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Management Insights

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Optimal Software Reuse in Incremental Software Development: A Transfer Pricing Approach (p. 541)

[Yasin Ceran](#), [Milind Dawande](#), [Dengpan Liu](#),
[Vijay Mookerjee](#)

Is a planned “reuse” software rollout strategy best for expedient development? Software reuse is “the systematic use of existing software assets to construct new assets or products,” but conflict between users and developers might result. The driver of such conflict is software reuse: Although the effort on software reuse can delay the release of critical functions, it can speed up the delivery of the complete system. The authors develop optimal transfer pricing schemes that manage software reuse in incremental software development, namely, a development regime wherein users begin using parts of the system that are released to them even before the system is entirely completed. The release of functionalities is influenced by reuse, i.e., the effort spent by the development team to write code that can be reused within the same project or in future projects. For example, the development team may choose to spend extra effort to make certain portions of the system reusable because doing so could reduce the effort needed to develop the entire system. However, the additional effort spent on reuse could delay the release of certain critical functionality, making such a strategy suboptimal for the users. Thus, optimal reuse decisions for developers and users could be different. In addition, from the firm’s perspective, reuse decisions must balance the objectives of developers and users for the current project, but reuse effort may be spent to benefit future projects. The insight for management: Reuse may not always be beneficial for the firm; the user–developer conflict may require transfer pricing schemes that achieve two key properties: firm-level optimality and truth revelation of user functionality preferences.

Don’t Ask Me If You Will Not Listen: The Dilemma of Consultative Participation (p. 560)

[Brice Corgnet](#), [Roberto Hernán González](#)

Participative decision making—in which employees’ opinions are garnered as input for corporate decision making—has been lauded because involving people in decision making can increase job satisfaction and

raise motivation. However, this strategy may very well backfire if opinions are collected, but not used, causing only frustration among employees. The authors show that consulting an employee was beneficial as long as the firm followed the employee’s advice. Ignoring the employee’s opinion was detrimental to the firm because it engendered negative emotions and low levels of transfers. Nevertheless, the majority of firms are reluctant to adopt the employee’s proposal if it runs contrary to the firm’s opinion. The insight for management: The ability to change one’s own mind is an important dimension of successful managerial use of participative decision making.

Relationship Organization and Price Delegation: An Experimental Study (p. 586)

[Noah Lim](#), [Sung H. Ham](#)

Is a salesperson’s authority to set prices profitable? Price delegation to the salesforce is a practice widely adopted by firms. The authors study how varying the relationship of the sales manager and salesperson—to allow for (1) requests by the salesperson for the manager to choose price delegation and (2) the manager to award a small bonus after observing the salesperson’s decisions—can affect behavior and profitability. The insight for management: Managers choose price delegation frequently, and salespeople respond reciprocally, leading to higher manager profits under price delegation, and this behavior increases when requests and bonuses are allowed.

Optimal Design of Social Comparison Effects: Setting Reference Groups and Reference Points (p. 606)

[Guillaume Roels](#), [Xuanming Su](#)

Can “keeping up with the Joneses” be leveraged to influence positive behaviors? The authors study how social planners should exploit social comparisons to pursue their objectives. People may feel a loss from underperforming relative to their peers and may feel a utility gain from overperforming relative to their peers. For example, a “green rating” system from the utility company of a homeowner and his neighbors tells him where he stands. On one hand, he might want to stay “greener” than some wasteful neighbors;

on the other hand, he might strive to be as green as his more efficient neighbors. A social planner can tailor the framing of the comparisons to achieve the desired objectives while minimizing negative behaviors. A performance-focused social planner may tailor the presentation of this information so as to maximize the output of either the top or the bottom of the group. When the social planner also cares about the utility of the participants, she may be less likely to embarrass underperformers, which hampers performance improvement. The insight for management: Shame and pride are powerful motivators; making relative rankings available to peer groups directly affects their performance.

**The Effect of Giving It All Up on Valuation:
A New Look at the Endowment Effect** (p. 628)
[Amos Schurr](#), [Ilana Ritov](#)

Is the perceived cost of relinquishing goods greater than the benefit of their acquisition? The endowment effect is the tendency to demand more money for relinquishing owned goods than one is willing to pay for the same goods. This effect is well known. The authors find that this effect fails to emerge when sellers are not fully depleted of their endowment, which is incompatible with previous research that found that the effect stems primarily from aversion to loss relative to the individual's current state. The insight for management: Losing it all is perceived differently from a marginal loss; human aversion to "giving it all up" is greater than an aversion to incurring any loss relative to the status quo.

**Outsourcing Information Security: Contracting
Issues and Security Implications** (p. 638)
[Asunur Cezar](#), [Huseyin Cavusoglu](#),
[Srinivasan Raghunathan](#)

Does a managed security service provider (MSSP) have the proper incentives to provide both detection and prevention services? The current norm is to outsource both prevention and detection to the same MSSP. However, detection implies some failure in prevention; thus, the MSSP has mixed incentives: To show value in one area, the MSSP demonstrates failure in another. As a result, MSSPs have a strong incentive to reduce detection efforts. To remedy this, some security experts have advocated outsourcing prevention and detection to different MSSPs. The authors show that the traditional outsourcing contract leads to a significant disincentive for the MSSP to provide detection effort. The suggested split contract alleviates this problem but introduces misalignment of incentives between the firm and the MSSPs and eliminates the advantages offered by complementarity between prevention and detection functions, which may lead to a worse outcome than the current contract. The insight

for management: New proposed contract specifications allow for improved incentives, efficiency, and performance of MSSPs than those that have usually been deployed.

**A Closer Look at the Short-Term Return
Reversal** (p. 658)
[Zhi Da](#), [Qianqiu Liu](#), [Ernst Schaumburg](#)

Researchers have documented profits of approximately 2% per month over 1934–1987 using a "reversal strategy" that buys and sells stocks on the basis of their prior-month returns and holds them for one month. The reversal strategy is a contrarian one; sell recent winners and buy recent losers. The reversal strategy takes advantage of short-term pressures on stock price that may be due to psychology (overreaction) or economics (short-term excess supply and demand). However, stock returns unexplained by "fundamentals," such as cash flow news, are more likely to reverse in the short run than those linked to fundamental news. So which has a bigger effect on short-term return reversal—inventory sentiment or liquidity? Isolating the component of past returns not driven by fundamentals provides a way to measure these two effects on short-term reversals. The authors find that both liquidity shocks and investor sentiment contribute to the observed short-term reversal, but in different ways. The reversal profit is attributable to liquidity shocks on the long side because fire sales more likely demand liquidity, and it is attributable to investor sentiment on the short side because short-sale constraints prevent the immediate elimination of overvaluation. The insight for management: The authors propose that a simple enhanced reversal strategy generates a risk-adjusted return four times the size of the standard reversal strategy.

**Informed Bond Trading, Corporate Yield Spreads,
and Corporate Default Prediction** (p. 675)
[Song Han](#), [Xing Zhou](#)

How does improved bond trading information affect the ability to predict corporate default? The authors take advantage of recently augmented corporate bond transaction data and examine the pricing implications of informed trading in corporate bonds and its ability to predict corporate defaults. They find that microstructure measures of information asymmetry seem to capture adverse selection in corporate bond trading reasonably well. They demonstrate that information asymmetry in bond trading has explanatory power for corporate bond yield spreads and that this result holds after controlling for the transaction costs of liquidity, credit risk, and other traditional bond pricing factors. Furthermore, information asymmetry can help forecast corporate defaults after conditioning on other default prediction variables. The insight for management: Such default forecasting ability of

informed bond trading is especially useful for private firms because the bond market constitutes the only venue for informed traders to exploit their information advantages.

Entropy-Based Optimization of Nonlinear Separable Discrete Decision Models (p. 695)

Yuji Nakagawa, Ross J. W. James, César Rego, Chanaka Edirisinghe

How can very difficult optimization problems be solved more quickly? The authors develop a new way to help solve difficult linear and nonlinear discrete-optimization decision models more efficiently by introducing a problem-difficulty metric that uses the concept of entropy from information theory. The entropy metric is employed to devise rules for partitioning the problem into smaller subproblems, which are solved based on the subproblem complexity. The authors apply their method to problems with a relatively small number of constraints but a large number of variables. They develop a hybrid partitioning and enumeration solution scheme that they call ISCENT based on the entropic approach with recently developed methods. The insight for management: ISCENT can be an order of magnitude more efficient than commercial solvers for standard problems with few constraints, and in general, ISCENT is significantly more efficient than other standard global solvers.

Resource Flexibility and Capital Structure (p. 708)

Jiri Chod, Jianer Zhou

How is the optimal investment in the capacity of flexible and nonflexible resources affected by financial leverage, and how does a firm's resource flexibility affect its optimal capital structure? The authors consider a two-product firm that invests in the optimal capacity of product-flexible and product-dedicated resources in the presence of demand uncertainty. Before investing in capacity, the firm issues the optimal amount of debt, trading off the tax benefit and lower transaction cost of debt financing against the cost of financial distress and the agency cost associated with leverage. The authors show that, in the presence of debt, resource flexibility has benefits in addition to reducing the mismatch between supply and demand. Also, resource flexibility mitigates the shareholder-debtholder agency conflict as well as the risk of costly default. The authors show that resource flexibility mitigates the underinvestment problem because it reduces the probability that a firm will go bankrupt with some of its capacity being fully utilized. The insight for management: When lenders anticipate that a firm will choose a relatively flexible capacity mix, they should provide more favorable credit terms, to which the firm should respond by issuing more debt. Resource flexibility is negatively related to the cost of borrowing and positively related to debt.

Pricing and Revenue Management: The Value of Coordination (p. 730)

Ayşe Kocabiyıkoğlu, Ioana Popescu, Catalina Stefanescu

Revenue management attempts to squeeze the most revenue from a limited capacity in a dynamic and unpredictable demand environment in industries such as hotels, airlines, rental cars, and the like. However, challenges in information and systems management and organizational coordination can affect customer service. How should management measure the integration of systems for pricing and revenue management against potential revenue gains in the face of significant practical and technical challenges? The authors evaluate sequential policies for making pricing and revenue management decisions that compare hierarchical and coordinated integration and deterministic versus stochastic pricing inputs. Near-optimal performance is usually achieved by a simple hierarchical policy that sets prices first and then uses these prices to optimize nested capacity allocation. The insight for management: Jointly optimizing price and allocation decisions for the high-end segment improves performance, but the largest revenue benefits stem from adjusting prices to account for demand risk.

Equilibrium Discovery and Preopening Mechanisms in an Experimental Market (p. 753)

Bruno Biais, Christophe Bisière, Sébastien Pouget

At the opening of the market, there is large uncertainty about supply, demand, and valuations. Market openings can, therefore, be plagued by informational problems and coordination failures. Can preopening communication help obviate these problems? The authors experimentally analyze how to design preopening mechanisms facilitating coordination on high-equilibrium liquidity and gains from trade. They allow a call auction to be preceded by a preopening or not, allow preopening orders to be binding or not, and allow the opening time to be deterministic or random. They find that when the preopening is nonbinding, traders place manipulative orders, reducing the credibility of preplay communication. Random market opening deters manipulation, but it also hinders communication by making it costly. Gains from trade are maximized when preopening orders are binding. This enables some traders to place early limit orders, attracting further liquidity. The insight for management: Carefully managed, preopening communications can mitigate some problems at market opening.

Simultaneously Learning and Optimizing Using Controlled Variance Pricing (p. 770)

Arnoud V. den Boer, Bert Zwart

How can a firm find a pricing policy that optimally balances learning the optimal price (exploring prices)

and gaining revenue (exploiting the optimal price)? Price experimentation is an important tool for firms to find the optimal selling price of their products, but it should be conducted carefully, because experimenting with selling prices can be costly in terms of foregone revenue or market share. The authors propose a pricing policy, called controlled variance pricing (CVP), to help find that balance. In order to encourage learning, the authors propose a “taboo interval” around the average of previously chosen prices that forces exploration into new prices. The width of the taboo interval shrinks at an appropriate rate as the amount of data gathered gets large; this guarantees sufficient price search but allows settling on a best price as the information set grows and incremental learning falls. The authors show that eventually the value of the optimal price will be learned. They also show an upper bounds on the regret, which is the expected amount of money lost due to not using the optimal price earlier. The insight for management: The “exploit-explore” trade-off applies to pricing; the value of price exploration in new markets with low information, high dispersion, and high value of learning dissipates over time, leading to an exploit strategy in mature markets with less uncertainty and lower returns for price exploration.

Product Line Design with Seller-Induced Learning (p. 784)

Hui Xiong, Ying-Ju Chen

“Try it before you buy it” is an offer commonly made by some service providers, such as fitness centers. Such activities are known as seller-induced learning.

They help the consumers learn more about themselves, but they also exploit the consumers by helping to reveal the consumer’s valuation. As a result, sellers can be more sophisticated in their price discrimination. The authors show that an “exploding offer” (if you act now only) should sometimes be offered in conjunction with the seller-induced learning to encourage immediate purchases when uncertainty persists in some consumers. The insight for management: A sophisticated combination of seller-induced learning and exploding offers can maximize the effectiveness of such selling policies in an environment with heterogeneous consumers.

On Portfolio Choice with Savoring and Disappointment (p. 796)

Elyès Jouini, Paul Karehnke, Clotilde Napp

Researchers have observed puzzles such as a positive demand for assets with negative expected returns, a preference for skewed returns, and underdiversification of portfolios. What might explain these irrational behaviors? In the past, researchers have assumed that the consumer’s expectations are fixed before a chance outcome is revealed. The authors propose that consumers may reset expectations or that these expectations are endogenously related to the chance event. They revisit previous results under this new assumption. The insight for management: Better characterizations of the dynamic nature of decision makers’ expectations before a chance event, and their reactions afterward, can help explain decisions and behaviors that previous models could not easily reconcile.