



# Getting intelligent insight from external data

Powering sustainable manufacturing  
growth strategies

prevedere

 Microsoft Azure





## Summary

- Demand forecasting and planning require more than the information you get from internal data sources. External data can reveal leading indicators to validate your growth strategies, find hidden drivers, and optimize your product distribution.
- However, there are many cultural, structural, and operational barriers to data-driven manufacturing. These include difficulty collecting, synthesizing, and curating data from thousands of sources to make sense of it.
- These barriers can be overcome with a predictive data engine like External Real-time Insights analytical engine (ERIN). ERIN enables greater accessibility to the right data sets for affordable management and analysis of huge amounts of data through Microsoft Azure.
- ERIN and other cloud-based solutions are part of the digital transformation in manufacturing that drives intelligent supply chain for real competitive advantage. They provide the key elements to assess your business at the right level of granularity from the inside, and the outside.



# Introduction:

## For a solid strategic view—include the outside perspective

You are an expert when it comes to your company. You know what's happening on every inch of the factory floor. You know capacity by the week, quarter, day, and hour. But few manufacturers have as deep a view into what's happening beyond their factory and operational walls—and more important—what's about to happen. What are the leading indicators to inform growth strategy? And how can these leading indicators and external data inform better strategic decisions for growth?

If you have the benefit of accurate and timely demand forecasting powered by artificial intelligence (AI) and machine learning (ML), it boosts your business in innumerable ways, including the ability to:

- **Validate Existing Growth Strategies**

When you know how the industry is shifting before your competitors do, you can drive sales forecasting discussions with data-driven insights for better conclusions and actions. On the other hand, a single bad forecast can be very costly, especially if you have a vertically integrated supply chain.

- **Discover Hidden Performance Drivers**

You can better refute or defend long-held assumptions on what drives demand and predict future economic risks with enough lead-time to operationalize responses.

- **Optimize Product Distribution**

With foresight, you can better adjust marketing and sales priorities based on the latest economic leading indicators. This helps you fine-tune resource allocation based on predictions of demand by region or market.

Given these facts, it makes sense that 90% of manufacturing executives feel external data can improve their overall financial performance. The trouble is that over half of them don't have the time to spend on strategic thinking, with 60% of their time spent on tactical, short-term issues.<sup>1</sup> As a result, many manufacturers miss critical turning points and shifts in their markets because either (1) executives have no time to step back from internal operations to make decisions from sound external data, or (2) by the time studies or reports come back, often it's too late to take advantage of fast-moving opportunities. And with these turning points coming at a faster pace and with more volatility than ever, understanding how economic factors will impact future business can be a real advantage.

Long-range, strategic thinking and data research have their places, but before that—and within that—timely, data-driven analysis is critical, and possible. You can systematically discover, collect, and integrate clean, external data from millions of sources to identify the leading trends and economic signals in your market.

Accuracy in this is key; a small percentage of error can result in millions of dollars in lost revenue. In this e-book, we'll show you how new data analytics capabilities such as those powered by ERIN, the External Real-time Insights analytical engine on Microsoft Azure, can push manufacturing forward in ways and at speeds never before possible.

---

<sup>1</sup> 2019 Executive Survey: "Improving Data Analytics: The Most Valuable First Step Towards Digital Transformation."

# What challenges stand in the way of leveraging external data?

Of course, the main challenge in leveraging external data is acquiring, processing, synthesizing, and curating the data. Finding and sorting through thousands of potential data sources alone can take huge amounts of time. Once that data is gathered, ingesting and synthesizing it so that it can be meaningfully interpreted requires huge computing power and can be greatly accelerated with AI, ML, and elastic cloud resources. These are hurdles that an engine like ERIN can overcome through technology. In addition, there are cultural and organizational barriers as well that can slow down the quest to leverage valuable external data.

## A historical reliance on intuition

Many businesses hypothesize about what external factors are influencing their business based on their “gut.” They may think, “why should we spend the time to collect, sort, and analyze external data from hundreds of sources just to test an unfounded hypothesis about one business driver?”

**As a result, harnessing macroeconomic insights to strategize a forward-looking view into their business takes a backseat at most manufacturing companies.**

But that’s precisely where they could find big wins. By finding the best correlations between the company’s business performance amid the preponderance of external data, manufacturing companies can drive more value into their innovation journey,





and at the same time, reduce costs, particularly related to inventory and working capital, reduce risk of market turns (up or down), all while providing better guidance to investors on the business outlook for the company.<sup>2</sup>

That alternative is considerably more informed than going by “gut instinct,” alone.

Besides, gut decisions can cost hundreds of millions in missed or excess capacity if they’re just a few percentage points off. And we’ve found they’re off by an average of about 10%. That’s a lot of money to leave behind. The truth is, even being one percentage point off can cost companies millions of dollars.

## **The impression that “data-driven” means less control**

Monitoring external data and business influencers can be challenging to departments that want the ability to “control their destiny” – it may be hard to accept the economy is not going to support an internal business plan. Or that performance successes in marketing or sales have actually been attributable to economic tailwind rather than solely to internal effort or skill.

## **The team is too busy to spend time finding and curating data**

Analytics teams often run lean and do not have the econometric depth to turn mountains of data into focused strategic insights. The amount of information just

becomes too large to manage without assistance from machine learning to help frame the data in an unbiased way that can inform outcomes. These outcomes can then form a dispassionate reference point for consideration of models, strategies, and trends leading to more empirical decision-making.

However, none of this can happen if the data aren’t available. In a recent survey, 60% of businesspeople said that finding the right data was the biggest challenge they faced in improving data-driven decision-making;<sup>3</sup> and 70% of the time spent on a typical global data project is gathering the data itself.

## **Operationalizing economic insights throughout the organization**

Process integration can be a bear. Getting all the participants in the planning process to systematically integrate economic insights into their planning process can be a big challenge. By its nature, process integration seems to knock the status quo and sometimes reveal risks and imperfections to otherwise ambitious business plans. It can also seem daunting to do all this in real time to capitalize on those fleeting opportunities. How can we move faster to get results?

---

<sup>2</sup> 2019 Executive Survey: “Improving Data Analytics: The Most Valuable First Step Towards Digital Transformation.”

<sup>3</sup> “Bridging the Data Divide,” Survey Report by Prevedere.

# Including external data: Getting beyond the barriers—and the guesswork

Overcoming all these barriers is possible with a predictive analytics solution like ERIN, Prevedere's cloud-based predictive analytics technology. What most companies aren't expecting is that they can be set up and running in a matter of hours or weeks—not months. Using the latest technology, manufacturers now have the power not only to analyze internal and external data, but to automatically determine what data to use—and do it in-house. An engine like ERIN provides economic intelligence through machine learning and mass data, allowing executives and leaders to strategize and execute faster than ever before. By marrying internal data with relevant leading external indicators, strategies can be built on more comprehensive knowledge and objective empirical data, while empowering leaders to be flexible and insightful as conditions change.

It's not difficult to achieve. Without extensive training, new insights can start to flow immediately since ERIN already contains and uses over 3.5 million up-to-the-minute data sets. ERIN applies patent-pending technology that helps you identify and leverage true drivers of demand using both internal and external factors, which have helped companies reduce forecast error by more than 50% on average.

This, combined with your internal data, forms the base of the analytical processes. External data sets are vetted and categorized to save time searching for the right data. These sources include economic trends, consumer behavior, online metrics, and physical world data from various data sources across industries and geographies around the globe. For up-to-date intelligence, the data repository is continuously updated so clients stay relevant to the ongoing market trends and environmental factors.

Using a predictive data engine, the time and resources needed to gather and select data can be drastically reduced, allowing data teams to spend most of their time on rapidly testing hypotheses, analyzing results, and creating truly predictive and timely insights. This is the stuff of sustainable business growth. It makes the data available to the financial and strategic planning process in ways, volumes, and speeds that we have never been able to access before.

## The element of timing

Having more accurate and objective trend data informs not only what your plans should be, but when best to launch initiatives. Knowing the arc of a demand curve will tell you when best to hit the market, so you can calculate lead times for more successful strategies.



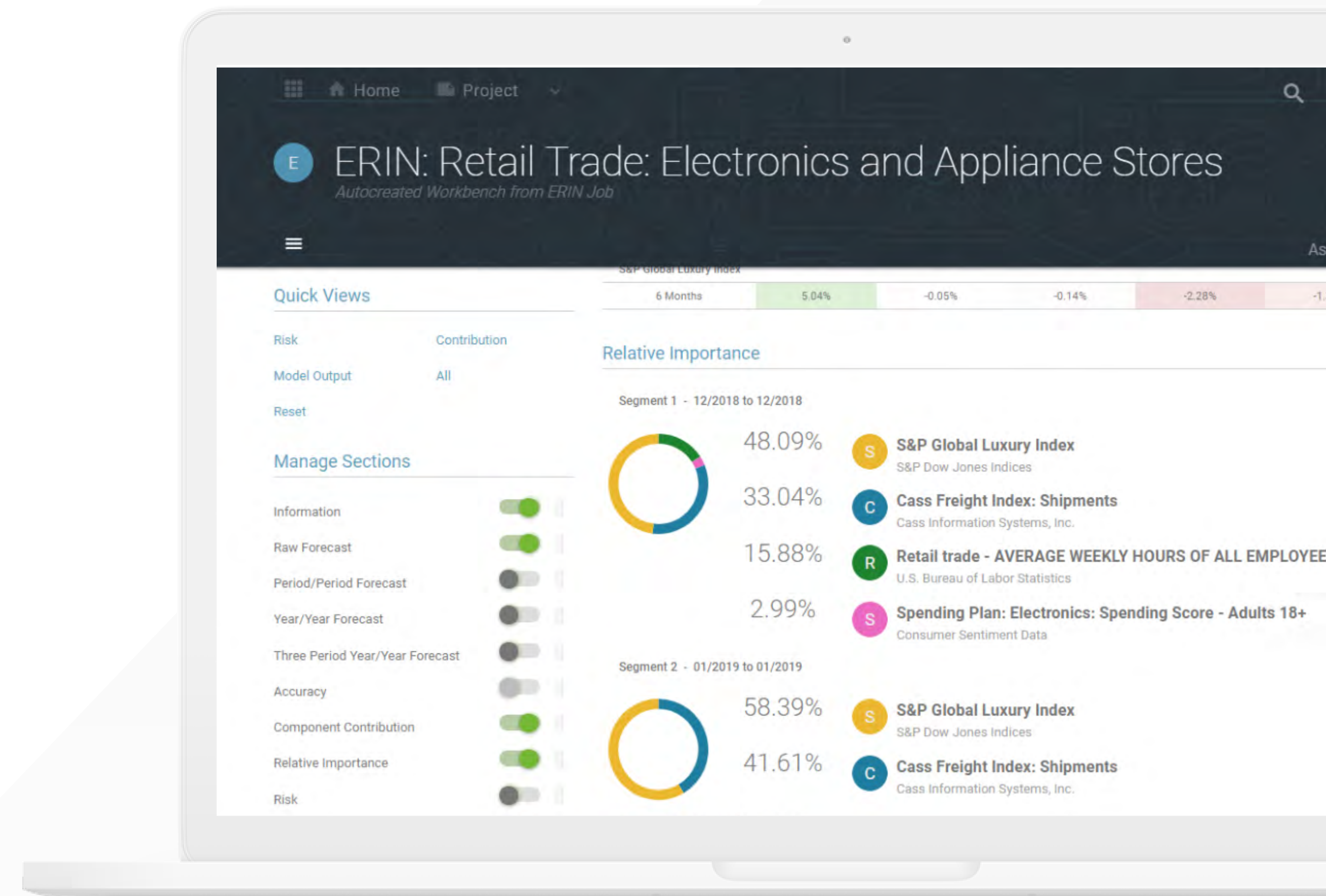
This is where you can be better equipped to give consultants and analytics teams the data they need faster so they're armed to bring you more value and stronger strategic ideas. Using ERIN, you can become a much stronger collaborator with them. In effect, these new data streams can help foster a powerful and symbiotic relationship for your internal and external consultants. It also has the benefit of driving better, more informed digital transformation strategies.

## Using ERIN, you enhance these relationships with:

Unprecedented accessibility to external data (through API access to public and private sources) for greater visibility into previously difficult-to-discover insights.

Certainty that you're using the right data sets. Machine learning-based applications can determine which data sets your organization should use based on your industry or geography, and then run millions of tests to automatically determine the most relevant predictive performance factors.

Affordable and easy access to the power of billions of processors as computing power has become inexpensive and ubiquitous. This cloud capability is powered by the world-leading Microsoft Azure cloud.







# Fueling intelligent supply chain

ERIN and other cloud-based solutions are part of the digital transformation in manufacturing that drives intelligent supply chain. It enables manufacturers to simplify the delivery of complex product portfolios and services using sensors, networks, and ambient intelligence to create autonomous supply chains.

Through intelligent supply changes, manufacturers can maintain optimal inventory levels and manage cost of goods while meeting customer expectations without sacrificing innovation and speed.

It also enables the coordination of suppliers and logistics providers by leveraging multi-enterprise collaboration tools that understand your supply-chain network, enhancing your ability to make smart timing, purchase, and growth decisions.

What are the data you need to do this? In a recent survey on the types of supply-chain data they consider most helpful to their strategic objectives, customer data comes out on top. It was cited by 52% of respondents, followed by supplier data (47%), internal manufacturing data (45%), and logistics data (43%). It's clear that a wide range of data are considered valuable in supply-chain transformation<sup>4</sup>.

Third-party data from supply-chain partners are an important part of this picture, too. OEM sales, after all, often involve business-to-business (B2B) customers who are responsible for reselling and distributing products to downstream end consumers, or B2B2C customers.

---

<sup>4</sup> "Bridging the Digital Divide," Survey Report by Prevedere.



# What to look for in a predictive data analytics engine

Any data analytics engine should use an extensive portfolio of data sourced from millions of data sets. With over 3.5 million data sets from more than 250 trusted sources, ERIN Indicators cover just about any external factor that can influence a business—industry trends, demographics, macroeconomics, consumer behavior, online activity, weather patterns, and more. But it's not as simple as putting outside economic data up against internal data; ERIN is a practical tool to help your business plan a strategy to mitigate downside risk and take advantage of growth signals—and do it quickly, before they pass. A solution like ERIN is cloud based and delivered as SaaS, so it's:

- Deployable without the barriers of software installation.
- Accessible by any stakeholder, without training time.
- Constantly updated for always-current outside intelligence.
- Fast—returning actionable insights immediately by running data in real time.


All these advantages can change how you measure ROI to add elements such as better identification of directional turning points in markets; quicker recovery from downturns; and higher quality consensus forecasts and budgets.

Your criteria, internal data, queries, and other requests are processed through a SaaS solution that applies the power of machine learning and predictive analytics to millions of indicators of global economic and consumer activity specific to you. It reveals hidden insights from internal and external indicators to improve business outcomes based on economic trends through Microsoft Power BI. And because it's built for Microsoft Azure, it enables deep integrations and machine learning for better insights.

The key is to assess the business at a level that is both large enough that you can see changes in the business that mirror economic conditions, but is also granular enough for you to take actions based on those insights. The sweet spot is often at the category, subcategory, geographic territory, business unit, or some other measure of the business that is lower than top-line revenue but higher than SKU. Monitoring at the SKU level might be too volatile and mask economic trends and also provide a paltry ROI considering the effort involved. Monitoring at only top-line revenue for any diverse global business will not be specific enough for meaningful actions and also provide a minimal ROI.

## The engine and the platform—a perfect match

ERIN and the Microsoft Azure cloud combine to provide new and powerful data-driven analytics tools.



Azure includes over 70 compliance offerings, the largest portfolio in the industry.

More than 90% of Fortune 500 companies trust their business on Azure.

Azure offers the security, speed, and flexibility of 54 global regions—more than any other cloud provider.

ERIN is built specifically to leverage Azure's power, providing deep integrations and machine learning for better insights. It's recognized in the 2019 Gartner Market Guide for Augmented Analytics Tools.





# Case study: Building consistent success on data

## Challenge

A national manufacturer for residential home products had difficulty gaining an internal consensus on sales forecasts by market. Their leadership knew revenues were closely tied to new home sales.

## Solution

Prevedere increased the visibility to more upstream drivers, giving them more accurate, data-driven forecasts, including regional and national data. Prevedere analyzed five years of historical performance and automatically identified external factors such as building permit trends, rainfall, hourly wages, and regional

employment data. Using that data, Prevedere developed predictive analytics by market and integrated them into existing CPM to use as the baseline for a bottom-up forecasting process.

## Result

Once the finance team optimized their forecasting process to include Prevedere's data as standard baseline, their forecasting accuracy increased by 18% at the outset. But the improvements don't end with a single number; as regional economies change, the company's data are updated in real time, allowing the company to see, analyze, and take advantage of changing market conditions faster than their competitors.



# Drive speed to value

Sure, reporting on internal performance is simple. The key is getting the right real-time internal and external data at the right time for exceptional speed to value. Prevedere's external real-time insights engine, ERIN, constantly monitors the world's activity, identifying future threats to or opportunities for business performance. Along with a team of industry experts, data scientist, and economists, Prevedere helps business leaders make the right decisions for today and tomorrow even as conditions continue to change.

prevedere

