**ENTREPRENEURIAL DESIGN: A DESIGN BASED THEORY OF ENTREPRENEURSHIP**

**ABSTRACT**

In this paper the authors offer design theory as an alternative to both existing entrepreneurship processes and a theory *of* entrepreneurship, consistent with the most commonly accepted definition of entrepreneurship. Design theory acknowledges and is built upon, social constructionist theory, is prescriptive, creative, and content free. The design theory framework is discussed in an entrepreneurial context, and two real-world cases, one from a professional design company, and one from an undergraduate entrepreneurship program are recounted to demonstrate the efficacy of the framework.

**INTRODUCTION**

Entrepreneurship as a field of study has often been in search of a defining framework. Without a defining framework, a field suffers from a lack of focus in its scholarship and application of knowledge generated. Entrepreneurship often borrows theories from other disciplines. Because of this, we discuss theories *used* in entrepreneurship as opposed to theories *of* entrepreneurship. One group of theories brought into the entrepreneurship field in its early scholarly development focused on entrepreneurial motivation. Maslow's (1968) hierarchy of needs has been used to explain the motivations of some entrepreneurs, and need for achievement (McClelland, 1961) is another classic concept that has been used to explain why some people but not others choose to become entrepreneurs. Other examples of motivational theories applied to entrepreneurship include disadvantage theory (Evans & Leighton, 1989) and vocational choice (Holland, 1985). As a group these theories give some insight into who becomes an entrepreneur and why they do so. However, they give no explanation into the processes that entrepreneurs use to select their competitive spaces, develop their business ideas, or launch and grow their businesses. Other theories seek to explain where business ideas come from and how they develop. For example, population ecology theory posits that ideas are fairly random in how they arrive. Many ideas are tried, most fail, and a few succeed (Aldrich & Martinez, 2001). Businesses are the market selected result of the successful idea. This explanation gives us a reasonable description of what happens that allows for new businesses to come into existence, but does not address the issue of how it happens.

If entrepreneurship is to establish itself with other social sciences, it must define its domain of scholarly inquiry. Recognizing this obstacle to furthering research in entrepreneurship, Shane and Venkataraman (2000) concluded that the field at its essence is based on how people pursue opportunities. They state, "Consequently, the field involves the study of *sources* of opportunities; the *processes* of discovery, evaluation, and exploitation of opportunities; and the set of *individuals* who discover, evaluate, and exploit them" (Shane and Venkataraman, 2000: 218). By focusing on opportunity, the field can amass a body of work that separates it from other disciplines and provides entrepreneurship scholarship with a distinctive identity and expertise.

Shane and Venkataraman offer their definition as a starting point for developing a "conceptual framework that explains and predicts a set of empirical phenomena not explained or predicted by conceptual frameworks already in existence in other fields" (2000: 217). Previous work examining the opportunity phenomena include Schumpeter's concept of "creative destruction" (Schumpeter, 1942: pp 81-86), Kirzner's description of entrepreneurial alertness (Kirzner, 1997, Shane, 2003), and the idea that opportunities are created by the entrepreneur’s actions (Aldrich and Ruef, 2006). These landmark studies are descriptive in where opportunities come from and what entrepreneurs typically do in pursuing them. While useful in better understanding the opportunity phenomenon, a new line of prescriptive research is being developed that offers guidelines in how entrepreneurs *should* pursue opportunity. The premise of the research is that while we may gain knowledge on what entrepreneurs typically do, there might be better ways they could pursue opportunity if they were taught a different way. The three leading prescriptive models are business plan preparation, systematic search, and effectuation.

Systematic search is not a theory of how entrepreneurs find and exploit business ideas, rather it is a theoretically derived and empirically tested system of locating and developing opportunities that produces superior results when compared to unconstrained search ([Fiet, 2002](#_ENREF_1), [2007](#_ENREF_2); [Fiet, Norton Jr, & Clouse, 2007](#_ENREF_3)). That is, systematic search is a theory of what entrepreneurs *should* do, rather than an explanation of what they *do* do. Systematic search is a pre-business guide to idea discovery. The general idea is that instead of participating in an unconstrained search for a valuable idea simply by being alert, the entrepreneur *should* constrain his or her search. Boundary conditions are determined by where the entrepreneur's specific knowledge could lead to a competitive advantage, or at the very least, to an insight that would not be discovered by an uninformed yet alert entrepreneurial observer. Under empirical examination, tests of this theory show repeatedly that ideas derived through the process of systematic search have more market value than ideas generated by study participants engaging in unconstrained search (Fiet 2002, 2007; Fiet, Norton & Clouse 2007).

Effectuation is another method for finding opportunity that is based on less causal logic than systematic search. Instead of finding an opportunity in a systematic fashion, effectuation emphasizes that ideas grow and change as entrepreneurial actions are taken. Sarasvathy's findings are based on samples of only highly successful entrepreneurs, whom she describes as expert. Expert entrepreneurs are those who have taken companies public, created jobs, and generated significant wealth ([Sarasvathy, 2008b, p.21](#_ENREF_6)). The model is based on the premise that if you want to build successful businesses you should model yourself after those who have done so before you. Sarasvathy found that a majority of expert entrepreneurs “effectuate more than half the time, both in the number of decisions they make using effectual criteria, and in the number of stakeholder relationships they generate and sustain” ([Sarasvathy, 2008a p.48](#_ENREF_5)). *Effectuation* is “the focus on using a set of evolving means to achieve new and different goals. Effectuation evokes creative and transformative tactics. *Effectual logic* is the name given to heuristics used by expert[[1]](#footnote-1) entrepreneurs in new venture creation” ([Read, Sarasvathy, Dew, Wiltbank, & Ohlsson, 2011 p.7](#_ENREF_4)).

While the standard business plan approach has been popular in the entrepreneurship field, and systematic search and effectuation are gaining in popularity, design is another trend in business that holds great potential for informing nascent entrepreneurs on how to start a business. Design is the process that shapes and converts ideas into form, whether that is a plan of action or a physical thing. It offers a different route to capitalizing on opportunity than systematic search and effectuation because it is content free and not reliant on the resources and knowledge of the entrepreneur. Individuals taking an entrepreneurial design approach do not have to be experts or experienced in a particular domain to build successful businesses. Rather, strong facilitation skills and design behaviors and thinking can help an entrepreneur craft an opportunity. In this paper, we discuss the design principles and skills and how they can be applied in an entrepreneurial context.

**ENTREPRENEURIAL DESIGN PRINCIPLES**

In systematic search and effectuation, it is advised that the nascent entrepreneur begin with what they have and know. While these approaches make sense, it limits opportunities for people who may not have much experience or resources. This especially pertains to entrepreneurship students. Entrepreneurship programs are increasingly getting away from being small business focused and more innovation-based. Yet, most students may not have the necessary resources (knowledge, experience, skills, abilities, capital) to generate a truly innovative business idea. A design-based approach to opportunity creation can mitigate this problem because it is process oriented. Learning and mastering a process is not contingent on having content knowledge or domain expertise. Rather, it is based on facilitating oneself and others in reaching a creative outcome. Since entrepreneurship at its root is creative (a business is created that previously didn’t exist), a design approach can help the student move an idea along.

Design has blossomed into a hot topic in today’s business press. The seed of this trend was likely planted in 1998, when a popular news show covered design. In the well-known *Nightline* episode about design, Ted Koppel and his crew pay a visit to IDEO, one of the world’s top design firms. He opens the segment with a challenge to IDEO: ***“***We gave IDEO a distinctive challenge. Take something old and familiar, like say the shopping cart, and completely redesign it in five days.” IDEO then takes the challenge and runs with it.

IDEO projects begin in a state free of content and little expertise. The key expertise IDEO brings to the table is their knowledge of how to transform ideas into innovations. Clients approach the firm and give them challenges to work with. IDEO then applies its design methodologies and processes to create new products and services. First, IDEO studies up on the problem space and context of the challenge, which they call a Deep Dive. The Deep Dive encompasses examining what currently occurs in the problem space by looking at existing models of the product, both their client’s and their client’s competitors; learning all they can about their client’s customers and how the customers use the product; talking to experts in the field who may have knowledge about the market, product, and customers; observing the customers using the products; talking with customers and garnering thoughts on their likes and dislikes with the products and capturing their aspirations and desires; and talking to people in the supply chain who may provide insights to how the product is and/or could be made and sold.

After they have acquired the information, the designers meet to discuss their key insights and what opportunities lie in the challenge for improving or creating a new product or service. They then develop ideas for how to improve the product or create new offerings. Sketching and drawing the concepts and producing cheap mock-up models from inexpensive materials are part of the process as well. They then show their ideas to a larger group, and decide what the best ideas are. In the *Nightline* episode, Koppel reports that after the best concept is captured “now the ideas go off to the machine shop.” Unfortunately, the show goes to a commercial break at this point, and we see little of IDEO building the working prototype in the machine shop. In the next segment, the design team shows the working prototype that comes out of the machine shop to IDEO partner David Kelley and his management team. The team is positive about the concept, and they decide to take it to grocery stores to gage the reaction of store managers, employees, and customers. Feedback from the field would then be used to modify the shopping cart before making an initial production run.

**The Design Process and Nascent Entrepreneurs and Entrepreneurship Students**

Since the IDEO approach to design is content free, nascent entrepreneurs and entrepreneurship students could apply similar approaches to developing product and service ideas. Unfortunately, this is rarely done. Many students and inexperienced entrepreneurs often run with their first idea and sink a lot of resources attempting to bring it to market, whereas others sometimes have a hard time getting started because they struggle with finding ‘the right’ idea to work with. The design process eliminates both these potential pitfalls. Design is a facilitative process through which almost anyone can develop a desirable opportunity. Just as the IDEO challenge was to take something old and familiar and make it better, the same thinking can be done with other everyday objects. For example, Michael Graves, the famous architect, was hired by Target in the 1990s to design home appliances. He took something very mundane as well, the tea kettle, and made it iconic and popular. Graves gave it a sleek shape and put a little bird on the spout that whistled when the water was boiling. The tea kettle became a smash hit, and drew customers in for other well-designed products at Target. By using design principles and processes, entrepreneurs without content knowledge of a domain can uncover and create opportunities in markets. Every product and service has the potential for improvement because there are always tradeoffs made in any design that comes to market. Therefore, there are always new artifacts that can be created from existing or newly imagined objects. For example, an entrepreneur with a designer mentality could pick up a salt and pepper shaker and start thinking of new designs for them. Two examples that come to mind from purchases the authors of this paper made recently are a yin and yang salt and pepper set and a seven deadly sins set that included salt, pepper, cinnamon, garlic, chili powder, lemon salt, and vanilla.

Entrepreneurial design can also be used by entrepreneurs to help inventors and technology experts develop ideas that they may be struggling with. By taking an invention as a starting point and reworking through a design facilitation process, the entrepreneur can help others find a new, more marketable version of the product or service. An entrepreneur skilled in design can take an existing idea and rework it until it is a better idea.

In all these scenarios, the ideas become better because of facilitation processes that the entrepreneur leads. They do not generate the answer alone, but instead do it through getting feedback and ideas from others who may have insights and input that would help the designer in addressing the challenge. In the following section, more details are given on the skills needed to make this happen.

**ENTREPRENEURIAL DESIGN SKILLS**

Design is beginning to gain attention in the popular business press and in the academic literature. In much of the coverage, the concept of design thinking is covered in great depth (Kelley, 2001; Liedtka, 2011; Martin, 2009). Design thinking encompasses how to look at the world, think about the artifacts in it, and conceive new ideas on how to improve it. Thinking is an important component of design, but one element that is not covered in great depth is the behavioral skills needed to create good design. How the entrepreneur utilizes design is just as important as what they choose to focus on and think about. Unfortunately, much of the writing on design in business is fuzzy with little structured guidance on the skills needed to shape ideas into opportunities. In this section, we provide design skills that we have taught students and nascent entrepreneurs that we have found useful over the years.

**Proactive and Humble Inquiry**

In a previous section, we discussed how different schools of thought view opportunity. Two philosophical schools of thought debate opportunity. Positivists believe that opportunities exist in the world waiting to be discovered, while social constructionists hold that opportunities are the creative results of individual agents and don’t exist until something is created. One particular theory that supports social constructionism is structuration theory. Saranson, Dean, and Dillard (2006: 287) state that, “A structuration theory representation of the process can enlighten and empower entrepreneurs. Opportunities do not exist a priori waiting to be discovered, but become manifested to the entrepreneur and to others as they are conceptualized and developed by the actor as part of the venturing process.” This sentiment is consistent with design, since design is about doing and taking action, not just thinking and coming up with ideas. The actions of taking an idea and shaping and reshaping it with feedback from others are more consistent with structuration and social constructionism than positivism. Utilizing design, even if one thinks they have discovered an opportunity, the idea will be reshaped into something quite different from the original concept, especially after different constituencies are approached for feedback.

To attain this feedback requires an open-minded and humble approach to working with an idea. Ed Schein calls this approach ‘humble inquiry,’ and says it is composed of behavior that embodies “accessing one’s ignorance, and becoming open to what the helper and the helped may learn from each other through observation, genuine empathic questioning, careful listening, and suspension of judgment” (Lambrechts, Bouwen, Grieten, Huybrechts, and Schein, 2011: 131). This type of behavior is similar to one of the seven habits of highly effective people Stephen Covey covers, which he deems makes someone an interdependent person. As Covey explains, “If I am intellectually interdependent, I realize that I need the best thinking of other people to join with my own. As an interdependent person, I have the opportunity to share myself deeply and meaningfully with others, and I have access to the vast resources and potential of other human beings” (Covey, 2004). Once someone is consulted for advice, additional information can be acquired by asking for other contacts whom may be helpful on the issues discussed.

One management framework that is useful in utilizing humble inquiry is stakeholder theory. Freeman (1984) defined a stakeholder as any group that affects or is affected by the pursuit of an organization’s objective. In entrepreneurial design, an entrepreneurial stakeholder could be defined as any party that affects or is affected by the startup of a business. The way those relationships impact an organization in its early stages may be different than for established companies **(**Blank, 2005**).** In Agle, Mitchell, and Sonenfeld’s (1999) analysis of stakeholder salience, legitimacy, power, and urgency were found to be three underlying dimensions of a stakeholder relationship. In the early stages of a company, gaining legitimacy from various stakeholders may be an entrepreneur’s biggest challenge in getting to market.

Investors, suppliers, production, distributors, and customers will be salient stakeholders to a company’s successful launch. Therefore, these stakeholders should be consulted in getting feedback on the idea of a business. If an entrepreneur decides to outsource manufacturing, they must know that they have designed a product that has feasible manufacturability. Even if the product is manufacturable, can they get the supplies needed to meet production runs? An entrepreneur must know he or she can get the supplies needed for delivering a product. It would seem that suppliers would want the business, but this is not always the case. Bernie Marcus and Arthur Blank, co-founders of Home Depot, said the biggest challenge they had in the early days of their company was getting vendors to sell them products for their shelves. They said they had to convince vendors to take “a leap of faith” to trust that they would be good customer (1999: 215). An entrepreneur also has to convince those in distribution channels to sell their products and services. With limited shelf space and advertising dollars, outlets want to be assured that all their products will move. Once an entrepreneur is fairly sure that they can produce the product, they will seek out customers to buy it. The chances of a product being sold are much higher obviously when their interests, desires, and problems are taken into account. With production and selling lined out and the interest of customers met, an entrepreneur will seek the help of investors to provide financial capital to make the business a reality. The more these parties are consulted in the design of a product or service, the more likely they’ll be sold on the concept later in the entrepreneurial process. After all, they will be presold on the idea, since it will incorporate many of their suggestions.

Additionally, utilizing stakeholders throughout the entire design process has another added benefit. While entrepreneurs seek financial, intellectual, and human capital in the startup stage, they also need to acquire social and reputational capital. By acquiring social and reputational capital, entrepreneurs overcome one of their biggest obstacles: legitimacy and credibility. By including entrepreneurial stakeholders throughout the process, the idea will encompass many of their ideas, which will better the chance of buy-in, since they will have a connection to it.

An added bonus of this approach is that the business proposition is more professional as well. Experts helping shape the idea will ensure a better business is presented for seeking their involvement. The entrepreneur will come off as more professional, and receive more involvement from key constituencies for later stages of business development. Again, as Marcus and Rock comment on their early days, “We had to be psychologists, lovers, romancers, and con artists to get them aboard. Our ability to paint a picture of how that would take place—lowest prices, widest selection, and great customer service—was what convinced skeptical manufacturers to sell merchandise to us during the early years” (1999: 205).

**Prototyping**

Prototyping is another skill that is important in the design process. A prototype is a physical representation of an idea, and is useful for attaining in-depth feedback. A model of an idea makes it more realistic. It’s no longer just on paper, so others can look at it from every angle. Therefore, a prototype is rich with details of what the entrepreneur is hoping to build. After all, visual communication is usually more informative than verbal communication. If a picture is worth a thousand words, a prototype is worth a million words. When an entrepreneur has an idea, they should start working on a small prototype of the idea. A prototype can often pique the interest of stakeholders to know more about the business idea.

Prototypes vary in their sophistication and costs, but in the early stages of design, an inexpensive model made of simple materials like paper and tape capture the most basic elements of an idea. As prototype is presented for feedback, it can be modified with another inexpensive model. Iteration continues until an enthusiastic response is given to the idea by the entrepreneur’s stakeholders. Once enthusiastic support is given has been received for the simple prototype, a more advanced conceptual prototype can be built. The conceptual prototype is not necessarily polished or expensive, but it is more sophisticated than the earlier rough prototypes. Conceptual prototypes are also known as surface prototypes, because on the surface they start to take on the appearance of what the final product may look like. A few conceptual prototypes may need to be made before until a winning concept is found. When a pleasing conceptual prototype is built, a working prototype can be developed. More costs are incurred on this model because it actually works and is more sophisticated. Some designers go a step further and build a presentation prototype that closely resembles the final product.

In the case of an entrepreneur, the two most important elements to prototype are the product or service and the business model. In the early stages of a business, an entrepreneur is trying to create a product or service customers want and trying to figure out a business model that will make the company money. The iterative process described above can be used on both of these important elements of a startup.

**Iterations**

In the previous section, it was mentioned that iteration often happens with prototypes. Iteration may be the most important element of the design process because it captures the essence of the emergent quality of good design. The key practice that brings forth a great design is iteration. The iterative process is composed of three steps that occur over and over until a design is considered worthy for investing more resources in. In the first step, we work with an idea and tinker with it until we think we have come up with something that is worth showing to others. The second step is showing it others for feedback. Suggestions for how the idea could be improved should be garnered by the entrepreneur. The third step is addressing the insights and suggestions of others to rework the idea. The entrepreneur continues this process until they are satisfied that they have developed a good idea or concept. Too many entrepreneurs are overly confident in their original idea or are too secretive, and this limits them from more fully developing the potential of the initial concept.

Understanding the principles of good design and developing design skills can prepare an entrepreneur to create better business opportunities. These ideas are better developed by working them through a process. The following section describes a method the authors have used with students and nascent entrepreneurs.

**THE ENTREPRENEURIAL DESIGN PROCESS**

When doing design, much of the advancement of the idea is a learning process. Learning is a topic often covered in entrepreneurship (Harrison and Leitch, 2005a, 2005b). A learning framework that fits the entrepreneurial design process well is Dutta and Crossan’s (2005) 4I organizational learning framework. They bring together the research streams of entrepreneurship and organizational learning to examine the phenomenon of entrepreneurial opportunities. Drawing upon the insights from Crossan, Lane, and White’s (1999) 4I (Intuiting, Interpreting, Integrating, and Institutionalizing) organizational learning framework, they adopt a process orientation that claims that the creation of entrepreneurial opportunities and learning are intricately related. That is, “learning is seen as a combination of stocks and flows of knowledge: even as individuals, groups, and the organization act as repositories of knowledge, learning flows across these levels through the 4I processes in the form of feedback and feed-forward linkages” (2005: 433). In the following sections, we utilize Crossan and Dutton’s framework by applying it to the entrepreneurial design process. We also provide an example of how we used the process with a student in one of our classes.

**Intuiting**

Intuiting is “the preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience” (Crossan, Lane, and White, 1999: 525). From an entrepreneurial design perspective, the entrepreneur can take an idea and begin exploring areas that may be conducive to creating economic value. For example, one of the author’s students was given a military technology to find commercial opportunities for. The technology was a simulated skin that was used by the Navy to test artillery and shrapnel effects on the human body. The student had no experience with the military, technology, or biology; however, he was asked to find a market in the private sector for the technology. He asked himself what other industries work with skin, and came to the insight that there might be medical applications for the technology. The simulated skin was a patented product that had the same texture, thickness, and elasticity as real skin. He at first thought the product might be used for grafting onto burn victims. With a humble and proactive disposition, he approached skin doctors to receive feedback on the viability of the material for skin grafts. Surgeons told him the skin would not work well for those purposes, so he asked who else in the medical field might work with fake skin. One surgeon suggested he look at medical schools and consider developing training devices for nursing and medical students.

He acquired catalogs for medical training devices and began visiting nursing and medical schools. He inquired about what training procedures utilized simulated human skin for training purposes. He was told that one area that schools buy a lot of products for training is for suturing devices. Students need to become proficient on suturing cuts and other wounds. When talking to medical instructors, he learned that schools currently used pigs’ feet, chickens, and cadavers for practice. Each of the products had weaknesses. Pigs’ feet and chickens were not the same consistency as human skin, and cadavers were expensive and also posed a problem with decomposition. There was general interest by medical professionals, instructors, and students in the concept of a replacement for current suturing devices.

The student then worked on the two key outcomes for the first stage of the entrepreneurial design process: on the product side, he worked on a rough prototype of his idea. He took the simulated skin and wrapped it around jello. His idea was that jello would have the same feel as muscle and fat under the skin. He then showed the concept to other design stakeholders, such as experienced investors and entrepreneurship faculty. He received positive response and was encouraged to show the product to potential customers for their feedback. He showed the product to medical and nursing schools for feedback on the prototype. When they agreed they liked the concept, he decided to move forward with the idea. As a result of the positive feedback, the student had hit the first two outcomes of the intuition stage of entrepreneurial design. On the business side, he had a value proposition that was received enthusiastically by different stakeholders. The value proposition was to provide a better suturing practice device for medical and nursing schools than cadavers, pig’s feet, and frozen chicken. On the product side, he had developed a cheap mock-up prototype that got the concept across to stakeholders for their input. Most liked the concept, and he was encouraged to move forward with the idea. In the next stage, he would consider in more depth how to make money on the product and work on developing a more sophisticated prototype.

**Interpreting**

Interpreting is “the explaining of an insight or idea to one’s self and to others. This process goes from the preverbal to the verbal and requires the development of a language. Interpreting takes place in relation to a domain or an environment. In the previous stage, the entrepreneur is onto an idea with possibilities, but it is still quite undeveloped. In the next stage, he or she must give it more substance. More structure is needed for grounding the idea in elements that can be acted upon in starting a business. The nature or texture of the domain within which individuals and organizations operate, and from which they extract data, is crucial to understanding the interpretive process. The precision of the language that evolves will reflect the texture of the domain, given the tasks being attempted” (Crossan, Lane, and White, 1999: 528). The entrepreneur must now work on the product so that it meets expectations and demands of various stakeholders in the chosen industry. Each industry will have customer expectations, supply chains, and economics that impact the success of a business idea. On the product side, a conceptual prototype is created that will resemble what the final product will look like. Working more details in features and materials into a prototype gives the entrepreneur a communication tool to receive even more feedback from stakeholders. From the business side, more structure is given to the idea through the development of a business model. Simply put, the entrepreneur must figure out how they will make money with the idea.

In the previous example, the entrepreneurship student knew that jello, although it had the needed consistency, was not a durable material for use in medical school settings. But it served the purpose of getting the general idea across for the product. Now he consulted engineers for advice on a material that would have the same consistency but wouldn’t require refrigeration. The engineers advised that ballistics gel would have qualities that seemed appropriate for the product. It was cheap, durable, and had the appropriate consistency.

To get a better understanding of the medical domain, he approached surgeons at a nearby hospital for their advice on his product. They liked the concept, and invited him to attend a surgery so he could see how incisions are made and sutured. After seeing the procedure up close, he had a better idea of what his product should look like. The student then built a more advanced prototype by making a plaster mold of his arm from the elbow to the wrist. He filled the mold with ballistics gel until it was compact enough to maintain its shape. After attaining the desired shape, he fitted the simulated skin onto the prototype. He then showed the prototype to surgeons and medical and nursing school instructors, who all practiced suturing on the prototype. The prototype received a positive response, and he decided to move forward to the next stage of the product.

On the organizational side, he worked on finalizing a business model. His value proposition remained the same. After consulting with various advisors, stakeholders, and mentors, he determined that he would outsource the manufacturing of the product to a medical device company. He decided to sell the product through educational catalogues and websites through dealers who sell to schools. His revenue stream would be cyclical with heavy orders during school buying periods interspersed with replacement purchases by the school. He would focus his energies on sales, customer service, and managing the business. The student was getting better idea how to build a viable business. He was encouraged to keep moving forward with the business concept.

**Integrating**

Integrating is “the process of developing shared understanding amongst individuals and the taking of coordinated action through mutual adjustment. Dialogue and joint action are crucial to the development of shared understanding. This process will initially be ad hoc and informal, but if the coordinated action taking is recurring and significant, it will be institutionalized” (Crossan, Lane, and White, 1999: 525). In this step, the entrepreneur begins to develop relationships and commitments with stakeholders who can make the business a reality. Given that the entrepreneur has consulted a wide range of experts and has developed prototypes and a business model, he or she will have a good idea of what the business can become and will come across as professional and well-prepared.

At this stage, the entrepreneur can focus on building their supply chain. In our example, the entrepreneurship student contacted suppliers and manufacturers for Requests for Information. After building a thorough list of vendors and manufacturers, he consulted experts in the domain for advice on who might be the best candidates for supplying materials and building the product. He then asked for meetings with those candidates to discuss the production of his product. He requested price quotations and terms, and after meeting with his advisors, he selected a national supplier of medical devices to provide the materials needed to build the product. He also secured an arrangement with a national medical device company to manufacture the product. Oftentimes a working prototype will be built, but in this case, the manufacturer felt the conceptual prototype provided enough information regarding manufacturability to move forward into production. He simultaneously was in contact with educational distributors, and secured a distribution deal with the country’s leading distributor of educational training devices.

He also completed a business plan that he showed to angel investors. At the writing of this article, he was seeking startup capital to get his first production run. He also was granted space at the local community incubator to operate the business. His focus was on making his first sales and acquiring startup capital. He and his family are also investing money in the business to get it off the ground. Once he secures these elements, he’ll be into the final phase of entrepreneurial design.

**Institutionalizing**

Institutionalizing is “the process of ensuring that routinized actions occur. Tasks are defined, actions specified and organizational mechanisms put in place to ensure that certain actions occur. Institutionalization is the process of embedded learning that has occurred by individuals and groups into institutions of the organization including systems, structures, procedures and strategy” (Crossan, Lane, and White, 1999: 525). As the company matures and routinizes its processes, it will get more efficient, more productive, and cuts costs (Arrow, 1969). The organization becomes more professional and makes more profits. At this point, it will have transcended into an established organization that has gained legitimacy in the greater society and pursue growth in building off its core competencies (Blank, 2005). The student example above has not reached this point yet, but we hope it does. We believe the young entrepreneur is off to a good start though by utilizing the design process we have described in this paper.

**CONCLUSION**

As can be seen in our example, our entrepreneurial design process is in its early stages, so we haven’t had businesses out long enough to claim it works. Clearly though, this process shows that with entrepreneurial design, opportunities can be created and pursued, even without much domain experience when started. While Sarasvathy’s effectuation, Fiet’s systematic search, and traditional business plan practices all have their place in our field, we offer entrepreneurial design as another theory for capitalizing on market opportunities.

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1. Sarasvathy, in the quoted study, defines expert entrepreneur as “a person who, either individually or as part of a team, had founded one or more companies, remained a full-time founder/entrepreneur for 10 years or more, and participated in taking at least one company public” (Sarasvathy 2008 p. 21). While being very effective at capturing successful individuals, this definition does not control for luck, outside agency, or non-business related skill sets (c.f. politics) brought to bear upon business situations. [↑](#footnote-ref-1)