



# The Power of Machine Learning and AI in Tackling Today's Utility Challenges

Environmental, weather, and market uncertainties compound challenges for small and mid-size utilities that aim to access restoration and other resources in a competitive field.



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**DTN**

- The machine learning effect
- Democratization, scalability, and access
- Bridge the data gap
- Competition for restoration resources
- Data as revenue protection
- Prosper in a dynamic world





# The machine learning effect



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## The big picture

Machine learning is changing the landscape of work around the world. As reported by Statista, worldwide revenues for the artificial intelligence (AI) market, including software, hardware, and services, are forecast to grow 15.5% year-over-year in 2023 to \$500 billion.

Machine learning and artificial intelligence are exerting this level of impact across sectors and geographies because they are fundamentally shifting how businesses access, interpret, and act on data.

## The impact on utility providers

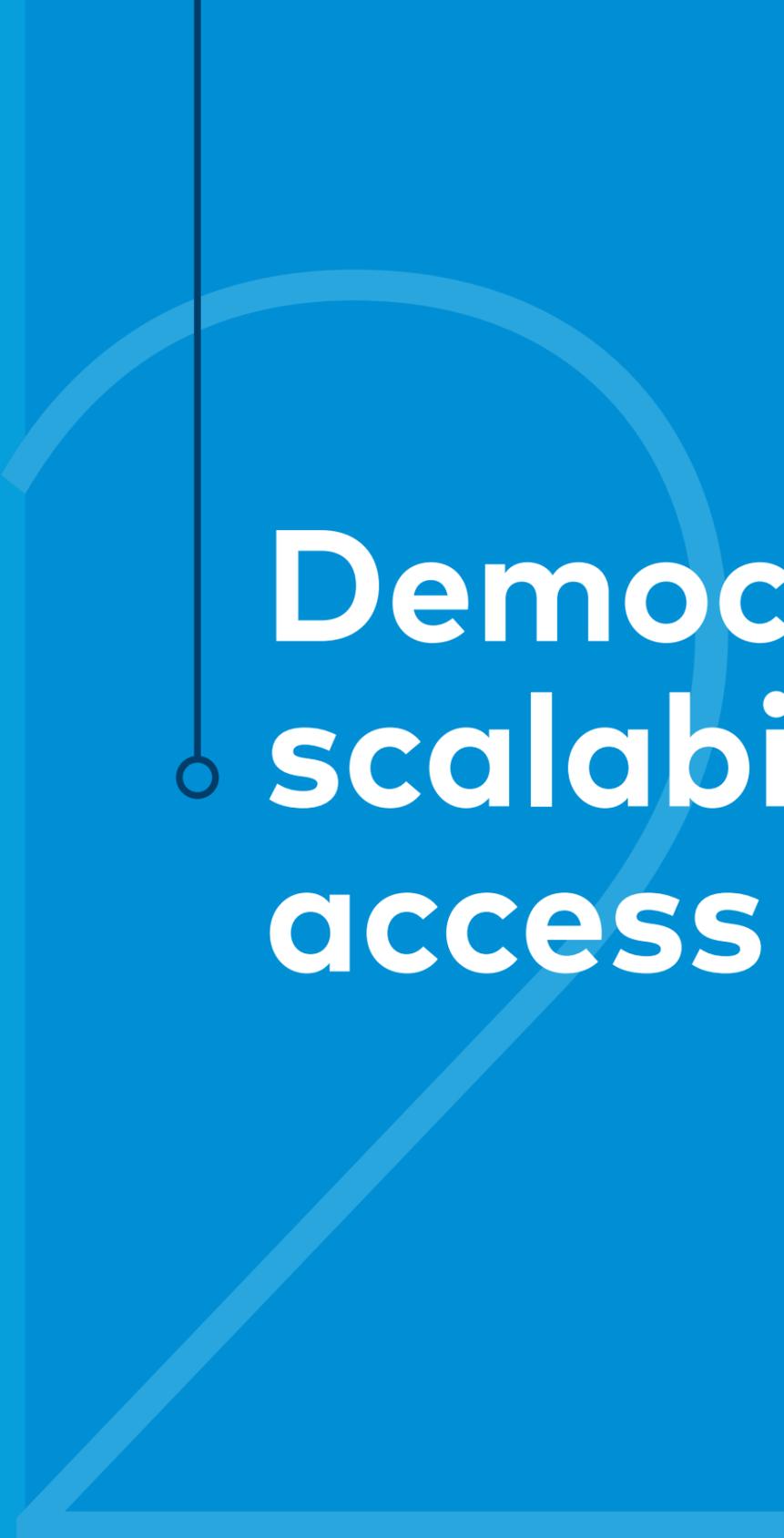
The market size of artificial intelligence and machine learning is significant because of the impact these technologies have on the way decisions are made, from day-to-day operations to long-term strategies.

AI and machine learning shorten the time between data collection, analysis, and action. Businesses that leverage machine learning, therefore, strengthen their position to access resources and serve customers more quickly and effectively.

Business Wire, quoting an IDC report, projects "(AI)-powered enterprises will respond to customers, competitors, regulators, and partners 50% faster than their peers." AI and machine learning give utility sector businesses the capability to deal with difficult-to-predict weather events and to initialize quick, targeted responses. Solutions with artificial intelligence capabilities that deliver insights help utility providers improve response time, restoration, and access to resources.

Actionable insights position providers to satisfy customers and regulators.





# Democratization, scalability, and access



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## Democratization, scalability, and access

Machine learning meets weather events and other environmental uncertainties head-on through data democratization, scalability, and accessibility.

This enables utilities to objectively declare events to initiate incident command procedures and escalation levels. Additionally, it leverages data insights to do the following:

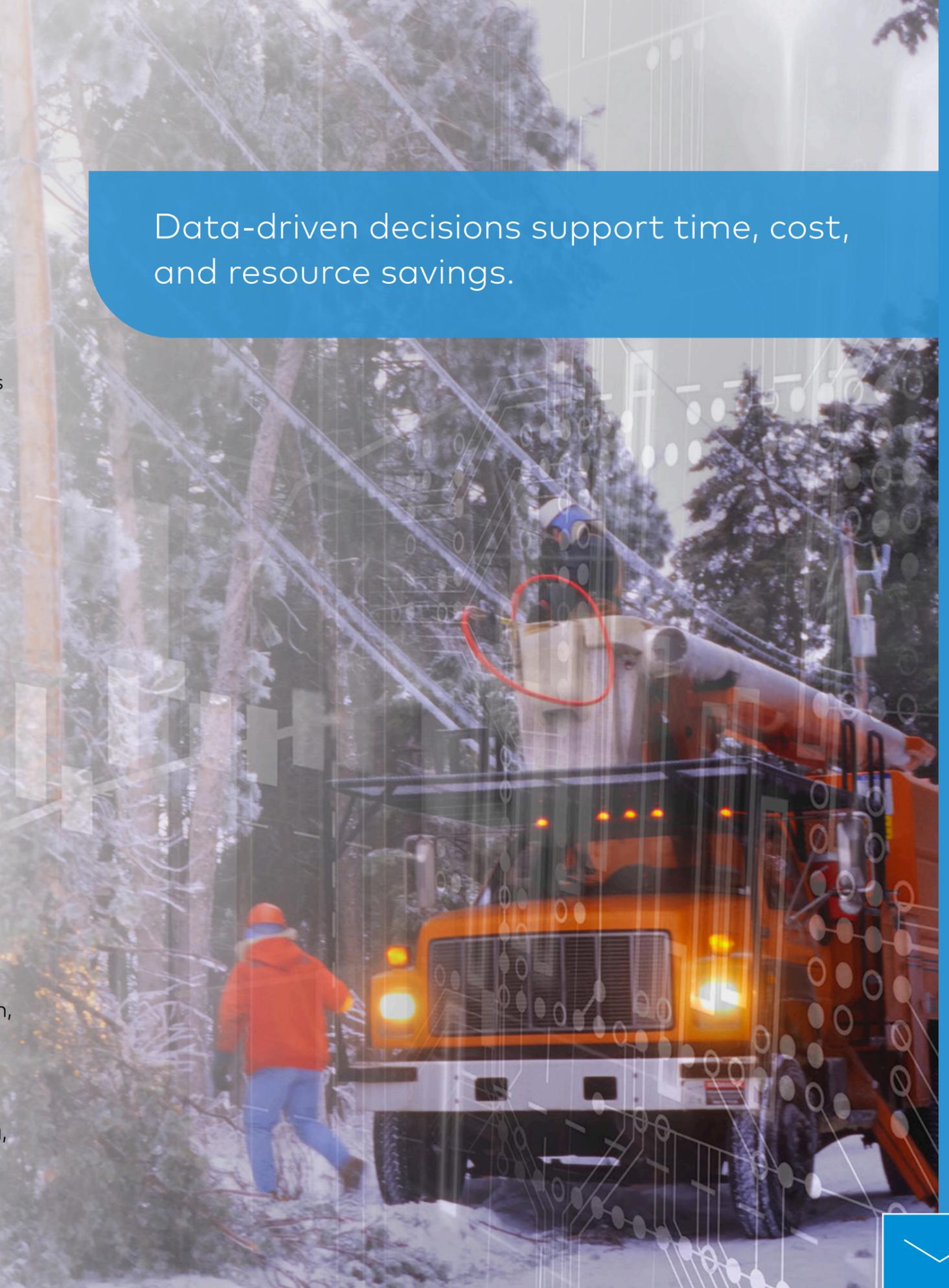
- Size internal and external resources for restoration and response.
- Identify regions and event windows for the most significant weather impact on pre-stage and holdover resources.
- Justify weather event preparation decision-making to public commissions and constituents.

Data democratization and scalability directly impact utility provider responses to weather events and other scenarios that require immediate action to serve customers and avoid regulatory penalties.

Clear, usable data, delivered in near real time, empowers companies to determine where, when, and what resources need to be accessed and deployed. This enables them to get ahead of the demand for resource access and to scale and customize responses. As a result, guided by data, companies save on time, money, and labor.



Data-driven decisions support time, cost, and resource savings.





# Bridge the data gap





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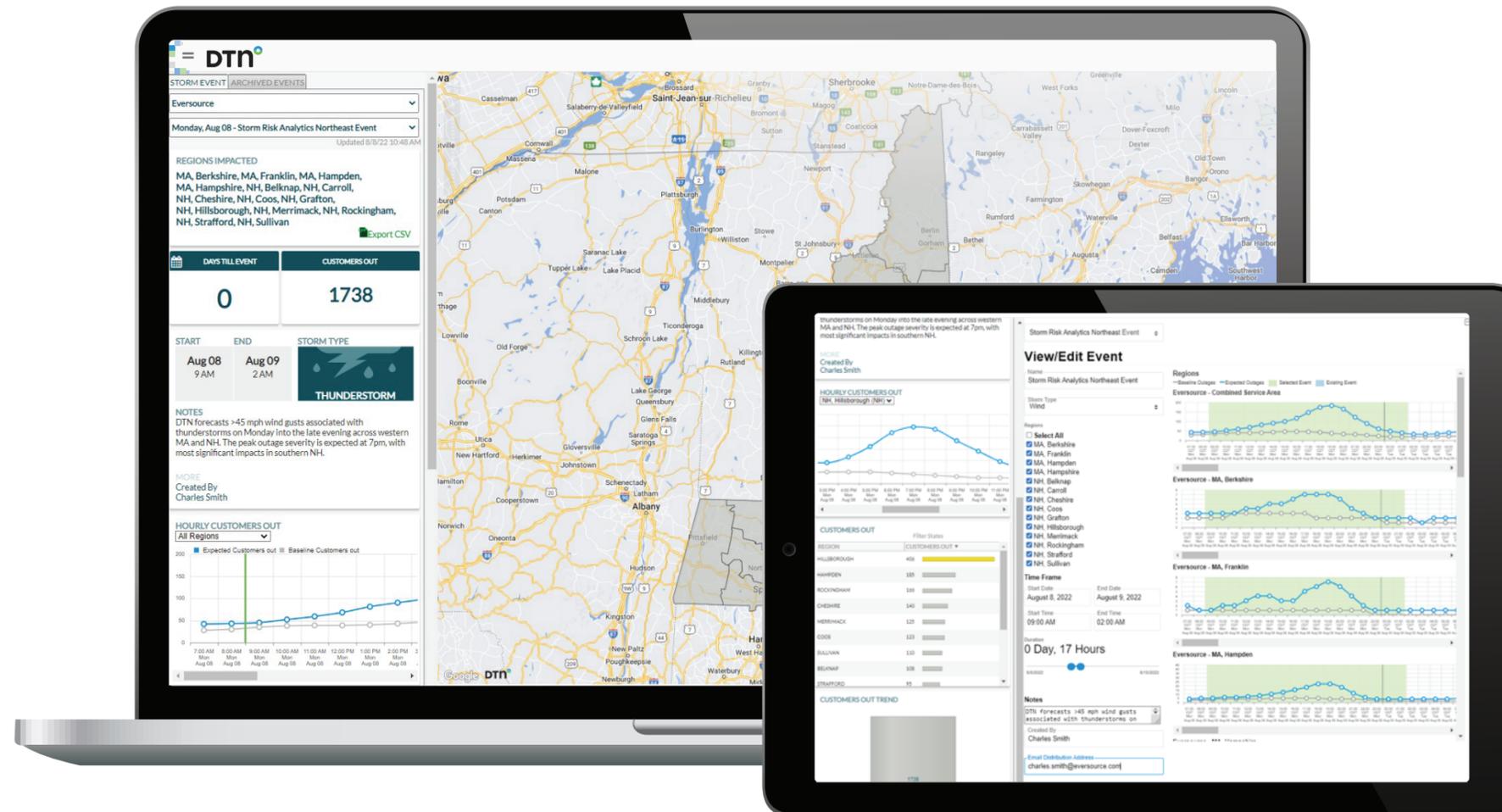
## Bridge the data gap

Smaller and mid-size operations grapple with data gaps. Solutions like Storm Risk Analytics (SRA) from DTN utilize machine learning and AI to bridge that gap.

With an AI solution like SRA, mid-size utility providers — and even their smaller counterparts — gain access to actionable data that fuels intelligent decision-making and leverages and conserves resources.

**Powered by machine learning, SRA helps companies do the following:**

- Access clear guidance on the required incident command escalation level for all operations centers.
- Reallocate and source additional restoration crews, as needed, in advance of an event.
- Source and (re)allocate additional materials, as needed, in advance of an event.
- Get regionally-trained outage prediction models that include historic customer outage data.
- Reduce (or eliminate) regulatory performance penalties.

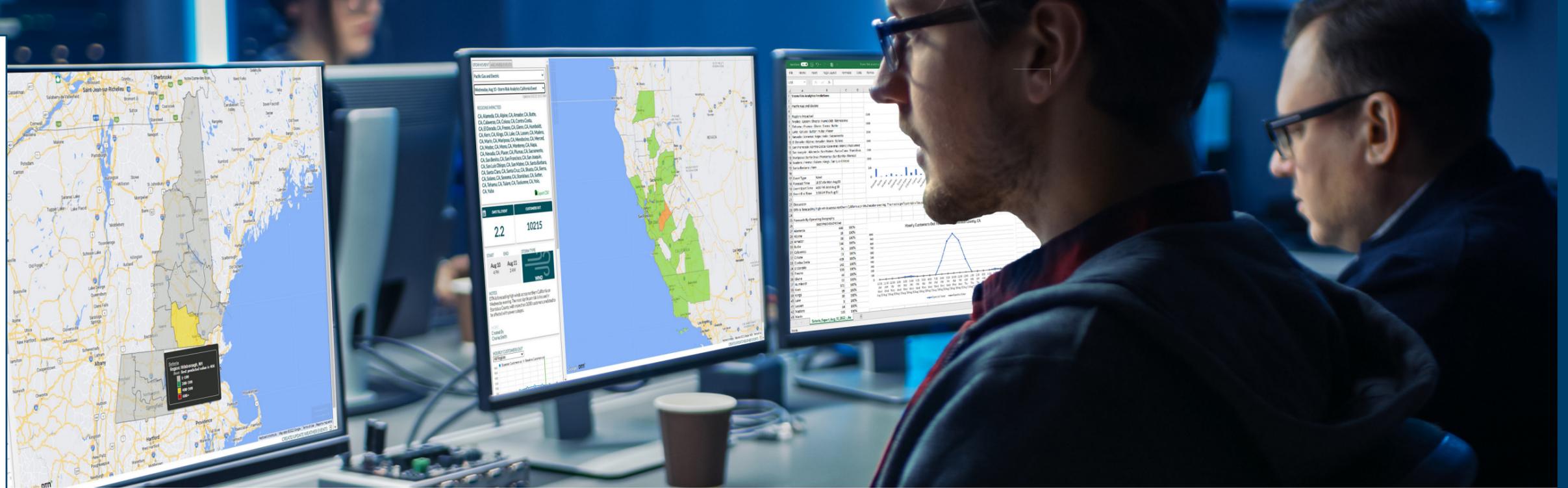




# Competition for restoration resources



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## Competition for restoration resources

In unpredictable, weather-dependent environments, competition for restoration resources is tight. With the demand for restoration resources coming earlier and more emphatically, there is an immediate need to make insights-backed decisions related to resource access requests.

Making the wrong request at the wrong time is a real risk. To combat that risk, it is imperative to acquire tools that enable on-time, accurate, informed decisions.

## Declare incident command events

Data insights enable utility providers to declare incident command events objectively. This opens the pathway to secure outside restoration contractors and pre-stage resources. Ultimately, that leads to faster service restoration for customers.

## Use data to manage restoration

Once the incident is declared and resources allocated, data streamlines restoration management. This includes making informed crew staffing, call center resourcing, and materials allotment decisions.

Predictive and historic data combine to justify restoration response decisions to all stakeholders, including management and regulators. Data makes better decision-making possible because it clarifies what utility providers should anticipate related to the weather incident type, severity, location, and cost. These insights make it possible to mobilize contractors in advance and make the right materials available at the right locations for repairs.





# Data as revenue protection



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## Data as revenue protection

Outage duration, inefficient responses, and misaligned resources all can negatively impact revenue.

Data protects utility providers from these losses by generating insights that lead to targeted decisions that get the right resources to the right locations at the right times. In fact, it is access to data that fuels accurate anticipation, appropriate response, and informed incident management.

## Improve scores

In addition to the impact on revenue, solutions empowered by machine learning help utility companies improve SAIDI/CAIDI scores, ETR goals, and overall customer confidence and satisfaction.





# Prosper in a dynamic world





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## Prosper in a dynamic world

DTN provides operational intelligence to our customers who feed, fuel, and protect the world.

### Industries we serve

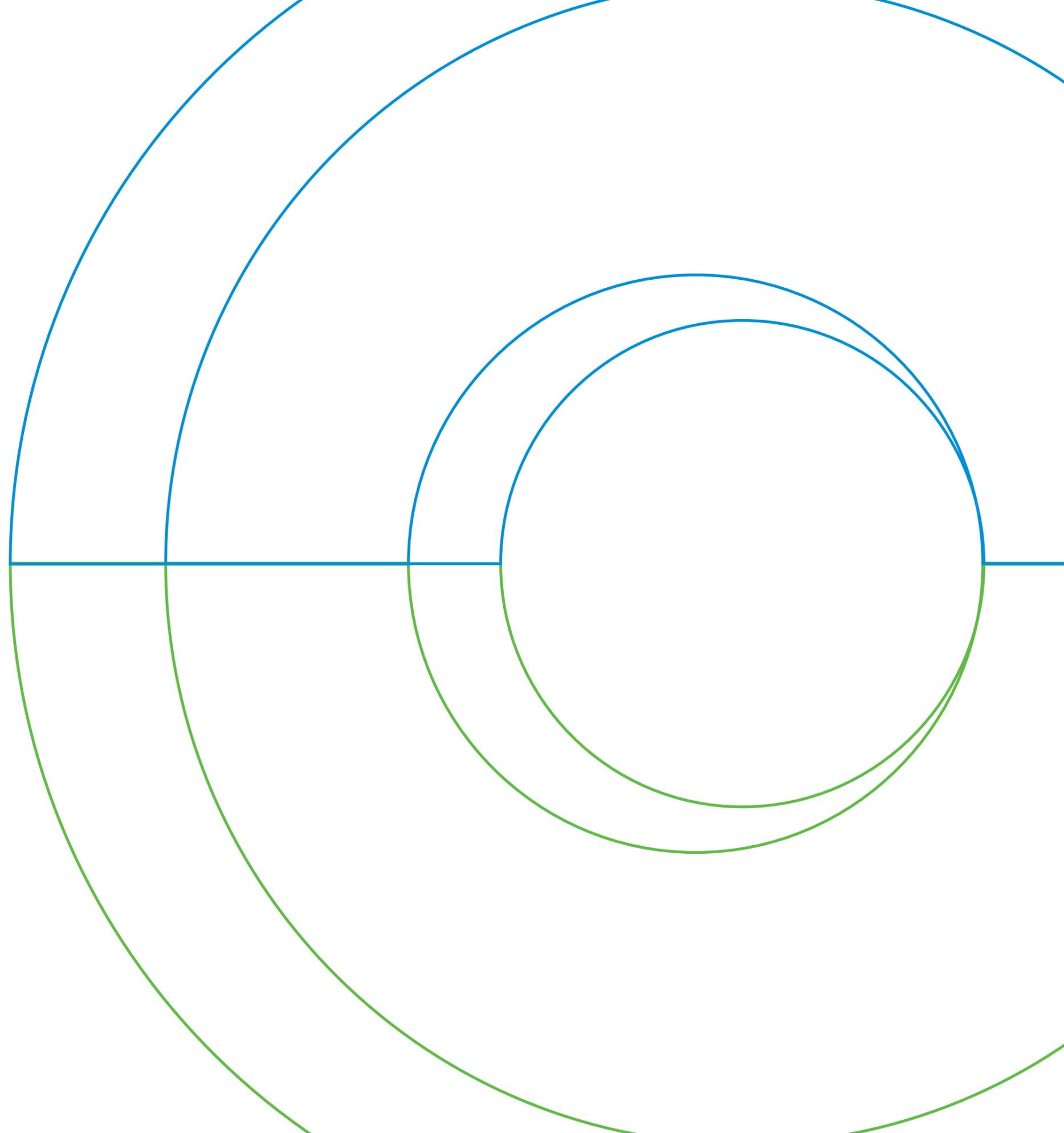
DTN empowers customers in agriculture, aviation, mining, offshore, refined fuels, renewable energy, shipping, transportation, and utility sectors with intelligent, actionable insights that exceed expectations and enable success.

### Storm Risk Analytics

Storm Risk Analytics from DTN leverages the power of AI and machine learning to deliver data insights directly to utility provider companies.

SRA weather insights help drive informed, effective decision-making for incident management, including crew planning, load balancing, line rating, and asset inspection.





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