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Management Insights

Why Intuitive Averages Can Make Bad Forecasts and Counter-Intuitive Forecasts Can Do Better (p. 4) [Steven M. Shugan, Debanjan Mitra](#)

What is the best predictor of sales for a vocal-artist's next album? The average of the artist's previous album sales, right? Wrong. Although it is natural to use the artist's average sales as a metric to predict future sales, it turns out that the artist's maximum sales may be the better predictor, even if some of the artist's previous albums were terrible. Similarly, it may be more desirable to invest with an entrepreneur who has had one highly successful startup and several failures rather than to invest with an entrepreneur who on average had more success. How can this be? Sometimes rare events (e.g., a success in an environment where failure is common) convey more information and averaging tends to ignore that critical information. We show that this counter-intuitive result can hold in many situations, including, among others, the performance of professional sports players, the box-office draw of actors, and the research productivity of scientists. In addition to explaining why nonaveraging metrics (such as the maximum) can perform better, we provide guidelines for decision makers as to when they should use nonaveraging metrics.

Evidence of Boundedly Rational Trading Around a Stock's 52-Week Highs and Lows (p. 16) [Steven Huddart, Mark Lang, Michelle H. Yetman](#)

What happens to a stock's trading pattern when it crosses its 52-week high or low? According to our research, trading volume increases dramatically, and in particular, we find that "new high" and "new low" events especially influence small investors. This effect is more pronounced the longer the time since the stock price last achieved the price extreme, the smaller the firm, the higher the individual investor interest in the stock, and the greater the ambiguity regarding valuation. Taken together, our results are consistent with the notion that investors are boundedly rational. Furthermore, these findings suggest a rationale for technical analysis that uses past trading ranges to predict market activity.

Revenue Management in Markets with Competition and Strategic Consumers (p. 32) [Yuri Levin, Jeff McGill, Mikhail Nediak](#)

The rapid growth in Internet and point-of-sale technologies has given many firms a promising new tool

for revenue management—the capability to monitor demand and to respond with real-time price adjustments. Unfortunately, these same online systems also allow customers to track the firm's pricing policies over time. This presents a real danger that experienced consumers (or third party brokers) will behave strategically by shifting their purchases to anticipated periods of lower price. We study the competitive dynamics of this market and find that strategic behavior by consumers can have serious impacts on revenues if firms ignore that behavior in their dynamic pricing policies. A key conclusion is that firms may be better off limiting the information available to consumers rather than trying to manage competition when consumers have full information.

Competition Between Amazon and Brick-and-Mortar Retailers: How the Benefit of Buying Online Depends on Where You Live (p. 47) [Chris Forman, Anindya Ghose, Avi Goldfarb](#)

How does competition from Wal-Mart, Target, Barnes & Noble, or Borders affect what people buy on Amazon? We examine Amazon sales in 1,497 U.S. locations over 10 months and find that consumers are less likely to buy very popular products online after a new retailer opens. This suggests that online firms should view geographic expansion by discount stores and by large bookstores as a threat. Further, the increasing diffusion of discount stores and large bookstores across the United States may lead to consumers using the Internet channel mainly for relatively unpopular products that are less likely to be available locally. Our results also suggest that advertisements and informational displays by online retailers should be targeted to consumers based on local retail supply conditions. To this point, location-based geo-targeting by online firms is growing in prominence. For offline retailers, our results show that competition will depend not only on the number of local stores, but also on consumer adoption of electronic channels. More generally, we show that geography significantly impacts the benefit that consumers derive from electronic markets.

Insurance Fraud: Outfoxing the Defrauder at Their Game (p. 58) [Georges Dionne, Florence Giuliano, Pierre Picard](#)

Because fraud represents a significant cost in many financial activities, adequate auditing mechanisms are

crucial. In the insurance industry, it is often mentioned that about 8% of claims are fraudulent. Fraud is also important in the banking industry, and financial statement fraud is well documented. Reducing the cost of fraud may thus enhance the competitive position of firms. We propose a new approach to fraud detection and apply the method to insurance. Our method accounts for the strategic behavior of potential defrauders—both in whether they choose to file a fraudulent claim, and if they do file a claim, the information they provide. We find that a large European insurer would have saved 21 M euros per year with our approach, which contrasts with the 51 M euros per year they were paying for fraudulent claims. Our results show that managers can more successfully reduce the cost of fraudulent claiming by using fraud detection software that can rely on an explicit analysis of the defrauders' behavior, instead of simply computing the probability of fraud from a purely statistical approach.

Risk Management with Satisficing Measures (p. 71)
[David B. Brown, Melvyn Sim](#)

In the modern world of risk management, most tools for measuring risk rely critically on the use of tolerance parameters, which can be difficult to specify let alone understand. For example, in the value-at-risk approach, how is a client to articulate a desire for protection at the 1% level versus the 0.1% level? A different approach is to specify a financial goal for the client and then manage risk by maximizing the probability of achieving that goal. Unfortunately, that approach does not encourage diversification, which flies in the face of one of the fundamental tenets of risk management. In this paper, we create a set of tools called satisficing measures for evaluating risky positions. These measures (i) rely only on financial goals of the investor, (ii) reward diversification, and (iii) result in portfolio optimization problems that we can solve easily with modest computational effort. This has potential implications for the practicing risk manager, both in terms of bridging communication gaps with clients, as well as simplifying the process of finding recommended positions.

Team Familiarity, Role Experience, and Performance: Evidence from Indian Software Services (p. 85)
[Robert S. Huckman, Bradley R. Staats, David M. Upton](#)

In many contexts ranging from product development to service delivery, value is delivered to customers through the execution of projects. As a result, understanding the linkage between the experience of fluid project teams and performance is vital in these settings. In this paper, we examine how team members'

prior experience working with each other and within their given role in the team affect multiple measures of performance in a knowledge-based setting—software services. We find that team member experience working with one another improves both quality and delivery (i.e., time and budget) performance in teams. We also find that role-specific experience is a more important predictor of team success than general experience. In other words, an individual's experience with a specific role may be more critical to team performance than experience in the industry or at the firm.

Do Smart Scientists Make Good Entrepreneurs? Exploring the Relationship Between Biomedical Scientists' Human Capital and Firm Performance (p. 101)

[Andrew A. Toole, Dirk Czarnitzki](#)

What types of academic scientists are more likely to be successful when they transition to the business sector? We study this important question by analyzing a group of biomedical academic scientists. Our results indicate that academic scientists who are particularly skilled at identifying and exploring commercially important questions make a significant contribution to the performance of invention tasks at the firm such as patenting. Academic scientists who are particularly skilled at identifying and exploring scientifically important questions make a significant contribution to the performance of research tasks at the firm such as proof-of-concept studies. Surprisingly, academic scientists who possess a strong orientation toward scientifically important questions actually hinder invention at the firm, all else constant. Thus, managers need to recognize that the most accomplished academic researchers are not necessarily going to be the best hires for commercialization tasks.

The Value of Partial Resource Pooling: Should a Service Network Be Integrated or Product-Focused? (p. 115)

[Barış Ata, Jan A. Van Mieghem](#)

If a firm offers different service quality levels, should the firm use the same set of resources for all of its services or should it establish dedicated resources for some of them? The polar extremes of total specialization and full resource pooling are well known, but full resource pooling is unrealistic in many settings. For example, FedEx and the United Parcel Service (UPS) both serve regular and express customers, but FedEx uses dedicated resources for each class while UPS integrates its network, and some resources are shared by both classes. We study these intermediate network strategies in which resources are partially pooled, and we provide methods to quantify when

the value of partial resource pooling exceeds the fixed cost of restructuring and integration. We conclude that the appropriate network design strategy depends very much on the particular characteristics of the market, such as the volatility of the demand for each service and the likelihood that demand for each service moves in unison.

Centralized vs. Decentralized Management of Digital Content on a Network of Caches (p. 132)
[Mohit Tawarmalani, Karthik Kannan, Prabuddha De](#)

How can one best allocate digital content in a network of caches (servers) that cooperate to serve this content expeditiously? Internet TVs, public-domain cache networks, and Internet business exchanges present scenarios where such investigations could drastically improve customer satisfaction. In some of these practical setups, caches are centrally controlled, whereas the control is decentralized in others. We find that when control is decentralized, as is typical in the current cooperative caching protocols, the system may not perform as well (in terms of social welfare) as a system with centralized control. Nevertheless, if caches are allowed to charge prices for sharing

objects, then we show how to design an auction so that the system can achieve optimal performance even when operating decentrally. The proposed allocation techniques naturally extend the commonly used single cache policies, such as the least recently used (LRU) policy, to a network of caches. The results obtained in this paper should help one develop and evaluate cooperative cache management policies.

Revenue Management with Robust Optimization
(p. 148)

[Ş. İlker Birbil, J. B. G. Frenk, Joaquim A. S. Gromicho, Shuzhong Zhang](#)

We study revenue management optimization models of airfare classes on single-leg routes. Uncertainty in demand is a crucial input to these models, and these inputs are usually created with statistical distributions estimated from past observations. However, small errors in the estimates, which are unavoidable by the nature of statistics, may result in painfully adverse impacts on the expected revenues of the policy. We use a novel technique, known as robust optimization, to immunize the models against this erratic behavior.