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“Knowledge of truth is always more than theoretical and intellectual. It is the product of activity as well as its cause. Scholarly reflection therefore must grow out of real problems, and not be the mere invention of professional scholars.”

JOHN DEWEY,
UNIVERSITY OF VERMONT



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FORESIGHT, an official publication of the International Institute of Forecasters, seeks to advance the practice of forecasting. To this end, it will publish high-quality, peer-reviewed articles, and ensure that these are written in a concise, accessible style for forecasting analysts, managers, and students.

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Contributors of articles include:

- Analysts and managers, examining the processes of forecasting within their organizations
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All invited and submitted papers will be subject to a blind editorial review. Accepted papers will be edited for clarity and style.

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This 55th issue of *Foresight* opens with an article from **Phillip Yelland**, **Zeynep Erkin Baz**, and **David Serafini** of the Data Science/AI team at Target: **Forecasting at Scale: The Architecture of a Modern Retail Forecasting System**. The challenge of scale at Target is the requirement for nearly one billion forecasts per week, demanding a careful balancing act between statistical modeling, software engineering, and business practice. The team also reports the need to weigh considerations of forecast accuracy against model explainability.

We found that while some statistical forecasting models might achieve superior forecasting accuracy, it was generally at the expense of explainability; we chose models that represented the best compromise between these twin considerations.

The lead author, **Phillip Yelland**, talks about his role in our **Forecaster in the Field** interview.

Foresight began reporting on open-source forecasting software back in 2010, featuring an article by Stephan Kolassa and Rob Hyndman: *Free Open-Source Forecasting Using R*. Since then, the functionality of R has expanded significantly and, as described by **Tim Januschowski**, **Jan Gasthaus**, and **Yuyang Wang** of Amazon Web Services, “the Python programming language has gained immense popularity in recent years,” particularly for machine-learning applications. The authors proceed to evaluate major **Open-Source Forecasting Tools in Python** while comparing the forecasting sophistication of these tools to those available to users of R.

One of *Foresight*’s most visionary authors, **Niels van Hove**, looks ahead to the emergence of **Autonomous or “Lights Out” Supply-Chain Planning** and identifies the essential requirements for this new technology to take hold.

Autonomous car development is happening in most of the major car companies with the promise of self-driving cars everywhere within a few years. Since autonomous vehicles already exist in the supply chain, why should we not strive to achieve autonomous supply-chain planning? However, to truly achieve “lights out” planning, eliminating the human planning role, the problem-solving and decision-making capabilities of the system must improve upon human reasoning, judgment, and creativity so as to resolve impediments to execution of solutions.

Niels’ article is followed by a Commentary from **Stefan de Kok**, who argues that the autonomous supply chain is not going to happen if the separate horizons of operational, tactical, and strategic planning continue to operate in isolation from each other. We not only need to close the loops in planning but be able to rapidly respond to changes through autonomous *replanning*.

Our book review is of the hot-off-the-press *Forecasting: An Essential Introduction*, by Jennifer Castle, Michael Clements, and David F. Hendry. Reviewer **Mike Gilliland**, *Foresight*’s Editor for Forecasting Practice, observes that while *business forecasting* and *economic forecasting* “overlap in many ways, this book exposes some significant, fundamental differences that make economic forecasting an even more vexing challenge.”

Autonomous transportation and autonomous planning are two of the applications of futuristic technology and artificial intelligence. This edition of *Foresight* concludes with **Dan Philps**’s article **Continual Learning: The Next Generation of Artificial**

Intelligence, which describes the emergence of autonomous machine learning and highlights how Dan's team applied CL to investment decisions. The article addresses how automated machine learning might mitigate forecasters' concerns with the complexity of AI.

While ML is generally perceived to be complex, it can actually reduce complexity in model development by avoiding human behavioural biases and by automating intermediate steps. In addition, if complexity serves to encompass a richer variety of information and if learning from this information can be automated, complexity is a price worth paying.

COMING UP RIGHT AWAY: THE 2019 FORESIGHT PRACTITIONER CONFERENCE

November 13-14 are the dates for this year's *Foresight* Practitioner Conference, where in beautiful Chapel Hill, North Carolina, a distinguished group of speakers will offer their insights into **Artificial Intelligence: The Hype and the Promise for Forecasting and Planning**. See details on the program and registration on the inside cover of this issue or <https://foresight.forecasters.org/2019-conference/>. Hope to see you there!

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The FAB welcomes **Dean Sorenson**, Management Consultant with a unique mix of strategic, financial, and operational experience across manufacturing companies in consumer products, food and packaged goods, automotive, aerospace, industrial products, chemicals, steel, and the high-tech sectors. Dean advocates for more highly integrated business planning to encompass strategic, financial, and operational planning as well as performance management. See his article *Beyond S&OP and IBP to Enterprise Planning and Performance Management* in the Winter 2016 issue of *Foresight*.



Carolyn Allmon has accepted a new position at Cargill, whose 160,000 employees work across a variety of sectors including food and agricultural, metals, and shipping. **Simon Clarke** has joined Crimson & Co, a global management consultancy, after many years leading the forecasting teams at Coca Cola.

After more than a decade of dedicated service on the FAB, **John Unger**, Demand Planning Manager at Clearwater Paper, is stepping down. Our thanks, John, for the help and encouragement you've given us over all these years.

#3 ON THE HIT PARADE

In their recently published list of "The 21 Best Business Forecasting Books of All Time," the BookAuthority (<https://bookauthority.org/books/best-business-forecasting-books>) gave the bronze to *Business Forecasting: Practical Problems and Solutions* by Michael Gilliland, Len Tashman, and Udo Sglavo. More than half of the chapters are reprints of articles that initially appeared in *Foresight*. The gold, by the way, went to *Superforecasting: The Art and Science of Prediction*, by Philip E. Tetlock and Dan Gardner, which was reviewed by Steve Morlidge in this journal's Winter 2016 issue.