Redefining Agribusiness

Q & A WITH MONSANTO CHIEF TECHNOLOGY OFFICER ROBERT T. FRALEY

Being an industry innovator isn't just about advancing technology. Often, what can make the difference between success and failure is a company's ability to actively manage the organizational and business issues that support those technological advances. As part of Spencer Stuart's ongoing series of interviews with top agribusiness leaders, Dr. Robert T. Fraley, chief technology officer at Monsanto, talks about the company's exciting research in biotech and genomics, how the technology is reshaping modern agriculture, and the leadership issues facing the company as it drives these advances.

What are the specific leadership challenges for a global, high tech company like Monsanto?

Fraley: We have a unique leadership challenge in that we're defining an industry that never existed before; we're bringing a new set of science-based products into agriculture. There is a huge amount of excitement at Monsanto about these advances, but our challenge as leaders is to try to forecast or think through the path of something that's being done for the first time. Many times, that means we must develop the business framework and encourage the development of the regulatory framework and the commercial paradigms that we'll be working from, which may differ from product to product and country to country. In addition, the scrutiny we face in every one of those facets of business — whether it's regulatory, product development, market practices or market acceptance — is very high. The bar is high, the rate of inspection and re-inspection is high and that requires us to act safely and think carefully about anything we do and how our actions might be setting precedents for the future.

Given the differences in how agriculture is practiced in the developed world versus the developing world, how does Monsanto organize and manage itself to address very diverse circumstances and needs?

Fraley: It's a great question. On one hand we're a global company, so we're always searching the market for the best talent in the world. On the research and technology side, we are looking for the most diverse and best minds, those individuals who can add the most to a global development program. Just the opposite, the sale of products is all very local. Whether it's a sale to a small farmer in the Philippines or a large farmer in Brazil or Argentina or the U.S., sales are based on the knowledge of the farm, local conditions and the product. To me, one of the most interesting challenges is harnessing the global capabilities of an international talent pool, while always remembering that the customer is local. We're always balancing both dynamics and striking the right equilibrium is crucial.

How is biotechnology making an impact on agriculture?

Fraley: The exciting thing to me is that, unlike most products or technologies, biotechnology and the agriculture industry have a very broad reach. The way I like to describe it is that every farmer in the world — a big cotton farmer in the Mississippi Delta, a cassava farmer in Africa or a rice farmer in the Philippines — knows what to do with seeds. The beauty of biotech is that the latest cutting-edge science — genetic engineering and biotechnology — is incorporated in the seed and the seed is then rapidly multiplied and distributed. It surprises a lot of people to learn that biotechnology already is on 170 million acres and nearly half of that acreage is located outside of the U.S. Three or four million farmers in India and China alone are using biotech today, compared to fewer than 100,000 farmers in the U.S. So the technology has been widely adopted.

Even with the current adoption rate of biotechnology in agriculture, we still face challenges. Particularly challenging are distribution and education. Whether our customers are planting one or two Mu of Bollgard cotton in China or planting Roundup Ready soybeans on 10,000 acres in Iowa, farmers need to be competent in the benefits of technology and comfortable that the choices they are making are the right ones for their farm.

How has industry consolidation affected the major agriculture companies from both a technology perspective and a talent perspective?

Fraley: The consolidation on the chemical side of the industry has been pretty dramatic. When I joined Monsanto more than 20 years ago, there were probably 20 companies that were developing and discovering new products. Today, there are five or six basic manufacturers. A similar trend has occurred on the farm and in other industries supporting agriculture. Much of this consolidation is driven by the scale needed to support research. To be competitive in this industry today, an agriculture company has to spend hundreds of millions of dollars on R&D, and that's a big investment. It requires a lot of scale and a big return to do that.

Other trends have overlaid on that. Twenty years ago the worldwide seed industry and the worldwide crop chemical industry were completely separate. One of the profound implications of biotechnology is that those industries now are virtually the same. When a farmer in Iowa makes a decision about his corn seed purchase today, not only has he picked the hybrid for his farm, but in many cases he's made the decision about the type of insect control he's going to use on his farm, he's made the decision about the type of weed control and, often, which market the grain from that field will be transported to. So decisions have become much more complicated.

With all this investment, do you expect to see an explosion in new products, as has been promised for so long?

Fraley: What we're doing through our biotech work is adding new value to seeds, historically in the areas of insect and weed control. When you look at the pipeline, what's in the development stages and in field trials today are the next-generation of products that will enhance seed value and food value. There also is a lot of excitement about products that will confer heat and drought tolerance, as well as those that can improve heart health.

When I describe where the industry is today, I like to compare it to the electronics industry in the '50s or '60s. I can remember my first real electronics experience as a kid was getting a transistor radio. When you think about it, all the breakthroughs in electronics were in that box, but nobody could imagine that the transistor would lead to the computers, the Internet and the PDAs that we have today. Biotech is a lot like that. We've seen the effect of one or two genes with weed control and insect control characteristics, but the technology that's coming is going to re-shape agriculture, the food chain, health and nutrition for decades to come. We're just at the very beginning of the technology that's going to change these industries and drive economic growth for three or four decades into the future.

When will we see the first quality trait products — products that offer consumers some type of benefit?

Fraley: Very soon, we hope. We are producing and will sell in 2005 on a limited basis soybeans that produce a more stable oil, thus reducing the need for hydrogenation and the formation of trans fats. Scientific evidence shows that consumption of saturated fat, trans fat and dietary cholesterol raises levels of low-density lipoprotein (LDL), or "bad" cholesterol, increasing the risk of coronary heart disease. "Healthy" oils will become an increasingly important component in lowering the amount of "bad" cholesterol in our diets, which can reduce the risk of developing heart disease. New soy varieties with better flavor and texture are improving palatability and will be used in soymilks, cereals, nutrition bars and other foods beginning in 2006.

If you could pick another industry or company and borrow a skill-set or capability for use in the organization, what would it be and why would that be a priority?

Fraley: As I said earlier, I believe that agricultural biotechnology is going to change the way we grow crops. It's going to change the way we produce food. It's going to change the way we deliver health and nutrition. A lot of what the industry could learn, then, is the positioning of products and educating stakeholders about the benefits of products, which is a skill-set that exists in many of the leading consumer products companies. That's the skill-set where I'd put my bet today.

What non-technology or science attribute does your research organization have that sets it apart from the competition?

Fraley: One of the real challenges is getting people to think far enough ahead and dream because it's so hard to balance time between what's important in the long term and what's the crisis today. You have to be able to deal with the issues of the day, yet you have to plan and invest for the years ahead. In many cases, you've got to be thinking a decade ahead. One of the things that is unique in our organization in terms of research is that we've been very good at addressing near-term science and regulatory issues, but we've also been able to think and plan and dream far enough ahead to anticipate what some of those new opportunities in the future may be. Foresight is a really important attribute to have. In today's world, that's a precious commodity.

Talk about the relationship between technology and the commercial organization.

Fraley: One of the decisions that changed the company the most was to break down the old stovepipe segmentation of the R&D, commercial development and commercial marketing organizations. When we made the decision to move to a more team- and project-based organization, one of the founding premises was to speed up the cycle time of product development to better link the research efforts with marketplace needs. We created multifunctional teams to bring together the key insights in science with the legal, the regulatory, the commercial and the marketing functions. That's been a big part of our success and it's allowed us to reduce our cycle time for translating the value of science to market value.

Have competitors made similar organizational changes?

Fraley: I don't think so. We have been much more dramatic in how we've reworked our organization to break down those functional barriers. It's really something that we reward and applaud in our culture. We put a high premium on communication skills, teamwork and networking capabilities.

Do you think your approach draws better talent?

Fraley: I think it excites a lot of people. It provides more career exposure and flexibility. Scientists come into the company with an opportunity to see directly in the line of sight to the marketplace. It's also a more challenging environment. Scientists today are networked with research going on around the world. They're closely linked with the shifting regulatory and intellectual property challenges that we address every day, but also very attuned to the marketplace and the customers. That makes for a clearer focus on what's important.

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