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TELL ME A STORY: Jaume Villanueva's research shows how an entrepreneur's story can sway investors, yet still not close the deal.

The Power of the Story

Studying Its Impact on Prospective Investors

For as long as people have been able to communicate, there have been stories. The power of stories to provide legitimacy, confer meaning to events, to attract and inspire has been well documented in the humanities and sciences. Yet there has been relatively little research about the influence and effect of stories in real-world business settings.

The question has intrigued Jaume Villanueva, assistant professor of Management, who has been looking at how stories told by entrepreneurs might get at the "gut feel" investors have about a new venture. ►

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NEW LOOK, NEW NAME, ALWAYS NEW RESEARCH

Minds@Work is the new name of the Business School's research publication. The new name captures what we do best: innovative and influential research that connects theory and practice.

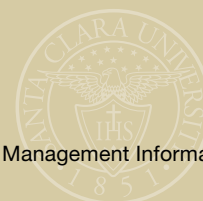
Universities are often accused of being ivory towers where scholars are isolated from students and the community. At Santa Clara, our teaching-scholars are part of a vibrant, collaborative community dedicated to solving real-world problems.

In this issue, we feature our newest colleagues and the scholarship that transforms the way we do business.

All the Best,

S. Andrew Starbird, Ph.D.

Dean and Professor of Operations & Management Information Systems



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“Most of the research in this field so far has focused on how entrepreneurs use stories to establish their legitimacy with investors: how do you get resources when you don’t have a track record and your business is not well understood,” Villanueva says. “I was trying to look at what happens when entrepreneurs use a story to make an idea more attractive or desirable, and how the investor reacts to that.”

“From the investor’s standpoint the thing that stands out is that it is really difficult to know *a priori* whether a business idea will work, so it made sense to hypothesize that a story would affect the investor’s decision at an intuitive level. There are powerful reasons why stories should matter in a highly uncertain context in which many decision makers make intuitive decisions.”

Villanueva’s findings are reported in a working paper, currently titled “Entrepreneurial Stories: Getting at the Gut Feel of Investors.”

To get at the effect of stories in this sort of entrepreneurial setting, Villanueva created four separate versions of a written presentation for a new venture opportunity and presented it to 188 “angel investors,” wealthy individuals who invest their own money.

The opportunity was presented to the investors as a non-narrative report in both basic and intense language, and as a narrative (story) report in both basic and intense language. In all four versions, the facts of the enterprise—including the nature of the market and the competence and record of the entrepreneurs—remained the same, and the investors were using the same set of investment guidelines.

What Villanueva found came as a surprise. He said that going into the project he had expected the power of the story to have a positive impact on investors. In many respects it did, but in one critical respect it didn’t, and that neutralized the other positive effects.

“Story matters in different ways,” he writes in his conclusion. “The story positively influences how investors perceive the motivation of the entrepreneur, how they identify with the entrepreneur, and the empathy they feel for the entrepreneur, which in turn positively affects their general assessment of the opportunity.”

Stories affect investors in surprising ways

“However, the story also influences negatively how investors evaluate the competence of the entrepreneur (perhaps because it violates their assumptions about the norms of what constitutes a professional business opportunity pitch—i.e. entrepreneurs must present the business opportunity in an institutionalized manner which does not involve using the canonical elements of a story) and ultimately also how they assess the opportunity.

“In other words, stories do affect how investors think and feel about the new venture, but the positive effects of the story on global assessments are suppressed by the negative ones.”

Debt and Taxes

How a Disconnect Could Explain Federal Bond Yields

Conventional economic models have had a difficult time making sense of a federal debt phenomenon: Several empirical analyses have shown that from the 1980s onward, it has often been the case that a rise in government debt has resulted in an increase in yield rates on U.S. government bonds of differing maturities, which are the means of financing that debt.

Arunima Sinha, assistant professor of Economics, has developed a model to explain what may be going on.

Sinha says that the households, businesses and countries that buy government bonds actually “forget” past experience with respect to the correlation between government debt and future higher taxes. “They don’t correctly understand how much taxes are apt to go up, so they consume more and that in turn affects interest rates and the economy. Increases in holdings of government bonds are perceived as an increase in net wealth of the agent, or bond holder. That creates a sense of false security.

“Since my model can explain the debt-yield correlation, it opens up a new channel to explore: How important are household expectations about future taxes, and how do these expectations affect consumption and savings decisions today?”



THE 'FORGETFUL' INVESTORS: Arunmia Sinha's economic model shows how investors' 'forgetting' or discounting the tax impacts of federal debt can affect long-term bond yields.

A "bounded rationality" model, which factors in that misconception, is laid out in Sinha's working paper, "Learning, Fiscal Policy and the Yield Curve." That model, she says, partly explains the actual connection between bond yields and debt over a 25-year period from 1984 to 2009.

That model looks at a larger yield curve that takes into account the rates on three-month, five-year and ten-year bonds. The shorter-term bonds reflect the interest rates that will be charged by commercial banks on quick-turnaround loans, while the longer-term bonds reflect the rates that will be charged on mortgages and major commercial investments.

While Sinha looked at the entire curve, she particularly focused on ten-year bonds and treasury notes, because those longer-term instruments are more likely to be affected

by the increase in government debt as that debt is dealt with during the term of the bond.

In the bounded rationality model developed by Sinha, investor forgetfulness is factored in by assuming that the investing

agents don't place enough weight on past experiences of future tax liability in relation to government debt.

"In this case," she writes, "while it is still true that the present value of the agents' future tax obligations is equal to the value

of government debt, the agents no longer understand this" and thus consume more, which drives up bond yields.

Sinha has a background in both finance and macroeconomics. Finance, she says focuses primarily on explaining asset prices, while macro attempts to explain statistical properties of variables such as consumption and investment. Using a macro-finance model she attempts to explain both variables in this situation (asset prices and consumption choices) when they are caused by factors inside the system.

"A lot of analyses up to now have focused on the effect of changes in government spending or taxes on interest rates, whereas my model emphasizes the effect of changes in total holdings of government debt," Sinha says. "It's a general equilibrium model in which the government issues riskless debt and the optimizing agents (the bond purchasers) are adaptive learners.

"Increased holdings in government bonds may lead to a false sense of security"

"This is a fairly flexible theoretical framework," she says. "Few analytical tools let you do what it does. This lets us take a new approach to some old questions."



HOW VOTERS CHOOSE: Ravi Shanmugam's research has found that negative advertising affects voter choices more than previous research would have suggested.

Going Negative

It Affects Voters' Choices More Than Previously Believed

Negative advertising has become a pervasive part of America's political landscape, yet there are substantial gaps in knowledge of how and whether it works. Most of the research has focused on its effect on voter turnout, generally concluding that negative ads tend to lower participation in elections.

Ravi Shanmugam, assistant professor of Marketing, has applied standard market-research techniques to a rich vein of election data and concluded that negative advertising has a statistically higher impact on voters' choice of a candidate than on turnout.

"We looked a lot more at the effect of negative advertising on voter choice," says Shanmugam. "We took the research techniques used to determine how people

make choices in basic product categories, such as toothpaste, and applied them to the broader choice voters make in deciding which candidate to vote for."

Those findings are reported in "Negative Advertising and Voter Choice," a working paper by Shanmugam, Hai Che and Ganesh Iyer.

Shanmugam and his colleagues were able to apply the market-research techniques to a wide range of data collected by the American National Election Studies Project at the University of Wisconsin during the 2000 presidential and congressional elections. That study provided detailed information on 1,807 individual voters around the country who were surveyed before and after the election. The ANES

study also compiled detailed information on different types of advertising deployed in election markets, which made it possible to categorize nearly every ad in every studied campaign as either positive or negative.

Several clear trends emerged from the study. One was that, as a rule, negative advertising tended to be more prevalent in the presidential campaigns than in congressional races. Republican candidate George W. Bush's ads were 68 percent negative, whereas Republican Congressional candidates' ads were only 49 percent negative.

The most likely explanation for this, Shanmugam says, is that many of the Republican Congressional candidates were incumbents, some in safe seats, who saw less need to go negative.

Negative campaigns affect voter choice more than voter turnout

"In many Congressional races, name recognition is the key hurdle a challenger has to overcome," Shanmugam says. "In those cases, incumbents might feel that negative advertising would give an opponent more attention."

Detailed analysis of advertising strategy also showed that negative advertising is more likely to be used in campaigns for closer races and in Congressional districts where the cost of advertising is relatively low. Campaigns are less likely to take a negative approach in markets with a more educated electorate, where advertising exaggerations or errors are more likely to be spotted, resulting in a backlash in favor of the candidate being attacked.

The most critical finding, however, was that when market-research techniques were applied to the data, it turned out that 80 percent of the impact of negative advertising was on the choice of candidate, and only 20 percent was reflected in voter turnout.

“This uncovering of the relatively high impact on voter candidate choice as compared to that on turnout is missing in existing political advertising studies,” the authors write.

Shanmugam says he was drawn to this research by a long-standing interest in American politics and that he hopes to do additional research building on the findings of this paper.

“Now that we have this information on the outcome of negative advertising, we have the potential to look at the actual traits of the ads,” he says. “The main way we can extend our research on political advertising would be to look at the content of negative ads and try to determine why some work and others don’t.”

The Scientist as Entrepreneur

Navigating the Waters Between Academia and Commerce

In recent years scientists at America’s universities have seen—and in many cases participated in—a higher level of commercialization of their research. Where scientists once focused almost entirely on their research and left its practical application to others, they now have to decide how much they want to become involved in business spawned by their efforts.



BETWEEN TWO WORLDS: Sanjay Jain’s research looks at how academic scientists react to, and become involved in, the commercialization of their research.

A critical question in the debate over the commercialization agenda is whether it is having a negative or positive impact on the mission of universities. Sanjay Jain, assistant professor of Management, has been studying the issue from the scientist’s perspective.

“We found that there was a lot of introspection on the part as scientists as they became involved in entrepreneurial activity” Jain says. “Scientists didn’t want to stop being scientists; there were a lot of different ways they expressed their love for the research freedom of the university and said they weren’t willing to let that go.”

Jain and his colleagues, Gerard George and Mark Maltarich, report their findings in an article “Academics or Entrepreneurs? Investigating Role Identity Modification of University Scientists Involved in Commercialization Activity,” recently published in the journal *Research Policy*.

Based on their own interviews with scientific academics, as well as an oral history project conducted by a large Midwest state university, they outlined various ways in which the ►

[continued from page 5 – The Scientist as Entrepreneur]

scientists addressed the challenge of getting involved in the commercialization of their inventions.

Typically, the result of research done by a university-employed scientist belongs to the university. Its Technology Transfer Office (TTO) decides whether or not to apply for a patent, then sets about licensing the patents that have been granted. Increasingly, those licenses are going to entrepreneurial start-ups, in which the scientist is in some way involved.

The paper reports that one reason scientists are willing to get involved in such a venture is that they can have more say in how their invention or research is used, or even if it is used at all.

“Sometimes new technologies are disruptive,” Jain says. “Some established companies are willing to acquire the rights to a patent so they can kill it and keep it from competing against their existing products.”

Having entered the entrepreneurial world, academic scientists develop a range of strategies for dealing with a new culture.

Some companies buy patent rights to keep disruptive technology off the market

“Once they find out how different the business world is, some of them dive in and try to master it themselves,” Jain says. “Others try to take a more hands-off approach and use graduate students, university support, and business professionals to do much of the work. In a majority of the cases, however, we found that while these individuals are taking on a hybrid identity, they typically accord priority to their academic self over their entrepreneurial one.”

Universities have been going through their own changes as they attempt to profit from the scientific research they support, and as that revenue becomes more critical in a time of decreased funding. Jain says his paper suggests some of the things universities will have to do to retain their top scientists.

“The onus moves to the university to balance the need to provide mechanisms that enable scientists to take on these more composite personae,” Jain says. “This could mean changing the sabbatical structure, putting more responsibility on the TTO or getting involved in public/private partnerships. One way or another, the contract between the scientist and the university has to be modified.”

Connected Directors

Why Mergers That Have Them Seem to Work out Better

Mergers and acquisitions have been prominent in business news for decades, yet for all the money and effort that goes into them, the acquiring firm is often afflicted with “winner’s curse”—a term used to describe market backlash over the value of the deal, often related to perceived overpayment for the target company.

Ye Cai, assistant professor of Finance, was intrigued by the phenomenon and wondered if “winner’s curse” was as prevalent when there were board connections between the acquiring and acquired firms. Accessing data recently made available, she and her co-author Merih Sevilir were able to determine that M&A transactions where such a connection existed were more likely to turn out better for the acquiring firm.

“When we started on this research we weren’t sure what to expect,” she says. “Some previous papers had suggested that the presence of informed insiders, such as interconnected directors, would help acquiring firms because they would be familiar with details about the acquired company and their presence might cause other bidders to back off. What we found supported that.”

Cai and Sevilir’s conclusions are laid out in a working paper, “Board Connections and M&A Transactions.” They began by looking at 5,055 M&A transactions between 1996 and 2008 for which



A KNOWING CONNECTION: Ye Cai's research posits that mergers or acquisitions benefit from connected directors, who are likely to know more about the acquired firm.

documents were recently placed online under a mandate from the Securities and Exchange Commission. After winnowing out transactions where information was insufficient, they ended with 1,664 that were subjected to further review.

Board connections were broken down into two types. First-degree connections are those in which both the acquiring and acquired company share at least one common member of their board of directors. Second-degree connections are those where one director from the acquirer and one director from the target have been serving on the board of a third firm before the deal announcement. For example, when Wells Fargo was acquiring Wachovia, a director from each bank was also serving on the board of Vulcan Industries.

In deals where a first-degree connection existed, announcement returns—

the acquirer's stock price in the days immediately before and after the deal is announced—were 2.45 percent greater than those in non-connected transactions. Where there was a second-degree connection, announcement returns were still a healthy 1.67 percent greater than in non-connected transactions.

"Our results suggest that first-degree connections benefit acquirers by providing them with an information advantage about the true value of the target firm, limiting competition from outside less informed bidders, and allowing them to acquire underperforming firms at an attractive price," Cai and Sevilir write. "In addition, advisory fees paid to investment banks are significantly lower in the presence of a first-degree connection.

"Second-degree connections, on the other hand, appear to facilitate efficient deal-making as evidenced by greater

overall value creation experienced by acquirer and target shareholders at the deal announcement, and better operating performance of the combined firm after the deal completion."

Board connections may lead to more accurate valuations of acquisition targets

First-degree connections are restricted to some degree by federal law, which prohibits a director of one firm from serving on the board of a competing firm. Still, Cai says, a director who sits on the board of the acquired firm and the acquirer can still exercise influence behind the scenes, and the question of what constitutes a competing firm is fluid. Recently Google CEO Eric Schmidt stepped down from the board of Apple because the two companies are increasingly seen as competitors, rather than occupants of separate niches within the high-tech industry.

However those connections may play out, Cai's paper documents their significance. "Overall," she says. "our paper provides new evidence that board connectedness plays an important role in corporate investment policy and leads to greater value creation."



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Featured Faculty

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Sanjay Jain, *Assistant Professor of Management*, was previously at the University of Wisconsin-Madison and San Francisco State. He has published articles on a range of technologies, including Java and Linux. He received a bachelor of engineering degree

from Bangalore University, a post-graduate diploma in Management from IIM-Calcutta and a Ph.D. in Management from New York University.

Ravi Shanmugam, *Assistant Professor of Marketing*, teaches introductory marketing classes in the undergraduate and MBA programs at Leavey. He received his Ph.D. and MBA from the Haas School of Business at UC-Berkeley, where, as a graduate student, he was twice honored by being named to the “Club 7” list of outstanding instructors. He has worked at PricewaterhouseCoopers, Live Person and Digitas.

Arunima Sinha, *Assistant Professor of Economics*, earned her B.A. and M.A. degrees at Delhi University and received her doctoral degree in Economics from Columbia University. She has held visiting positions at the Federal Reserve Bank of New York. At Santa Clara University, her primary teaching areas are Macroeconomics and Finance.

Jaume Villanueva, *Assistant Professor of Management*, has worked in international business development, and was co-founder of Fluent Systems, which developed a new fertilizer application technology. He received his B.S. in International Economics at the University of Gothenburg, Sweden, an MBA at University of Wisconsin-Madison and earned his Ph.D. from the University of Minnesota.

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