Market Management in Biotech

Or How to Avoid Being a Mule

Biotechnology in Perspective

When thinking of what drives the success of a biotechnology firm in the 21st century one is reminded of what might be considered a scientist's view of business:

*If a man makes a better mousetrap than his neighbor, though he builds his house in the woods, the world will make a beaten path to his door.*

Ralph Waldo Emerson

While if one wanted to differentiate those who succeed from those who fail, one looks at a marketer's view:

*The manufacturer who waits for the world to beat a path to his door is a great optimist. But the manufacturer who shows this "mousetrap" (and its value) to the world, keeps the smoke coming out his chimney.*

O.B. Winters

What these quotes demonstrate is a fundamental problem of all technology firms, but especially those in biotechnology and the life sciences. For many trained in technology and science it is this core competency that creates entrepreneurial success. What they fail to realize, perhaps too late, is that technology entrepreneurship is an attitude towards management and technology that focuses on opportunities, needs fulfillment and controlling resources. It is not focused on risk management, owning resources, or science for science sake. The history of innovation has demonstrated, time and time again, that science alone or the better technology, does not bring a technology to commercial success.

The Role of Customers

The fundamental purpose of any firm is to create a customer and this is done through both marketing and innovation. Within high technology the focus is as in the name on technology and for a very long time it used to be sufficient to excel in technology management in order to achieve business success. However, along with globalization of business the necessity to understand markets and to manage markets, have become of strategic importance and along with constant innovation, the basis for sustainable competitive advantage. This holds for any high technology organization.

Predicting Success

What differentiates successful firms from those who are less successful can be seen from the Winter's quote above. It is important to identify customer needs, wants & fears (while hopefully having governmental policies that encourage, reinforce, or at least get out of the way of the successful technology entrepreneur).

The Role of Networks

It is also important to understand that technology entrepreneurs are embedded in networks that provide necessary social and human capital. One only has to look at the knowledge intensive clusters in BioValley, Silicon Valley, Rte. 128, San Diego bio-corridor, or even the emerging Singapore Biotech cluster to understand the importance of 1) intellectual property; 2) “A” team players in a firm’s R&D; and 3) the importance of adequate infrastructure. It is clear to have successful biotechnology start-ups one needs to have necessary financial capital from not only venture capitalists and government funds but also from organized seed-stage investors and the often unrecognized, but important strategic investors.
often that which academics do not want to recognize, but which is in fact a reality: those who have a commercial interaction early in career subsequently ask better research questions; produce better science and therefore technology; are more highly cited by their colleagues, and ultimately produce more commercially viable innovations.

When trying to predict the success of a technology based entrepreneurial firm it is important for academics, policy makers, entrepreneurs, investors, and others to remember that publications, patents and R&D dollars alone are not sufficient predictors of the success of technology firms. These are, at best, inputs to firm success not the output.

We also know from experience that research clusters effect new venture development, but it is not a one-to-one relationship. As a matter of fact if one in one hundred succeeds it may be a major accomplishment. In order to increase the probability for success to happen we will need cooperation among and between (i) individual researchers, (ii) universities, (iii) R&D firms, and (iv) last but not least large multinational firms. Recent research show that universities apparently carry the largest burden in this respect, which is interesting given their nearly chronic financial dilemmas which again makes one wonder how they do this, or how long they can carry this activity – the attempt of “the miracles at the loaves”.

Incubators and Industrial Clusters

The roles of incubators and more recently that of industrial clusters in the development of biotechnology firms have been the grist of national policy makers, local economic development officials and even real estate speculators. What is important to realize is that for firms, incubators, and clusters to be successful they must exist for mutual self-interest. This comes through sharing resources and encouraging inter-firm cooperation. The results ultimately lead to the consolidation of both technology and firms, which produce successful new technology introductions and more viable and competitive firms. However, if the European experience is any indication, this is more than “networks” based on governmental policies or enforced relationships dictated by well meaning, but behaviorally science-naive bureaucrats.

When is Marketing Important?

Strategic market management has often been regarded as the last task in a com-
mercialization process, thus not of primary concern for biotechnology companies whose business model is concentrated on early stage R&D. This assumption is incorrect as many of the initial assessments concerning market attractiveness are done in the very beginning of the R&D process – already at the discovery stage. Strategic market management has to be embedded into the entire R&D process and is hence fundamental to the long term success of biotech business.

Given the long product development time within biotechnology strategic market management is a long term endeavor requiring extensive scanning of long term market trends and feasibility. Strategic market management is about analyzing quantitative market data of today, supplemented by qualitative market analysis synthesized into as realistic as possible assessment about future market dynamics.

Developing a Marketing Orientation

Research and Development firms who take a value added marketing approach to their strategic partners are typically more successful if thirty plus years of research is any indication of the role of market orientation to firm success. Those that see their partners as having needs, wants, and fears to be addressed are more likely to produce commercially viable technology for their partners. However, a real barrier for successful technology firms (especially biotechnology) is the lack of entrepreneurial management skills.

It is not unusual that science and technology are treated as synonyms, although they in our opinion represent two distinct but related concepts. Our understanding is that science is about producing new knowledge, normally within universities – not necessarily leading directly to commercial ends, whereas technology clearly has a commercial goal. Consequently – and actually quite surprisingly – technology firms often do not understand the needs, wants and fears of their strategic partners or investors, much less their paying customers. Training technologists in management, marketing and finance is cheap insurance to reduce the risk of business failure, but it is equally important to train investors in both technology and management as it will reduce the risk of bad investment as well.

Technology should yield perceived significant benefits in: (i) performance, (ii) functionality, (iii) capabilities, and (iv) cost reduction; preferably two or more of these. Asking if the technology is radically new and disruptive will perhaps tell you if it will replace current technology for example look at how birth control pills or laparoscopic surgery changed their various customer groups and the industries in which they function.

At this point we feel it important to note that while the term market is frequently used in technology firms, what we have is a failure to understand we really have five basic, but related, but very distinct concepts.

Key Marketing Concepts:
- Market: The set of all actual and potential buyers of a product
- Potential market: The set of consumers who profess a sufficient level of interest in the market offer
- Available market: The set of consumers who have interest, income, and access to a particular market offer
- Target market: The part of the available market the company decides to pursue
- Market demand: The total volume of a product that would be purchased by a defined customer group in a defined geographical area in a defined time period in a defined marketing environment under a defined marketing program

Marketing and Investment

Ok, so you agree that marketing is important, but what does that have to do with me as an biotechnology entrepreneur who needs financial resources to complete the development of my technology or become the next Amgen? The answer is quite simple, the more you can explain and demonstrate your understanding of your market, the increasing levels of confidence investors have in your concept and ultimately your firm. Let's get pragmatic, if an investor asks “Why are they here asking for money, we have no idea what they do and who would care?” you are highly unlikely to get funds, at least in the United States. By merely reciting publicly available statistics you achieve only the lowest of respect by investors and not much in the way of funds. One can be somewhat more creative by purchasing available research studies or even a commissioned a custom market study, but the results are not likely to impress investors in this economy. If you do want to grab an investors attention try personally conducting your own market study, perhaps by interviewing at least 15 target market customers.

Want to really impress those with money, sign up beta test customers, or better yet show fully operational and satisfied customers or a clearly defined & detailed sales pipeline by prospect name and the money will most likely flow. If you go too far, that is ok, all they will say is “Why are they here asking us for money, they don't need any money.” Not a bad problem to have.

However, remember investors are always asking these questions:
- Is this really an adequate business opportunity?
- Is this one we want to pursue?
- What resources are required to exploit it?
- How do we acquire them?
- How do we manage the operation?
- How and when do we harvest?

What All Biotechnology Firms Need

A business model proves it is possible to create a market with effective demand where there are customers who are willing to pay, thereby converting resources into wealth. What the customer considers value is never just a product, it is always a utility, i.e. what a product or service does for him or her. A viable business model requires a sound revenue model, with one objective, profit. Profit is the test of the validity of the business model, profit is a condition of survival. It is the cost of the future, the cost of staying in business.

Remember

Most investors think biotechnology is the newest whim on earth! From a historical perspective it is simply not so! And from a business perspective, it is not so new either. Biotechnology’s genesis goes back to some 7000 years when farmers noticed that certain crop grew better in some conditions than others. A follow-up took place around 1000 BC when farmers cross-bred the best of two breeds – the female horse and the male donkey – creating a new animal, the mule. The mule became the first genetically engineered species. We hope that biotechnology firms are not as stubborn as this first genetically engineered species.

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