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Michael F. Gorman,

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Management Insights

Michael F. Gorman

School of Business Administration, University of Dayton, Dayton, Ohio 45469,
michael.gorman@udayton.edu

The Extroverted Firm: How External Information Practices Affect Innovation and Productivity (p. 843)

[Prasanna Tambe](#), [Lorin M. Hitt](#), [Erik Brynjolfsson](#)

When it comes to technology, should firms focus on their internal core capabilities or on threats and opportunities in their external environment? The authors suggest that an external focus—which enables a firm to detect and therefore respond to changes in its external operating environment—increases returns to information technology (IT). They gathered detailed data on organizational practices and IT use at 253 firms to examine the hypothesis that an external focus might help the returns to IT. They find that an external focus and decentralized decision making enhance both IT innovation and productivity, which in turn enhance returns to IT investment. The insight for management: Firms that operate in information-rich environments such as high-technology clusters or areas with high worker mobility are likely to achieve higher returns on IT investment.

Information Transmission and the Bullwhip Effect: An Empirical Investigation (p. 860)

[Robert L. Bray](#), [Haim Mendelson](#)

Is the bullwhip effect real, and, if so, how large and pervasive is it? The bullwhip effect is the amplification of demand variability along a supply chain; a company bullwhips if it purchases from suppliers more variably than it sells to customers. Such bullwhips (amplifications of demand variability) can lead to mismatches between demand and production and hence to lower supply chain efficiency. The authors search for the bullwhip effect in a sample of 4,689 public U.S. companies over 1974–2008. Overall, from 1974–1994 to 1995–2008, they find that mean bullwhip has dropped by a third, but still approximately two-thirds of firms bullwhip. The sample's mean and median bullwhips measure 15.8% and 6.7% of total demand variability. Put another way, the mean quarterly standard deviation of upstream orders exceeds

that of demand by \$20 million. The authors find differing levels of bullwhip based on planned and unplanned deviations, seasonality effects, and the lead time between when deviations are realized and when they are experienced. Bullwhip is greater when less lead time is given. The authors find that advanced information dampens the bullwhip effect. Firms with more than three-quarters' notice contribute 30% of the bullwhip, but those with less than one-quarter's notice drive 51% of the bullwhip. The insight for management: Practices such as "order freeze periods" (where planned orders do not vary from actual in the near term) may reduce bullwhip.

Signaling Quality via Queues (p. 876)

[Laurens G. Debo](#), [Christine Parlour](#), [Uday Rajan](#)

Yogi Berra famously remarked, "Nobody goes there anymore; it's too crowded." Could Yogi have been right? The authors evaluate behaviors of impatient consumers who observe the length of the queue before deciding whether to buy a product. The product may have high or low quality, and consumers glean information from the queue, which may grow longer as a function of two factors: high product quality or low service rates. Consumers join the queue if the line is short enough to satisfy them. Interestingly, they might join a longer queue if they infer something about the product quality based on the queue length. The authors suggest that this strategy of an uninformed consumer has a "hole," joining at queue lengths both below and above the hole, but not at the hole itself. The insight for management: Designed scarcity might pay off; a high-quality firm may select a slower service rate than a low-quality firm in order to signal higher quality, even if the cost of faster service is negligible.

Rational Herding in Microloan Markets (p. 892)

[Juanjuan Zhang](#), [Peng Liu](#)

On Prosper.com, the largest microloan market in the United States, individual borrowers raise funding from multiple individual lenders. Often, lenders seem to follow a herd instinct; that is, they tend toward the

same borrowers in droves. Is this behavior rational? The authors study data from Prosper.com to evaluate whether lenders are irrational and simply “follow the herd” or whether this herding mentality is more an example of lenders acting rationally in their herding, as they interpret other lenders’ willingness to lend as a signal of the borrower’s creditworthiness. The authors find that, instead of passively mimicking their peers (irrational herding), lenders engage in active observational learning (rational herding); the lenders infer the creditworthiness of borrowers by observing peer lending decisions and use publicly observable borrower characteristics to moderate their inferences. This is true even in the face of obvious borrower defects such as poor credit grades. Other signals, such as endorsements, reduce herding by providing an alternative for herding-based inference. The insight for management: Lenders engage in rational herding in microloan markets even if it leads to poor lending decisions; microloan markets can be maneuvered by recognizing herding behavior.

Three-Way Complementarities: Performance Pay, Human Resource Analytics, and Information Technology (p. 913)

[Sinan Aral](#), [Erik Brynjolfsson](#), [Lynn Wu](#)

What is the connection among information technology (IT), performance pay, and human resource (HR) analytics practices? The authors develop a model examining how these practices work together as an incentive system that produces a larger productivity premium when the practices are implemented in concert rather than separately. The model is measured through the combination of detailed data from 189 firms on human capital management (HCM) software adoption over 11 years with detailed survey data on incentive systems and HR analytics practices. They find that the adoption of HCM software is greatest in firms that have also adopted performance pay and HR analytics practices. Furthermore, HCM adoption is associated with a large productivity premium when it is implemented as a system of organizational incentives, but it has less benefit when adopted in isolation. The authors note that productivity increases significantly when the HCM systems “go live” but not when they are purchased, which can be years earlier. The insight for management: IT investment, performance pay, and HR analytics are a powerful combination to increase productivity—much more so in combination than in isolation.

When to “Fire” Customers: Customer Cost-Based Pricing (p. 932)

[Jiwoong Shin](#), [K. Sudhir](#), [Dae-Hee Yoon](#)

When is customer retention just not worth the effort and cost? The widespread adoption of activity-based

costing enables firms to allocate common service costs to each customer, allowing for precise measurement of both the cost to serve a particular customer and the customer’s profitability. The authors investigate how pricing strategies based on customer cost information affect a firm’s customer acquisition and retention dynamics—and ultimately its profit. Although past purchase and cost information helps firms to increase profits through differential prices for good and bad customers, it can hurt firms because strategic forward-looking consumers may delay purchases to avoid higher future prices. As a result, the authors suggest that when cost differentials are high enough, it is better for firms to “fire” some high-cost customers; surprisingly, it is optimal to fire even some profitable customers. The insight for management: Retention is not always preferable to customer churn; firms can improve their profitability by selectively firing known old bad customers and intentionally replacing them with a new set of customers — both good and bad.

Competition Between Organizational Groups: Its Impact on Altruistic and Antisocial Motivations (p. 948)

[Lorenz Goette](#), [David Huffman](#), [Stephan Meier](#), [Matthias Sutter](#)

Is competition creative or destructive? Economist Joseph Shumpeter coined the popular phrase “creative destruction”; sometimes competition creates something that destroys something else. Similarly, firms are often organized into groups that might compete. Group membership has been shown empirically to have positive effects in the form of increased prosocial behavior toward in-group members. This includes an enhanced willingness to engage in altruistic punishment of inefficient defection. The authors show a dark side of group membership when tested empirically in Swiss Army platoons. They find that when there is competition between groups, a taste for harming the out-group emerges that might tend more toward negative punishment than toward increased creativity and productivity. The authors give an explanation of previous mixed results on the social value of punishment. The insight for management: Competition within firms is as Joseph Shumpeter intuited between firms; competition enhances within-group efficiency but also generates costly between-group conflict.

Impact of Performance-Based Contracting on Product Reliability: An Empirical Analysis (p. 961)

[Jose A. Guajardo](#), [Morris A. Cohen](#), [Sang-Hyun Kim](#), [Serguei Netessine](#)

Which is better, time and material contracts (T&MC) or performance-based contracts (PBC)? PBC, in which

the buyer pays for some performance over time of an asset (say, availability time), has been heralded as better aligning buyer and seller incentives, as opposed to T&MC, which might give the seller incentive to overperform profitable maintenance when providing service after the sale. Based on data from a major manufacturer of aircraft engines, the authors find evidence of a positive and significant effect of PBC on product reliability as measured by time between unplanned outages. They find that product reliability is higher by 25%–40% under PBC compared with T&MC, even after controlling for the inherent tendency of firms to lean toward one contract or the other. The insight for management: PBC improves reliability through more frequent scheduled maintenance and better care performed in each maintenance event.

Dynamics of Rate-of-Return Regulation (p. 980)

Alexander Nezlobin, Madhav V. Rajan,
Stefan Reichelstein

How do regulation and depreciation affect the price of an asset? Under rate-of-return regulation, a firm's product prices are constrained by the requirement that investors not earn more than an allowable return on the firm's assets. The authors show that underlying depreciation rules for property, plant, and equipment determine whether these stationary prices will be above, equal to, or below the long-run marginal cost of providing the regulated service. The insight for management: The efficiency of rate-of-return regulation depends on how well the applicable depreciation schedule matches the productivity pattern of the assets in use.

Consistency Judgments, Embeddedness, and Relationship Outcomes in Interorganizational Networks (p. 996)

Alberto Sa Vinhas, Jan B. Heide, Sandy D. Jap

How are buyer/seller relationships influenced? The authors examine 788 buyers of a single supplier to understand the complex, multilevel picture of the process by which relationship outcomes come about in interorganizational networks. They propose that the effect of these comparison processes depends on the nature of a buyer's existing interorganizational ties and on the norms that are brought to bear on the buyer/seller relationship. The insight for management: Buyer/seller relationships are formed based on a number of factors, including the characteristics of the relationship and the buyer/seller processes.

Modeling Purchasing Behavior with Sudden "Death": A Flexible Customer Lifetime Model (p. 1012)

Albert C. Bemmaor, Nicolas Gladly

What is the lifetime value of a customer? Of course, this depends on customer purchase size, frequency, and retention. Typically, customer lifetime has been approximated with the "Pareto negative binomial distribution." The authors provide a new customer lifetime model, the gamma/Gompertz distribution. The advantage of this model over the Pareto distribution is twofold in its ability to accurately describe customer retention: (i) its probability density function can exhibit a mode at zero or an interior mode, and (ii) it can be skewed to the right or to the left. Of six data sets, the G/G/NBD model provides a notable improvement in predictive ability over the Pareto/NBD model in four data sets. The insight for management: A new model for estimating customer lifetime has been developed to help better predict the lifetime value of a customer.

Relicensing as a Secondary Market Strategy (p. 1022)

Nektarios Oraopoulos, Mark E. Ferguson,
L. Beril Toktay

Does the indirect benefit of maintaining an active secondary market outweigh the potentially negative effect of the sales of used products at the expense of new product sales? On one hand, an active secondary market enhances resale value of an asset and improves new product value by reducing risk; on the other hand, secondary markets can cannibalize new product sales. Secondary markets in the information technology industry, where used or refurbished equipment is traded, have been growing steadily. For original equipment manufacturers (OEMs) in this industry, the importance of secondary markets has grown in parallel, not only as a source of revenue, but also because of their impact on these firms' competitive advantage and market strategy. Some OEMs like Sun Microsystems and Cisco seem to be actively trying to eliminate the secondary market for their products through high relicensing fees. Other OEMs such as IBM and Hewlett Packard have policies that enhance their secondary markets through lower relicensing fees. Which strategy is optimal depends on key trade-offs between the two markets. The insight for management: Optimal OEM relicensing fees can derive maximal profitability from the primary and secondary markets of durable goods.