Why Limit the Market?
How Exclusive Deals With Revenue Sharing Make Sense

In 2007 Apple announced it was releasing a new product called the iPhone and that AT&T would be the sole carrier for its phone and data services. The exclusive deal between a manufacturer and service provider was unusual for the wireless business at the time, and it caught the attention of Gangshu Cai, who recently joined the business school faculty as an associate professor of operations management and information systems.

“It was a unique marketing phenomenon,” Cai says. “They were doing something different from their competitors, and I found myself asking why it was happening now, considering how long the cell phone and wireless industries had been around.”

ANATOMY OF A DEAL: Gangshu Cai looked at the exclusive arrangement between Apple and AT&T for the iPhone and showed how revenue sharing made it work.
That idea resulted, several years later, in a paper, “Exclusive Channels and Revenue Sharing in a Complementary Goods Market,” written by Cai as first author, and colleagues Yue Dai of Fudan University, and Sean X. Zhou of Chinese University of Hong Kong. It was published in the January-February 2012 issue of Marketing Science.

Cai says that at first the idea of an exclusive service provider for a new product seemed counterintuitive, since Apple could presumably have sold more phones by letting all wireless carriers provide phone and data service. He quickly grasped that revenue sharing had to be the critical ingredient in the deal, and his subsequent research bore that out.

“If a manufacturer goes exclusively with one service provider, it creates a smaller market for the product,” Cai says, “but the tradeoff is revenue sharing. This paper could be the first to describe this sort of exclusive arrangement in terms of revenue sharing for complementary goods.”

For example, Cai notes in the paper that as the exclusive service provider for a hot and greatly demanded product, AT&T was able to charge a base service rate for the iPhone that was almost 50 percent higher than its existing base rate. Whatever the split with Apple may have been, both companies likely benefited from the additional revenues. Apple’s overall share of revenues presumably was enough to make up for what it lost by not selling to customers of other wireless carriers, and the revenue-sharing agreement may have helped it lower the purchase price of the phone to attract additional buyers.

The model developed by Cai and his colleagues also suggested that an exclusive arrangement makes more sense in a highly competitive market, where neither the manufacturer nor the service provider holds a dominant position.

If the product becomes more dominant, the service provider benefits from it more than the manufacturer, and the relationship between the two becomes asymmetric. In that case, it probably makes sense for the manufacturer to opt out of the exclusive arrangement, as Apple later did by allowing Verizon to become a service provider after the iPhone became a huge hit.

Although the paper was inspired by the Apple/AT&T deal, the model it posits for evaluating exclusive deals could be applied to a wide range of commercial enterprises, and Cai is quick to point out that the current business environment is rife with examples: Sirius Radio’s exclusive deal to broadcast NFL games on satellite; Martha Stewart’s granting of exclusive retail rights for her products to Kmart and Macy’s; author Stephen King’s agreeing to have Amazon be the sole publisher and distributor of his e-books.

“This paper came out of reality, telling a good story about Apple and AT&T,” Cai says, “But the model we developed can be applied to many industries. The combination of exclusive deals and revenue-sharing shown in our model is what filled in a gap in the existing literature.”
Executive compensation—a subject much in the news in recent years—tends to be measured by and based upon the performance of the company. In theory, a chief executive officer who manages a firm well will generate strong profits and stock returns, thereby justifying the large compensation package that he or she commands.

But what if much of a company’s performance, good or bad, is the result of luck, and how can that be measured? Seoyoung Kim, a new assistant professor of finance, has studied the subject in depth and reported her findings in a paper, “Measuring Luck in CEO Outperformance,” that was recently submitted for publication.

“We see the outcomes in hindsight,” Kim says of company performance, “but we don’t really know if they were the result of good decisions, based on what was known at the time the decisions were made. What we do know is that in a large pool of people, such as corporate CEOs, some people will be repeatedly lucky or unlucky.”

Her research resulted in two principal conclusions. The difference in company outcome under the stewardship of the great majority of CEOs, she said, is not much more than could be attributed to luck and to factors outside the executives’ control, as opposed to skill and competence. However, there is an elite group of top-performing executives whose results are so good that luck is highly unlikely to be the reason.

“The very, very top performers in real life are doing so well they outperform what statistical simulations, adjusted for luck, show the top outcome should be,” she says.

Kim says that questions of executive performance, luck and outcome have been studied before, but generally by defining luck as the industry or market-wide shocks that are outside a CEO’s control (such as sharp swings in oil prices). However, she contends that the remaining CEO-specific “skill” portion of performance may not reflect skill at all. Her paper adds to the existing research by looking at a broad range of CEOs and companies across a wide range of industry sectors over a long period of time—more than a decade and a half.

Using the Standard and Poor’s Executive Compensation Database, covering 1,500 companies during the period from 1992 to 2009, she was able to get a big-picture look at the performance of executives and companies over time and establish the range of outcomes. She then developed a statistical model based on the presumption that all CEOs are equally competent and that differences in corporate outcome are essentially the result of luck or other factors outside the control of the executive.

Comparing the two sets of results, Kim was able to determine that most of the actual outcomes were not so different from the simulated ones as to be entirely attributable to skill, and
Optimizing the Learning Curve
How Pricing Can Be Connected to Efficiency Gains

When a company launches a new product, there is nearly always some inefficiency in the manufacturing process at first. And, typically, with the passage of time, there is a learning curve in which the firm figures out how to manufacture the product more efficiently.

The normal pricing inefficiency that exists in any relationship between manufacturer and retailer, known as “double marginalization” because both parties are affected, becomes more severe as the learning curve makes manufacturing more efficient.

Tao Li, a new assistant professor of operations management and information systems, has been looking into how revenue-sharing agreements between manufacturers and retailers can make the supply chain more efficient and boost profits.

IMPROVING PROFITABILITY: Tao Li’s research shows how manufacturers and retailers can benefit as manufacturers learn to make a product more efficiently.

that luck was likely to have been a factor. The difference, for instance, between actual outcomes of an executive in the 90th percentile, based on company performance, and one in the 50th percentile, was not starkly different from the difference that occurred in the statistical simulation. Only with the very top performers was there a substantial difference that was highly unlikely to be the result of luck alone.

“As the simulation results demonstrate,” she writes in the paper, “CEOs can be repeatedly lucky or unlucky, guaranteeing extreme differences in performance outcomes even if everyone is equally skilled and puts forth the same amount of effort.”

“It’s a hard question trying to determine what’s the result of luck and what’s the result of skill,” Kim says. “Evaluating how much variation in performances we can expect due solely to differences in luck, thus, has important implications for replacement decisions, for designing incentive contracts, and more broadly, for how CEO performance outcomes are interpreted in attempting to measure managerial effort or ability.”
“Other approaches to supply-chain efficiency, such as quantity discounts, two-part tariffs and buy-back programs don’t really coordinate the chaos,” Li says. “But we found that by using a revenue-sharing contract, it’s possible to control the supply-chain chaos so that both the manufacturer and retailer are better off.”

The findings are reported in a working paper titled “Dynamic Pricing, Procurement, and Channel Coordination with Stochastic Learning,” which Li co-authored with Xiuli He of the University of North Carolina at Charlotte, and Suresh P. Sethi, at the University of Texas at Dallas.

In this sort of supply chain situation, the key issue is double marginalization, which refers to the pricing inefficiency that occurs when the manufacturer sets a wholesale price based on anticipated manufacturing costs and the retailer sets a retail price based on anticipated demand.

That disparity can become worse as the learning curve makes the manufacturing process more efficient and less costly at the same time demand for the product is easing after the typical flurry of sales when the product was first introduced.

Li says that academic studies to this point have focused on the learning-curve issue from the manufacturer’s perspective. In the paper he and his colleagues wrote, he says, “we look at it as a game played by both the manufacturer and retailer.”

Additionally, they look at it over two different periods: when the product first comes out, and later, when manufacturing efficiency has peaked but demand is falling off.

“What Li and his colleagues found was that a well-constructed revenue-sharing agreement between the manufacturer and retailer can smooth out the disparities in the process.

As an example of how that might work, Li outlined a contract arrangement in which the retailer and manufacturer split sales revenues 50-50 in the first period of a contract, then the retailer takes a 60 percent share in the second period.

(He notes that negotiated rates aren’t always optional because large retailers, such as Target and WalMart have the clout to get themselves a larger share, which creates another form of distortion.)

Li also said that the retailer may not necessarily be better off by getting a larger share of the revenue in the second period.

When the arrangements are optimal, the result is likely to be that the manufacturer’s share of the retailer’s revenue allows it to charge a lower wholesale price at the outset, which means the retailer can charge a lower sales price, perhaps stimulating additional consumer demand.

In the second period, when sales drop, the retailer gets a bigger cut, while the manufacturer’s margin is improved by greater production efficiency. Lower wholesale and retail prices then create a better chance of growing total sales.

“Reducing wholesale prices improves the efficiency of the supply chain,” Li says, “and that grows the pie of total sales. Once the pie becomes larger, both the manufacturer and retailer are better off.”
Like America’s Federal Reserve, central banks around the world play a significant role in their countries’ economies—printing money, lending to banks and casting a large shadow on political and economic policy.

For some time now, economists have been puzzled by a 20-year trend, which escalated in the late 1990s, of developing nations’ central banks accumulating larger international reserves (a catch-all term for foreign currency and other financial instruments with global liquidity) relative to GDP. Goncalo Pina, new assistant professor of economics, argues that if the question is approached from a monetary perspective, in view of the multiple financial crises of the past two decades, it makes sense that these countries were accumulating large reserves.

“It’s been extremely puzzling to economists,” he says. “These are countries that don’t have highways, decent educational systems and the like. You would expect their central banks to be pumping as much as they can into economic growth, yet they’re sitting on large reserves that generate little or no income.”

His conclusions, and the model explaining them, are laid out in a paper, “The Recent Growth of International Reserves in Developing Economies: A Monetary Perspective.” The paper is currently in the review process with a leading journal.

Traditional economic theory typically doesn’t distinguish between central bank savings and private savings in a given country. Pina says that theory applies well to China, for example, where both savings rates have been high. But he argues that because of that assumption, researchers had a hard time accounting for the magnitude of international reserves and precisely why the central bank is the agent for accumulating them in other countries, where personal savings rates were not so high.

Applying monetary principles to the question, Pina came up with a model demonstrating that the likely explanation of the high reserve rates is that the number of banking crises in recent years and the severity of those crises has pushed central banks to a policy of maintaining higher financial reserves. This gives the banks the flexibility to deal with anticipated future crises in ways least disruptive to their national economies.

As a graduate student in 2008, Pina spent considerable time reading reports issued by central banks around the world and realized that the banks were obsessed with financial stability. The point was particularly driven home by the situation in Russia. That year, as the worldwide recession was beginning, Russia was spending substantial amounts of foreign reserves through its central bank in interventions with financial institutions.

It is not surprising, he says, that the accumulation of reserves in developing countries—which had already been rising

**Why Foreign Cash Accumulates**

**An Explanation for a Central Banking Mystery**

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**HOLDING THE MONEY:** Goncalo Pina’s research has provided an explanation for why central banks in developing nations are sitting on reserves, rather than pumping the money into their economies.
steadily for a decade—took an even sharper upward turn following the Asian crisis, which had devastating economic impacts in many countries.

Developing nations are particularly vulnerable to a banking crisis. It has a clearer, more visible effect in their smaller economies, and these countries often lack the cushioning of a substantial borrowing capability, such as that enjoyed by the richer developed nations. From that perspective, maintaining larger reserves as a safeguard against a bank crisis makes financial and political sense.

Ultimately, the central bank has to cover the costs of a banking crisis through inflation, Pina says. The simplest way to do that would be to print more money, but that can have a devastating effect on the international exchange rate of the nation’s currency and on the day to day decisions made by political leaders, businesses and ordinary citizens. It’s better to spread out the cost of inflation over time, and having access to large reserves provides a central bank with a range of tools for doing so.

“Central bankers typically have longer terms of office and greater independence,” he says, “They can’t be sent away in an election, so they tend to take a longer-term policy view and are aware of the high cost of inflating the economy too quickly. In a developing country, when you start printing a lot more money, things can go berserk.”

Noted Faculty Named to Endowed Chairs

Two business school faculty recently were appointed to distinguished professorships by University President Michael E. Engh, S.J., in recognition of scholarly achievements in their respective fields.

William and Janice Terry Chair

Trained as a financial economist at New York University and a computer scientist at UC Berkeley, Sanjiv is a prolific scholar whose research covers varied areas, including portfolio theory, where his recent work with Nobel prize-winner Harry Markowitz and SCU’s Meir Statman resulted in a new approach to portfolios using mental accounts.

Connecting theory and practice through a rigorous analytic approach is a hallmark of his research, which includes fixed income modeling, text mining and analytics, developing software and algorithms to parse discussion on the web and construct stock sentiment indices, and constructing and measuring liquidity indices (winning a 2012 award for this work from Standard & Poor’s). Most recently, his series of papers on fixing the mortgage debt crisis has been influential in policy discussions from Sacramento to New York to Washington, D.C. Sanjiv earned his bachelor’s of commerce from the University of Bombay, his MBA from the Indian Institute of Management, a M.S. in computer science from UC Berkeley, and his master’s of philosophy and his Ph.D. from New York University.

The William and Janice Terry Chair was established by alumni Bill and Jan Terry in 2005, to support distinguished research and teaching in the School of Business by a faculty member whose creative scholarship integrates the theoretical and pragmatic.

For more about endowed chairs in the SCU School of Business, visit scu.edu/business/endowedchairs.

Naumes Family Chair

A Santa Clara University Leavey School of Business faculty member since 1988, Greg is director of the School’s Food and Agribusiness Institute, where he has led development of the University’s undergraduate pathway, “Food, Hunger, Poverty, and the Environment,” as well as strengthening the MBA food and agribusiness concentration offerings.

Greg is one of the leading scholars in food and agribusiness management, specializing in consumer perspectives on food safety, hunger, and childhood obesity. He is the author or co-author of more than 45 refereed journal articles, as well as producing several book chapters, and is serving as editor of International Food and Agribusiness Review. He is co-author of Food and Agribusiness Management, one of the most widely used texts in the field. He has received numerous awards from the Leavey School and the University for his teaching and research activities. Greg earned his bachelor’s, master’s, and Ph.D. degrees from Purdue University.

The Naumes Family Chair was established by the Joseph Naumes family in the 1980s. The Naumes family has a long history with Santa Clara University, beginning with patriarch Joseph Naumes, a 1934 Santa Clara graduate. His company, Naumes, Inc., is a nut and fruit producer in Oregon, Washington, and northern California, farming more than 4,500 acres of pears, apples, cherries, cling peaches, walnuts, and persimmons.

Gregory Baker

Sanjiv Ranjan Das
New Faculty for 2013

Dr. Seoyoung Kim joined the Finance department as an assistant professor. Formerly an assistant professor at the Krannert School of Management at Purdue University, Professor Kim’s expertise is in Empirical Corporate Finance with a focus on Corporate Governance and Executive Compensation. In one of her current projects she looks at how social networks among board members impacts their decisions.

Dr. Gangshu Cai, was previously an associate professor in the College of Business Administration at Kansas State University, and has joined the Operations Management and Information Systems (OMIS) department as an associate professor. Winner of the Outstanding Teaching Award at Kansas State, Gangshu is a highly prolific scholar with expertise in the area of supply chain management and the marketing-operations interface.

Tao Li became an assistant professor in the Operations Management and Information Systems (OMIS) department in the fall. He is currently completing his doctoral dissertation at the School of Management, University of Texas at Dallas. With a number of top-tier publications already under his belt, Tao is an expert in the area of supply chain management with a special emphasis on sourcing strategy.

Gonçalo Pina joined the Economics department as an assistant professor in September. He recently completed his doctoral dissertation in Economics at Universitat Pompeu Fabra in Barcelona. Gonçalo’s main areas of study are international finance and macroeconomics, but he has broad ranging interests including behavioral economics, having co-authored a paper on the role of over-confidence in decision-making using evidence from a rule change in professional hockey.