



SPRING 2006: **Pricing**

Findings from Faculty Research at Columbia Business School

Focus on Pricing

Pricing is your only chance to capture value from your customers. Is your pricing strategy leaving money on the table?

Despite the development of increasingly sophisticated pricing methods in the past 15 years, many companies still take a trial-and-error approach to pricing.

This issue of Columbia Ideas at Work challenges you to identify opportunities for improvement—even if your company is already using state-of-the-art revenue management tools.

You will read about research that can help you more accurately gauge your customers' sensitivity to price, more

effectively segment your target market and more efficiently compute optimal prices in a dynamic environment. You will also explore the relationship between price and brand equity and learn how to set transfer prices for internal sales that maximize profits.

To download the research articles cited in this newsletter—and to browse faculty research on topics ranging from accounting to world business—please visit the **Columbia Ideas at Work Web site at www.gsb.columbia.edu/ideas**.



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Ideas @ Work

Columbia Ideas at Work is a bridge between business research and practice, offering key insights from our faculty's leading-edge research.

The Pricing Prize

The right price for the right customer in the right market at the right time is your company's greatest source of value.

In many industries, pricing is more art than science. Managers make pricing decisions without fully analyzing their long-term profit impact. Companies may have only a vague understanding of their customers' sensitivity to price. Manufacturing firms often take a cost-plus approach rather than a market-driven approach to pricing. And even in industries with more sophisticated pricing methods, companies don't always take advantage of opportunities to apply creative pricing strategies.

So how can you do better? Professor **Hitendra Wadhwa**, who in the past 12 years has helped several leading companies design optimal pricing strategies, suggests three areas for improvement.

Prize continued on page 2

1. Get Your Basic Economics Right

First, understand which costs are relevant to price and which are not. For example, fixed cost allocations like overhead should not be driving price.

Second, know your customers' sensitivity to price at different price levels. Sometimes companies skimp on market research because they worry that it will take too much time. "But there are some practical and easy ways," Wadhwa says, "to get quick checks of what the customer response is going to be—for instance, an online pricing survey, conversations with trade partners and salespeople, and analysis of sales and pricing history across accounts."

Third, think about a customer's lifetime value to your company. In what cases might you want to sell something at a lower price today in order to foster a long-term relationship with a customer?

Financial services companies have amassed huge databases of information that they can use to sell complementary products to existing customers. But they don't always leverage that information to make strategic pricing decisions based on customer lifetime value.

"They're struggling with the complexity of managing multiple product lines and customer segments, with tons of data that in theory they could mine," says Wadhwa. "That's a situation where there's certainly untapped opportunity."

In the retail world, where drug and apparel stores are now starting to benefit from revenue management tools developed in the airline and hospitality industries, there is even more room to improve by getting the basic economics right.

2. Find Creative Ways to Segment Your Customers

Do you know which of your customers are willing to pay more for your product? If so, are you charging those customers a price that reflects the value they assign to the product?



Some companies are squeamish about price segmentation because they think it will annoy their customers. When Northwest Airlines announced recently that it would charge a higher price for exit row seats, which offer slightly more legroom, some customers complained that the new pricing policy was unfair.

But there are multiple ways to implicitly implement a segmented pricing strategy without alienating customers. "You can create variations of the product," says Wadhwa. "Or you could offer the product at a high price and then selectively give discounts on a targeted basis, through one-on-one conversations with those accounts that you feel are price sensitive, without necessarily broadcasting it to everybody."

A third possibility is to change your pricing metrics. An online employment or dating service, for example, might charge customers based on the volume of communication they engage in rather than charging a flat monthly fee. "If somebody's a heavy user, they're likely to be less price sensitive," Wadhwa says. "If you're charging everybody the same price, then you're leaving money on the table, since those customers were willing to pay more."

Price is very easy to change, and the short-term sales effect can be attractive, so it's an instrument of first resort as opposed to last resort.

3. Reexamine the Marketing Mix

When sales of a new product don't meet your expectations, your first instinct might be to drop the price. But perhaps you simply haven't done enough to educate consumers about the product's value or haven't lined up enough support from your channel partners. And by lowering the price you may unleash a price war, drawing you and your competitors into a downward spiral. Instead, consider focusing on further differentiating your product and creating healthier long-term pricing conditions.

"In getting price right, often you have to operate the other aspects of the marketing mix," Wadhwa says. "Price is very easy to change, and the short-term sales effect can be attractive, so it's an instrument of first resort as opposed to last resort. But when you operate in a vacuum and you're only focused on price, you're ignoring the opportunity to use the other variables to your benefit as well."

Hitendra Wadhwa is assistant professor of marketing at Columbia Business School.

Measuring Willingness to Pay

Traditional market research methods may not give you the information you need to set the right price.

When Professor **Kamel Jedidi** began teaching a course on pricing several years ago, he was frustrated by the standard methods of measuring a consumer's reservation price—the point where the consumer is indifferent between buying and not buying a given product. Market researchers typically ask consumers directly how much they are willing to pay. But this approach yields biased results, since consumers tend to overstate their responses for prestigious brands and lowball their responses for most other products.

“So I asked myself, how can we do better?” Jedidi says. In the late 1980s Professor **Rajeev Kohli** had introduced a more accurate method that uses conjoint analysis—a psychometric concept widely used by marketers. In a series of recent studies, Jedidi improved on Kohli's approach by combining it with economic utility theory and recent advances in statistical estimation techniques.

The whole concept of pricing strategy lies in trying to understand how much value people attach to products and services.

By presenting consumers with a series of choice sets and then building a model that describes their preferences, you can use this method to infer their reservation prices for various product configurations. The basic conjoint method assumes everybody is in the market, which leads to inflated demand estimates. Jedidi's method is closer to reality because it allows people to opt out if their reservation price is below

all the products offered. In a paper with John Zhang of Wharton, Jedidi demonstrated another advantage of the augmented conjoint method: it allows you to decompose your demand estimates into gains from market expansion, gains from switching and losses from cannibalization.

In another study, Jedidi, Sharan Jagpal of Rutgers and Puneet Manchanda of the University of Chicago adapted the new method to product bundling scenarios. If you want to offer a bundle of products, you can use this approach to build a model that helps you pick the bundle/price combination that maximizes your profits.

More recently, Jedidi, Kohli and Raghuram Iyengar of Wharton developed a conjoint method that measures reservation prices for products with a tiered pricing structure. In a set of experiments, they presented people with a series of wireless phone service plans. Variable attributes included the monthly access fee, the per-minute fee, the number of free minutes per month and features like Internet access and a rollover option.

“This method builds a model for how people make decisions when they have two-part tariffs,” says Kohli. “The model allows you to estimate the different parameters that go into measuring the reservation price for each part.”

For a particular product, you can use this method to compute the mean reservation price and the variance within a given population. And by varying the price and features, you can infer the reservation price for specific attributes. “If consumers react a lot to a price change as compared to a feature change, then clearly price is more important than the feature,” Jedidi says. “We're basically trying to understand the tradeoffs that people make.”

You can also estimate the market share and level of unit sales for different product configurations. “Given a certain

product or service, you could determine what percentage of people will buy it and how many they will buy,” Jedidi says. “This is the core information that managers need to decide on optimal prices or on a pricing structure.”

This method helps you segment your customers based on willingness to pay so that you can match your offerings to the interests of each segment. “The whole concept of pricing strategy lies in trying to understand how much value people attach to products and services,” says Jedidi. “If you can segment consumers into homogeneous groups of people who are willing to pay more for one thing or a bundle of things, then your pricing is nicely matched along those dimensions.”

Jedidi notes that most of a firm's activities—creating products and services, making them conveniently available and educating consumers about them—center on value creation. “Pricing is the only variable where the firm has a chance to capture that value back from consumers,” he says. “So good pricing can lead to future success. Bad pricing can leave money on the table and is likely to jeopardize the firm's long-run performance.”

Read More

Iyengar, Raghuram, Kamel Jedidi and Rajeev Kohli. “Optimal Multi-Tiered Pricing of Products and Services: A Structural Conjoint Analysis.” Working paper, Columbia Business School, 2006.

Jedidi, Kamel, Sharan Jagpal and Puneet Manchanda. “Measuring Heterogeneous Reservation Prices for Product Bundles.” *Marketing Science* 22, no. 1 (2003): 107–30.

Jedidi, Kamel, and John Zhang. “Augmenting Conjoint Analysis to Estimate Consumer Reservation Price.” *Management Science* 48, no. 10 (2002): 1350–68.

Kamel Jedidi and Rajeev Kohli are professors of marketing at Columbia Business School.

Small Difference in Price, Big Difference in Profit

Small changes in pricing by time and location can have a dramatic impact on your bottom line.

If you're managing products for a national department store chain, should you charge the same price for a pair of shoes in Cleveland and on Madison Avenue? What's the impact on your gross margin if you mark cashmere sweaters down a week before Christmas versus a week after? And how do you decide when to salvage unsold merchandise to make room for new inventory?

Professor **Garrett van Ryzin** has spent 15 years developing methods to efficiently compute optimal prices in industries with complicated pricing structures. His research has contributed to a revolution in the airline, hospitality and retail industries, where pricing decisions involve subtle tradeoffs with regard to the timing of each sale.

Van Ryzin's work merges consumer behavior models with mathematical optimization models. This approach helps you analyze the economic impact of pricing decisions: How will raising or lowering the price affect demand? If you sell a product now versus later, what are the opportunity costs? "We embed all that into a model that lets you say, OK, this decision or this set of prices generates the most revenue," van Ryzin says.

Large retailers offering thousands of products at hundreds of stores often adopt rules that make pricing easier, such as charging the same price for a given item in every store in the country. And that sort of simplification can make you lose out on opportunity, van Ryzin says. "The product might be too expensive in Florida and too cheap in New York because you're constraining yourself and can't make the right adjustments."

Van Ryzin and his colleagues have developed models that can help companies find prices that maximize profits—even for a very large number of products—in industries where the

timing of pricing decisions is crucial. "The economic tradeoffs are difficult to reason out manually because you're dealing with significant uncertainties about what the demand will be if I change the price," says van Ryzin. "These models can capture and reason through the tradeoffs in a way that most human decision makers can't."

For a large airline, pricing decisions must take into account demand on a point-to-point basis for thousands of flights per day, multiplied by hundreds of possible itineraries and several fare classes. "You have hundreds of thousands of different things that you're selling at one point in time," van Ryzin says, "and you're making decisions about those things every day for 90 days prior to the departure of all these flights. So trying to manage that level of complexity in pricing by purely relying on people to make manual decisions is extremely difficult."

Traditional optimization models tend to project demand for each flight segment separately. But van Ryzin's recent work considers the possibility that if you make fares too expensive on one route, consumers might choose a different route. He is also studying strategic consumer behavior—how consumers respond to anticipated price changes. "If you offer different prices over time, that affects their behavior," he says, "because now instead of buying spontaneously they're going to wait until you drop the price."

While the optimization approach doesn't eliminate human error, it does ensure that you're making pricing decisions in a consistent way, which makes it easier to figure out if you're doing something wrong. This method also has a productivity advantage. "Rather than paying lots of people to rack their brains, if you have a system that automates the decision making, you can



get away with a lot fewer people," van Ryzin says.

In the airline industry—the first to adopt dynamic pricing models—this method has generated revenue gains of 2 to 6 percent annually. "Since you're dealing with revenue, very small refinements in how well you make those decisions can translate into quite a big number," says van Ryzin. "The fine-tuning is economically significant because there's a lot of leverage: if you can do 2 to 3 percent better on the top line, that can mean the difference between making a profit or not making a profit."

Read More

Talluri, Kalyan, and Garrett van Ryzin. "Revenue Management Under a General Discrete Choice Model of Consumer Behavior." *Management Science* 15, no. 1 (2004): 5–33.

Garrett van Ryzin is the Paul M. Montrone Professor of Private Enterprise at Columbia Business School.

Designing for Price

Especially in high-tech industries, the ability to charge different customers different prices has to be part of product design.

In the growing field of information services, as in other industries, companies seek to maximize profits by matching customers with products based on the customers' preferences and willingness to pay. But for an information services company, such as an Internet service provider, the demand curve is only one piece of an intricate puzzle. Economic models that analyze consumer behavior do not take into account the dynamics of the technology system delivering the service. By the same token, technology models that aim to optimize system performance pay little heed to the company's bottom line.

So how should an information services company design its products—and the system that delivers those products—in order to maximize profits? Professors **Costis Maglaras** and **Assaf Zeevi** have studied such questions with research that combines a detailed model of consumer behavior with a simple model of system dynamics.

Consumer behavior models typically make two basic assumptions: first, consumers vary in their preferences and willingness to pay, and second, faced with an array of products, consumers will make rational choices. When you add a complex service delivery system into the picture, you also have to consider such factors as congestion, bandwidth and service quality. Understanding customers' sensitivity to those issues can help you determine whether it makes sense to offer a menu of differentiated services.

"If everybody has similar preferences in terms of delay," Maglaras says, "even if they differ in terms of how much they're willing to pay, the service provider should just offer one class of service. If on the other hand the market seems to be more heterogeneous—let's say some people want to do voiceover IP using Skype and some want to do Web surfing and e-mail—then you're better off offering different classes of service, because the people that want

to use Skype have a different sensitivity to congestion versus the people that are just using the service to send e-mail to their friends."

Once you've made the decision to segment your customer base, your delivery system must support that decision.

First, the system must have sufficient capacity to provide high-quality service

to the higher-paying customers. Maglaras and Zeevi have developed a model that can help you determine the appropriate level of technology investment based on aggregate demand data. "If you do reasonable market research, you can estimate demand elasticities in certain industries—and there are studies that do that," says Zeevi. "And since our model takes the elasticity as an input and spits out an insight like 'Yes, the system will be very congested' or 'No, it won't be,' a service provider can plan accordingly."

Second, in order to encourage customers to choose the higher-priced service, you must ensure that high-end customers suffer shorter delays than low-end customers—although the infrastructure supporting both types of service may be largely the same. Some companies deliberately provide slower service to low-end customers even though they could provide faster service at no extra cost. Recent work by Maglaras and Zeevi

articulates in what situations this strategy would significantly increase profits.

"How do you segment the market in a way that people who are willing to pay more will indeed pay more?" asks Zeevi. "One possibility is to offer two classes of service, where the lower-end customers experience high congestion because resources are mostly used to serve high-paying customers." In some cases this approach may not achieve sufficient differentiation, and high-paying customers may choose the lower-end service. "To prevent this from happening," Zeevi says, "the service provider may artificially degrade the quality of the lower-end service—for example, imagine holding completed orders at a warehouse before shipping them out, or slowing down the rate of an Internet connection."

Whether you opt for a tiered pricing structure or a one-rate-fits-all strategy, Maglaras and Zeevi's research offers insights to help you strike the right balance between price and service quality. "If you're offering good service quality at a high price," says Zeevi, "you need to have ample capacity to actually make sure that service quality is being delivered."

Read More

Maglaras, Costis, and Assaf Zeevi. "Pricing and Performance Analysis for a System with Differentiated Services and Customer Choice." Working paper, Columbia Business School, 2006.

Maglaras, Costis, and Assaf Zeevi. "Pricing and Design of Differential Services: Approximate Analysis and Structural Insights." *Operations Research* 53, no. 2 (2005): 242–62.

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Costis Maglaras is the Philip H. Geier, Jr., Associate Professor of Business and **Assaf Zeevi** is the Gantcher Associate Professor of Business at Columbia Business School.



What's Your Brand Worth?

A product's revenue premium is a more accurate measure of brand equity than its price premium.

Many companies view the difference in price between a branded good and a generic substitute as a rough measure of brand equity. But that rule of thumb ignores the impact of price on sales volume. When you take volume into account, a product with a modest price premium may well have greater brand equity than one with a higher price premium.

"I can charge a very high price and sell very few units or a very low price and sell lots of units," says Professor **Donald Lehmann**. "Those are strategic decisions a firm makes depending on the demand curve it faces."

Based on that simple observation, revenue should give you a better sense of a product's brand equity than price. To test that assumption, Lehmann and Kusum Ailawadi and Scott Neslin of Dartmouth studied the revenue premiums of grocery store products in 17 categories, using scanner-based data to compare revenues of the top branded goods in each category to those of a generic product.

The researchers included in their models advertising expenditures for the branded goods as well as data on the perceived quality of the generic goods. As expected, the results showed that when you advertise more, your brand equity—as measured by your revenue premium—gets bigger. And in categories where the generic product has a higher quality rating, the branded goods have a lower revenue premium.

This research has two main implications for firms that market branded consumer goods. First, a product's revenue premium gives you important information about how your brand is evolving. "You ought to be measuring the revenue premium of your product versus some standard of comparison and noticing how this premium changes over time," says Lehmann, "because

that's a pretty strong early warning signal about what's likely to happen to your brand in the future." That standard of comparison could be a generic product, the cheapest brand or an average of all other brands in the category.

You ought to be measuring the revenue premium of your product versus some standard of comparison and noticing how this premium changes over time.

If your revenue premium goes up, you might capitalize on your growing brand equity by raising your price or spending a little less on advertising. If your revenue premium falls, you might consider lowering your price, increasing your advertising budget or revamping your product. "Automatically cutting price in response to a drop in sales is not necessarily a good idea," warns Lehmann, "because there's a whole other field of literature showing that people infer quality from price."

The study's second insight is that brand equity doesn't just show up in a product's price premium—it also shows up in the number of units sold. In fact, if you break down the revenue premium for most branded consumer goods, you find that brand equity manifests itself largely in increased volume, not higher prices. That's likely due to the fact that most branded goods have at least one branded competitor that is a close substitute.

"If there were only one name brand, it could well take its premium in price," says Lehmann. "But to a lot of people Coke and Pepsi are interchangeable, which is why they buy whichever is

on special. So Coke can't raise its price, because that group of people—which is substantial—just switches to Pepsi."

An increase in sales volume can come about indirectly, because if you have brand equity, you're able to get your product into more channels. A 7-Eleven

store, for example, only carries the top two or three brands in each category because of limited shelf space. "Brand equity should help you get more placements and better shelf placings," Lehmann says. "Because you have better shelf placings, customers may infer that this is a good

brand. In any event, it's easier to buy a widely available brand than one available only in selective outlets."

Lehmann emphasizes that since revenue premium is a top-line calculation, it isn't equivalent to the extra market capitalization you would expect to see as a result of brand equity. "Managers spend an awful lot of time looking at ticker tapes," he says. "They ought to be looking at things like revenue premium and customer satisfaction, since that's what's eventually going to drive the stock price."

Read More

Ailawadi, Kusum L., Donald R. Lehmann and Scott A. Neslin. "Revenue Premium as an Outcome Measure of Brand Equity." *Journal of Marketing* 67, no. 4 (2003): 1–17.

Donald Lehmann is the George E. Warren Professor of Business at Columbia Business School.

THE IDEA: Internal discounts for buying divisions within companies may enhance the efficiency of market-based transfer pricing.

THE RESEARCH

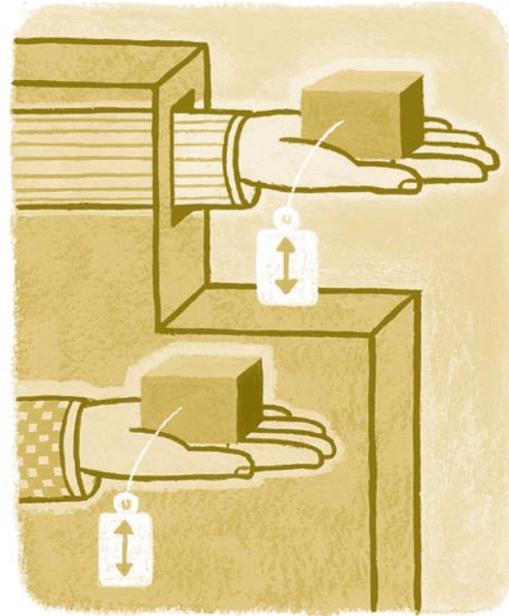
Many companies use market-based transfer pricing to value internal sales of intermediate products. This practice leads to efficient outcomes if the external market for the product is perfectly competitive. But what if the product is specialized or proprietary? **Tim Baldenius** and Stefan Reichelstein studied the efficiency of market-based transfer pricing when the division that makes the product has effective monopoly power, usually due to intellectual property rights. They found that the profit impact of tying the internal transfer price to the external market price hinges on the available

production capacity of the upstream division.

The study showed that if the upstream division has market power, the external price generally exceeds the marginal cost of supplying the product to a downstream division.

Trading internally at the market price thus allocates too

much capacity to external sales and not enough to internal sales. The researchers found that if capacity is constrained, internal discounts will always mitigate this distortion and lead to a more efficient resource allocation for the firm overall. If capacity is not constrained, internal discounts have an ambiguous impact: the downstream division will often be better off, but the upstream division's profit in the external market may go down, so the net effect on the firm's profit can be either positive or negative.



PRACTICAL APPLICATIONS

CFOs and managerial accountants

You can use the findings from this study to decide whether to offer discounts to internal buyers of intermediate products and to determine how large such discounts should be. With constrained upstream capacity, suitably adjusted market-based transfer prices tend to achieve efficient outcomes. If the upstream division has effectively unlimited capacity, market-based transfer pricing combined with internal discounts may still work well, especially if the external market is large relative to the internal market. This research helps you design discount rules that maximize your firm's overall profit.

Read More

Baldenius, Tim, and Stefan Reichelstein. "External and Internal Pricing in Multidivisional Firms." *Journal of Accounting Research* 44, no. 1 (2006): 1–28.

Tim Baldenius is the David W. Zalaznick Associate Professor of Business at Columbia Business School.

With constrained upstream capacity, suitably adjusted market-based transfer prices tend to achieve efficient outcomes.

Managing Global Accounts

Q & A with Noel Capon

In the future, global companies will do more and more business with other global companies. G2G is a different game from B2B. Noel Capon explains how to make the shift.

In your new book *Managing Global Accounts*, you mention that globalizing firms often overlook the globalization of customers.

There's an awful lot of talk about globalization, and there are books, but they tend to be more macro and do not get inside the organization. This book is really about getting inside the organization. I teamed up with two former senior executives—Fred Schindler from IBM and Dave Potter from Xerox—so the book brings together their extensive real-world experience and my research, which is based in part on a forum that we've been holding here at Columbia.

The starting point is the way companies are organized for global business, and many of them are organized by geography. They have a person in

charge of a country—the country manager for Argentina, for example—and that country manager reports up to a regional head. That particular structure works very well with the management theory that says you push responsibility and authority down in the organization.

occurred is the changing cost structure of organizations. If you divide companies' costs into procurement costs and internal costs, there's a secular shift towards more procurement. So if you're a general manager or CEO and you're concerned about getting cost improvements, a fairly obvious place to look today is in procurement. And the people that are moving into procurement jobs often are very high fliers, so the management expertise in procurement is much greater today than it was a number of years ago.

With that as a backdrop, what companies are also doing because of globalization is looking at ways to buy products and services globally. In this geographic structure, let's suppose that there's a meeting where this new global procurement guy from corporate meets with all the procurement managers from different countries. And let's suppose they start talking about the prices they're paying for some product that they all buy. If you go around the room, it becomes pretty clear that the

price is different in different countries. It also becomes pretty clear that what the suppliers are doing is segmenting by geography and extracting the best prices

And then somebody says, "It would be a great idea to

procure globally, because rather than buying little bits of stuff we'd be buying huge contracts, and the prices would go down." So then they say, "OK, let's call the supplier and talk about this." But then they call the supplier and there's nobody to talk to, because the supplier is organized exactly the same



"What companies are also doing because of globalization is looking at ways to buy products and services globally."

— Noel Capon

way. They've got somebody in charge of sales in Argentina, and that person is measured on how well he or she does in Argentina. Nobody cares about this customer in all the different countries. They care about them in the individual countries, but nobody cares overall.

Should every company that operates internationally have a global accounts program?

I think that depends. If your customers are going to some form of global procurement, you have to match that in your organization, absolutely. Now, let's suppose you've got a big multinational customer that isn't buying globally. It seems to me that if you've got a global program in place, then you can be very helpful to that company as it moves to global procurement. So I wouldn't say everyone has to have one, but the forces out there seem to be changing the procurement behavior, and if that changes, then you've got to do it. And it doesn't matter whether the supplier is a big company or a small company.

The book notes that many top companies have tried unsuccessfully to leverage their strategic accounts program into a global accounts program. What pitfalls should companies watch out for while setting up a global program?

There are problems on the customer side and on the supplier side. Let me begin with the customer side. Taking the example I used before of all these

Basically, organizational change is what it's all about. And with any change in an organization, some people will be in favor of it and some people will be against it.

charge of a country—the country manager for Argentina, for example—and that country manager reports up to a regional head. That particular structure works very well with the management theory that says you push responsibility and authority down in the organization.

Now, another major trend that's

procurement managers talking about the different prices they pay, let's suppose that the average price across all the countries is \$100. And they think, if we go to global procurement, we'll probably get that down to \$80. The countries that are paying \$120 or \$130 think that's great. The countries that are paying \$60 might not be very happy about global procurement.

It's the same sort of issue on the supplier side. If I'm the general manager of

regional heads are very powerful people. It may not immediately be the thing that they want to do.

So that's why you say that the scope of the program should be directly tied to the level of commitment on the part of top management?

That's right—for this to work, top management's got to be behind it. The second issue is start it small, because it's very complicated to do. Companies will screw it up, inevitably, because there

are so many moving parts. So do it on two or three or four or five customers, get it right and then roll it out. That's how the best companies have done it. IBM is right at the forefront of this, but they've had three or four different iterations in the last 10 or 15 years. I remember a country manager in France telling me that if he called a cabinet minister, the cabinet minister would return his calls. When IBM withdrew the budgets from the country managers, the country manager job totally changed. That change is very tough to implement, and you don't just do it unless the

person on top is saying, "This is the way we've got to go."

Can you talk about an example of a company with a successful global account program?

IBM is really pretty successful. What they did was to divide the world up into industries. So if you take a manufacturing organization, the global account manager for that customer would report up through that industry rather than through a geography. That's a very big change. They've got to the stage now where they have really senior executives running their major global accounts, because

those accounts are worth a lot of money. If you've got a company that gives you \$100 million in revenue a year, if you use a 10 percent discount rate, that makes a lifetime value of a billion dollars.

Citibank is also pretty successful. IBM's program is probably around 200 accounts. Citibank has 1,600 or 1,700 accounts, and they put a tremendous amount of effort into the people that serve in those global account manager roles, right through to all the systems and processes you've got to have to make it work.

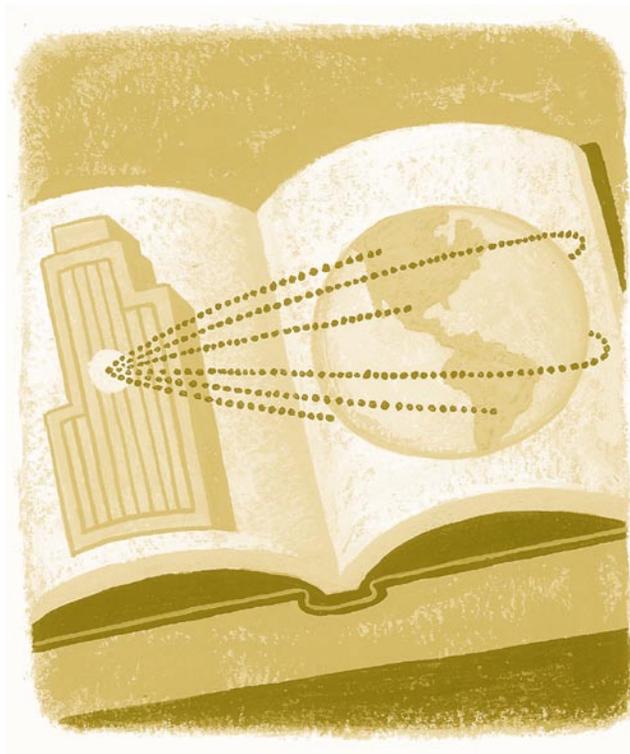
One of the major problems people run into is very simply the accounting system. Going back to where we started, with my multinational supplier, there's a P&L statement almost certainly for Argentina. There's a P&L statement probably for the Latin American region. There are almost certainly P&L statements for the various products they sell. But there aren't P&L statements for customers. So this customer is around the world. Do we know if we're making any money off them or not? And so one of the things that companies are having to do is to put in systems that enable them to look at Siemens and say, "Are we making any money off of Siemens?"

There's this old statement in management: If you can't measure it, you can't manage it. And many companies are sort of in the dark because they just don't have that data.

Read More

Capon, Noel, Dave Potter and Fred Schindler. *Managing Global Accounts: Nine Critical Factors for a World-Class Program*. Mason, OH: Thomson South-Western Educational & Professional Press, 2005.

Noel Capon is the R. C. Kopf Professor of International Marketing and chair of the Marketing Division at Columbia Business School.



Argentina and I'm getting sales revenue out of one of these global customers, and now in comes some other unit that's going to have responsibility, that's cutting into my direct authority and responsibility. So there are a lot of internal problems, shifting from this very well entrenched geographic structure into some other structure that's dealing with customers on a global basis. Basically, organizational change is what it's all about. And with any change in an organization, some people will be in favor of it and some people will be against it. Very often the country managers and

Making Health Care Markets Work

Q & A with Glenn Hubbard

Glenn Hubbard explains five reforms to the U.S. health care system that would save as much as \$60 billion a year while extending coverage and increasing consumer choice.

You propose a set of tax reforms that would encourage people to spend less on insurance premiums and more on direct health care expenses. Explain how these changes would cut costs, increase consumer choice and reduce the number of uninsured people.

As somebody who's studied health care markets for a long time, I'd like to see us return more to patient-centered medicine, where doctors and patients are making decisions. But you can't do that if the patient is not at the center of choice. And in the United States, five out of every six dollars that are spent on health care are spent by somebody other than the customer. Insurance is the big reason. During World War II,

health insurance benefits from an employer were made tax-exempt. That's continued, and what it's done is distort the [cost] of insurance that your employer buys and not give you the same subsidy if you buy it on your own or if you decide just to go to the doctor on your own.

So you wind up with very expensive Cadillac coverage, and that's important for two reasons. One, in health care it's driving up costs, because you have excess demand. Also, for a worker, you might prefer to have higher wages but lower health insurance, but it's not your choice. If [we] did some tax reforms that said it's the same tax subsidy whether your employer buys your plan, you buy a plan on your own or you go to the doctor on your own, you might go to your employer and say, "I'd rather have a little bit less health insurance and a little more wages." Dan Kessler and John Kogan and I estimate that could cut health care costs significantly by making consumers better shoppers.

Partly this is about portability. One thing that can tie you to one employer is the fact that you may get health insurance. You may want to take another opportunity, but are you going to get insurance? Insurance should really follow the individual, not the company. I think if we had these reforms, you would see people buying more policies in the individual market.

Can you briefly describe the changes you would make to the tax code?

What we would do is start out by basically making a level playing field for tax policy. Currently, when your employer buys



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insurance, you don't pay tax on that. But how about having it be that if you go to the doctor on your own, that's also tax deductible. Or if you decided, "I don't want to buy this plan; I want to buy that plan," that's tax deductible.

So that's the first tax piece. The second is to expand health savings accounts, which are already in the law—to make you able to have this deductibility arrangement in the context of a health savings account. So you could put money in but carry it over from year to year. There are all kinds of reasons why people might want to do that, and it gives them greater flexibility.

The third reform would be to have tax income credits for low-income families who don't benefit from tax savings currently. I think fairness suggests they should get a benefit.

You note that insurance regulation at the state level drives up insurance costs by 5 to 15 percent. Who would benefit most from your proposal to allow insurance companies to offer coverage on a nationwide basis?

Interestingly, the least well off among us. Currently, most people who have high incomes tend to work for large employers, and any large employer is in the federal marketplace already. Lots of states have benefit mandates. In the old days, there were a handful of benefit mandates across the 50 states; now there are hundreds of them. They cover things ranging from mandatory childbirth



coverage to psychiatric to chiropractic. I don't mean to say any of these aren't worth covering, but why should everybody be forced to buy that coverage that they may not have any interest in whatsoever?

The Congressional Budget Office says state regulation raises the cost of insurance by as much as 15 percent. And then we wonder why so many people are uninsured. It's interesting that a third of the uninsured make more than \$50,000 a year, which means they're voluntarily deciding not to buy health insurance—it's not that they can't afford health insurance. And the reason is that in the individual market, if you work for yourself or if you work for a small employer who's not in an ERISA plan, insurance is prohibitively expensive.

What we proposed was not to tell states what to do, but we said we're going to exploit competition. We'll offer a side-by-side federal product that's stripped of mandates. And so if you wanted to buy a low-cost plan that didn't mandate chiropractic and psychiatric coverage, you could buy it in the federal

insurance in the classic sense is against very large, catastrophic risk. You don't have car insurance to buy gasoline; you have insurance in case the car is wrecked. But that isn't how health insurance works. That's the first departure.

The other is the chronically ill. Insurance is about catastrophe—it's about big, one-time events. Chronic illness isn't insurable once it's known. What we propose is a fairly significant public subsidy to the chronically ill to take these people out of private risk pools, because as it is, they're raising the cost. My fear is that's driving up insurance costs and making people go without insurance. I'd rather cover those people straightforwardly through a public subsidy.

You propose reforms in three other areas where health care markets are not functioning effectively: information, anticompetitive behavior and medical malpractice. How would your reforms in these areas benefit consumers?

Your first two questions were about the supply and demand factors—that health insurance for individuals isn't easily available and people don't necessarily

want to buy it because public policy's pushing them in the wrong direction. But even if those markets were working, people need better information. Now, you don't have much information about the quality of providers.

Partly it's tradition,

but partly it's the fact that litigation has stopped people from sharing information about mistakes. There are some litigation reforms that would make it easier and give consumers better information.

Normally, when I talk about health care to big audiences, doctors in the room are with me for most of the conversation, and when I start talking about competition, that's where they get off the bus. I believe that we have significant competition-policy problems in health care. I think there are some specialist

societies that are behaving blatantly anticompetitively, and I think there are some hospitals that are using market power that we don't usually tolerate. This would require no change in the law, simply for the Justice Department or the Federal Trade Commission to enforce the law.

Medical malpractice is actually pretty serious, because the cost of medical malpractice is between 7 and 10 percent of individual health insurance premiums, and it significantly discourages people from buying insurance. We propose a set of litigation reforms that essentially would cap [awards] at economic damages—the actual damages—and some different dispute-resolution mechanisms that could really lower costs.

There is no silver bullet in health care reform. But what we could do is actually give markets a chance to work, and in order to do that you have to make these changes. But in no way do I think that even doing all of these would be a silver bullet. It doesn't exist.

Read More

Cogan, John F., R. Glenn Hubbard and Daniel P. Kessler. *Healthy, Wealthy and Wise: Five Steps to a Better Health Care System*. Washington, DC: AEI Press, 2005.

Glenn Hubbard is dean of Columbia Business School and the Russell L. Carson Professor of Finance and Economics.

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market. I believe that discipline will force states to get in line—otherwise they'll lose the healthy people to the federal market.

What kind of protection would your plan offer to chronically ill patients, who are not well served by competitive insurance markets?

This is a really important problem, because the economics of insurance are being violated in a couple ways. One is that employer-provided insurance is mostly prepaid health care. True

Fixing Social Security

Progressive Personal Accounts— a new plan for reforming the U.S. public pension system— could satisfy Democrats and Republicans.

Last year Americans spent a great deal of time debating Social Security reform. While both major political parties claim they are committed to improving this important program, neither side has yet put forward a politically acceptable solution. President Bush's proposal to partially privatize the system attracted strong opposition from Democrats and only lukewarm support from Republicans. That plan would have allowed younger workers to divert some of their Social Security taxes into individual accounts invested in stocks and bonds.

"One of the things that Republicans value most about individual account proposals is the enhancement of property rights," says Professor **Stephen Zeldes**. "You have a certain amount of money that's yours, and the government can't take it away. They also like the transparency of individual accounts and the market valuation of assets—the fact that you can see how much your assets are worth in the marketplace."

But for many Democrats, the president's proposal was too risky, especially from the perspective of lower-income workers. The features of the current system that Democrats value most are guaranteed benefits and redistribution—the fact that lower-income people get a higher payback for each dollar they pay into the system. "Democrats also like the fact that there's some insurance across generations," Zeldes says. "Benefits are tied to aggregate average wages, so if young workers are doing well, it improves the benefits of workers who are about to retire."

Working under a grant from the Social Security Administration, Zeldes and Professor John Geanakoplos of Yale have come up with an individual accounts proposal that could please Democrats as well as Republicans.

Their progressive personal accounts (PPA) proposal combines the core features that matter most to both parties.

The first step toward a politically feasible solution was using new language. "Even though the current system is usually couched in terms of defined benefits," Zeldes says, "with some relabeling, it's actually not that different from a personal accounts system."

The next step was devising a system that offers property rights, market valuation and transparency while preserving the redistribution, risk-sharing and security aspects of Social Security that are important to Democrats.

Here's how a PPA system would meet all of those requirements:

- **Property rights:** The government issues a new type of financial security called a PAAW (personal annuitized average wage). It's like a bond, but its payoff is tied to economy-wide average labor earnings. You accumulate PAAWs in a personal account, accruing so many units for each dollar you contribute in Social Security taxes.
- **Market valuation:** The government requires you to sell a small percentage of your PAAWs. These assets get pooled and traded in financial markets, and their market price gives you an indicator of the current value of the benefits you will eventually receive.
- **Transparency:** Your accrued benefits are clearly spelled out and measured in units of a security with a well-defined payoff.
- **Redistribution:** The government matches your contributions—like a 401(k)—but the level of the match varies based on your total past contributions. So people with a low lifetime income get a higher match, while people with a high lifetime income get a lower match or, possibly, a tax.
- **Risk sharing:** When you retire, each PAAW in your account pays a fraction of the average labor earnings in the economy in that year.



• **Security:** The payouts on your PAAWs, which automatically rise to compensate for inflation, continue for as long as you live, thus providing considerable security in your old age. Because you are allowed to sell only a small fraction of your PAAWs, there is very little portfolio choice and thus limited opportunity to make costly mistakes.

Zeldes and Geanakoplos are currently refining their proposal so that the system becomes self-balancing, reducing the future need for Congress to tinker with the program rules. Because implementing a PPA system would require some intermediate steps, including the creation of a new security, the proposal does not offer an immediate solution. But based on the outcome of last year's debate, a quick fix for Social Security is unlikely to emerge.

"We're hoping," says Zeldes, "that this plan could be the best of both worlds."

Read More

Geanakoplos, John, and Stephen Zeldes. "Reforming Social Security with Progressive Personal Accounts." Working paper, Columbia Business School, 2006.

Stephen Zeldes is the Benjamin Rosen Professor of Finance and Economics at Columbia Business School.

Outsourcing and Technological Change

If your industry has a high rate of technological change, are you more likely to outsource?

If you owned a print shop 60 years ago, you might have hired an in-house repairperson to maintain your machines. Today, you'd probably rely on an outside repair service. The main reason for this shift is not that you now have fancier machines but that you replace them at much more frequent intervals. "If every two years you have to retrain the worker to fix your machines," says Professor **Nachum Sicherman**, "maybe you'd better outsource the repair to some outside agency, because they do it on a larger scale."

The dramatic growth of outsourcing—including the use of temp agencies and consultants—in the past 30 years has redefined the scope of firms in many industries. As outsourcing has moved up

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the value chain from cleaning and secretarial services to higher-skilled services, especially those related to information technology, firms are increasingly weighing the tradeoffs between hiring and outsourcing for a wide range of jobs.

To what extent is technology driving the outsourcing boom? Sicherman and Professor **Ann Bartel** of Columbia and Saul Lach of Hebrew University set out to answer this question by studying U.S. Census Bureau data from manufacturing firms. More specifically, they wanted to find out whether high rates of technological change tilt the balance toward outsourcing in particular sectors.

"We tried to examine the different channels by which technological change could increase the incentive of firms to outsource," says Sicherman. "Some of it is tautological: if the nature of the technology is such that it makes it easier to outsource, then you see more outsourcing. But theoretically, just because you use more-sophisticated technologies, there is nothing that says why it should be easier to outsource. If instead of using a regular broom to clean the floor you are using an electric broom that allows you to do it faster, it's not clear that you should now outsource it rather than doing it in-house."

The study showed that technology reduces the relative cost of outsourcing and that firms with a more advanced technology infrastructure tend to outsource more. Such firms are more likely to outsource not just computer-related services but also other services—such

as legal and accounting services—that rely on technology.

The researchers hoped to prove that firms in sectors with higher rates of technological change rely more heavily on outsourcing, but the survey data were not detailed enough to show the effect of technological change. "We were not

able to distinguish between sectors that are more high-tech and sectors that just have more frequent changes," Sicherman says. The researchers recently gained access to a Spanish data set with more detailed survey questions, which they hope will provide more conclusive evidence.

Through interviews, however, the researchers have found anecdotal support for the hypothesis that technological change—rather than technology per se—induces companies to outsource. One software company, for example, used consultants for database programming and employees for other types of

computer programming. The company switched database programs frequently, and it was cheaper to swap out the consultants on a regular basis than to retrain employees on a new program.

Sicherman emphasizes that the impact of technological change on outsourcing is not limited to the information technology sector. "If you look at technological changes in the last 20 or 30 years, most of them have been in information technology and computers," he says. "But my father is a carpenter and my brother is a carpenter. My father changed the machines every 20 years. My brother is changing them every five years. So I don't think it's mainly a story about computers. I think it's mainly about the fact that you change the technology with which you do your product."

Read More

Bartel, Ann, Saul Lach and Nachum Sicherman. "Outsourcing and Technological Change." Working paper, National Bureau of Economic Research, 2006.

Nachum Sicherman is professor of finance and economics and **Ann Bartel** is the A. Barton Hepburn Professor of Economics at Columbia Business School.

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THE IDEA: Alan Greenspan's implicit policy of low and stable inflation needs explicit adoption after he leaves the Fed.

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THE RESEARCH

Frederic Mishkin studied the elements of monetary policy that made Alan Greenspan's tenure as chairman of the Federal Reserve so successful. Three elements stand out: an effective inflation target; a combination of long-run and preventive policies on inflation; and more transparency about the Fed's actions. The result has been an outstanding period of low and stable inflation that contributed greatly to economic growth. Greenspan's stellar record gave him tremendous leeway to undertake these strategies and, as conditions change, adjust them as he sees fit.

Greenspan's successor will not start out with the same degree of trust and will need help in resisting pressure from lawmakers and the public to take actions that seem better in the short run but hurt the economy in the longer

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run. Mishkin recommends that the Fed adopt as explicit policy the key implicit elements of Greenspan's strategy.

First, the Fed should announce a long-run target for inflation. Second, the Fed should explain clearly how such a target is the best way to fulfill over time both sides of its official mandate: high employment and stable prices. Third,

the Fed should declare that it will take a full range of measures in the face of future unforeseen inflation shocks to bring the economy back toward its long-run target. Fourth, the Fed should limit its further transparency beyond these explicit measures, as the public is less likely to understand other policy adjustments as circumstances change.



PRACTICAL APPLICATIONS

The U.S. monetary policy community

There are many institutions and individuals involved in a formal and informal way in setting the climate for Fed policy. This study offers a summary analysis for everyone to understand how to preserve the best elements of Greenspan's legacy through future Fed policies. An informed policy community can be a key ally for the Fed to stay on the right track after Greenspan.

Other central banks

This study provides an accessible summary of the key accomplishments of Alan Greenspan at the Fed for your consideration and possible emulation.

Read More

Frederic Mishkin. "The Fed after Greenspan." Presidential address at the Eastern Economic Association meetings, New York, March 4, 2005.

Frederic Mishkin is the Alfred Lerner Professor of Banking and Financial Institutions at Columbia Business School.

Coming Soon: Watch for a Q&A with Professor Mishkin about his new book, *The Next Great Globalization: How Disadvantaged Nations Can Harness Their Financial Systems to Get Rich*, in the next issue of Columbia Ideas at Work.

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THE IDEA: Exploiting information from a large set of economic indicators gives a better picture of monetary policy and how it affects the economy.
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THE RESEARCH

Ben Bernanke, **Jean Boivin** and Piotr Eliaszc took a fresh look at popular small-scale empirical models—vector autoregressions, or VARs—for tracking the evolution of the economy and how monetary policy affects it. These empirical models are typically based on fewer than seven or so macroeconomic indicators, because including more makes statistics unworkable. Yet in reality, many more indicators might be required to properly summarize and forecast the state of the economy. Financial markets and central banks do in fact keep track of hundreds of data series. This research solved the problem by condensing information from a large number of indicators into a few indices, an approach that requires the extra step of estimating the summary indices. The result is a factor-augmented vector autoregression, or FAVAR.

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In this study, the researchers looked at data on the U.S. economy as a whole from 1959 through 2001. They compared a FAVAR model that used 120 key macroeconomic indicators to standard small-scale empirical models that used particular rather than summary variables. The results showed that the FAVAR method provides a more

accurate characterization of the conduct of monetary policy and a more comprehensive picture of the effects of policy changes on various dimensions of the economy.



PRACTICAL APPLICATIONS

Fed watchers, forecasters and central bank economists

You can use this research method to add more information to the empirical analysis of monetary policy. It systematically summarizes a small number of trends from a broad range of economic variables that you typically track, which lets you see how those variables respond to monetary policy changes. By providing a more complete account of the information tracked by central banks, the FAVAR method gives you a more accurate description of policy behavior and expected policy changes, as well as a fuller picture of the impact of a policy change.

Read More

Bernanke, Ben, Jean Boivin and Piotr Eliaszc. “Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach.” *Quarterly Journal of Economics* 120, no. 1 (2005): 387–422.

Jean Boivin is associate professor of finance and economics at Columbia Business School.



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Off the Shelf: Dean Glenn Hubbard offers a market-driven solution to America's health care woes, while Noel Capon explains the challenges and opportunities of global-to-global marketing.

Other Features: Read about a plan that could avert America's looming Social Security crisis, find out why firms with high rates of technological change outsource more and learn how the Federal Reserve can build on Alan Greenspan's success.

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