

17. Entrepreneurship

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Jeff Bezos, with a degree in computer science and electrical engineering, worked at several firms on Wall Street, becoming the youngest Vice President at D. E. Shaw in 1990. With such a successful career in Finance, one would rarely think of abandoning it altogether. That's exactly what Jeff did, when in 1994, Bezos resigned and took the risk of starting his own company. The Internet always fascinated him given the endless opportunities it could be used for—his idea was simple—an online book store. He moved to Seattle, and along with a few employees began building software and opened Amazon.com as an online site on July 16, 1995. In spite of hardly any advertising, Amazon.com was a huge success as it sold books not only in the United States but also across 45 foreign countries within 30 days of its inception. The rest is history. What did Jeff Bezos do? He identified a problem that created opportunity, crafted an idea to solve that problem, and converted his idea into a start-up company that is serving the masses, all while earning a significant profit. Jeff Bezos is an *entrepreneur* and the process by which he harnessed this opportunity and made his idea a reality, is referred to as *entrepreneurship*.

By studying entrepreneurship, one can learn how to take advantage of opportunities, start a business, grow a business, and harvest a business, while serving the needs of society and contributing to economic and cultural progress. Entrepreneurs have opportunities in both good and bad economic times and are important to our society, gross national

Characteristics of Entrepreneurs

Creativity and Innovation. Entrepreneurship entails the creation of a new business venture with a unique focus, structure or differential advantage. The startup can be a for-profit or a not-for-profit organization, but it must be more than merely an idea. It must be put into operation. Entrepreneurs are like a spillway that channel knowledge into society (Audretsch et al., 2012) through innovative ideas and business models. Creativity is a skill (Audretsch and Belitski, 2013) related to generating ideas, while innovation is a process (Autio et al., 2014) to make creativity a reality. The business concept is new, or the product is new, or even the process by which the product is manufactured may be novel; thereby, aiding in increasing efficiency and effectiveness across society.

Personality Traits. Entrepreneurship is not one personality trait that one can ask questions about on a survey. It is a combination of personality traits, including an ability to see themselves as having control over their lives. These "entrepreneurial" personality traits include: risk tolerance, intrinsic motivation (Prabhu, Sutton & Saucer, 2008), flexibility, openness to experience (which is strongly correlated to creativity) social awareness, resilience, and a need to succeed. Entrepreneurs work to take calculated risks and focus on "what can be done" rather than "what cannot be done." The propensity to focus on things in one's control allows the entrepreneur to think of the various possibilities for the challenges at hand, rather than brood about what is likely to go wrong.

Diversity. Entrepreneurs are focused, able to change the status quo, accept change, cause dynamic change and embrace change. Entrepreneurs can be any race, gender, ethnicity or age. Anyone at any time may realize that they have seen the heart of a problem and have an idea of how to solve that problem, feel passionately about it and work towards solving that problem or changing that idea or dream into reality. These traits encourage a person to explore, question and then take risks to try something new, open a new business and put financial security in jeopardy.

Risk Tolerance. Creating a new business brings a variety of risks. There is risk of bringing a product/service/idea to market before it is ready; risk of not understanding the target market well enough to have the right type of product/service/idea, risk of losing the investment of money that is needed to start the business, and the risk of being seen as a fool by friends and family. The entrepreneur brings a passion for the new business idea that helps lower the perception of the risk involved (van Gelderen, Thurik, & Patel, 2011). Successful

product, and cultural mindset. Entrepreneurship gives us the new, different, and cutting edge ideas by which we continue to compete in a global environment. Considering how important entrepreneurship is, we need to understand what it is, who becomes an entrepreneur, the types of entrepreneurs, and how to avoid failure as an entrepreneur.

Nature of Entrepreneurship

Definition

There have been many attempts to define entrepreneurship. The terms entrepreneur and entrepreneurship are often interchanged or substituted for each other in conversation, but they slightly differ as an entrepreneur is an individual engaged in the practice of entrepreneurship. One view of entrepreneurship refers to a field of study concerning the creation of a new business, the individual risk involved, and the economic impact on society (Mohr & Sarin, 2009). Another view of entrepreneurship is that anyone who wants to work for himself or herself is an entrepreneur (Shane, 2008). One of the most widely accepted definitions of entrepreneurship suggests that entrepreneurs discover, assess, and take advantage of opportunities to bring new products, services, and business models to the market in new ways (Shane and Venkataraman, 2000; Shane, 2012). The view we take has more of a practical orientation rather than an academic orientation and integrates these definitions. For the purposes of this chapter, we adopt the following definition:

Entrepreneurship involves the establishment of an enterprise built around an innovative idea by an individual—an entrepreneur—who has certain characteristics that enable him or her to face the challenges and risk involved. They take the initiative and risk to start a business. They also bring an additional level of creativity and have the ability to think out of the box and recognize the opportunities present in a given situation.

Habitual or Serial Entrepreneurs

Some habitual, or serial, entrepreneurs start and own multiple businesses at one time. Others like the challenge of creating and starting a new business and when the firm becomes more of a managerially based business with routine challenges, the entrepreneur sells that company or implements professional management and moves to the next big idea (Sarasvathy, Menon, and Kuechle, 2013; Westhead, Ucbasaran, & Wright, 2005).

Growth Entrepreneurs

Growth entrepreneurs create economic opportunities for their communities and neighbors by creating new businesses and jobs leading to an increase in local wealth and standard of living (Carsrud & Brännback, 2011). The establishment of a new business creates the environment for the growth of competition and the initiation of a new industry, which can support other new firms and small businesses. Growth entrepreneurs are generally recognized by their new product launches, growth rates, and intentions to grow (Dutta and Thornill, 2008).

Occasional Entrepreneurs

Occasional entrepreneurs create their businesses on a part-time basis and finance them with only their own money. They usually earn a smaller profit since they run the new enterprise in their spare time. However, since they have not foregone their "day job," the risk is also lower in launching a business as an occasional entrepreneur.

Late Career Entrepreneurs

There are at least two different situations that can lead to late career entrepreneurs. They may have remained in their first career much longer than intended in order to provide financial security for themselves and their families. They have often built up extra funds in order to start the business of their dreams. The second situation is when the person has been let go from a company through early retirement packages or reductions in force and has to create a new career

entrepreneurs take calculated risks by assessing their level of expertise and the level of ambiguity in a particular decision context and then tailoring their decision-making process to reduce risk (Murmman & Sardana, 2013).

Motivation. An entrepreneur has the motivation to start a new business due to the need to succeed through either psychological motivation or by economic pressure (Carsrud & Brännback, 2011). Entrepreneurs are self-motivated, want self-fulfillment, want to be hands-on, will get psychic satisfaction from the job, have an eye for coming changes, shifts in consumer attitudes and opinions and industry needs (Shane, 2008). They are interested in people and in being sociable, but are also willing to be alone in order to create the product/service/idea that they bring to market. They are able to postpone gratification in order to succeed.

Flexibility and Social Awareness. An entrepreneur is flexible, able to cope with change, has the ability to see how a new methodology, new product or new service will be able to enter a market profitably. He/she must understand what talents need to be added to support his/her own shortcomings in order to form the networks needed to support the company. Entrepreneurs are also very involved with people. They are able to understand and absorb what others are telling them on business topics and would likely score highly on an emotional quotient scale. Entrepreneurs are able to gather talented people around them to move the firm forward (Vissa, 2011).

Need to Succeed. Entrepreneurs have a drive to succeed. Failures are perceived as learning experiences, especially for habitual or serial entrepreneurs. One can often learn more about the business model and consumers from a failure than from a success. Since many entrepreneurs start their companies based on their previous business experience, the entrepreneur can alter a business model until the firm succeeds (Shane, 2008), learning from failed firms and projects (Sarasvathy et al., 2013).

Types of Entrepreneurs

Just as there are many types of businesses, which can be created, there are also different types of entrepreneurs with diverse goals and business behaviors.

Hybrid Entrepreneurs

It's a known fact that many start-up ventures fail due to the high risk and uncertainty involved, leaving the entrepreneur discouraged and demotivated. Risk is an integral part of any new venture and hence cannot be overlooked. However, it would greatly help if one could take calculated risks and is prepared to have a backup source of finance if the new venture fails. To that end, a new trend is evolving referred to as "hybrid entrepreneurs" who on one hand continue to hold on to their secure "day job" while also venturing out and taking the risk of starting a new company (Raffie & Feng, 2014). Creating a business with self-funding while continuing to work at another job is a typical starting scenario for entrepreneurs and is known as "bootstrapping." Many entrepreneurs do not seek outside funding until their companies grow, either through a desire to retain managerial control or financial control (Shane, 2008).

It has been found that individual characteristics such as risk aversion, need for security, and long-term orientation (saving for the future) may be typical of hybrid entrepreneurs. Furthermore, risk-averse entrepreneurs may prefer to purchase an existing business rather than build a new venture from scratch given that the latter may be more risky (Block, Thurik, van der Zwan, & Walter, 2013).

Intrapreneurs or Corporate Entrepreneurs

There have been companies, which have set out to encourage entrepreneurship within the company. The environment would have to encourage time for thinking, for brainstorming and then considering what might be able to be put into production or application. 3M is a company with a very long history of encouraging innovative thinking, starting with the beginning of the company in 1902. 3M has found that by hiring smart and inquisitive people and then giving them the time to innovate, corporate entrepreneurship can be encouraged.

Steve Jobs said that his job was not to innovate, but to veto the ideas and products that would not fit the vision or strategy of the company while encouraging innovation. Sometimes an idea has to simmer until the consumer is ready for it, like the iPad. By allowing others to create new applications, the iPad also increased its own success. So, in addition to needing to succeed, encouraging the invention of new uses by consumers can increase the public support for corporate entrepreneurs.

out of necessity. It is often difficult for the average over 50+ person to find a corporate job, which leaves entrepreneurship as the best alternative (Shane, 2008).

Social Entrepreneurs

Social entrepreneurs feel passionately about solving a pressing social problem by addressing the root cause of the problem and in the process making it also a profitable venture. Muhammad Yunus, a Nobel laureate and one of the most famous social entrepreneurs developed the concept of microfinance and started the Grameen Bank of Bangladesh. This bank focused on lending to women in rural villages. As opposed to the conventional bank, which lends money only to people who have some money (collateral), Grameen Bank lends money to those who truly have nothing but are working towards becoming self-reliant through their small businesses. Started in 1977, Grameen Bank served 7 million clients by 2006. Thus social entrepreneurs are those business people who not only see an opportunity for addressing societal problems but also simultaneously see a possibility for growing a business. Sometimes the comment is that social entrepreneurs do well by doing good (Gorgievski, Ascalon, & Stephan, 2011; Murphy & Coombes, 2008). Social entrepreneurs have a concern for the public good and want to fix a problem.

There are different models of social entrepreneurship. One model was created by TOMS Shoes—the buy one, give one model. When a customer buys one pair of shoes, another pair of shoes is donated to a child in an underdeveloped country. The cost of the donated pair of shoes is included in the price of the shoes sold. Another model is where the business tries to improve the lives of their workers and their neighbors through good business practices as Tom's of Maine (<http://www.tomsofmaine.com/home>) has done for years.

A third model is when some entrepreneurial philanthropists want to have a direct say in how their charitable dollars are going to be used by a nonprofit organization. Bill Gates created the Bill and Melinda Gates Foundation (1994) in order to deliver new technologies and new ideas in health and education to underdeveloped countries. While there are many charitable organizations with a focus on education and/or health, starting a new business concern allows for greater control over the entire business operation. He and Warren Buffet have challenged Fortune 400 billionaires to donate 600 billion dollars to charitable causes.

Genius

One myth is that entrepreneurs must be genius in order to start a business that will be very successful. Many people think that you need to be like Bill Gates or Mark Zuckerberg in order to create an incredibly innovative and interesting new business that captures the attention of the consumers. Not true! Entrepreneurs simply need to see a new solution to a problem and create a new business as Blake Mycoskie did in creating TOMS shoes. He created a shoe to sell that could be made inexpensively enough that each customer buys two pairs of shoes; one for themselves and one for a needy child.

Hi-Tech

Another myth is that an entrepreneur must be hi-tech. Not true! TOMS Shoes are not hi-tech. They are inexpensive shoes that let a customer act on a charitable mission—donate a pair of shoes. There are other simple ideas that can be seen on television. Watching one episode of Shark Tank reveals the number of low-tech, yet innovative entrepreneurs entering the marketplace.

Wealth

Wealth—everyone becomes an entrepreneur in order to make lots of money. Not true! The great majority of entrepreneurs decide to take on the risk of starting a new business because they cannot ignore the passion that they have for their product/service/idea. The need to succeed is really the need to see the passion passed on to others. The need to succeed is also a part of the passion that social entrepreneurs have to improve society and/or the environment. The need to succeed is also a need to have the company do well enough for the entrepreneur's family to be proud.

Failure

There is another myth that is promoted by many textbooks, newspaper articles and journal articles, which purports that 70% to 80% of new companies fail. Not true! The Small Business Administration (SBA) reports that about half of

Entrepreneurship or Small Business?

Entrepreneurship is the creation of a new venture with a unique focus, structure or differential advantage. The venture is not necessarily the first mover in the market, but is the first with a significant market share and has viability. Entrepreneurship is different from small business management as the small business owner may be continuing a family business or has bought a successful business. A small business may be inherited within a family business succession plan and grow into an entrepreneurial venture as a new owner/manager brings new ideas, new business models and/or innovation into the creation of new products/services. Entrepreneurs may also grow small businesses into medium and large sized companies through the continual innovation and evolution in products/services and business practices. Continual growth is not a necessity as long as innovation and change remain at the heart of the business. An entrepreneur may choose to remain small for agility and operations that allow the business to seek change, react to change and be ahead of the curve in applications.

While small businesses carry a risk of business failure due to changes in the consumer market or changes in the environment, entrepreneurs take on additional risks. Entrepreneurs have additional financial risk involved in the creation of the company and the monetary outlay for office/manufacturing space, equipment and hiring new people. The company is new to the marketplace and there is usually little or no financial cushion available to absorb the losses from a slow start up or a slowing economy. An additional risk is that the entrepreneur may not have strong knowledge of the consumer market due to a lack of business experience in this industry category.

Entrepreneurship Myths

Although entrepreneurs are generally respected in society, and knowledge about entrepreneurship is ever increasing, many pervasive myths about entrepreneurs and the entrepreneurial process remain. Some of the more popular myths are addressed below.

entrepreneurs tend to create within industries that are similar in nature and in location. Once successful, they continue to support and reinforce the creative spirit in the area.

Social entrepreneurs flourish when technology or business culture may have focused more on business success than the downstream effects on people and culture. With an understanding that it is realistic to have as business goals improving living conditions as well as creating a profitable business, social entrepreneurs give society the examples of what can be created when many questions are asked about why a situation has to be the way it is. How can things be better? What is holding society back from making an improvement? How can the improvement be done on a less costly basis? Changes in technology help stimulate possibilities for an active and imaginative person to use in a novel manner leading to a new product/service or new distribution system or a new method of donations.

Entrepreneurship frees members of society to think of how to integrate the process of living and working in a new way by giving people license to innovate. While Google is a multinational search engine, there are Chinese entrepreneurs who created a Chinese based search engine, Baidu, which works better within the Chinese culture. The creation and success of each new entrepreneur opens opportunities for subsequent entrepreneurs.

Implications for Organizations

Expansion into new markets through creativity, innovation and corporate entrepreneurship helps support job growth and economic expansion. Even in a recession or slow economy, people will spend their disposable income on items and services that excite them. Corporate entrepreneurship is a great way to ensure that the company can continue to grow and survive in both good and bad economic conditions. Support for corporate entrepreneurship comes from top management encouraging creativity among company employees and a willingness to listen to new ideas.

With regard to innovation, there are three types of innovation: continuous innovation, dynamic innovation and discontinuous innovation. Nelson and Consoli (2010) support Schumpeter's ideas that consumer behavior is an active participant in this process. As people living in a consumption society, an individual can figure out a better way to solve a consumer problem. Just solve

all establishments survive five years or longer, and approximately one-third, survive 10 years or longer (SBA, 2016). It is also true that people who have received higher levels of education are more likely to become entrepreneurs (Shane, 2008). Budding entrepreneurs believe that being offered some training and help early would support their success in the first two years (Roomi & Harrison, 2008). That means that getting help (from the Small Business Administration as well as other sources) is a good idea.

It is possible that you have a great idea but somewhere in the business plan, there is a flaw in your feasibility study. While a business failure is a failure of your idea, the experience of failure may help you learn what set of circumstances and business planning will be needed for a successful new business. Many entrepreneurs use this to "fail up," which simply means they fail intelligently and grow from the experience.

Effectiveness of Entrepreneurship

One outcome of entrepreneurship is expansion of the economy. It is easy to expect large businesses to increase their hiring in order to expand job creation. Entrepreneurs create new businesses and new job opportunities. The rapid growth in social media websites like Facebook, Groupon, and Living Social that add in geographic identifiers to retailing suggestions show how the passion of one entrepreneur can excite the imagination of others to create a new industry.

Serial entrepreneurs create new businesses as they have the passion for each type and then sell as they form a passion around a new idea/product. The thrill is in the start-up of the company so the serial entrepreneur sees the seed of a new industry or new idea and nudges it into a growth cycle. The company attracts interest due to its innovative view of the product/service and attracts more people into the business. As this business grows, competitors come into the market, which creates an industry or reinvigorates an older industry. The economy in the geographic region benefits from new businesses congregating in a competitive industry with the influx of people to work in the industries. The new people bring with them the possibility of other ways of seeing the needs of a consumer or innovative manufacturing ideas further encouraging entrepreneurship growth. Entrepreneurs encourage other entrepreneurs to step out of comfort zones and into more new businesses. The emergence of Silicon Valley in California and Silicon Alley in New York are examples of this. Serial

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What will encourage entrepreneurs in the 21st century? Difficult economic times create the need to succeed. New technologies and downward economic pressures create the environment for smart people with the ability to define problems and think creatively to become entrepreneurs. Computing in the cloud (Internet based computer programs) may support multitudes of possible innovations just as a need for alternative fuel supports innovation in transportation. Implications for management are that companies need to explicitly value thinking and innovation, by giving employees the time and freedom to develop creative ideas and products.

Questions for Students

1. Explain the difference between an entrepreneur and entrepreneurship.
2. Name the different types of entrepreneurs.
3. Which personality trait do you think is most important to becoming an entrepreneur? Explain.
4. Is social entrepreneurship realistic? Why or why not?
5. Is entrepreneurship only for the genius and wealthy? Why?
6. What does it take to be an entrepreneur?

Case: Exotics and Hybrid Motors

Exotics and Hybrid Motors is a privately owned car repair shop in Nassau County, Long Island. The co-owners, Robert and Peter Positani (father and son), prefer to work on high-end European cars. The Positanis can repair any type of car and motorcycle supported by their experience in the car repair business and commitment to education. They take advanced course work offered by a

variety of car manufacturers and automobile service associations. The shop has been in business for 32 years when it was begun by the three Positani brothers (Pietro, Robert, & Paolo). They were born in Italy, but are all now U.S. citizens. The Positanis have great mechanical skills as well as intense attention to detail, which may have been inherited or learned from their grandfather and father who were cabinetmakers.

History

In 1976 Robert was thinking about going into business for himself or with family members. He found a location on Long Island, NY and told Pietro about it. In March of 1977, the two brothers opened Exotic and Hybrid Motors with a focus on European cars. At that time, European car manufacturers created most of the automotive innovations. Those car innovations trickled into the U.S. car market affording the Positanis the opportunity to service and repair both foreign and domestic cars. After a year the youngest brother, Paolo, joined his brothers in the shop.

For 10 years, the brothers worked together with varying degrees of rivalry and cooperation. It was sibling rivalry in their business. Their level of attention to detail brought a great deal of customer satisfaction since repairs were done right, well and quickly. Exotics and Hybrid Motors' reputation grew and there was often a one, two or three day wait before one could get his/her car in for repair.

The Positanis started to consider enlarging the shop in order to accommodate more cars in repair on the floor at one time, thereby reducing the wait time for getting a car in for repair. They also wanted to start to hire more of the second generation of the family as repair people and more space was needed in order to have more workers. They first wanted to enlarge the shop that they had, but there was no land available near their location for an additional building or for adding onto the existing premises.

The next possibility would be to relocate the company to an entirely different location, build a new shop and hope that the customers would follow. Each of the brothers had an idea of where they wanted to go and each investigated possible new company sites. Conflict over strategic planning, division of profits, vision of what the shop should become became a daily focus of divisive arguments among the brothers.

The first to leave was Paolo. He had an opportunity to partner with someone outside the family in a new location, one nearer where their customers lived.

one problem, answer a need and give an easily defined benefit to using the product/service or idea and there is a seed of a new business and possibly a new industry. It is innovation that drives business and the economy forward. It is the individual entrepreneur who is willing to take a financial risk and perhaps a social risk to bring a new product/service to the market. It is entrepreneurs who create the future—either individually or within an organization. It is the constant creation of newness that keeps business alive.

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a car into the shop. Their prices for repair are generally 75% of the price at car dealerships. Exotics and Hybrid Motors are able to repair any make or model of car at competitive prices.

The Exotics and Hybrid Motors shop is in an industrial automotive section of Mineola, New York. It cannot be seen from a well-traveled consumer road. The building appears to be at least 50 to 70 years old and is not inviting on the outside. The inside is well maintained and very clean. There are a few chairs for waiting but no amenities.

Exotic and Hybrid Motors has premiums to give to customers: imprinted pens, memo paper cubes, refrigerator magnets and similar items. There is no budget for promotion.

Exercise

Following is a list of six entrepreneurs: (a) Sara Blakely; (b) Bill Gates; (c) Steve Jobs, (d) Elizabeth Holmes, (e) Larry Page, and (f) Mark Zuckerberg

Choose any three of these entrepreneurs and research the following:

1. What is this entrepreneur famous for?
2. Describe briefly about their journey as an entrepreneur.
3. What are some of the factors that helped in building their first start up.

Suggestions for Further Reading

- Downes, L., & Nunes, P. (2014). *Big bang disruption: Strategy in the age of devastating innovation*. New York: Penguin Group.
- Gorgievski, M. J., Ascalon, E., & Stephan, U. (2011). Small business owners' success criteria, a values approach to personal difference. *Journal of Small Business Management*, 49, 207-232.
- Khalifa, A. S. (2008). The "strategy frame" and the four Es of strategy drivers. *Management Decision*, 46, 894-917.

Pietro and Robert continued in business for another year when their disagreements over how to expand the business became excessive. The brothers decided to end their partnership, as they could not decide where to go or what the company should become or how to deal with a second generation in the shop and distribution of profits.

One of the Positani brothers (Robert) kept the same location and was able to keep the same name of the shop—Exotics and Hybrid Motors. While the breakup of the brothers in business was hard on the family and on the customers who were used to seeing their favorite brother at the shop, the remaining Positani brother has been able to gather enough customers to remain in business at the same location.

It is now 17 years later and Robert's oldest son (Peter) has joined him at Exotics and Hybrid Motors. Car repair is their life. The question is whether they can expand the customer base to be able to keep Robert, Peter and two other mechanics gainfully employed year round. It is not easy to find a skilled mechanic and once found, the Positanis do not want to hire for seasonal demand. While repair work has picked up significantly once the snow melted in the spring, Robert is concerned about what to do about next winter. He is worried that next winter will also see a seasonal decline, which has not been a typical pattern for the shop's customers. This is especially troubling since the county economy seems to have slowed as noted by the slower housing sales in the area.

Peter, the son, loves cars and motorcycles. While he had an opportunity to go to college, he did not enjoy the atmosphere or anything else about college. He came to the repair shop ten years ago and expects to own the shop when his father retires. While the future for car repair remains difficult due to better cars and longer warranties, there are people who collect old and antique cars who look for craftsmen to do the work. That is where Exotic and Hybrid Motors sees their niche. Both Robert and Peter continue to take classes on the innovations in cars to be able to repair both old and new imports. Peter's future seems like a challenge in the present car ownership environment.

The 4 P's of Marketing

The product that Exotics and Hybrid Motors sells is service and the replacement parts that are used in the car repairs. Their differential advantages are that they create a personal relationship with the car owners, the Positanis' expansive knowledge of European and U.S. cars and a very short waiting time for getting

10. Creativity

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Powerful forces are now reshaping the business landscape faster than ever before. In the present fast-changing environments, all organizations are challenged in unprecedented ways to create value. Whatever advantages there ever were in knowing secrets is rapidly being replaced by the skill to turn information into the unique, the new, the profitable before all margin is lost. The force that powers this is creativity and those organizations which can harness its power will leave in the dust those that can't see new relationships, form new combinations, or better knit ideas together for revolutionary results.

Nature of Creativity

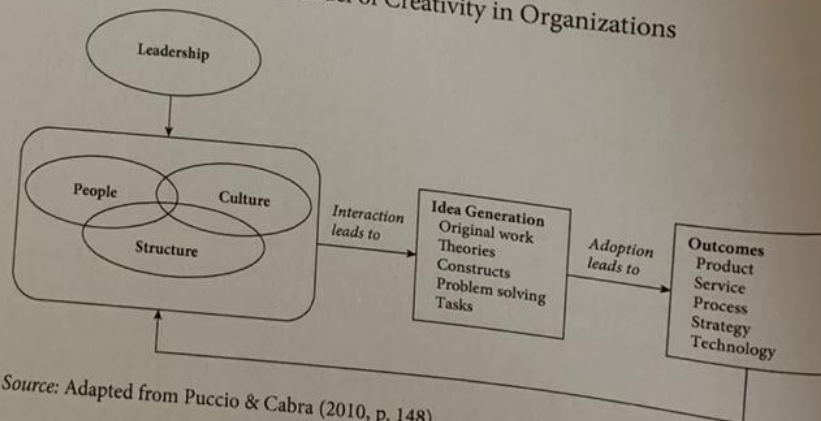
Definition

Sometimes the words creativity and innovation are used interchangeably, but each has a distinct meaning. Creativity is associated with generating novel and useful ideas, but innovation is associated with transforming these ideas into products, services, processes, and technology. Some of the synonyms of creativity are originality, imagination, ingenuity, and expressiveness. The APA Dictionary of Psychology defines creativity as "the ability to produce or develop original work, theories, techniques, or thoughts. A creative individual typically displays originality, imagination and expressiveness. Analyses have failed to ascertain why one individual is more creative than another, but creativity does appear to be a very durable trait" (VanderBos, 2007, p. 242).

Creativity as a Process

Creativity is first and foremost a process. A systems model of organizational creativity, presented in Figure 10-1, shows that leadership is essential to prepare the organization for generating creative ideas which lead to innovation (Puccio & Cabra, 2010). To make an organization creative, leaders need to recruit those

Figure 10-1
A Systems Model of Creativity in Organizations



Source: Adapted from Puccio & Cabra (2010, p. 148)

with skills, experience, and intelligence; design a flat and flexible organizational structure; and foster an organizational culture that rewards risk-taking and experimentation. Interaction among people, structure, and culture is expected to have a positive impact on the generation of novel ideas relating to products, services, administrative processes, and technology. Figure 10-1 shows how these new ideas will lead to innovation.

Components of Creativity

It is generally accepted by scholars that creativity has two components—*novelty* and *utility*. Some scholars have suggested additional components of creativity, such as aesthetics and authenticity (Kharkhurin, 2014), genesis and elegance (Cropley & Cropley (2008), but there is no consensus among creativity researchers regarding the additional components. The following is an explanation of the novelty and utility components of the creativity construct.

1. **Novelty.** The standard definitions of creativity are linked to originality, ingenuity, or distinctiveness. Employees who generate ideas that are differentiated from others may be considered creative. Definitions of problems or their solution that do not follow standard operating procedures is generally considered as creative.
2. **Utility.** The standard definitions of creativity suggest that the outcomes of creative ideas must be useful to human beings. In other words, creative work can be put to some use.

Types of Creativity

Positive and Negative Creativity. Creativity can be positive or negative (James, Clark, & Cropanzano, 1999). The concept of usefulness carries with it the connotation of being either “good” (positive) or “bad” (negative). Positive creativity is expected to lead to desirable outcomes, such as product creation, reducing health costs, and adaptability to change, but negative creativity may lead to undermining goals and policies, exploitation, and sabotage (James et al., 1999).

them provide incentives for risk-taking, and even reward failure. A new car, for example, is clearly the result of prodigious teamwork, but at the core, it resulted from someone somewhere having an inspirational event when he or she responded to market desires.

Outcomes of Creativity

Some empirical studies have found a positive link between creativity and innovation. A literature review by Puccio and Cabra (2010) "support the important role of creativity plays in fostering innovation and the tangible benefits organizations derive from innovation" (p.148). It is no surprise by now that any Google search returns a lifetime of reading in only fractions of the second. Not only do you have this information, but so do your competitors. Given that you can be reasonably confident your organization faces competition from those now in its market or those about to be, any use of equally accessible data in ways that generate more revenue is incredibly valuable. More revenue can be a direct result of finding unique solutions that extend from current technology and processes used in new ways. You personally can develop your own competitive advantages by combining this information in unique fashion. The Web has become a great equalizer, but what it's really done is put a premium on those who can assemble thoughts, feelings, instincts, and all other physical resources for new, creative successes. So, here is the next logical question: what are the tangible benefits of improving creativity?

Creativity is essential to maintaining competitiveness in a global economy (Zhou & Shalley, 2008). The creative process leverages relationships, and leaders have an important role in encouraging employee creativity (Liao, Liu, & Loi, 2010) by removing barriers and providing resources. So, why should you as a leader pay attention to this? It's because there seems to be a clear positive link between the positive feelings you as a leader can help others to have and the degree of creative work that people produce (Amabile & Kramer, 2010). Creativity itself is a mood enhancer, improving feelings of self-worth (Simmons & Thompson, 2008). However, perhaps it's more functional to state it this way: seeing one's creativity become useful and make substantive progress leads to feeling better, and feeling better leads to even more creativity.

As it turns out, creativity is at the core of progress, and the feeling that one has made real progress has important effects upon job satisfaction and other

We often think of a good idea as one that we can put into action, or one that has a clear, perceived likelihood of positive return. Leaders are constantly asked to evaluate many outputs of creative processes. It is very easy to discount and criticize new, creative ideas by trying to cram into the "useful" category. It is very hard, particularly in times of abnormal stress, to consistently be open-minded and see where and how new ideas could make your organization better, faster, richer. Perhaps we would be well to consider that though the idea may not have application immediately or to a particular task in question, but could in another context could be highly valuable.

Radical and Incremental Creativity. The theory of creativity was extended by the introduction of two additional types of creativity: radical and incremental (Madjar, Chen, & Greenberg, 2011). Radical or divergent creativity is associated with ideas that are significantly different from the existing ones in an organization. Incremental or adaptive creativity is associated ideas that offer only minor modifications to existing products, processes, and service.

Individual Creativity. Musicians, writers, and dancers we all automatically consider creative. These individuals respond to their need to express themselves in ways that are new, compelling, and help us see and feel what we have not before. It is worth noting that we often respond most strongly to those forms of creativity borne by those with overwhelming dedication to perfecting their form of expression. Bach, Shakespeare, Dostoyevsky, or Picasso all achieved their recognition through single-minded dedication and intense commitment to become fluent in their modes of expression.

We also know scientists, mathematicians, or athletes to be creative, though perhaps differently than in the artistic sense noted above. Scientists are often charged with solving a problem through chemistry or biology; the insight occurring when a solution to a puzzling problem is often perceived as a creative event. Einstein reinterpreted previous thinkers' work in a new way to develop his theory of relativity; a noted cancer researcher was sitting in his synagogue when the realization that tumors in a body might communicate along chemical pathways suddenly came into his mind unbidden. Note that these two mental events, while seemingly prosaic, are nonetheless, new, special, and resulted in profoundly different outcomes in just the way we recognize a new painting, a new song, or a new creative events.

Organizational Creativity. At the macro-level an organization, like people, can be creative. This chapter discusses activities and suggestions that can help organizations respond productively to challenges in the world. Companies, for example, can learn to sense opportunities when the individuals that comprise

Providing Support. Leaders need to provide resources, information, analysis, or assisting in any one of many possible activities that make up actual work processes. It means more than just asking how things are going, it means being actively engaged by listening to find out what team members need and then acting upon that knowledge yourself, personally.

Learn from Successes and Failures. This is vital to keep communication lines open. Assigning blame is rarely positive or helpful; instead, treating experiences as opportunities to learn will get you further in the long run. This means having lots of conversations that start with "So, what did we learn from this?" and "What would we do differently next time?"

It's worth observing here that the factors you are probably studying as the most important in creating positive workplace behavior are likely similar to the following: recognize good work, establish performance incentives, and support progress. The take away points for leaders are: set goals that don't change arbitrarily, be continually decisive, and provide needed resources (Amabile & Kramer, 2010). Here are other important considerations to take into account that you shape your behavior as a leader, again, all with the explicit intent to help improve creativity by helping people feel better about why and how they work.

Recognize That Some Activities May Be Inherently More Complex. A team leader tries to match up those parts of the work process that he or she knows will need more creative energy with the time, physical resources, and people power to contribute to the best possible outcomes. This means recognizing that if an actual product that would meet client specifications would require much creative energy, the likelihood of success is much greater if team members you pick have shown creative ability, and you then stay out of the team's way (Seidel, Moeller, Weinbergen, & Rosemann, 2010). In short, anticipate the need for oversight, allow as much freedom as you can, and adjust your direction based on your instinct.

Listen to New Ideas. Note here the sense that a creative idea is not only new, but also useful and meaningful in some human context. However, it is well worth considering the effect these preconceptions have upon this common definition of creativity. In business, and business education, great stock is placed upon being useful, being able to measure and quantify the value of an idea: "what is its internal rate of return, its net present value?" There is a slang business phrase called "analysis paralysis" which refers to indecision (lost opportunity) caused by over-examination of a potential action. Sometimes one has to rely more on intuition than data, so while you are training yourself to

workplace attitudes. As we will see below, leaders who consistently remove roadblocks and enhance their subordinates' ability to do meaningful, relevant work are highly rated. Humans view meaningful progress as a powerful indicator that their efforts are worth something. As a leader, removing roadblocks really means going beyond the common, the ordinary, the usual perception. Again, this means thinking and acting creatively.

If you are now in business school, you are training yourself to be a leader, and that means getting work done motivating others. It's important to know that it is the perception of meaningful progress that is likely the highest single motivator in creating positive feelings and efforts in the workplace, according to a study by Amabile and Kramer (2010). This same study found that six-hundred managers ranked progress as the least important motivator, while their employees ranked it as the most important motivator. In fact, feeling positive can have a huge effect upon creative output. In the aforementioned study, encompassing almost 12,000 individual work day diary entries, participants felt, and their entries corroborated, that their creative output was 50% higher when they felt their best (Amabile & Kramer, 2010). So, how do you help the people you lead to feel their best about work and be as creative as they can be?

Implications for Management

To encourage creativity among employees, there should be certain changes at the micro and macro levels in an organization. Recent literature shows that learning organizations are providing ample opportunities for employees to be creative. At the macro-level, learning organizations generally make appropriate changes in the organization design that involve creating flatter, decentralized, and less complex structures and culture which provides rewards for risk-taking and creativity. These changes require effective leadership. At the micro-level, between people, the following changes are worth considering.

Goal Setting. Set clear goals so people can effectively organize personal thinking and resources. It turns out that this is probably a leader's most important task, if for nothing else that the absence of clear goals seems so profoundly frustrating to people. This often means continually checking with other stakeholders in an organization to make sure your team's outputs match desired results.

those last-minute-hurry-up-and-rush-kind of experiences that made everybody frustrated and would make a house look disorganized.

Phi Rho had signed up to lead the competitions between houses, which meant games had to be fun, but also had to show that Greek Week was something more than just a high school field day. Her house had sixty members, most of who lived on campus and were reasonably active. About two thirds were upperclassman, and most had participated in Greek week at least once. Greek week was one of the highlights of fraternity and sorority life on campus and was an important way for graduates to connect with current student members in the social functions that followed its daily events.

Sarah knew that she better prepare something for the meeting, so she thought of a few PowerPoints would be a start. She opened her laptop and started creating a few slides. The first one said, "What are we going to do for Game Day?" the second, "Here's what we did last year: Volleyball, Jell-O toss, Capture the Flag, Crazy Relay, and Tug-Of-War." The third slide listed the six hours in the weekend schedule that Phi Ro was responsible for hosting with time slots for people to sign up in. After staring at a blank fourth slide for a few moments, Sarah closed her laptop with a sigh and started chemistry homework that was due Monday morning.

The 8:30 evening meeting started pretty much on time. Sarah began by recognizing the achievements of the new freshmen members of the House and accepting the treasurer's report. She pulled up her first slide and started by saying "Okay guys, you'll know we signed up to do this. It's important that we look good and that everybody has a good time. Let's try a bit of a brainstorming session to figure out what we want to do.

Anyone have any thoughts about games for Game Day?" Silence greeted her question. She waited a few more moments. Still silence. More crickets. "Come on guys, I'm sure we can think of something. Here's what we did last year", and pulled up the second slide. "I don't like the tug-of-war, I got squished last year" was the first thing she heard. There were a few echoes of agreement throughout the fifty or so members. "Capture the Flag is just too hot most of the time", someone else said. This kind of reaction went on for another five minutes with various members raising similar and sometimes different objections, but without any substantively new suggestions. Sarah was growing increasingly frustrated. "Well, we figured out something to do last year. Is there anyone who would like to help me decide this time?" Three freshmen in the back row raised their hands together. "Okay, thank you. Would you three please see me right after the meeting, and we'll get some ideas on the table." The rest of the

meeting was pretty typical, with a presentation from the National representative about fundraising ideas, a song, and a report from the membership vice president about attendance policy.

After the meeting, the three freshmen dutifully showed up and they made an appointment to meet Sarah Monday afternoon. The result of that Monday meeting was that the games Phi Rho hosted for Greek Week were exactly the same events it sponsored the year before.

Suggestions for Further Reading

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now greater familiarity with the context of the problem to enhance ideas for a solution. In particular, this third step draws upon the benefits of increased visualization and conception that can occur in people when their fear of public criticism fades. This is precisely why this exercise needs to be done in a climate where members of the group consistently highlight ways to make an idea work better.

If this seems a little complicated for the first time, it probably is. But remember, we been brought up to believe that brainstorming is only "getting ideas out there" without any real understanding of whether or not positive outcomes typically occur. It's worth knowing that groups get better at doing this and report that the need for verbal distractions dramatically decreases over time.

In the end we are challenged to reexamine the habits and the misconceptions that have been ingrained into us from an early age. It is a challenge that is not easy to embrace: to fully accept we don't have to settle for mediocrity. One of the chief complaints voiced by talented undergraduate business students is the emphasis on group projects with the all-too-often difficulty of group members who seem unmotivated. I would submit that is the group process, not the failing of innate creative ability that causes these complaints. Read this article, pass along its lessons in the form of purposeful leadership in your groups and their members, and always remember that you are worth more than you know, and know more than you think.

Case: Why Don't We Ever Get Anything Done?

Sarah Murdoch, Phi Rho house president, was thinking about the Sunday evening chapter meeting with a mixture of fear and frustration. Greek Week was less than three weeks away, and she felt her chapter was unlikely to have any great successes during one of the most important social events of the Greek calendar. As president, it was her responsibility to make sure that her chapter was well-supported and well-represented, and that the activities that the chapter promised to undertake for Campus Events would come off smoothly. But now, there seem to be so little time left before all the events had to be lined up that there didn't seem to be any way that it was going to be anything less than one of

Nature of Innovation

Definition

"Innovation is generally understood as the successful introduction of a new thing or method. Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services" (Luecke & Katz, 2003, p. 2). Innovation is also the ability to recombine existing elements, see connections, spot opportunities and make the best of resources on hand. Thus, innovation is not just about new products or markets, but also new ways of serving established or mature ones.

Types of Innovation

Managers of innovation refer to four broad categories of innovation, which are product innovation, process innovation, position innovation, and paradigm innovation (Francis & Bessant, 2005).

Product Innovation is embodied into novel physical outputs of an organization, or changes in things (products/services) that an organization offers.

Process Innovation is a change in the way an organization conducts its business, such as the way it manufactures its products.

Position Innovation is a change in the context to which a product or service is introduced, for example using fruit juice as a nutraceutical (or natural drug).

Paradigm Innovation is a change in the underlying mental models in which the firm operates, which usually changes innovation at an industry level, such as online booking of tickets (Southwest Airlines) or mass customization (Bath and Body Works).

Within these four broad categories, innovation can be considered *incremental* or *radical*. An incremental innovation (like the introduction of diet soda) builds upon existing knowledge and resources, whereas a radical innovation (like the introduction of mobile telephone) will require completely new knowledge and/or resources. Likewise, an incremental innovation will involve modest technological changes and the existing products on the market will remain competitive, whereas a radical innovation will involve large technological advances, rendering the existing products non-competitive and often obsolete. Many

11. Innovation

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If a company fails to innovate, it may die. Innovative firms—those that are able to generate and/or use innovation to improve processes, products, and services—outperform their competitors in market share, profitability, growth, and market capitalization. Not only does innovation enhance competitiveness but it can improve the quality of life for stakeholders such as the employees, the local community and the national economy. However, management of innovation is difficult and requires a different set of skills and knowledge from those of everyday business management.

Autonomous Teams can be developed where team members from different functional areas are committed and co-located with project manager. This type of team benefits from the isolation, allowing the most radical breaks from conventional ways of doing things.

Innovative manufacturing firms can also supplement the ideas sourced from internal employees with external sources, including suppliers and lead users. A manufacturer and its supplier can enter into a *strategic alliance*, i.e., arrangement between two companies who have decided to share resources on a specific project. Successful innovators also identify *lead users*, customers that are invested in identifying solutions and benefits months or years before the general marketplace. These are some of the different sources of innovation, or multiple innovation channels, available to a firm. It is important to understand that external and internal sources are often complements, and that firms with large internal product innovation teams are also the heaviest users of external collaboration networks. Innovation comes from different places and in different ways.

Idea Conversion refers to the notion that once ideas have been generated, they need to be screened and protected. Out of every 3,000 raw ideas there is approximately 1 commercial success. Selection should be made using standardized frameworks and guidelines that are unique to the firm. The standardization of the screening criteria is important in order to maintain consistency over evaluations and the firm will be able to make their choices objectively. The key question managers should ask is: Are we good at identifying and protecting good ideas? The KPIs include the percentage of all ideas selected that become fully developed (either internally or externally); the percentage of funded ideas that lead to revenues; and the number of months to first sales.

In order to quickly and effectively screen an idea, firms need to work on effective and prompt *prototyping*, to quickly fabricate a scale model of a product innovation. *Try-storming* is a more advanced type of prototyping that also simulates and tests the model in practice before committing to any one process or solution.

Once a prototype is found to work, the underlying innovation can be protected through the patenting process. A *patent* is a set of exclusive rights granted by a state (national government) to an inventor or their assignee for a limited period of time in exchange for a public disclosure of an invention. If patents are not obtainable or enforceable, innovation can be protected through secrecy, lead time and/or complementary resources (Arundel, 2001). Secrecy is the use of confidentiality or classified information to keep product innovation

other distinctions can be made about the type of innovation whereby different management techniques prove more or less successful.

Innovation Process

In focusing on product innovation, the *innovation value chain* (Hansen & Birkinshaw, 2007) present innovation as a sequential, three-phase process that is comprised of idea generation, idea conversion, and idea diffusion. Each of these three steps in the innovation value chain differs in the "key questions" they address and the "key performance indicators" (KPIs) they measure. The questions and measures help managers add value to every step of the innovation process.

Idea Generation. This involves the focused identification of an area in science, technology, or user need for a breakthrough. This can be achieved internally within a firm, in a business unit or across units or externally from sources outside of the firm. The key question that managers must ask themselves is if the people in the firm create good ideas on their own. Based on the KPI of number of high-quality ideas generated within a unit, managers can add value by improving the team dynamics within the firm or by finding additional sources of innovation externally.

Dynamics within the firm can be improved through the cross-pollination of diverse talents from diverse divisions, and by this method, the interactions between workers will add value to the process (Clark & Wheelright, 1992). There are four basic team structures that can be followed to achieve this cross-pollination:

Functional Teams can be developed where members work completely in their principal function and those members are coordinated by respective functional managers. This type of team would benefit product innovation that required high levels of expertise.

Light-Weight Teams can be developed where a dedicated project manager works with the functional managers to coordinate team members across functions. This type of team would benefit product innovation that required coordination and increased communication across functions.

Heavy-Weight Teams can be developed where a dedicated project manager has direct control over functional members, and these members work only with the project manager and other functional members. This type of team would benefit new developments that required focus and expertise.

rely on a single, trusted adviser to help them make sense of technology. The last 16% of the adopters are labeled "laggards" and are characterized as traditional and want only to maintain the status quo. They tend not to believe that technology can enhance productivity and are likely to block new technology purchases.

Outcomes of Innovation

An important facet of understanding innovation is effectively and efficiently managing the outcomes of innovation. Besides the actual creation of a new product, service or process, the outcomes of innovation include job creation, economic growth and improvements in quality of life.

However, products often have unintended effects in addition to the ones intended by the manufacturers (Tenner, 1997). Sometimes, those unintended effects can even be contradictory, creating bigger problems than the ones they were meant to solve in the first place. Examples include the indiscriminate use of antibiotics, yielding harder strains of bacteria and viruses that do not respond to pharmaceutical treatment and the wide-scale use of air conditioning that has raised the outdoor temperature in some cities places by as much as 10 degrees, adding stress to already-taxed cooling systems. In addition to unintended consequences, products influence the values of a society by changing expectations and realities including efficiency and social progress. Products influence lifestyles making some aspects simpler and others more complex, and add issues of privacy, security, ethics and environmental impact.

Often firms must issue a *product recall*, a request to return to the maker a batch or an entire production run of a product, usually due to the discovery of safety issues (Berman, 1999). The recall is an effort to limit liability for corporate negligence (which can cause costly legal penalties) and to improve or avoid damage to publicity. A recall is costly to a company because it often entails replacing the recalled product or paying for damage caused by use, although possibly less costly than consequential costs caused by damage to brand name and reduced trust in the manufacturer. A country's consumer protection laws will often have specific requirements in regard to product recalls. Such regulations may include how much of the cost the maker will have to bear, situations in which a recall is compulsory (usually because the risk is big enough), or penalties for failure to recall. The firm may also initiate a recall voluntarily, perhaps subject to the same regulations as if the recall were compulsory. Product

from being replicated by competitors. Lead time is the rapid turnaround of product innovation from initiation to execution of commercialization, in other words being the first to market. Complementary resources are resources that enhance the product innovation by extending or strengthening the whole package, including marketing, customer service, and other product innovations that can be included in a package or bundle.

Idea Diffusion includes both *commercialization*, i.e., the production of the product and bringing it to the market, and *adoption and diffusion*, i.e., the product acceptance by the market. The key question that managers should ask themselves is if the company is good at getting products adopted by users. The KPI would be the percentage of penetration in desired markets, channels, or customer groups, and the number of months to full diffusion.

Managers can improve idea diffusion by managing the technology adoption life cycle (Moore, 1999). The *technology adoption life cycle* describes the adoption or acceptance of a new product or innovation, according to the demographic and psychological characteristics of defined adopter groups. The first 2.5% of adopters are labeled *innovators* and are characterized as venturesome; educated; having multiple sources of information; showing greater propensity to take risks; appreciating technology for its own sake; motivated by the idea of being a change agent in their reference group; and willing to tolerate initial problems that may accompany new products or services. The next 13.5% of adopters are labeled *early adopters* and are characterized as social leaders; popular and educated; visionaries in their market and are looking to adopt and use new technology to achieve a revolutionary breakthrough that will achieve dramatic competitive advantage in their industries; attracted by high-risk, high-reward projects and not very price sensitive because they envision great gains in competitive advantage from adopting a new technology. After the early adopters is a chasm representing a critical phase or opening from the last early adopters that allows for mainstream acceptance of the product. This chasm can be effectively crossed through increased education and word-of-mouth recommendations from early adopters to the next category. The next 34% of adopters are labeled "*early majority*" and are characterized as deliberate and have many informal social contacts; and rather than looking for revolutionary changes to gain productivity enhancements in their firms, they are motivated by evolutionary changes. The next 34% of adopters are labeled "*late majority*" and are characterized as skeptical and of lower socio-economic status; very price sensitive and require completely preassembled, bulletproof solutions; motivated to buy technology just to stay even with the competition and often

Organization Design

This intervention attempts to improve the organizational effectiveness by changing the organization's structural design characteristics, which include differentiation and integration mechanisms, hierarchy, procedures, reward system, etc. This approach mainly attempts to manage conflict by altering the perceptions of the intensity of conflict of the organizational members at various levels.

Although Duncan and Weiss (1979) indicated more than two decades ago the need for designing organizations for encouraging organizational learning, scholars have not yet provided adequate attention to this issue. Many organizations have responded to competitive pressures by creating flatter, decentralized, and less complex designs than others. The shift is reflected in new organizational forms, such as the modular organization, virtual corporation, and the horizontal organization.

Many organizations have responded to competitive pressures by downsizing. Unfortunately, downsizing does little to alter the single-loop learning and consequently the basic way work gets done in a company. To do that takes a different model, the organic design. This design is flatter, decentralized, and less complex than others. Some of the biggest corporations, such as GE, Xerox, DuPont, and Motorola are moving in this direction. Unfortunately changes in organization design, without corresponding changes in culture, may not alter single-loop learning and consequently the basic ways of doing work.

Questions for Students

1. What is the difference between single-loop learning and double-loop learning?
2. Why is the double-loop learning more effective than single-loop learning, in terms of creating sustainable change in organizations?
3. What are some of the things that a manager can do to promote double-loop learning in an organization?

recalls can be prevented with the use of more extensive and robust testing, the fourth of the six broad steps of product innovation.

The new challenge of innovation is the outcome of environmental sustainability through *green product innovation*. These products are non-toxic, energy and water-efficient, and relatively harmless to the environment. *Life Cycle Assessment* (LCA) is a method that allows systematic analysis of a manufactured item into its components and their subsidiary industrial process, and allows measurement of impacts on nature from the beginning of the product to the final disposal (Goleman, 2009). In designing for sustainability, the entire life cycle of the product is analyzed from birth of the innovation to re-birth in an infinite cycle. This approach highlights all the impacts that a product will have from a sustainability stand point and this insight helps to make more informed decisions very early in the products life cycle at the design face. Moreover, the implementation of LCA relies on the overall supply chain. The outcome of LCA innovation is a *sustainable (or green) supply chain*, where the management of a product from raw materials to manufacturer to consumer with explicit consideration of improvement to the social and environmental impacts, in a way that allows for reverse supply chain flows and network communication. Therefore, it is important to understand that the manufacturer of the product is not alone in managing the product innovation's overall impact on the environment.

The outcome (in this case sustainability) of a product cannot be determined on an individual firm basis but rather in the context of the ecosystem that the product is a part of in terms of its social, economic and environmental impacts. This ecosystem has distinct components which include the processes in place, the people and the products, a system of organizations, people, technology, activities, information and resources involved in moving a product or service from raw materials, to manufacturer, to supplier, to customer. In following with the LCA, sustainable supply chains must integrate issues and flows that extend beyond the traditional supply chain, including manufacturing by-products, by-products produced during product use, product life extension, product end-of-life, and recovery process at end-of-life.

Innovation can also elevate all of humanity, including the poor, to be seen as creative entrepreneurs as well as value-demanding consumers. The phrase "*bottom of the pyramid*" (BOP) is used in particular by people developing new models of doing business that deliberately target that demographic, often using new product innovation (Prahalad, 2005). The BOP is the largest, but poorest socio-economic group, which in global terms is the four billion people who live on less than \$2 per day, typically in developing countries. In the case of the

Case: Disney Institute

Disney Institute began as a vision, and the visionary was Walt Disney himself. Not only did Walt Disney redefine the world of entertainment, his legacy is found in a worldwide scope of motion pictures, Theme Parks, stage shows, books, magazines, television, merchandise, music, apparel, radio, resorts, a cruise line and more. Of course, none of this would have been possible had he not also rewritten the rules of business.

Walt Disney was, and will always remain, that rare breed: an artistic genius who, with the unflagging and essential support of his brother, Roy, created an effective organizational model and efficient work environment where employees were recognized for their achievements, encouraged to work as a team and, by striving for excellence, continually broke the confines of the status quo to surpass the expectations of the world.

Your Opportunity

Since Disney Institute opened in 1986, millions of attendees representing virtually every sector of business from every corner of the globe have had an opportunity to witness and experience these innovative business strategies.

Disney Institute remains the only professional development company where you will literally step into a "living laboratory" at Disney Theme Parks and Resorts for guided behind-the-scenes field experiences. Disney's brand of business excellence is also being taught at locations across the U.S. and, to date, in more than 45 countries around the world.

We have inspired leaders to change not only their business practices, but also to examine their business issues in an entirely new light. Like them, you will find your organization has more in common with Disney than you ever imagined.

Our Methods

Whether you tune into a Disney Institute WebCast, attend a workshop in your city, or immerse yourself in a multi-day program at a Disney Destination, the lessons we've developed are rooted in the time-tested visions and ideals of Walt Disney. As you "experience the business behind the magic," you'll

lies in selecting those innovations which offer the best chance of competitive advantage and consumer adoption. Moving quickly to prototyping allows for fast failure and the ability to try out ideas to find success quickly. Managers then need to grow the prototype to commercial product, paying attention to feedback from the market across different stages of adoption. Most importantly, managers need to reflect upon previous stages of development and review successes and failures in order to learn about managing the innovation process, and improving it for the future. All of this should be done with an eye towards social responsibility, ethical behavior and sustainability to meet the needs of today without compromising those of future generations.

At the macro-level, innovation requires supportive leadership, a learning culture, and a flat and flexible organizational structure. People and corporate culture should not only encourage but also manage, track, and measure innovation as a core element in a company's growth aspirations. An innovative culture is based on trust among employees. In such a culture, people understand that their ideas are valued, trust that it is safe to express those ideas, and oversee risk collectively, together with their managers. Such an environment can be more effective than monetary incentives in sustaining innovation.

Questions for Students

1. Describe in one or two sentences the four types of idea generation teams described in the chapter.
2. Identify the two key elements of the idea conversion stage of the innovation process.
3. How does the concept of idea diffusion apply to an assignment you had in a college class or work assignment?
4. What are the reasons for developing innovations for the Bottom of the Pyramid?

Exercise

Research the development of the iPod by Apple and mp3 players in general. Write-up a page in review of the development of the product from idea generation

BOP, the outcome of product innovation can bring quality of life improvements if innovative firms work with civil society organizations and local governments to create new local business models. However, bringing materialism to the masses introduces fuel to the fire on unsustainable consumption. BOP product innovation needs to develop sustainable products so that these human needs can be met not only in the present, but also for future generations. The BOP approach to targeting the poorest people in developing countries appears counter intuitive to the fundamental business philosophy of capturing and sustaining value. However, there is an underlying fallacy that misrepresents the poorest people in the world. In many parts of the developing world, for example in India and Africa, the richest of the land and the poorest of the land often live in startling proximity to each other and have the desire to live in equality. Another important consideration is the role of infrastructure and basic amenities in supporting a sustainable approach to development among the people at the bottom of the pyramid. Innovative firms, like all corporations have a sole objective of maximizing returns; however, they must find incentives in investing the basic infrastructure that will allow them to create sustainable value to the bottom of the pyramid.

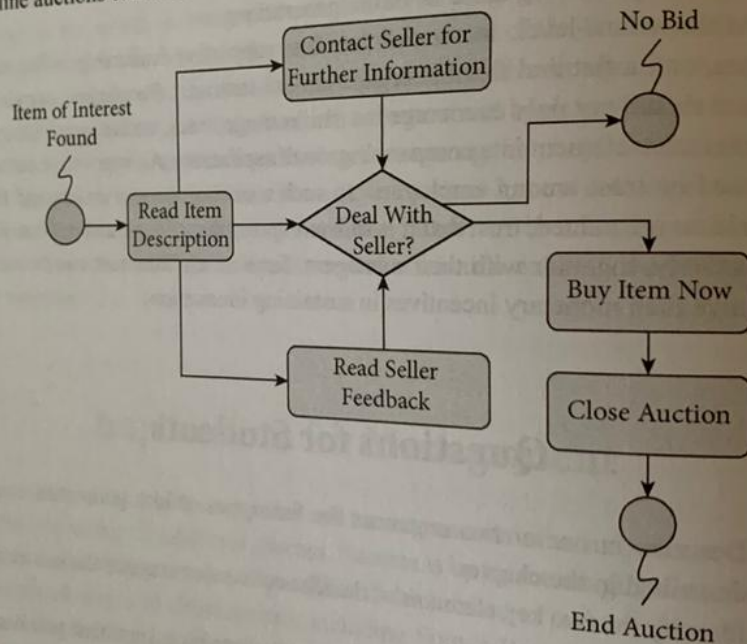
Implications for Management

The process of managing innovation and turning uncertainties into secure competitive advantage is a difficult process. Success is by no means guaranteed and history is ripe with examples of good ideas which failed to make it through the three broad stages of development, including Sony's Betamax, Apple's Lisa, Pepsi's Crystal Pepsi and Ford's Edsel.

What can managers do to encourage innovation? As this chapter highlights, managers must engage in the innovation process, understanding the doing nothing is rarely an option in dynamic industries. Innovation should be seen as a core process that helps the organization renew what it offers, the way in which these offerings are created and/or delivered, the context in which offerings are made, and/or the underlying frame in which the company operates.

Managers need to pick up and process signals about potential innovation internally (from strong teams) and externally (from alliances and lead users). Managers then need to strategically select from potential opportunities to those ideas which the firm will commit resources to completing. The challenge

to idea conversion to idea diffusion at Apple as you find it. Summarize the main strategic decision(s) faced by the managers in developing this product. Where could the development of the iPod have diverged significantly? On a second page, capture what you have written in words into a diagram, using the notation for process flow diagrams (rectangle for process/verb/action, arrows for direction of flow, diamond for decision resulting in at least two paths, and a circle for start and stop). Share your diagram with a classmate and note the differences and similarities. An example of a process flow diagram regarding online auctions can be found below:



Source: adapted from Thomke, S. (2000). IDEO Product Development. HBS Premier Case Collection No. 600143-PDF-ENG.

- Do employees hesitate to offer suggestions for improving production times—despite knowing that something may be done? If so, what may be the reason for organizational silence?
- Is there an unwritten convention to avoid raising issues that might be noted with employees or processes, for fear of embarrassing others or not stepping on others' toes?
- Have production delays been accepted as a way of life in ours? If so, since when and for what reasons?
- Is problem diagnosis and resolution often viewed as the exclusive responsibility of a few select individuals? Why might there not be shared responsibility?

C. Instructions for student activity

1. Each student in the class is asked to classify the above questions into two categories: (1) questions that promote single-loop learning; and (2) questions that promote double-loop learning.
2. The class is then divided into groups (of three members each) and each group is asked to discuss the reasons behind members' classification of these questions.
3. After members discuss their rankings within their groups, each group as a whole (re)classifies the questions.
4. A representative from each group explains to the class how their group benefited from this exercise.
5. The instructor then facilitates a class conversation on what students have learned from the exercise.

Suggestions for Further Reading

- Argyris, C., & Schon, D. A. (1996). *Organizational learning II: Theory, method, and practice*. London: Addison-Wesley.
- Crossan, M., Lane, H., & White, R. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24, 522–537.
- Sadler, P. (2001). Leadership and organizational learning. In M. Dierkes, A. B. Antal, J. Child, & I. Nonaka (Eds.), *Handbook of organizational learning and knowledge* (415–428). New York: Oxford University Press.

Case: IDEO's Innovation Process

IDEO (<http://www.ideo.com/>) is a leading product design firm that grosses between \$40 million and \$60 million annually, and whose client list includes innovative firms such as Apple, BMW, Nike, Pepsi, and Canon. Headquartered in California's Silicon Valley, the company's motto is to "fail often to succeed sooner." IDEO is a flat organization, where all work is organized into product teams formed for the life of a project and then disbanded. As a result, there are no organization charts or titles to distract from the quality of work. Project leaders often emerge on the basis of personal excitement about a project. Though the company has established a free-flowing approach to the innovation process, IDEO uses the following five-phase system to provide structure to the development process:

Phase 0: Understand/Observe

In this phase, the project team attempts to understand the new client and its business. The team will research everything it can about previous product models, including cost structure and how the product was used. By the end of this phase, the project team would have constructed a feasibility record as well as recorded its insights about the users and market.

Phase 1: Visualize/Realize

In this phase, the team will create prototypes to visualize the direction a product solution is heading. This phase involves close coordination with the client to ensure timely feedback. By the end of this phase, the team will have three-dimensional models of the product and would have outlined the manufacturing strategy. Brainstorming goes hand in hand with rapid prototyping and vice versa, using the following principles: stay focused on the topic; encourage wild ideas; defer judgment to avoid interrupting the flow of ideas; build on the ideas of others; hold only one conversation at a time; go for quantity; and be visual.

discover our innovative training methods focused on three key program outcomes: Knowledge, Comprehension, and Application. These outcomes will clearly illustrate ways that you can adapt and apply these lessons into your organization.

As vital as the message are the messengers. Disney Institute facilitators include accomplished business leaders, entrepreneurs, educators, and executives who use dynamic and entertaining stories and demonstrations to explain effective business models and concepts. Depending on the program length and location, these sessions may be enhanced by facilitated discussions, team-building exercises, case studies, experiential activities, and behind-the-scenes guided tours at Disney Destinations. Disney Institute programs provide you with a business map that will help you chart a course for your organization, your division, and yourself.

Your return on this investment is across the board improvement. You'll realize this improvement in processes, your work environment, and the delivery of customer service. You'll sense it in yourself and your employees who are inspired to strive for excellence. Above all, you'll see it in increased productivity and a renewed sense of purpose and potential.

Source: Disney Institute. (2011). Our story. http://disneyinstitute.com/about_us/our_story.aspx. Retrieved on 8/19/2011.

Exercise: Types of Organizational Learning

A. Stated problem

An electronics manufacturing plant is suffering significant production delays.

B. Potential questions management may ask to solve the problem

- Which step in the production process constitutes a bottleneck?
- Which unit suffers most from production delays?
- How do production delays hurt our sales?
- What do our customers think about the production delays?
- How can we redesign the assembly line to reduce production time?
- What alternative technologies can be used to improve production times?
- What are the bases for setting the expected production cycle time, and are these bases still valid in this situation?
- If the production delays had been documented for a while, what may have prevented us from doing something about it?

12. Organizational Learning

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Organizational learning is a significant construct, but it has not received the kind of attention from organization theorists that it deserves. There is greater need to improve our knowledge about organizational learning than ever before so that organizations can effectively respond to the fast-changing environment. Competition is increasing on a global scale, which calls for greater emphasis on developing effective processes for enhancing collective learning. The issue for the organizations is not whether they want to learn; they must learn as fast as they can.

Phase 2: Evaluate/Refine

In this phase, fully functional prototypes are built so that the team can identify and resolve technical problems and issues in the ways users interact with the product. By the end of this phase, the emphasis has shifted from human factors to engineering, and the phase will culminate in the delivery of a complete product design with technical specifications.

Phase 3: Implement (Detailed Engineering)

The team verifies the manufacturability and performance of the completed product in this phase. Though the emphasis is on engineering, engineers stay in close contact with design team members to ensure that the product is evolving in a way that meets both manufacturability and usage goals. At the end of this phase, the team will begin selecting vendors.

Phase 4: Implement (Manufacturing Liaison)

In this phase, the team coordinates the release of the product design to the manufacturer. The team will supervise production of tooling, regulatory testing and approvals, and pilot runs of the manufacturing process. At the end of this phase, the team officially will turn the product over to the client.

Suggestions for Further Reading

- McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make things*. New York: North Point Press.
- Banerjee, P. (2008). Leveraging existing technology: The role of alliances in cross-application. *Strategic Management Review*, 2 (1), 1-22.
- Dyer, J. H., Gregersen, H. B., & Christensen, C. M. (2009). The innovator's DNA. *Harvard Business Review*, 87 (12), 60-67.

for transferring what is learned by individuals to the collective. In other words, organizational learning occurs when members of the collective have successfully learned from the individuals. There must also be mechanisms for preserving and accessing knowledge acquired by the collective.

How Organizational Learning Occurs?

Organizational learning involves the transfer of knowledge and/or skills from the individuals to the collective, and the expansion of the collective's capacity to take effective action. The diffusion of learning occurs when the members of the collective or the organization are no longer dependent on the original holders of the knowledge for making decisions (Tompkin, 2005). Tompkin's model shows four stages of collective learning:

- Collaborative climate for managing conflict;
- Continuous improvement in organization's clarity of vision, principles, and purpose;
- Searching ways to improve the organization's competence by sharing and dispensing individual knowledge and skill; and
- Focusing on improvement in performance and satisfaction.

The factors which facilitate the process of learning are as follows.

Individual Defensive Reasoning

Argyris (1990) has persuasively argued and provided evidence that double-loop learning is inhibited by defensive reasoning of organizational members. This type of reasoning takes place when members fail to take responsibility for their decisions and attempt to protect themselves against the complaints of errors of judgment, incompetence, or procrastination by blaming others. This psychological reaction has something to do with the mental models humans develop early in life for dealing with embarrassing or threatening situations. Other scholars have described this type of defensive behavior as executive blindness. As a result of this, "Organizational members become committed to a pattern of behavior. They escalate their commitment to that pattern out of self-justification. In a desire to avoid embarrassment and threat, few if any challenges are made

Nature of Organizational Learning

Definition

Organizational learning involves *creation and/or acquisition of knowledge, transfer or distribution of knowledge, interpretation of information, and preservation of information* (for future access and use) (Rahim, 2002). This enables organizational members to collectively engage in the process of diagnosis of and intervention in problems. Argyris (1990) define learning as *detection* (cognitive) and *correction* (behavior) of error and discusses two types of organizational learning: single-loop and double-loop learning.

Types of Organizational Learning

Single-Loop Learning. This involves the diagnosis of and intervention in problems without changing the underlying policies, assumptions, and goals. In other words, single-loop learning results in cognitive and behavioral changes within an existing paradigm (i.e., the old paradigm or mindset).

That is, single-loop learning generates cognitive and behavioral changes within an existing organizational structure. In this type of learning, the social and cultural context in which decisions are made is largely ignored—instead, solely concentrating on treatment of the symptoms.

Double-Loop Learning. This occurs when the diagnosis and intervention require changes in the underlying policies, assumptions, and goals. In other words, double-loop learning involves cognitive and behavioral changes outside the existing paradigm (i.e., the new paradigm or mindset). Double-loop learning is very similar to second-order learning, or “learning how to learn.” Bateson (1972) describes this type of learning as deuterio-learning.

In this type of learning, not only are the symptoms treated, but the root cause of the symptoms—often grounded in a social and cultural context—are also investigated. Hence, it is important for organizational members to construct and exchange knowledge through double-loop learning, if their individual learning is to translate into organizational learning and then, in turn, into better organizational performance and sustainable change.

It should be noted that individual learning is a necessary but not adequate condition for organizational learning. There must be processes and structures

1. **Problem Recognition involves:**

- Problem sensing—This is associated with becoming aware of a discrepancy or error in one or more activities.
- Problem formulation—This is associated with collecting and analyzing relevant information and stating a problem formally.

2. **Solving Problems involves:**

- Recommending solutions to problems—This involves articulating alternative solutions to the stated problem.
- Preparing plans for intervention—This involves preparing plans designed to implement recommended solutions to the problem.

3. **Implementation involves:**

- Putting plans into action—This is associated with the implementation of the planned activities prepared in the previous step.
- Review of outcomes—This involves evaluating the outcomes of the plan that was implemented and recommending corrective actions.

Because organizations neglected to recognize and deal with the problems of defensive reactions of employees and organizational defensive routines, organizations do not have the culture that encourages members to engage in real problem solving process. The first phase of problem solving is problem recognition, which involves confronting political and other risky problems. Even if some organizational members overcome their defensive reactions, organizational defensive routines will not allow them to formulate the real problems. Organizational members who create "dissent" become the bad "guys."

Type III Error. In contemporary organizations, problem formulation in the problem recognition phase is often distorted. As a result, old policies, procedures, and practices continue to be followed although they may have been rendered ineffective due to changes in the external environment. This typically results in Type III error, which has been defined as the probability of having solved the wrong problem when one should have solved the right problem (Mitroff, 1998). Type I and Type II errors are well known in statistics, but Type III error is not a statistical error. Type III error is associated with the probability of solving a wrong problem. Type III errors occur prior to Type I and Type II and it is also more basic. "Uncritical thinkers focus on and attempt to minimize Type I and Type II errors; critical thinkers focus on the Type III Error before they get caught up in Type I and Type II Errors. In other words, critical thinkers first attempt to insure that they are working on the right problem before they attempt to solve it in detail" (Mitroff, 1998, p. 18).

Organizational members may have to deal with another type of error. Sometimes good plans for intervention may not be put into action or a part of the plan

to the wisdom and viability of these behaviors. They persist even when rapid and fundamental shifts in the competitive environment render these patterns of behavior obsolete and destructive to the well-being of the organization" (Beer & Spector, 1993, p. 642).

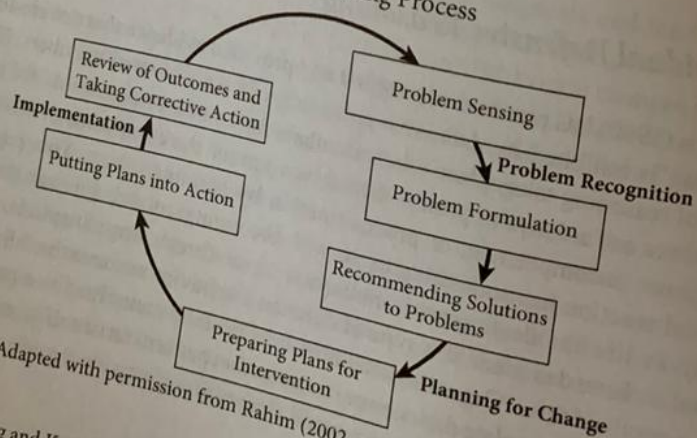
Organizational Defensive Routines

Organizational defensive routines consist of procedures, policies, practices, and actions that prevent employees from having to experience embarrassment or threat. Also these routines prevent them from examining the nature and causes of that embarrassment or threat. Organizational defensive routines make it highly likely that individuals, groups, intergroups, and organizations will not detect and correct errors that are embarrassing and threatening. It is not possible to design an effective learning organization unless the problems of defensive reactions and routines are recognized and confronted.

Problem Solving

Individual defensive reasoning and organizational defensive routines impede members of an organization to engage in problem solving process effectively. Creative problem solving involves the processes of problem recognition, solving problems, and implementation (see Figure 12-1):

Figure 12-1
Problem-Solving Process



Source: Adapted with permission from Rahim (2002, p. 214)

& Conine, 2005). Studies suggest that organizational learning also leads to greater innovation, internal efficiency, project performance, and organizational competitiveness (Osterloh & Frey, 2000; Wang Cheung, & Fan, 2009).

Implications for Management

With the publication of *The Fifth Discipline* (Senge, 1990) the term *organizational learning* became a permanent part of business lexicon and has continued to draw significant interest from scholars of organizational studies ever since. Learning organizations essentially need appropriate leadership to foster a culture that promotes learning, design a flat and flexible organizational structure; and select top management that fully supports and models learning. Collaborative network—as opposed to rigid and hierarchical organizational structures—allow firms to more effectively adapt to their environment through efficient knowledge acquisition and dissemination (Peters, Johnston, Pressey, & Kendrick, 2010).

Leadership

Senge (1990) maintains that a different set of leadership roles will be needed with more emphasis on leaders as teachers, stewards, and designers. These leaders, “articulate a clear and challenging vision for their firm based on their insights into key industry trends that can be the catalyst for redefining the foundation of competition. ... They focus on developing the people around them, motivating them to want to learn and take greater responsibility. ... they lead in ‘unlearning’—the conscious effort to challenge traditional assumptions about the company and its environment” (Slater, 1995, p. 33). General Electric’s former CEO Jack Welch and Chrysler’s former CEO Lee Iacocca fit this description of leadership.

To some extent this type of leadership fits Bass’s (1985) description of transformational leadership that has three distinct factors: charisma, intellectual stimulation, and individualized consideration. Transformational leaders encourage their subordinates to engage in critical and innovative thinking that are needed for problem solving. These leaders, sometimes referred to as charismatic leaders, use their personal power to inspire employees to new ways of thinking and problem solving.

may be put into action for a variety of reasons. This results in Type IV error: the probability of not implementing a solution properly. Mitroff's (1998) excellent book, *Smart Thinking for Crazy Times*, has provided detailed guidelines for avoiding Type III Error to solve the right problem. These are summarized as follows:

1. **Select the right stakeholders.** Managers often assume that stakeholders share their opinion or try to select stakeholders who share the same opinion. To avoid Type III error, Mitroff suggests that managers need stakeholders who challenge their views.
2. **Expand your options.** To avoid Type III error, managers should look at problems from more than one perspective: *scientific/technical*, *interpersonal/social*, *existential*, and *systemic*. An individual or group can determine whether a Type III error is committed "by comparing two very different formulations of a problem. A single formulation of a problem is a virtual prescription for disaster" (Mitroff, 1998, p. 61).
3. **Phrase problems correctly.** Phrasing a problem incorrectly may lead to Type III error. The effectiveness of the formulation of a problem depends to a great extent on the language one uses.
4. **Extend the boundaries of problems.** Managers should enlarge the boundary or scope of a problem so that it is inclusive enough. In other words, "never draw the boundaries of an important problem too narrowly; broaden the scope of every important problem up to and just beyond your comfort zone" (Mitroff, 1998, p. 29).
5. **Think systemically.** Managers should not focus on a part of the problem or ignore connection between parts. Failure to think and act systemically can lead to Type III error.

Effectiveness of Organizational Learning

Organizational learning needs to be well understood and managed, as it influences organizational outcomes. Organizational learning helps firms better develop their competence and resources that contribute to better performance and satisfaction and commitment of members. Spicer and Sadler-Smith (2006) suggest that organizational learning has a positive impact on financial, as well as non-financial performance. Organizations that formally promote learning seem to enjoy higher profitability and increased employee job satisfaction (Rowden

Conflict and tension will go up as more people challenge the old ways of thinking and doing things. As result, the problems are surfaced (problem recognition), which leads to recommendations for change in the process and structure (solving problems), and implementation of recommendations.

Organizational Culture

Conflict management to support organizational learning and long-term effectiveness would require cultures which support experimentation, risk taking, openness, diverse viewpoints, continuous questioning and inquiry, and sharing of information and knowledge. This implies that employees would be encouraged to take responsibility for their errors and not blame others for their mistakes or incompetence.

Such a culture would encourage substantive or task-related conflict and discourages affective or emotional conflict. For example, Honda Corporation encourages its employees to explicitly surface and handle conflict in a constructive way. Honda holds sessions in which employees can openly (but politely) question supervisors and challenge the status quo. "This is not an empty ritual but a vital force in keeping Honda on its toes. It sustains a restless, self-questioning atmosphere that one expects to see in new ventures—yet Honda is into its fourth generation of management. Its founders retired in 1970" (Pascale, 1990, p. 26).

Effective programs require an incentive system that encourages risk taking. An organization may have to reward failures; otherwise organizational members will learn to do what is safe and avoid risk-taking behaviors. B. F. Skinner's operant conditioning, which refers to voluntary learning of behavior through positive reinforcement, is particularly appropriate here. This was acknowledged by Schein (1993): "This is the kind of learning symbolized by the use of the carrot instead of the stick, the creation of incentives to do the right thing, and the immediate rewarding of correct behavior. In this model, errors and wrong behavior are not punished but are ignored so that the learner remains focused on improving and refining correct behavior" (p. 86). Managers need to know how to use reinforcements to elicit conflict management behaviors which are not only associated with effective performance and creativity, but also with risk taking for improving long-term performance.

13. Knowledge Management

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Knowledge management entails the exploration and exploitation of organizational knowledge. Knowledge is treated as one of the strategic resources for generating market value and economic rent for products and services of an organization. Producing a good or rendering a service typically requires the application of many different types of knowledge. Knowledge management allows organizational members to create, acquire, transfer, store, and use their knowledge individually and in group so as to improve organizational performance. The successful implementation of knowledge management is essential for improving the sustainable competitive advantage of an organization.

management. Several other scholars contend that that information management plays a role in providing fresh insights into the development of knowledge management discourse. It is true that knowledge management has borrowed terminologies and technologies from information management discipline. As a result, there is a debate among academics and researchers to resolve whether knowledge management and information management are the two distinct disciplines or are the same.

Similarly, there are scholars who believe that knowledge management and organizational learning can be used synonymously as they are closely related. There is strong logic behind linking knowledge management with organizational learning. In this regard, Rahim's (2002) definition of organizational learning supports this claim. According to him, organizational learning is associated with knowledge acquisition, knowledge distribution, information interpretation, and organizational memorization (i.e., preserving information for future access and use). However, there are scholars who treat the two fields as distinct subjects. Knowledge management is about the creation, distribution, and application of knowledge, whereas organizational learning is more concerned with the processes of collective learning.

Knowledge Hierarchy

Philosophers like Plato defined knowledge as "justified true belief," which is widely cited in knowledge management literature. Knowledge is a catalyst for purposeful action of an individual as it increases his (her) capacity to take effective decisions. Although the terms data, information, and knowledge can be used with a similar meaning, knowledge differs from information and data. Davenport and Prusak (1998) provide a comprehensive discussion of the distinctions between data, information, and knowledge, suggesting that data are simply facts, which then become information by the addition of meaning, while knowledge originates in peoples' heads, drawing on information which is transformed and enriched by personal experience.

It is helpful to view data, information, and knowledge as separate constructs. However, they are also linked sequentially. For example, the list of stock prices is data; information is the meaningful data that is extracted for various stocks' price; and finally knowledge is the processed information, taking into account various information, such as stock price, company profile, industry information, portfolio risk, and availability of funds, that helps one to

Nature of Knowledge Management

Definition

Knowledge management is an integrated approach that identifies, captures, stores, retrieves, and transfers knowledge so as to enhance strategic advantage of an organization over its competitors. There is a confusion over the meaning of knowledge management, which has somewhat restricted its theoretical development. Scholars have even found difficulty to distinguish it from other related concepts, such as knowledge engineering or information management. Difficulty in defining the concept actually arises from the broad domain of the field, which covers different research areas and levels of analysis. Several attempts are made to offer a comprehensive definition with an aim to integrate various dimensions that knowledge management involves. In the broadest sense, the term *knowledge management* refers to the effective and efficient collection, distribution, utilization and retention of knowledge with an aim to ensure an organization's sustainable competitive advantage.

Roots of Knowledge Management

Karl Wiig coined the 'Knowledge Management' concept for the first time in 1986 at a conference organized by the International Labour Organization (ILO) held in Switzerland. Since then, knowledge management has matured from fad to enduring management subject with its own dedicated consulting companies, journals and management gurus. However, information management is thought to be the forerunner of knowledge management.

The fact that knowledge management has received increased attention over the last two decades among academics and practitioners from across a broad range of subjects. Broadly speaking, academic disciplines such as organizational learning, strategic management, information systems, human resource management and economics, to name a few, help develop the understanding of knowledge management field.

In this regard, there are few scholars who claim that that knowledge management appears to represent an extension of information systems. Others argue that there is little to distinguish knowledge management from information management. They think it is little more than a repackaged form of information

Knowledge Creation

Knowledge creation is widely regarded as a strategic issue of knowledge management. A growing body of literature indicates that knowledge creation is crucial because at the cutting edge of innovation knowledge generators provide the engine for change in process and products of an organization. The fact that knowledge creation embraces a continual dialogue between explicit (that is, codifiable and transmitted in a formal document) and tacit (that is, personal, context-specific, difficult to formalize and articulate) knowledge through the interaction of internal and external sources, which eventually boosts the creation of new ideas and knowledge.

Knowledge Transfer

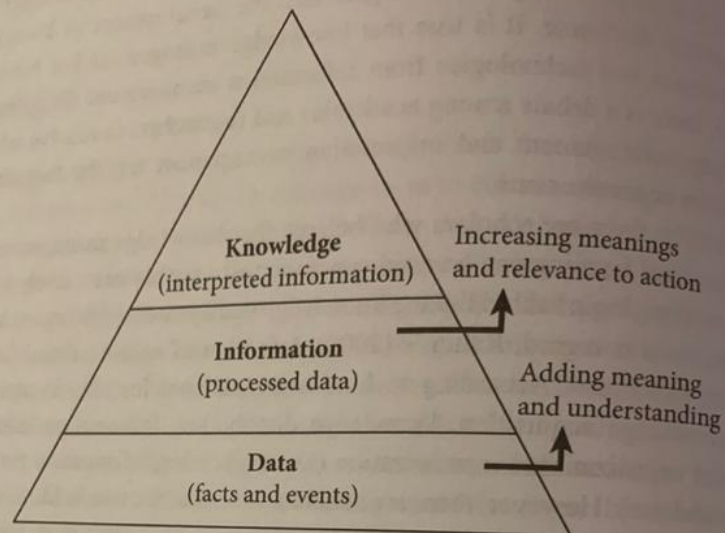
Knowledge transfer is identified as a major focus area for knowledge management. Knowledge transfer refers to the process of exchanging knowledge among the members of an organization. The terms 'knowledge transfer', 'knowledge share', and 'knowledge exchange' are interchangeably used. Knowledge sharing is basically seen as the process by which an organization makes relevant knowledge available to other members. Most specifically, knowledge transfer is an act of transmission of knowledge among actors using a communication channel so that they can make decisions and take purposeful actions to do their job.

Knowledge transfer process can be discussed in terms of the information system (an operational level of analysis) or the interpretative system (a conceptual level of analysis). While the information system views knowledge transfer as a communication process with information-processing activities in which knowledge is exchanged by a medium, the interpretative system treats knowledge transfer as the concept of the learning organization.

Knowledge Storage and Retrieval

Knowledge storage and retrieval is one of the key elements of knowledge management. The preservation of knowledge (which is popularly referred to as "organizational memory") is a major building block in the implementation of knowledge management as it helps to reuse the existing knowledge and create new knowledge. The terms 'organizational memory' and 'knowledge storage' are used synonymously. Knowledge storage and retrieval can be defined as a

Figure 13-1
Knowledge Hierarchy



make decisions regarding stock investments. Hence, data are simply events or fact which are interpreted to form information. While information is data with meaning which is possessed by simple data, and knowledge is structured information which is the outcome the interpretation of information. The relationship between data, information, and knowledge as a hierarchy is shown in Figure 13-1. The three constructs can be viewed as a hierarchy of increasing meanings, depth and relevance to action.

Knowledge Management Process

Knowledge management deals with the creation, transfer, use, and storage of organizational knowledge. Knowledge management process involves various activities, such as the creation, interpretation, dissemination, application, preservation, and refinement of knowledge. It is not surprising that there are diverse views of what the components of knowledge management process are. The idea of knowledge management process is difficult to describe. In the broader sense, there are differences both in the understanding of the term 'knowledge management process' and its elements. Scholars have discussed knowledge management process probably in hundreds of ways in the relevant literature. Drawing on the extant literature, we categorize knowledge management processes into four components.

system that preserves and stores perceptions and experiences beyond the moment when they occur, so that knowledge can be retrieved and used at a later time (Probst, Raub, & Romhardt, 2000).

Viewing knowledge as a crucial resource, organizations recognize the value of knowledge storage not only for present use but also for future use. If knowledge is not kept in a storage bin, that may be simply forgotten, represents a waste of organizational resources. At the time of need, we have to reinvent the wheel. If such transferred knowledge is stored and retained in a repository so that other members of the organization could get access to retrieve it for future use, it is more useful. But all knowledge of the organization should not be preserved and retained in a knowledge repository. If irrelevant and unused knowledge is stored then knowledge storage will be filled with garbage. So knowledge, which is perceived as current, relevant, and correct, should be stored into and should also be retrievable from knowledge repositories for use.

Knowledge Application. Knowledge application at individual and collective levels within an organization is considered to be a crucial task in modern organizations. The task of knowledge management does not end with the exploration of knowledge from inside and outside of an organization. Additionally, it should ensure that right knowledge is used in the right place at the right time. It is to be noted that the knowledge exploration function will be productive if it is used in an organization over and over again. In fact, knowledge that is in the head of a person or in a knowledge repository has limited value, while the value of knowledge can increase exponentially when it is used and reused, and quickly integrated into business practices and processes.

If transferred knowledge or stored knowledge are not utilised properly, it is a loss for the organization. Knowledge that is created through interaction, transferred among the organizational members through an appropriate mechanism, and stored in a knowledge repository is likely to be more useful when it is applied. In this regard, huge investment is needed to spend by an organization at the time of creation, transfer, and storage of knowledge. Hence, it is important to make sure that right knowledge is used in the right place at the right time, immediately after its exploration from the right source.

An Integrated Framework for Knowledge Management

Having discussed various facets of knowledge management, a framework is suggested that supports the connectivity of knowledge storage and knowledge

Knowledge management is assuming a greater role in all types of organizations (e.g., private firm, educational institution, public enterprise, military establishment, hospitals, government and non-government organization). Most specifically, leading multinational enterprises (MNEs) around the world are involved in knowledge management practice since 1990s. Most successful and innovation companies today are considered knowledge based organizations. Companies such as Accenture, Buckman Laboratories, Cable and Wireless, DaimlerChrysler, Dow Chemical, Earnest & Young, Ford, Hewlett Packard, IBM, Skandia, Siemens, Unilever, and Xerox, just to name a few, have implemented knowledge management initiatives. ShareNet, Siemens' Information and Communication Networks division is a global knowledge sharing Intranet that serves as an instrument to transfer and leverage existing knowledge so as to create new knowledge in a division based in one part of the world and make available for reuse by its employees elsewhere.

The Fortune 500 companies spent \$12 billion by duplicating knowledge work. Thousands of companies across the world have incorporated managing knowledge as a part of their business function. As a result, many organizations have established a knowledge management department and created a position called a Chief Knowledge Officer (CKO), who will be responsible for managing and maintaining knowledge. Eighty percent of Fortune 500 companies currently have knowledge management staff, one fourth of which have knowledge administrator-equivalent. Such an officer may engage in developing a knowledge management strategy, and managing knowledge content for the company (Jasimuddin, Connell, & Klein, 2012).

The implementation of knowledge management initiative is not an easy task. Rather its implementation is generally a formidable challenge. There are a variety of reasons for its failure. It is essentially needed to identify the problems faced. Its implementation can be very expensive, time consuming and resource intensive. Sometimes top management is not ready to assemble resources. The resistance of employees to any change in an organization is a common phenomenon. This might be the case that could limit the impact of knowledge management in practice.

Implications for Management

Knowledge management has turned into a crucial agenda for organizations around the world. The main focus of knowledge management practice has been

administration within the KM process. The framework reflects such integration. There are five interrelated aspects as integral parts of a conceptual framework. Accordingly, the KM process is explained in a framework which is provided to identify and prescribe these key components of the process. These five main components of the proposed framework are as follows and are explained in turn:

- the actors engaged in the transfer of organizational knowledge;
- the knowledge that is exchanged between the actors;
- the mechanisms (*hybrid approach*) by which the knowledge transfer is carried out;
- the repositories where knowledge is stored; and
- the knowledge administrator-equivalent who is responsible to manage and maintain knowledge.

Outcomes of Knowledge Management

In the knowledge based society, the success of an organization depends on how well knowledge is exploited. Since knowledge is the heart of a modern, knowledge-driven economy, knowledge management has become critical to organizational survival and growth. The benefits as derived from knowledge management initiatives are many. Knowledge management helps to improve the exploitation of the organizational knowledge and to protect it from imitation by competitors. Furthermore, KPMG (1999) describes knowledge management goals and provides a list of benefits derived from its application, which are mentioned below.

- supporting innovation, the generation of new ideas and the exploitation of the organization's thinking power;
- capturing insight and experience to make them available when, where and by whom required;
- making it easy to find and reuse sources of knowhow and expertise, whether they are recorded in a physical form or held in someone's mind;
- fostering collaboration and knowledge sharing; continual learning and improvement;
- improving the quality of decision making and other intelligent tasks;
- understanding the value and contribution of intellectual assets and increasing their worth, effectiveness and exploitation.

Exercise

Development of Knowledge Management Framework

You are working for a company. The company does not have any knowledge management practice. Moreover, top management has no idea about KM. You have been asked by the top management to develop a framework for KM. How will you advise and develop KM framework to put into practice.

Suggestions for Further Reading

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- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Boston: Harvard Business School Press.
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on how an organization discovers and deploys its knowledge. Both academics and practitioners recognize that knowledge management is an important functional area for an organization. Senior management support is crucial to launch a knowledge management initiative in which leaders have to share a vision on knowledge management, and provide such a program with ongoing support. Most specifically, top management should take the following measures for the successful implementation of knowledge management.

1. Assembling of people, time and money to put knowledge management into practice;
2. Building of a knowledge sharing culture in the organization;
3. Creating a knowledge management infrastructure;
4. Establishing a full-fledged knowledge management department which will be headed by the Chief Knowledge Officer (CKO). Hence the CKO needs to be created so that he (she) dedicatedly manage organizational knowledge.
5. Knowledge management has a bright future. It will expand as a scholarly discipline. Knowledge management is far from being a narrow management initiative, or 'fad'. Knowledge management is now a well-established subject. Although knowledge management is developed first by the professional services firms, it has quickly been practiced by manufacturing, financial services, government and non-government, military, and intelligence organizations. In this regard, academics and researchers are making an effort to foster knowledge management in management education with an aim to sustain its popularity. A notable thrust in recent curriculum development within higher education sector focuses on designing modules and degree schemes on this subject to offer knowledge management education.

Questions for Students

1. Does knowledge differ from data and information?
2. How does a thorough understanding of knowledge management processes can help a manager to implement knowledge management initiative?
3. Do you think senior management has role to ensure the successful implementation of knowledge management? Justify your argument.
4. Why does a company need to establish its knowledge management department headed by a Chief Knowledge Officer?

Nature of Family Business

Definition

Three criteria are generally present in family firms: *ownership control*, *strategic direction*, and the *intention to continue family ownership* of the enterprise. Ownership control refers to the rights and responsibilities held by family members as part of voting ownership and governance of the firm. Strategic direction reflects the influence which family members set for the venture through their involvement. The intention to sustain family influence and control into future generations deepens the owner's relationship with his employees, customers, and community. These elements combine to define a family business as a synthesis of the following elements (Poza, 2010, p. 6):

- Ownership control (of at least 15 percent) by two or more members of a family or group of families.
- Strategic direction by family members on the management of the firm. Direction may be expressed through active management or by serving as a board member or advisor.
- Concern for family relationships.
- Intention to continue the business across multiple generations.

In addition, stakeholders (i.e., family, owners, management) often hold multiple and overlapping roles. This overlap is unique to family business.

Family businesses come in many forms: sole proprietorships, partnerships, limited liability companies, and holding companies in addition to publicly-traded and family-controlled businesses. Different terms, such as, family enterprise, family venture, family-controlled, or family-owned are used to refer to family business. These terms are used interchangeably in this chapter.

Systems View of Business

In non-family business, two roles predominate: owners and management. In these firms, individuals are rarely both majority owners and managers (employees) at the same time. There are three primary roles in family enterprises: family, owners, and management. Overlaps between roles are common. *Systems*

18. Family Business

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Family businesses play an important role in the global economy. Worldwide, they account for 80–98 percent of all businesses and are a leading source of start-up capital. In the United States, family-owned or -controlled firms account for approximately 90 percent of all incorporated businesses, including one-third of all Fortune 500 companies. The words “family business” often conjures an image of a neighborhood grocery or other small enterprise, and many family-owned businesses fit this description. Family businesses can also be found among the largest corporations in the United States. Their names may be familiar to you—Wal-Mart, Levi Strauss, L.L. Bean, Hallmark, Nordstrom, Smucker’s, and The Wall Street Journal are all family-owned or -controlled businesses. Why should a manager care about family business? Managers need to understand family-owned businesses because they are likely to work with members of a family business as customers, suppliers, employees or employers. Family-controlled enterprises operate similarly to their non-family counterparts, but with a few differences. Understanding these differences will help managers achieve their goals.

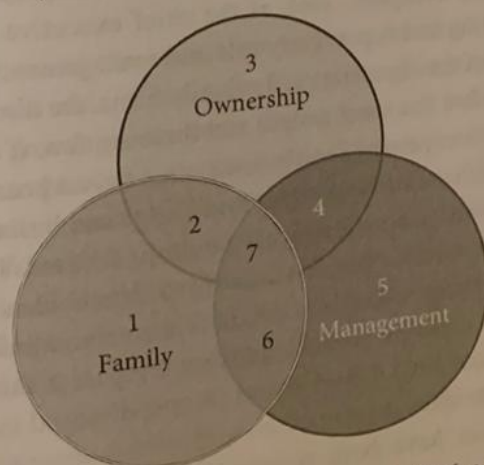
theory is a tool for understanding overlapping roles (Bertalanffy, 1972) and here it is applied here to family business (Taguiri & Davis, 1996).

Example of the Systems Model. The McIlhenny family, manufacturers of TABASCO Pepper Sauce, was founded in 1868. Today, revenues exceed \$250 million and the seventh family member is at the company's helm. Ownership of the company has grown from founder Edmund McIlhenny through his two sons to approximately 145 shareholders (stock was inherited or given by a living family member). The family limits the number of family members in senior management at one time as part of an effort to keep management open to new ideas.

In the Systems Theory model (Figure 18-1), McIlhenny family members occupy the circle marked 1, owners who are not members of the family (if any) are in the circle marked 3, and the employees of the McIlhenny Company are represented in the circle marked 5. Each circle represents clear and independent roles. When the circles overlap, there is also an overlap of roles. Family members, who are also owners (shareholders), are represented in overlap 2. Shareholders, who are also employees, but not members of the family, occupy area 4. Family members who work in the business, who are not owners, are shown in overlap 6. Finally, overlap 7 identifies family members who are owners and employees, like the family member serving as CEO.

Figure 18-1

The Systems Theory Model of Family Business



Source. Adapted from Taguiri and Davis (1996, p. 201)

prestige for being associated with the company, jobs for family, philanthropy, and job security (Zellweger, Nason, Nordqvist, & Brush, 2011). Like management-controlled firms, they also seek to be profitable.

Another view of the difference between management-controlled firms and family-controlled firms suggests that the former seeks to maximize wealth and the latter seeks to maximize value, with wealth being only one aspect of the enterprise's value (Stockmans, Lybaert, & Voordeckers, 2010).

Resource Based View. Another way to look at differences between family and non-family firms is the Resource Based View (RBV), a management tool used to determine the strategic resources and capabilities that are available to a company. The central idea of the RBV is that the resources of an organization drives its success and those resources should be valuable, rare, not imitable, and non-substitutable (Wernerfelt, 1984). For example, the unique resources of Apple Computer, a public, management-controlled consumer electronics company, include:

- Exceptional brand loyalty, which creates a market when new products are released;
- products feature a user-friendly and unique visual vocabulary;
- channel control through Apple retail stores and on-line media, product and application stores;
- multiple patents plus commitment to strong R&D; and
- reputation for innovation and status as a "best place to work" make it a desirable employer and keeps employee turnover low.

In family businesses, the interaction between the family and the business is one source of the unique resource. Five Guys Burgers and Fries, one of America's fastest growing restaurants, led by Jerry and Janie Murrell and their four sons is an example. Each member of the Murrell family understands multiple aspects of their business and is responsible for a specific management role from training to franchising to baking hamburger buns. This cross-functional knowledge enables a family member to pitch in to when extra help is needed (Weise, 2011). The family's rapid success illustrates five resources that form the RBV and the advantages promoted by each (Poza, 2010).

- Overlapping responsibilities of owners and managers which support quick response time and speed to market.

Differences between Family and Non-Family Businesses

Family and non-family businesses are not necessarily different from one-another in their structure or operation (Stewart & Hitt, 2012). Differences, if they exist, can usually be seen in firm ownership, membership of the Board of Directors, and in the company's goals.

Ownership. In publicly traded businesses, ownership occurs when an individual purchases stock in the company through a market, such as the New York Stock Exchange. Share price is determined by the marketplace. Most family firms are privately owned and in these firms, the purchase or sale of company shares are handled privately. In addition, the company by-laws may limit who is eligible to own shares. For example, the by-laws might state that only family members working in the business or only family members related by blood (i.e., not an in-law) can own shares. Without an open market, financial professionals are often required to determine the value of the shares.

Board of Directors. There are two kinds of directors. *Inside director* is the term used for individuals who have significant relationships with the company (i.e., officer or owner) and are board members. *Outside directors* are board members who do not have significant relationships with the company other than serving on the board.

In large public companies, the board is composed primarily of outside directors who are elected by the stockholders. Inside directors tend to be senior level officers of the company, such as the chief executive officer. The board has a strategy-setting and supervisory role and management is delegated to the professional staff of the organization. In family firms, the directors and majority shareholders are often the same people and there are few, if any, outside directors. To gain outside expertise, family firms often have a board of advisors who provide objective advice based on their knowledge and business experience.

Goals. Management-controlled firms are profit-focused. The firm's primary goal is to generate economic benefits or profit to shareholders. Typically, senior management sets strategic direction which is then communicated to, and carried out by, the firm's employees. Employees are paid a salary. If employees own shares in the company, they will also receive dividend income and benefit from increases in the share price.

Family businesses have both economic and non-economic goals. Non-economic goals can include the survival and independence of the firm, social

- Concentrated ownership structure which promotes higher productivity and long-term commitment to investments in personnel and innovation.
- Focus on customers and market niches which result in higher return on investment.
- The family's desire to protect its name and reputation often promotes high product and service quality. This, in turn, may lead to higher return on investment produced by high-quality leaders.
- Family unity, ownership commitment, and interaction between the family business system (family, ownership, management) support lower administrative costs, knowledge transfer from generation to generation, and the ability to act quickly in changing markets.

Features of Family-Owned Enterprises

Family-owned and -controlled firms introduce a unique dynamic, the family, to the executive suite. Family presence can have both a positive and negative impact on business and it is useful for managers to be aware of these dynamics as well as the benefits, from patient capital (i.e., stakeholder capital invested for the long term) to quick response time, which are common to family firms

Family Impact. *Familiness* is a term representing the unique package of resources and capabilities arising out of family involvement in their business. The resources are assets that are available and may include knowledge and/or skills in addition to social, financial, and physical capital. Capability refers to the ways in which owners and managers are able to leverage those resources. In business families, the business represents a significant part of the family's context and, in turn, the family represents a big part of the business's context. Depending on how the resources and assets are used, familiness can drive, constrain or have a neutral effect on firm performance (Frank, Lueger, Nose, & Suchy, 2010).

Family Power and Influence. While the misuse of power and influence is not unique to family firms, two types of behavior are unique to family firms. In both instances, family members in ownership and/or management positions take actions to benefit family members at the expense of the company. The first, *nepotism*, occurs when family members are hired based on their blood ties and not as a result of managerial skill or merit. The second behavior, *altruism*, is defined as having concern for the welfare of others. It can have a positive impact

With these dimensions in mind it is easy to understand why trust is important to business success and how it facilitates cooperation, reduces harmful conflict, and supports group effectiveness (Rousseau, Sitkin, Burt, & Camerer, 1998, p. 395).

Trust is also a primary attribute of leadership. To maintain and promote trust, managers must be consistently open and honest in their relationships and transactions with employees and customers. Managers are role models who must demonstrate confidence in the integrity and ability of the people in the organization. Conflict is inevitable but when trust is present there is a foundation for resolution.

Communication. Family business functioning can be enhanced or weakened by the type and frequency of communication between the business' stakeholders. Stakeholders who are actively involved in a business are likely to have more up-to-date and detailed knowledge about the venture simply because of their role in it. A primary function of a communication strategy is to communicate with family members not involved in daily business affairs.

A successful communication promotes open sharing of knowledge, beliefs, values and goals related to the organization through written documents and family meetings. The family's "rules of the road" can be communicated through documents such as a family constitution and family code of conduct. A wide range of family members should be involved in developing these documents so they reflect the family's shared commitment to specific norms and values. Firm performance and stakeholder satisfaction are enhanced when family documents such as the constitution are in alignment with the company's objectives.

Regularly scheduled meetings provide important opportunities for family members to discuss important issues. These meetings can range from annual retreats, which balance business discussion with fun activities designed to build relationships and to introduce younger family members to the firm, to quarterly family council meetings which provide opportunities for family shareholders to establish their goals and define their role with the business. These gatherings provide a safe place to resolve conflict and are also a forum for educating the next generation of family shareholders. Taken together, these communication tools support successful financial performance and the development of trust (Berent-Braun, & Uhlaner, 2010).

Succession Planning. Succession plays a critical role in family businesses. The company's success in the marketplace, family harmony, and financial results are all dependent on successful transition from one leader to the next. The average tenure of a family business CEO is more than 20 years so the transition

on a company or can become a problem when an owner-manager allows family members to break rules that non-family employees are expected to follow. An owner-manager's failure to reprimand children-employees for laziness or other improper behavior is one example. Corporate reporting structures which minimize the time that employees spend reporting to immediate relatives can also help avoid this kind of altruism, as well as provide the family employee with objective performance evaluations and critical advice.

Outcomes of Family Business

Successful family firms create jobs, wealth, and help to fund new ventures. These firms are able to take advantage of the business' traditional focus on performance and the family-centered values of long-term loyalty and nurturance. Together, these elements promote the many of the behaviors discussed as part of the resource based view (RBV), including quick decision making and speed to market. Family firms play an important role in the new venture creation process in two ways: by mobilizing both financial and non-financial resources for new start-up ventures and by spinning new businesses off of existing family enterprises. Family provides a larger percentage of funding to start-ups than venture capital firms, especially critical in the early venture stages before a venture has gained credibility from other potential funders (Matthews, Hechavarria & Schenkel, 2010).

Implications for Management

What behaviors are most crucial to the success of family ventures? Three areas are critical to family business success: *trust*, *communication* and *planning*. While these areas are not unique to family enterprises, they are especially important to them. Understanding each of these elements can help managers work more effectively with family businesses no matter whether the manager's relationship is that of employee, customer, supplier or owner.

Trust. Trust is a psychological state that occurs when one is willing to uphold their commitments and relies on others to do the same. The five dimensions that underlie trust are integrity, competence, consistency, loyalty and openness.

President, and Chair of the Family Council are holding a planning session. As the meeting begins, it becomes apparent that the three individuals are not aligned in their thinking about the company's strategy for the future. At issue is whether the company should retain cash to buy out its soon-to-be-retiring CEO or invest in computer technology to improve business operations and customer relationships or do something else? Should the company consider debt financing so that it can do both? They must reach some agreement so they can prepare a proposal for the meeting.

Roles. The exercise has three character roles and one observer role. Each character role has their own view of what is in the company's best interest. The characters' perspectives may not align with one another at first. However, the characters share the family values and traditions that are the foundation of the business and each of them is committed to its continuing success. During the role play, the shared values and commitment that each character has to the success of the company prompts them to move toward a position that is aligned with the positions of others.

Chair of Family Council. The chairperson represents thirty family owners who do not work for ACC. The Council facilitates communication between management and non-employee owners. The Chairperson is tasked with representing the Family Council's perspective to management. Council members hold 48% of ACC stock. Approximately half of the council members rely on their dividend checks to fund their lifestyle and are opposed to taking on debt or non-family partners.

Chief Executive Officer. The CEO has held this position for twelve years and is planning to retire within two years. With retirement just around the corner, the CEO wants to be sure that the company has sufficient reserves to buy his shares, and thus fund his retirement. The CEO has fought every effort to upgrade the company's computer systems. Under his leadership the company has retired all its debt and he has taken a neutral position on future corporate borrowing.

President. The President has worked in the company for ten years, five years in her current role. She has been very successful and both the Board and non-employee owners have agreed that she will serve as President and CEO when the current CEO retires. The President is concerned that American Chemsol is becoming less efficient and risks losing market share to the competition. The President wants to upgrade the company's enterprise software to help streamline and improve operations. She sees a lot of potential for the company and

from one leader to the next will have a significant impact on all stakeholders. In contrast, CEOs of publicly-traded non-family companies serve in that role for an average of six years.

Management succession is an important issue for all types of businesses but family business face additional challenges which may include a restricted pool of applicants, if the family is limiting potential successors to family members, as well as potentially sensitive relationships among incumbent leaders, potential successors, and family stakeholders.

Given these challenges, a best practice in succession is to view it as a dynamic process which extends over time and requires thoughtful planning rather than as a single event. Successful succession results from family employment policies which offer employment only to qualified and experienced personnel and family standing brings no special treatment. A second best practice for succession involves a committee of outside advisors in addition to family members playing a role in identifying the successor. For example, a steel manufacturer hired a search firm to evaluate all its executives and selected the most promising for membership on the executive committee. As part of the evaluations, some family and non-family employees were told that they did not have a future at the firm. Several years later, the new CEO was selected from among the members of the executive committee.

Questions for Students

1. How do family-owned or -controlled firms differ from management-controlled firms?
2. What is the resource based view and how does it differ between family and non-family business?
3. Would you want to work for a family business? Why or why not?

Exercise

American Chemsol Corporation (ACC), a successful chemicals and solvents manufacturer now in its third generation of family ownership, is preparing for its annual stockholder's meeting which will be held in four months. The CEO,

Case: Fasteners for Retail (FFr)

In December, 1999, Gerry Conway faced the toughest decision of his 37 years as an entrepreneur. Something had to be done about the long-term future of Fasteners for Retail (FFr), the business he had founded in 1962. The company had been extremely successful, with sales doubling every 5 years since the 1980s, and the market for the company's point-of-purchase display products was still growing.

With no dominant players in FFr's niche, Conway saw nothing but opportunity ahead. Still, he was concerned. The company had been debt-free from the start, but feeding its continuing growth would require an infusion of cash. At 69, Conway felt that this was more risky than he wanted to assume. An even more pressing concern for Conway is the recent announcement by his son, Paul, that he does not want to become FFr's next president and instead planned to leave the company. None of his other children were interested in becoming part of the leadership team. He mused:

I am a good entrepreneur but I don't like the managerial part of the business. I have a good manager here in Don Kimmel (the non-family company president). Until a year ago I was ambivalent about the future, but now I realize that I am ready to make a transition.

Business History

Gerry Conway was the classic American entrepreneur—visionary, charismatic, driven, impatient, and independent. He started a career in sales as a printing broker and, after a few years, hit upon the idea of adding display and merchandising accessories as part of the business. The advantage to selling accessories was that he could sell the same product to many companies, simultaneously, which was not possible in display printing.

Continued Growth at FFr

Within a decade, Conway began to focus exclusively on display accessories and fasteners within the point-of-purchase (POP) industry. POP products include

is willing to take on debt, especially now that interest rates are near historical lows.

Observer. The Observer is tasked with providing objective and impartial feedback. The Observer will track the role play, making note of each character's position and shifts throughout the role play, as described in the following procedure section. The Observer should also note areas of agreement and disagreement in the discussion. Consider how the systems theory model can help you understand the dynamics of the conversation.

Tips on Role Playing

- Be yourself as much as you can.
- Imagine yourself in your character's life. Consider your character's history with the company and their future plans.

Procedure. Each student will select a role and become familiar with it. Once the role play begins, the observer will track the time informing the group at five minute intervals. The role play lasts for ten to fifteen minutes. The three characters will first share their perspective on the company's strategy with regard to buying out the CEO and investing in software. The characters will then acknowledge their shared commitment to, and interest in, the success of ACC. Acting on this shared interest, the characters will propose steps which resolve their concerns relating to buying out the CEO, investing in technology and taking on debt. If time permits, they should draft the proposal to be presented at the Board meeting. The role play should be interactive and students are encouraged to ask questions of one another to learn more the various perspectives.

Feedback. The order of feedback begins with the participants and ends with the observer. The characters should address the following questions:

1. From your character's perspective, what is your reaction to the conversation with your colleagues? How was it different in the beginning, middle, and end of the role play?
2. Based on the conversation, what do you think the family's shared values are?

the signs, displays, and devices, and structures that are used to merchandise products in retail stores. Conway listened to his customers and found that he was able to design new products to meet their needs. In a niche known for commodity products, FFr had almost 75 patents and patents pending. FFr's unique products and superior service also differentiated it from the competition.

FFr continued to grow rapidly. In the 1990s, Conway began to further professionalize the staff and named Don Kimmel as president. Kimmel was the perfect foil to Conway's creativity and vision. He introduced internal systems which matched the creative design and sales energy which had propelled the company for years.

Family Involvement

The Conway family was involved with the firm from the start. Early in FFr's history, the Conway children earned extra money by putting adhesive on the backs of fasteners. But of the seven children, only three worked in the business as adults. Kevin, the eldest, worked at FFr for many years as a salesman until health problems prompted him to resign. The fourth son, Neil, worked in the warehouse. He was diagnosed with schizophrenia during his first year in college and the structure of part-time employment worked well for him and for the company. Paul, the youngest son, had planned to join FFr from an early age. He joined the firm after having a successful career with another company. Paul came up through the marketing department. When Don Kimmel joined the firm as president, Paul was asked to become his assistant. The timing of the offer was designed to allow Paul to learn the business from a different vantage point and to take part in long-range planning. But now, Paul plans to leave the company.

Initially, Gerry Conway and his wife, Marty, were the owners of FFr. As part of their estate plan, they created a trust for each of their children and transferred a substantial amount of the value of FFr to them so as to avoid estate taxes, but without relinquishing control of the company. According to the trust agreement, a number of years, children over age 30 took their shares outright while those who were not yet 30 remained in successor trusts.

23. Sustainability

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Sustainability—the ability to last for a long time—is a goal for most organizations. In the past, it referred to the economic health of a business. Successful organizations carry out their activities for many years, and the longer they do so, the more we believe they are indeed successful. In other words, the very ability to stick around for long time periods becomes a measure for the quality of products or services and the management of a business. *Sustainability* also refers to the ability of our planet, with its limited resources, to continue to support human activities. We have always valued sustainability even when we did not have a name for it. What contributes to it? This chapter discusses the meanings of sustainability, its dimensions, and the organizational strategies that promote it.

Succession Stories

Paul's Story. Paul admired his Dad and was happy to be working with him. Paul wanted to be perceived as contributing to the success of FFr and not working there just because he was SOB (son of boss). Initially, he saw his work with Don Kimmel as a potential launching pad for his new role at the company. Over time he became less interested in working at FFr. Paul came to believe that his Dad was able to manage the growing business because he grew with it, but he felt that he was less equipped than his Dad to manage what was now a large business.

Reflections from the Board of Advisors. Members of the advisory board felt that Paul could learn the job if he wanted to, and that having an experienced management team in place would give him time to learn. One member in particular recounted that Paul stated that he did not want to be in the position of making tough decisions. The member added that Paul may not have realized that he could do the job differently—in a more decentralized and collaborative way than his father.

Founder Gerry Conway's Dilemma

When Paul came to Gerry and said that he did not want to run the business, Gerry was disappointed but knew that Paul had not made this decision lightly. He wanted to support Paul and accept his decision. As Gerry Conway contemplated the future of FFr, his management team put the finishing touches on the company's new strategic plan. The plan made a strong and well-supported case for making a significant capital investment to develop fulfillment and to increase the product line through acquisition.

Conway intuitively knew that the time for the business to aggressively explore these growth opportunities had arrived. Funding the plan would take all the cash out of the business and would also require outside financing. Conway and his wife had given most of the non-voting shares of FFr to their children, but had retained all the voting stock. While the decision was his to make, it was a decision that would impact the entire family. A family meeting was scheduled for the following week. It was time for Conway to decide what action to take.

Two sustainability characteristics are shared by all contexts in which this term is used. The first is that we consider sustainability *desirable*. We would be hard-pressed to find anyone in the private or public sector claiming to pursue lack of sustainability. The second is that sustainability is linked with *time* by its definition. Since it means providing conditions for a system to last, it requires anticipating what the future may hold and preparing for it, and it is not a short-range outcome. Sustainability is achieved over the long haul, sometimes beyond the life span of those who promote it. Together, the positive connotation of sustainability and its link to time give rise to a paradox: The decision to achieve the much-desired sustainability is difficult to sustain!

The 1987 Brundtland Report issued by the United Nations World Commission on Environment and Development captured the meaning many attach to sustainability. It deemed development sustainable if it "meets the needs of the present without compromising the ability of future generations to meet their own need" (p. 1). This rather utilitarian definition reflects a broadly shared view of nature as having value insofar as it serves human purposes. It also reminds us that sustainability is about the long run.

Sustainability does not mean "staying the same." Rather, for socio-economic systems including business organizations, it is the ability to adapt or change practices, institutions, and rules to enhance our collective capacity to meet the challenges of continuing desired activities in time. It also means limiting future choices as little as possible.

Before proceeding, we should ask "sustainability of what?" As students of management, we may be inclined to focus on the sustainability of organizations. However, sustainability is sought for ecosystems, as well as social systems including businesses, communities, cities, regions, or the entire globe; it may refer to environmental, economic, and social assets and/or to relationships. For ecosystems, sustainability means retaining functionality and the ability to restore themselves despite continued extraction of some components or destabilizing shocks. A city or region is sustainable if it manages in the long run to provide the quality of life its residents seek, despite changes in the generation in which it is embedded and without undermining the future generation's ability to do the same.

Businesses enhance or undermine the sustainability of social-economic systems through their use of resources and waste production. A business is sustainable if over extended time periods it produces needed goods or services efficiently, providing value to those invested in it, and if it contributes to a business, sustainability of its broader contexts—from local to global. To sustain a business,

Nature of Sustainability

Definition

Sustainability is a broad term; applied to ever more contexts, it sounds so familiar that definition seems hardly necessary. Looking closer, however, we find that it has different meanings for different people. In general, *sustainability* is the *capacity of a system—whether ecological, social or economic—to function and serve its purposes in the long run*. Such long-term functional survival hinges on systems' ability to use wisely the resources upon which they depend. This means not exhausting such critical resources in the short run and also managing their flow and quality, so they continue to serve in the future. Therefore an organization's sustainable behavior has to be purposeful, targeted, and active, rather than a passive consequence of other processes.

Since all human activities are embedded in our shared natural environment, sustainability has come to refer especially to maintaining and improving the local and global natural ecosystems that provide vital resources. Ecosystems consist of living organisms and their habitats working together as systems with numerous interlinked components without which they get disrupted, sometimes irreversibly. We alter and even deplete these ecosystems through production and consumption of goods and services. In the past, the scale of ecosystems exceeded by far the scale of human activities. Therefore, the possibility of exhausting them was difficult to imagine. Nevertheless, since the dawn of history many people destroyed their host environments through unsustainable agricultural practices. Population growth, the industrial revolution, and advances in transportation and materials-processing technologies led to sharp increases in the demand for, and capacity to use, natural resources. In the last 150 years, global use of natural resources has accelerated. Renewable resources—such as vegetation that can grow back—have been exploited at rates exceeding their speed of regeneration. Economic globalization and new transportation, information, and communication technologies appeared for a while to increase our ability to secure natural resources, but the accompanying global interdependence of production and consumption systems is now becoming a limiting factor. It is no longer possible to keep any portion of the planet safe from consequences of unsustainable practices elsewhere. As we deplete the natural environment, we reduce our ability to sustain in the long run organizations that depend on it, such as businesses.

To take into account these three dimensions of sustainability, businesses need to be aware of the social and natural systems they affect, as well as of the resources necessary to nurture them. These resources are more available in affluent countries than in developing countries, which tend to be less able to afford sustainable practices, though they, too, need to preserve their natural environment. This explains partly why many industries apply different standards of operation in different countries and locate production facilities where dire poverty forces people to accept damage to ecosystems and to human health that would not be tolerated in other, more developed countries.

Environment components

Some of the key components of the environment in which businesses operate include water, soil, air, and plant and wildlife. Businesses need to sustain them through their practices.

Water is limited and unevenly distributed across the globe. Growing populations and fast-paced economic development are straining its availability; current economic activities are overdrawing or polluting rivers and lakes, at times to irreversible levels. The Aral Sea in Uzbekistan offers a striking example: Its feeding rivers having been diverted for irrigation, and it is now approximately ten percent of its original size, when it ranked among the four largest lakes in the world. The Great Lakes and many American rivers are heavily polluted with chemicals and debris. As a result, "dead zones" exist in the Gulf of Mexico and elsewhere; millions of ocean creatures die after ingesting excessive amounts of plastics. Worldwide water-use patterns are unsustainable: if trends continue unabated, water for drinking and agricultural use will become increasingly expensive or even unavailable in arid areas. The environmental, health, and economic consequences of running out of clean water are catastrophic. We could buck the trend through policies and actions that protect and sustain water resources. Some of the barriers to action will be discussed later.

Soil. Local unsustainable practices have global consequences. For example, the ongoing desertification in North Africa and portions of Asia is partly due to unwise agricultural practices. The ensuing severe famine in places no longer able to grow enough food causes political unrest that can destabilize an entire continent and lead to war. Soil salinization, expected to increase with rising sea levels, is found in North Africa, China, Bangladesh and other countries are experiencing similarly disastrous consequences for food production.

managers have to understand not only the goals, needs, and inner workings of their own organization but also how it relates to its economic, social, and environmental contexts. Can businesses conduct their activities without attention to the contexts in which they operate? We propose here that while it is not impossible (for a while), such businesses are not sustainable because ignoring their interdependence with the natural environment and with their host communities would bring about their demise. Owing to the complexity of this subject and to the functional interrelatedness of natural and socio-economic systems, we cannot hope to offer here complete coverage of all the facets of sustainability. We focus on how managerial decisions can foster or undermine environmental sustainability.

Dimensions

At its publication, the UN's Brundtland Report represented a milestone: it was the first time the international community expressed collective awareness and readiness to address the impacts of economic development on global shared and limited natural resources. There is now widespread recognition that sustainability of our societies and economies is fundamentally dependent on practices that sustain the capacity of the earth's ecosystems to support human communities. Therefore, promoting sustainability amounts to conducting business activities without reducing or compromising their resource base. The report identified three key sustainability dimensions:

The Environmental Dimension entails resource conservation and pollution prevention in order to satisfy demand for products and services without exceeding the carrying capacity of the natural environment—its ability to support human activities without being degraded or depleted.

The Social Dimension refers to justice aspects of production and consumption of goods and services. Sources of satisfaction other than consumption include social cohesion, equity of fundamental rights, equal opportunities, and poverty eradication. Thus socially sustainable businesses promote democracy, human rights, equity, respect for cultural diversity and regional identity, as well as broad access to information.

The Economic Dimension requires factoring into the price of goods and services the costs of maintaining the quality of shared natural resources (air, water, soil), instead of considering them free public goods. It entails avoiding the negative environmental effects of unconstrained economic growth.

The larger the *scale* we consider, the more difficult it is to draw a simple list of what it takes to promote sustainability or to assess it. For example, how to tell if a country's economy is sustainable before clear signs of failure become evident? Is the population of this planet managing available resources in ways that will allow it to continue to live within its bounded means? Answers to these questions entail not only *descriptive* challenges of understanding of how ecological and socio-economic systems interact, but also normative (value-driven) issues about how they should interact, and *prescriptive* questions of how they need to interact to achieve sustainability of social-ecological systems. We also need measures or indicators to inform us reliably if we are making progress or slipping off the paths to sustainability.

In general, as our understanding of ecological systems and of our dependence and impact on them increases, we would expect our ability to foster sustainable ecosystems and social-economic structures within them to be greatly enhanced. We now know, for example, what causes irreversible damage to wetlands, or what leads to failure of businesses and public institutions, and even of entire national economic systems. Nevertheless, we continue to engage, individually and jointly, in private and public domains, at all scales from local to global, in actions that predictably undermine our systems' ability to endure. In what follows, we discuss some threats to environmental sustainability that might account for our seeming inability to promote it at all scales. Understanding these obstacles may lead to strategies to overcome them.

Threats to Sustainability

In the past, unsustainable activities were due to lack of knowledge about cause-and-effect links to environmental impacts. For a long time people did not understand that their agricultural practices led to desertification or that they could hunt animals into extinction. More recently, as resource limits have become visible, people have grown increasingly aware of their own global interdependence as well as of the links between people and their natural environment. The perception has gradually set in that human decisions and activities can have unwanted and at times irreversible consequences; the continuity of human societies depends on the health and quality of their natural environment. In countries with relatively high standards of living (often achieved by depleting natural resources around the world) people value their quality of life and understand how the natural environment contributes to it. They are searching

Air. The hole in the atmosphere's protective ozone layer (resulting in high rates of skin cancer around the world and high rates of morbidity and mortality,) and global climate change are global consequences of production and consumption practices that pollute the shared atmosphere we all need for our existence or change its composition with deleterious effects. Carbon dioxide (CO_2), one of the gases contributing to the greenhouse effect that causes climate change, has increased over the past 150 years from 280 to 400 parts per million (ppm). This level is well in excess of what climate scientists believe to be sustainable. Since the already emitted CO_2 remains in the atmosphere for about 100 years, we need to develop adaptive strategies along with attempting to curtail emissions, which has been challenging given the rapid global population growth.

Plants and Wildlife. The ability of healthy ecosystems to sustain plants and wildlife and offer economic value can be severely reduced or even irreversibly destroyed by human activities. For example, responding to high demand for wood as a construction material, some developing countries cut down their forests in quest of much-needed cash for food and development. The zealous tree-cutting outpaced the speed of regrowth, exhausting a resource that could have served well in multiple ways in the long run had it been sustainably exploited. A similar story of depletion through overharvesting can be told about the few remaining tuna and other fisheries once abundant around the world.

Other quickly diminishing resources include non-renewable (fossil) energy sources, some construction materials, and minerals critical to various production processes including phosphorus for agriculture and some "rare earth" metals used in the manufacturing of electronics.

Sustainability of any resource or human activity is the cumulative result of *joint decisions*, actions and practices by individuals, businesses small and large, communities and government agencies. No one can bring it about by acting alone. Instead, numerous individual and collective choices contribute to sustainability or undermine it in time. For example, some managers decide that paying a penalty for infringing on regulations (e.g., by illegally dumping industrial effluent in a river) is less costly to their company in the short run than abiding by rules. Others seek competitive advantages by providing products that are "green," or meet their social responsibilities by providing products host communities to protect scarce or endangered natural resources. One such example is the concept of a "circular economy" that minimizes flows of waste products into the biosphere as wastes from one production process are used as input to another.

aspects of sustainability, they are yet to be widely accepted. We discuss next a few common obstacles to sustainable management behavior.

Psychology: "I'll Gladly Pay You Tuesday for a Hamburger Today."
J. Wellington Wimpy, a "Popeye" cartoon character, gave voice to our tendency to sharply discount benefits or costs the further in the future we reap them. Environmental consequences of how we use natural resources or of how we pollute soil, air, and water become visible years from when we implement our decisions. We are hard-pressed to expend resources now to prevent damage in the (often distant) future. Difficult economic times only accentuate our Wimpy-like preference for benefits now and costs later. Even knowing that continued discharge of polluted effluent may exhaust a lake's ability to repair itself, the practice goes on because in the moment it appears more cost-effective than acting to protect the lake. The current heavy pollution in the Great Lakes is the result of many preceding decades during which they served as a low-cost means of waste disposal for abutting industries.

Psychology: "If We Run with Scissors ..." Bazerman and Watkins (2004) suggest that we should not be as surprised as we are by many of the crises we face—environmental, economic, and social—because they are predictable if we heed their signs. We understand well many of the factors contributing to environmental degradation and how our activities cause irreversible damage or exhaust the resources we need for our activities. However, psychological and organizational dynamics stack the odds against timely preventive or mitigating action (Kaufman, 2011).

Besides overly discounting future benefits of current costly actions, both individuals and organizations tend to be overconfident in the plans we devise to reach our goals. We rarely have a Plan B, and we fail to learn from the past (Bazerman and Watkins, 2004). Production of goods and services still relies heavily on the continued availability of cheap fossil fuels, even after we experienced the distressing effects of shortages during the 1967 and 1973 oil crises. We should have learned and prepared, but we still failed to predict the next crisis in 2008, when oil prices skyrocketed and dealt a global economic blow. For the first time in the U.S., oil demand dropped significantly. Consensus developed around the need to seek alternative energy sources, but only several weeks later oil prices dropped drastically, if temporarily. Resolve to act and change petered out. The next fuel supply crisis is waiting in the wings, and we will be surprised—as usual.

There is a good example of a timely collective response to a predicted crisis, but its uniqueness reflects how difficult it is to act before crises hit—although

for ways to lessen their impact on the environment. In contrast, in developing countries where many have yet to eat enough to relieve their hunger, people have relatively less awareness of the negative health consequences of the activities that provide sustenance and less willingness to devote scarce resources to any other purposes than aggressive economic development.

Besides awareness, obstacles to acting sustainably at the individual or societal levels stem largely from the complexity of the systems within which we function and their intricate relationships and delayed feedbacks. For example, the sustainability of a business organization depends not only on direct managerial decisions but also on indirect decisions by competitors or government regulators. The sustainability of natural ecosystems such as watersheds depends directly on the decisions of those who use/exploit/manage them and indirectly on political decisions to allocate public funds to watershed protection or cleanup. Consequences of any decisions and actions accrue slowly in time, leaving us uncertain about the effectiveness of our sustainability decisions.

The earlier example about managers dumping industrial effluent in a river even if they have to pay ensuing penalties illustrates the obstacles to sustainability and the dilemmas it poses. These managers are responding to poorly structured regulatory incentives that make it more worthwhile to pay penalties than to obey rules. They are rewarded for short-run successes and lack long-run incentives. They are perhaps not haunted by ethical dilemmas or by the lasting consequences to ecosystems and human health of dumping toxic effluent. They are responding as many do when faced with the temptation of the immediate competitive edge obtained by getting away with more than those who comply with regulations; or they do not want to be law-abiding when others are exploiting opportunities for quick gain. To succeed, sustainable management strategies have to address such obstacles and the incentives that privilege the short run.

Some of the obstacles to sustainable management are psychological, inherent in our ways of thinking. Other difficulties are institutional, inherent in the structure of political and economic incentives and the rules within which managers operate. Finally, some difficulties stem from the very nature of the ecosystems we wish to sustain and from the interdependence between economic, social, and natural systems. Knowing how well we are doing when acting sustainably is challenging on two counts. First, most environmental processes are very slow-changing, so almost no immediate feedback is evident from our action. Too often, only later generations bear/reap the costs/benefits of our current choices. Second, although several indicators have been devised for assessing various

The commons incentives to overconsume or overuse are exacerbated by lack of mutual trust and lack of ability to enforce oversight through regulations or *a partial* trust. A global-scale example is the failure of nations to agree on reductions in the emission of greenhouse gases to reduce predicted consequences of global climate change. If all countries agree on emission limits, the temptation is great for each country not to do its share. Since the other countries are suspected of releasing more than their share of greenhouse gases (equivalent to adding cows to the commons), each country concludes it should do the same, instead of being the only one that imposes economic hardships on its population to save the planet. Neither will any country retaliate on others for not carrying out the treaty: countries beset by many problems and with diverse and divergent interests have a poor record of forming durable coalitions to impose sanctions on those who default on commitments. Thus most see cheating as being cost-free while living up to compliance commitments is very costly both politically and economically. The agreements signed by more than 100 countries following the United Nations Conference on Climate Change in Paris, France, in 2015 provide a framework for collaboration to reduce global production of greenhouse gases. However, as in the Tragedy of the Commons, the agreement has no enforcement mechanisms. Since humanity is already exceeding some of its "planetary boundaries" (Rockstrom and Klum, 2015), should consequences of climate change materialize as predicted, globally shared outcomes will likely be dire.

Economics: "Air, Soil, and Water Are Ours to Use." Air, soil and water are used in the production of goods as ingredients or as storage for waste. They have long seemed abundant and free, and therefore are not included in the price of goods and services. The price of electricity does not include the price of cost of disposing of them. The price of electricity does not include the price of loss of salmon at river dams or loss of aquatic fauna and flora due to discharge of hot nuclear reactor cooling water into lakes and rivers. Electricity generating plants on the Hudson River in the state of New York are but one example of hundreds around the globe. However, we are paying for pollution and overuse through the costs of healthcare, of transporting resources over longer distances or lack of land for agriculture and development. In hindsight, given the choice we might have preferred to pay (possibly less) for sustainable practices to avoid the consequences of pollution, some of which are irreversible.

Pricing that includes the costs of maintaining and improving air, soil, and water quality has long been proposed as a means to enhance environmental sustainability. However, most consumers prefer to pay as little as possible for

it is often less costly than fixing the damage later. The so-called Y2K crisis threatened critical, interlinked data sets that support the functioning of vital private and public organizations and the essential services they provide. The trigger would have been the transition from 1999 to 2000 (Y2K), expected to cause irreversible damage to data because of the internal representation of dates in computers. Predictions of immediate, far-ranging economic and functional losses caused direct stakeholders to rally and act to prevent the crisis. However, judging by public reactions at the time and since then, we did learn a lesson, but it was the wrong one! Instead of realizing how effective and efficient it is to forestall crises before they happen, many concluded that since the dire predictions did not materialize, the costly prevention measures had been wasteful and unnecessary.

Similar attitudes underlie widespread perceptions that (costly) measures to forestall or to mitigate climate change consequences are not necessary and that we can handle problems if and when we see them. While not all proposed solutions to climate change are necessarily cost-effective or sure to work as planned and to achieve their goals, neither is inaction a wise strategy. Since currently few people are inclined to act, many more unpleasant but predictable surprises are in store for our environmental and socio-economic systems at all levels.

Incentives Structure: "I'll Sneak Another Cow on the Commons and Hope Nobody Notices." This logic underlies the Tragedy of the Commons, a story G. Hardin (1968) told to illustrate the effect of incentives on people's decisions. In the story, there is a pasture (commons) in town that can support only one grazing cow per neighbor. The temptation is great for one neighbor to add a second cow to this free pasture, since the added damage is minimal while his/her benefit is substantial. However, everyone is similarly tempted—and gives in. In Hardin's words, "Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own interest in a society that believes in the freedom of the commons" (p. 4). The natural environment is our commons. Individuals and businesses face the temptation to over-consume scarce resources—lest someone else do it and gain competitive advantage—or to pollute in all media, since everyone else does. Overfishing of tuna and sea bass in international waters is a replay of the commons: to secure one's share when faced with competition, everyone harvests too much fish until the fish populations are exhausted, as is the livelihood of those who depended on them. Examples of such actions and outcomes abound.

models of (how we think) they work. The complexity and interconnectedness give rise to so-called *wicked problems* that are difficult to resolve because interventions often have unforeseen negative consequences that exceed all expected benefits. Adding to this problem, we have a tendency to assume the expected events have one cause, and we focus on that cause alone as we devise solutions. To prevent climate change, the focus has been on reducing the *carbon footprint* (CO₂ emissions), although several other greenhouse gases and water vapor are also serious contributors. Solutions address reductions both in use of fossil fuels to generate energy and in energy consumption. On the generation side, wind turbines were deemed ideal until side effects surfaced, including relatively large land needs, noise, and the killing of migratory birds—all predictable, had attention not been focused only on expected benefits. On the consumption side, incandescent light bulbs were replaced with fluorescent bulbs, but the focus on benefits ignored the fluorescent's mercury content posing health dangers. Besides the hazardous material cleanup necessary when breaking fluorescents, the switch from incandescent has moved pollution from air to soil, as fluorescents pose landfill problems.

Systems and Their Interconnectedness vs. Mental Models: "There Is

No Free Lunch." The examples above illustrate one last obstacle to environmentally sustainable business practices. Changes in the ways that we consume, produce, and price goods, or manage organizations have not only benefits we seek but also costs, at times unexpected. For changes to be implemented, a broad understanding of costs is necessary as well as a consensus that the benefits are worth the price. Crises can sometimes bring about rapid consensus for change. Environmental problems occasionally reach crisis level and mobilize attention, resolve, and the sense that the price of response is justified by the needs. More often, long-term environmental issues have difficulty attaining the salience and perceived urgency necessary for action (Layzer, 2012) and quickly fall in priority behind pressing short-range problems such as economic crises, unemployment, poverty, health care, or education.

Having listed several dimensions of sustainability related to the natural environment and some obstacles to it, we address next some practical management aspects, including sustainability outcomes, indicators, and strategies.

goods and services. Businesses competing to respond to demand seek to lower their production costs. The recent trend to produce food locally through sustainable farming is a step in the direction of including the real production costs into the price of goods. Locally produced food has other beneficial side effects such as reducing the cost, energy use, and pollution associated with hauling goods over long distances, etc.) through production decentralization. However, this trend has yet to reach the scale at which it can make a meaningful difference to the environment, not least because only the relatively wealthy can afford local farmer market prices.

Ecosystem Processes: "What We Don't Know Won't Hurt Us." Owing to global availability and accessibility of information, ideas and knowledge spread faster than ever. As a result, the idea that human activity is contributing to greenhouse gas emissions causing global climate change has taken hold broadly. Although predictions vary, they point consistently in the direction of widespread negative, destabilizing consequences for many parts of the world. Yet at every decision level—from country to regional, local, organizational, and individual—there has been much talk and little preventive or remedial action. Compounding the Wimpy factor, the commons incentives and pricing issues is the slowness inherent in natural environmental processes with ensuing *low feedback* about consequences of our choices.

Effects of our actions accrue gradually over many years, often beyond our lifetime. As a result, our ability to assess success and benefit from it is low, and so is our ability to be concerned about the predicted long-term consequences of inaction and our willingness to prioritize them above our daily challenges. It is as difficult for managers as it is for elected officials to justify expenses whose benefits are uncertain (because they are far in the future) and for which they will receive no credit. Moreover, since ecosystem feedback is very low in the short and medium run, we quickly tend to conclude that our actions have no impact, and, therefore, a change of strategy is in order. There is also a mismatch between our attention to issues and the time necessary for assessing whether measurable changes go in the desired direction. Our resolve is undermined by the absence of evidence of environmental response to our (often costly) actions. In environmental sustainability, we give up too soon and thus fail to foster **Systems and Their Interconnectedness**.

and One Solution." The complexity of ecosystems and their interrelatedness with social and economic systems is substantially different from our mental

Business Sustainability Strategies

Has sustainability become just a trendy word without real implications for societies and business operations, or can managers give it meaning through their actions? Let us imagine that we have overcome many of the hurdles just described and have reached the point where individuals, private and public organizations, and governments around the world are now poised to act in ways that promote environmental sustainability. In fact, several countries and some American cities and other regions of the world are engaged in sustainable development practices. What does that mean for businesses in practical terms? How can we monitor progress toward various sustainability goals—whether reducing waste, curtail pollution, or reducing the demand for energy and water, curbing pollution or reducing greenhouse gas (GHG) emissions?

Monitoring effectiveness of management for sustainability requires baseline data describing where we were when we began to act. We also need practical indicators—reliable and readily accessible data—at different scales, to link corporate social and financial performance. Of the numerous indicators proposed so far (e.g., Chao and Lam, 2011), some are helpful in overcoming obstacles to the kinds of managerial decisions that sustain the environment. We give below a couple of examples of such indices (the “ecological footprint” and the “ecological backpack”) as well as indices used by individual businesses to measure how sustainable their actions are. We follow up with a few strategies and actions that can help businesses self-monitor and engage in sustainable practices.

Indicators of Business Sustainability

Researchers, practitioners, and politicians need ways to assess sustainability. Promoting it has costs, so it is incumbent on us all to provide measures of the benefits and of progress toward achieving them. The earliest such indices were focused on capturing the social impact of human behavior on the planet, to show how our economic activities affect the environment. Two best known indices are the ecological footprint and the ecological backpack.

The Ecological Footprint assesses the strain various human activities cause to natural ecosystems. It measures the biologically productive area required to produce agricultural crops, meat, fish, or wood, or to provide infrastructure services and to absorb carbon dioxide emitted by burning fossil fuels. The global ecological footprint (closely related to natural capital) has nearly doubled since

A setback in Patagonia's history came when the number of factories with which it worked grew rapidly. The company lost track of the information about new factories and the ways in which they had worked for a number of years. As a result, Patagonia was even dropped from the Fair Labor Association (FLA). To regain the employees' and factories' confidence regarding social and labor issues, the company hired a social responsibility manager.

Nowadays, the company trains its staff and employees about Patagonia's Workplace Code of Conduct. It works closely with suppliers (three of whom are FLA members) and factories, auditing them and reducing their number in order to facilitate monitoring. Corporate responsibility is integrated in Patagonia's outsourcing strategy and in its strategic management practices. Its Social/Environmental Responsibility (SER) team can veto a decision to work with a new factory that does not fit with the company's policies. The SER team is revising conduct codes and publishing a Footprint Chronicles website, in which they trace the environmental and social impacts of products. The Footprint Chronicles is the equivalent of a corporate responsibility report. The website is also a model of corporate transparency and of commitment to exercising social responsibility through actions, processes, management style, and consequences. This type of industry needs more such good models of how to bring about change and solve environmental, manufacturing, and labor responsibility problems.

Suggestions for Further Reading

- Anderson, R. C. (2009). *Confessions of a Radical Industrialist: Profits, People, Purpose—Doing Business by Respecting the Earth*. New York: St. Martin's Press.
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- Marshall, G. (2014). *Don't Even Think About It*. New York: Bloomsbury.
- Mykleby, M., Doherty, P., & Makower, J. (2016). *The New Grand Strategy: Restoring America's Prosperity, Security and Sustainability in the 21st Century*. New York: St. Martin's Press.
- Savitz, A. W., & Weber, K. (2006). *The Triple Bottom Line: How Today's Best-run Companies Are Achieving Economic, Social and Environmental Success—and How You Can Too*. San Francisco: Wiley.

- United Nations Global Compact (UNGC) was released by the United Nations (UN) in 2000 to promote social and environmental concerns in corporations and foster organizational collaborations and partnerships with governments, civil society, labor, and the UN. UNGC includes ten universal principles to measure CS along four dimensions: human rights, labor, environment, and anti-corruption.
- ISO26000, the International Organization for Standardization (ISO) social responsibility guidance standard, was launched in 2010 to provide guidelines to organizations on how to establish a social responsibility program. It aims to contribute to sustainable development and encourage firms to go beyond legal compliance.
- The Global Reporting Initiative (GRI) is a nonprofit organization established in 1999 to guide firms in creating standardized sustainability reports. Researchers and firms consider GRI as the leading voluntary guideline to create sustainability reports based on its classic economic, social, and environmental dimensions.

Strategies for Fostering Sustainability

Several business concepts and approaches have been effective in designing sustainability strategies for improving sustainability outcomes. These strategies range from conservative to proactive, from risk mitigation and compliance with legal standards to innovative processes looking for differentiation and compliance with targets to consumers or other stakeholders. We offer here four examples. They are not universally applicable; the best sustainability approach is likely the one designed to serve a specific business, its stakeholders, and its environmental context.

The 3Rs (Reduce, Reuse, and Recycle) Initiative, proposed by Japanese representatives to the 2004 G8 Summit, aims to foster responsible individual and organizational consumption habits by reducing waste. Businesses can reduce their costs of production, a short-run incentive beyond the satisfaction of contributing to long-run environmental sustainability. Such strategies are easier for businesses to adopt precisely because of the short-run economic benefits that appeal even to those uninterested in sustainability.

The Precautionary Principle entails avoiding suspected risks to ecosystems and to human health before conclusive scientific evidence is available. This principle has been widely adopted in matters of high-risk threats to large

1961, meaning we have almost doubled the strain of the biosphere on the planet. Since the 1970s, had everyone in the world consumed on average the same amount of natural resources as the inhabitants of developed countries, we would have needed the resources equivalent to two additional planets Earth (WWF 2004 Annual Report).

The ecological footprint can be computed not only globally but also for a specific organization, family, or individual. It communicates effectively the need to tread lightly on the natural ecosystems that host our activities. This indicator can also be used to assess an organization's progress toward reducing its consumption of resources and its output of greenhouse gases.

The Ecological Backpack measures the total amount of natural material disturbed in its natural setting by production activities. It consists of the total input—from cradle to readiness for use—necessary to generate a product, less the weight of the product itself. It can also be used to assess the resources needed to provide services, including those that are often not given a value, such as air or water.

These two examples illustrate how difficult it is to capture in a single measure all aspects of sustainability. More recently, businesses have been using different approaches to measure it. New indices have been proposed by business academics, investment-rating agencies, multilateral organizations and NGOs, all trying to incorporate sustainability concerns into business management. Now researchers and managers often compare firms' sustainability performance using one of the following indices (Montiel and Delgado-Ceballos, 2014):

- The Dow Jones sustainability index (DJSI) is maintained collaboratively by Standard and Poor's, Dow Jones Indices, and SAM. In addition to a global index, regional indices are also published for Europe, North America, Asia Pacific, and South Korea. The DJSI follows the well-established sustainability trichotomy—economic, social and environmental—and has been previously used in sustainability studies, for example to assess the relationship between financial and sustainable business performance.
- Kinder, Lydenberg, and Domini (KLD) is an independent rating service that includes all firms listed on the Russell 3000, representing approximately 98% of the investable U.S. equity market. It analyzes corporate sustainability (CS) using seven different dimensions: corporate governance, product quality and safety, employee relations, diversity, human rights, community relations, and environment.

step further by adopting a proactive orientation to sustainability and making it central to its strategies, which Valente (2012) has defined as the "sustaincentric" orientation of firms.

Implications for Management

We have discussed the need to promote the long-term goal of (mostly environmental) sustainability and some obstacles to sustainable business decisions. We offered examples of indicators and tools for assessing progress and for reframing organizational goals to include environmental impacts. However, managers' awareness of environmental consequences of their decisions is not sufficient to steer decisions toward sustainability because managers do not make their decisions in a vacuum. They operate in a broad socio-economic context where other decision makers—stakeholders—also act to protect their economic and social interests and their values.

Stakeholders are the individuals and public and private organizations who affect or are affected by an organization's activities. Their interests, demands and expectations, and the power each wields in this network of relationships play key roles in shaping business strategies. From an organizational perspective, stakeholders can be seen (framed) as direct—providers, users—and indirect influencers—the public, media, and members of governance structures such as elected officials. With competitors, customers, regulators, employees, suppliers, and shareholders, such relationships are inevitable; with labor unions, schools and universities, media, local communities and the natural environment they are necessary; and with employees' families, other companies, nonprofits, cultural organizations, political parties, opinion leaders, and various advocacy groups, including those that support all elements of the biological systems, relationships are desirable. Managers must draw their own stakeholder lists in order to get more value from their organizations' sustainability efforts.

Sustainable approaches prescribe taking into account not only shareholders but also other stakeholders to whom an organization may have a moral responsibility. Initiatives such as the European Commission's Green Paper, the United Nations Global Compact, or the Global Reporting Initiative generated debate on responsible corporate governance that is accountable to the society to which it belongs, to its legitimate stakeholders, and to the natural environment.

populations or unique natural resources and/or severe or irreversible impacts. When an animal disease outbreak might be linked to imports from a specific country, trade restrictions are typically imposed before information is obtained about the precise source and extent of the outbreak—better safe than sorry. However, we also need to avoid haste in applying costly remedies. The discovery in the U.S. of clusters of cancer cases among people living around high-voltage transformers led to calls to move everyone away from them. This costly remedy was eventually avoided when scientific evidence disconfirmed the link. Waiting for more information paid off in this case. However, in instances where effects accrue rapidly, preventive action should also be quick.

Biomimicry entails applying solutions from nature including biological principles, biostructures, and biomaterials to various human problems. For example, economic activities could mimic how almost any residue from biological processes is used by some animals or plants in a natural recycling of sorts. Some restaurants have been using their spent cooking oil to supply part of the energy they need. Here again, short-run cost-cutting incentives make this strategy easier to adopt than diffuse benefits that materialize only in the long run.

Triple Bottom Line (TBL) Accounting entails measuring a company's performance along the three dimensions of sustainable development, instead of focusing only on economic outcomes. The principle underlying TBL (also called "people, planet, profit") is that corporate sustainability depends on balancing economic, social, and environmental responsibilities (Elkington, 1998; Helm, 2015). TBL may promote businesses' consciousness about the need to sustain their host environments and communities and also leads to concrete actions. A company using a TBL reporting format will strive to generate economic benefits for its shareholders as well as behave responsibly towards everyone it affects through its activities.¹

Business managers are trying to find ways to connect social, economic and ecological concerns with multiple business factors: shareholder value, prestige, reputation, quality, ethics, and job creation, but attaining all objectives is challenging. Managers must create policies beneficial to the public, while engaging their stakeholders all the time in a dialogue about sustainability. The organizational structure, culture, and innovation processes must incorporate sustainability, rather than adding it in as an afterthought. Businesses can go a

¹ For internal accounting purposes, the newly formed Standards Board Sustainability Accounting is issuing sustainability guidelines for various industries (www.sasb.org).

Questions for Students

1. What is your "working definition" of sustainability? (Please indicate the level of analysis you are addressing in terms of geography, scale, organizational systems, etc.)
2. How does *time* affect business decisions that contribute to or detract from sustainability of the natural environment? Differentiate the descriptive and the normative in your answer.
3. How does/should the need for environmental sustainability affect the conduct of business?
4. Find two business examples in which commons-like incentives lead to negative collective environmental outcomes.
5. Find another sustainability indicator and give an example of where it might be used.
6. What are the advantages and disadvantages of the TBL accounting approach?
7. Investigate the cradle-to-grave and the cradle-to-cradle product-design approaches and how they might contribute to business strategies for environmental sustainability.
8. In what ways is the Pikolinos Maasai project socially responsible? How is it contributing to the company's sustainability? Are there any environmental benefits of this project?

Exercise

Select a type of business of interest either because you have experience in it or because you plan to work in it.

- Analyze how it affects the natural environment. Consider for example (if applicable) its inputs and their sources, the production processes and their by-products, the energy necessary for transportation of raw materials and products and for the production process, the handling of waste, and issues related to the product's life cycle and its disposal.
- Using readily available data, propose some measures for making it sustainable in any or all aspects of production, use, and disposal. You may want

Designing creative paths to sustainability is becoming ever more necessary as the public's awareness of it increases and as communication technologies afford inexpensive real-time participation in decisions for large numbers of people around the globe. Many stakeholders prefer organizations they view as socially responsible. In addition, the more organizations adopt sustainable practices, the fewer regulations may be necessary to ensure the protection of natural environments. Examples of positive consequences of industry-wide sustainable practices are found in the hotel industry and more generally in the tourism sector, as well as in the apparel sector (see the *Patagonia* case which follows or the *Interface* carpet firm below²). Additionally, the *Pikolinos* shoe company illustrates socially responsible management of stakeholding relationships for sustainability. It collaborated with the Association for the Cohesive Development of the Amazon (ADCAM) to create a new shoe model and to have it manufactured by women in Maasai Mara (Kenya). This project provided Maasai tribe members with sustainable employment consistent with their traditional lifestyle.

Is the business world on the right track in terms of sustainability or should it do more? The many positive examples of management initiatives that sustain the natural environment seem to be going in the right direction, but they are not sufficient to overcome either the Wimpy syndrome or the commons incentives that drive businesses to focus more on the short run and to compete for resources by any means, regardless of long-run consequences. In 2007, humanity used resources as if it had 1.5 planets Earth; according to projections, if we do not change our behavior, by 2030 we will require the capacity of two planets Earth (WWF, 2010). Between 2008 and 2010, despite a widespread financial crisis, global CO₂ emissions increased by 4.4% from 29.3 to 30.6 gigatons per year. Global sustainability—the use of limited resources to satisfy current needs without compromising the future or exceeding the resources of the one planet we have—cannot be achieved unless the sustainability ethos percolates, becoming the dominant approach to the conduct of business.

... of global corporate sustainability achievements is the Interface Carpet
... of Sustainability" since 1994. Its target is now
... ment by 2020.

- to consider using the Trendalyzer tool (<http://www.footprintnetwork.org/en/index.php/GFN/page/trendalyzer>).
- Explore obstacles to the implementation of your proposal and ways to overcome them.

Case: Patagonia Company

Patagonia is a company based in California that designs, develops, and markets clothing and gear for outdoor sports, travel, and daily wear. It is known for innovative designs, quality products, and environmental conscience.

Patagonia's mission states that building the best possible product must cause no unnecessary harm and that the business should inspire and implement solutions to environmental problems. Consistent with its mission, Patagonia uses environmentally sensible materials, such as organic cotton, recycled and recyclable polyester. It also sponsors and participates in environmental initiatives and has given \$40 million in grants and in-kind donations to grassroots environmental organizations. Patagonia considers its employees to be its "internal clients" who are very important to the organization. The nearly one thousand people working directly for Patagonia are paid fairly with benefits, health care, flexible work schedules, and paid time off for environmental internships. Patagonia seeks employees who share its values regarding quality and environmental causes.

Patagonia does not make the products it sells. Rather, it enters into agreements with more than 70 factories worldwide, including in countries such as Vietnam or China where there have been cases of bad labor practices. However, since Patagonia's commitments are not limited to its organization, it works with factories that share the values of integrity and environmentalism. Their case shows that it is possible to make good products and to reduce employee turnover by treating everyone humanely, in contrast to common practices in the apparel industry where some businesses have mistreated employees with excessive work hours, unsafe work conditions, low salaries, and even child labor.

Patagonia's path to responsibility began when it was still a small organization. It decided to test and formalize its vision and management processes while growing. In the 1990s it reviewed factory conditions agreements, quality standards, and labor conditions. It developed a "contractor relationship assessment" using scorecards to review factories' performance in different areas related to its mission, including the responsible side of social compliance.