



## Teaching Note Archer Daniels Midland Company<sup>1</sup>

### Case Overview

Archer Daniels Midland (ADM) is an upstream manufacturer of bio-based raw materials. In light of the recent shift to green chemistry, the company has been working to establish itself as a leader in the green chemistry movement. It was recently awarded two Presidential Green Chemistry Challenge Awards, including one for the Archer RC™ reactive coalescent, which significantly reduces volatile organic compounds (VOCs) in paint and coating products.

At the moment, ADM faces two primary questions: how it can fully commercialize its innovative Archer RC reactive coalescent in a very fragmented paint and coatings industry; and how to leverage its internal competencies and strategically respond to opportunities in the green chemistry field, both within the paint and coatings industry and beyond. Having demonstrated leadership in VOC reduction, ADM is exploring other initiatives that would continue this environmental performance.

The case leaves students to struggle with diagnosing ADM's internal and external environments along with how the company should strategically position itself in the marketplace in the future.

### Teaching Objectives/Purpose

This case can be used for different sections of a strategic management and/or marketing class while playing a rather central role in a business sustainability class. From a strategic management point of view, this case would be especially useful in

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<sup>1</sup> Unless otherwise noted, case data are based on interviews and review of company documents. All people and events are real.

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assessing a firm's external and internal environment for the purpose of strategy formulation. Students should assess the sources of ADM's current success by identifying the firm's internal competencies while understanding how it has successfully positioned itself in the external environment. With this knowledge in hand, students should collectively come up with some interesting propositions for future strategies, diversified or not.

From a business sustainability point of view, this case demonstrates some of the rewards associated with this business approach while highlighting internal capabilities required for its execution and external signals exhibiting potential positioning opportunities. Finally, marketing classes could use this case to examine the marketing opportunities associated with a sustainability agenda along with some of the business-to-business challenges associated with the paint and coatings industry and, more generally, manufacturing partnerships.

## Discussion Questions

**1. Describe the industry in which ADM competes. What are the industry's defining characteristics? What is the industry's competitive structure? What other external factors should ADM consider?**

At a high level, ADM operates in the chemical industry. It competes in a range of industries at the most upstream parts of the supply chain. Because it manufactures bio-based materials, the company has a broad spectrum of manufacturers that could act as customers. Rather than classifying ADM as a company in a particular sector, such as rubber or renewable resources, it is better classified as a bio-based manufacturer that services multiple and diverse sectors.

Whereas the chemical industry is generally considered mature, the green chemical industry is growing. Many opportunities still exist to supplement existing industrial products with green chemistry techniques. Given that many chemicals are produced using a non-renewable feedstock, bio-based feedstocks are in great demand. ADM has the potential to compete in this area, given that it uses bio-based, renewable feedstocks such as corn and soybeans. The political, social, and ecological dimensions are especially relevant in this case (pages 5–6).

ADM essentially acts as the intermediary between farmers and large manufacturing companies that require bio-based materials for the production of their goods and services. Consequently, ADM's customer market is quite fragmented, and ADM must understand a large range of industries in which its customers operate.

### *Porter's 5 Forces*

**Buyer Power**—Given ADM's history and size and the dearth of competitors in the bio-based materials industry, buyer power is quite low. Many customers consider ADM's

longevity and expertise as substantial benefits. Because ADM is so diversified in its product offerings, many customers have looked to ADM as somewhat of a one-stop shop, which increases customer retention.

**Supplier Power**—Supplier power would be quite low. Although farmers have a few companies through which to sell their crops, they are somewhat limited in their choices because of the locations of ADM's distribution systems, which create substantial switching costs.

**Threat of Substitutes**—This threat is low to moderate as customers feel pressure to adopt sustainable practices, such as using bio-based materials. Having said that, substitutes in the paint and coatings industry appear to be emerging regularly implying that while these policies are helping to build a customer base, it is also encouraging similar initiatives from competitors through the creation of alternative product applications (see page 13 of case study).

**Threat of Entry**—This threat is quite low, as entrants would need to build a large network of farmers to get a business like this going. Many firms already engaged in bio-based manufacturing could enter particular downstream markets that ADM is already in, however, demonstrating low mobility barriers. So while the threat of new entrants is low, the threat of mobility barriers is quite high. **Most students will not get this but it is an important point.**

**Competitive Rivalry**—This case doesn't provide much information on competitors, who exist with little rivalry in different regions around the world.

Overall, the Porter's 5 Forces analysis should provide students with an indication that ADM operates in a lucrative industry at the moment. Complementing this analysis with a PESTE analysis might also shed light on the fact that trends (political, economic, social, technological, and ecological) more generally support the green chemistry movement and, thus, the use of bio-based raw materials.

The external analysis detailed above warns of a challenge for ADM. Because the paint and coatings industry is quite fragmented, ADM struggles to employ a standard compound for all paint manufacturers. In addition, ADM has little control over how its bio-based materials are used, and the company's sales are entirely dependent on what its customers downstream in the supply chain choose to make. Furthermore, ADM has not nurtured relationships with these customers, so it has little information about its customer's products or future business goals.

## **2. How successful has the company been to date? Support with data. What factors account for ADM's success?**

A quick ratio analysis of ADM's income statement indicates that its cost of goods sold (COGS) as a percentage of sales is declining. ADM's net income margin is quite low, though it has increased from 2.1 percent in 2003 and 2.0 percent in 2004 to 4.2 percent

in 2005 (all figures using before tax income)<sup>2</sup>. Selling, general, and administrative expenses dropped substantially. The imbalance of expenses versus COGS confirms that ADM focuses on the upstream farmer, not on the downstream customer, in terms of marketing, sales force development, and brand building. ADM would need to substantially reduce its cost of goods sold if the company attempts to improve its relationships with downstream customers.

From a balance sheet perspective, the company's liquidity is sound (ratios equal 1.53 for 2004 and 1.81 for 2005)<sup>3</sup>. The debt-to-equity ratios are just above 1, which is a good sign. A substantial amount of money is tied up in receivables and inventory, which may be a cause for concern. Generally speaking, ADM's financials are in good shape.

### **3. What are ADM's strengths and weaknesses? What competencies and capabilities does the company have that its rivals lack?**

A major part of ADM's business is to separate oils and feedstock into components; the company also considers how these components can be used to add value to its customers' products. ADM's strengths include its history and established relationship with farmers. Its core competencies lie with its separation, purification, and conversion capabilities. Consequently, ADM can process and separate different agricultural materials at a large scale, which provides the company with substantial cost efficiencies that are inimitable among competitors. Moreover, ADM can adapt these capabilities to produce many different materials used in a range of customer products.

ADM also has a substantive presence on many shelves in grocery stores as bio-based ingredients are typically found in many products. It is also an expert at acquisitions and partnerships, as it has engaged in numerous integration initiatives in the last 50 years. This indicates that ADM has a unique ability associated with acquisitions. ADM also has some experiential capacity associated with bio-based raw materials and technologies that would supplement petroleum (i.e., ethanol and biodiesel). This, of course, requires ADM to leverage its current purification, separation, and conversion capabilities.

ADM recently introduced a wave of new industrial products that puts it head-to-head with some of the chemical industry's biggest players. Interestingly, ADM makes these products from bio-based materials, such as corn, soybeans, and other crops, rather than from petroleum-derived feedstock. Similar to how companies in the petroleum industry are back-integrated into the supply of crude oil, ADM is back-integrated into the bio-derived feedstocks that are available today in large quantities. Consequently, being a large commodity supplier puts ADM in a very good position to source raw materials for new chemicals, especially those chemicals that need to possess renewable ingredients.

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<sup>2</sup> ADM 2005 Annual Report. <http://www.adm.com/en-US/investors/Documents/2005-ADM-Annual-Report-Eng.pdf> (accessed March 9, 2009).

<sup>3</sup> *Ibid.*

ADM's technological capacity, derived from the creation of Archer RC, is quite unique and difficult to imitate. ADM's reputation is strengthened by its two Presidential Green Chemistry Challenge Awards, but competitors are introducing alternatives to Archer RC.

ADM's weakness lies in its downstream relationship with customers. Because it has thousands of customers, the company finds it difficult to establish solid, long-term relationships. ADM doesn't have a large sales force, and it relies on its Web site to convey information. The company uses large distributors for small volume sales, and sells direct to large customers. This sales arrangement could represent a threat to ADM down the road if competition intensifies. If ADM is not aware of how the green chemistry movement is influencing its customers, the company cannot adapt. This weakness is manifested in ADM's inability to fit its product ingredients with manufacturers' paint formulations or recipes.

Consequently, ADM is weakened by the fragmented paint and coatings industry's need for customizing the use of Archer RC. This implies that the ingredient's benefits may be nullified if the paint manufacturers do not use the proper amounts.

**4. What is ADM's organizational paradigm? What does the company stand for? Describe ADM's culture.**

In 2001, ADM announced a new corporate logo, tagline, and advertising campaign designed to underscore the company's deep commitment to nature and global agriculture.

The case provides a brief description of the culture. ADM certainly encourages innovation and cooperation. Implicit in the case is ADM's general commitment to bio-based sources of manufacturing, which is very much in line with a sustainable/green chemistry movement.

Students should get from the case that the company is focused on supplementing existing, non-sustainable feedstocks with renewable ones.

**5. How should ADM position itself in the paint and coatings industry? In the industrial products industry? What internal capabilities should it leverage in this positioning strategy?**

Rather than recommending a strategy, the instructor should allow the class to discuss this topic. This case describes a number of diversification opportunities related to the paint and coatings industry that ADM might find lucrative. Through their analysis of the external environment, students should position the company in a context that leverages its internal capabilities in an emerging market.

Some students might want to leverage ADM's innovative and collegial culture in combination with its separation, purification, and conversion technologies. Students

should find ways to take advantage of the emerging green chemistry market and other initiatives associated with sustainable development (i.e., renewable energies).

Students will most likely discuss the opportunities associated with bio-based raw materials and technologies that would supplement petroleum. This would clearly draw upon ADM's capabilities and, with oil prices showing little sign of dropping, this might indeed be a lucrative endeavor. That being said, the company would need to find creative ways to make these affordable in the short term so that it can reinvest some income into the technology for long-term petroleum replacement. The case talked about biodiesel as one option, not as a fuel supplement, but as engine lubricant.

**6. If you were asked by ADM's CEO to recommend specific strategies for the next five years, what strategic options would you consider and what options would you recommend? Why?**

The instructor should list a number of alternative strategies that the company could pursue given the information in the case. Asking the students to come up with some criteria to evaluate these alternatives will reveal the key success factors for the company and, more generally, the industry. Standard criteria for a strategic management class should include whether or not it would be leveraging existing capabilities, whether or not the external environment is accepting of this approach, and whether or not the strategy is aligned with the organization's paradigm (which would have all been discussed above). These should be supplemented with case-specific criteria, such as dealing with the fragmented nature of the paint and coatings industry, tapping into the conversion capabilities, etc. With these criteria in mind, the instructor might want to ask students to discuss the best alternative or combination of alternatives in small groups.

Clearly, ADM's value proposition is really the use of bio-based materials as a supplement for petroleum-derived feedstock as ingredients in the creation of industrial products. ADM's dominance in this market is critical, as the market for sustainable products continues to expand.

With the push of renewable fuel sources and ingredients for industrial products, ADM might consider the potential associated with leading the bio-based and renewable market. As probed in the next question, students should be aware of the product implementation implications associated with this strategy.

Applying the technologies gained from the Archer RC product to other applications does indeed leverage ADM's internal capabilities. The company must stay abreast of the signals from the external environment, however, in terms of what is valued or going to be valued. Leveraging this technology for applications for which the market is not ready is a common downfall that must be avoided.

Although ADM is an expert at acquisitions, these typically involved upstream raw material opportunities, not downstream manufacturers closer to the end-consumer, or

even sales and marketing firms. ADM could transfer this internal competency to this downstream gap. Given the upcoming changes associated with green chemistry, these downstream partnerships or acquisitions might be something to consider.

## **7. How do you suggest ADM implement these recommendations?**

The implementation plan is entirely dependent on the recommendations. A couple of important points should be considered, however. ADM would need to be aware of the massive investment required to move downstream in terms of customer relationship development. ADM may need to acquire a sales force or company that specializes in these functions. To stay abreast of the changes in the green chemistry movement, ADM must develop closer relationships with product manufacturers who are aware of shifting market demands. Proactivity is key here. So although ADM possesses the competencies upstream, it needs to invest in closer relationships downstream.

Whatever the recommendations, students should review the implications for structure, reward systems, processes, culture, capability development, etc. Because this is discussed near the end of the class, students should be left with the somewhat daunting task of implementing recommended strategies.