Management Science

Publication details, including instructions for authors and subscription information:
http://pubsonline.informs.org

Management Insights

To cite this article:
(2008) Management Insights. Management Science 54(3):iv-vii. https://doi.org/10.1287/mnsc.1080.0874

MANAGEMENT SCIENCE
Vol. 54, No. 3, March 2008, pp. iv–vii
ISSN 0025-1909 | EISSN 1526-5501 | 08 | 5403 | 00iv

informs

DOI 10.1287/mnsc.1080.0874

Management Insights

Human Capital and Institutional Effects in the Compensation of Information Technology Professionals in the United States

Sunil Mithas, M. S. Krishnan

Should information technology (IT) professionals pursue an MBA degree or acquire more IT experience? This paper answers this question by studying economic returns on an MBA degree and IT-related experience for IT professionals. We use data on the demographics, salary, education, and experience of over 50,000 IT professionals in the United States for the 1999–2002 time period. Our results show that an IT professional with an MBA earns 46% more than an IT professional with a bachelor's degree and 37% more than an IT professional with a master's degree other than MBA. This finding is contrary to prior research that questions the economic benefits of an MBA degree. We find that firms value IT experience more than non-IT experience for IT professionals, and that firms compensate for IT experience at other firms more highly (3.2% per year) than they compensate for IT experience within the firm (2% per year). Given these findings, if firm-specific IT experience is more valuable to the firm, firms should consider subsidizing investments in MBA education to help retain their IT professionals. Even if firms do not provide subsidies, IT professionals are better off investing in MBA education because the economic returns on an MBA degree are significantly higher than the returns on IT experience.

Managerial Expertise, Private Information, and Pay-Performance Sensitivity

Sunil Dutta

Incentive contracts, which tie managerial pay to performance, play a central role in ensuring that managers take actions to maximize shareholder value. A key issue in designing effective managerial compensation contracts is the choice of pay-performance sensitivity. While theoretical research predicts a negative association between risk and pay-performance sensitivity, the empirical evidence has been mixed. A potential reason is that previous models of incentive contracting have largely overlooked the role of managerial expertise. This paper analyzes a contracting model in which a manager's expertise affects his or her outside employment opportunities. The rate at which opportunity wage increases in expertise depends on the nature of that expertise, i.e., whether it is firm specific or generic. We identify circumstances under which risk and incentive intensity are positively associated, which provides an explanation for the mixed empirical findings. Furthermore, our analysis provides guidance on how the nature of managerial expertise affects the choice of effective managerial incentive plans. Our main conclusion is that higher-powered incentive plans are apt to be more effective in environments when managerial expertise is relatively general. In contrast, managerial compensation plans with lower pay-performance sensitivities are more suitable for environments in which managerial skills are relatively firm specific.

Foreign Investments of U.S. Individual Investors: Causes and Consequences

Warren Bailey, Alok Kumar, David Ng

We explore a well-known puzzle: investors typically do not diversify internationally as extensively as classic portfolio theory and common sense suggest. This is particularly anomalous because even the smallest U.S. investor can easily access hundreds of internationally oriented mutual funds and individual foreign stocks offered in the domestic U.S. financial markets. We study the brokerage accounts of U.S. individual investors to uncover the motivations and consequences of their foreign equity investment decisions. Although some investors invest in foreign equities for diversification, others appear to venture abroad for the wrong reasons. "Behaviorally biased" investors display aggression, impatience, or myopia in their domestic investments, and these bad decision-making skills often spill into choices regarding foreign investment. They often ignore or misuse foreign equity securities, and experience poor portfolio performance as a consequence. Some even appear to use foreign securities purely for speculation, or to make up for poor domestic portfolio performance. Our results suggest that there is much room for brokerages to market international equity products and strategies to individuals, for listing firms to market new securities issues to such investors, and for sophisticated investors to trade against the poor decisions taken by many individual investors.

The Sound of Silence in Online Feedback: Estimating Trading Risks in the Presence of Reporting Bias

Chrysanthos Dellarocas, Charles A. Wood

Online feedback mechanisms offer a tremendous potential to build trust among geographically separated, or previously unacquainted, business partners. A practical problem with many such mechanisms is that feedback is voluntary. For a variety of

reasons, transaction partners are often substantially more likely to report certain classes of outcomes than others. For example, individuals considering posting online feedback for service providers (e.g., lawyers, physicians) are often intimidated by the threat of lawsuits against unfavorable comments. This results in a reluctance to report negative experiences, which, in turn, results in deceivingly high percentages of positive feedback. This phenomenon, known as reporting bias, distorts the distribution of public feedback relative to the distribution of the underlying transaction outcomes, and potentially reduces the public's confidence in such systems. This paper proposes a method that allows users of a feedback mechanism to "see through" the distortions introduced by reporting bias and to derive more reliable estimates of the probability of satisfaction associated with a prospective business partner. Our method can benefit several industries where the application of online feedback mechanisms is currently hampered by reporting bias considerations (e.g., professional services), by ultimately increasing people's confidence in dealing with previously unacquainted business partners and facilitating more efficient economic transactions.

Online Consumer Review: Word-of-Mouth as a New Element of Marketing Communication Mix
Yubo Chen, Jinhong Xie

This paper examines the marketing function of consumer reviews, an emerging type of word-of-mouth information. We argue that such reviews can serve as free "sales assistants" to help consumers identify products that best match their individual preferences. However, this benefit does not come without cost because it eliminates a seller's control over the product information accessible to consumers, and because consumer reviews may not be fully informative. We focus on two important decisions faced by an online seller: (1) when and how to actively facilitate creation and dissemination of consumer reviews via the firm's website, and (2) how best to respond to consumer reviews by adjusting the firm's own marketing strategies. Our analyses suggest that less popular online stores (i.e., websites with less traffic) need to be cautious about offering consumers opportunities to post reviews on their websites because low numbers of review postings can make consumer reviews a poor information source for potential buyers, and in turn, hurt the seller. We also show that under some conditions, the seller can best respond to consumer reviews by increasing the amount of product attribute information it offers on its website, and by controlling the timing when such reviews become available to potential buyers.

The Predictive Power of Three Prominent Tournament Formats
Dmitry Ryvkin, Adreas Ortmann

Managers often encourage competition among their workers, with recruiting and promotion decisions based on relative performance. How should intrafirm competition be organized in order to correctly identify the best candidate? In this paper, we explore how accurately three prominent tournament formats—contests, elimination, and round-robin tournaments—can select the best player as the winner. In our model, the key parameters that affect the selection of the optimal tournament format are the number of players, the overall level of uncertainty about the players' qualities, and the distribution of players' types. We show that in some situations, quite counterintuitively, adding more candidates to the competition and/or increasing the level of uncertainty can increase the likelihood of selecting the best player. For example, when recruiting from a select pool of candidates, such as top-level university graduates, an increase in the number of applications can actually make the selection easier.

Corporate Venturing, Allocation of Talent, and Competition for Star Managers
Jean-Etienne de Bettignies, Gilles Chemla

Corporate venturing, which consists of financing and development of new ventures, either inside (intrapreneurship) or outside (corporate venture capital) the corporate structure, rose dramatically with entrepreneurial activity during the Internet boom of the late 1990s, and evaporated just as quickly afterwards, as firms refocused on their main business. This model proposes a new explanation for corporate venturing that is consistent with these procyclical fluctuations with entrepreneurial activity. Indeed, it suggests that by presenting new opportunities for star managers, entrepreneurial activity increases competition among firms for their services; and that corporate venturing arises as an optimal organizational response to this increased competition for talent. As competition intensifies, firms increase their managerial compensation. By raising the performance-related part of the compensation (e.g., stock options), firms "kill two birds with one stone"—they increase overall managerial compensation *and* provide stronger incentives. Anticipating harder-working managers, however, leads firms to allocate them to tasks where their effort is more valuable. To the extent that managerial effort matters more in new ventures than in the main business, even firms that would normally focus on their main business may choose to invest in corporate venturing and allocate some managers to the associated new projects.

Pricing and Operational Recourse in Coproduction Systems
Brian Tomlin, Yimin Wang

A key feature of many biochemical-, chemical-, and material-processing industries is that products of varying quality are produced simultaneously in a single production run ("coproduction"). These industries are often buffeted by significant production and

demand uncertainties. The semiconductor industry is one such example—the fabrication step produces random quantities of devices of varying speeds. The coproduction feature, coupled with the uncertainties, presents managers with a complex challenge but also an opportunity: the firm may have the flexibility of filling demand for a lower-quality product using a high-quality one. Our research investigates the value of operational and marketing levers, e.g., flexibility, operational improvements and pricing, in managing production and demand uncertainties. While the operational levers are valuable, we find that price postponement (if feasible) is often more valuable, indicating that demand management should be viewed as an important tool for managing both production and demand uncertainties.

A Simultaneous Model of Consumer Brand Choice and Negotiated Price
Yuxin Chen, Sha Yang, Ying Zhao

Price negotiation is prevalent in business-to-business marketing, as well as in sales of consumer durable goods such as automobiles. With the presence of price negotiation, the final transaction price is often determined by seller's cost, buyer's willingness to pay, and their bargaining power. It is therefore managerially important to understand how buyer and seller characteristics predict their bargaining power, and how the negotiated price influences a buyer's brand preference. To address these questions, we develop a model to study the joint outcomes of the consumer brand choice and the negotiated price in automobile purchases. Analysis of this model leads us to important managerial insights, including: (1) consumer age and gender and the local competition intensity are significant predictors of consumer/dealer bargaining power, and (2) the increase in dealer's inventory cost from unsold cars puts a downward pressure on the selling price of a car. Finally, our model provides a means for car manufacturers to determine their optimal quantity discount level and price, and a mechanism with which managers can more accurately predict consumer choice and negotiated price.

Revenue Management of Callable Products
Guillermo Gallego, S. G. Kou, Robert Phillips

Airline revenue management is a risky business. Selling too many discount seats will result in displacement of later-booking high-fare passengers. Selling too few will lead to a departure with empty seats. This paper describes how offering "callable products" can both reduce the risk and increase revenue for an airline facing demand uncertainty. A passenger who buys a callable product grants the airline the option to reclaim the seat at a future date for an agreed upon price. The airline should do this if high-fare demand turns out to be higher than anticipated. We show that offering callable products at a discount can provide a riskless source of additional revenue to an airline. We also illustrate how the optimal call price and booking limit can be calculated in the case of two fare classes and show using numerical examples that the gain from offering a callable product can be significant. While our discussion is couched in terms of passenger airlines, the idea is potentially applicable to any industry in which capacity constraints play a role.

Scheduling Arrivals to Queues: A Single-Server Model with No-Shows
Refael Hassin, Sharon Mendel

Appointment systems are common in medical service systems, such as outpatient health clinics. Better-designed appointment systems can reduce waiting times for patients and increase the utilization of expensive personnel and other medical resources. One aspect that influences the efficiency of such systems is that of no-shows. Empirical studies indicate that in many health clinics the volume of no-shows is in the range of 5%–40% of the scheduled appointments. Nevertheless, despite extensive work on appointment systems in general, no-shows have received very little research attention. This paper fills this gap by answering some of the key questions related to the management of appointment systems that suffer from no-shows. By comparing a system in which all customers show up to an otherwise equivalent system with no-shows, we show that efficiency of the system deteriorates as the proportion of no-shows increases. We also present a model for planning an appointment schedule with no-shows, which can be used to reduce expected waiting times and idle times of the system resources.

Incorporating Asymmetric Distributional Information in Robust Value-at-Risk Optimization
Karthik Natarajan, Dessislava Pachamanova, Melvyn Sim

Despite the widespread use of Value-at-Risk (VaR) for risk measurement in the financial industry, solving the problem of how to allocate assets optimally so as to minimize this risk remains a computational challenge. Practitioners often assume that future portfolio returns are normally distributed in order to work with a tractable formulation. Such an assumption, however, may lead to gross underestimation of the actual portfolio VaR when the portfolio contains assets with highly skewed return distributions. This paper presents an approach for minimizing portfolio VaR, Asymmetry-Robust VaR (ARVaR), that takes into consideration skewness in the distributions of asset returns, and approximates the portfolio VaR more closely than other approaches used in practice. In addition to desirable computational properties, ARVaR possesses a feature that is appealing from a financial theory perspective. VaR is not a *coherent* risk measure—in some circumstances the VaR of a portfolio of two assets may end up greater than the sum

of the VaRs of the individual assets—but ARVaR is. One positive consequence of this fact is that portfolio managers employing ARVaR optimization will not be subscribing to a policy of possible nondiversification, which they may unknowingly do by using VaR optimization.

Mean Variance Vulnerability
Thomas Eichner

In this paper, we consider an agent with mean variance preferences who must make a decision about some risk in the presence of other risks that are beyond the agent's control. Prototypical examples of this scenario are (i) an investor who selects a portfolio with one risky asset and one risk-free asset, (ii) a manager who determines the firm's output when the price is uncertain, and (iii) a manager who insures the firm's buildings against fire risks. Each of theses decisions is made in the presence of an independent background risk. The background risk includes risks from environmental catastrophes caused by climate change, risks from social unrest or political as well as military risks. Under reasonable conditions the presence of the background risk implies (i) that the investor selects a more conservative policy, (ii) that the manager reduces the firm's output, and (iii) that the manager increases the insurance coverage. Managers should take background risks into account and behave in a more risk averse manner in order to make better decisions and to improve their risk management. Our tools and results allow the managers to determine the optimal risk taking.

Allocation Models and Heuristics for the Outsourcing of Repairs for a Dynamic Warranty Population
Li Ding, Kevin D. Glazebrook, Christopher Kirkbride

There are major incentives for original equipment manufacturers (OEMs) to outsource their repair and warranty services and particular reasons why they may wish to contract with several vendors when they do. However, outsourcing poses risks, particularly that of poor post-sales customer experiences, which lead to loss of future customers. This poses the question of how an OEM should allocate responsibility for its warranty population among the contracted vendors to best mitigate such risks. The research discusses how to design effective rules to determine which of several vendors should be responsible for repairs to newly purchased items while they remain under warranty. It identifies simple rules, which may be easily implemented online and which work very well. Their strong performance lies in their capacity to minimize the chances of customers experiencing unacceptable response times caused by excessive repair queues at the vendors. In contrast, we show that an intuitively plausible approach to managing vendor workloads can in fact result in a very poor quality of post-sales service.

Customized Bundle Pricing for Information Goods: A Nonlinear Mixed-Integer Programming Approach
Shin-yi Wu, Lorin M. Hitt, Pei-yu Chen, G. Anandalingam

Advances in digital technologies and communications networks have made distributing information goods, such as music, motion pictures, and news, more efficient. However, vendors are concerned about how to sell these digital information goods with minimal reproduction, packaging, and distribution costs. This paper examines the strategy of customized bundling for selling these goods, with which customers can choose a number of goods from a larger collection at a price that depends on the number of goods chosen. Our analysis suggests that customized bundling is especially attractive when consumers do not positively value all goods, and that the heterogeneity of number of goods consumers positively value is much more important than the shape of the valuation distribution in determining the optimal pricing scheme. This has interesting implications because the information about the number of goods a consumer might purchase is relatively easier and less costly to obtain in practice than is a full customer valuation distribution. We also find that customized bundling still outperforms other pricing schemes even when exact consumer valuations are not known ex ante—a problem faced by many vendors. Taken as a whole, our results can help vendors understand the important factors in determining a pricing scheme and also help guide the design of a pricing scheme in selling zero/low marginal costs goods.

Research Note: Revisiting "Retailer- vs. Vendor-Managed Inventory and Brand Competition"
Hag-Soo Kim

Why are retailers interested in vendor-managed inventory (VMI)? In their 2004 paper, Mishra and Raghunathan conjectured that one reason is that VMI restores competition between manufacturers and encourages manufacturers to maintain a higher stock of their own brand than that under retailer-managed inventory (RMI). In this note, we show that this claim is not valid in general. In some cases, each manufacturer's stocking level may be higher under RMI than VMI and the retailer may lose by adopting VMI when the relative profit margin of the retailer is high. Our analysis clarifies that, when prices are determined exogenously, the relative profit margin of the retailer, the magnitude of the holding costs and the intensity of brand competition affect the retailer's profitability, and additional numerical tests show that the effect of brand competition on the system is not highly significant and the transfer of holding cost is the key incentive for the retailer to adopt VMI. However, these results are not definitive under endogenous price conditions. Consequently, retailers need to carefully analyze the impact of potential VMI adoption on their profitability.