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Building the New Biotech Leadership

The Economic Promise of Biotechnology

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Competition for regional development is fierce among state governments. Is the long-range hope of fiancial returns likely to be as great as the gamble?

You would be hard-pressed to find anyone who would argue against the healthcare promise of biotechnology. Since its humble industrial beginnings in the early 1970s, biotechnology has provided healthcare benefits to hundreds of millions of people worldwide. Currently, there are more than 250 US FDA-approved biotech drugs for nearly 400 indications and more than 400 biotech drugs and vaccines currently undergoing clinical trials.

But what about the economic promise of biotechnology? A lot of folks seem to be betting big on the economic fortunes that biotech will bring them. And I'm not talking about the financial benefits to VCs and related private equity investors. I'm talking about the heavy bets being placed by government, in particular state government.

Pursuing the Promise

In the United States alone, states have spent billions of dollars pursuing the economic promise of biotechnology. State spending includes startup and seed funding for new biotech companies, new facilities construction, R&D funding, establishing biotech parks and incubators, and purchasing expensive equipment—as well as numerous tax incentives and tax credits provided to attract and recruit biotech companies.

Notwithstanding the fierce global competition, competition among US states to attract biotech is increasing. Who hasn't heard of Florida's $300+ million fund to attract and build an east coast location for the Scripps Research Institute? And what about Florida's current efforts to recruit the Burnham Institute? With $500 million in public money, Kansas has recently mounted a major effort to recruit new biotech companies. Just about every state is now betting on biotech to fuel its economic growth.

Like other, larger industries before them, some biotech companies have leveraged the situation to their economic advantage. Some have negotiated increased tax credits and related concessions by threatening relocation. Biotech's growing negotiating power is not going unnoticed by either government officials or bioexecutives.

State governments have implemented some obvious initiatives. For example, agricultural states have implemented biotech initiatives focusing on agricultural biotech, coastal states are focusing on marine biotechnology, and states having established medical research centers are focusing on biomedical initiatives.

If you're not reading about all this competition in the newspapers, just attend the next BIO conference and take a leisurely stroll through the exhibit hall. At the BIO 2006 Convention in Chicago, more than 1,700 exhibitors displayed their lavish displays, fanfare, and trinkets. You couldn't miss the growing competition among the various states, regions, and countries to attract and recruit biotech companies.

Fueling the New Economy

Can biotech fuel the New Economy? The failure rate for biotech companies is about 90 percent, and only a handful have yet turned a profit. But when they hit, they can hit big.

According to IMS Health, biotech drug sales in 2005 accounted for about 14 percent of the total U.S. prescription drug sales ($33 billion versus $239 billion); however, biotech drug sales grew about three-and-a-half times faster than pharma drug sales (17 percent versus 5 percent).

Biotech employment currently accounts for about one percent of the total private sector employment in the United States, showing lots of room for growth. However, employment growth for the sector has averaged just more than one percent during the past five years. Notwithstanding the sluggish job growth for the economy as a whole during this same period, these numbers are not impressive. Although government officials are quick to say that their spending efforts and investment in biotech reflect less of an interest in ROI than in growing the economy and creating new jobs, economists are starting to question how much money states should spend on an industry that is creating few jobs.

Some bright lights are on the horizon, notably biofuel and biosecurity applications of biotechnology. And innovation and imagination are the wild cards for biotech applications not yet developed.

Doubtful Delivery

Returning home from BIO 2006, I decided to conduct my own personal poll regarding the economic promise of biotechnology. I cannot claim a statistically significant representation, but I found that the vast majority of my biotech colleagues had serious concerns and doubts that biotech would deliver the economic results that government officials expect, at least in the short term.

Why such strong doubts and concerns from those intimately involved with the biotech industry? It is one thing to grow your knowledge base and yet another to grow the economy. And there are a number of economic concerns and threats looming on the horizon. Federal government spending, which has fueled biotechnology and the life sciences, has leveled off recently and may even decrease in real dollars during the next decade or so. Unless you can demonstrate that a biotech initiative is directly beneficial to homeland security or that it can dramatically reduce our dependence on fossil fuels, don't expect federal dollars to fuel the coffer.

Job creation exists in the biotech industry; however, these jobs aren't necessarily being filled by local workers. As the global economy becomes reality, hiring knowledge-based employees has no geographical boundary. The global biotech economy is eminently well-suited for outsourcing—with R&D being conveniently carried out at one location and manufacturing and distribution in another.

Profits from biotech drug sales may decline as generic biotech drugs eventually enter the marketplace. Other economic concerns and threats include growing consumer pressure to lower healthcare costs and potential consumer backlash regarding genetic modification of the food supply.

So what about the economic promise of biotechnology? Will biotech deliver? Only time will tell. The current competition for biotech industry bodes well for biotech companies. We might as well enjoy it while we can.

Suggested Reading

"The United States of Biotech", *The Boston Globe*, April 16, 2006.

"Growing the Nation's Bioscience Sector: State Bioscience Initiatives 2006," *Battelle Technology Partnership Practice and SSTI,* April 2006.

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