Improving Postal Service with AI, Machine Learning, and Data

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If recent innovations have shown us anything, it's that data has the power to be a transformative mechanism by which strategy, supply, and logistics may benefit. We've already seen the effects of technology on supply chain management in countless industries. Now, postal operators are looking to the potential of data, AI, and machine learning services to transform the industry and provide world-class service to their customers.

Network Planning

Data can play a big part in route optimization planning. For example, if a particular truck has the capacity to deliver 200 parcels, and suddenly there's 400 parcels one day, this should no longer be a surprise. Not with the advanced tools available to us.

Using this incoming data, we should be able to recognize the additional parcels and automatically schedule a second truck to handle the overflow. What's more, machine learning and AI can determine whether a single additional truck is optimal, or whether more might be necessary.

This is also helpful for planning for certain events such as weather, high volume seasons (such as holidays), or other events which might alter or impact delivery routes, i.e. parades, road closures, sporting events.

The information is available to us. The question is can we make these changes dynamically as needed. As in the example above, we need to know that one truck isn't going to be able to handle the parcel flow and anticipate this beforehand rather than reacting to it later. The goal is to proactively predict these changing needs rather than reactively scramble to accommodate them.

Last Mile Planning and Logistics

One thing that machine learning and AI are good for is helping us sort through normal occurrences like, scheduling and planning, predicting routes, optimizing, etc. Historical trends based on holidays or weather patterns become easier to anticipate and plan for, given enough available data. For many, this information already exists from historical transaction data.

What AI and machine learning are less adept at managing is abnormal occurrences, such as failed deliveries. However, it does allow us to identify these circumstances and prompt us to take further action. So, one solution is to let the programs take care of the normal, while the humans jump in and have more time to manage the abnormal.

For example, failed deliveries can be re-routed to a pick-up location closest to the customer. Or, customer preferences can be logged and managed for further review and action. This can also be incredibly helpful when we combine this information with other transaction data. For example, we can identify the sender, the size of the package, and perhaps the cost of shipping and insurance. This can lead us to estimate what the contents of the package may be; whether it's perishable or valuable, etc.

A customer having an expensive television shipped to them, for example, might have different preferences for delivery than a pair of socks. In the case of a failed delivery, it may not be beneficial or convenient to route the parcel in a certain way. Using customer preferences, we can recommend a course of action that the customer would prefer and automate that course of action, or flag the failed delivery so a human can follow up with the customer.

Where Does The Data Come From?

In many cases, the data posts need to get started already exists in the form of historical transaction data. To this, posts can add point-of-sale customer feedback collected at the point of interaction (i.e. a self-serve kiosk or retail counter). As a result, postal operators can start to build a baseline of data to start drawing from.

The goal of any data analytics plan is not collecting data for the sake of data. Rather, we want to make data work for us and allow us to mine actionable insight from its collection. By putting data to work, post offices can create a better customer experience, alleviate their own pain and pressure points, and provide a more complete service to their customers.

To learn more, listen to the Postal Hub Podcast featuring Wayne Haubner, CTO of Escher, as he shares his thoughts on AI, machine learning, loyalty programs, customer engagement, digital onboarding and more.

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