INNOVATION:
THE SOUL OF ENTREPRENEURSHIP

JoAnn and Jim Carland
Carland Academy
www.CarlandAcademy.com

INTRODUCTION

Innovation is the *Soul of Entrepreneurship*. How dare we make this assertion you may ask? Aristotle defined the soul *"as the core essence of a being"*[1] and that is how we feel about the essence of entrepreneurship: innovation truly is an economic engine, the vital essence of true entrepreneurship.

Innovation typically involves creativity, but is not identical to it: innovation involves acting on a creative idea to make some specific and tangible difference in the domain in which the innovation occurs.[2] Amabile, Conti, Coon, Lazenby and Herron proposed the following definition in 1996:

> "All innovation begins with creative ideas . . . We define innovation as the successful implementation of creative ideas within an organization. In this view, creativity by individuals and teams is a starting point for innovation; the first is a necessary but not sufficient condition for the second."[3]

In our view, innovation is the tangible expression of creativity. From an entrepreneurial perspective, innovation is the creation of a new product or service, or a new method or combination. The marriage of innovation and entrepreneurship requires one to visualize the process. First is the vision, the idea, the concept which gradually materializes in our minds and our hearts; an idea that we simply *know* is great. It can be described as that *"Eureka!"* moment of true discovery. We create or develop these ideas and concepts in our minds, we refine and develop them, generally through discussion with others. Finally, we must translate those ideas and concepts into reality. If innovation is to have more than psychological value, it must become more than thought. It must become tangible.

Yet if we stop here, then where is the value to humanity? Is our creation something we feel compelled to share, or will we be satisfied with the secret knowledge of our own creation? Is our creation of potential value to others? If so, then could we find both psychic and financial reward from its becoming? Entrepreneurship is the process of this translation. We create an enterprise which brings our concept to life. Now, we can enjoy the psychic reward of creation while we share our great discovery with the world.

TYPES OF INNOVATION

Creativity has many forms as we see in the literature. Paul Torrance, an early writer in the field, described four elements of creativity. *Fluency* refers to the production of a great number of ideas or alternate solutions to a problem. Fluency implies understanding, not just remembering information that is learned. *Flexibility* refers to the production of ideas that show a variety of possibilities or realms of thought. It involves the ability to see things from different points of view; the ability to use many different approaches or strategies. *Elaboration* is the process of enhancing ideas by providing more detail. Additional detail and clarity improves interest in, and understanding of, the concept. Last is *originality* which involves the production of ideas that are unique or unusual. It involves synthesis or putting information about a concept together in a new way.[4] While these elements of creativity connote pure ideas, their translation into a tangible innovation usually results from either elaboration or originality.

The Torrance Elements of Creativity

✓	**Fluency:**	**the production of a number of ideas or alternate solutions to a problem**
✓	**Flexibility:**	**the production of ideas that show a variety of possibilities or realms of thought**
✓	**Elaboration:**	**the process of enhancing ideas by providing more detail**
✓	**Originality:**	**the production of ideas that are unique or unusual**

Source: E.P. Torrance (1979). The Search for Satori and Creativity. Buffalo, NY: Creative Education Foundation.

This means that the translation of an idea into reality typically involves the creation of a new product or service or the enhancement of an existing product or service. In the realm of business, we often see entrepreneurial firms innovate as evidenced by originality while in larger firms creation of a new use for an existing product or service, the combination of existing products or services in new ways or simply the enhancement of the ingredients, packaging, advertising or message, are the preferred methods of innovation. In fact, in an early study conducted in 1984, small businesses produced 2.4 times the innovations of their larger cousins[5] and the pre-eminence of small firms in innovation is still evident in a 2005 study.[6]

As early as 1934, Joseph Schumpeter, often identified as the "father of entrepreneurship," called innovation, "creative destructionism."[7] He elucidated upon this commentary by enumerating the aspects of innovation-generating creative destruction in an industry: new markets or new products; new equipment; new sources of labor or raw materials; new methods of organization or management; new methods of inventory, transportation, communication, advertising or marketing, etc.[8]

Schumpeter's Creative Destructionism

- ✓ **New markets or new products**
- ✓ **New equipment; new sources of labor or raw materials**
- ✓ **New methods of organization or management**
- ✓ **New methods of inventory, transportation, communication, advertising or marketing**

Source: J. Schumpeter (1934). The Theory of Economic Development, (Translated by R. Opie), Cambridge, MA: Harvard University Press.

Schumpeter's view is complementary to Torrance's perspective of elaboration and originality. He went on to explain that these innovations could destroy old markets, old products, old services, old ways of doing business. Hence the creation of the innovation resulted in the destruction of its predecessor.

APPLICATIONS OF INNOVATION

In large measure we owe our national standard of living to the fruits of creativity. The innovations that have taken tangible form over the years constitute all of the products and services which we enjoy. Collectively, these innovations create and continue to evolve the economy of the nation, and of the world. A powerful perspective, but one which suggests an important question. How were all of these fabulous innovations translated into workable components of the economy? The *applications* of innovation hold special significance for us.

Applications of Innovation

✓	**Gifting**	**the innovation**
✓	**Licensing**	**the innovation**
✓	**Commercializing**	**the innovation**

There are several paths to innovation application. One which is frequently overlooked is gifting of the intellectual property. We frequently forget about the vast impact of freeware, open source software, the sharing of ideas, research, insights and breakthroughs. Conferences, academic publication, informal discussion groups, and a myriad of idea communication and distribution networks have evolved in the United States and the world. These innovation sharing networks continue to be a powerful factor in the evolution and application of technology, knowledge and innovation of all types and in virtually all fields; perhaps the most powerful. One could argue that the Internet itself is simply an outgrowth of the desire to share ideas and insights: the ultimate network.

The virtually complete absence of financial incentives involved in these networks form no impediments to the application of innovation. Some people might even suggest that the absence of financial incentives enhances the innovation process. It is the sharing of ideas and the exchange of insights that drives innovation, so the more minds we involve in the process, the more powerful the results and the more rapidly the innovation emerges. If we have people who are focused on making money from an innovation, they tend to be more reticent about sharing ideas and tend to take steps to protect the intellectual property.

The pervasiveness of this view among academic and philanthropic groups and networks of social entrepreneurs makes it crystal clear that psychic rewards are real and are real drivers of the creation of innovation. Being the parent, even just one of the parents, of an innovation brings a vast sense of satisfaction. Humans have an innate need to create and that drive is the real source of the individual payoff for the work and effort involved in innovation. The power of these psychic rewards in incalculable.

However, the actual application of innovation in society is not purely the result of altruism. It takes money to perfect an innovation and distribute it to consumers of that innovation. This is *commercialization*: casting the innovation in tangible form which is ready for consumption and delivering it for consumption to the people of the community, region, nation and world.

Clearly the profit motive is a powerful one, but not the only one. Consider electricity. Virtually everyone in the United States can afford electricity. That is largely the result of low cost production, but it required the efforts of a great number of local rural cooperatives to develop the last miles of power lines for delivery to less profitable venues.

The point is that society cannot enjoy an innovation without commercialization of that innovation. It is equally clear that the commercialization process has the potential to create profit, and sometimes, vast wealth. The pursuit of such wealth is a potent driver of creativity and innovation, although that pursuit may not be as powerful as the psychic driver.

Consider the interest in patents. The idea that one can invent something and license it for commercialization to a big firm is so pervasive in our society that it is almost a cliché. In reality, this seldom happens. Only a tiny number of inventions, less than 3%, are actually licensed to large firms on a royalty basis and make money for their inventors.[9] There are really very few inventors who are making a living in research and development. Most of the people we think of as inventors, were, and are, actually entrepreneurs.

We know that large firms do actively engage in research and development, investing money in the process, with the idea of commercializing innovations which result for the benefit of the company. We will talk more about this process in a bit. For now, let us just suggest that there is really very little real innovation which flows from this process in most industries. There are exceptions, of course, like pharmaceuticals, but by and large, as we will see, original innovations flow disproportionately from entrepreneurial enterprises.

American folklore makes it clear that the best way for innovation to reach the people is for the innovator to create an enterprise to commercialize it. That is the *American Dream*; to become an entrepreneur. The pioneers that settled our nation were not just fleeing religious persecution, they were seeking the opportunity for economic self sufficiency. It is no accident that our early history demonstrated the power of that drive as our people covered the world with Yankee trading ships. We were founded as, and we are today, a nation of entrepreneurs.

ENTREPRENEURSHIP: THE ULTIMATE EXPRESSION OF INNOVATION

It is generally accepted that entrepreneurs "serve as agents of change; provide creative, innovative ideas for business enterprises; and help businesses grow and become profitable."[10] In an early work in 1984, we proposed to define an entrepreneur as, "an individual who establishes and manages a business for the principal purpose of profit and growth... characterized principally by innovative behavior and [who] employs strategic management practices."[11] In contrast, we defined a small business owner as, "an individual who establishes and manages a business for the principal purpose of furthering personal goals."[12] That definition enjoyed initial widespread acceptance, and has recently emerged again as potentially useful. In 2003, a group of Australian researchers noted that the Carland definition embodied five basic dimensions: establishment status (venture founder or non-founder); profit importance; growth orientation; innovative behavior; and the use of strategic management practices.[13] Their research demonstrated that the most important and powerful differentiating factor was innovation.

In a later paper with Wayne Stewart in 1996, we defined entrepreneurs much more simply as those who have "...the ability to see what is not there."[14] We actually believe that such vision must be coupled with the drive to make the vision real. In essence, this perspective of the entrepreneur suggests that he or she has the intuition and insight to *recognize an opportunity* to establish products, services, and industries where none now exist; and, also has the ability to *create an opportunity* to establish products, services and industries.

The Carland Perspective of Entrepreneurship

- ✓ **Entrepreneurs have the ability to see what is not there and the drive to make the vision real**
- ✓ **Entrepreneurs have the intuition and insight to recognize an opportunity**
- ✓ **Entrepreneurs have the intuition and insight to create an opportunity**

This ability to see into the future, to dream of possibilities, and to dare to act is that series of attributes that drive entrepreneurs to turn dreams into reality. This, indeed, is innovation in action: a tangible, profitable, creation which drives the wealth and welfare of people and nations. At every phase, innovation is the driving force: the ultimate expression.

FINANCIAL ASPECTS OF ENTREPRENEURSHIP

Most economists seem convinced that innovators do not reap financial rewards for their efforts. In a sample of 1,091 patented inventions, Astrebro reported in 2003 that the average internal rate of return on a portfolio investment of those inventions would yield only 11.4%.[15] Even worse than the mean data, Astrebro reported in this highly respected study that the median return on such a portfolio was actually *negative*.[16] Even that statement fails to capture the seriousness of the study. Of the 1,091 patents, only 75 patents (7%) actually reached the market; which means that 93% never saw the light of day. Further, 60% of the patents which did reach the market, *lost* money. This leaves only 30 patents (2.7%) which actually made money. Of those, 6 inventions created real wealth for their creators, with the top return at the 1,400% level. The net result of the study suggested that one half of one percent of inventions really are successful.[17]

Astrebro's findings were consistent with virtually all of the other studies, and there have been a number of these studies. Nordhaus, in a 2004 study, estimated that innovators capture only about 2.2% of the returns from an invention,[18] and Baumol had similar findings in a 2002 study.[19]

If we accept the findings of these respected researchers, then we are left with a burning question in our minds: *So, why innovate?* If the financial rewards for innovation are as rare as a lightning strike, then is all of the creative effort driven by psychic rewards? Is the only thing that propels innovation, the need to create?

We cannot accept that proposition because it would imply that most commercializations occur through the process of businesses sifting through the various networks of academics, idealists, social entrepreneurs, and inventors to find marketable innovations among the gifted intellectual property. That is *not* what happens. There might be an occasional innovation that an enterprise discovers from the mountain of developments that are being gifted to society each day, but most innovations are brought to market for one of two reasons. Either the sponsoring enterprise is virtually certain of financial success, or the sponsoring enterprise is an entrepreneurial venture engaged in the great social experiment of proving the viability of a new innovation. We will return to this idea in a few minutes.

INNOVATION IN LARGE ENTERPRISES

When one thinks of large companies and the access they have to research and development capital, one might conclude that most innovation comes from those companies. But time and again, we see large, successful companies engaging in *elaborative* innovation. They change the target market, add flavor, change the trade dressage, or change the size of their existing products rather than create new, original products. There is a statement which is expressed by Joel Barker[20] and also by Andy Grove, former CEO of Intel which goes, *"Success sows the seeds of its own destruction."*[21] The adage refers to the tendency of the people in a successful enterprise to assume that they are successful because they have it right; they understand the market and they know what they are doing. Such an attitude can cause people to sit back and enjoy their success; to become mentally lazy; to assume that the future will be a reflection of the past. When they do, they tend to be passed by entrepreneurs.

Grove was willing as CEO of Intel to "cannibalize his own products" to stay ahead of the game. His strategy sacrificed returns by introducing the next generation of chip to the public before the earnings of the last had been fully realized. He felt that in order for Intel to retain its 80% market share, it had to continue as the technology leader. As soon as he slowed development, another company would become the de facto standard and history has proven that he was right.[22] Grove's successors either felt that the cost to stockholders of such a strategy was too great, or they fell victim to their own success. Today, under new leadership, Intel has lost its market domination and much of its market share.

It is true that the majority of research and development expenditures do occur in large enterprises, but few of the really ground breaking innovations result from those efforts.[23] In a 1995 report prepared by the U.S. Small Business Administration, the most important innovations of the Twentieth Century were developed by entrepreneurial enterprises.[24]

Why is it that underfunded, small businesses without marketing clout, without manufacturing resources, without personnel, without all of the accouterments of business, produce virtually all of the real breakthroughs? The answers relate to the people. So frequently we forget that "enterprise," "organization," "business," even "venture," are words that we have coined to describe the activities of individuals. No "business" ever decided to take any action. Every action, every decision, every effect of every organization is the result of the acts of one or more people. It is the motivation of these human decision makers that we must examine.

DRIVING FACTORS IN LARGE ENTERPRISES

Decisions in a large enterprise are made by managers. Managers are very different from entrepreneurs. Managers are paid salaries. There may be the opportunity for bonuses or profit sharing, but for the overwhelming majority of managers, the potential for serious wealth is not present as a motivating factor. As a result, managers are driven by numbers. As they make decisions, they must address the question, *"What actions will create the best internal rate of return for the company and create the best performance numbers for my unit?"*

If you remember how the internal rate of return (IRR) is calculated (or if you don't!), the returns must be adjusted for the risk. The greater the level of uncertainty about the potential for market acceptance of an innovation, the greater the mathematical risk attached to forecasted returns for that innovation. The greater the risk, the more forecasted returns are discounted in the formula. The result is that a minor innovation with limited forecasted returns and very low risk will fare better under traditional IRR analysis than a major innovation with forecasted high returns and high risk. In other words, it is much safer to put peanut butter in a new jar than it is to launch a new sandwich spread as a companion for jam.

It is easy to understand the bias that is incorporated into the IRR formulae. Management scholars have never read Alfred Lord Tennyson![25] In the realm of traditional business, it is *not* better to have loved and lost than never to have loved! It is far better not to take the chance. This bias is perpetuated by the evaluation system for management. Managers are literally driven by numbers because their performance is evaluated with them. If you want to progress in the company, then you need to make your numbers. When you meet with your superior each year, you come away with an understanding of the returns you should produce in your profit center, or the percentage of spending reduction you should achieve in your cost center. To progress in the company, you need to meet those numbers. If you exceed the numbers, that's great, but if you double or triple the numbers, there is rarely any serious difference in your career outcome. In other words, no one is going to double your salary because you doubled the expected returns for your department or division. In fact, they are far more likely to believe that the original expectations were too conservative and to saddle you with higher expected returns next year. Your reward for outstanding performance is likely to be an expectation for continued outstanding performance in the future coupled with a penalty for failure to achieve those results.

To complicate this picture even more, accounting rules mandate that expenditures for research and development (R&D) be expensed when incurred. We know that there is a lag time between the development of an innovation and any returns it might create and this lag time can be several years. Nevertheless, expenditures made in the search for innovations this year, are deducted this year. That means that the more you spend on research and development, the lower your returns will be, *whether your R&D is successful or not!*

Driving Factors in Large Enterprise Innovation

- ✓ **Most large, successful companies engage in elaborative innovation only**
- ✓ **Major breakthroughs and significant original innovations occur in small enterprises**
- ✓ **Evaluation systems for managers stress internal rates of return and cost containment**
- ✓ **Research and development costs are charged against revenues this year whether successful or not**
- ✓ **Costs of merger or acquisition or joint venture are capitalized, not expensed**
- ✓ **Failure to achievement benchmark objectives is career limiting for a manager**
- ✓ **Reward systems for managers do not create significant returns for over-achievement of objectives**
- ✓ **Over-achievement tends to lead to higher expectations in future years**
- ✓ **The down side potential for failure tends to outweigh the upside potential for success**
- ✓ **Buying a small enterprise with a proven innovation is the least risky course of action**

The accounting issue is a significant one because it drives the calculation of the benchmark numbers for the managers of the world. This is one of the reasons for the popularity of joint venture research and development projects. The costs of a joint venture can be capitalized and charged off over a period of years, rather than being deducted in the current period. It is also a major driver of the interest in mergers and acquisitions. Costs of acquiring another enterprise are not operating expenses, so they do not affect the budgets or benchmarks of the managers making the daily decisions.

Can there be any wonder that managers see failure as career limiting? It *is* career limiting. Tom Kelley of IDEO told an apocryphal story about a senior level manager in large company who was presented with the world's first wireless mouse.[26] IDEO had developed that innovation when infrared transmitters began to be used on personal computer systems. The manager turned down the innovation saying, *"If it fails, I'll be known for the rest of my career as the guy with that stupid cordless mouse!"*[27] Better not to adopt an unproven innovation, even one with such obvious potential, than to risk such a stigma! Right!

So, what is a wise manager to do? There is only one safe course of action! Make sure your research and development people concentrate on peanut butter jars, not peanut butter. Control your R&D expenses carefully. Then, watch the market place. Just watch! Sooner or later, some crazy entrepreneur will arise and *prove* the viability of an innovation which you can use in your company. When that happens, you buy the little enterprise. It is likely to cost less to buy the little enterprise than it would to develop the innovation in house. More important, the cost of buying the venture won't be charged against your budget. Most important, buying a proven innovation is clearly the least risky course of action available!

There are exceptions, of course. A number of large enterprises have been successful at establishing an environment which really *does* encourage innovation. The secret is quite obvious; one must eschew the traditional management evaluation system. It requires commitment from the top levels of the organization and a willingness to resist pressure from shareholders.

There will be pressure from shareholders because innovation is wasteful! It produces failures which consume resources. It produces a playful atmosphere which is seemingly less efficient. In fact, nothing about innovation is efficient! That means that most of the time when we see a large firm supporting innovation among its people, that firm is producing such great returns for its shareholders that they don't resist the "waste of resources." If the returns to shareholders begin to lessen, top management will discover that supporting innovation becomes much more difficult, and even career threatening. In fairness to large enterprises, it is this external pressure from shareholders which stacks the deck against innovation despite the best intentions of well-meaning people.

INNOVATION IN ENTREPRENEURIAL ENTERPRISES

We all know that not every entrepreneurial enterprise is innovative. You can probably name a dozen ventures near your home which seem to do exactly the same things as everyone else. However, it is clear that those entrepreneurial enterprises which practice innovation grow more strongly and become more vibrant.[28]

There are numerous studies which demonstrate that entrepreneurial ventures disproportionately produce new products and services. Many of these studies use patent activity as a proxy for innovation in general because it is easier to measure. One impressive study sponsored by the Office of Advocacy of the U.S. Small Business Administration examined 194,000 patents filed by more than 1,000 firms between 1996 and 2000.[29] In comparison to patents produced by large firms, the study concluded that a patent filed by a small business was more than twice as likely to be among the top one percent of most frequently cited patents; that small firms represent one third of the most prolific patenting companies; and, that small firm research is substantially more high tech or cutting edge and twice as closely linked to scientific research.[30] This study clearly demonstrates the value of small firms in producing economic wealth for the United States.

We have already talked about the tendency for true breakthrough innovations to arise in entrepreneurial enterprises. From airplanes to hydraulic brakes to pacemakers to safety razors to zippers,[31] we owe much of our standard of living not to the safe, secure, risk-free research and development efforts of major companies; we owe it to entrepreneurs with limited resources and big ideas! There was a great entrepreneurial movie produced by George Lucas in 1988 called *Tucker: The Man and His Dream.*[32] Francis Ford Coppola had long admired Tucker and when he asked Lucas to produce the film under his direction in 1988, the team won three Academy Award nominations and produced a film for the ages. In the closing scenes of the film, set in 1948, Tucker, the developer of the most innovative car in history, had actually built 51 automobiles, but was facing bankruptcy and prison time for securities fraud. The Tucker Car Company died along with his dream for a breakthrough in the automobile industry, but Tucker tosses off the loss with perfect aplomb, *"Those are just machinery! It's the idea that counts, Abe! And, the dream!"*[33] An earlier, and much less frequently cited quotation occurs in the film when the manager of Tucker Cars is on the witness stand testifying against Tucker. This manager had been installed by stockholders to hold back the tempestuous Tucker, and to protect their investment. An experienced manager, he explained to the jury, *"A well managed company doesn't innovate! Unless, of course, it is forced to by its competition!"*[34]

Tucker did not live to see his innovations become commonplace in modern automobiles, but one wonders if he really cared. After all, he built the car of his dreams: 51 of the beauties, 44 of which are still operational today! If you believe in psychic rewards even in the slightest, then you know he has to still be smiling somewhere!

Tucker made and lost several fortunes in his life, and when it ended he was trying to raise money to start yet another company in Brazil. The interesting thing about the entrepreneurial psyche is that it doesn't seem to matter whether money is made or lost; the drive to innovate survives. Steve Jobs sold all but one share of his stock in Apple on the day he was fired for a reputed $130 million. The next day he started NeXt, the company he sold back to Apple 17 years later when he became CEO again.[35] Such legends ignore the millions of serial entrepreneurs throughout history who lost everything in a venture, and pulled themselves up to launch yet another dream. Bill Gates and Ted Turner may have thrown themselves into philanthropic work, but Bill still has a hand in Microsoft and Ted has three business ventures ongoing, including a new one he started in 2007.[36] Money is a tool in the hands of an entrepreneur and the best way to use that tool seems to be in driving more innovation.

The stories of these *macroentrepreneurs* may be the stuff of legend, but ask an entrepreneur in your neighborhood what he or she is doing differently from the competition and you are likely to initiate a discussion of innovations tried, abandoned, and adopted in a continuous effort to make the venture more viable and more successful. Entrepreneurs do not just go to work every day and wait for the weekend. Entrepreneurs are immersed in their ventures and that immersion drives their interest in innovation and their need to continuously create. Listen to managers talk and compare that to the conversation of entrepreneurs to see the disparity in their perspectives. Managers talk about their last vacations, last weekend, next weekend, their next vacations; they talk about their lives *outside* the business. Entrepreneurs talk about their lives *inside* their businesses and their conversation is peppered with stories of the business and their efforts in it; frequently punctuated with descriptions of innovations.

New methods of competition and the validity of new products and services are played out on the entrepreneurial stage and when the give and take in the market place makes it clear that a new wave is coming, entire paradigms shift. Industries die and new industries are born. It is a complex interplay between small businesses and large. The small tend to lead the way and prove the concepts; the large tend to devour the small then apply economies of scale to drive down costs and expand the application of the innovation to the masses. But, we must never lose sight of the fact that the *originating* innovation is almost always entrepreneurially based.

THE ENTREPRENEURIAL MINDSET

The process is clear: entrepreneurs initiate business ventures. What is not clear is *why* they do so. The debate continues to rage about entrepreneurial behavior and this singular act of individual volition which is so vital to a nation's economic health and well being. The drives and personalities continue to be debated. Back in 1988, Bill Gartner asked, *"Can one know the dancer from the dance?"*[37] Is it even important to try? We wrote a rejoinder to Bill in 1988 because we thought that one could not understand the dance without understanding the dancer.[38] Surprisingly, this debate in the entrepreneurship literature continues to this very day, and researchers still cannot reach a consensus about the entrepreneurial mindset, or even the necessity to understand that mindset.[39]

We think that the dance takes on the personality of the dancer. It is the dancer who interprets the dance and each artist makes the process his or her own. If we seek to understand the entrepreneurial process, we must have insight into the entrepreneurial psyche. This is especially true if we wish to design educational and training programs which can actually help prospective and practicing entrepreneurs.

We have talked a bit about psychic rewards and the continuous emphasis on innovation, but does that mean that the potential for financial return is not a major factor? Baumol reports that there is systematic evidence dating back to the 1970s that self employed people make significantly less money than employees with similar qualifications.[40] However, virtually all of the studies that deal with issues involving entrepreneurship and entrepreneurial ventures are *cross-sectional* in nature. That is, they are not longitudinal studies and may *not* be reflective of the underlying realities.

For example, consider how real wealth generally comes calling in a business venture. The folklore may suggest that it revolves around "going public." In reality, that is the path chosen by only a few ventures. By far the majority of the entrepreneurs who become wealthy do so by selling the enterprise. These sales are private sales, consequently, real information about the financial ramifications is not captured in economic databases and is absent from cross-sectional studies.

We are left with the question, how often does it happen? How many entrepreneurs really do make a great deal of money? How many actually outperform their employee brethren? We don't have an answer for that, but we do know that *it does not matter*. What matters is whether entrepreneurs have a *perception* of the potential for profit. Behavior is driven by perception, after all. So, if there is widespread belief that real wealth opportunity exists in entrepreneurship, that perception could well influence behavior.

Anecdotally, we believe that the perception of the potential for financial returns is widespread among entrepreneurs. We have consulted with hundreds of entrepreneurs over the last 30 years. It is certainly true that there are many people who have settled into a family-owned business and who appreciate the ability to make a living doing things they enjoy while making their own decisions about their lives. However, there are also many people who truly believe that real wealth is just around the corner. We believe that the potential for profit is a major driver of behavior. Even the entrepreneurs who talk about pending wealth, however, always mention the life style. In no other profession, they say, do you actually determine your own fate and define your own destiny. In no other profession do you get to *prove* the validity of your own ideas, *and* have the potential for great wealth. These are powerful motivators!

ENTREPRENEURS VERSUS MANAGERS

We noted earlier that managers were driven by numbers. In our view, entrepreneurs are driven by *intuition*. It is an exact opposite decision style from that taught in management textbooks and practiced in large enterprises around the world. Only in an entrepreneurial venture can you take an action because you have a *feeling* that it is the correct action. We have always maintained in our teaching that human intuition is the most powerful analytic tool on the planet. That tool does need to be prepared. Intuition does not function in a vacuum. You need knowledge and skill, and the more knowledge you feed to your mind and the more skill you develop in the profession, the more powerful your intuition will become. Entrepreneurs know this and they trust their intuition. They constantly seek to feed it and refine it through additional study, but they know to trust the intuition and that is what allows them to apply an unproven innovation in the market place. If you can not prove with numbers that an innovation will be successful, how else do you decide to launch it? It can only be launched as an act of faith. You must just *know* that it will work!

There is an adage among managers that one frequently hears: *"You have to give the customers what they want."* That attitude only permits elaborative innovations to be applied to the market. Customers cannot know whether they want an original innovation or not. They've never seen it, so how can they know they want it? They must be educated and trained to know that they want it. Numbers can never prove out in advance the validity of an original innovation; only intuition can do that. Consequently, we have the power of intuition to thank for all of the breakthrough innovations that have impacted our lifestyle.

In addition to simply knowing that an innovation will be successful, in our view entrepreneurs who present original innovations also intuit the potential for great wealth. We don't see that as the primary motivating factor, but money is important because it is a universal yardstick by which entrepreneurs can prove the validity of their ideas. It is also quite satisfying to experience financial success. In fact, the financial satisfaction seems to be more psychic than real, judging by how entrepreneurs tend to spend their wealth. Rarely do we see an entrepreneur buy a tropical island and retire from the world to enjoy his or her millions, or initiate a trek to travel to all the cities of the planet. The obvious exception is the entrepreneur who funds a secret dream to travel in space, but we most often see entrepreneurs using their wealth to support the pursuit of more innovations.

Entrepreneurs are aided in their quest by a high level of self confidence. They *know* that their intuition is valid; they *know* that the innovation will be successful; they *know* that they have the skills and abilities to make it work. The confidence is a result of the intuition and that also drives the perseverance which we so often see in the entrepreneurial mindset. If we have a strong insight into the potential of our dreams and confidence in our abilities to translate those dreams into reality, then we view failure differently.

Entrepreneurs versus Managers

- ✓ **Managers tend to base decisions on analytic techniques involving cost and return**
- ✓ **Entrepreneurs tend to base decisions on an intuitive feel for the potential for success**
- ✓ **Managers tend to see failure as career limiting**
- ✓ **Entrepreneurs tend to see failure as a learning process and therefore career enhancing**
- ✓ **Managers tend to view risk as something that needs to be quantified**
- ✓ **Entrepreneurs tend to ignore risk because of their self confidence**

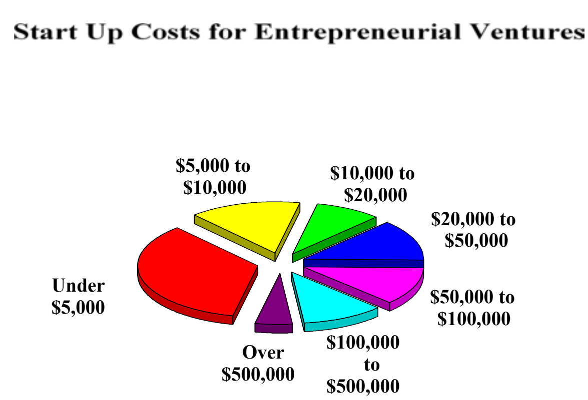
Failure is a powerful learning tool for children. Whether learning to walk, talk, ride a bicycle, bounce a basketball, or swing a tennis racket, failure is simply an indication of progress. So it is in the entrepreneurial psyche. Large enterprises eschew failure as a waste of resources, but how could resources be wasted if they produce great learning? Robert Kennedy said, *"Only those who dare to fail greatly can ever achieve greatly."*[41] Mary Kay Ash said, *"Aerodynamically the bumblebee shouldn't be able to fly, but the bumblebee doesn't know that so it goes on flying anyway."*[42] We tell our children when we see them fall down, *"Get up, and try again!"* Do we stop saying that when they become adults? We do *not,* but for some reason we do say to a business enterprise, *"That's not working; stop doing it!"* At least, managers tend to say that; entrepreneurs never do.

Perhaps entrepreneurs are still children at heart, or perhaps their intuition is powerful enough to overcome adversity. They still see failure as a learning aid. In fact, their comfort with failure and their confidence in the power of their dreams and their own abilities to transform them may be the major drivers in the way they view risk. After all, risk is simply a word we use to discuss the probability that an action might fail. We know from our years of observation that entrepreneurs do not look at risk in the same fashion as most of the world, but that begs the question. Each of us views the risk of a particular action in a different light. We would be paralyzed with fear if that were not the case. The only way to avoid risk in life is to live in a box; even then, there is risk. How do we learn to confront risk and take action? We develop a tolerance for the risk, we shunt it aside, we take comfort from the sure knowledge of our own abilities. This lets us cross the street in a city, take a hike in the country, climb a mountain, or start and run an entrepreneurial enterprise. We *forget* to consider the risk inherent in our daily actions. Entrepreneurs *forget* to consider the risk inherent in their ventures.

MYTHS ABOUT ENTREPRENEURSHIP

Why is it that so many people view entrepreneurship as being so risky? We fear that the popular folklore contributes to this tendency. One of the most pervasive and powerful of these is the myth of high failure rates. We are constantly bombarded with facts and figures which suggest that the overwhelming majority of business ventures fail. That is a myth which is fueled by flawed data and cross-sectional analysis techniques. It is true that a large number of enterprises cease to exist in any given year. However, there are good reasons for the cessation of many of these ventures. If you make the leap to incorporation from a proprietorship, the proprietorship ceases to exist. If you sell a business, it is almost always a sale of assets and the older venture ceases to exist. If you tire of a venture which has little market value, you may just decide to close it. Finally, if you fail utterly in a venture, you may well succeed greatly in the next as a result of the lessons you learned. There are a number of studies which show that traditional thinking about entrepreneurial ventures is flawed: the majority succeed, they do pay higher wages, and those that exit the market early were likely based on flawed ideas.[43] In other words, entrepreneurial ventures do fail, but the reality is that with a bit of training, one can learn to avoid flawed ideas. Do that, and the odds are that you will be successful.

Secondly, the folklore suggests that you must invest a huge amount of money in a new venture. This ties to the earlier myth in that we



hear people say the cause of business failure is frequently undercapitalization. In fact, as shown in the chart to the right, U.S. Chamber of Commerce 2005 statistics show that 35% of entrepreneurial enterprises are launched with less than $5,000 and 15% with $5,000 to $10,000, so half of startups cost less than $10,000. The data shows 9% in the $10,000 to $20,000 bracket; 13% at $20,000 to $50,000; 12% at $50,000 to $100,000; 11% at $100,000 to $500,000, and 5% at more than $500,000.[44] Anecdotally, our experience bears out the data: the overwhelming majority of entrepreneurs launch their ventures on the proverbial shoestring.

With regard to the capitalization issue, the traditional view seems to be flawed yet again. It is a large enterprise perspective that a venture can be undercapitalized. In reality, an entrepreneur simply uses the resources which are available. If there is not money for some things, then you do other things. A very successful entrepreneur of our acquaintance once told us that he thought most ventures were launched with *too much* money. In his view, if you had too much money, you could become lazy or wasteful. When you have limited cash, you husband your resources.

Yet another myth involves the need for a high tech innovation to support an entrepreneurial launch. In fact, the overwhelming majority of launches involve low tech. The only entrepreneur ever to create three ventures that became members of the Fortune 500 largest enterprises in the world was Wayne Huizenga. Wayne started with a used truck picking up trash. He grew that into Waste Management, the largest waste company in the world, then he took Blockbuster Video to the Fortune 500 followed by AutoNation, a national chain of car dealerships. He then created Extended Stay America, which he grew to 500 hotels before he sold it. Finally, he created Republic Services, which become the third largest waste management company in the nation before his first company acquired it.[45] None of those are particularly romantic enterprises, but they certainly made him one of the wealthiest people in the world.

Innovation is not limited to high tech. In fact, most innovations involve services or low tech products. The important thing is to employ an innovation to differentiate the enterprise from its competitors or to penetrate a market. Consider one of the most successful innovators in restaurant history: the Subway enterprise. There is nothing high tech about this venture, and co-founders Fred Delucca and Peter Buck started the enterprise with just $1,000. *Inc. Magazine* profiled a number of low tech start-ups launched with virtually no money which have become household names today.[46] In each case, the key was the application of an innovation to the market. These stories also demonstrate that low cost start ups can have tremendous potential.

Perhaps the most insidious of all myths is the one that avers, *"You can't teach entrepreneurship."* In fact, you can teach entrepreneurship. We've been doing that successfully for 25 years. Admittedly, most business schools do not teach entrepreneurship and many programs which are called entrepreneurship fail to live up to the name.

If you reflect on the idea for a moment, you will see that *anything* can be taught. It is also perfectly clear that you can teach yourself virtually anything, as well. It is true that entrepreneurs are typically self-taught, but that does not mean that you can't teach entrepreneurship. In fact, most of the successful entrepreneurs who have been students in our classes have told us that they could have saved themselves a great deal of trouble if they had possessed some of the skills from the class when they were starting their ventures.

We think the tendency to perpetuate this myth is the drifting away of traditional business schools from the professional model. You want your physician to have graduated from medical school, but you also want his or her professors to have actually practiced medicine. You want your attorney to have graduated from a law school in which the faculty have practiced law. That is the professional school model; one expects the faculty to have both practical experience and theoretical knowledge. For reasons which are largely driven by research expectations, business schools no longer follow that model and few business professors have any practical experience. Further, the research orientation drives ever greater levels of specialization. As a result, professors in different disciplines within a business school might not even share a vocabulary. Not only does that limit the potential for teamwork, team teaching is frequently problematic as a result of the problems associated with determining faculty loads; a major factor in satisfying accreditation standards. In our view, the tendency to recruit more and more faculty without practical experience, combined with little opportunity for serious teamwork, severely hampers the effective teaching of entrepreneurship.

Using entrepreneurs as faculty cannot solve this problem. Entrepreneurs, by the very nature of their lives, become experts in very narrow areas: the business and industry in which they practiced. This does not give them well rounded knowledge or insight into the world of entrepreneurship, which is quite varied and amazingly complex. Further, without academic training, entrepreneurs really do not know how to translate their experience into an effective teaching and learning environment. The tendency is for them to tell the stories of their experiences, but not to craft those into a vehicle which can inculcate skills and knowledge.

The solution is to build a faculty which has practical experience, theoretical knowledge and teaching acumen. Further, we need to practice what we preach. We know that a team is smarter and more powerful than an individual, yet most educational institutions continue to utilize individual teachers in their classes. Team teaching is infinitely more powerful.

Another factor which seems to be involved in the teaching myth involves passion. This is a powerful word which one hears constantly. *"The key to entrepreneurial success is passion." "You must have passion for what you are doing." "You can't teach passion."* Obviously being passionate about an enterprise is a powerful and rewarding experience. However, we think that teaching *can* influence passion. Can you really be passionate about something if you are *afraid* of it? Don't you have to conquer the fear to let the passion emerge? We think that eliminating fear is a prerequisite for developing passion about anything. How do you eliminate fear? Knowledge is the single most powerful factor in eliminating fear. The more you know about a thing, the less you fear it. The more you know about how to start, grow and manage an entrepreneurial enterprise, the more confident you become, and the more passionate you become about the prospects. We have seen this in our classes time and again over the years. People who thought business was a dirty word became passionate about a particular venture as they gained confidence in their ability to create that venture.

Challenges to Teaching Entrepreneurship

- ✓ **Difficult in traditional universities which employ faculty without practical experience**
- ✓ **Complicated by research expectations that drive greater and greater specialization**
- ✓ **Challenged by faculty load requirements which limit team teaching opportunities**
- ✓ **Using entrepreneurs is an issue as they have narrow experience and limited teaching acumen**

How to Really Teach Entrepreneurship

- ✓ **Use faculty who combine practical experience, theoretical knowledge and teaching acumen**
- ✓ **Encourage team involvement in continuous curriculum development**
- ✓ **Encourage team teaching**

You *can* teach entrepreneurship. You just need to be innovative in your approach to teaching, just as any entrepreneur needs to be innovative in his or her approach to the enterprise. The secret of all of our success in all our ventures is innovation.

DEVELOPING THE ENTREPRENEURIAL MINDSET

We're not *born* to be entrepreneurs, anymore than we are born to be accountants, attorneys, purchasing agents, or horse trainers. We are each today a composite of our experiences and our education and training. Sadly, many of us have come to believe that we are not creative. Everyone is creative at heart. If you doubt that, simply observe children at play. All of them are creative; you were creative as a child. You may have curbed your creativity because you thought it no longer had a place in your life, but you started life as a creative being.

Many enterprises tend to limit creativity in their workforces because it is viewed as wasteful and inefficient. After all, creativity is playful and work cannot be fun, or else we would not call it work! People have to be *made* to work. A crusty old manager of 20 years experience stood up in a seminar we conducted once, and explained that to us. Our theories were all well and good, he said, but at the end of the day, you had to make people work. That's what managers do! He certainly put us in our place! Sadly, he also displayed the managerial mindset that has limited innovation for decades. The traditional perspective which our vocal critic so profoundly represented says that when we want our people to be creative and invent or improve a product or service for us, we will tell them. Until then, they should just do the work.

If you have been trapped in an enterprise like that, you could well have dimmed the spark of your creativity in self defense! Any talent or ability will lessen with disuse. The good news is that it really is like swimming! You never forget how; you just need to get back in the water to get some practice and it will come back to you. You can touch that child within and you can bring that creativity back to the surface. All it takes is the will and the interest.

If you spend any time talking about ideas and innovations with people, you will rapidly come to the conclusion that most people have lots of great ideas. At the same time, it becomes obvious that very few people seek to commercialize their ideas. A bit more discussion will frequently reveal that most people have actually thought about becoming an entrepreneur; or even dream about it now! They have not made the leap, frequently because they are just too afraid. *"What will I do about health insurance?" "What happens if I fail?"* They need knowledge to gain the self confidence to limit the fear.

We need to make a point here that the fear never really goes away; you just learn to control it. Fear can be a good thing as it keeps you aware of the need to be careful. Good mountain climbers are always afraid, but not at the level of a novice climber. We want to learn the skills that will let us become comfortable with the risks, but we never want to lose sight of the fact that the risks are always there. Andy Grove, of Intel fame, is famous for a quote which he made into the title of a book: *"Only the Paranoid Survive."*[47] The recognition that the market is in a constant state of flux and that nothing that happened last year is likely to happen in the future, helps us to understand the constant need to innovate in order to keep our enterprises growing and healthy.

Do you want to become an entrepreneur? You can do it; everyone can do it. Everyone can become an entrepreneur. It takes knowledge and it takes an idea; an idea that you can turn into an innovation. It takes self confidence and its takes passion and desire. It takes intuition. The root of it all is knowledge. The more you know, the more ideas come to you and the more powerful your vision of how to translate that idea into an wonderful venture becomes. The knowledge drives your intuition which fuels your idea generation machine. The more you know about how to actually start an enterprise, put together the financing, attract and lead the people, approach the market, and deal with the competition, the more powerful your business intuition becomes. Combine the two and continue to work on the concepts and ideas and you will come to a moment in time when your intuition says to you, "This idea will work! This venture will go!" When that moment comes, you are an entrepreneur and you just need to launch the enterprise.

ON BECOMING AN ENTREPRENEUR

We talked about the role of intuition in perfecting ideas. It is driven by knowledge. As ideas come to you, you need to discuss them with other people. Study the field; learn more; learn as much as you can and keep reading in ever more widening areas. The most powerful approach is to partner with other people who bring different talents and insights to the team. Try to recruit both genders to your team. Cross gender teams are much more capable. Discuss ideas with the team on a regular basis. Your team members need to also thirst for more knowledge and strive to keep learning. Make sure that you keep the tone light, playful, and non-critical, and the idea will develop, grow and mature through the cross-fertilization of minds. Keep a journal or records of your discussions and review them from time to time to keep the progression going forward. This process will lead to an idea which the team will realize can be turned into a real innovation. If you can build a prototype of the innovation, that is all to the better! Nothing is stronger than a working model, and nothing teaches you more about an innovation than trying to build a working model.

Now, to become an entrepreneur, you need to develop a vision for the venture around the planned innovation. This vision is of how the innovation can be commercialized. Just as you need knowledge to craft an innovation from an idea, you need knowledge about commercialization. How is that done? How can an innovation be converted into a salable commodity? How can you find, identify, and penetrate a market? How do you make money on that process? You need to study and learn. Learn the entrepreneurial skills of commercialization. As you learn more, a vision will begin to emerge of an enterprise which will produce and sell your innovation.

Becoming an Entrepreneur

- ✓ **Study the fields in which you have ideas developing, study related fields and study unrelated fields**
- ✓ **Study entrepreneurship and the process of commercialization**
- ✓ **Recruit a team of people of both sexes with diverse backgrounds and conduct regular discussion meetings**
- ✓ **Always keep discussions light and playful, never critical, and keep a journal of ideas**
- ✓ **Talk about ideas, wild ideas, commercialization, markets, entrepreneurship, everything**
- ✓ **Do not try to limit the discussions or sharpen the focus, rather encourage far ranging ideas and discussion**
- ✓ **A vision will emerge of one innovation which can be successfully commercialized and how that can be done**
- ✓ **You and your team are now entrepreneurs and will not be swayed from acting on your vision**

The most powerful approach, as before, is to partner with other people who bring different talents and insights to the team. Discuss the vision and the prospective enterprise with the team on a regular basis. Research the market and the competition, and look at methods of production, fabrication and distribution. Think about money: how to spend it, how to make it, how it can flow through the enterprise. Make sure that you keep the tone light, playful, and non-critical during your team discussions and meetings. As the team progresses in its mastery of the commercialization process and its understanding of the application of the innovation to the market, it will refine and hone the vision. You will find that you come to intuit the feasibility of the vision. Never believe that the feasibility of an innovation can be determined with numbers, analysis or other tools. Data forms grist for the intuitive mill; it never answers questions. When your intuition says, “This business will work,” and the team agrees, you have a feasible vision. The process of innovation is really team-based. The notion of the lone entrepreneur, like the lone genius, is a myth.

All you need to do to make the vision real is raise some money and launch the venture. These are skills which you can learn, as well, but the approach to raising money will be well underway through the process of perfecting the vision. You see, most of the initial money used in an entrepreneurial start-up comes from family and friends. A good entrepreneurship training program will teach you how to build a business plan which can be used to support the initial fund raising and lead into the launching of the enterprise. The important thing is that the shared vision which your team has produced will not be denied. The team will not be swayed from acting on its shared conviction.

ENVIRONMENT FOR CREATIVITY

Typically, innovation does not occur on demand and yet that is what we often hear in the corridors of the large corporations. *"We need a new product, a new idea, a new market!" "Quick, let's brainstorm!"* While some of us have many ideas, others of us have fewer. Idea people usually are not as qualified to evaluate their ideas for commercialization. It is almost as if we have dreamers and doers and we need a marriage between the two to turn those dreams into reality. That is one of the reasons for the power of an entrepreneurial team. But, again, creativity does not happen at the snap of a finger. We need to have the right environment, the right culture, the right philosophy and the right people.

Most of the stories of truly innovative ventures have all of the best of these "*rights.*" Take IDEO,[48] Mars,[49] Google,[50] and Southwest Airlines,[51] as examples. They are quite successful companies who began much as you desire, some with more money and some with less, with a dream of providing the best products or services that they could provide while having fun and being profitable and helping others.

Each of these ventures created an open environment: one in which questions were welcome, discussion was expected, ideas were respected and possibilities were challenged. The structure allowed for openness and communication with the founders. There were no ivory towers, but constant engagement and lots of fun. Open areas, not enclosed rooms, gave the opportunity for the cross-fertilization of ideas, much as that process originally occurred in Edison's *Invention Factory*.[52]

Creating an Environment to Support Creativity

- ✓ **Employ open spaces, not offices or cubicles, so that people interact freely and continuously**
- ✓ **Foster an environment of playfulness and fun**
- ✓ **Create teams and discussion groups to explore ideas; use both sexes and widely diverse backgrounds**
- ✓ **Forbid negative thinking; forbid critical thinking; forbid judgmental thinking; encourage wild ideas**
- ✓ **Embrace and laugh about failure; celebrate successes**
- ✓ **Eliminate numbers from evaluation systems and create upside potential without its corollary**
- ✓ **Focus on having fun; never focus on outcomes**

Edison provides a wonderful role model for the marriage of innovation and entrepreneurship. A great practical joker, he encouraged fun, and experimentation, and had a healthy respect for those who had tried and failed. Many of the founders of the most innovative companies embraced failure as it not only showed initiative, but also resulted in learning on the part of the individuals who had attempted the impossible but discovered something else. Edison pursued invention for the purpose of creating commercializable products. His failure to find a market for his first invention, an electric vote counting machine, led him to vow never to waste time inventing things that people would not want to buy.[53] We suspect that he was still prey to the psychic rewards of innovation, but recognized the need to make money to keep his stream of innovations flowing. His remarkable career was more about entrepreneurship than invention as he created a network of companies to exploit the products that flowed from his *"invention factory."* Among these was the Edison General Electric Company, which became General Electric.

One of the adages which seems to be responsible for the immense success of Stanford University graduates has become a favorite of ours. The command is to *"...create a healthy disregard for the impossible."*[54] With such direction, how could one not innovate!

STRETCHING THE MIND

"A mind once stretched by a new idea never regains its original dimensions."[55]

Oliver Wendell Holmes

Years of disuse has led to stagnation in the creative psyche of so many people. In business, creativity was frowned upon as a non-serious pursuit for many years, until the realization that new products, services and processes came from creative minds. But the inverse of Holmes' insight was found to be prevalent; i.e., that minds not used in creative pursuits become atrophied and inactive. Then, when asked to *"come up with a great new idea,"* there is frustration and impotence.

We need to exercise our minds and do it daily in pursuit of new and wonderful thoughts. A few enterprises are adapting strategies to support the development of these new mental pathways. These include retreats in which employees engage in creative activities as well as using flex-time for the pursuit of original endeavors.

Most exercises and activities can be fun. Brain teasers, incomplete drawings, creative problem solving exercises, problem identification and brainstorming can be quite useful to stretch the mind. The key at the initial stages is to be playful, not judgmental. Too often in business, the urgency expressed to *"come quickly to commercialization"* prevents really good ideas from being explored. Judgment expressed too early can result in satisficing rather then excelling. Experimentation is to be applauded and yet it is seen as expensive in most large companies and failure can lead to career limiting results.

The IDEO philosophy is that individuals in both large and small enterprises can be innovative and creative. You need to create a fun environment, a playful attitude, the encouragement of wild ideas, the recognition of the value of collaboration of diverse minds on a task and the understanding of the role of failure.[56]

What a better world it would be if we could encourage creative thinking, stretching minds to embrace truly great ideas for the betterment of mankind! Innovation carries its own rewards, but financial success is a great companion. Entrepreneurship is the greatest vehicle we know to allow us to simultaneously envision, dream, analyze, create and profit. It is a life journey like none other. Innovation is its heart and soul, and in no other enterprise can you live your life as your intuition dictates and enjoy the success that your mind creates. We encourage you to:

Dare to Dream!

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