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## Sellin' Spuds: The Value of Doing it Right

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In 2001, directors and managers of the United States Potato Board (USPB) in Denver, CO had an epiphany. Fresh from an evaluation of the last five years of performance of their generic advertising program – one that showed very little in the way of returns to growers – they realized they were trying to sell a commodity to consumers rather than respond to consumers' wants. Packaging, taste and nutritional innovation, convenience, variety and excitement were all around them in the grocery store – except in the produce aisle and definitely nowhere near the potato display. This needn't be the case.

Adopting a consumer-product orientation, however, wasn't easy. First, potato consumption, whether fresh, frozen or chipped, had been essentially flat for a number of years (figure 1). Diet fads such as the Atkins Diet, South Beach and a number of other low-carb alternatives often used potatoes as an example of a forbidden food. Concerns over childhood obesity and the role of fast food changed french fries from a staple to an indulgence or, worse yet, child abuse. From the start of the decade, potato marketers were paddling up stream. Second, no one in the industry had developed a sophisticated understanding of the potato consumer. Accustomed to planting what worked well for their farm, regardless of consumers' needs, potato producers developed few truly innovative products in the 1990s. Meanwhile, food processors brought a stream of new staple carbohydrate-based products to the store – pastas, rice dishes, breads – based on a deep understanding of how their target consumers were changing. Third, and perhaps most important, the industry had forgotten the retailer. Consumers buy most of their potatoes in the supermarket and are most heavily influenced by what they see in the last minutes before making food-purchase decisions. While the produce aisle is one of the most important areas of the store in terms of shaping the quality of a shopper's experience, the way potatoes were displayed and sold hadn't changed in decades. That was about to change.

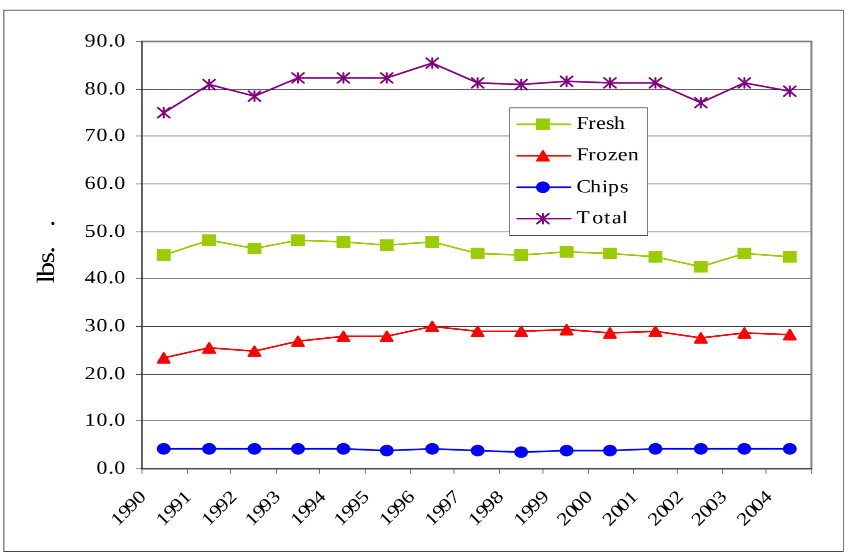


**Figure 1** Per Capita Potato Consumption, U.S., 1990 - 2004
Source: USDA, ERS

This study investigates the return to one of the most important components of the USPB's new consumer-oriented marketing strategy – an "efficient consumer response" (ECR) program intended to move potatoes from a commodity to a consumer product. Gone were generic ads on television, radio, newspaper and billboards and in

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its place came a rigorous, fact-based marketing program that sought to translate a deeper understanding of the consumer and potato market to programs that most directly met competitive threats on the battlefield – the supermarket. At the core of their ECR program was a suite of "best practices" developed by the USPB and taught to as many retailers as would listen. Our research looks into how effective this program was in generating long-term profit for US potato growers.

## The "Best-in-Class" Program

The Best-in-Class program is a collection of "best practices" that USPB marketing staff, in cooperation with marketing consultants at the Perishables Group, have designed to increase potato sales at participating retailers. These practices consist of far more than simply recommending prices and locations for the potato display. Rather, they involve an integrated, complementary program of changes to every decision a retailer must make regarding the potato category:

- Assortment - bargain, mainstream, premium and specialty segments, new products and bag-size options;

- Promotional Strategy - depth, breadth, frequency, timing, ad copy and longevity;

- Packaging - different types of bag, bag label appearance, nutritional information, recipes and preparation tips on the bag;

- Pricing - price points, competitive analysis and market segmentation;

- Merchandising - plan-o-grams, behavioral analysis, location of premium product types, optimize space-to-sale ratios, cross-merchandise, use the point of sale experience, and develop a mixture of ads, displays, features and signage.

The intent of all of these practices is to make potatoes appear, and sell like, a consumer product instead of a commodity. If a retailer agrees to participate in the Best-in-Class program, the USPB provides tools and support for executing best practices, annual category plans, quarterly reviews and benchmarking reports. Category plan meetings involve all store employees responsible for buying and selling potatoes: the produce director, category manager, category buyer and area merchandisers. This way, everyone has a stake in the success of the program.

## A Natural Experiment

The data used for the Best Practices model is provided by TPG. In fact, TPG's data gathering activities provide a unique opportunity to conduct a real-world "field experiment" of the effectiveness of the USPB Best-in-Class program. For this study, we use unit and dollar sales data from Albertson's - Midwest (Jewel) from March 2004 through September 2006 (the "intervention" data). Further, we use data from all other supermarkets participating in the A.C. Nielsen data syndication program in the midwest region and define their unit and dollar sales as "Rest of Market" (or the "control" data in experimental terminology). The intervention – the Best-in-Class program – begins in June 2005, so we define the period from March 2004 through May 2005 as the "before" period and from June 2005 through September 2006 as the "after" or intervention period. A brief explanation of how the difference-in-difference method is implemented in terms of a statistical model is provided next.

In order to take advantage of the data generated by the Best-in-Class experiment, we employ a difference-in-difference method of analyzing the data. Essentially, the difference-in-difference approach uses a simple linear regression model to estimate the impact on category sales due only to the intervention by comparing the change in sales before and after the beginning of the program between intervention and control stores. In terms of a regression model, the difference-in-difference method amounts to a test of the hypothesis that $\$_3 = 0$ in the following regression equation:

$$S_{jt} = \beta_0 + \beta_1 TP_{jt} + \beta_2 BP_{jt} + \beta_3 TP_{jt} * BP_{jt},$$

where $S_{jt}$ is the dollar sales by chain $j$ in week $t$, $TP_{jt}$ is a binary variable that equals 1 during the period in which the Best-in-Class program is implemented and 0 prior to that period, $BP_{jt}$ is a binary variable that equals 1 for the chain that implements the program and 0 for the "control chain," and $TP_{jt}*BP_{jt}$ is the product of the two binary variables. Because the method of least squares used to estimate this equation implicitly uses the difference of each variable from its own mean, it perfectly reflects the experimental difference-in-difference intuition described above. By including the $TP_{jt}$ and $BP_{jt}$ variables, we account for the fact that sales may differ during the sample period simply because they are trending upward and also may be higher for the test chain for reasons unrelated to USPB activities. The parameter on $TP_{jt}$ *$BP_{jt}$, therefore, is interpreted as the effect that is due entirely and specifically to the Best-in-Class program. Further, because this model explains the difference between weekly sales of control and test store, the coefficient is interpreted directly as the incremental weekly revenue due only to Best-in-Class.

**How Did it Do?**

Retailers following best practice guidelines sold significantly more potatoes than those who did not. Specifically, we find that the Jewel chain sells some $41,000 more in potatoes per week than stores in the same market who do not follow the Best Practices program. This represents an 18.0% increase in dollar sales per week. Multiplying the Jewel estimates by the total number of participating stores implies a total value to the program of approximately $4.3 million in retail revenue. Note, however, that this estimate represents the increase in *retail revenue* and not grower profit, which is the usual performance metric for farm-product marketing programs. In order to convert retail to grower revenue, we multiply by an assumed farm share of 22.0% yields an incremental revenue at the farm gate of $936,000. This is only slightly more than the total investment in the program in FY 2005 of $919,000 so the revenue-to-cost ratio for this program is $1.018 for every $1.00 in cost.

Evaluating the Best-in-Class program on the basis of 409 stores, however, is not entirely accurate because the program was designed to be implemented in as many grocery stores as possible. Rolling out Best-in-Class for an initial 409 Jewel store, therefore, is regarded as a pilot program. From the USPB perspective, the costs

**Table 1. The Returns to USPB "Best Practices" Program, Difference-in-Difference Method[a]**

| Variable | Estimate | t-ratio |
|---|---|---|
| **Intercept** | 213,981.579* | 21.600 |
| **Best Practice** | -11,705.875 | -0.671 |
| **Jewel** | 174,751.292* | 12.473 |
| **Best Practice*Jewel** | 41,019.622* | 2.369 |
| **$R^2$** | 0.578 | |
| **Annual Return** | $2,132,998.30 | |
| **Program Return (409 Stores)** | $4,255,571.40 | |
| **Grower Gross Return** | 1.02 | |
| **Program Return (4,200 Stores)** | $43,700,987.00 | |
| **Grower Gross Return** | 6.50 | |

[a] Gross return is defined by the weekly increment due to the best practices program (shown in the table as the BP*Jewel coefficient) multiplied by 52 weeks. Program return applies this value to all participating chains as of June 2006. Note that "Return" refers to incremental revenue because implementation cost by the chains is not known. Annual USPB cost for "Research" in CY 2005 is used to define the B/C ratio presented in the table ($919,341.00). A farm share of 22.0% is used to calculate the grower's share of retail incremental revenue.

**(Footnotes)**[1]

Fixed vs variable cost allocation determined by USPB research staff.

incurred to operate the Best Practices program are largely fixed. With greater participation by retailers, the benefits increase linearly while the costs remain the same. Due to the economies of scale inherent in this program, the returns will increase rapidly as the program expands. On a per store, or per chain basis, the econometric results from the difference-in-difference analysis show that the set of category management strategies themselves are highly effective in increasing potato demand. However, if the program were to be scaled to include 4,200 stores nationwide rather than the current 409, the revenue-to-cost ratio rises to $6.50 to $1.00. This is due to the fact that fully 1/3 of program costs are fixed while only 2/3 are variable.[1] Therefore, while the program in its current, limited roll-out form covers its own cost, a full implementation of Best Practices would deliver significant incremental value to US potato growers.

Changing the fundamental strategy of a long-standing commodity promotion board was a bold move. Given recent trends in potato consumption, and forecasts of continued stagnation, something radical had to be done. Forming only one part of a multi-faceted shift toward moving potatoes from a commodity to a consumer product, the Best-in-Class program represents an excellent example of the future of perhaps all commodity promotion programs. Milk faces competition from a host of other beverages, beef and pork from poultry and a number of alternative protein sources, and fruits and vegetables from both imported produce and processed foods that continue to marginalize "raw" foods. Based on the results reported here, one successful strategy seems very simple – give consumers what they want, where they want and at the right price. Although the details may change, this strategy has worked in the past and will likely continue to work in the future.

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