes – the ‘last mile’ being off-limits to third-party providers. Holding one's own in the competitive market requires creative and innovative solutions. A decisive advantage for DHL is provided by the Visual Rules Suite.



Deutsche Post, DHL (North America), has captured a not inconsiderable share of the market for postal delivery services to wholesale customers in the US. Currently, DHL operates 87 service centers throughout the US. From these centers, mail is distributed by different routes as close as possible to the respective destination (from collection centers for large quotas to the local post office) and then transferred to the United States Postal Service (USPS). Delivery is currently made to 3,000 destinations, with more to come.

What challenges needed to be mastered in the past and what challenges exist now, which will also in future always require process optimization on an ongoing basis?

In the wholesale customer sector, DHL generally offers its customers fixed prices for transporting mail. Its own profit margin therefore cannot be obtained by increases

in prices or fees, but only optimized to make the fullest possible use of USPS discounts based on guaranteed volume quotas. When selecting the discount rate, there is always the risk of DHL calculating a wrong rate, or one that is “too favorable” for DHL. Discounts which are applied falsely lead not only to a loss of the more favorable rate and thus to incorrectly calculated rebate expectations, but also inevitably to considerable penalty fees imposed by the USPS. These have a direct negative impact on the company’s own profit margin. For these reasons, DHL has decided to implement the USPS discount regulations with the aid of the Visual Rules Suite, a business rules management system (BRMS). The regulations themselves speak in favor of the Business Rules approach: They are characterized by a multitude of rules, complex interconnections as well as frequent changes.

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DHL has modeled and automated the discount regulations with the aid of Visual Rules. The discount rates are transparently implemented with Visual Rules. Visual Rules is part of a comprehensive logistics software platform which was completely revamped in 2010 and which has been in productive use since November 2010. Since its launch, DHL has profited from the benefits of the modern and flexible platform and in particular from this type of rule-based “Manifesting” – the steps required to qualify mail items under the USPS price model and the subsequent creation of transport documents and inspection reports.

Rule-based “Manifesting”: Qualifying Mail Items

How can mail be sent optimally (in the sense of an optimal logistics and supplier chain) in order to bring it as close to its ultimate destination as possible while at the same time providing a cost-effective service, i.e. making the fullest possible use of discounts from the USPS?

Firstly, DHL handles the qualifying of up to 1,000,000 mail items per day: The applicable price scale for each wholesale mail item is identified using a rule-based system. In the next step, an additional rule-based process is used to calculate the exact postal charge for each mail item. The transport documents are created and printed, and all of the data is electronically stored. Inspection reports for the day's mail volume must be provided each day to the USPS so that it can verify compliance with the regulations governing the application of its discount rates. These reports are extracts from automatically generated rule-based regulation documentation.

Competitive Advantages with Visual Rules for Deutsche Post

The USPS discount system is subject to regular modifications. All changes previously needed to be entered and tested through costly reprogramming and implemented within the scope of release cycles for the entire system. Today, this is done in an agile manner (i.e. not tied to any rigid software release cycles) by a small number of staff using the Visual Rules Suite. Not only that: Changes in DHL's own customer base and thus in DHL's logistics infrastructure can also be quickly and directly implemented in Visual Rules, without the need of involving software programmers. If, for example, DHL wins a new wholesale customer, daily mail volumes could soar, thus even making it necessary to open a new mail center.

USPS's discount regulations are now implemented transparently in DHL's software platform in the form of clearly defined and readable modules for everyday use.

“Instead of 2,000 lines of spaghetti code, we've now implemented the USPS price catalog in the form of readable modules that are validated by business experts. As a consequence, updates to business logic and to the IT application can go hand in hand. We now have a full understanding of the implemented regulations – and what's more, we can quickly implement any changes.”

Robert Werner,
Head of Functional Architecture, DHL Global Mail

These rules are kept constantly up to date with the involvement of business experts.

The Visual Rules Suite helps DHL experts to calculate charges correctly so as to minimize the risk of formidable penalty rates applied by the USPS for false calculations, thus also optimizing the company's profit margins.

Continually Optimizing Margins

At present, 20 rule technologies have been implemented at DHL. The transparency of the decisions as well as that of the complicated rule technology is fundamental. Because the decisions are transparent, continuous optimization of postal charges can occur. If necessary, DHL submits a request to the USPS and receives a more favorable discount rate in order to use higher quotas to send as many mail items as possible at the highest discount. In order to receive this discount, DHL must provide qualified proof of eligibility which, due to the transparent systems of rules, is not only possible but ultimately has become a profitable advantage.

With the aid of the Visual Rules Suite, DHL has managed to implement tariff and logistics optimization in an innovative manner all the way to the ‘last mile’. DHL benefits greatly from the quick and easy implementation of changes in USPS price structures, in customer and logistics infrastructures as well as by making the fullest possible use of the greatest discounts to continually optimize profit margins.

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