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Differentiating On Service Innovation at BASF

BASF's company tagline, "We create chemistry," represents 150 years of collaboration and innovation. As Neil Bentley, director of marketing for the Crop Protection division of BASF in the United States, sat behind his desk at the company headquarters in Durham, North Carolina, he pondered how critical innovation was in developing business relationships—just as it was in developing new chemistry compounds.

The company had come a long way since it was founded in 1865 as Badische Anilin und Soda-Fabrik. The company was originally founded as a dye maker for the textile industry, but as the industrial revolution spurred population growth, demand and opportunity in agriculture grew. In 1913, when German chemist Fritz Haber and BASF engineer Carl Bosch developed a method to synthesize ammonia[1] on an industrial scale, BASF quickly commercialized the process and firmly established its pioneering role in increasing growers' yields.

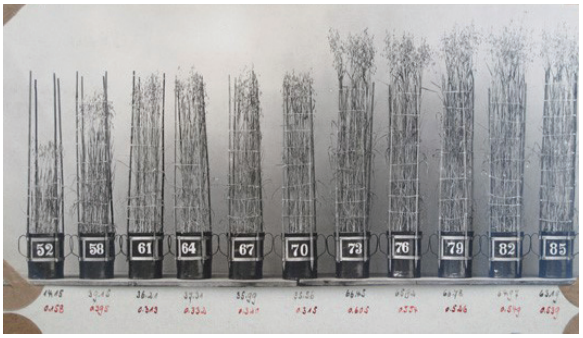

Figure 1. Results of a fertilizer test in 1919

The application of nitrogen fertilizer resulted in large improvements in crop yields. Figure 1 shows the dramatic results of nitrogen in a 1919 test. Even now, with the agriculture industry undergoing structural consolidation and a world population expected to grow to 8.1 billion in the next 10 years (Roser 2015), BASF remains true to its core and continues to create innovative solutions with and for its customers. The extensive portfolio of products and solutions BASF has crafted—ranging from chemical and biological crop protection to seed treatment and nutrient management—address the key needs and challenges faced by agricultural producers. The company has historically remained in the middle ranks of the seven major agro-chemical companies in the U.S. market, but Neil had recently implemented a shift in the company's go-to-market approach in North America. The goal: to better create demand and enhance relationships across all levels of the agricultural input sector.

1 Patented as the Haber-Bush process, it is still used in the production of ammonia today.

This case study was prepared under the direction of Dr. W. Scott Downey (Center for Food and Agricultural Business, Purdue University) by Josiah Ringelberg, a Purdue University master's student in the department of agricultural economics. The author would like to thank BASF, particularly Brady Spangenberg, Market Intelligence Strategist, for his assistance and Neil Bentley, Director of Marketing, who inspired this case and supported its production. The case is a basis for class discussion and represents the views of the author, not BASF or Purdue University.

The Industry

The North American agriculture industry is uniquely structured with defined levels and different product channels for agricultural inputs, including fertilizer, crop protection, and seed. While BASF has largely focused on crop protection—herbicides, insecticides, fungicides, and seed coatings—other players have put much of their innovation effort into seeds and genetics. Companies such as Monsanto, Dow, and DuPont (through its Pioneer brand) have developed seed traits that provide pest resistance through genetics rather than chemical mechanisms.

The path by which raw materials are transformed to agricultural products used by farmers is varied. BASF converts raw materials into value-added products sold primarily through agricultural retailers. These retailers, in turn, sell directly to farmers. The history of agricultural retailers is heavily rooted in the transport of bulk commodities, such as fertilizer, which is an input in agriculture, and grain, which is an output of agriculture. The dispersed nature of transportation and the heavy equipment needed to store products and load trains or barges meant that every farm community had a local predecessor of today's modern retailer. Because these organizations, often farmer owned, dealt with commodities, their focus was on operation and safety more than sales and differentiated services. Over the last several decades, retailers have started providing additional products and services to farmers, including crop protection products and seed.

Retailers still play an important distribution function, but they now offer a broad array of products to farmers. Retailers are often the primary owners of farmer relationships and few product manufacturers have had success removing them as mediators in order to sell directly to farmers. In fact, many retailers are structured as cooperatives owned by farmers themselves. One of the ways retailers have retained relationships with farmers is by fostering a degree of perceived objectivity by selling a variety of competing product lines as well as private label or proprietary brands of seed, crop protection, and fertilizer (a largely undifferentiated product).

There have been some attempts to subvert the standard three-step value chain[2], particularly in the seed industry. Along with several regional seed companies, the large seed subsidiary of DuPont Pioneer uses an exclusive direct-to-farmer distribution strategy. This strategy sometimes involves enlisting farmers themselves as dealers. Other companies, such as Monsanto and Dow's Mycogen Seed, use a mixed distribution strategy of exclusive dealers and sale offerings through agricultural retailers. Most of the companies with successful direct distribution approaches have had those models in place for decades. None of them distribute crop protection or fertilizer directly—only seed.

While some input manufacturers have investigated a more direct approach to farmers, many distributors and retailers have grown. CropLife Magazine reported that seven of the top 100 retailers disappeared each year in the early 2000s as a result of mergers and acquisitions. Large players, such as Pinnacle Ag Distribution, Wilbur-Ellis Co., and CHS, have aggressively

2 The main levels being 1: Manufacturer, 2: Retailer, 3: Farmer. Figure 5 displays this three tier hierarchy.

acquired local retailers. These companies have made substantial moves in the market during the last five years, but it is unclear what impact future changes in commodity prices will have on consolidation efforts. It is possible that a weak market could lead to surges in mergers and acquisitions[3]. The largest retailers and their 2014 sales are displayed in Figure 2.

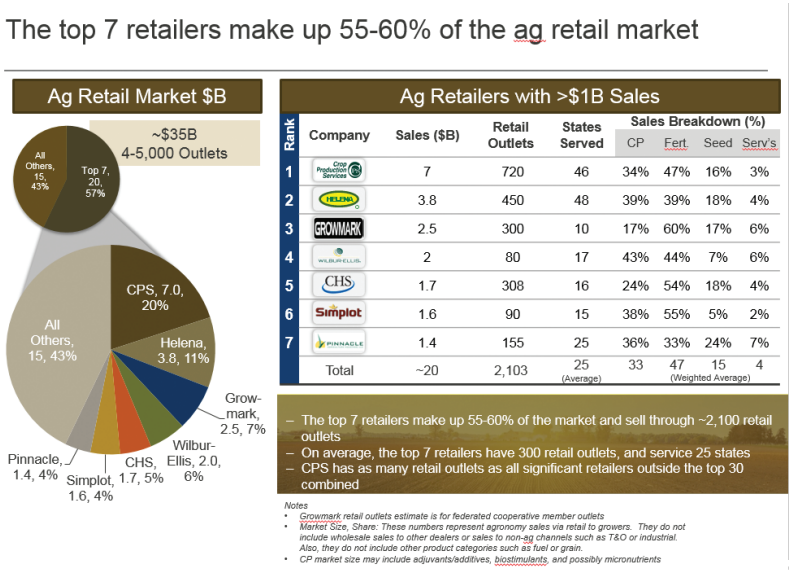

Figure 2. Context ag retail market report

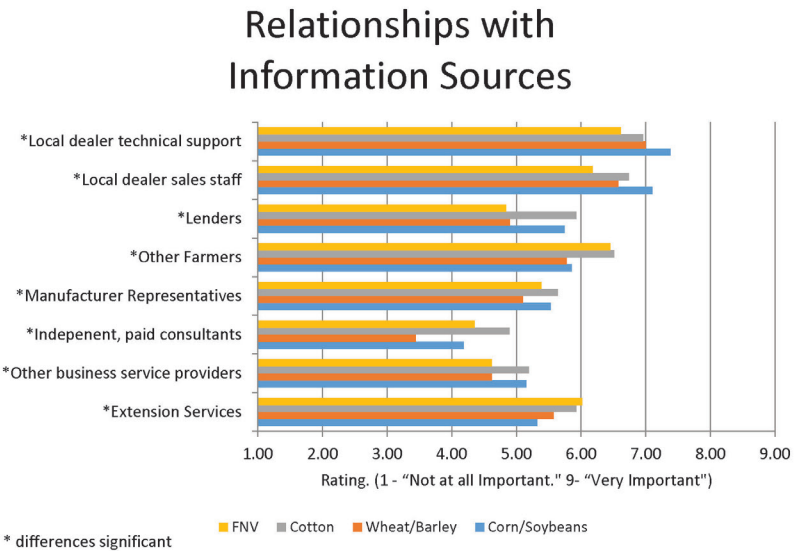

Figure 3. Relationships with information sources

Farmers and manufacturers have encountered consolidation as well. Companies including BASF are well aware that today's customers or channel partners might be tomorrow's competitors.

The agriculture industry is defined by unpredictability, change and technical innovation, yet it still remains a deeply conservative, relationship-driven industry. In favorable market conditions, farmers are willing to take chances and experiment with innovative products. In more challenging market conditions, farmers' buying habits are generally more conservative in nature. Similarly, farmers prefer to work with people they know and trust. Figure 3 shows how important local relationships are to large producers for four categories of crops – Fruit, Nut, and Vegetable (FNV); Cotton; Wheat and Barley; Corn and Soybeans. For every category, local dealer sales, and technical support staff were viewed as some of the most important information sources for seed and crop protection decisions.

Typically, farmers prefer to buy similar products from the same supplier year after year. In order for a new product to be purchased on a farm, the farmer must perceive the need for a

3 More on M&A activity in ag retail can be found in the CropLife article *Ag Retail Consolidation Trending Up*

Product Introductions and R&D by Major Company

Rank	Company	Number of Products			
		Introduced Since 1980	Currently in R&D	Research/Early development	Co-development
1	Bayer	68	3		
2	Syngenta	60	2	4	1
3	Dow AgroSciences	37	2	9	1
4	BASF	37	1	2	1
5	Sumitomo Chemical	34	3		
6	DuPont	21	3	2	1
7	Nihon Nohyaku	13	3		
8	Mitsui Chemical	12	2		
9	Kumiai	12	3		
10	Ishihara	10	5		

Figure 4. Product introductions and R&D by major company

solution provided by the product, be made aware of the product's existence (often by technical advisors, but also by salespeople), and have some preference for that product over what they have used historically. A retail manager must be willing to include the product in the retailer's product portfolio and the retail salesperson must be knowledgeable enough to communicate the differentiated value of the product as compared to very similar products offered by competitors. Every product manufacturer faces two critical issues: how to create end user demand and how to ensure product differentiation is conveyed through the distribution system.

THE TWO MOST VITAL RELATIONSHIPS ARE THOSE WITH FARMERS AND RETAILERS.

BASF Innovation Specialists

The pipeline of new products at BASF is rich. From 2015 through 2019, BASF plans to introduce 45 new products (Gustafson 2015). These products include 12 new active ingredients and two herbicide-tolerant crops. The company has invested more in research and development than most of its competitors, as shown in Figure 4 (Phillips 2014), but must capitalize on this

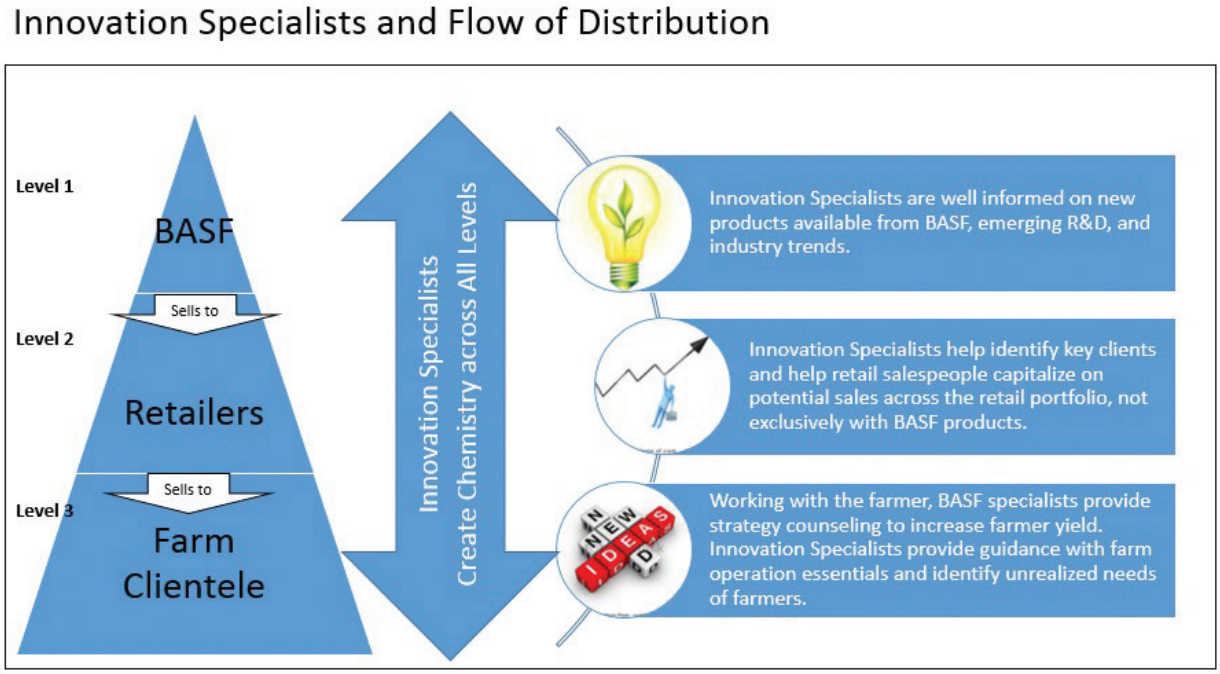

Figure 5. Innovation specialists and flow of distribution

investment through successful marketing and strong business relationships. The retailers through whom BASF distributes its products and the farmers who ultimately purchase them have different goals. To be successful, BASF must create awareness of its offerings at both levels. This is difficult because a retail salesperson's time and a farmer's time are limited, valuable, and equally desired by manufacturers of other products. To create a bridge and prompt conversation about new product education, agronomic strategies, and new industry practices, BASF has developed the position of Innovation Specialist.

As Figure 5 shows, innovation specialists work across all levels of the distribution system in order to create synergy and help farmers devise strategies that will maximize production. One innovation specialist illustrated the range of the position by stating:

"I not only work with farmers but also with everyone else they work with: their retailers, advisors, seed reps, equipment manufacturers and business partners. I think of it like being part of a grower's board room. The business of agriculture is just too complex for one person to handle, so only by working together can we help an operation get the most out of every acre."

BASF'S STRATEGY IS NOT TO BECOME A MARKET LEADER, BUT TO BECOME A LEADER IN DISTINCT MARKET SEGMENTS

He went on to identify a crucial part of the job as "meeting customers, helping identify the challenges and problems they have, and then developing plans together to help solve those issues." His statements support the notion that BASF innovation specialists are technical specialists who seek to help growers implement new technology and be successful—they're not just salespeople.

Innovation Specialists and the Farmer

BASF's reasoning behind creating the Innovation Specialist role has not only been to maximize individual farmers' yields, but to help the entire industry grow. With limited resources to accomplish this, BASF has to carefully select the farms on which innovation specialists must focus their effort. The data to make those decisions has been elusive in many manufacturing organizations. A farm is often a complex entity, representing generations of land splits, sales, leases and ownership structures that are maintained as a single operation. A single decision maker might control input decisions for dozens of small entities listed as customers on a record of purchase transactions for input products.

Aggregating purchase information on large-scale family farms and non-family farms can have misleading results. To obtain better data, BASF has provided rebates as incentives for farmers and retailers to buy specific products within targeted timeframes and provide information about how farming entities are combined. This has provided important information to BASF about the end-users who purchase their products. Using rebate data and a variety of other resources, BASF has developed profiles of decision makers to help innovation specialists select relevant and interested farmers with whom to work. Understanding the marketplace at the

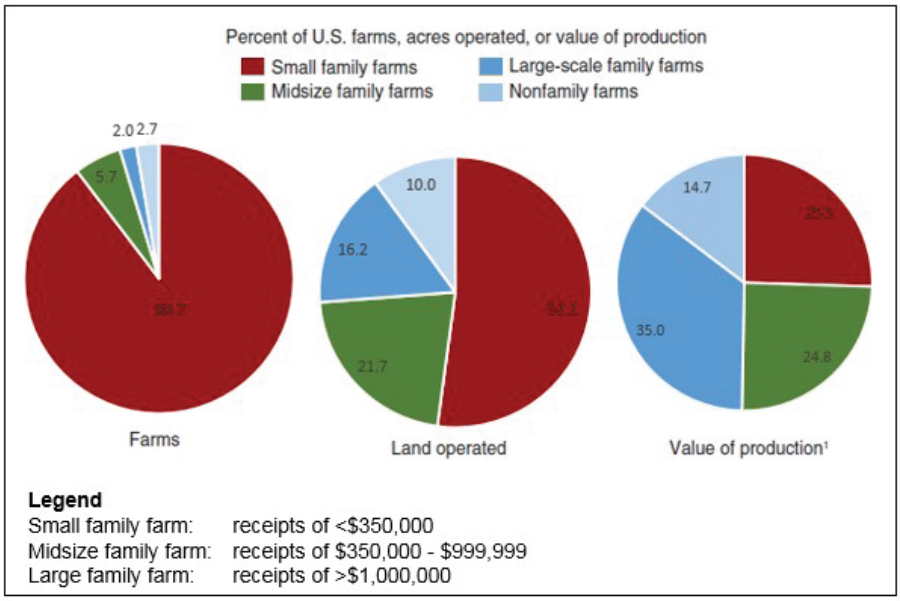

Figure 6. Distribution of farm acres

farm level has become increasingly important as farmer demographics change and their needs become more sophisticated.

In order to effectively allocate the innovation specialists, BASF has chosen not to be a market leader across the entire industry, but to be a leader within distinct market segments. The company considers demographic factors like farm size, farm owner/manager profiles, and current purchases of BASF products when selecting targets for innovation specialists. Farm size has become increasingly important as a factor in choosing whom to target. The industry has experienced rapid consolidation at the farm-level. Figure 6 shows the concentration of U.S. farm acreage in mid-size and large farming operations, as well as non-family farming operations. Large-sized operations are expected to continue to grow by more than 70 percent in the coming years[4].

In order to prioritize its sales efforts through the Innovation Specialists, BASF has focused its resources on two groups of farmers: advocates and prospects. Advocates are growers who already do a significant amount of business with BASF in terms of expenditures and number of product brands purchased. Prospects are growers who have significant acreage but have historically bought one or fewer BASF products. Prospects have low product loyalty but are large enough to be attractive targets. Prospects will need to be won over in order to be receptive to strategy advice, particularly in regards to BASF services, because they don't have a preference for the BASF brand yet. Advocates, on the other hand, purchase at least two BASF products and are therefore somewhat accustomed to BASF. Helping prospects become advocates is important because advocates have a high retention rate[5]. A third group of growers, made up of "Delegates" and "Customers," are larger in number but smaller in size. They are served through traditional channels and are not targeted by innovation specialists. Figure 7[6]

CONSUMER DEMOGRAPHICS THAT MATTER: FARM SIZE, MANAGEMENT PROFILE, PURCHASE HISTORY

4 Estimated growth for large farms comes from the 2014 Large Commercial Producer Survey. This value reflects the total growth of large farmers from 2014-2019. Recent economic downturns may impact its accuracy.

5 Purchasers of four or more BASF products have a retention rate of almost 96%.

6 Figure 6 does not include Nonfamily farms from Figure 5, since these do not have clear size or opportunity characteristics.

shows the approximate distribution of these segments.

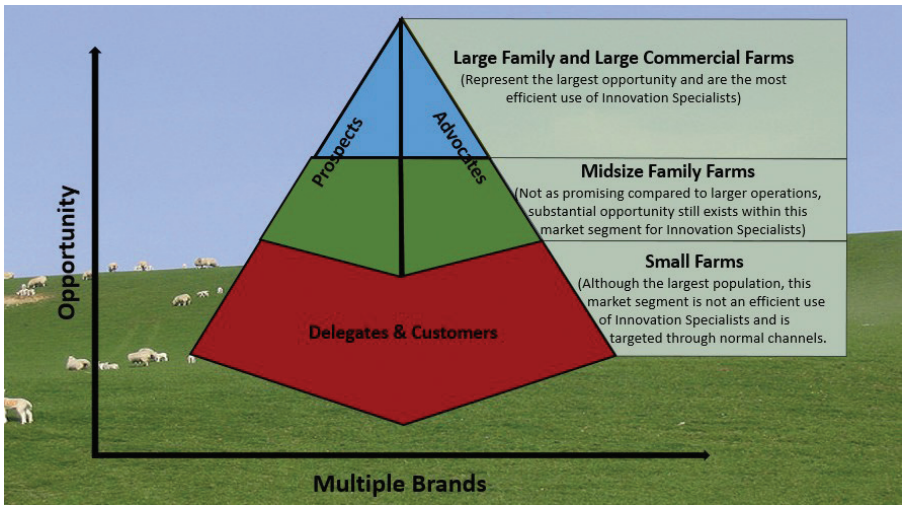

Figure 7. Prospects and advocates

Innovation Specialists, the Grower, and the Retailer

The end goal of innovation specialists is always to help the farmer produce crops in the most efficient and productive manner. BASF believes that by having innovation specialists focus on the grower, served by the retailer's portfolio rather than their own, they will build loyalty, relationships, and, ultimately, sales for BASF in a mutually-reinforcing cycle.

With salaries and benefits in the $80,000 to $100,000 range for an innovation specialist, it was expected that their interactions with farmers and retailers would result in revenue increases five to ten times their costs in the markets where they were deployed. It also was expected that when a farmer sees the innovation specialist as integral to the success of their operation, sales and opportunities will naturally migrate to BASF. But the support of retailers is key to the success of the strategy. That support comes only if working with an innovation specialist increases the retailer's overall sales. By supporting the efforts of retailers in an active way, BASF can work with retailers to jointly focus their efforts on the farms most likely to control future acreage. Innovation specialists have been given the mandate to operate in the interest of farmer and retailer first, then BASF.

BASF believes it will be successful only by helping others be successful. Innovation specialists will share customer profiles and opportunity heat maps with retailers to help them easily identify opportunities. In addition to their technical knowledge, innovation specialists are trained to help a retailer evaluate their portfolio and identify new potential customers. This process has five stages:

1. Identify which farmers would be the focus of sales efforts.
2. Prioritize specific prospect or advocate farms.
3. Build strategies for serving those farms.
4. Seek to understand the goals of those farms.
5. Help those farms accomplish their goals.

Innovation specialists need to create strong connections with their retailers. The connection begins with meeting retail managers and identifying local farm operations that would benefit from their expertise. With only a couple meetings, most retailers are able to compose a target list of growers who could capitalize on industry-leading innovations. The criteria for this list is ultimately determined by the retailer and could be different than the list developed by BASF. For example, a retailer might want to prioritize existing relationships over new clientele. The innovation specialist is trained to work with retailers to find overlaps between retailer and BASF targets and pursue those farming operations first. Those opportunities are often identified on heat maps that provide a graphical representation and ranking of the biggest opportunities within a specific geography.

Once targets are identified, innovation specialists help retail salespeople develop strategies for building value at selected customer operations. This process could include meeting with a customer to identify goals and places where additional technical resources could be used to help improve farm yields. While innovation specialists must understand the unique characteristics of each key farmer, they do not replace or supersede the role or relationship of the retailer. Instead, they strengthen these existing relationships, providing the retail salesperson with a tool through which farmer goals are more effectively identified and accomplished.

Challenges with Farmers

Although excited about the new approach, Neil was aware of potential obstacles that BASF would have to overcome. He identified several questions that had to be addressed. For instance, when an innovation specialist identifies a farmer's goals that oppose the interests of the retailer or BASF, how should he or she handle it? How should an innovation specialist react to retailer interests that don't align with BASF interests? Neil worried about the implications of having employees on the BASF payroll who were prioritizing the interests of farmers and retailersover those of BASF.

The intention of innovation specialists is to find synergies with farmers' goals. Innovation specialists are experts on crop production—advisors, not salespeople. Ideally, there should be no scenario where innovation specialists would be unable to offer aid to a farmer. If such a situation occurred, it would come from poor target selection.

Neil worried about how much farmers would actually trust innovation specialists to put farmer needs first. The mission of prioritizing farmer success has an altruistic air for which there are few industry examples. Suspicious farmers might wonder if it's too good to be true or if there's a catch. When farmers have no prior experience with manufacturers or suppliers who are truly dedicated to their success, it could be easy to mistrust the motivations of BASF and innovation specialists.

Challenges with Retailers

Even more concerning to Neil were potential conflicts with retailers. For example, some retailers already have lists of customers they are targeting, but not with BASF products. Neil worried about how innovation specialists would handle these situations. This dilemma could test the resolve of BASF employees to prioritize the interests of the farmer and retailer first.

Opportunity Heat Map								
	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Rank
	Fertilizer	Seed	Crop Protectio	Fungicide	Spraying	Precision Ag	Total Customer	
Customer 1	20,000.00	600.00	600.00	400.00	2,000.00	3,500.00	27,100.00	2
Customer 2	10,000.00	300.00	300.00	320.00	1,000.00	2,100.00	14,020.00	3
Customer 3	5,000.00	150.00	150.00	240.00	500.00	1,750.00	7,790.00	4
Customer 4	2,000.00	75.00	75.00	24,000.00	260.00	1,400.00	27,810.00	1
Customer 5	1,000.00	37.50	45.00	160.00	150.00	700.00	2,092.50	5
Total Produ	38,000.00	1,162.50	1,170.00	25,120.00	3,910.00	9,450.00	78,812.50	

Figure 8. Opportunity heat map example

Many of these questions come down to a tradeoff between immediate company value creation through sales and potential future value creation through goodwill.

An example of this dilemma appears on the "heat map" shown in Figure 8. There is an important opportunity with Customer 1 in fertilizer, but BASF doesn't sell fertilizer. The innovation specialist who is most interested in helping the retailer be successful should prioritize this relationship, but might be uncertain as to how it should be prioritized relative to Customer 4, for whom there is a significant opportunity in fungicide, where BASF has products. An innovation specialist should be versatile enough to provide valuable guidance to the farm operation of Customer 1, but BASF cannot expect a large return. Likewise, a vice-versa situation could occur where a specific farm is a large sales opportunity for BASF, but might not be perceived as an important opportunity by the retailer who already sells a product that competes with BASF.

Innovation specialists will be trained to help farmers accomplish their goals through a broad range of business and production goals that will include products and services not provided by BASF. Providing a whole-farm solution might sound enticing, but farmers might feel that BASF is reaching beyond their expertise. Retailers might misconceive innovation specialists as trying to usurp their relationships with important farmer clientele.

Conclusion

As Neil considered these issues, he felt confident that innovation specialists and industry relationships would provide BASF competitive advantages. Like any new approach, this initiative experienced a few growing pains. In an industry where success is generally measured once a year at harvest, hurdles can take time to overcome—especially when it comes to establishing trust with farmers, overcoming retailer skepticism and demonstrating consistent product performance. But early into the launch of the innovation specialist initiative, the success stories and positive business results seemed to support the effort. A recent BASF analysis showed that even as the 2015 U.S. crop protection market has declined somewhere between 3 percent and 7 percent, depending on the region and crop, BASF's innovation specialists had not only helped to increase product sales but achieved a customer satisfaction rating of 87 percent extremely satisfied. Differentiating on knowledge was providing real value in the marketplace.

"If we can foster a culture of inclusiveness and collaboration that goes beyond our own company walls, even if that collaboration can sometimes produce a result counter to our own business interests," he thought, "we'll have some excellent opportunities down the road."

Discussion Questions

1. As consolidations concentrate buying power into fewer farms, how should BASF grow their market presence? What are the potential risks and rewards from this strategy?

2. What role does trust play in the various levels of the channel? Will a strategy of altruism lead to product opportunities?

3. What role does information about the market and customer base play in the BASF strategy? If BASF is able to offer information to retailers that they don't have and help retailers execute on their own strategies, will they be able to obtain a return on the investment of doing so?

4. What returns on the investment in innovation specialists should BASF consider success? Is five to ten times a salary the right expectation? What other metrics should the company be considering?

Citations

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Figures

Figure 1
The photo is from the BASF company website. The photo illustrates yield improvements from a fertilizer test in 1919. The original photo can be viewed here: http://www.agro.basf.com/agr/APInternet/en/content/Blog/Blog_Archive/31__a_new_century_in_agriculture_the_haber_bosch_process

Figure 2
This graph has been used with permission from Context, an agricultural consulting firm. More on Context, their services, and contact information can be found here: http://www.contextnet.com/.

Figure 3
The figure is used with permission from Phillips McDougall AgriService and shows a research and development global overview. The report lists the top twenty companies and has been trimmed to cite only the top ten in this paper.

Figure 4
This figure has been developed to convey the roles of innovation specialists at each identified industry level. It was developed for this case study. The figure is not an absolute, and many innovation specialists perform tasks and responsibilities not mentioned above.

Figure 5
Figure 5 incorporates data gathered from the USDA and ERS. The graph comes from the 2014 Structure and Finances of U.S. Farms: Family Farm Report and displays some of the intuition BASF uses when analyzing market segments.

Figure 6
Figure 6 depicts the approach by which BASF has analyzed and segmented the market. It highlights two main customer bases as well as customer profiles and how the company identifies opportunity.

Figure 7
Figure 7 displays an opportunity heat map developed by the Center for Food and Agricultural Business. Although the numbers and figures are fabricated, the approach and intuition mimic methods employed by BASF during selection discussions of targets for innovation specialist.