

Collaborative Entrepreneurship: A New Model for Surgeons to Bring Ideas to Market



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In its 2006 Annual Global CEO Study, IBM highlighted a fundamental shift in direction in the creation of new technologies. Rather than being driven from within a company's traditional R&D departments, these CEOs expect most innovation to occur through collaboration with external partners. Business partners and customers were cited as top sources of innovative ideas, while internal research and development departments fell much lower on the list.¹

The above paragraph probably comes as no surprise to any orthopaedic surgeon. Many new products being introduced to the orthopaedic market are first conceived of by an orthopaedic surgeon. Triggered by shortcomings in existing procedures, devices or tools, a surgeon will think about potential improvements until an innovative idea for a new technology, process or product is formed to address the limitation(s). Once the idea becomes more tangible, the surgeon may decide that it is worth pursuing. At this point, the process begins to become more complicated.

The two most common paths that surgeons follow are to approach an existing medical device company or to assemble a small start-up company. In the first scenario, the surgeon will probably approach a company with whom he already has a working relationship, with a goal of partnering to bring the product to market. In the second scenario, the surgeon will need to pull together a strong management team, raise venture capital and try to bring the product to market through independent channels.

Each approach has advantages and disadvantages. Going to an existing medical device company, especially a larger one, becomes a tricky dance for both the surgeon inventor and the company representatives. For a surgeon who believes he has an idea that could be worth a significant amount of money, the greatest concern rests with the appropriation of that idea without fair compensation. In most cases, the surgeon has a very good relationship with the company; however, it is reality that the companies that manufacture and distribute these products are very large, well funded and have teams of attorneys designed to negotiate on the company's behalf. The surgeon inventor does not. On the other hand, working with a medical device company enables a surgeon to tap into an existing infrastructure of engineers, testing protocols, marketing resources and distribution channels.

Conversely, the company is concerned about maintaining a good working relationship with the surgeon, who is more than likely a good customer (which is why he approached that particular company), thus, they do not want to damage that relationship in any way. In addition, most medical device companies are presented with so many different innovations (both from internal and external sources) that there is a good probability that they are already working on something similar or competitive to the innovation in question – which can lead to potential conflicts.

Starting a small company to develop, test, manufacture and ultimately market and sell a new device is an option gaining popularity, especially in

the spine market. This has the advantage of not relinquishing control of the innovation to a large company, but instead becoming involved in a small one. The costs, however, are very real. This is an extremely time-consuming process and one that is unfamiliar to most surgeons. Most who choose this option make sacrifices to their practices in order to pursue this path. The process of assembling a strong management team, raising venture capital and leading a design and testing team is in itself a full time job. At the end, there is a very good probability that the venture will fail.

The New Alternative: Collaborative Entrepreneurship

A third alternative is emerging and is already demonstrating success in the orthopaedic technology markets. Taken from the theories of *Collaborative Entrepreneurship*, a book written by the former Dean of the UC Berkeley Haas School of Business and his colleagues, this new approach emphasizes a team of collaborators developing and protecting ideas by turning them into patents. The goals for this process are to enable each team member to participate in the process without giving up their day job; provide each member of the team with equity in the innovation; and reduce the out of pocket expense and time commitment required. The outcome of this process is collective ownership of a patent that can then be shared, sold or licensed in a uniform and predictable way.

Step 1: Setting Down the Principles of Behavior

The first step, and one of the most important, is to agree upon principles of behavior. While much has been written on the topic of collaboration, there are a few key behaviors that must be practiced for this process to be successful. Some of these are:

- Compensation must be fair for contributions made.
- Roles and deliverables must be well defined.
- Consensus should drive decision making.

Indeed, the first act of collaborative behavior is the identification of necessary team members (designers, engineers, legal, etc.) and a proposal for the equity split for each member of the team.

Step 2: Building the Team

When selecting a team, the goals of the collaborative entrepreneurship process must be kept in mind. Every team member should be actively employed in the business of design (not relying on this project for income), be skilled and experienced in their respective discipline (time is of the essence, so minimal learning curve is essential) and be fair minded (equity is going to be split between the team members, so each participant should be committed to a fair split for all members).

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Once a pool of candidates is identified, interviews are held to determine fit for the particular innovation. This step is critical as collaboration is built on a foundation of trust established between team members. Conflicts – including personality conflicts – hinder the collaborative process. Identifying potential sources of conflict through the interview process is paramount.

Step 3: Establishing Equity Percentages

Now that the team is identified, it is time to propose the equity percentages that are allocated to each team member. This is an important part of the process, but equally so is the acknowledgement that the overriding goal of splitting the equity is that each team member receives a fair split based on contributions. In addition, while it is necessary to establish a split upfront, it may be necessary to adjust the percentages down the line if it is determined that one member did more work (or less) than originally expected. This process is called “true-ing up.”

Step 4: Vesting Equity

Once the team is signed up, it is time to begin the actual work. When creating a patent, the standard process involves writing specifications and requirements (typically led by the inventor), patent planning and writing (patent attorney), conceptual and preliminary design work (engineer) and general project management.

Although a percentage of equity was previously allocated to each team member, equity is not actually granted until the work product is delivered, accepted and assigned to the organization. This is a process called “vesting.” It is important to vest the equity to ensure that each team member is fairly compensated for work contributed; without contributions (work product), there is no need to compensate. This is a fairly common practice in high tech companies and the process is very well defined.

Step 5: Submitting the Patent

The large portion of the project’s first phase is completed when the patent is submitted; however, it is not over. There may be significant work required in answering questions from the patent examiner’s office. This can take months, even years in extreme cases, so it is important to reserve some portion of the vesting until the patent is granted.

Case Study

One such firm that specializes in the “Collaborative Entrepreneurship” process is Syndicom, Inc. The company recently began working with surgeons to help them use Collaborative Entrepreneurship to turn their ideas into patents. They have worked on spinal implants, orthopaedic instruments and other inventions related to orthopaedic surgery.

In February 2006, an orthopaedic trauma surgeon began a discussion with the company about an idea that he had been trying to develop for three years. Initially, the surgeon had approached his sales representative, who put him in touch with an engineer inside the rep’s company. The first thing the surgeon had to agree to was signing a non-compete agreement for three years. Because he had no reason to work with anyone else on the idea, he signed the agreement. The process was slow and work was sporadic. After approximately 12 months, the surgeon was informed that this company was not interested in pursuing the development work because they were unable to engineer a certain aspect of the invention.

Within three months of their first discussion with the surgeon, Syndicom helped the surgeon build a team, worked on several different approaches to the invention and submitted the patent for a total out of pocket expense of \$757. That surgeon has recently signed up to develop his third patent.

Other companies such as Nine Sigma and Innocentive have developed innovation networks that put together “buyers/seekers” with “solution providers” in an open marketplace to collaborate on new products and technologies.

Conclusion

While there are many ways to develop an idea as a practicing surgeon, in some cases, the traditional avenues may be less than ideal. From uncertainty regarding ownership rights and control, to significant time commitments in a risky venture, each approach has challenges. Collaborative Entrepreneurship appears to offer solutions that address the shortcomings of the conventional paths identified earlier. The end result is a solution that gives the entrepreneurial surgeon more time to innovate, greater control over his intellectual property and a larger share of the equity.

1. Global CEO Study, IBM, Expanding the Innovation Horizon, 2006.

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