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New England Journal of Entrepreneurship, Spring 2003

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New England Journal of Entrepreneurship

Spring 2003

Volume 6

Number 1

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By Nadia Ballard, Rollins College



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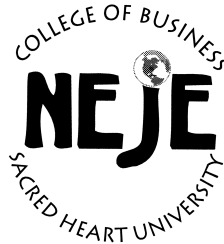
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New England Journal of Entrepreneurship

Call for Articles

New England Journal of Entrepreneurship (NEJE), published twice a year by Sacred Heart University's College of Business, is intended to be an invaluable forum for exchange of scholarly ideas, practices, and policies in the field of entrepreneurship and small business management.

The journal is currently seeking original contributions that have not been published or are under consideration elsewhere. The scope of the articles published in NEJE ranges from theoretical/conceptual to empirical research, with maximum relevance to practicing entrepreneurs. The journal tries to appeal to a broad range of audience, so articles submitted should be written in such a manner that those outside of academics would be able to comprehend and appreciate the content of the material.

Format

Please submit four typed copies of your article, on separate pages, include an abstract of the article (100 words maximum) and a biographical sketch of the author(s). A title page should precede the article and should list the name(s) of the author(s) as well as their full address (including phone and fax numbers and email address). Papers are to be double-spaced with one-inch margins. References should be included on separate pages at the end of the paper. Manuscripts should be no longer than 20 pages of text and 25 pages total, including abstract, text, tables or illustrations, notes and works cited. Please consult APA style guidelines for all formatting details.

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Review Process

All articles will be double blind refereed. Authors will receive reviewers' comments and the editors' publishing decision in approximately 90 days of submission.

All prospective authors are required to include a \$20 submission fee with each manuscript sent in for consideration, payable to "NEJE." The fee will be used to cover administrative costs and will also provide the author with a year's subscription to the Journal.

Submission

Authors are encouraged to submit articles for the Spring 2004 issue by September 15, 2003. Papers received after the due date will automatically be considered for future issues of the journal.

All submissions and correspondence should be addressed to:

Editor, New England Journal of Entrepreneurship
College of Business
Sacred Heart University
5151 Park Avenue
Fairfield, CT 06825-1000
(203) 371-7854 (phone)
(203) 365-7538 (fax)

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Sample Copies

Sample copies of the previous issues will be available from the Editor on a first-come, first-served basis.

New England Journal of Entrepreneurship

From the Editors

Drs. Laurence Weinstein and Shawn Blau served as editors for the recent Thomson publication, *Best Practices in Entrepreneurship: Readings from the New England Journal of Entrepreneurship*. Twenty-four of what we considered to be the best interviews and manuscripts over the first five years of the *Journal's* existence are included. Instructors, researchers, and students alike are offered a variety of insights, theories, and applications in the study of entrepreneurial behavior. The soft-cover book is now available. If interested, please contact Ms. Julie Howell at Julie.howell@thomsonlearning.com for ordering information.

An announcement was made in our Spring 2002 issue (Volume 5, Number 1) that Dr. James Santomier, Director of the Sport Management program at Sacred Heart University, was planning to serve as Guest Editor for the Spring 2003 issue on the special focus topic of Sport Business Entrepreneurship. Unfortunately, we have had to delay the issue because we did not receive sufficient manuscript submissions to provide our readers with a comprehensive look at this topic.

We believe, as James Santomier does, that the entrepreneurial spirit is flourishing in the sports industry and is well worth the attention of our readers and prospective authors. We hope that we can return to this area of interest in the near future. In the meantime, readers who do want to keep up with sport business entrepreneurship are referred to the *Journal of Sport Management* and *Sport Marketing Quarterly*.

Dr. Blau's recent MBA class in entrepreneurship at Sacred Heart University placed four business plans in the top 10 in the State of Connecticut Collegiate Business Plan Competition, sponsored by the Connecticut Department of Economic and Community Development. This was the greatest number of finalists from any university in the state. Robert Mather, an MBA student at Sacred Heart, won a \$10,000 prize for his business plan for "Connecticut Eldercare, LLC."

Finally, for the purposes of disclosure to our readers, Dr. Joshua Shuart, Associate Editor, is the son of R. Stephen Shuart, one of the *Journal's* two featured entrepreneurs in this issue.

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Responding to God's Guidance

Craig Hoekenga
Microboard Processing, Inc.

C*raig Hoekenga is CEO of Microboard Processing, Inc. (MPI), a very successful subcontract electronics manufacturing company located in Seymour, Connecticut. There are many reasons why Hoekenga would stand out in any gathering of CEOs, but one of the most arresting reasons would be that Hoekenga credits his success to God and considers MPI a "Christian business." The New England Journal of Entrepreneurship editors started with a plant tour and then caught up with Hoekenga in his office.*

NEJE: Things seem to be really busy in your factory area. Hasn't the recent slowdown in the telecommunications field hurt your sales?

Hoekenga: Yes, our revenue is down a few percentage points from the same period last year, but not anywhere near the disastrous drop-off that some of our competitors are experiencing. In fact, despite the problems we've encountered with the telecommunications industry, our profit has stayed pretty much the same over the past three years.

NEJE: How come?

Hoekenga: I can't pat ourselves on the back and say we saw this whole high-tech downturn coming. That wasn't the case at all. But we are ferocious when it comes to cutting costs and improving productivity, and we have learned to adapt quickly to changes in the marketplace. We have worked hard to get to where we are today. I believe that God has been with us as well.

NEJE: You have prints of Jesus Christ in and around your office and a carved wooden plaque that says "Jesus is your 'master.'" Have you always been so deeply religious?

Hoekenga: No, I left religion when I was 17 years old and didn't return for roughly 20 years. I had a religious conversion on a plane coming home from California on one of my frequent trips to the West Coast and I've been a different person for the last 20 years.

NEJE: What happened exactly?

Hoekenga: I was consulting three days a week for companies like IBM, GE, GTE, and UTC because I had gotten quite a reputation for fixing corporate problems in

operations. I was leaving Connecticut every Monday night, and not returning until Thursday night, earning in excess of \$500,000 a year during the 1980s, when I heard God speaking to me on a flight home from San Francisco. Basically, He told me to quit consulting and pay more attention to a small side business I was involved in at the time.

NEJE: How was this side business doing?

Hoekenga: Oh, not particularly well. I owned a small telecom equipment repair business with 50 employees generating about \$3 million in business each year. When I returned to run this business in late 1990, I felt we would have to get out of the repair business (about \$2 million of the \$3 million and concentrate all of our efforts on manufacturing). The problem was we needed \$1.5 million in machinery to get started and all I had was \$5,000 in the bank.

NEJE: Did we miss something here? You were earning a huge amount of money every year, but all you had was \$5,000 in cash?

Hoekenga: That's right, when I returned to God, I promised I would give Him my excess income each year and sell the property I had acquired, and give the proceeds to world missions. Therefore, I had only \$5,000 in the bank at this time.

NEJE: Did your wife or children say something like, "Craig, have you lost it? Why are you walking away from all that money?"

Hoekenga: No. As a matter of fact, my wife was delighted with my decision. She said she had been praying for years that some day I would come back to the church and change my lifestyle and now that I was walking with the Lord she would support any decision I made. My dad, a church deacon, was very supportive of my decision as well.

NEJE: How did you manage to "find" the \$1.5 million you needed?

Hoekenga: That was an interesting experience! Or, should I say, set of experiences. While I was thinking how exactly we were going to get into the subcontract electronics business around 1990, we were approached by several businesses in the area asking if we wanted to take used

machinery and assorted business inventory off their hands. Remember, there was a serious recession in 1991–92 and companies were scrambling to raise cash.

We were good negotiators and we managed eventually to buy millions of dollars of physical assets located in area warehouses for just pennies on the dollar and then resell the equipment for much more than we paid for it or use it in our facility. In the course of less than 90 days we had raised the money we needed to buy our capital equipment and/or had acquired it through inventories we had purchased. That was the first miracle I saw God perform in our business.

NEJE: That's certainly not something you learned in college!

Hoekenga: No, in fact I never graduated from college. I attended Michigan State University and I was in my freshman year when my dad told me he could not afford to pay my tuition bills. He had six other children to consider. I was working 45–50 hours a week as a custodian but it wasn't enough to keep me in school so I returned to Connecticut and went to night school at the University of New Haven for five years. I was two courses from graduating when I started my first business.

NEJE: What happened next?

Hoekenga: I returned to Connecticut and worked first for Exide Battery, then took a job with Remington Shaver Products in Bridgeport managing the customer correspondence group. Within two years, I was put in charge of its 144 service centers and had 550 people working with me. I also suggested a direct mail campaign to warranty cardholders because I figured they were an untapped "gold mine" for the company. A good direct mail response rate is 2 percent. We achieved a 22 percent response rate! During my time at Remington, I really wanted to work on my own, so with another Remington employee, I offered to buy about 20 of the centers and we expanded the business to include working on Norelco, Schick, Ronson, Braun, GE, and many other small appliance manufacturers.

Victor Kiam bought Remington a few years later and asked me for help in turning around the rest of their service centers. They just weren't making any money for the company. That was my first consulting job and I continued to consult for many Fortune 500 companies over the next 15 years.

NEJE: The business then morphed over the years into MPI.

Hoekenga: Yes it did. MPI was started in 1983 and I started to run it full time in 1991. Now we do business with some of the biggest names in the industry including JDS Uniphase, Intel, IBM, NEC, and ASML. In fact, we recently built the systems that overhauled the entire East Coast

Air Defense System, run the train system in Italy, and we have built millions of the in-store coupon dispensers that you see in supermarkets around the country.

NEJE: Do you always know what the end result will be for the boards you build for customer orders?

Hoekenga: No, many times we don't know until after the fact, since we build to our customer's specifications. For instance, for one of our customers we built the systems that helped the Montgomery County, Maryland, police handle all the phone calls coming in on the recent sniper case in the D.C. area. The system worked so well our customer congratulated us for our part in a successful conclusion to the whole situation (much to our surprise) and told us the state of Maryland would be following up with orders for more systems.

NEJE: Another thing we noticed during the plant tour was every station has a computer monitor.

Hoekenga: The monitors you noticed are used by our employees to keep in touch with customer changes in board manufacturing requirements. We are as close to paperless in our manufacturing operation as we can be. It took a bright young engineer 18 months to help develop the software, but after a six-year commitment to upgrading our systems, we are now one of the leaders in the industry. Others talk about "going paperless on the manufacturing floor," we truly are.

NEJE: How has your company managed to keep profitability up in a very difficult business environment?

Hoekenga: We run a conservative business. We like to hold onto cash and negotiate with our suppliers from a position of strength. We negotiate better deals that way. For instance, we pay our invoices within 10 days and ask for a 3 percent discount. That equates to 102 percent on an annual basis. I don't understand why other companies aren't taking advantage of the same opportunity. Instead, they try to treat their suppliers like bankers and stretch out their payments for up to six months. The suppliers, knowing this and figuring that some of these clients won't pay their invoices at all, have increased their prices to reflect this risk of doing business. With us, they know they'll be paid immediately and there is no risk at all. We get terrific pricing that way.

However, I urge our purchasing department to be fair and not ask for a deeper discount than the supplier can reasonably afford. We recently set goals of reducing our company costs by 20 percent. We had one instance where one of our employees actually negotiated a 25 percent reduction. I looked into it and thought it was unfair to our supplier. I asked the employee to call back and say we would be pleased to receive a 20 percent discount and to adjust their prices back up 5 percent. You can imagine the surprise on the other end of the phone. Yet I think it was the

right thing to do because when the economy gets going again, this supplier won't drop us because it resented us squeezing its margins so much. After all, the supplier has to show a profit at the end of the day just as we do.

NEJE: What about "bad debt" in this current environment?

Hoekenga: Since 1991 right up to today, we've had a grand total of \$18,000 we've had to write off. That's it. I believe God has protected us and we've worked hard at our client relationships. "Bad debt" has not been a problem for us to date.

NEJE: What about inventory write-downs, especially when the telecom industry orders deteriorated so badly the past two years?

Hoekenga: We saw a potential loss of millions of dollars in inventory literally overnight. It was scary. But we have a terrific management team here and we put our heads together to come up with solutions. We had to write down some of our inventory but it was no more than a few hundred thousand dollars. We are coming out of this business cycle stronger than ever and I think 2003 will see tremendous growth for us.

NEJE: You've certainly beaten the odds. Yet you dress casually and don't seem to reflect the fact you must be worth millions.

Hoekenga: On the contrary, I don't own anything. Like the biblical Job, I came into the world naked and naked I will leave. I don't even own a car. Whatever excess money I have at the end of the year goes to world mission projects.

NEJE: You own nothing?

Hoekenga: My wife is taken care of because she has income property in her name, and our three children together own income property. I put the company in a 25-year charitable trust; 11 years are gone since I started the trust with 14 more years to go. In 2016, our children can decide what to do with the company; it will be their decision, not mine. I pray they will continue to help others as they do today. The present management can run the business with or without them.

NEJE: What jobs do they have here in the company?

Hoekenga: They don't. I wouldn't let them stay here after graduate school even though each one of them was a great employee. I insisted they leave for at least 10 years before they consider coming back. Do I miss them? Sure I do! However, I believe it's best for their own growth experiences to have independent experiences before committing themselves to any business. They may choose not to come back to MPI and I would be fine with that.

NEJE: During the site tour, we couldn't help noticing a lot of the employees are ethnically diverse.

Hoekenga: "Minorities" make up 70 percent of our factory workforce, and we just promoted a woman to vice president of engineering.

NEJE: Is this part of your doing God's work?

Hoekenga: Yes, it is. Our initial factory was located near Bridgeport, Connecticut, which has a large minority population. We were approached by local clergy who asked us to hire city residents, some of whom had never been able to hold down a full-time job before or who had addiction issues, such as drug and alcohol, been in prison, or were unemployed and/or physically or mentally challenged.

We worked closely with several area churches and we've hired dozens of people who many other companies would have considered too risky or too hard to train. Believe me, we've had our share of failures, but we've also had wonderful success stories like the gang leader who showed up one day and asked for a job.

I thought he was kidding, but he was earnest in his approach to me so I hired him. There were employees in the beginning who were very afraid of him, but he stayed for years and became a team leader. We believe strongly in giving every human being a second chance. Our human resources department gets stretched a bit working with some of our employees. We need to understand and be sensitive to the time it takes for them to appreciate what it means to work regularly and do consistently excellent work.

NEJE: How long is that?

Hoekenga: We remain patient with every new person and work hard with them to develop their innate skills. I know this isn't a prescription for everyone. I'd say our success ratio is around 50 percent. Some employees turn back to the streets, drugs, or liquor. I'm upset when that happens. But for those who make it, we're proud of them because they've broken the cycle of poverty and despair.

NEJE: How have your neighbors reacted to this commitment to giving employees a second chance?

Hoekenga: Sorry to say, not always well. Before we moved to Seymour, we had selected another site in a town adjoining Bridgeport and I had pretty much sealed the deal with the building contractor with a handshake. We committed to spending \$4 million on a new plant location. At a local planning and zoning meeting, I was confronted by people who said they were afraid I was going to hire murderers and former prisoners, who during their lunch breaks would threaten their children with harm.

I was surprised at their anger and their fears. I told everyone in the room that at no time during our company's history did anyone associated with MPI do anything harmful or threatening during work hours, but our

prospective neighbors remained adamant. When we realized what we were up against, we told them we would look elsewhere.

The very next day, this property in Seymour became available. It took the previous occupant \$5.5 million to build our present facility, but we were able to purchase it for \$2 million. I've learned that when one door closes, another opens up. It's God's way of increasing our faith.

NEJE: As a Christian business, do you proselytize to your employees or to the people your company has relationships with?

Hoekenga: No, not at all. I noticed once that several young employees who had done some missionary work before coming to work here had started to write inspirational messages on outgoing products. I put an immediate stop to it. It's just not appropriate.

We have a Christian prayer session every Thursday during lunch hour and folks can join in or not. We have a chapel near the front of the building and employees know they are welcomed to use it any time. We also have a fund set aside so that any employee can borrow up to \$300 once each year, interest free, with no questions asked to get over a little bump in the road.

Also, when it comes time to divvy up the profit at the end of the year, we take care of all of our employees starting with factory bonuses first. We have a caring attitude around Microboard and the folks who work here reciprocate by working hard. Sometimes their commitment to the company goes a bit overboard and I literally have to chase them out of here at night.

NEJE: What keeps you motivated?

Hoekenga: I love change. I embrace it. Technology drives everything we do here at MPI and with the frenetic dynamism we face, no two days here are the same. Ever. You might have 10 projects you're working on, get one done and be forced to temporarily put the other 9 on hold, because of new demands that day. We either adapt or we die.

—J.S.

—L.W.

The Value and Impact of Seminary Training

R. Stephen Stuart
Stephen Stuart Export Co.

The Reverend R. Stephen Stuart is an Episcopal priest by profession. He is rector of two parishes and serves on the Diocesan Financial Committee and as a rural dean. However, he has spent most of his wage-earning life as owner/operator of Stephen Stuart Export Co., an internationally known photographic business, located in Kane, Pennsylvania. Stuart's unique entrepreneurial endeavor has been the subject of a televised news feature, and the object of camera collectors' attention since his company's inception in the early 1970s.

NEJE: Please describe your business for us.

Stuart: I deal with photographic mail order. I have sold what is termed "photographica"—just about anything that can be shipped by USPS, UPS or FedEx. My customers are mostly serious amateur photographers, with a smattering of collectors and those who are nostalgic. Photographers, collectors of photographic history and equipment, books on photography, photographs, libraries, museums, etc. Just about anyone with an interest in photography, but not necessarily photographers.

I'd say my customers are probably 50 percent collectors, 25 percent professional, and 25 percent nostalgia...such as Korean War Veterans that were photographers, and now want a camera outfit like they used in the military.

Initially, I advertised in *Shutterbug* (originally *Shutterbug Ads*). I was a "ground-floor" advertiser in the early 1970s when it was published in a back room. In the beginning the magazine was all classified ads. I was the first full-page display advertiser (actually two pages). This was 1977. That in itself changed the nature of my business and the magazine. How I came to be the first display advertiser is a story in itself.

NEJE: We'd be glad to hear it.

Stuart: Sure. In January 1977 I attended the PMA (Photo Marketing Association) in Chicago. It was an opportunity for a lookaround. Although it was all new equipment and that really wasn't my interest, I thought it an opportunity to develop contacts. At the Chicago convention, I met Glenn Patch, publisher of *Shutterbug*. As an aside, Glenn went on to be very successful in publishing (*Computer Shopper*, a series of used aviation reselling magazines, databases,

etc.). He had worked at Link Aviation in the 1960s and had early computer knowledge. He built his own computer typesetters and printing presses. Over a bottle of scotch in the hotel bar, he convinced me to move from classified to display advertising. The end result, the following month, I ran two full-page displays. Within 60 days, I had quadrupled my business.

For a period of 12 to 14 years, I staked out the inside back cover of the magazine. People read the magazine in this fashion: front, inside front cover, flip it over and read inside back pages and work toward the front. So I was in a good position. My customers could find me in the same spot every month.

NEJE: So your business grew slowly and solidly. Can you talk more specifically about how your business developed?

Stuart: Actually, it developed out of necessity. I was a collector. I supported my "habit" by buying and selling. One day I decided not to be a collector, and so I went to full-time dealing.

My business started when I was in high school. I bought a Leica from a teacher, and sold it a few years later at a profit. That was about 1959. I did a lot of high school photography. I liked equipment, good equipment. I was too busy in college to do photography, but picked up on it in graduate school. It was a good hobby. Later when my wife and I started our family, my interest peaked in photographic history. As a hobbyist, I did a lot of trading, buying, and selling. I started turning a profit, and it grew into a business. As my family grew, I needed more money, so I decided to make it a full-time profession. Some of what happened in the very beginning was simply by chance, like a career-changing experience in Pittsburgh about 25 years ago.

NEJE: And that was...?

Stuart: While I was at the PMA, I landed a sales job with Amphoto, the largest photo publisher in the United States (and the world). I called on Pennsylvania stores. My real interest was to get into stores looking for good used equipment. At one Pittsburgh store in July 1977, I was asked by the buyer to meet with the owner. The owner laid out that he had been asked to make an appraisal, but couldn't do it because the woman was the widow of a deceased county commissioner...and about 50 percent of their sales went

to the county. It would clearly be a conflict of interest.

I made arrangements to meet with this party. At her home, I came upon room upon room of select equipment—from Leicas to sophisticated stereo cinematographic equipment. After six hours of appraising, I handed her an appraisal of \$80,000 (resale value based on retail), explaining that she could expect to find someone who might pay her only about one third to one fifth that value, again somewhat less, but she would need to find the right person. You must understand, this stuff could, and sometimes does (in similar situations), end up being taken by the owners to the dump.

She asked me if I bought such equipment and I replied that if I had the money, I would happily give her \$20,000 on the spot, but that I had just used every cent I had on a house down payment and was flat broke. She responded, “Would you give me \$1,000 for everything?” I replied that I would happily give her \$1,000, but I was overwhelmed having bought my first house, had five mouths to feed, and really didn’t know where I’d come up with the cash. She said, “Do you know how to write postdated checks?” My response was that I was pretty expert at that, so I wrote her two \$500 checks. Her desire was that I remove everything immediately, so the next two days I spent moving everything.

Within a week, I instructed her to cash her checks and within six weeks, I had about \$20,000 from the sale of the equipment in my checking account. This would serve as my “working capital.” It was a bonanza and there was no looking back from that point.

NEJE: That’s quite a start.

Shuart: Yes, but it began to snowball as I got the hang of it. In the spring of 1978, another dealer friend, Ted Bromwell, who had studied law at Yale, but ended up as a buyer for the May Co. (and later in a responsible management position in Pittsburgh), called my attention to a scheduled federal bankruptcy of a photo supplier in Huntingdon, Pennsylvania. We met there the day before the sale to look at the goods. It was clearly a situation of a successful business gone sour by bad inventory management. The merchandise available was all new, so we planned to bid to \$5,000—Ted paying one third and I paying two thirds. He would walk away with three cartons of new cameras, all of which would fit in the trunk of his Volkswagen Rabbit. I would spend three days moving three truckloads of good stuff.

There was one hobbyist bidder at the auction and the hammer went down at \$3,000. The bank, of course, was extremely disappointed. Ted and I escaped to the bar across the street to celebrate. This purchase put \$10,000 into my account within a week. Then I made a sale to my hometown drug store—printing paper, film, and prepaid film mailers. Within the month I had cleared over \$30,000. It was another bonanza.

The owner of the store insisted on immediate removal but then said that if we would give him a good Polaroid camera, he would give me two days. It was something that we needed to do. With the sale came everything not nailed down in the shop—tools, fixtures, showcases, everything. Having filled the third truckload, I was getting ready to wrap it up and pay three workers that I had hired for the move, when he said, “I want those three-ring binders in the basement out of here.” I then realized that I hadn’t even been in the basement yet! There were about 5,000 three-ring binders, imprinted with the company name, that were used to bind the catalog that this company sold. It was a buying club, by subscription. So we loaded them in the truck and off I went. On the way back to my home, I passed by State College, Pennsylvania, and thought that maybe I could sell some of the binders to the Penn State University bookstore. They were good quality and when I offered to sell 200 cases of 20 binders at \$0.25 each binder, the buyer jumped on it, had some of his workers off-load them. In 30 days I received a check for \$1,000, and I continued to sell the rest locally. They were all sold within the year. This was another turning point that put thousands of dollars in my account.

NEJE: What were some of the unique factors that made your business different from others in the field?

Shuart: My business was unique from others in that I was on the ground floor, that I moved to dealing in Europe in the late 1970s, and that I was able to find interesting items that people seem to find of interest—items that no one else had, like European-published books on photography, and photographic tools. It seemed as though I was a person that people looked to see what certain items were worth. I was being asked to do a lot of professional appraising.

My philosophy has always been simple: I zero in on a product that has little or no competition, and then when I am “found out” or others start selling the item, I move swiftly into something new. Profit is everything.

NEJE: You’ve mentioned a couple of times that you were “on the ground floor.” What does this mean?

Shuart: I was basically dealing directly with camera collectors. Camera collecting came into its own around 1969. I got started in the business in 1971, right at the beginning.

NEJE: Would you consider yourself a niche marketer?

Shuart: Absolutely. Many people have said they scan my ads because there they find something interesting or unusual that no one else has.

I have always dealt in niche areas. I would pick up on an item, set the price, others would see that I was obviously making a buck, then begin to imitate. Usually, they had no imagination. There would then be several, the supply would grow, the price would decline, and then I would

transition into something new and let them beat each other over the head. Transition is the key to surviving niche marketing. Transition is the key to staying alive in any business.

NEJE: *You say that “transition” is the key. Were there specific things that you did yourself to ease the transitions?*

Shuart: Things change. Buyers change their wants. Other competitors come along selling in the same niche. All of a sudden there are two to three selling the same item. This is the time to bail out and move into something else. It is important to know when to make the move...and you better have some new item to market.

NEJE: *You have an interesting educational background. Can you tell us about that, and how it might have influenced your business development?*

Shuart: I graduated from a New Jersey school and attended a small, liberal arts Lutheran college in Pennsylvania. That was in the early 1960s, just about the time that no one was studying Latin and it was dropped from most high school curricula. Frankly, the demand for Latin teachers was nil. I also studied Greek—New Testament Greek—having some interest in the Church. I was still in the study mode and decided to enroll in a seminary, the Berkeley Divinity School (at Yale). After I spent three years in “theological study,” having married and having our first child, I needed a job. So I took the ordination route and landed two small churches in Pennsylvania, a place that I had come to like from my college experience.

Seminary is an interesting experience: a place where you learn to live in a community of people. You are intellectually challenged and you learn a lot of basic life skills. You also learn some basic business practices, how to relate to people, institution work and life, and many other things. Some say it is the cheap M.B.A. What I learned in seminary enhanced my developing business.

Education never hinders anything. The skills I acquired while a student there, and while traveling in Europe from 1964–1966, cannot be understated. I attribute my success to the good education that I received, plus hard work.

NEJE: *You sound very busy! How do you balance your business with your other jobs?*

Shuart: Time management, which I am not real good at, I admit. But I have found that the busier I am, the more productive I am.

As my business grew, balancing my profession as a priest of the Episcopal Church and my hobby-turned-business was a real task. I was consumed by the demands of the church on one hand and a rapid growing business on the other. At the same time my family grew to five and my church income was not what I deemed necessary to raise them the way I wanted. I decided to go the business route.

It was an easy decision, because at this point, I was able to exceed my entire yearly church salary with a single business transaction, completed over a two- to three-day period. So I went full steam ahead with the business. Nonetheless, I was to return to my church job at a later date, being able to balance both professions. More on that later.

NEJE: *To me, it is very interesting that you used your seminary background to enhance your own business.*

Shuart: Seminary education was paramount. Besides the theological education, time is spent in practical matters. When you are graduated, you have the skills to run a business. There are a lot of practical courses, other than just New and Old Testament. Much emphasis is spent on interpersonal relationships. You need to know how to talk to people, and deal with them. People have a lot of problems, and you become a skilled problem solver. It is very helpful in the business.

I spent two weeks in Washington, D.C. in 1976, testing to see what my church interest was and whether to move into the business world full-time. It was there I learned that much of what I had learned was transferable into another profession.

When I was hired by Amphoto to sell books, I asked the president why he was hiring me? He said, “If you can sell something as abstract as the church, you can sell books!”

NEJE: *How do you advertise, and has that changed with new technology?*

Shuart: Rapidly changing and new technology and the advent of the Internet have drastically changed the manner in which I now do business. As I mentioned earlier “transitioning” is the key to survival and/or growth in any business. I spent about 15 to 20 percent of my gross sales in advertising during the good years, then at the advent of the Internet, I was beginning to spend upwards of 50 percent of my gross. Something was wrong. The Internet had taken the lack of supply to an abundance of supply, prices dropped, demand dropped, and the world economy changed. The foreign buyer was no longer there. *It was a new game*, it was time for a transition.

I advertised aggressively in several trade journals (mostly *Shutterbug*). When newspaper advertising became ineffective about 3 to 4 years ago, I switched to Internet site and auctions.

NEJE: *Why are you located in Kane, Pennsylvania?*

Shuart: A mail-order business can be run from anywhere. I was already living here. My kids were in school, and the schools were good. It was a safe place. I like rural. I could hunt and fish. It was the ideal for me. Housing was cheap. In terms of location, I can reach the following places in my car: New York, 5.5 hours; Toronto, 3.5 hours; Buffalo, 2 hours; Cleveland, 3 hours; Pittsburgh, 2.5 hours;

Chicago, 9 hours; D.C., 5 hours; and Boston, 9 hours. The quality of life was the best, isn't that a good reason?

NEJE: Sure. What you would consider to be the most interesting thing you have experienced during your business career?

Shuart: When I took my business to Europe in late 1978, I was clearly on the ground floor. There was no other American doing what I was doing. Inflation was at a record high. People wanted to get rid of cash, and they wanted hard goods. The American dollar was at its weakest against the German mark and all European currencies. The trick is simple: get paid high prices in foreign currencies, convert to bagloads of U.S. dollars. I carried all the goods as baggage. I took a friend or relative with me. There were always four bags of goods, and two carry-on bags of clothes. Each trip was five to six days, and all goods were sold. And while I was there, I picked up interesting European equipment, which I brought back and resold stateside. I also bought European collector books, which were duty-free. Most stuff passed duty-free in Europe and in the United States.

NEJE: You've mentioned you have an international reputation.

Shuart: I spent five years in Europe selling until other dealers got the idea. By that time, the monetary situation changed. It really wasn't that profitable anymore. Maybe just enough to support a European vacation. The niche was disappearing and it was time to make a transition.

I was back to the mail-order business full-time, with all my European contacts. Now I was able to deal with my new contacts at a distance. No more travel, more UPS and FedEx. It worked.

NEJE: Earlier, you said that you were able to "return" to the church. What is the current status of all of your career ventures?

Shuart: In 1989, we experienced a bit of a "camera recession." I was still being carried by the diocesan medical plan, but there was a substantial spike in the cost and I was paying for it out of pocket. About this time the local cure was vacant and they were looking for an interim. I approached the congregation with the idea that I would work for a year while they did a search. I was paid in tax-free housing allowance and medical. The medical stretched over a two-year period, as they would keep me on as an assistant the second year. That seemed to solve my current slowdown in business.

In a year they called a new rector, who stayed for three years. Then I seized the opportunity for a full-time (really only part-time at 15 hours per week) position. That was in 1993. This solved my medical insurance problems, and

gave me tax-free housing. It is all quite legal, and, oh yes, the pension!

—J.S.

(Editor's Note: Since this interview, Father Shuart began serving an additional parish, 30 miles down the road...part-time, of course!)

Marketing Orientation in SMEs: Effects of the Internal Environment

Richard C. Becherer
Diane Halstead
Paula Haynes

Marketing orientation refers to a culture in which organizations strive to create superior value for their customers (and superior performance for the business) by focusing on customer needs and long-term profitability. Some studies have found that firms with a high degree of marketing orientation experience improved performance; others have found mixed or nonsignificant results. The marketing orientation of small businesses has not been thoroughly investigated, however. This study of more than 200 small business CEOs examines the marketing orientation levels of small to medium-sized firms (SMEs) as well as the impact of various internal variables (sales/profit performance, company characteristics, and CEO characteristics) on marketing orientation levels. The results confirm some earlier research on marketing orientation and provide new insights into this important strategic dimension.

The role of marketing orientation in a firm's business strategy has been debated extensively since the marketing concept was formally introduced 50 years ago. Described as the "implementation of the marketing concept" (Kohli and Jaworski 1990), marketing orientation refers to a culture in which organizations strive to create superior value for their customers (and superior performance for the business) by focusing on customer needs and long-term profitability (Narver and Slater 1990). Specifically, marketing orientation has been defined as the process of: (1) generating marketing intelligence, (2) disseminating marketing intelligence, and (3) responding to marketing intelligence in order to provide superior customer value (Kohli and Jaworski 1990; Narver and Slater 1990). These definitions highlight recent debates about whether marketing orientation encompasses a specific set of organizational *behaviors* or a type of organizational *culture* (see Slater and Narver 1995, for example). In any event, marketing orientation has been definitively linked to multiple areas of firm strategy and business performance.

Of the considerable research that has been conducted on marketing orientation, however, very little has focused on the small to mid-sized enterprise. Yet, in SMEs, there is great potential for the CEO's vision to be reflected strongly in the organizational characteristics and operations. Much as an entrepreneurial firm is the expression of the founder's vision and philosophy, so the continued

operation of small and mid-sized firms reflects the priorities and marketplace perspective of the company's CEO. As noted by Carson and Gilmore (2000), marketing in SMEs is often "dominated by the inherent characteristics of the entrepreneur/owner/manager of the SME itself" (p. 1). The unique aspects of SMEs and their entrepreneurial founders/managers often lead to a type of "implicit marketing planning" that is less formal, less structured, and less sequential than traditional marketing frameworks. Informal, intuitive and context-specific marketing practices that reflect the style and influence of the entrepreneurs tend to evolve (Carson 1993).

In addition, much of the existing research on marketing orientation has focused on the external environment rather than the internal environment. For example, industry characteristics such as market turbulence or market growth, competitive conditions such as hostility or intensity, and even the degree of technological turbulence have all been examined. The internal environment has been investigated, but the characteristics studied were more suited to large-firm research such as decentralization (Jaworski and Kohli 1993; Pelham and Wilson 1996), formalization (Jaworski and Kohli 1993; Pelham and Wilson 1996), and interfunctional coordination/connectedness (Jaworski and Kohli 1993; Atuahene-Gima 1996; Pelham and Wilson 1996; Gatignon and Xuereb 1997; Han, Kim, and Srivastava 1998). More recently Coviello et al. (2000) investigated size-related differences in how SMEs approach such marketing activities as market planning and market performance. Their results were mixed regarding the effect of size, and they point out the importance of learning more about when and why differences do exist between different size firms. In general, however, few internal factors focusing on the SME, and especially the firm leader, have been investigated relative to marketing orientation.

Our research objective, therefore, is to explore the circumstances in the internal environment under which marketing orientation varies in small and mid-sized firms. Specifically, what levels of marketing orientation are observed in SMEs? In addition, under what company, leader, and performance characteristics are low marketing orientation levels observed? Under what conditions will marketing orientation remain high? The specific internal variables examined include performance of the SME in

terms of sales and profit, characteristics of the company (e.g., size and scope of the business), and characteristics of the company CEO such as age, education, decision-making style, and entrepreneurial experience.

Theoretical Background

Marketing orientation has been linked to business outcomes such as sustainable competitive advantage (Narver and Slater 1990; Pelham and Wilson 1996), profitability (Narver and Slater 1990), new product innovation (Lukas and Ferrell 2000), and overall firm performance (Jaworski and Kohli 1993; Slater and Narver 1994). Recently, Pelham (2000) in one of the few studies focusing on SMEs, found marketing orientation to have a strong relationship with performance. While the importance of marketing orientation in determining various aspects of business performance has been well documented, some inconsistent findings have still emerged. For example, Greenley (1995) found no direct influence of marketing orientation on performance. Pelham and Wilson (1996) found that while marketing orientation did influence new product success, it did not impact growth or market share, two critical marketing performance measures.

The problem of inconsistent findings is compounded when firm size, strategy, and other environmental characteristics are examined. Large firms have been noted for their marketing responsiveness (Day and Nedungadi 1994). Yet small firms should be better suited to the adoption of a marketing orientation since their greater response speed (Katz 1970), flexibility (Feigenbaum and Karnani 1991), and ability to exploit marketing niches (Carroll 1994) have all been noted. Do small firms exhibit high levels of marketing orientation, and if so, under what conditions? This issue deserves additional study, as the limited research on small firms does not attempt to identify the antecedents of marketing orientation.

Marketing knowledge is based on the theory-building research process that examines an issue from initial theoretical concept, through measurement design and testing, to specific moderator and outcome examinations. To clarify the existing contribution of marketing orientation research through these stages, the following classification is useful:

- *Initial conceptual development:* Studies in this stage examine theoretical/conceptual issues and the development of various research frameworks (e.g., Kohli and Jaworski 1990; Narver and Slater 1990; Slater and Narver 1995).
- *Measurement development:* Translation of the concept into empirically testable measurement tools and validation (Morris and Paul 1987; Miles and Arnold 1991; Kohli, Jaworski, and Kumar 1993).

- *Concept testing:* These studies include examination of—
 - antecedents of marketing orientation (Jaworski and Kohli 1993; Atuahene-Gima 1996; Pelham and Wilson 1996; Gatignon and Xuereb 1997; Han, Kim, and Srivastava 1998; Harris 1999; Voss and Voss 2000);
 - performance outcomes of marketing orientation (Narver and Slater 1990; Jaworski and Kohli 1993; Slater and Narver 1994; Atuahene-Gima 1996; Pelham and Wilson 1996; Gatignon and Xuereb 1997; Han, Kim, and Srivastava 1998; Lukas and Ferrell 2000; Voss and Voss 2000);
 - moderators of the marketing orientation-performance relationship (Jaworski and Kohli 1993; Slater and Narver 1994; Atuahene-Gima 1996; Pelham and Wilson 1996; Becherer and Maurer 1997; Gatignon and Xuereb 1997; Han, Kim, and Srivastava 1998); and
 - the impact of marketing orientation and various marketing practices in alternative organizations such as small or mid-size firms (Pelham 1997, 2000; Horng and Chen 1998; Carson and Gilmore 2000) and even nonprofit, artistic environments (Voss and Voss 2000).

This research process classification highlights the need for additional studies examining the impact of marketing orientation within the context of SMEs. As the internal environmental and internal context of the SME has received less research attention, this is an area that is particularly important to examine. Since this study will focus on this last stage in the research classification—marketing orientation among small and mid-size firms—a review of the limited literature in this area follows.

Marketing Orientation in SMEs

Research on marketing orientation has been concerned primarily with large U.S. firms; relatively few studies have been conducted that are specific to small and medium-sized businesses. In an early study, Peterson (1989) found that most small U.S. manufacturing businesses adopt either a production orientation or, secondarily, a sales orientation, rather than a marketing orientation. These findings were later confirmed in a study of small exporting firms conducted by Sriram and Sapienza (1991). Pelham (2000) found a negative relationship between firm size and marketing orientation. He noted that small firms that are marketing-oriented could enjoy a potential sustainable competitive advantage since they have simpler organizational structures, more flexibility and adaptability, and a greater capacity for speed and innovation. Barrett and Weinstein (1998) argue, however, that small firms have limited resources and little margin for error. This would indicate that SME's marketing orientation levels may be

affected. Thus, the existence or level of marketing orientation among SMEs should continue to be investigated. Furthermore, the business performance of small/mid-sized firms with various marketing orientation levels should be examined. Accordingly, we propose the following hypotheses:

Hypothesis 1: Marketing orientation levels do not vary among SMEs across company characteristics such as firm size, age, scope, or competitive advantage.

Hypothesis 2: Marketing orientation levels do not vary among SMEs across business performance levels such as change in sales or profits.

Of additional interest would be whether leader characteristics such as CEO education or experience levels would influence marketing orientation levels. For example, Horng and Chen (1998) found that the marketing experience and formal education of Taiwanese top managers significantly affected marketing orientation levels of small manufacturing concerns. Leadership style, however (which they classified as "people orientation"), had very mixed effects on various components of marketing orientation. Barrett and Weinstein (1998) argued that certain internal variables such as entrepreneurship behavior and other internal influences may be more important influences than external variables (such as industry characteristics or competitive hostility) because internal variables are, ultimately, more controllable than external variables. Thus, characteristics of the SME and the SME leaders should be examined in relation to marketing orientation. Therefore, the following exploratory research hypotheses are proposed:

Hypothesis 3: Marketing orientation levels among SMEs will not vary across leader characteristics such as CEO age, gender, or education.

Hypothesis 4: Marketing orientation levels among SMEs will not vary across leader decision-making style.

Hypothesis 5: Marketing orientation levels among SMEs will not vary across the entrepreneurial experience of the leader.

Methodology

Sample and Data Collection

The data was collected by questionnaires mailed to 683 small business CEOs located in large mid-western metropolitan areas. These respondents were drawn from a list of firms that had previously participated in a university Small Business Institute consulting program over a 12-year

period. Many of these firms had grown and matured during that time. To attempt to make the sample more comprehensive, over several years, additional start-up and small businesses were added to the mailing list.

The data collection procedure included an initial postcard alerting the respondent to the study and two subsequent mailings of the questionnaire and return envelope. There were 215 usable responses, for a response rate of 31 percent. Nonresponse bias was investigated by comparing the first 25 percent of the responses with the last 25 percent of the responses received. No significant differences were found for several demographic characteristics such as the age of the firm or the number of the employees in the firm. A t-test was also used to compare the early and late respondents for each of the research variables, and this analysis revealed no significant differences.

Of the respondent company CEO/presidents, 79 percent was male, and 21 percent was female. The companies they headed had median sales of \$3.5 million. Founded an average of 15 years ago, these firms had a median of 22 employees. The scope of operation of these firms ranged from local to international, with sales of \$10 million at the 75th percentile.

Measures

Marketing Orientation. An 11-item scale consisting of items originally developed by Morris and Paul (1987) and adapted by Miles and Arnold (1991) was used to measure marketing orientation. It has demonstrated very high internal consistency in prior research and exhibited a coefficient alpha of .77 in this study. The items in this scale reflect such factors as the company president's perspective on whether his or her firm "regularly performs marketing research" or "commonly uses customers as a source of new ideas." This measure is shown in Figure 1.

Since there has been limited study of marketing orientation in SMEs, the authors selected aspects of the internal environment that intuitively should influence the extent of marketing orientation in a small company. Additionally, factors were identified that could be investigated via responses provided by a small company president.

Company Characteristics. The five characteristics of the organizations were measured by asking the company presidents to classify their company into the appropriate category for each of the five company characteristics: number of full-time employees, perceived competitive advantage, scope of the business, age of the company, and company sales. The categories for each variable are presented in Table 1.

Company Performance. The performance of the company relative to both profit and sales was measured by asking the respondent company president what percentage change had occurred in sales and profit over the past three years. Due to the wide variation (from very negative

Please indicate to what extent these items best represent your company.

	Very Much Like My Company				Very Much Unlike My Company		
	1	2	3	4	5	6	7
We have a marketing department							
We employ marketing consultants							
The top-level marketing employee is V.P. or higher							
We have an 800-number for customer feedback							
We regularly perform marketing research							
In my company, marketing generates most new products							
We commonly use customers as a source of new ideas							
In my company, top management has a marketing background							
We feel that marketing has a significant impact on the firm's							
We have a new product development group							
We have a marketing research group							

*These items were mixed with other scale items on entrepreneurial orientation.

Figure 1. Marketing Orientation Scale Items*

Table 1				
Analysis of Variance for Company Characteristics				
	Variable	Mean Marketing Orientation	F-Ratio	Significance
Number of Full-time Employees	1 to 9	34.65		
	10 to 19	39.24	6.54	0.00
	20 to 99	42.58		
	100+	45.10		
Competitive Advantage	unique product or service	41.42		
	superior customer service	39.41		
	excellent product mix	44.88	1.00	0.42
	operating cost	32.80		
	price	36.10		
	other	42.71		
Scope of the Business	local	32.76		
	state wide	40.52		
	regional(multi-state)	42.49	9.58	0.00
	national	44.84		
Age of Company	international	46.29		
	0 to 4	40.61		
	5 to 14	40.79	0.30	0.83
	15 to 49	38.86		
Company Sales	50+	40.73		
	\$ 0-499	36.93		
	500-1999	36.25	4.04	0.01
	2000-9999	40.76		
	10000+	43.80		

to very positive), these responses were grouped into four categories for both variables.

Company President Characteristics. The respondent company presidents were asked to indicate their gender and the appropriate category for their age and education.

Decision-Making Style. Respondents were asked whether they make, share, or do not make decisions on both day-to-day and long-term issues. Daily issues were characterized as such things as issuing credit or purchasing, and long-term decisions were described as strategic areas like expansion or major new financial commitments.

Entrepreneurial Experience. The entrepreneurial experience of the company president was assessed in two ways. The CEO respondents were asked to indicate their ownership status in the company. The choices were: just manage the company, started the company, purchased the company, inherited the company, or "other" as ownership status. "Other" may include presidents who have stock options or other "earn in" provisions. As a second variable, each respondent was asked how many businesses he or she had started.

Results

To examine the influence of organizational characteristics on the marketing orientation of SMEs, ANOVA was used to analyze five different internal organizational characteristics as independent variables, with marketing orientation as the dependent variable. These results are presented in Table 1. As is indicated in the results, three significant differences were identified in these five company characteristic variables.

Marketing orientation was significantly different across the size of the organization as measured by the number of employees ($p=.00$). Interestingly, as the company size increased (from small companies with 9 or fewer employees to those with 100 or more employees), the level of marketing orientation increased. Significant differences

were found again when company size was measured by sales level ($p=.01$). When comparing the smallest sales volume companies with the largest, with only slight variation, the larger companies tended to exhibit more marketing orientation than the smaller companies.

While there were no significant differences in the marketing orientation of companies based on their reported competitive advantage focus ($p=.42$), the pattern of results is suggestive. A differentiation strategy appears to be associated somewhat with higher levels of marketing orientation as compared to a more price focused strategy. Scope of the business did produce significant differences ($p=.00$). Companies that were local showed the least amount of marketing orientation, and as the scope of the company operations got broader (i.e., state, regional, national, and international), the marketing orientation at each level increased ($p=.00$). The number of years in operation was not a significant characteristic, however ($p=.83$).

The analyses presented in Table 1 provide some evidence that there is a difference in marketing orientation over different company characteristics. Hence, H_1 is rejected, indicating that an increase in a company's marketing orientation can be anticipated as the size or scope of their operations increase.

The performance of a company and its marketing orientation are investigated in Table 2. Potential differences in marketing orientation relative to the change in profit and change in sales over the preceding three-year period were examined. The analysis of variance for change in sales was significant. Companies with more favorable changes in sales demonstrated more marketing orientation than firms with less satisfactory sales performance over the preceding three years ($p=.02$).

Although the ANOVA examining the change in profits was marginally significant ($p=.10$), the marketing orientation/performance relationship was not completely clear. While in general, firms with a more favorable change in profits exhibited more marketing orientation, there was a slight dip in marketing orientation comparing firms with

Table 2
Analysis of Variance for Company Performance

	% Change	Mean Marketing Orientation	F-Ratio	Significance
Company Change in Profits Over the Past 3 Years	-100 to -1	37.81	1.97	0.10
	0	36.08		
	1 to 24	39.37		
	100+	44.58		
Company Change in Sales Over the Past 3 Years	-100 to -1	31.82	3.16	0.02
	0	37.70		
	1 to 24	39.90		
	25 to 99	42.45		
	100+	42.83		

Table 3
Analysis of Variance for Company President Characteristics

	% Change	Mean Marketing Orientation	F-Ratio	Significance
Gender of Company President	male	37.81	1.23	0.27
	female	37.94		
Education of Company President	HS	30.91	3.29	0.04
	College all or some	40.01		
	Post college	41.66		
Age of Company President	20-35	36.36	0.57	0.68
	36-44	40.75		
	45-54	39.91		
	55-64	40.84		
	65+	41.80		

static profit performance over the past three years. Based upon the overall results, however, H_2 is rejected; this suggests that higher performing companies tend to have higher amounts of marketing orientation.

Regarding H_3 , the hypothesis dealing with the marketing orientation of the company relative to the personal characteristics of the leader, the analysis is presented in Table 3. The personal characteristic variables that were investigated include the gender, education, and age of the company president. Only education was significant in the analyses of variance that were conducted ($p=.04$). The data indicated that presidents with less education led companies with significantly less marketing orientation. Since only one of the three analyses was significant, there is insufficient evidence to fully reject H_3 .

Interestingly, while the pattern of the data regarding the marketing orientation of the company and the decision-making style of the leader is the same for both day-to-day decisions and long-term decisions, only for day-to-day decision-making was the relationship significant ($p=.02$; see Table 4). In both decision-making styles, the lowest marketing orientation was found in companies where leaders make all the day-to-day and long-term decisions. This was followed by more marketing orientation when they shared these decisions, and even more when they are not involved in these decisions at all. The differences,

however, were not significant for the long-term decisions ($p=.44$), suggesting that H_4 can be rejected only tentatively. The somewhat indeterminate results of both H_3 and H_4 suggest that further research on these variables is needed.

For the fifth hypothesis involving the marketing orientation of the company and the entrepreneurial experience of the company leader, the data is presented in Table 5. Two measures of entrepreneurial experience were utilized, and both were significant.

While it is clear from the data in Table 5 that the marketing orientation of a company varies depending on the entrepreneurial experience of the leader, the results also suggest some unanticipated but interesting findings. Managers (i.e., with no ownership) and those who inherited their ownership demonstrated the lowest levels of marketing orientation. In contrast, the highest level of marketing orientation was associated with company presidents with stock options and "buying-in" ownership potential. Falling in the middle with respect to marketing orientation were those who started or purchased the business. The fact that the highest level of marketing orientation was associated with more sophisticated ownership mechanisms such as stock options may provide some insights into these results. This group may include a more experienced set of company leaders. The lower levels of market-

Table 4
Analysis of Variance for Company President Decision-making Style

	% Change	Mean Marketing Orientation	F-Ratio	Significance
Day-to-Day Decisions	make	36.96	4.25	0.02
	share	42.07		
	do not make	43.43		
Long-term Decisions	make	39.03	0.84	0.44
	share	41.14		
	do not make	46.00		

Table 5
Analysis of Variance Entrepreneurial Experience of Company President

	% Change	Mean Marketing Orientation	F-Ratio	Significance
Ownership Status of Company President	started	39.61	2.64	0.04
	purchased	41.49		
	inherited	37.80		
	other own manager	56.60 38.32		
Number of Businesses Started by Company President	0 bus. started	38.81	5.24	0.00
	1 bus. started	36.17		
	2-3 bus. Started	44.98		
	4+ bus. Started	42.20		

ing orientation for those who had initiated or purchased their firms may reflect a less experienced leader group.

Similarly, the ANOVA for marketing orientation and the number of prior businesses that the leader has started is also significant. While company presidents who had experience with multiple previous start-ups demonstrated higher levels of marketing orientation, no clear pattern was seen in the past entrepreneurship experience/marketing orientation relationship. For example, firm leaders with between two and three previous start-ups had higher levels of marketing orientation than those who had initiated four or more businesses.

This second category of entrepreneurial experience is based on the number of start-ups, however, not the number of sustained ventures the leader has been involved with. It is possible that an “idea generator” type of founder is prevalent in the group that reported four or more previous launches. Marketing orientation may be most critical in sustaining a venture. These founders may be more involved in the start-up phase than in sustaining the enterprise. This may account for this group’s lower level of marketing orientation, even with greater apparent entrepreneurial experience. Based on the analysis, however, H₅ can be rejected.

Discussion and Implications

Better insights into the influences that organizational and leader characteristics have on marketing orientation can lead to more effective marketing practices. For small to medium-sized enterprises, these factors have been less frequently examined. This study was an effort to make such an analysis, and several patterns emerged.

Theoretical Implications

Previous studies (Slater and Narver 1995; Harris 1999, for example) suggest that the internal characteristics of an organization can play a determining role in implementing an organization-wide marketing orientation. This study’s overall findings support that perspective in SMEs. Certain key organizational and leader characteristics were associated with significant differences in the marketing

orientation of the firms in the study.

The pattern of differences suggested by the findings is also intriguing. On the surface, the findings may suggest that marketing orientation is not stronger in smaller firms. Size of the organization may not be, however, the actual reason for the differences observed. Rather, marketing orientation involves not only the willingness of the firm to gather and disseminate marketing intelligence, but also an organizational culture that is committed to shaping customer value based on marketing intelligence. Both awareness of the contribution marketing intelligence can provide in adding customer value *and* the resources to put marketing intelligence into effect are necessary. The ability to create and sustain the needed organizational culture and resource infrastructure may be more difficult in smaller firms.

The pattern of differences in marketing orientation associated with day-to-day decision-making may also be considered in this context. As the company leader retained operational decision-making on a day-to-day basis, lower levels of marketing orientation were evidenced. In a larger organization it may be difficult, if not impossible, for the firm president to retain this type of hands-on involvement. In contrast, such involvement might be prevalent in many smaller firms.

While smaller size would appear to offer an advantage in creating a firm-wide responsiveness, fostering such a marketing-oriented culture becomes much more dependent on a single individual: the company president. If the firm’s leader is unwilling or unable to relinquish day-to-day decision-making, the organization’s culture may also not support the values needed for high levels of marketing orientation. Though more immediately apparent in smaller organizations, top management support for a firm-wide culture that fosters a marketing orientation is critical at any size.

Managerial Implications

One managerial implication for SMEs involves the type and level of involvement of the CEO on the day-to-day operations of the small business. Clearly, small business

leaders must learn to delegate day-to-day decision-making once a company grows beyond the start-up and growth phases. The danger of lower levels of marketing orientation being exhibited throughout a firm could be enhanced if CEOs are focused too much on operational issues.

The research findings also suggest that CEO education plays a role in the marketing orientation of SMEs since higher marketing orientation levels were associated with higher levels of CEO education. Small firm leaders, regardless of job pressures or time constraints, should consider continuing executive education programs not only for personal career fulfillment, but also as a logical approach to improving firm performance. The impact of additional education could be especially advantageous if it allows small firm leaders to combat many typical problems associated with SMEs—leadership dependent on the CEO, obsession with growth at all costs, administrative inefficiencies, and poor organizational structure (e.g., Brereton 1974; Lowry and Chapman 2000). In addition, since problems in sales/marketing recently ranked as the number one business problem of small and mid-sized businesses (Lowry and Chapman 2000), greater executive education in this area, including understanding the benefits of and implementation necessary for marketing orientation, could help small companies.

Additionally, this research indicates that marketing orientation is related to both the size and scope of a company's operations. As small and mid-sized firms evolve from start-up ventures and move into the growth, maturity, and rebirth/decline stages, CEOs must begin to place greater emphasis on infusing the SME with his or her innovative behaviors. This includes evolving from traditional marketing companies to "entrepreneurial marketing" organizations (Schindehutte, Morris, and Kuratko 2000). Often referred to as corporate entrepreneurship (Morris and Kuratko 2000), intrapreneurship (Pinchot and Pellman 1999), or corporate venturing (Block and MacMillan 1993), this process of organizational change and renewal relies heavily on a company-wide marketing orientation and activities. For example, the creation of customer value through continuous innovation or leading the company into

new markets, products, or technologies will be critical factors for future SME business performance.

Future Research

The cross-sectional design of this study does not, of course, allow causal inferences. Future longitudinal studies would provide a better understanding of the nature of these relationships. While appropriate to the design, future research might also combine internal self-report measures with other internal and external measures. Such a range of measures would enhance the generalizability of the findings.

Several directions for future research are, however, suggested by these findings. This study examined the potential differences in marketing orientation across internal organizational and leader characteristics in SMEs. Further investigation into the role the organizational leader plays in fostering a firm's marketing orientation could yield valuable insights. For example, the current research must eventually be extended to measure marketing orientation levels of SMEs throughout all stages of the business life cycle, not just at a single point in time. How much (if at all) do marketing orientation levels change over the life of the SME? And how might these changes be impacted, positively or negatively, by other internal characteristics?

Previous research found that a differentiation strategy was associated with higher levels of marketing orientation (Pelham 1997; Homburg, Workman and Krohmer 1999, for example). Although not significant in this study, further examination is needed to determine whether a niche strategy is associated with higher levels of marketing orientation. Since niche/differentiation strategies are often employed by smaller entrepreneurial firms, this has particular relevance for SMEs.

The performance variables used in this study suggested a positive impact on SMEs exhibiting stronger levels of marketing orientation. However, since firms experience differing sales cycles, the time frame between implementing marketing orientation and resultant outcomes may also differ. Incorporating this characteristic into future studies could further clarify the impact of marketing orientation on SME performance.

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RICHARD C. BECHERER (Richard-Becherer@utc.edu) holds the Clarence E. Harris Chair of Excellence in Business and Entrepreneurship at the University of Tennessee at Chattanooga. He has had extensive experience both as an academic and as an entrepreneur. He cofounded one of the first for-profit health maintenance organizations in the United States, and has also been involved in several other business start-ups, including a marine business and a plastic injection molding business. Dr. Becherer received his doctorate from the University of Kentucky and primarily teaches entrepreneurship courses. He has been published in numerous journals, including *Entrepreneurship Theory and Practice*, *Journal of Small Business Management*, *Journal of Marketing*, and *Decision Sciences*. He was the 1993 winner of the Coleman Foundation Award for the best research paper at the 1992 University of Illinois-Chicago American Marketing Association Research Symposium on Marketing and Entrepreneurship. In 1998, Dr. Becherer received the Edwin M. Appel Prize presented each year at the Price/Babson College Fellows Program.



DIANE HALSTEAD (Diane-Halstead@utc.edu) is the Mary Harris Distinguished Professor of Entrepreneurship at the University of Tennessee at Chattanooga where she teaches small business management and marketing. She has also held faculty positions at the University of Kentucky and Western Michigan University. Professor Halstead earned a Ph.D. in marketing from Michigan State University and a BBA and MBA in marketing from Western Michigan University. Dr. Halstead's industry experience includes serving as marketing director and account manager for several advertising and public relations agencies. She has also done extensive consulting work for DuPont, American Red Cross, Tennessee Valley Authority, UNUMProvident Corporation, Blue Cross/Blue Shield of Tennessee, and others. Her research has appeared in the *Journal of Small Business Strategy*, *Journal of Marketing Theory and Practice*, *Journal of the Academy of Marketing Science*, *Journal of Business Research*, *International Journal of Research in Marketing*, *Journal of Services Marketing*, and others.



PAULA J. HAYNES (Paula-Haynes@utc.edu) is the George Lester Nation Professor of Marketing at the University of Tennessee at Chattanooga where she teaches courses in e-marketing, marketing research, and marketing management. She earned her doctor of business administration degree from Mississippi State University. Dr. Haynes has served as a consultant to a variety of for-profit and not-for-profit organizations on quality program implementation, market analysis, and survey procedures. She has published more than 40 articles in journals including *Internet Research*, *Journal of Services Marketing*, and *Journal of Business and Entrepreneurship*. Her current research interests include the effects of job dissatisfaction on the entrepreneurial process and the impact of the Internet on entrepreneurial business activities.

Collaboration among SMEs as a Mechanism for Innovation: An Empirical Study

Mário José Batista Franco

The interest for collaboration among small and medium-sized enterprises and innovation has been highlighted, in recent times, due to the acceleration of technological changes and to increasing international competitiveness. Many small firms, with rigid structures and weak entrepreneurial dynamics, experienced difficulties in becoming innovators. Some of these firms can adopt collaborative agreements because these relationships enable them to get the necessary innovative activities, know-how, and exploit opportunities, which they cannot achieve alone.

This study examines the motives for the formation of collaborative agreements in industrial Portuguese SMEs and presents some empirical evidence concerning collaboration as an important vehicle for the innovativeness of these small firms. The findings were based on a sample of 92 firms/collaborative agreements.

Faced with global economic competitiveness, the need for collaboration among small and medium-sized enterprises (SMEs), completed with innovation has become a subject of prime importance to governments, industry, and academics. Firms are reminded constantly that collaboration strategy (Jarillo 1990) and innovation (Chaharbaghi and Newman 1996) lie at the heart of competitive performance. Collaboration and innovation have been widely regarded as an important change process that can sustain business development in increasingly dynamic markets. In recent years, a large amount of literature has emerged on collaboration strategy (Franco 1995, 2001; Glaister and Buckley 1996; Volery 1996) and innovation (Pettitt 1990), but very little basic research has been conducted by industry recognizing that these two instruments can be related and they can contribute to international competitiveness. However, a recent study (Kaufman et al. 2000) explored the relationships among collaboration, technology, and innovation in SMEs manufacturers.

In fact, in a globally competitive marketplace, collaboration and innovation—new technologies, new skills, and new systems—are transforming the goals and practice of economic development. For Birchall et al. (1996), competitive pressures and market globalization have provided the inputs for innovation (i.e., creation, development, and introduction) of new product/services or a new procedure or process for business to benefit one or more of the stakeholders in an organization.

In this sense, González et al. (1997) argue that because firms must adapt themselves to a changing external environment, they need an aggressive innovation policy in order to convert innovation into competitive advantage. This circumstance has obliged firms to introduce innovation into their strategic plans, so they can attain the necessary competitiveness to operate in the current environment. To innovate there has to be a determination to achieve some results. Such a determination will then transform itself through creativity into a vision of the future where opportunities can be realized. The exploitation of these opportunities requires certain models and tools, the application of which will refocus the organization on new ways of working (Chaharbaghi and Newman 1996).

Due to their limited financial and human resources, some SMEs need to develop collaborative agreements with other firms, public institutions, and large corporations. Collaboration among SMEs can be a good strategy to overcome some of these constraints and to reinforce and improve the level of their innovation. As stressed by Celeste (1996), beginning in the 1980s, collaboration helped revitalize key industries. Now, a new generation of collaborative agreements is beginning, ones formed to focus on technology innovation. These relationships include university agreements, research institute agreements, collaborative research and development (R&D) agreements, inward technology licensing, and, in certain instances, R&D limited partnerships.

Collaboration encourages firms to maintain continual innovation and quality improvement needed to compete globally, and to strengthen market position. Industrial collaboration is almost unanimously considered vital to a firm's survival. Hausler et al. (1994) state that collaborative agreements are perceived as a major source of a nation's competitive strength and, according to Harrison (1997), firms have been encouraged to innovate so as to increase their competitiveness.

In this context, the theoretical framework of this study is to explore the developing literature about motives for collaboration formation and to analyse firms' innovative behavior, as well as to present some empirical evidence about these last two issues.

In this research, innovations are considered as a set of activities limited in space and time, and include new products, new processes, new organizational technologies, or new social methods.

Theoretical Framework

Collaboration among Firms for the Rapid Exploitation of Innovation

Collaboration among firms has become a focal issue in the debate on industrial innovation. The ascent of collaborative agreements as a central topic in the literature on innovation has been accompanied by proposals for a redefinition of concept of innovation (Hausler et al., 1994; Dutta and Weiss 1997). Evidence supporting an increasing need for collaborative agreements in industrial innovation processes has been provided by an increasing number of studies. According to Hausler et al. (1994), numerous empirical studies have revealed firms' motivations for participating in collaborative agreements.

In an economic environment where innovation tends to be increasingly costly and where the timing of market entry appears to be increasingly critical for the commercial success of innovations, collaboration strategy is seen as the most promising way to reduce the risks and costs associated with industrial R&D activities (Hausler et al. 1994). As stressed by Kotabe and Swan (1995), global and increasingly key organizational forms are being created through collaborative agreements.

According to Rosenberg (1991) and Tushman (1977), new models must be able to incorporate notions such as feedback between scientific research, technical development, and production. In organizational terms, such "interactive" or "circular" models of innovation presume an institutional structure of innovation that is extremely variegated and involves a complex network of backward, forward, horizontal, and lateral relationships and linkages within and among firms and organizations such as universities (Hausler et al. 1994).

According to Celeste (1996), collaborative agreements formed to share the costs and benefits of new technology and operating methods, serve as important new tools for economic development. Technology and innovation are often the key drivers in the formation of business partnerships and collaboration, reflecting the parallel relationship between the institutional and the technological areas (Arias 1995).

As changes in an environment create possibilities for future innovations, Forrest (1990) states that collaborative agreements allow small firms to innovate in a timely manner, for often there is an optimal time to develop a new product.

Several authors have provided reasons for collaboration formation. An explanation for use of collaborative agreements stems from theories on how strategic behavior influences the competitive positioning of the firm (Kogut 1988). Harrigan (1985), Mariti and Smiley (1983), Porter and Fuller (1986), Contractor and Lorange (1988), and Glaister and Buckley (1996) explicitly consider a number

of the motives for collaboration formation. Collaboration has a competitive use in that it could consolidate a firm's existing market position. Collaborative agreements also allow firms to diversify into attractive but unfamiliar business areas, thereby providing a less risky means of entering new markets.

The theoretical frameworks for the explanation of collaboration processes do not map neatly on to motives. According to Glaister and Buckley (1996), the mainstream economics approach treats the extension of the firm by collaborative agreements as a means to obtain economies of scale. Transaction cost explanations emphasize the use of collaboration as a means of reducing costs and the reduction of risks. Motives of organizational theory involve a transfer of technology and the suggestion from this body of theory is that international expansion is facilitated by cooperation. Collaboration among SMEs provides benefits from the exploitation of innovative activities, technology, or other skills transfer (Harrigan 1985). Contractor and Lorange (1988) and Forrest (1990) point out that, in general, collaborative agreements can be used to bring together complementary skills and talents which cover different aspects of the know-how needed in technology industries. As noted by Glaister and Buckley (1996), significant innovation is likely to result from the fusing of these complementary skills, a result which is unlikely to be achieved by one firm acting alone.

Although many small firms will opt for growth through collaboration, the choice of agreement is important. Effective linkages can occur throughout the innovation chain. These linkages help the firms overcome their weaknesses and build on their strengths. The choice of alliance must depend on the focus of the firm's overall growth strategy (Forrest 1990). For example, collaborations such as R&D agreements, marketing/distribution agreements, outward technology licensing, or joint ventures are valid choices, but may not fit every company's business plan.

Based on collaboration strategy, small firms would be wise to choose those relationships which help to strengthen their core technologies, and develop others which assist in their market focus. According to Forrest (1990), managers recognize that collaboration is a key factor in a firm's competitiveness and, therefore, a basic factor in their generic strategies. A unilateral agreement is necessary whereby the skills of one firm can complement those of another.

In conclusion, SMEs can use a variety of collaborative agreements to develop and to sustain their technological competitiveness, facilitate the rapid exploitation of their innovation activities, and facilitate international expansion.

Entrepreneurial Innovation and Firm's Size

For innovation to become the goal of firms, it must first be understood. However, the concept of innovation has been

defined in different ways. According to Chaharbaghi and Newman (1996), the difficulty is that there is no common perspective to link different studies. Innovation is viewed differently, emphasising different components such as marketing, technology, and organization.

For example, some researchers (Berry and Taggart 1994; Celeste 1996; Chaharbaghi and Newman 1996; Hauschildt 1992; Harrison 1997) have used innovation to describe the introduction and spread of new and improved products and processes in the economy and “technological innovation” to describe advances in knowledge. For Hyvarinen (1992), innovation is an invention used on a large scale to take economic advantage of it. One basic invention may lead to several innovations.

Early definitions of an innovation were developed for industrial purposes and they stressed the product and process. Later, the concept was widened to cover different innovations from everyday improvements to large organizational renewals based on different technologies.

According to most studies (Birchall et al. 1996; Harrison and Watson 1998; Hyvarinen 1992; Lara 1990), the contribution of small firms to research and innovation has grown regularly and seems to be slightly higher than that of very large corporations, mainly because SMEs have shorter development cycles and are closer to the market. In fact, only very recently have researchers and managers suggested that small firms are able to manage their technological knowledge and their know-how in a more systematic way than larger companies.

There is a continuous discussion about the association between size and innovative capacity. Some researchers argue that bigger firms’ dynamism is greater in this field. However, other authors assert that SME possesses appropriate characteristics for innovative activities (González et al. 1997).

The size-innovation relationship debate is well known. Traditionally, two opposing positions existed. On one hand, are those who, following the arguments of Schumpeter (1942), considered that large firms were more innovative. On the other hand, there were those who maintained that small firms were more open to the introduction of organizational changes. The flexibility of the SMEs, their simple organizational structure, low risk, and receptivity to changes, would be, according to González et al. (1997), essential features for enabling SMEs to be innovative, both within the organization and in the external market.

Recent studies have paid more attention to the contribution that small firms could make in the innovation field. According to Jones-Evans et al. (1996), studies show that technologically innovative SMEs in the United Kingdom have above-average growth rates with regard to assets and exports. Moreover, such companies tend to have low bankruptcy rates.

Some empirical studies have attempted to clarify the relationship between size and innovative capability, but

without definitive conclusions. There is evident ambiguity regarding the role that the variable of size assumes with regard to the collaborative agreements and to the capability of firms to generate innovation. With a steady number of products, a large organization, a greater diversity of capabilities, better marketing channels, and economies of scale, larger firms are more innovative (Baldwin and Scott 1987). On the other hand, small firms have to be even more highly innovative to attract more attention and overcome their competitors’ advantages in order to attract their customers, as suggested by Utterback and Abernathy (1975) and Kotabe and Swan (1995). These smaller, less integrated, and undefended firms with new technological innovations collaborate with established firms to gain access to the latter’s complementary assets of reputation and distribution channels, customer bases, and possible acceptance as dominant design in subcategory markets.

It is wholly conceivable that the introduction of successful products by larger firms can be attributed to innovations created by SMEs. Large firms are in a more favorable position to learn and to imitate the production and distribution advantages of small firms (Miles and Snow 1978).

Finally, it is important to note that a firm’s size, in itself, is neither an advantage nor a disadvantage. But each dimensional step involves a set of specific characteristics that, depending on the objective (innovative behavior), can represent benefits or obstacles.

Objective, Hypotheses, and Methodology

Research Objective

SMEs represent the major part of the Portuguese industrial sector. About 76.5 percent of firms have fewer than 10 employees and less than 0.2 percent have more than 500. Some of these small firms are concentrated in traditional activities such as textiles and clothing manufacture. These SMEs are mainly labor intensive and tend not to diversify their products or markets.

In this sense, competitiveness depends on a firm’s innovative capability and cooperation strategy. Therefore, this research identifies the main motives for collaboration formation and explores the relationship between a firm’s size and innovative behavior in industrial Portuguese SMEs.

Hypotheses

Research concerning the motives to engage in collaborative agreements has examined the development process from a variety of different theoretical perspectives. According to Frankel and Whipple (1996) motives are important because they represent the participating firms’ goals for the collaboration. As such, motives may form the basis for evaluating potential and actual attainment. Different motives imply different goals.

Understanding the potential impact of those differences is only one of many factors that are important to the successful creation, implementation, and maintenance of an agreement. Research suggests that critical issue regarding collaborative agreements concerns the recognition of complementary motives. Such recognition requires careful design, development, and use of interorganizational structures and procedures to achieve the cooperation goals and objectives inherent in each firm's motives.

Theoretical frameworks developed in collaboration field suggest that the formation of collaborative agreements is an innovative attempt by a firm to manage and control uncertainty (Spekman and Kirti 1990). While such theoretical frameworks broadly characterize the underlying rationale for a firm's entry into a collaborative agreement, they generally do not explicitly detail those motives.

In fact, the literature gives little indication a priori of what to expect in terms of the relative importance of a set of motivating factors for collaboration among firms' formation. Thus, this reasoning leads to the first hypothesis.

Hypothesis 1: Since motives for collaboration are often multidimensional, very complex and heterogeneous, it is possible to aggregate motives into several factors (dimensions) for collaboration among SMEs formation.

Some theoretical and empirical studies (Jones-Evans et al. 1996; González et al. 1997; Riedle, quoted in Birchall et al. 1996) propose that there are differences between SMEs and large firms in their innovative behavior. Some of these studies point out that small firms behave in a different way than large ones. These previous studies conclude that the innovative strategy implanted by both types of firms is different and presuppose a homogeneous behavior of the SME with respect to the innovation. However, other studies (González et al. 1997; Hage and Aiken 1970; Thompson 1967) suggest that several characteristics of small firms make them more likely to introduce changes. Thus, size can play a role in the diversity of a firm's size, a mixture of large and small firms, and has been supported as most conducive to innovation. Finally, despite empirical studies that have attempted to clarify this relationship between size and innovation capability, they do not arrive at definitive conclusions.

The research does also not present explicitly this association, about firm size and the motives for collaboration formation, which leads to the second hypothesis.

Hypothesis 2: The relative importance of the motives for collaboration formation will vary with the firm's size. The dimension (factor) associated with innovative activities will also vary with this contingency variable.

Methodological Aspects

Sample and Data. In Portugal, there is no publicly available database about cooperative agreements because most of them are implicit (tacit or informal). In order to analyse the potential association between collaborative agreements in Portuguese SMEs (firms with less than 250 employees) and their innovative behavior, data were collected from a survey based on a database created in an empirical study (Franco 2001). In this previous research, a total of 627 questionnaires were administered in February 2000. After one reminder, 114 usable questionnaires were returned, representing an 18.3 percent response rate. This low response rate may be due to the fact that small firms find it more of a problem to reply to mail questionnaires than larger companies, especially when the subject is relatively new, as in this study. Another potential argument is that the managers in small firms would have only a limited amount of time to devote to the questionnaire and limited human resources. Note that, in this study, the data were only collected from the 92 questionnaires corresponding to SMEs.

To evaluate the main motives for collaboration formation, business owners were asked to respond to a set of statements on a five-point Likert scale (i.e., 1 = "of no importance" to 5 = "of major importance").¹ Prior research indicated that ordinal classification of perception was a more realistic task for respondents than use of interval or ratio measures (Geringer 1991). It was also expected that managers would have only a limited amount of time to devote to the questionnaire, hence an easily understood Likert scale appeared to be more feasible than a potentially more precise but more complex scaling method. A five-point scale was adopted because it was felt that more numerous response categories would exceed the respondent's ability to discriminate, with the likelihood that "noise" rather than more precise data would result. See Table 2 for a complete list of collaborative motives.

Statistical Analysis. Based on statistical tools (frequency analysis, factor analysis, as well as multivariate analysis) and using the Statistical Package for Social Sciences (SPSS), the data collected were analyzed to provide an overview of collaboration and innovation variables. First, an approximation to the behavioral understanding of the collaboration and innovative firms was made from frequencies' analysis of the variables included in the survey. Second, results were obtained from a factor analysis of variables indicating the main motives perceived by the SMEs regarding collaboration. Finally, a one-way ANOVA (statistic F) was performed to identify some association between a firm's size and innovative motives.

Table 1 summarizes the methodological aspects and others used to validate the cooperation and innovation behavior in Portuguese firms.

Fieldwork time	Cross-section
Geographic focus	Portugal
Industrial coverage	Manufacturing sector
Firm's size	Small, medium, and large firms
Units of analysis	Firm and agreements
Sampling design	Convenience
Initial sample size	114/627 (Response rate: 18.3%)
Final sample size	92 SMEs/agreements
Data collection	Mail survey (questionnaire)
Date of research field	January to April 2000
Key informant	Top management (general)/manager
Analysis	Statistical (univariate and multivariate)

Findings and Discussion

Sample Characteristics

The sample is composed of 92 SMEs² and presented some diversity with respect to size distribution. About 23 percent of the firms were medium-size and only six firms were micro-size (less than 10 employees). In the industrial sector, machines and equipment (20.4% of the total), textile and clothing industry (10.4%) were more representative. The localization of these firms was distributed in the following main areas: Aveiro (20.4%), Lisbon (19.4%), and Leiria (15.1%). Regarding their juridical form, S Corporation³ was more representative (52 firms). Firms were an average of 26 years old, ranging between 1 and 119 years, and many of the SMEs (57.8%) were family businesses.

Main Motives for Collaboration Formation

To determine the main firms' motivations for participating in collaborative agreements, firms were asked to value a set of variables (motives), which were later submitted to factor analysis.

The motivations for collaborative agreements, which are based on the mean measure of the importance of the motives, are shown in Table 2. For the full set of agreements, the mean is higher for the following motives: "entering new markets," "to improve the level of innovation," and "to share resources and competencies."

Survey Item/Motivation	Mean	Standard Deviation	Number of Firms
Entering new markets	3.761	1.152	92
To improve the level of innovation	3.685	1.037	92
To share resources and competencies	3.663	1.041	92
To create economies of scale	3.533	1.032	92
To increase production capacity	3.478	1.172	92
To improve the quality	3.391	1.89	92
Facilitate international expansion	3.337	1.102	92
To achieve some experience	3.337	1.030	92
Technology transfer	3.185	1.204	92
Risk sharing	3.174	1.115	92
Faster payback on investment	3.098	1.028	92
To foment learning process	3.065	0.912	92
To improve the lead times	2.902	1.112	92
To share superiors and techniques staffs	2.696	0.958	92
To obtain financing	2.641	1.033	92

Note: The mean is the average on a scale of 1 ("of no importance") to 5 ("of major importance")

Table 3
Principal Components Factor Analysis of Collaboration Motivations in Firms

<i>Factors</i>	<i>Factor Loads</i>	<i>Eigenvalue</i>	<i>% Variance Explained</i>	<i>Cumulative Percent</i>	<i>Cronbach's Alpha</i>
<i>F1: Innovation and Organizational Learning</i>		3.453	23.023	23.023	0.839
To improve the level of innovation	0.810				
To promote the learning process	0.782				
Technology transfer	0.758				
To share resources and competencies	0.730				
To improve the quality	0.676				
To achieve some experience	0.512				
<i>F2: Development and Market Power</i>		1.955	13.032	36.055	0.755
Facilitate international expansion	0.863				
Entering new markets	0.799				
<i>F3: Resource Dependence</i>		1.866	12.437	38.492	0.687
To obtain financing	0.883				
To share superiors and techniques staffs	0.652				
Faster payback on investment	0.651				
<i>F4: Risks and Costs Sharing</i>		1.644	10.962	59.454	0.666
To create economies of scale	0.812				
Risk sharing	0.785				
<i>F5: To Reinforce Production Capacity</i>		1.636	10.907	70.361	0.640
To increase production capacity	0.881				
To improve the lead times	0.696				
Notes: KMO measure of sampling adequacy = 0.746 Bartlett Test of Sphericity: 510, 058; df=105; p <0.000 Fi (i=1,..., 5) – Factors (dimensions) Principal components factor analysis with varimax rotation					

Other relatively highly ranked motives are “to create economies of scale” and “to increase production capacity.” As shown in Table 2, the highest ranked motives are concerned with competitive positions in either new or existing markets, as well as in innovative activities.

As noted earlier, the 15 motives represent a number of overlapping perspectives. From the analysis factorial technique, five factors (dimensions) were produced which make good conceptual sense and explained 70.36 percent of the observed variance, as shown in Table 3. For each factor obtained from the factor analysis, a reliability analysis was also performed (Cronbach's Alpha) to measure the internal consistency of each scale as a whole. Such an index, which varies between 0 and 1, measures the consistency among variables and those they are expected to measure. According to Malhotra (1993) and Hair et al. (1998), the closer the index is from 1, the better is the scale's internal consistency. Results obtained are displayed in the last column of Table 3. In general, we can observe that all the indexes are higher than 0.64, but not very close to 1. According to the variables within each group, five factors were classified (see Table 3). The

remainder of this section discusses the interpretation of each of these factors.

Innovation and Organizational Learning (Factor 1).

This factor (dimension) includes motives associated with the development of resources and competencies in technology and innovation areas, with benefits in terms of quality. “To achieve some experience” was another motive for SMEs to collaborate. The experience is the main source of interorganizational learning. This factor aggregates also with the variable “to promote the learning process” as a reason related with collaboration formation. In fact, the motives that aggregate this first factor show the importance of activities' coordination and a very close relationship among firms. With this coordination and relationship among firms, know-how and accumulate experience sharing is easier.

Development and Market Power (Factor 2). This includes two motives/variables: “entering new markets” and “to facilitate international expansion.” International collaboration can also be the easiest way to penetrate foreign markets. For SMEs, which lack international experience, initial overseas expansion is often likely to be a collabora-

tive agreement. Contractor and Lorange (1988) argue that, in general, it is an expensive, difficult, and time-consuming business to establish a global organization and a significant international competitive presence. In fact, the move to new foreign markets and the development of either a multidomestic or global strategy can be facilitated by collaboration formation even for firms with considerable overseas experience.

Resource Dependence (Factor 3). When one firm collaborates, it can achieve resources not otherwise available. Small firms can have access to tangible resources such as financing and investments. In fact, investment sharing among several SMEs in cooperation projects can reduce the costs. With collaboration among the firm's strategic thinking, the required financing can be lowered through such collaboration. This entrepreneurial mechanism allows access to different resources and capabilities within the process. This dimension (factor) shows that to enter into a collaborative agreement can be a risky option compared with investing alone.

Risks and Costs Sharing (Factor 4). This factor includes variables associated with a low uncertainty in the current environment. For example, when high development costs of new products exist, a collaboration agreement can lessen the risk or at least help to minimize a

possible failure. Another motive that includes this dimension is economies of scale. Despite economies of scale sometimes increasing the risk, according to Sousa (1997), it can constitute a way to reduce the risk by more efficient cost structures.

To Reinforce Production Capacity (Factor 5). This factor includes two variables related to the production area: (1) rationalization of material resources to increase the production level, and (2) to achieve flexibility and specialization. For Roig (1989), the main objectives that the firms achieve when they adopt collaborative agreements are an economy of these resources and the reduction of excesses in production processes. Cooperation allows a firm to concentrate on its resources and distinctive competencies and to achieve other resources in speciality areas.

To sum up, the findings show a high number of motives that firms can associate with collaboration strategy. However, factorial analysis allows us to conclude that the SMEs are motivated by factors associated with (1) innovation and organizational learning, (2) development and market power, (3) resource dependence, (4) risks and costs sharing, and (5) reinforce production capacity. So it should be stressed that these findings give statistical support for hypothesis 1.

Table 4
Motivation for Collaborative Agreement Formation:
Firm's Size

<i>Factors/Dimensions</i>	<i>Firm's Size</i>			<i>Statistic F</i>
	<i>Group</i>	<i>Mean</i>	<i>S. Deviation</i>	
Factor 1: Innovation and Organizational Learning	Less than 10	-0.092	1.087	0.888 (n.s.)
	11 - 50	-0.046	1.101	
	51 - 250	0.048	1.001	
Factor 2: Development and Market Power	Less than 10	0.341	1.074	0.657 (n.s.)
	11 - 50	-0.064	0.804	
	51 - 250	0.008	1.134	
Factor 3: Resource Dependence	Less than 10	-0.119	1.055	0.557 (n.s.)
	11 - 50	-0.104	1.061	
	51 - 250	0.107	0.952	
Factor 4: Risks and Costs Sharing	Less than 10	0.496	0.233	0.358 (n.s.)
	11 - 50	-0.120	0.843	
	51 - 250	-0.003	1.152	
Factor 5: To Reinforce Production Capacity	Less than 10	-0.258	0.735	0.063 *
	11 - 50	0.291	0.953	
	51 - 250	-0.198	1.023	

Notes: The mean for the factors is the mean of the factor scores
* p< 0.10 n.s.: No significant

Firm's Size and Innovation Relationship

As the five factors (dimensions) are not correlated with each other, each of these motives can be pursued independently. Thus, particular combinations of these factors can underlie joint venture formation. To investigate further the underlying nature of the motivation for this sample of agreements, the analysis was developed by considering the motives' factors in terms of a firm's size. For size variable reports the means and standard deviations of the five factors, the rank order of these dimensions (factors) and the appropriate test statistic for comparing differences in means (One-way ANOVA), is shown in Table 4.

The findings suggest that there is only significant difference (at the 0.10 level) in the means of the five factors. On the basis of the findings it can be argued that, in terms of percentage, firm size is not linked with motives for collaboration formation but rather with innovative activities. It should be stressed however that these findings give weak statistical support for hypothesis 2.

Conclusions

In an environment where competition has become severe, where national boundaries have been broken down, and where technological leadership can be transitory, collaboration should be used as an important mechanism for small firms to become innovators. Because of their dynamic environment and the gaps between the various links needed to complete the innovation process, firms must, out of necessity, forge lateral "links" in the form of

collaborative agreements.

The innovation process for small firms can be simplified and addressed in terms of the collaborative agreements. The role of collaboration among SMEs, which has been discussed, and how they relate to the completion of the innovation process, has been an important mechanism for firms to achieve a higher level of innovation.

However, based on the findings obtained in this study, we can conclude that there are several motives that firms can adopt for collaborative agreements, including innovation. On the basis of these findings, it can be argued that small firms are linking up with other firms to pursue innovative activities at lower cost and to gain from the technological know-how of the partner. However, the empirical evidence does not confirm the size–collaboration–innovation relationship. The statistical test used indicates that the relative importance of the motivating factors do not vary significantly with a firm's size. So, this debate about a firm's size and collaboration and innovation behavior is still open. Further investigation into these two features would provide a deeper understanding of collaboration and innovation linkages.

Finally, we suggest that entrepreneurs adopt collaboration as an alternative strategy. It could be useful to put together more and more of these small firms to improve their level of innovation. From this study, it can be seen that for SMEs to develop and sustain their technological competitiveness and facilitate the rapid exploitation of their innovativeness, they should use a variety of collaborative agreements.

Endnotes

1. A "3" corresponds to "indifferent" and not "a mean importance."
2. One collaborative agreement was considered in each firm.
3. "S" Corporation is different from corporations due to the limited capital permitted by law (5.000 € contrasted to 50.000 €) and the minimum number of partners (two versus five).

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MÁRIO J. B. FRANCO (mfranco@fenix.ubi.pt) is a professor of entrepreneurship and SMEs administration in the Department of Management and Economics at the Beira Interior University, Portugal. He received his Ph.D. in management from Beira Interior University in 2002. In 1997, He was a doctoral candidate and participated in the European Doctoral Programme in Entrepreneurship and Small Business Management in Spain and Sweden. His research focuses on strategic alliances, innovation, and creation of firms. He is also member of a Research Unit (NECE) and is currently involved in some research projects about SMEs.

Supplier Selection and Development: The Relationship between Small Manufacturing Enterprises and Mass Merchandisers

Stephen C. Jones
Tami L. Knotts
Gerald G. Udell

This study examines the results of a program intended to act as a selection tool for mass merchandisers and a development tool for small manufacturers. The evaluation program assessed the management practices and products of potential suppliers. Based on past experience, buyers for mass merchandisers consider small manufacturing enterprises a poor risk as potential suppliers of retail goods. As part of the evaluation process, firms were asked 34 closed-end questions regarding their management practices, and each product was evaluated on 41 specific qualities necessary for the mass merchandising market. Of the 1,690 firms that participated in this project, about 5 percent had their products accepted by a national mass merchandiser. A review of the evaluation data reveals that firms needed high performance in both areas of evaluation to be successful in the marketplace, not just a strong firm or a marketable product. However, each of these areas separately had a statistically significant effect on the success of the product in gaining a retail buyer's attention.

Much of the research done on small firm survival focuses on the specific factors which seem to predict the early demise of the venture. Begley and Boyd (1986) indicated that this research misses the viability of the mature firm and the factors which, long-term, predict its health in the marketplace. Lussier (1995) found that the factors that are cited are too narrowly focused, lacking a comprehensive framework for examination, echoing the results of an earlier study by Gaskill, Van Auken, and Manning (1993). Corman and Lussier (1991) also found that quite often the factors cited as failure reasons or causes are better defined as symptoms.

From a purchasing standpoint, the buyer-supplier relationship often uses similar litmus tests in establishing long-term business partnerships between firms. Research examining this area often looks at either screening factors or supplier development procedures for the purchasing function. Park and Krishnan (2001) and others have studied various models of the purchasing relationship, but to date this research has not fully examined the small firm purchasing function. They did find that the function is a strategic competency issue for buying firms. Pearson and Ellram (1995) listed selection and evaluation factors, but

the development side of the partnership is left untouched. Dollinger, Enz, and Daily (1991) suggest that minority firms can profit from a greater understanding of how both sides of this partnership (evaluation and development) create a strong and healthy relationship for both parties.

This study attempts to examine the results of a program created for just such a purpose. The program had both an evaluation function for the buyer and a development function for the potential supplier. While this program did not restrict itself to minority firms, it used many of the features called for by Dollinger et al. (1991). The program evaluated small manufacturing enterprises (SMEs) wishing to enter the national mass merchandising market, but it also focused on ways to develop these firms so that they would be more attractive to large retailers in the future. After a review of relevant research in this area, we will examine this program and its results in greater detail.

Literature Review

Much of the literature on the buyer-seller relationship has focused on supplier selection and evaluation (Pearson and Ellram 1995; Swift and Gruben 2000; Park and Krishnan 2001). Some researchers have also looked at supplier development and the role it plays in building long-term purchasing relationships. These relationships are important to the financial health and long-term viability of the firms involved because of the impact they have on each firm's balance sheet. Studies have shown that the purchasing function alone can account for up to 60 percent of a firm's expenditures (Tully 1995). This review focuses on supplier selection studies that identify important criteria and supplier development articles that offer advice for improving the performance level of potential vendors.

Supplier Selection Studies

Supplier selection is an important aspect of the purchasing management function because choosing the right supplier and developing a supportive relationship begin the production process (Li, Fun, and Hung 1997). Careful supplier selection has become more critical recently due to shifts in supply chain management. Buyers are reducing their supply base, focusing on long-term cooperative relationships,

and involving suppliers in production design (Abegglen and Stalk 1985; Emshweiller 1991). Buying organizations have realized that goals of lower costs, higher quality, and customer satisfaction are heavily influenced by supplier-controlled product attributes such as price and reliability. Therefore, they are dedicating more resources to building relationships with suppliers that are positive for both sides (Tully 1995).

The goal of supplier selection is to choose the best supplier, or the one who has the highest quality product and service for the customer (Swift and Gruben 2000). Prior research on supplier selection has identified many criteria for determining the best supplier(s). Verma and Pullman (1998) identified quality, delivery reliability, price, and flexibility as critical selection factors for buyers. Pearson and Ellram (1995) found that quality was the number one factor for small and large electronic firms in selecting suppliers, followed by cost, current technology, and design capabilities. St. John and Heriot (1993) suggested that potential suppliers distance themselves from the competition by raising quality above the industry standards, offering unique products, and having excellent design capabilities.

Piercy and Cravens (1997) examined the selection criteria of product, price, service, and relationships to determine what buyers rated as important and what suppliers performed the best. The authors found that buyers preferred quality products and trustworthy relationships the most, and suppliers scored high on both of these items. In general, buyers ranked supplier-related issues such as trust, communication, and a positive attitude higher in importance than product-related issues such as packaging, warranties, and international brand recognition. Wilson's (1994) research also suggested that quality and service have increased in importance as supplier selection criteria, while price and delivery have decreased.

Park and Krishnan (2001) looked at the supplier selection practices of small businesses and found that although managers use objective criteria for supplier selection, their decisions may be influenced by industry factors and personal characteristics. Li, Fun, and Hung (1997) suggested that supplier selection should not be based on just price. The value of the supplier should be measured by the firm's performance on multiple criteria which indicate the total materials cost.

Pearson and Ellram (1995) call for studies that examine the measurement of each selection criteria and different industry studies to determine the criteria value based on the environment. Past selection criteria such as dependable quality, delivery reliability, and large volume production capability represent minimum qualifications for suppliers. Today, buyers are also looking for supportive, long-term relationships with suppliers (St. John and Heriot 1993).

Supplier Development Studies

While supplier selection is an important, extensively researched purchasing activity, the literature concerning supplier development is sparse. Supplier development involves feedback, where potential vendors learn about their strengths and weaknesses in order to establish or improve a cooperative relationship with a buyer. Traditionally, supplier development has not been a strong point of U.S. firms, but the benefits are evident. Whitman (1996) compared the sourcing strategies of suppliers in the United States and Japan and found that Japanese automakers were much more concerned with maximum efficiency in the supply chain than U.S. firms. The result of this development focus by Japanese firms included lower inventory levels and costs.

Supplier development is not separate from supplier selection but is rather an extension of the purchasing process. Chrysler Corporation recognizes how supplier selection and development blend together. No longer are Chrysler dealers evaluated on sales and service alone; other components such as training and employee development programs are gaining importance. Chrysler wants proactive dealers who implement their own continuous improvement programs in an effort to become high-quality retailers (Jackson 1997).

Self-improvement is a large aspect of supplier development. Donovan (1996) noted that most manufacturers could use a radical change in their supply chain management, and he offered 10 benchmark questions to determine areas that need improvement. All of the questions relate to product quality, price, and order processing. Donovan (1996) stated that firms who reengineer their supply chain within a five-year period could increase their market share and profitability. Flanagan (1994) also suggested that firms should implement cost-reducing and quality improvement initiatives and build supportive buyer relationships to gain a competitive advantage and combat the large buying power of mass merchandisers.

Supplier development is not possible without buyer assistance. Some corporations have implemented purchasing programs to develop new suppliers (Dollinger, Enz, and Daily 1991). These minority development programs are meant to demonstrate social responsibility by the buying organization and stimulate entrepreneurship in the minority community. The transaction cost of a large buyer/small seller relationship is often high; therefore, Dollinger, Enz, and Daily (1991) suggested some actions that the buying organization could take to increase the selection and development of minority suppliers. First, buyers should separate the evaluation and selection aspects of the process. In other words, purchasing employees should not be responsible for both assessing supplier potential and contracting with selected suppliers. Second, buyers should adopt multiple criteria for evaluat-

ing the effectiveness of purchasing programs that benefit special groups and the performance of their purchasing employees. Finally, buyers should use an evaluation process coupled with a feedback process.

It is clear that both evaluation and development should be important aspects of a supplier selection program. However, the costs to firms, even large ones, can be prohibitive. Additionally, many firms are not ready to take such proactive steps, whether or not the company's mission is oriented toward active social responsibility. Often, larger firms may find it simply easier and more efficient to rely on other large firms with established reputations rather than to experiment with smaller manufacturers who are as yet unproven. This study reviews an independent, outside program set up to evaluate small manufacturers as potential suppliers to large mass merchandisers. The program also took on a developmental role for the SMEs in that it used the evaluation results to help these firms understand their weaknesses so that they could begin self-improvement processes to increase their chances of success in the future. In the end, the choice to improve was left to the SME, and the choice of suppliers was left to the retailer. However, it is likely that both were armed with better information after the process than they would have been without it.

Program Overview

In an effort to help mass merchandisers select more small manufacturing firms as vendors, a program was developed that focused on supplier selection and development. This evaluation program assessed the products and management practices of SMEs that were interested in becoming suppliers to major American mass merchandisers. While the ultimate goal of the process was to determine which ventures were best suited for the mass merchandising market, the program also served as an advising tool for manufacturers by counseling them on their strengths and weaknesses. The program consisted of two evaluations: an assessment of the firm's management practices and an assessment of its submitted product. Each venture was either forwarded or not forwarded to mass merchandiser buyers for their consideration based upon the results of these evaluations. The resulting decision to market the product nationally was made by the merchandiser buyer.

Firm Assessment

After contacting the program's director, a venture's owner was asked to complete an objective self-assessment of his or her firm's management practices. Each owner was advised that all responses would be independently verified and that fraudulent representations would immediately disqualify their venture from further consideration in the program. Firms were asked 34 closed-end questions

regarding their management practices. Each question had five or six possible responses which were based on prior research or observed practice, and they were ranked for desirability by professional buyers prior to the program. However, when the actual instrument was constructed, the responses were scrambled to reduce respondent bias. The minimum desirable level of compliance was set at the median of the responses available. An example of an item and its responses (listed in ascending order of desirability) is given below:

Marketing Plan. Does your firm have a marketing plan for this project?

We do not need a marketing plan for this project.

We have an informal, unwritten marketing plan.

We have an informal, written plan.

A formal, written marketing plan is in progress.

We have a formal, written marketing plan.

The management practice items included on the firm assessment instrument were selected and revised based on generally accepted research conclusions and discussion with potential buyers from the mass merchandiser industry. The program director and his staff researched the literature in this area to find what seemed to be the salient qualities required for success as a small manufacturer. They then approached scholars in each business discipline and further developed the core areas. Finally, they approached representatives of mass merchandising firms to verify the qualities that these professionals deemed appropriate for their firm's suppliers. The final instrument was created based on the management practices distilled in this process, as suggested by previous studies (e.g., Pearson and Ellram 1995). The basic content areas of the firm assessment instrument are presented in Figure 1.

Product Evaluation

The prospective supplier also had to provide the program with a sample of the product in its final packaging. Independent professional evaluators assessed this product for its potential success in the major retail market. Each product was evaluated on 41 specific qualities necessary for the mass merchandising market. Evaluators then made general assessments of the firm in five areas (production capability, product quality control, marketing capability, engineering and technical capability, and financial capability) and overall assessments of the product and the firm. As with the firm assessment, there were five or six possible responses for each item (along with the option to mark an area as "not applicable"), but the responses were not scrambled because bias was not expected from the trained independent evaluators in this program. The minimum desirable level of compliance was set at the median of the responses available. An example of an item and its responses is given below:

Content Areas	Management Practice
Marketing Management	Creation and Use of a Marketing Plan
	Marketing Organization Structure
	Price Determination Process
	Market Demand Determination Process
	Competitive Product Analysis
	Creation and Use of a Promotional Plan
	Company Orientation (Customers, sales, profitability, etc.)
	Strategic Direction
	Creation and Use of Detailed Job Descriptions
	Openness to Employee Input
	Type and Quantity of Management Experience
	Quality Assurance Process
	Primary Objectives of Company (Return on investment, market share, etc.)
	Use of Outside Consultants
	Creation and Use of a Business Plan
	Existence of a Board of Directors
	Involvement of the Board of Directors
	Technical Management
	Extent of Research and Development
	Manufacturing Technology Upgrade Cycle
	Production Management
	Delivery Schedule Reliability
	Quality Control Measures (Including ISO 9000)
	Creation and Use of a Maintenance Program Schedule
	Creation and Use of a Cost Containment Program
	Creation and Use of a First-Piece Approval System
	Creation and Use of an In-Process Quality Inspection System
	Creation and Use of a Continuous Improvement Program
	Financial and Accounting Management
	Length of Budgetary Planning Cycle
	Length of Budget Update Cycle
	Use of Professionals for Cost Accounting Measures
	Use of Professionals for Accounting Function Measures
	Use of Professionals for Financial Planning Measures

Figure 1. Common Management Practices Used in This Study

Functional Feasibility: In terms of its intended functions, will it do what it is intended to do? This product:

- Is not sound; cannot be made to work.
- Won't work now, but might be modified.
- Will work, but major changes might be needed.
- Will work, but minor changes might be needed.
- Will work; no changes necessary.

As with the self-assessment instrument, the product evaluation instrument was constructed using a combination of research and practical observation. The product assessment format was essentially a modified version of the seventh version of the Preliminary Innovation Evaluation System (PIES) initially developed by the National Science Foundation as part of the Innovation Centers experiment at the University of Oregon in 1974. Since that time, this structured evaluation format has been used to evaluate more than 30,000 ideas, inventions, and new products in the United States, Canada, and elsewhere. The PIES format was noncorporate in its orientation and contained questions addressing societal, business risk, demand, market acceptance, competitiveness, and commercialization issues. For the most part, only minor changes in wording were needed to shift the focus from ideas and innovations to completed products prepared for the marketplace. The specific areas are shown in Figure 2.

Sample

All of the small manufacturing firms in this sample were independently owned and were not dominant in their industry. A review of the basic demographics of the sample shows that 1,690 of 2,113 potential suppliers (80.0%) completed both the self-assessment and product evaluation portions of the assessment process. Of these 1,690 firms, 321 (19.0%) were female-owned and managed, 1,330 (78.7%) were male-owned and managed, and 39 (2.3%) were not identified by gender ownership or management. Respondents were from all states, with no one region dominating the sample. Racial, ethnic, and other minority information were not kept as part of the main database. No one manufacturing or retail area was predominant, although all firms supplied products exclusively for consumer purchase. Industrial products were not part of this program. Products varied in suggested retail price from inexpensive and/or point-of-purchase to major purchase levels.

Methodology

The instruments used in this program were created following the lead of earlier studies. These methods have since been validated by further research which suggests that the

use of academics and practitioners to create items and their responses is a valid technique. Swift and Gruben (2000) suggest the use of previous instruments to generate items. Their study used acceptable techniques to modify and even eliminate items based on their usefulness for the current study. Pearson and Ellram (1995) used selected criteria from various studies to create a new instrument. They then asked colleagues to review the instrument for content validity and clarity and then distributed the edited document to academics and practitioners for further review. The resulting document was assumed to have content validity based on these procedures. Evans, Feldman, and Foster (1990) used a similar procedure to elicit criteria from professional buyers to establish selection criteria, and they further used an importance Likert scale as measurement rather than a "check Yes or No" scale used by most of the selection studies to date. This scale was found to better represent respondents' beliefs than the dichotomous scale in use by other studies. Li, Fun, and Hung (1997) suggest the use of such scaled criteria and the establishment of a single scale score for each criterion through the use of multiple items averaged to determine that score. This program used academics and professionals to verify, expand, and edit the criteria found through an extensive literature review, and it also used a sliding scale of responses to determine the level of compliance for each criterion. Criterion scores (e.g., marketing management or societal impact) were determined through averaging multiple item scores. Paired samples, independent samples, and regression analysis tests were used to examine the data generated by the program.

Results

Successful Management Practices

The firm assessment portion of the program evaluated firm management practices by using 34 items grouped into the following major management categories: marketing management, strategic direction, technical management, production management, and financial and accounting management. Table 1 shows the mean ratings for all firms in each of these categories. The mean statistic was determined by a simple averaging of the responses for each item in the category. The number of items for each category varied from 3 (technology) to 10 (strategic direction), but the numerical range for each item was identical. The most desired response for each item was given the value of five, and the least desired response was given a value of one. The median value, three, was assigned to the response that was marginally acceptable for a potential supplier. Responses with values less than three were considered unacceptable management practices. By averaging responses for each category, an overall assessment of a firm's preparedness in that category could be determined.

Content Areas	Evaluation Criteria	Content Areas	Evaluation Criteria
Societal Impact	Legality of the product	Competitive Capabilities	Perceived appearance
	Product safety		Perceived superiority
	Environmental impact		Perceived durability
	Societal welfare impact		Perceived cost
			Market entry ease
Business Risk	Functional feasibility		Competition expectations
	Production feasibility		Legal protection
	Market readiness		
	Capital investment requirements	Management Requirements	Technology transfer options
	Payback period		New venture options
	Return on investment		Marketing experience
	Marketing research		Technical experience
	Research and development		Financial experience
			Production experience
Demand Analysis	Market potential		In-store promotions
	Sales potential		Merchandising potential
	Demand life cycle		
	Demand stability	Overall Venture Assessment	Production capability
	Product life cycle		Quality control measures
	Product line potential		Marketing capability
			Technical capability
Market Acceptance	Customer attitudes		Financial capability
	Customer learning curve		Overall venture readiness
	Customer need fulfillment		Overall product readiness
	Demand interdependence		
	Product benefit awareness		
	Promotional costs		
	Distribution channels		
	Product service		

Figure 2. Product Evaluation Criteria Used in This Study

As shown in Table 1, the average firm in the program was best prepared in financial and accounting management. Often, firms chose to use outside professionals to assist with these functions because they were too small to have professionally qualified staff members trained to handle these responsibilities. In general, firms were also relatively well prepared in production management and strategic direction. The mean statistics above 3.50 indicate that the average response was above the marginal (3) response for most items. On the other hand, firms were much less well prepared for marketing and technological concerns. For each of these categories, while the mean is

above 3.00, more items were answered with marginal (or worse) responses than for the former three categories.

Table 2 examines the differences between successful and unsuccessful firms from this program. Success was determined as having the firm's product recommended to buyers for further review. While ultimate success would actually be something similar to having a profitable product on a mass retailer's shelves, the vagaries of the market would make this harder to predict. An excellent product from an excellent firm might be rejected by a mass merchandiser because of an oversaturated market, yet the product could find limited success in a regional or local

Successful Product Characteristics

The product evaluation portion of the program assessed product readiness for mass merchandising through 41 items grouped into the following categories: societal impact, business risk, demand analysis, market acceptance, competitive capabilities, and management requirements. This assessment process was completed by independent evaluators reviewing product characteristics and documents filed by firm executives in the program application process. Table 3 shows the mean results for each category for all participating firms. As with the self-assessment process, the mean statistic was determined by a simple averaging of the responses for each item in the category. The most desired response for each item was given the value of five, and the least desired response was given a value of one. The median value, three, was assigned to the response that was marginally acceptable for a potential product. Responses with values less than three were considered unacceptable product characteristics. By averaging responses for each category, an overall assessment of a product's readiness in that category could be determined.

The results in Table 3 show that business risk was judged positively by the program's evaluators and that the societal impact of submitted products was not seen as a major concern. The average product was not seen to have many potential legal or social liabilities, and its profit potential was judged, on average, to be helped by functionality, production feasibility, low capital costs, and low resource requirements. Evaluators rated the usefulness of the products relatively well, but they found greater problems in other areas. While market acceptance was judged positively, demand was judged to be marginal, and participating firms' competing capabilities were judged negatively. In other words, the products themselves might fill a potential consumer need well, but the demand levels for the products and the ability of firms to compete against entrenched larger manufacturers were suspect. SMEs had little management experience in producing these items in

Firm Assessment Category	Mean (n=1690)	Standard Deviation
Financial and Accounting Management	3.74	0.93
Production Management	3.56	0.73
Strategic Direction	3.52	0.73
Marketing Management	3.31	0.71
Technical Management	3.15	0.93
Note: Each assessment category is statistically significantly greater than the next at the $p < 0.01$ level.		

marketplace. Besides, this program was designed to educate manufacturers on acceptable management practices and to provide a review process for buyers, not to actually select the products that a mass retailer should have on its shelves nationwide.

The results in Table 2 illustrate that forwarded firms were those that were better prepared across the board. The mean response for each category was statistically significantly higher for forwarded firms than for nonforwarded firms. Successful firms reported above-marginal (3.50 or above) averages for practices for each category, while unsuccessful firms reported the same level of professionalism for only one category: financial and accounting management. Earlier results seemed to indicate areas for concern about this study's participants and their marketing and technology management performance. The results in this table seem to identify this weakness as the responsibility of the unsuccessful SMEs alone. Successful firms reported more sophisticated management practices than unsuccessful firms for all items in this self-assessment with one exception: delivery schedule reliability. For this one item, there was no discernible difference in the responses of these two types of firms.

Firm Assessment Category	Forwarded (Successful) (n=539)		Not Forwarded (Unsuccessful) (n=1151)	
Financial and Accounting Management	4.11	0.66	3.57	0.99
Production Management	3.87	0.65	3.42	0.72
Strategic Direction	3.87	0.59	3.36	0.74
Marketing Management	3.61	0.66	3.17	0.69
Technical Management	3.53	0.88	2.97	0.91
Note: Successful firm statistics are statistically significantly greater than unsuccessful firm statistics at the $p < 0.001$ level.				

Table 3
Complete Sample Statistics—Product Evaluation Statistics

Firm Assessment Category	Mean (n=1690)	Standard Deviation
Business Risk	4.29	0.54
Societal Impact	4.07	0.36
Market Acceptance	3.41	0.44
Management Requirements	3.12	0.47
Demand Analysis	3.00	0.51
Competitive Capabilities	2.96	0.43

Note: Each assessment category is statistically significantly greater than the next at the $p < 0.01$ level.

the large quantities required by a mass merchandiser, and they faced a demand curve for their products that was often flat or on the decline. Further, given the inexperience and small size of these SMEs, their competitive capabilities were poor against larger firms producing the same or similar products. Their products were often too similar to popularly accepted products or were not distinctive enough to be viewed as different or better than their potential competitors. Firms that were unsuccessful often found themselves making a newer version of a mousetrap, but they were unable to distinguish the superiority of their product to other cheaper versions already on the market.

Table 4 compares the evaluations of successful and unsuccessful firms. As with the firm assessment process, successful firms were found to receive higher ratings than unsuccessful firms. Successful firms submitted better-prepared products with better market possibilities than did products from unsuccessful firms. All categories, with the exception of societal impact, were judged higher for successful firms than for unsuccessful firms. Apparently, the societal impact of these products was judged to be relatively minimal, and few legal, safety, or environmental

problems were considered likely with the average product. Successful firms were supplying a product that was superior in almost every aspect to those supplied by unsuccessful SMEs. This attention to all the details (rather than focusing on one characteristic or market-oriented quirk [e.g., a trendy name or fleeting consumer preference]) seemed to be a major success factor.

Combined Strength

Conventional wisdom, practical experience, and academic research have shown that the most successful SMEs are those with well-managed firms and excellent products. Weaknesses in either or both decrease the chances of success. This study focused on determining the importance of each of these to the success of participating firms in this program.

Regression analysis was used to determine the effect of the major independent variables (firm management and product characteristics) on the dependent variable (forwarding status). Because both independent variables are hypothesized as important to success, an interactive effect was added to the analysis (firm X product). The results of this analysis are shown in Table 5. The strongest effect was found in the combined variable, with firm assessment and product characteristics providing secondary explanatory information. The combined variable explained 23 percent of the variation, and the other two variables added 5.5 percent to the adjusted r-square. The total 28.5 percent was significant at the $p < 0.001$ level.

Discussion

It can be argued that the use of forwarding status as a proxy for success borders on a self-fulfilling prophecy in that only the best ventures would have been forwarded to buyers for review in any case. Poorer ventures would have been rejected (and therefore identified as unsuccessful) as a result of the assessment ratings, so defining success as

Table 4
Product Evaluation Statistics by Forwarded (Success) Status

Firm Assessment Category	Forwarded (Successful) (n=539)		Not Forwarded (Unsuccessful) (n=1151)	
	Mean	Standard Deviation	Mean	Standard Deviation
Business Risk (*)	4.51	0.50	4.19	0.53
Societal Impact	4.09	0.35	4.07	0.36
Market Acceptance (*)	3.60	0.40	3.32	0.43
Management Requirements (*)	3.43	0.43	2.98	0.42
Demand Analysis (*)	3.24	0.48	2.90	0.49
Competitive Capabilities (*)	3.08	0.39	2.90	0.43

Successful firm statistics are statistically significantly greater than unsuccessful firm statistics at the $p < 0.001$ level where marked (*).

Table 5
Regression Analysis—Prediction of Forwarded Status

Independent Variable	R	R-Square	Adjusted R-Square	R-Square Change	Significance Of Change
Firm Assessment X					
Product Evaluation	0.481	0.231	0.230	0.231	0.001
Firm Assessment	0.530	0.281	0.280	0.050	0.001
Product Evaluation	0.534	0.286	0.284	0.005	0.001

successfully navigating through the program could be a bit self-serving. There is some truth to this concern, but other proxies might not actually serve the research better. In truth, the use of this criterion is not a poor choice. Piercy and Cravens (1997) suggest that performance evaluations such as the ones used in this study are similar to those used by buyers worldwide. They also suggest that the level of performance generally correlates well to the actual selection choice made later by larger firms. They also suggest that buyers using this set of criteria for selection tend to have higher performance levels themselves in the marketplace.

Why not use other conventional measures such as profitability, longevity, or even market success of the evaluated product? Measures of success were actually a part of the evaluation process (e.g., the financial stability of the firm and the success of the product on local or regional markets were both items in the assessment instruments). Additionally, while records were kept on whether the product actually made it to a mass merchandiser's shelves, use of that variable in a regression analysis was found to add little to the explanatory strength of the model. While on-shelf products showed the same level of difference in quality of firm and product compared to rejected products, they showed very little difference to other forwarded products that did not make it to a mass retailer's shelves. Only environmental impact, product appearance, and selling price showed significant differences in product characteristics, and only firm focus on quality and intensity of board of director involvement were significantly different in the firm assessment process. However, the actual mean differences in these variables were relatively insignificant.

Firms which were forwarded but were not accepted for a mass retailer's shelves were also encouraged to pursue other channels of distribution such as local or regional retailers or specialty merchandisers (such as sporting goods stores or pharmacies). Even those firms that were successful in gaining a place on a mass merchandiser's shelves were counseled to pursue other channels as well. Further, many of the rejected products were not necessarily turned down because they were low quality or because

the SMEs producing them were poorly managed. Often the products were attempting to enter a saturated mass market (how many new dish detergents could mass retailers carry?) or were trying to enter mass markets when specialty markets were a better outlet. A follow-up study of these program participants is planned to determine their current state of operations and profitability and to see the long-term effects of the educational aspects of the program.

Finally, the results of this study confirm previous research which suggests that multiple factors affect the success of SMEs. Both the firm and the product need to be of superior quality for SMEs to be successful, and this is especially true for firms wishing to enter the mass merchandising market. Each has its own effect on success, but the regression model resulting from this study suggests that there is an interactive effect of the two variables. Again, SMEs need to spend time ensuring that both the firm and the product are of superior quality if they want to find even moderate success in today's marketplace. Retailers are interested in placing quality products on their shelves, but they are also interested in doing business with quality suppliers that can become long-term partners. Poorly run firms, no matter how good their products, are unlikely to find larger retailers willing to take the chance of entering partnerships with firms that may be unable to provide those products on a consistent basis with consistent quality.

Conclusions

This study examined the results of a program intended to act as a selection tool for mass merchandisers and a development tool for small manufacturers. The evaluation program assessed the management practices and products of potential suppliers. Prior to assessment, it is important to note that, based on past experience, buyers for mass merchandisers considered SMEs a poor risk as potential suppliers of retail goods. They estimated that only 1 out of 300 SMEs who contacted them had a viable venture (a strong firm and a potentially successful product) (Udell, Atehortua, and Parker 1995).

One of the goals of this program was to help SMEs become more successful in reaching a mass merchandiser's shelves with their products. The conventional wisdom from academics and practitioners alike was that a venture needed a well-managed firm and a marketable product to be considered in a supplier partnership with a large retail corporation. Even then, the chances of success were about 1 in 300. Using the results of almost 1,700 participants in this program, we can theorize that the conventional wisdom was correct: a well-managed firm or a marketable product alone cannot secure a partnership. Both are critical. But even having both is not a guarantee of success. Of the 25 firms (1.5% of the total participants) that initially had high ratings for both the firm and the product, only 2 (8%) actually made it to the retailer's shelves. While the majority of accepted products came from firms that initially had low ratings for either the firm or the product or both, the acceptance rate for these firms was in the 4 to 5 percent range. Excellent firm-product combinations had about twice the chance of being accept-

ed by mass merchandisers. Even this conclusion is conservative. Those firms with poor initial ratings had to make changes before they secured acceptance.

Almost one-third of the SMEs participating in this program (32.7%) were judged suitable for review by the merchandisers, and about 1 in 6 of these suitable firms (15.3%) ultimately were accepted as suppliers. Even though about 95 percent of all participating firms were ultimately rejected either by the program or the buyer, the 1-in-20 success rate compares favorably to the 1-in-300 rate cited earlier as a buyer's expected acceptance rate. Even acknowledging that the program participants were possibly the best 20 percent of potential suppliers to the merchandiser, the acceptance rate is still more than 1 percent, about three times higher than would otherwise be expected. Thus, this program seems to function well as a supplier selection tool that aids mass merchandisers in choosing quality vendors and as a supplier development tool that helps small manufacturers identify their strengths and weaknesses in the purchasing process.

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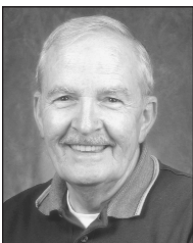
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STEPHEN C. JONES (scj904f@smsu.edu) is an assistant professor of management at Southwest Missouri State University. He received his Ph.D. in organization theory from the University of North Texas. Dr. Jones has published in the *Journal of Vocational Education Research* and the *International Journal of Management*. His research interests include entrepreneurship and social responsibility.



TAMI L. KNOTTS (tlk090f@smsu.edu) is an assistant professor of management at Southwest Missouri State University. She received her D.B.A. in management from Louisiana Tech University. Dr. Knotts has published in the *Employee Responsibilities and Rights Journal* and the *Business Journal for Entrepreneurs*. Her research interests include small business management and workplace religious involvement.



GERALD G. UDELL (ggu725f@smsu.edu) is director of the Center for Business and Economic Development at Southwest Missouri State University. He received his Ph.D. from the University of Wisconsin. He has authored more than 200 articles, books, monographs, and other publications. His research interests include industrial innovation, entrepreneurship, and innovation evaluation.

Applying Entrepreneurship to Health Care Organizations

Kristina L. Guo

This study examines entrepreneurship and assesses its relevance to health care organizations through a detailed description of the optimal environment, organizational factors, and managerial roles in the entrepreneurship process. The article finds entrepreneurship processes to be especially useful to health care organizations as they struggle to survive in the competitive managed care environment.

The U.S. health care environment is extremely turbulent, competitive, and complex. With managed care rapidly dominating the health care delivery, strategies to cut costs and improve quality and access are imperative to organizational survival. Faced with financial pressures, health care organizations are emulating market strategies and behaving more like for-profit businesses. For instance, hospitals, health maintenance organizations, and physician groups are undergoing organizational restructuring through various negotiations of contractual agreements and formation of integrated delivery systems to result in even more complex relationships. Operating under these circumstances, organizational viability has been haphazard with success harder to predict and demise a common occurrence. Strategies that rely on privatization and integration are only the beginning. Additional multidimensional strategies that analyze the environment, examine internal organizational processes, and investigate managerial traits, roles, and responsibilities are needed for long-term survival of health care organizations.

This article examines the health care industry using the concept of entrepreneurship as an appropriate approach for bettering the outlook of health care organizations. While numerous studies have been conducted on entrepreneurship in the hopes of increasing knowledge in this developing and dynamic area, most of these studies have been found in economics, business, psychology, marketing, or industrial management. That is, little research has been demonstrated on entrepreneurship in health services. Health care topics elude the use of entrepreneurship. Health care management textbooks skirt around the issue and focus only on roles and strategies of managers and their relationship to innovation and leadership. Other general health care textbooks emphasize the health care delivery system and describe the environment as

turbulent. Additional research on health policy seeks to make changes in response to rising health care costs, decreased quality, and access. Unfortunately, all topics within health care research manage to evade entrepreneurship while only developing fiscal options for health care organizational survival. Delving further into the literature leads to a few articles that describe continuous technological innovations in the pharmaceutical industry (Burgelman, Maidique, and Wheelwright 2001) and entrepreneurial characteristics of senior nursing executives as "having personal integrity," "possessing a vision," and "being a strategic thinker" (Ballein 1998; Parker 1998; White and Begun 1998). There is a lack of research on the use of entrepreneurship as an important and creative technique for dealing with the complexities in the health care environment.

Due to this deficiency, this article investigates and expands upon the multidimensional use of entrepreneurship as applicable to health care organizations. The intent is to show that the need for more innovative leadership in today's health care environment can be accomplished through entrepreneurship. Entrepreneurship has been thriving in other industries and should also be used in health care to bring about growth. This research is divided into four parts. The first section defines entrepreneurship in several disciplines. The second part focuses on the U.S. health care system, particularly the external environment which has served as the subject of widespread research and policy interest. The transplantation of business entrepreneurship into health care is described in this section. As the linkage is made, it will become more apparent that entrepreneurship can and should occur in health care organizations, especially since all health care organizations face similar resource scarcity and financial complexities. Thus, the third part delves into organizational issues, including determining organizational culture that supports entrepreneurship. The final part investigates the roles of managers in the entrepreneurship process for health care organizations, particularly, traits and characteristics of managers. The article concludes by explaining the use of entrepreneurship as practical and applicable to the health care sector.

Research on Entrepreneurship

While the term *entrepreneurship* has been used for

centuries, there is no single definition. Instead, researchers are continuing to expand, redefine, and innovate entrepreneurship in many different fields. For instance, entrepreneurship dates back to the 1700s by French economists and was associated with risk-bearing activities in the economy. Additional definitions of entrepreneurship refer to “an act of innovation that involves endowing existing resources with new wealth-producing capacity” (Drucker 1985). Still others define entrepreneurship as the examination of how, by whom, and with what effects to create, evaluate, and exploit opportunities and future goods and services (Shane and Venkataraman 2000). Furthermore, entrepreneurship can be related to productivity, where the entrepreneur is responsible for determining optimal production, investment, and financing decisions (Williams and Thompson 1998).

Although there is no consensus on a precise definition of entrepreneurship, one of the most commonly cited definitions is that of economist Schumpeter who used an economic model to explain the entrepreneurial process. He argued for five scenarios in which entrepreneurial innovation could occur: (1) the introduction of a new good, or of a new quality of good, (2) the introduction of a new method of production, (3) the opening of a new market (4) the conquest of a new source of supply of raw materials and (5) the carrying about of new organization in any industry (1936).

Since then, a more comprehensive approach was developed by Timmons, who defines entrepreneurship as the

...ability to create and build something from practically nothing. It is initiating, doing, achieving, and building an enterprise or organization, rather than just watching, analyzing or describing one. It is the knack for sensing an opportunity where others see chaos, contradiction and confusion. ... [I]t is the willingness to take calculated risks, both personal and financial – and then do everything possible to get the odds in your favour (1989).

Timmons' work suggests that external factors influence and shape the success of entrepreneurship. He also claims that the key to successful entrepreneurship is understanding opportunity, being able to match the organization and situation to the key players (1989). Furthermore, Kuratko and Hodgetts assert that entrepreneurship is made up of multidimensional processes involving the environment, organizations, and individuals (1998).

The External Environment

The environment plays a crucial role in the creation of entrepreneurship. The external environment is made up of two parts: the societal environment and task environment (Kuratko and Hodgetts 1998). The societal environment encompasses economic, political, legal, and technological

forces that influence long-term decisions of organizations. The task environment is made up of elements that are directly affected by an organization's operations.

Societal Environment

The societal environment can be illustrated by the current state of the U.S. economy which is experiencing sharp decline, as more businesses are forced to lay off employees or even worse file for bankruptcy. In the midst of this turmoil, policies are aimed at improving the economy by dropping interest rates, which makes it easier to acquire loans. On the technology side, dotcom companies are struggling to survive. Under these circumstances, the environment can be described as lean, lacking access to resources, and tending to promote more competitive practices. These factors challenge organizations' quest for growth and profitability and has led to the demise of many organizations (Zahra and Neubaum 1998). On the other hand, many organizations can survive, succeed, and thrive under these harsh environment conditions. In fact, adverse environments force organizations to innovate, take risks, and become entrepreneurial (Zahra and Covin 1995). Entrepreneurial strategies can help an organization move to richer environments by improving its operating practices, innovating its strategies, and enabling it to merge with other organizations. In other words, when societal environment forecasts a gloomy picture, entrepreneurial activities can be promoted to enhance organizational growth.

For example, in the battles for control of the automobile industry, Henry Ford's innovative strategy for Ford Motor Company was based on improving its operating practices through “vertical integration, carefully engineered production, and product simplicity” (Burgelman, Maidique, and Wheelwright 2001). Thus, Ford introduced mass-production and mass-market techniques. However, William Durant, owner of Buick Motors, sought a different strategy in which he proposed mergers with other companies. He found the automobile industry to be swamped by hundreds of carmakers each only producing a few models. Operating in such a competitive environment, Durant believed that manufacturers would benefit by banding together. His strategy, “based on acquisitions of smaller companies, marketing power, sales coverage, and product variety” (Burgelman, Maidique, and Wheelwright 2001), led to the creation of General Motors (GM). Although GM was created in 1908, today, it continues to steer around competitors and maintain its status as the world's number one maker of cars and trucks.

Wal-Mart Stores, the world's leading retailer, has successfully crushed its competitors using its basic strategy of supplying well-known brands in sparsely populated areas and offering products 15 percent lower than other stores in the same location. It began in 1962 as a discount store in

Arkansas. Wal-Mart maintains its small-town flavor, and is famous for low prices, friendly workers, patriotic products, and a wide selection of merchandise, including food, clothing, electronics, and prescription drugs. In fact, its prescription drug sales make it North America's third largest pharmacy. With the opening of its Supercenters that focus on groceries, Wal-Mart is now the nation's largest seller of groceries.

The 2001–2002 U.S. economic recession poses a different yet equally daunting challenge for large corporations. In the case of General Electric Company (GE), to recover from economic slowdown, it has “adopted a strategy of pursuing only high-achieving ventures and dumping those that didn't perform” (Hoover's Company Profile Database 2003). New CEO Jeff Immelt understands that the current lean economic environment affects not only GE, but also businesses that depend on GE services. His innovative efforts to maneuver in this environment include expansion of services outside of the United States and conducting more business on the web.

The four cases above describe the ability by large corporations to develop and sustain entrepreneurial activities in spite of the competition. In-depth scrutinizing and understanding of forces in the external environment led to the exploitation of multidimensional strategies to produce successful outcomes.

Task Environment

The task environment refers to the specific industry environment. Examples of entrepreneurial activities in other industries, such as the automobile, telecommunications, and computers can provide advice and warnings to the health care industry. The above descriptions of Ford's and GM's strategies only skimmed the surface; further illustration of these two companies lead to a greater understanding of the need for entrepreneurial strategies in response to industry challenges. Two notable struggles occurred in the automobile industry. The first was the 1930s' battle between automakers and workers. Working conditions were dangerous and laborers protested. As a result, the United Auto Workers Union was formed. It brought workers bargaining power and protection at a high cost of “work-rule rigidity and the polarization of workers and management” (Burgelman, Maidique, and Wheelwright 2001). Labor-management struggles continued into the 1970s, until the second significant industry challenge took on precedence. The U.S. auto industry nearly collapsed with the emergence of the Japanese automobile. Toyota combined “product variety, quality and efficiency.... with customer-focused design, concurrent engineering, flexible manufacturing, dedicated workers and networks of suppliers” (Burgelman, Maidique, and Wheelwright 2001). To defend against this new wave of business rivals, major U.S. automakers engaged in innovative entrepreneurial

practices that led to the total transformation of the auto industry. It resulted in competitive collaboration. Toyota's joint venture with GM and Mazda's with Ford allow these automakers the opportunity to assess the progress of their rivals and learn from them.

Similarly, the telecommunications industry also experienced enormous changes. The American Telephone and Telegraph (AT&T) Company monopolized the telecommunications industry from 1877 to 1970s. To accomplish this feat, CEO Theodore Vail's first strategy was to buy out its competitors. In danger of an antitrust lawsuit, Vail launched a major lobbying campaign to convince government that having a single telephone company was in the best interest of the nation. Having been recognized as a monopoly, Vail promised universal services and its profits would fund local services and research. However, in 1968, a breach of AT&T's monopoly occurred when the Federal Communications Commission allowed equipment suppliers to compete with AT&T. In 1974, AT&T lost its monopoly status when MCI filed an antitrust suit and won. Since then, the telecommunications industry has evolved into hypercompetition with its four markets: wireline, wireless, cable, and internet. AT&T must now coexist and struggle for market share with competitors. Realizing that AT&T has lost the majority of its long-distance business, CEO C. Michael Armstrong pursued aggressive multidimensional strategies to acquire the broadband, cable, and internet sectors which allow AT&T to penetrate all four segments of the market, thereby offering customers a “one-stop shopping” convenience (Burgelman, Maidique, and Wheelwright 2001).

Likewise, Tandy Corporation and Apple Computers introduced the personal computer (PC) industry in the late 1970s through their revolutionary packaging of hardware, software, and services. Apple's strategy relied on cooperation with independent software developers, while Tandy took on a vertically integrated approach. Tandy's tight control over its organization resulted in slower growth, while Apple's reliance on participation with other companies led to its larger market domination. International Business Machines (IBM) entered the PC industry in 1981. It also took on Apple's strategy of building on a community of partners. IBM generated more demand than it could meet. As a result, it developed nonexclusive relationships with suppliers, such as Microsoft, Intel, and Lotus, to help meet demand. Unfortunately, IBM did not take precautions to enforce its patents against clone makers. Thus, other suppliers were able to put together common standards for hardware and software without IBM's involvement. This ultimately led to the decline of IBM products as Intel and Microsoft now dominate the new computer market. IBM's failings occurred in its expansion stages when it could not keep up with innovations, while Intel surpassed with the innovative microchip and Microsoft with its software packages (Burgelman, Maidique, and Wheelwright 2001).

Successes and failures in entrepreneurial activities of other industries serve as guidance for the health care industry. In the health care industry, the task environment is made up of providers (i.e., hospitals, physicians), suppliers (i.e., pharmaceutical companies), competitors, patients, special interest groups (i.e., American Association of Retired Persons, Health Insurance Association of America), and governments (federal, state, and local). The health care industry has been depicted as turbulent (Shortell and Kaluzny 2000), which is characterized by highly complex and fast-paced changes, particularly due to the rapid growth of managed care as a strategy for lowering costs, improving access and quality. Furthermore, it is also made complex by the multitude of interests directly and indirectly involved in the delivery of health care. That is, private sector businesses are largely responsible for the development and delivery of drugs and medical supplies while government agencies regulate its actual delivery (Ginter, Swayne, and Duncan 2002). Thus, in times of turbulence, the ability to anticipate changes, recognize external forces, and meet the needs of the market greatly enhances the chances of success.

Forces that affect the health care industry include aging of the population, increasing ethnic and cultural diversity, growth of new technology, especially medical advancements, changes in supply and education of health professionals, social morbidity that changes from acute to chronic care, and globalization of the world economy (Shortell and Kaluzny 2000). For example, 13.2 percent of the gross national product was spent on medical care in the United States in 2000 (Levit, et al. 2002). The federal government estimates that national health expenditures will rise at a higher rate as baby boomers become eligible for Medicare and as new technology becomes available to improve quality of life. Those over 65 years old, who currently represent 12.3 percent of the population, fill 40 percent of hospital beds (Reinhardt, Hussey, and Anderson 2002). At the same time, government continues to subsidize the health care demands of the aged and poor, which means a heavier burden for the working population. At the societal level, choices are considered and must be made to decide upon the amount of resources to be spent on providing health services. Those decisions, not easily made by governmental policies, influence individual health care organizational priorities.

Health care organizations are affected by societal environment changes and their own industry changes, even though organizations may vary by complexity, susceptibility to change, and competitiveness. For example, hospitals exist in highly competitive, complex, and rapidly changing environments. Government policies that emphasize cost containment have pressured hospitals to perform more efficiently and cost effectively. To do so, hospitals must innovate by restructuring to form horizontal and vertical integrated delivery systems. As a result, two major cate-

gories of healthcare systems have emerged: (1) *geographically scattered systems* have a small market share in each of many different health care regions and (2) *geographically focused systems* attempt to capture substantial market share in one or a small number of geographic areas. Many church-related health care systems and for-profit organizations follow the former model, while larger health care systems resemble the latter (Griffith 1999).

Kaiser Permanente (KP), the nation's largest health care system, has been able to replicate its geographically focused model in many different sites. It is the nation's oldest independent, prepaid group practice, serving the health care needs of more than 6.5 million members in 16 states and the District of Columbia. In 1990, KP's revenue totaled \$8.4 billion. KP, a not-for-profit practice, represents a prototype health care organization in the changing health care environment. It combines the insurance function with the delivery function while providing a continuum of care to its defined populations. KP encompasses three organizations, Kaiser Foundation Health Plan, Kaiser Foundation Hospitals, and the Permanente Medical Groups. The Health Plan contracts with individuals and groups to provide health care benefits through its Hospitals and Medical Groups. The Hospital Groups own and operate community hospitals and outpatient facilities. The Medical Groups form partnerships with physicians (Shortell and Kaluzny 1997). KP is a leading health care organization and many of its strategies exemplify the concept of entrepreneurship. Specifically, the KP strategic model of integrating all components of service delivery is emulated by other health care organizations, particularly managed care organizations. KP's ability to establish effective physician relationships through its Medical Groups serves as a model for other health care systems that seek to combine physicians with hospitals. KP is a leader in the development of information systems that tie together patients and providers across the continuum of care to produce high organizational performance. In fact, KP's entrepreneurial activities have long established its status as a benchmark organization, thereby setting best industry practices for other organizations to follow.

Other examples of large health care systems include Intermountain, serving most of Utah and parts of adjacent states; Mayo, operating in Minnesota, Arizona, and Florida; Uni-Health in southern California; Henry Ford Health System in southeast Michigan; and Geisinger in Pennsylvania. The entrepreneurial activities of these health care systems are exemplified by their multifaceted approaches to exchange with the open environment, align partners, improve their processes, and empower workers (Griffith 1999).

Another innovative way for health care systems to expand their market share has been the conversion from not-for-profit status to for-profit status. This change signifies the industry's movement toward more business-like

practices. For example, the Health Maintenance Organization (HMO) of Pennsylvania converted to a for-profit status in 1981 to become U.S. Health Care Systems, Inc. In this way, it was able to obtain venture capital investments.

A prominent example of a large health care corporation undertaking entrepreneurial activities in response to demands in the environment is the case of Blue Cross (BC) and Blue Shield Association. BC was established in 1929 as the precursor to managed care when Baylor University offered schoolteachers prepaid hospital care for \$6 a year. By 1935, 11 states operated BC plans. In 1946, as states began sponsoring prepaid plans to cover physician fees, Blue Shield was created. By 1960, BC insured about one third of the U.S. population. In the next decade, BC administered Medicare and other government health plans. By 1970, half of BC's premiums came from government entities. In response to consumer demands for preventive care, BC and Blue Shield shifted their focus to prevention. Furthermore, they adopted hospital control measures. As the two organizations lost market share to other competitors, their major strategy led to the merge of the two organizations in 1982. To remain viable in the highly competitive environment, Blue Cross and Blue Shield (BCBS) engaged in several entrepreneurial activities, including converting to a for-profit status, merging and forming alliances with other health care organizations, and expanding globally. The BC of California became the first chapter to give up its tax-free not-for-profit status when it was bought by WellPoint Health Networks, a managed care subsidiary. Other BCBS soon followed in the switch to for-profit status. BC of Connecticut merged with insurance provider Anthem in 1997. Anthem later acquired and formed affiliates with BCBS in Colorado, Maine, and New Hampshire. Empire BCBS of New York converted to a for-profit practice in 2000. Half of the nation's BCBS operators formed an alliance called BluesCONNECT as a strategy to compete with national health plans by offering employers one nationwide benefits organization. In an unprecedented lawsuit of BCBS in 35 states against the tobacco industry, BCBS gained large settlements to treat patients with smoking-related illnesses. A final innovative strategy is BCBS's move to assemble a network of caregivers in Europe, South America, and Asia in its efforts to aim at worldwide health care coverage (Hoover's Company Profile Database 2003).

The health care industry, similar to the automobile, telecommunications, and computer industries, is becoming increasingly complex and competitive and has resulted in interorganizational networks (Shortell and Kaluzny 2000). Under these harsh environmental conditions, entrepreneurship activities that have succeeded in other industries are transplanted to the health care industry to promote success.

Internal Environment: The Organization

The external environment heavily influences the functions of the internal environment, which consists of the organization itself, its structure, culture, and resources. Organization structure describes its authority, communication, and work flow. Culture is the pattern of beliefs, value, and behaviors shared by the organization's members. Resources are the assets used to form the organization's products and services. As the external environment becomes more turbulent, the internal organization must take measures to reduce uncertainty.

According to a study conducted by Moon (1999), structural factors in the organization that affect entrepreneurship include hierarchy, formalization, and centralization. More levels of hierarchy lead to extra layers of communication and more managerial burdens in decision-making processes and tasks. In this way, managers are less likely to engage in risk-taking behaviors since they require added time and effort to gain communication approvals. Similarly, a formalized structure with required paperwork and written rules tends to cause administrative delay and poor communications and results in reductions in managerial risk-taking and entrepreneurial activities. Centralization affects entrepreneurship in two ways. In a centralized organization, senior-level managers have more authority over their subordinates. On the other hand, middle- and lower-level managers have less decision-making authority. Thus, a centralized structure offers more risk-taking opportunities for top managers, yet it restricts entrepreneurship activities for middle- and lower-level managers.

In the automobile industry, both Ford and GM were able to innovatively manage their mega bureaucratic operations through decentralized management. Sloan, president of GM from 1923 to 1937 created the multiproduct lines for its diverse company, so that GM became the prototype of the modern multidivisional company. In health care, multidivisional designs are found in most academic health centers that operate in highly uncertain environments combined with complex organizational relationships formed between medical schools and hospitals. For instance, the University of Miami/Jackson Memorial Medical Center is an example of a multidivisional design.

Maintaining and/or altering structure is initiated by senior-level management. Thus, senior-level managers are responsible for entrepreneurial activities such as risk-taking decisions. Entrepreneurial changes and innovations include fundamental design and structure of reporting relationships and authority, clinical and managerial information systems, management control systems and goals, policies, and directions of the organization. In some cases, organizations are innovating to gain greater operational flexibility and control, more rapid decision making and sharing resources.

For instance, going back to the case of Wal-Mart, the retailer has capitalized on three organizational capabilities: (1) building incentives to ensure employee commitment, (2) communicating with remote located stores, and (3) setting up an efficient distribution system that allows for joint purchasing, shared facilities, and systematic ordering. The latter strategy is Wal-Mart's trademark whereby warehouses serve a group of stores no more than a day's drive from the distribution center (Burgelman, Maidique, and Wheelwright 2001). Thus, Wal-Mart has been able to share resources while gaining operational flexibility.

A health care example of operational flexibility and sharing of resources is shown by the partnership between the Somerville Hospital and Cambridge Hospital in Massachusetts to form the Community Care Network program. Community needs assessments were conducted in both cities and identified similar top priorities. As a result, they collaborated to create the Somerbridge Community Health Partnership to coordinate health care needs for both communities. Their collaborative efforts resulted in the sharing of resources and greater opportunities for residents to gain access to health care (Shortell and Kaluzny 2000).

Organizational culture is considered a key element that promotes entrepreneurship in organizations; hence, it is a critical factor that determines success or failure of organizational entrepreneurial activities (Moon 1999). Changes in culture must be incorporated into organizational reform strategies to enhance entrepreneurship. These changes include emphasizing higher levels of trust and mission clarity and valuing employees' commitment and contributions to the organization. For example, Baptist Medical Center in Birmingham believes its Christian values and missions are essential to the organization's success. Thus, it redeveloped its mission statement to outline four core values: quality care, individual dignity, cost efficiency, and community support. This strategic maneuver helped to strengthen the organization's culture and values and enabled employees to gain a sense of stability in the complex and uncertain environment (Hernandez, Kaluzny, and Haddock 2000).

Entrepreneurship activities enhance organizational positions, and involve a company's innovation, venture activities, risk taking, proactiveness, and radical product innovation (Zahra, Nielson, and Bogner 1999). In the case of Sunnybrook Health Sciences Center, an academic health science center affiliated with the University of Toronto, the challenges were enormous as it operated in an environment of high costs, lowered revenue, limited funding sources, and high patient expectations of quality and outcomes. CEO Tom Closson took on a radical restructuring and risk-taking strategy to create a patient-focused care center. The five-pronged approach emphasized decentralizing various clinical units, bringing services to patients, promoting shared decision making, consolidating roles and scopes of practice of support and clinical staff, and continuous monitoring to maintain

the patient-focused center (Leatt, Shortell, and Kimberly 2000).

Entrepreneurship activities should be used by health care organizations to improve organizational growth and profitability and promoted as a means of achieving more efficient, flexible, and adaptable management in turbulent and competitive environments.

Managerial Traits, Behaviors, and Roles that Foster Entrepreneurship

Entrepreneurship can be characterized by the individuals who are responsible for new ideas, fundamental change, and risk taking to bring about organizational success (Bull and Willard 1995; Kuratko and Hodgetts 1998). Entrepreneurship activities originate from individuals whose traits, skills, behaviors, and background are crucial for entrepreneurial activity development.

Entrepreneurs are persons who perceive opportunities and assume the risks of planning and creating various means to pursue them. Common characteristics of successful entrepreneurs were identified by McGrath and MacMillan (2000) as (1) passionately seeking new opportunities, (2) pursuing opportunities with enormous discipline, (3) pursuing only the best opportunities by linking choice of options with strategy, (4) focusing on adaptive executive, and (5) engaging the energies of everyone in their domain. Chell, Haworth, and Brearley (1991) describe traits of entrepreneurs as self-confidence, risk taking, flexibility, strong desire to achieve, and independence. They point out that behaviors include total commitment, determination and perseverance, drive to achieve and grow, and orientation to goals and opportunities.

Miner created a four-way psychological typologies of successful entrepreneurs as:

...(1) *the personal achiever type, who is prone to motivated for self achievement*, (2) *the real manager type who demonstrates high supervisory ability and strong need for occupational advancement*, (3) *the expert idea generator who enjoys coming up with original or innovative ideas* and (4) *the empathic supersalesperson type who is sociable, friendly and supportive and encourage participation and is action oriented* (1997).

Certainly, Henry Ford, Alfred Sloan of GM, and Sam Walton of Wal-Mart are just a few examples of successful entrepreneurs. In health care, the specific role of a manager responsible for making significant changes has most commonly been identified as that of leader. As a leader, one must articulate and internalize the values of the organization, according to Edward J. Connors, past president of Mercy Health Systems and former chair of the American Hospital Association's Board of Trustees (Zuckerman and Dowling 1997). Managers can also be characterized as strategists and designers (Zuckerman, Dowling, and Richardson 2000). As strategists, managers must monitor and analyze the environment prior to employing a variety

of strategies to meet those changing needs. As designers, managers are responsible for managing organizational structure, innovation, and change. Another role of the manager is that of the entrepreneur, responsible for initiating and designing change in an organization (Mintzberg 1973). Rakich, Longest, Jr., and Darr describe Mintzberg's entrepreneur role as that of "change agent." That is, health services organizations "are internally dynamic and continuously affected by their environment. Managers must seek to improve, modify, and rearrange work through planned, conscious, and controlled change" (1992).

A health care manager's role involves various types of changes and innovations. These could range from introduction of new products and services or redefining an organization's goals. In the previous discussion of Sunnybrook, CEO Closson drastically restructured his organization to meet the needs of patients. In the case of Lutheran Health Systems, CEO Michael Bice overhauled the entire organization to create a new proactive culture where continuous, personal, and hands-on commitment is a priority (Zuckerman and Dowling 1997). Another example is that of CEO Joseph A. Zaccagnino of Yale New Haven Health System. He believes success depends on aligning strong health care organizations (i.e., three major hospitals) to a shared vision to create a leading integrated delivery system. Furthermore, he recommends managers to have broad skills, enabling them to evolve in complex enterprises (Grazier 2003). As health care managers continue to expand their roles to develop innovations, they rely more on entrepreneurial traits, behaviors, and skills to result in their organizational growth.

Entrepreneurship: Applicability to Health Care Organizations

The health care industry is similar to other industries in environment conditions, structure, and strategies. Industries such as automobile and telecommunications have undergone massive transformations in their environment and organizational structure and strategies. Commonalities in their environment include turbulence, inflexibility, and competitiveness. Structural similarities include new entrants, mergers, and consolidation. Strategies have shifted to cost accounting and management and strategic alliances. These scenarios are very similar to the health care industry, since it is also characterized by turbulent and harsh environment conditions. In light of these environment variables, health care has undergone structural and strategic changes and innovations to achieve organizational economies of scale, improve utilization of resources, enhance access to capital, increase political power, and extend the scope of the market (Zuckerman, Dowling, and Richardson 2000). Samaritan Health System in Arizona, Sutter Health in California, Intermountain Health Care in Utah, and Kaiser Permanente are examples of health care systems that have undergone strategic and structural changes to improve patient care and establish competitive distinction

in their regions. Hospitals in the Rochester, New York, area have formed a voluntary alliance to contain duplication of services which resulted in impressive cost reductions (Zajac and D'Aunno 1997). Similarly, hospitals in the New England area formed the Yankee Alliance. Although challenges included reductions in membership, the benefits of shared resource and market power have been rewarding (Zajac, D'Aunno, and Burns 2000). Among the various industries, similarities exist in the environment, organizational structures and managerial behaviors; thus, multidimensional strategies emphasizing entrepreneurship practices can take place and become effective in health care industry.

Moreover, Chicken (2000) explains that industries conduct entrepreneurial activities for the exploitation of profits or benefits. In private businesses, entrepreneurial activities result in profit measured by monetary terms. As more health care organizations convert to for-profit status, entrepreneurial activities would occur when they vie for market share and profits. In other cases, profit or benefits cannot be measured by money. In not-for-profit health care organizations, the benefit of medical treatment can be assessed by organizational survival, reputation, growth and opportunities. Thus, these scenarios also require multidimensional strategies and necessitate the use of entrepreneurship in health care organizations. In fact, the complex health care environment demands more innovative solutions. Consequently, health care organizations are beginning to utilize entrepreneurship in their management techniques.

Another example of the applicability of entrepreneurship to the health care industry is described by Chicken (2000). He offers a number of entrepreneurial activities for a range of industries. For instance, he finds these activities in financial services (banking and insurance industries), manufacturing, agriculture, transportation, mining, fishing, hotels, media, civil services and government. He further summarizes that entrepreneurial activities occur under three circumstances. First, operations must be carried out in the open market. Second, some operations must be funded or subsidized by government. Third, operations could be completely funded by government. Using this formula, it is clear that entrepreneurial activities can occur in the health care industry, since health care organizational activities satisfy the first two criteria.

Moreover, Chicken suggests that there are many levels of entrepreneurial activities and they depend on the level of management responsibility (2000). For example, managers who are the decision-makers in the organizations must be prepared to react to changes in a flexible and positive manner. Thus, in current times of uncertainty, complexity, and resource scarcity, health care organizations rely on their managers to redefine their roles to enable their organizations to gain the competitive edge. The use of process-based managerial entrepreneurship (Moon 1999) refers to the improvements in administrative procedures, intraorganizational communications, and intragovernmental interactions. In other words, flexible

decision-making processes, open channels of communication and simplification of work processes in organizational innovations are more readily used and have become more important to health care organizations. These processes are, in fact, entrepreneurship processes, as managers increase their entrepreneurial role to become involved in risk-taking strategies and serve as agents of change. Multidimensional steps are necessary to assess the environment and organization prior to making changes using innovative strategies. Indeed, entrepreneurship is applicable to the health care industry as it has been successfully utilized in other industries.

Conclusions

This study has made the linkage between entrepreneurship and health care so that entrepreneurship should be promoted by health care organizations to better their chances of survival. The environment, organizational structure, and strategies of health care organizations have necessitated the use of entrepreneurship. Specifically, reliance on the entrepreneurial manager is the key to surviving difficult times and achieving success. While this study only takes the first step in establishing the relevance of entrepreneurship to health care, it serves as a bridge for furthering that knowledge into health care.

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About the Author

KRISTINA L. GUO (kguo@fiu.edu) is an assistant professor of health services administration at Florida International University. Dr. Guo’s areas of research include health care policy and management, in particular, the changing roles of managers in the managed health care environment.

From Intrapreneurship to Entrepreneurship: Is Technical Expertise Sufficient? — A Case Study

John E. Woodilla

Following a successful career in industry, Dr. Douglas V. Shick, a newly minted entrepreneur, established NRS Associates, LLC, to perform consulting services based on two highly technical computer-modeling programs. Doug was heavily involved in the development of one program, an innovative computer simulation software for modeling a particular manufacturing process, through intrapreneurial activity during his corporate experience. Doug established his business on September 1, 2001, and on September 10 announced his services by e-mail to everyone he knew. The unforeseen events of the next day, September 11, produced some unexpected aftereffects that Doug had to factor into his developing business.

In late spring 2002, Doug Shick was sitting in his home office, thinking about adding another link to his company website. He looked at the Visa/MasterCard credit card reader next to his computers and wondered how soon—or long—it would be before he would ring up another sale. What a six months it had been! He had made the leap directly from industry to entrepreneurship. He had worked through every imaginable business scenario before setting up his new business venture—a high-technology consulting service based on two very sophisticated computer analysis programs. He'd also spent 70 days as a ski instructor, because of the unexpected downturn in the economy. Skiing certainly wasn't in his original business plan—but then neither were the events of September 11. Surprisingly, the skiing had brought forth some unexpected business-related benefits. Where, he wondered, would his next lucky break come from?

From Intrapreneurial Engineer to Prospective Entrepreneur

Doug's Career in Industry

Doug has been involved in solving complex engineering problems using state-of-the-art computing resources for his entire professional life. Following receipt of his bachelor's degree in physics in 1976 from Bates College in Lewiston, Maine, he obtained both the master's and the Ph.D. degrees in mechanics in 1979 and 1984, respectively, from Rensselaer Polytechnic Institute. Between 1985 and 1990 he was first a post-doctoral fellow, and later a

research associate. In 1990 Doug left academe and became employed by the Advanced Technology Center of the Ingersoll-Rand Company in Torrington, Connecticut, first as a research engineer, and later advancing to the position of manager, engineering analysis and technical services.

In his positions at Ingersoll-Rand, Doug further developed his skills in computer modeling and solving complex technical problems, and also set up computer networks within his department. The latter responsibilities required him to coordinate his efforts with the corporate information technology (IT) organization. In addition, he had special assignments as part of his daily work routine, two of which involved setting up and administering his department's annual operating and capital expenditure budgets. Although these budgets had to follow established corporate guidelines, he nevertheless became very familiar with budgeting and financial issues, especially when he sought exceptions to the guidelines. In addition, he learned human resource and people skills through various courses and seminars and, more practically, from managing the 12 skilled people who worked directly for him. In these situations, his manager provided coaching and watched his leadership skills improve over the years as Doug progressed through promotions from an individual contributor to supervisory and then management-level positions.

In performing corporate R&D, Doug had to generate and develop ideas that would benefit some group of internal customers within the company. These customers were usually the engineering departments in the manufacturing divisions. Doug's ideas might have their origin in a problem that the customer was experiencing, or the idea might be one of Doug's own creation to advance the future capabilities of the company. In each case, going forward required Doug to generate a project proposal complete with resource requirements, expected milestone completion and project review dates with his customer, and the project's funding requirements. Finally, Doug had to "sell" (obtain approval) this proposal to the engineering manager of the department that would fund the project. Several iterations of the project proposal between Doug and the engineering manager to refine the details would not be unusual. They needed to have confidence in Doug's abilities to produce what he said he would produce, and Doug needed to understand exactly what the division wanted and how they would use the results from the proj-

ect. Doug had a long string of successful projects that contributed to significant new business opportunities for the company.

First Thoughts of Entrepreneurship

Doug never intended to become an entrepreneur. He was content with his career as an R&D engineering manager in a Fortune 500 company. As a key contributor in his department and as a respected manager, Doug was concerned with the future direction of the company in general and his department in particular. During the late 1990s and early 2000s, downturns in manufacturing resulted in several restructuring events. Doug's group was eventually affected by these actions, and alternative arrangements were a hot topic. On one assignment he worked with his current manager to develop "blue-sky ideas" as to what would be involved with spinning off the R&D function of the company and taking it private. The analysis showed that such a scheme would be unrealistic. However, as Doug remembers, "...that kind of got me thinking about doing this for myself,...but at first the idea of doing it on my own wasn't something that even really occurred to me." Doug worked more on the idea of taking himself private, feeling as he did that his future career path did not look as promising as it once did. Setting up a consulting business now took on a growing appeal. Subsequently, Doug informed his manager that he could consider Doug in any future restructuring actions.

Interestingly, Doug's intrapreneurial activities in industry provided the pathway to entrepreneurship. His involvement with developing a specialized software program, and later working with a collaboration of intrapreneurs on the same program, provided the impetus for him to consider the possibility of making his entrepreneurial debut as a consultant.

First, the Engineer as Intrapreneur: NCMS and Heat Treat Distortion Prediction

One of Doug's extra responsibilities was as the Ingersoll-Rand representative in a multipartner collaborative R&D program under the auspices of the National Center for Manufacturing Sciences (NCMS 2003). The collaboration developed a software program, later christened Dante™, which would subsequently become a key offering in Doug's business. Several years prior to becoming a member of this collaboration, Doug had initiated his own R&D project to try to solve the very problem that ultimately led to the formation of the collaboration. The need for this R&D was widely supported in his company. When the opportunity arose to join the NCMS collaboration, and work with other highly talented team members from NCMS member companies on this same problem, approval came quickly.

The Collaboration

NCMS forms and manages complex, multipartner, precompetitive collaborative R&D programs among its member companies. An act of Congress, the National Cooperative Research and Production Act of 1984, enabled the formation of NCMS. The goal of this collaboration was to develop a software program that predicted how a steel part of any geometry would change its shape, or distort, after being subjected to the high temperatures and rapid quenching that characterize the steel hardening process. The primary reason to harden steel is to improve wear resistance. Some aspects of hardening steel resemble elements of the process used by the blacksmiths of a bygone era when they heated a part to red/orange heat, shaped it on their forge, and then quenched the part into a liquid medium such as water, brine, or oil.

For the most part during this collaboration, Doug worked in his Ingersoll-Rand office—his assignments and responsibilities to the NCMS collaboration were just other items on his work agenda. He communicated with his colleagues on a regular basis and attended meetings at NCMS headquarters or elsewhere as scheduled. Doug also led a subteam during one phase of the program, which further enhanced his management skills since none of the members reported directly to him. Doug's and his colleagues' innovative work on the software program was much like that of a group of intrapreneurs innovating on behalf of their respective organizations.

A Major Decision

Once the software was successfully developed, the collaboration members made a unanimous decision to "commercialize" the software and make it available to the public. Following the evaluation of several alternatives, the collaboration team selected Deformation Control Technology (DCT) (DCT 2003), one of the original collaboration partners, to perform this task. This commercialization process made the code more user-friendly for potential purchasers and users, compared to the raw code developed by the collaboration engineers. The Dante™ software worked in a professional manner like any other high-technology software one might purchase or license on the open market. Even though Dante™ would ultimately become available to the general public, the collaboration members felt that they were still in the position of gaining the maximum benefit from the software because of their intense involvement with developing the original code and understanding every nuance of the software.

Doug and his collaboration partners brought a solution to this complex problem to the point where it could now be commercialized and then sold on the open market. Doug had just experienced a major intrapreneurial event, thanks to NCMS and ultimately the U.S. Congress! And Dante™

would soon form the basis of Doug's major entrepreneurial undertaking.

Evaluating Entrepreneurship

Financing

As Doug thought about "taking himself private," he first evaluated his financial resources. Fortunately, Doug's family situation was such that he didn't need to generate cash flow from "Day One." He had been saving funds in anticipation of starting his business enterprise, and he also had a separation package from Ingersoll-Rand that he earmarked for setting up his business enterprise. His wife had a stable, corporate position, and they had no children. With his separation package and accumulated savings, Doug had a "buffer" of about \$65,000 to establish his business enterprise and carry it through the start-up phase of development.

There were ongoing expenses associated with establishing his new business enterprise that were not trivial. Actual fixed business expenses were approximately \$6,500 per quarter. There were a number of variable expenses, such as travel to national technical society meetings and meetings with prospective clients, but these would be reduced to some extent by the potential for generating revenue. There were also some one-time fixed expenses associated with setting up his home office. As a potential source of future financing, Doug opened a home equity line of credit on his Connecticut residence while he was still employed.

Business Planning and Evaluating Risks

After finally accepting that his current position no longer held potential for advancement, Doug applied an analytical process to study alternatives. He used commercially available business-planning software to analyze various business scenarios to evaluate the risk of setting up a business enterprise. "I started looking at what would it take to make a go of it. Worked out some business plans and assumptions . . . that maybe the first month in business I might bill 35 hours, and ramped it up by 5 hours a month until I was selling 80 hours a month, and then I would be doing probably just about as well as I was doing before." He also evaluated the impact of different ramp rates as well as the impact of taking three months before achieving his first paying job, and even six months, attempting to be conservative in his projections.

Doug considered various hourly rates for his services, ranging from \$75–\$100 per hour for routine or general structural analyses to \$125–\$150 per hour for more advanced premium analyses using Dante™. Since there was more competition from other consultants providing general structural analyses, he knew from his experience

with such consultants while in industry that he would have to charge a lower hourly rate for these services. Doug anticipated that this class of analysis would provide the majority of his revenue. Doug also evaluated various ratios of premium to routine analysis, still recognizing that the majority of his analytical work would fall into the routine category. After evaluating the results of the different scenarios, Doug was confident that he could be successful.

Before setting up his business, Doug sent his résumé to several firms that provided computer analyses for their business clients. This generated positive interest. Both as a contingency plan and as a safety net, Doug felt that he could obtain employment at this type of firm on relatively short notice should he decide to abandon his business enterprise in the future.

Legal Organization

By now the desire to set up his business enterprise became compelling. "The more I thought about it, the more I wanted to be on my own. I'd be completely in control of what I did . . . sort of—in reality you do whatever anybody will pay you for. The flexibility of working either in Connecticut or in Vermont where we have a vacation home was particularly appealing."

Doug read up on business types and organizations, and how to start a company. Working with an attorney, he formed a LLC (Limited Liability Corporation) organization structure. He registered his new company using his home address in Connecticut.

Final Analysis

Doug was confident that he had realistically viewed his prospects and evaluated the risk potential. Reflecting back on the thought process he used to evaluate the present and the future, Doug said:

I tried to make sure I thought of things that could go wrong, (to) try to identify the ones that would just kill something, and (to) make sure that I knew either how I can keep them from happening or how I would respond in case they did. It wouldn't be much fun to be focusing constantly on the problems, and at the same time it would be foolish not to worry about them at all. I was pretty happy with the way things looked. The element of risk was there, and I thought I had considered every contingency. Even the worst case was survivable. I like doing the technical work, but I also like managing stuff and being the boss. This business venture gives me both things. It's my company that I have here. I get a charge out of looking at my brochure that says 'NRS Associates, Douglas Shick, President.' I talk about myself as the founder. . . . But I hadn't considered the impact of the tragic events of September 11.

Opening for Business

In August 2001 Doug left industry to start NRS Associates, LLC. NRS stood for the phrase “Not Rocket Science.” Doug explained his choice of name as follows. “A friend said I should have something whimsical—and I sort of thought something serious. So this way I can do both things. I can be whimsical with Not Rocket Science and serious with NRS.” On Doug’s website, www.nrsassoc.com (NRS 2003), he elaborated further on the name NRS, writing, “In the words of our founder, ‘Okay, maybe it’s Not Rocket Science, but it’s still awfully complicated.’ Our mission is to provide simple solutions to the complex problems faced by our clients.”

Doug established his high-technology business venture on September 1, 2001, and on September 10, he e-mailed an announcement detailing his technical services to everyone he knew. In return, he had a number of congratulatory replies, as well as some significant leads.

NRS’s Services: Computer Modeling of Mechanical Components

Doug’s clients wanted to know whether—or when—a particular mechanical part will fail once in service. The news media periodically carried stories of catastrophic failures; for example, a tail-rudder failure that was suspected of causing an airplane crash, but structural failures regularly occurred on a more mundane level as well. Computer-based analytical tools that predict how a virtual part or component will respond under various service conditions were an important part of providing reliable quality products. Structural modeling with computer simulation software has replaced the need for real-time testing of every component. Computer simulations provided the information required to assess the likelihood that a given component will fail in service. Many businesses had engineers on staff with the expertise and experience to provide such analyses, while others relied on consulting services such as Doug’s on an as-needed basis.

Structural Analyses

Technical computer modeling or simulation is to the engineer what EXCEL™ or another business spreadsheet program is to the business manager. Just as a business manager performs a number of “what-if” analyses in studying a given business scenario, inserting different values of the business variables into the spreadsheet as part of generating an understanding of that scenario, a design engineer performs high-technology computer modeling or simulation to gain an understanding of what is happening to a given structure or component under load or other input from its service environment. Seeing what happens to a component under different conditions enables the

engineer to make any needed design changes that become evident during the analysis and to have confidence in the final design of the component before actually building a prototype. Finally, physical testing of the prototype through actual experimentation and comparing its performance or response to its working environment with the predictions from the computer model generates a very high degree of confidence in the performance of that component before manufacturing begins and the component finally reaches a customer.

Home-Based Structure Modeling

Solving structural analysis problems required an incredible number of calculations. A decade ago, these calculations required the use of mainframe computers, making it impossible for the lone entrepreneur to set up his or her own dedicated computing system. However, the tremendous increase in computing power at reduced cost had made it possible for individuals like Doug to have the ability to perform these complex computer analyses in their own home.

Doug leased a state-of-the-art workhorse computer from Dell to perform the heavy computation, and a laptop computer that would enable him to provide the input parameters from any location at any time, whether from the same room, a distant location such as a customer’s office, or his family vacation home in upstate Vermont. The laptop also displayed the final results. Quarterly computer lease charges were about \$1,200. A simple modem connection from his laptop computer provided the necessary link from any off-site location to his office network and workhorse computer very effectively. Other expenses, such as dial-in access, cable Internet access, and web site charges, were approximately \$240 per quarter.

Doug Offers Two Services: ANSYS™ and Dante™

Doug’s company provided two services: routine or general structural analysis and specialized or premium computer modeling analysis. Each service required a different software program with different associated charges.

ANSYS™

Doug licensed a software program from Ansys, Inc. (called ANSYS™) that enabled him to analyze mechanical structures and components, and to make recommendations to his customer about the ability of the component to safely withstand the applied loads in service without undue stress concentrations that would lead to premature failure of the component (ANSYS 2003). Doug’s ANSYS™ license cost about \$5,000 per quarter.

Dante™

Doug was well aware that Dante™ represented a significant advancement in the realm of computer analysis software. He recognized that moving Dante™ into the marketplace would be a challenge—it was a high-technology innovation in complex computer simulations not previously available in the marketplace. It was a first—it was new to the world. “We’re dealing with customers who didn’t know they needed it—I guess that’s what we’re kind of struggling with . . . not struggling, but that’s the next step. It’s a matter of finding the right customer and showing them what it can do and they can figure out what to do with it.”

Doug licensed Dante™ for his business enterprise from DCT. Dante™ enabled Doug to predict for his customers how a steel part would distort, or change its shape, during the operation that involved hardening a steel component. A way to predict this distortion would offer several options to a manufacturer to minimize this effect. Dante™ can be extremely important in new product development, bridging the gap between product design engineers and manufacturing engineers. With Dante™ various designs and their manufacturing consequences can be studied before a new design was finalized and manufacturing was left with the challenge of making the part.

Doug had a second license from DCT to sell the Dante™ software outright in the northeast region of the United States. Because of this sales relationship with DCT, Doug did not pay a fixed annual license fee for his business use of Dante™, just royalties as a percentage of his fees for jobs where he used Dante™. These royalties to DCT acknowledged the intellectual property contained in Dante™ that DCT developed during the commercialization process.

Marketing Plans and Networks

Doug established his website, www.nrsassoc.com, himself, at minimal cost by drawing on his overall IT competency. He designed the website more as a means to demonstrate the credibility of his business enterprise than with the expectation that it would bring in cold leads. His website described his services and also contained links to other consultants, technical analysis software companies, and laboratories that provided various kinds of services that were complementary to Doug’s. He incorporated an IT principle that the more sites that were linked to yours, the more likely a search engine would think you were important and place your site near the top of any search list. In addition, Doug made sure that his homepage contained important keywords that a person seeking his kinds of services might use in their search. The benefit of these strategies was that anyone who used a search engine to search for these services was likely to find Doug’s website

relatively easily. Doug’s site met his expectations, “People are finding me.”

In Doug’s new entrepreneurial world, his highly refined skill in preparing project proposals was critical to the success of his venture. Doug’s new customers were largely unknown, they were located everywhere, and they had no prior working relationship with him. Marketing his entrepreneurial offering to these customers and generating sales dollars constituted an area of unproven skill, and represented a major challenge for Doug.

As a consultant Doug expected to sell the capabilities of Dante™ to high-technology customers in engineering and manufacturing. But, since few in industry had heard about Dante™, Doug knew that it would require some special marketing skills to convince prospective customers of the software’s benefits. Doug’s style was low-key: he was not an overpowering glib sales promoter who was verbose but really said little of substance. Doug spoke with authority, chose his words carefully, and let every word count. When marketing and selling technical services as a consultant, Doug needed to convince a potential customer that his overall competency and his computer modeling approach to specifically solve their problem would provide the necessary and correct answers, just as he had to with his customers in industry. In this respect, Doug’s technical competence garnered sales.

Doug used word-of-mouth referrals among people in the field to spread knowledge about his business enterprise. He had memberships in numerous professional societies. Doug supported DCT at national technical society meetings by presenting various Dante™ analyses. This has provided wide exposure of the technology to the segment of the technical community most likely to have an interest in Dante™. Members of these organizations constituted a major component of Doug’s network, and the cornerstone of his marketing plan. Conventional widespread advertising in technical journals and publications, or initiating cold calls to potential companies, have not proven effective in this field.

Doug gathered additional name recognition in his field by attending various ANSYS™ user-group meetings and presenting solutions to various complex problems to new analysts in the field (and their companies). As Doug stated, “My marketing plan is focused primarily on developing leads through people I already know, and, more important, who already know me.” These referrals were critical to Doug’s success. In this regard, Doug worked hard to get his name and that of NRS Associates in front of people who could use his services.

In addition to pursuing his own leads and opportunities, Doug had a number of contacts in his network whose expertise complemented what he did, and it has already provided an early source of revenue. In one instance the consultant working on a job felt that there was more to the failure of the part than just a heat treatment problem as

suggested by the customer. This consultant felt that there might actually be a design error. The customer agreed to have Doug examine that possibility. Two phone conversations and some e-mail between sites in Connecticut, North Carolina, and Indiana provided the information Doug needed. Doug did all the work from his home office. His analysis confirmed that the design of the part was at fault, and he provided the information needed to make the part sufficiently robust for this application. He needed no face-to-face meetings with the various parties.

If Not on the Links, Try the Slopes

The encouraging leads that Doug received in the replies to his September 10 broadcast e-mail announcement dried up completely, or were at least put on a very firm hold by the events of September 11, and no further leads developed during 2001. The lack of solid business activity in technology-depressed markets led Doug to informally establish "NRS Associates, LLC-North" at the family vacation home in upstate Vermont. With his computer network established, Doug could really work from any location. In the meantime, while waiting for the business climate to improve, he pursued potential leads by telephone or e-mail, and made visits as appropriate.

With time on his hands during the winter of 2001-2002, Doug decided to fulfill a long-time ambition. "I took a job as a ski instructor this winter, partly because it's been a dream of mine to be a ski instructor ever since I was 10! I finally got my skiing up to a level where it made sense." However, 70 days of skiing and instructing in early 2002 were not spent passing time and having fun.

The ski slope actually managed to generate a number of promising leads in early 2002. His most promising lead came from private ski lessons he provided to an 11-year-old girl over the 2002 President's Week. On the ski lift, he learned that the girl's father was a high-level engineering manager at a firm to which Doug wanted to sell Dante™. Doug met the father of the girl after the ski lesson and arranged to speak to him at his company at a later date. "He was the boss of all the people that I've been trying to figure out who they are so that I can go try to sell Dante™ to them!" Doug had left no snowflake unturned when it came to developing new leads for any of his analytical consulting services.

Quartz Resonators – A Premium ANSYS™ Analysis

A second unexpected source of leads came through the Internet, reminding Doug of the interconnectivity of websites. Much to his surprise, Doug recently had a telephone call from Dan, a colleague from his university days. Dan was surfing the web and came across Doug's name, and gave him a call.

While a research associate at Rensselaer, Doug studied the mechanics of quartz resonators. Quartz resonators were used in the electronics industry for both civilian and military applications. Doug published three papers based on this research, coauthored with the professor in charge of this research. Dan was still working in the field and brought Doug up to date about the significant advances taking place in the field. He informed Doug that his early papers on quartz resonators were some of the seminal papers in the field, and that anybody working in the field today still knew the name "Shick." Even though ANSYS™ was the software code used to solve quartz resonator problems, the solution required considerable knowledge beyond routine structural analysis. This would enable Doug to charge a premium rate for this class of analysis as well.

Late Spring 2002

With the 2001-2002 ski season over, Doug was spending more time in his office. He had imposed a sense of urgency on himself. He says, "At the moment, all I have to do now is get more work, and that is becoming more urgent. Once I have a job, clients will impose urgency. Typically I'll give a promise date. I've gotten pretty good at meeting those dates over the past few years. Learned my lesson years ago! In the meantime, I've never been happier. Except for the revenues, its great, best thing I've ever done!"

Doug saw incipient signs of the business climate improving, so there should be more positive market opportunities developing for his high-technology computer analysis services. He was following up with earlier leads again in the hope of opening up these opportunities. Promoting Dante™ to organizations that did not know they needed Dante™ continued to be an important next step, as was researching the companies that were active in the quartz resonator field. Doug planned to capitalize on his name recognition in the quartz resonator technical community. These both involved premium-level analyses and would go far in establishing a unique specialty for Doug's business enterprise. A competing firm could not easily replicate these specialized analyses, which could also generate leads for the routine ANSYS™ structural analyses that Doug still felt would represent the majority of his business. Doug was strongly motivated to market his capabilities and to make his new business enterprise work. He believed strongly that he had the talent to make it work, and will leave no snowflake unturned to find that work, reminding himself, "Now all I need is just a bit of good luck."

Epilogue

There was a lot more snow in the mountains and on the ski slopes of upstate Vermont in the winter of 2002-2003 than

in the previous winter, but Doug was doing less skiing. Doug's business was in the black, and in his words, he was "off life support!"

Questions for Discussion

1. For most of his career Doug had few thoughts about being an entrepreneur, but now he embraces his new role enthusiastically. Which aspects of Doug's personality appear to be helpful for his potential success as an entrepreneur? Which aspects could be a hindrance?
2. Doug has accumulated a number of skills from his past employment opportunities. Which of these skills contribute to his success? What skills may he be lacking? If so, how can he overcome this deficiency?
3. In many ways Doug is just another consultant who advertises his services through the web and via his network. His offering, however, has two unique services—Dante's™ distortion prediction and ANSYS's™ quartz resonator analysis. How best can he capitalize on these?
4. What start-up activities did Doug initiate to establish his new business enterprise?
5. Innovations can be considered to come in two broad classes: incremental and radical. Where would you slot Dante™? Are there potential benefits to being in one class or the other?
6. What characteristics define intrapreneurship and entrepreneurship? Distinguish between them.
7. Doug admits that his current revenues are not in line with his original business plan. To what extent do you think this is a direct result of the unexpected events of September 11? Suggest how he might go about revising his plan after September 11, and deciding if and when he should seriously consider abandoning his own business and explore other options.
8. Doug's IT experience enabled him to establish a professional website at minimum cost. Visit his site (www.nrsassoc.com), and review how Doug gives the impression that he has a larger operation than a single-person enterprise. In your opinion, is this deceit ethical, or even good business? Give your reasons.
9. Although Doug meticulously thought through all aspects of his business before start-up, events did not go according to plan. Now he recognizes that he could use some help jump-starting his business in a technologically depressed economy. What advice do you have for Doug at this point in time?
10. Is Doug's technical expertise sufficient?

Endnote

1. Teaching notes are available upon request from the author at WoodillaJE@sacredheart.edu.

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JOHN WOODILLA (WoodillaJE@sacredheart.edu) holds B.S. and Ph.D. degrees in metallurgy from the Massachusetts Institute of Technology. He retired as director of the Advanced Technology Center at the Ingersoll-Rand Company in Torrington, Connecticut, in 2000. Between 1988 and 1998, he was a member of the review panel that selected proposals for the State of Connecticut Charles Goodyear Grants to Connecticut colleges and universities for research in high potential areas that could contribute to economic growth in Connecticut. These proposals were prepared jointly by industry/university research partnerships, and many of these grants supported research of benefit to young entrepreneurial start-up companies in Connecticut.

Woodilla remains active as an industrial member on the Materials Academic Advisory Board of the Department of Metallurgy and Materials Engineering at the University of Connecticut. He is education chair of the Hartford Chapter of the American Society of Materials.

Book Review

Nadia Ballard

Ilan Alon and Diane H. B. Welsh, editors, *International Franchising in Emerging Markets: Central and Eastern Europe and Latin America*. Chicago: CCH Inc., 2001.

Ilan Alon and Diane H. B. Welsh, editors, *International Franchising in Emerging Markets: China, India and Other Asian Countries*. Chicago: CCH Inc., 2001.

Half of a two-book series, *International Franchising in Emerging Markets: Central and Eastern Europe and Latin America*, is a comprehensive, educational and yet practical collection of research and articles on the topic of cross-border franchising. Edited by Dr. Ilan Alon, associate professor of international business at Crummer Graduate School of Business, Winter Park, Florida, and Dianne H. B. Welsh, executive director of the Muldoon Center for Entrepreneurship at John Carroll University, the book begins with a general overview of franchising as one of the most effective methods for penetrating international markets and follows with an academic review of the political, social, economic, and technological developments facilitating the spread of franchising in developing regions. Most attention, however, is given to specific accounts of the opportunities and challenges facing current and future franchisors in the countries of Central and Eastern Europe and Latin America.

Through contributions from real-life franchisors and franchisees, academic researchers, consultants, legal experts and other authorities, the editors weave a dynamic portrait of the current state of franchising in the emerging markets that combines theory and practice from both global and local perspectives. For example, the first of two chapters dedicated to Russia focuses on the overall conditions for franchising in the country and gives general recommendations for entering that market, while the second chapter provides an in-depth analysis of the opportunities and threats in the Russian hospitality industry. A similar approach is followed in the sections on Central Europe and Latin America, while single chapters are dedicated to Slovenia, Bulgaria, Croatia, Brazil, and Mexico.

The book has special impact not only because Alon and Welsh are established authorities on franchising but also because the articles they've selected are mostly written by local practitioners and researchers who add realistic and

practical flavor to their writings, backing it with surveys, interviews, and statistical data. Therefore, the appeal of *International Franchising in Emerging Markets: Central and Eastern Europe and Latin America* stretches beyond academic circles to encompass business leaders, professionals, and entrepreneurs alike.

The exponential growth in the franchising sector and the frequent changes occurring in the developing countries covered in this book guarantee that the research and guidelines included here will soon have to be revised. Nevertheless, Alon and Welsh's compilation provides a much-needed glimpse into the dynamics of a business field and geographic regions that are often underrepresented in business research, but soon should emerge as some of the main sources for long-term growth for business.

The second part in this two-book series, *International Franchising in Emerging Markets: China, India and Other Asian Countries*, focuses on the Far and Middle East regions. To be precise, almost half of the book is dedicated to the development of franchising in China, and that is understandable, considering the importance this vast market holds for Western businesses. Three of the rest of the chapters focus on India, two on Kuwait, and one each on Singapore and Kazakhstan. Another chapter takes a more integrative approach in discussing restaurant franchising in the Middle East, while the final discussion looks at franchising in a global context, summarizing the findings and patterns emerging from both books into comprehensive, well-organized tables and bulleted lists.

The editors have selected a broad collection of articles on China that take readers from the beginning of franchising there in 1994 with KFC and McDonald's, to its evolution through the year 2000, its legal aspects, and its prospects for the future. The section on China is interspersed with articles examining real-life cases such as those of the executive management firm Management Recruiters International (MRI), California-based ITN, Inc., and a Chinese beauty parlor franchisor.

The chapters on India focus more on academic research and descriptive accounts of franchising in that country since new market-based economic policy reforms were enacted. The booming domestic franchise sector is examined, as well as the unique character of Indian franchises, which span from the traditional restaurant, hotel, and soft drink sectors to original sectors such as health

care, entertainment and education. Readers may find of particular interest the results of a couple of surveys conducted among franchisors in New Delhi and the general public throughout India on the subject of franchising in their country.

The survey method was also used first in 1995 with 62 local franchisors and in 1999 with 140 current and potential franchisors in Singapore to measure the progress of franchising as a business opportunity in that country, while interviews conducted with franchising companies in Kazakhstan were used to develop the market research there. Although at different stages of franchise development, both countries show encouraging signs for the success of their respective local franchising industries.

The most intriguing part of the book deals with the peculiarities of doing business as a franchise in the Middle East. From the first overview chapter on the region to the specific account of Starbucks' entry in Kuwait and the shoplifter situation at a Mercedes showroom, the section reveals some of the unique economic, cultural, religious, and managerial issues facing potential and current franchisors there.

Overall, Alon and Welsh deliver an authoritative and wide-ranging account of the challenges and successes of international franchising and the great potential this business sector has in the far-reaching corners of the world in this age of globalization.



NADIA BALLARD (nadia@bridgecultures.com), originally from Bulgaria, has a Masters of Business Administration degree with a concentration in international business from the Crummer Graduate School of Business at Rollins College in Orlando, Florida. She is the principal of Bridge Cultures, Inc., a cross-cultural communications agency. As an international marketing professional, Ms. Ballard has lectured and published articles on culture shock, cross-cultural communications, and translation issues at the Society for Technical Communications, the University of Central Florida, Shanghai University of Science and Technology, and the International Academy of Business Disciplines, among others.

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College of Business
Sacred Heart University
5151 Park Avenue
Fairfield, Connecticut 06825-1000

