The Depression’s Other Face
How Innovation Surged During an Economic Crisis

The images of the Great Depression are familiar to most Americans: Soup kitchens, the Dust Bowl, people waiting in long lines for a handful of available jobs. It’s a panorama of human misery reflecting an unemployment rate that rose from 3 percent before the 1929 stock market crash to 25 percent by the time Franklin D. Roosevelt took office in 1933.

At the same time another, more hopeful development, largely overlooked by historians, was taking place. Dramatic advances in technology—such as the invention of nylon and television—were occurring in many industries. Coupled with improvements in public infrastructure, as well as business organization and management, these advances increased America’s potential output, helping us win the war and establishing foundations for postwar prosperity.

“If you look at the last century of U.S. economic history,” Field says, “the 1930s were the most technologically progressive decade.”

More than the 1990s, with the Internet and advances in computer technology?

“There’s no denying that computers and the internet have changed our lives,” Field says, “but the locus of change has been substantially narrower. Computers experienced dramatic improvement, but cars, planes, and appliances didn’t really change that much. In the 1930s, there wasn’t just one set of innovations, but a broad range of them in many areas of the economy.”

Among the examples Field cites:

- Construction of major hydroelectric projects, powering national industrial capacity.
- Significant advances in aircraft design, including the DC-3, perhaps the most successful plane ever.
- Major improvements in automobiles, including streamlined body design, heaters, radios and automatic transmissions.
- The creation of television, which made its debut at the 1939-40 World’s Fair in New York.
- Dramatic changes in use and affordability of appliances. For example, the number of families with mechanical refrigerators (not iceboxes) rose from 3 percent in 1929 to 44 percent in 1941. This reflects another little-known reality of the Depression years: For most Americans who were working, real hourly wages went up.

Field, who is also Executive Director of the Economic History Association, says he became particularly interested in the economic complexities of the Depression years about a decade ago when he began to wonder why productivity advanced steadily during such rough economic times. As he looked into it, he concluded that three factors in particular contributed to a dramatic growth in potential output:

- **Private-sector spending on research and development.** Despite the Depression, the number of scientists and engineers employed in R&D rose from just under 6,300 in 1929 to nearly 28,000 in 1940.

That spending closed the output gap, the difference between actual and potential, and in that sense the conventional wisdom that the war ended the Depression is correct, says Field. His book focuses, however, not just on the unemployment and output gap that defined the Depression but also on the growth in potential that enabled the country to put 12 million people in uniform, produce tens of thousands of tanks, ships and planes, and, by some measures, increase consumption during the war.

The 1930s were the most technologically progressive decade in the last century.

- **Government spending on infrastructure.** The original U.S. Highway system (not the Interstates; think U.S. 101 or Route 66) was completed in the 1930s as work continued on roads, bridges and tunnels. This helped the transportation sector—in particular trucking and railroads—to move goods more efficiently and improve wholesale and retail distribution.

That pre-1942 expansion in economic capacity set the stage for the golden age of improvement in the U.S. living standard between 1948 and 1973.

On the cover of Field’s book is a photograph of people at the GM Futurama exhibit during the 1939-40 World’s Fair. They lean forward, looking at the design of a future city in rapt wonder. Field says because they’d seen striking advances in the past decade, they could easily anticipate an exciting future. The technological boom in the midst of economic hardship was, Field suggests, a testament of sorts to the human spirit.

“When exciting technological paradigms are ripe for exploitation,” he says, “the people on the cutting edge are going to push forward, depression or no depression.”
It’s Not Just the Return
Investors Have Many Needs, and Need to Know Them

Meir Statman, one of the pioneers in behavioral finance, has been taking his ideas to academic audiences for decades. Now he’s used his wide knowledge of the field to write a book of advice, What Investors Really Want, that’s aimed at the ordinary investor.

“Today that’s the general public,” says Statman, Glenn Klinek Professor of Finance at the Leavey School of Business. “You can no longer count on retiring on a pension from your employer, so as employees have been thrown into 401Ks and IRAs, we’ve all become investors. This is really a book for everyone.”

Statman’s book, subtitled “Discover What Drives Investor Behavior and Make Smarter Financial Decisions,” was published earlier this year by McGraw-Hill. Its fundamental message to investors is that they’re probably not as rational as they think and need to take a hard look at their saving and investing with an understanding of what they really want.

“If you’re a normal investor,” he says, “you’re sometimes smart, sometimes stupid. Along the way you’ll make mistakes and be led by your emotions rather than pure reason.”

A purely rational investor, interested only in getting the best possible return, would invest in index funds, Statman says. Those funds comprise companies in an index (such as Standard and Poor’s 500), and consistently outperform managed funds, where investment advisors try to custom-pick stocks they think will outperform the market.

But isn’t the best return what everybody wants? Not at all, he says. If that were the case, index funds would account for far more than the 13 percent of the investment pool they now claim. He cites several examples of different investment objectives.

Some investors, including Santa Clara University, want their money to be used in a socially responsible way. They shun the stocks of companies involved in tobacco, alcohol, gambling and other perceived evils. Other investors love the thrill of the trade, and are willing to accept a lower return in exchange for the fun of playing the investment game and scoring an occasional big win. Still others are vehement about not paying taxes and will forgo a profit if it’s taxable.

“People want things that are different from simply a high return at a low risk.” Statman says. “Finance professionals often try to separate money from life. I say you can’t do that. Money is for living and enjoying life, so you have to ask what the money means to that investor.”
“This is why most people save, and it’s also why people buy lottery tickets. They dream of being able to do these things,” Statman says.

For a hedge-fund manager, who makes hundreds of millions a year and has no financial worries, the money is probably viewed in a different light.

“In that case,” Statman says, “the money is more likely to be used to satisfy emotional needs. For example, you might buy Picassos or other expensive works of art, enjoy them for a while, then donate them to a museum and perhaps get your name put on a wing. There would be the satisfaction of having experienced something special and having done some good for the world.”

Statman devotes an entire chapter to the question of saving vs. spending—an issue that precedes investment—and to the psychology and motivations behind it. The chapter title, consistent with the psychological paradox throughout the book, is “We Want to Save for Tomorrow and Spend It Today.” In it he talks about how to develop a system of mental accounting and self-control that allows a balance between saving enough and enjoying your money now.

Statman says a number of people have told him personally that the book has helped them see investment issues differently than they did before.

“If, on the other hand, you joined the herd that invested in Bernie Madoff’s fund, that was a mistake. The critical questions in appraising herd behavior are what, and how good, is the information driving the herd, and what are the potential consequences of joining the wrong herd. If you look at it this way, you see that herd behavior can be good or bad, depending on the circumstances.”

What Investors Really Want has been well-received in reviews, with critics praising its use of stories, anecdotes and humor to make its points. “This book is about normal investors like you and me,” Statman writes in the introduction. “We are ‘normal smart’ at times and ‘normal stupid’ at other times. We do our best to increase the ratio of smart behavior to stupid behavior, but we do not have computers for brains and we want benefits computers cannot comprehend.”

Over the years the Kouzes-Posner books have stood out from the competition because of their emphasis on personal values, character and keeping promises, as well as the extensive research they have done across many cultures and with several generations of business people. Their Leadership Practices Inventory (LPI), with more than 3.5 million responses, is one of the most widely used leadership assessments in the world.

"The fact that our viewpoint is evidence-based and appeals to the thinking person has had a lot to do with the longevity of our books," Posner says. "We've identified five key practices used by exemplary leaders, and while there's room for individual interpretation, these principles have come to have universal application."

Those five leadership practices are:
1) Model the way;
2) Inspire a shared vision;
3) Challenge the process;
4) Enable others to act; and
5) Encourage the heart.

A common theme: the leader can't do it alone

"No one we've asked has ever been unable to come up with an answer," Posner says. "Everybody's done this stuff and knows it at some intuitive level; we're trying to help people do it more frequently, comfortably and successfully."

A common theme in the responses, and a key point in The Truth About Leadership, is that the leader can't do it alone. Posner still remembers after more than a quarter century one of the earliest answers to the question, from a Silicon Valley executive who said, "It wasn’t my personal best; it was really our personal best."

Is it possible for a leader to excel in every area? "It's kind of like being an athlete in the pentathlon, where you have to compete in five different events," Posner says. "Nobody does them all equally skillfully, but in order to win, you have to reach a certain threshold of competence in each one of them."

The Truth About Leadership was, Posner says, in some ways an attempt to define leadership qualities for Millennials, persons born roughly between the mid-1980s and the early 2000s, including Posner and Kouzes' current students at Santa Clara University. This group gives similar answers to those of previous generations when presented with the questionnaires, which further validates the overall findings of their research.

The book’s first truth, which draws a positive response in Posner’s classes is, “You make a difference. Before you lead, you have to believe you can have a positive impact on others. You have to believe in yourself.” Posner says students want to believe they matter and can find their calling. They appreciate hearing that from an authority in the field of leadership and that he, in turn, wants to help young people develop self-confidence and skills necessary “to lead people to places they have never been before.”

“Our mission is to increase the quality and quantity of leaders in the world,” he says. “There's no shortage of opportunities to lead, but there is a shortage of people who are ready to step up to the challenge.”
Technology and Retailing

In a Tough Market, Computers Help Make Key Decisions

When Steve Smith and Naren Agrawal began looking at retail management practices two decades ago, personal computer use by retail chains was in its infancy and computers were mostly being used to follow the money.

“Back then,” Smith says, “all the retailers were using mainframes with terminals and the software had no decision-making capability.

Two OMIS faculty provide a road map to the new era of technology-driven retailing.

Its main purpose was keeping track of sales. As technology got cheaper and better, retailers were able to track such things as how many units of an item were sold at what price at each store. Retailers can now make decisions at a finer level of granularity.”

Agrawal adds that this is not simply a response to technological advancements; rather, it is due to monumental shifts in the retail industry. “In an increasingly competitive landscape, retailers have responded with innovative retail concepts and store formats. As a result, customers have more choices and higher expectations, and are not so forgiving when they can’t get what they want. Consequently, retailers have had to get smarter about using technology to be more responsive to customer needs.”

The missing link, however, was analytical capabilities that could convert the vast amounts of data collected by these technologies into profitable decisions by retail managers. This opportunity is what attracted Agrawal and Smith, professors in the OMIS department, to research new methodologies for retail operations.

In a recently completed book, Retail Supply Chain Management: Quantitative Models and Empirical Studies, published by Springer, they provide an overview of the state-of-the-art in retail supply chain management research, with contributions from leading experts in the field. The pair also wrote five of the book’s 12 chapters.

In the book, the SCU professors and their colleagues describe advances in inventory management, product assortment, promotion strategy and supply chain management. It is, in some ways, a road map to the new era of technology-driven retailing. In addition to current research, it also highlights a host of open questions. This combination should make it a valuable resource for academic researchers, as well as retail executives and analysts who are interested in reengineering their own operations.

“With the help of statistical methodologies to estimate not just what sold, but what could have sold if retailers had the proper inventory, and to update demand forecasts based on observed sales, retailers no longer have to rely solely on vendors for supply chain flexibility. In fact, our research has shown that the benefits from internal flexibility can be substantial,” says Agrawal. “As a result,” he says, “stores can customize their product assortment and inventory dynamically, by region, which can be critical to profitability because there are significant differences in taste, willingness to spend, and demographics.”

Solutions based on such research can significantly outperform subjective decisions made by retailers, as Smith found in his work on markdown optimization. They can also lead to counter-intuitive results. For example, if information about customer heterogeneity is included in an assortment optimization algorithm, the profit maximizing assortments may not contain the most popular products.

“A lot of the methods talked about in the book are sure to become a part of new technology and methodology for decision support capabilities,” says Smith. These techniques will be indispensable to retailers as the complexity of the industry continues to grow. Agrawal and Smith hope that the book will motivate further academic research in retail supply chain management, which will in turn advance the state of the art in retailing.
Business management theory has traditionally focused primarily on people and organization, but in the 21st century a third element has become a significant piece of the picture: Technology. Management Professor Terri Griffith has written a book aimed at helping executives integrate technology, both high and low, into their management style and practice.

Her new book, *The Plugged-In Manager*, will be published in October by Jossey-Bass. Griffith says the book grew out of a professional lifetime spent watching organizations fail to adapt technology to their needs. "It makes me sad to see technological innovations fail because people don’t know how to integrate them with the people and organization," she says. "For the most part it’s not because they don’t know how to do it, but because the big picture has never been presented in an easy-to-grasp way."

Griffith says she originally started out to write a book about management of the Facebook generation, but when she submitted the proposal to Jossey-Bass, the editor, Santa Clara graduate Genoveva Llosa, told her that several other books with that theme were already in the pipeline. Instead, Llosa suggested that Griffith develop a chapter on plugged-in management into a full book proposal, and that was what finally happened.

Filled with stories based on interviews with business leaders, the book focuses on integrating the management of people, organization and technology in a practical way.

"The how-to element is built into the book," Griffith says. "A company could hand it out in the new-hire goodie bag to help someone just starting out see how to develop and advance an idea."

One of her critical points is that technological change can’t stand alone but has to be implemented with wise consideration of the management of people and organization as well. The book’s subtitle is “Get in Tune With Your People, Technology and Organization to Thrive.”

In the first part of the book, Griffith outlines the three practices of plugged-in managers:

- They stop, look and listen before making changes. Too many managers, she says, make the mistake of going after every “shining object” they see, whether it be a new technology or a new management approach. A plugged-in manager will take some time to research and reflect on what it would really take to make the contemplated move, given the people, technology and organization involved.

- They mix together solutions that balance the people, technology and organizational process involved, resulting in a fully integrated approach that makes the best use of all three.

- Finally, they share what they know with others in the organization, modeling good plugged-in management behavior and encouraging others to develop the same skills.

A number of well-known firms are profiled in the book, including Nucor, Southwest Airlines, Providence Regional Medical Center, Zappos.com, and Intuit. One of the book’s stories, illustrating plugged-in manager concepts in action, has to do with the development of the Brainstorm program at Intuit.

Tad Milbourn came to Intuit (the maker of Quicken, Quick Books and TurboTax) straight out of the University of Wisconsin. Early in his employment he and several other new management employees were sent with a group of new technology employees to the company’s call center in Arizona to learn about the products and how customer questions are handled.
After returning to headquarters in Mountain View, Milbourn and some of the others continued to meet regularly to discuss work, taking advantage of Intuit’s policy of allowing employees 10 percent of their time to pursue any issue they want. An issue that quickly arose was the difficulty of finding and sharing information within the company, which was closely related to the complexities involved in proposing a new idea. They originally thought about starting a Facebook-type program to improve communication but decided instead to come up with something original. Over a weekend, one of the tech experts in the group put together a simple program in which an employee could click on one button to share an idea or click on another button to find out what ideas had been suggested by other employees.

Brainstorm, as the program was named, went viral within the company, which in turn developed it as a program that could be marketed to other companies to help in their idea development. It happened, Griffith said, because the people in the group stopped from their daily tasks to look at bigger issues, mixed their talents and understanding of the organization to come up with a solution, and grew the idea by sharing it within the company.

"Tad is a really smart guy with a broad education and an interest in how people do things," Griffith said. "That he and this group of new hires were able to take the lead in making this happen just goes to show that you don’t need 20 years of experience and you don’t have to be a technological guru to be an effective plugged-in manager."