

Optimizing Dispatch: Artificial Intelligence and Actual Intelligence at Work

By: Paul Whitelam

In today's competitive business environment, product differentiation is becoming more and more difficult. Service has become a critical way to stay ahead of competitors. As companies increase efforts to distinguish themselves based on customer service, the experience provided by a mobile workforce becomes increasingly important. While there are various aspects of field service that can tip the scale toward success or failure, the largest opportunity to increase the productivity of your human capital lies in making sure that the scheduling and dispatch of your mobile workforce are optimized.



There is a lot riding on making the best decisions for scheduling. The choices you make impact every interaction with your customers or the assets you are servicing. And margins are under pressure due to multiple factors: the need to accommodate VIP customers with urgent problems, unexpected traffic, issues with site access, and customer cancellations, as well as many other challenges that arise on the day of service. Even the best-planned schedules are invariably disrupted.

Regardless of the challenges, scheduling still represents an area where companies can achieve a major positive impact on their bottom lines by improving the efficiency of the scheduling and dispatch process. In this quest for efficiency, there are two levers to consider. The first is automation—that is, making decisions in an automated fashion that improves response times and can reduce overall labor costs. The second is the use of machine learning to analyze historical data to make better predictions creating optimal routing and scheduling decisions.

Achieving real results from automation

Having the capacity to automate scheduling decisions can be a game-changer for field service teams. By using artificial intelligence to immediately identify the optimal resource allocation, organizations are able to dispatch jobs in a way that maximizes the chance of a first-time fix, ensuring customer satisfaction, and also reducing the cost of service by minimizing travel time and other elements. The ability to continually optimize a schedule as service requirements change also has a major payback. For instance, instead of leaving white space in the schedule when a customer cancels, an automated system will assign an alternative task immediately rather than leave a resource idle. This leads to improved productivity and more satisfied customers.

Another way automation delivers tangible benefits is by understanding the particular urgency of work and SLAs. This way, if an emergency comes up, low-priority work like preventative maintenance can be automatically rescheduled to another time within the SLA window without adversely impacting customer experience.

Machine Learning powers automation

While optimal automation cannot happen without sophisticated artificial intelligence, there is an additional advantage that can be delivered through the use of Machine Learning.

Machine learning (ML) is a type of AI that uses historic data to improve the quality of decision-making without explicit programming. One of the greatest attributes of ML is its ability to process large amounts of data from many different sources in ways beyond the limits of the human brain.

Through ML, organizations have the ability to use data about previous disruptions to help with future planning. For example, ML can analyze historical weather conditions throughout the year and, at times when there is a higher probability for snow, the system can schedule lower-priority jobs to preemptively mitigate scheduling disruptions should there be a storm and resulting cancellations. With a solution that uses AI and ML to handle job planning, scheduling and execution, field service technicians encounter less downtime and fewer work disruptions and are consistently assigned jobs that match their skill sets—[which can improve productivity by up to forty percent](#).

When these technologies are strategically applied to connected equipment and sensor devices, valuable data about performance, environmental conditions and more is constantly transmitted and processed. ML can analyze the collected data to preemptively identify issues before they even occur, avoiding downtime and saving time and money for businesses and customers.

Providing a differentiated customer experience

The most experienced dispatchers and service managers still confront a limit to the number of variables they can consider when making scheduling decisions. With AI capabilities, however, calculations and changes are instantaneous, adjusting in real time to minimize disruptions and maximize the organization's desired outcomes and KPIs. The majority of these changes and problems are addressed in the background without the need for human intervention. This level of automation enables an organization to deliver an optimized and differentiated customer experience as compared to a field team that relies solely on manual processes.

AI can also improve customer communication, which is key to a good experience. AI enables your team to share an accurate arrival time based on current travel conditions as well as send details about the technician and his real-time status and location. This information keeps customers from feeling "in the dark" about the appointment and eliminates variables that can result in customer no-shows and last-minute cancellations.

Lastly, as the use of IoT sensors increases, field organizations can be alerted to a problem before the customer even realizes that something is amiss. An alert can be sent to your FSM system, allowing for the schedule to automatically be adjusted in real time to dispatch a qualified service technician while also filling in any gaps that might occur as a result of this change. While providing such seamless service enhances the customer experience, it also enables field organizations to develop new revenue streams by selling monitoring services or up-time guarantees. Also, studies have shown that customers are actually willing to pay more for a better experience, so this might provide some pricing flexibility for your organization, helping to stabilize margins.

Hope for the best, but prepare for the worst

Delivering on a service request means having to deal with the unexpected. Factors like last-minute cancellations, sick calls, changing weather conditions, and shifting traffic patterns will always remain out of your control—and will inevitably impact field service operations. While these variables can't be eliminated, they can be managed through technologies like AI and ML. True AI and machine learning enable a scale and speed of schedule and dispatch optimization otherwise impossible to attain with mostly manual processes.

The benefits of schedule automation through the use of AI and ML are real and only

get better over time. The constant stream of inputs and refinements—and the feedback loop created by adherence to or deviation from the optimized routes and schedules—teaches your system to make better decisions in the future. The more data you provide, the more refined and focused your operations will become over time. The ability to run simulations and crunch massive amounts of data empowers service leaders to test-drive process changes and weigh variables to understand what will work best. So, what are you waiting for?