

TOMORROW'S OPPORTUNITIES IN THE POTATO INDUSTRY

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The Idaho potato industry faces exciting new opportunities in the global marketplace. One of the forces creating new opportunities is the increasing popularity of potatoes all around the world. In the last quarter-century global potato consumption climbed from 240 million metric tons (mmt) in 1980 to 330 mmt in 2004, an increase of nearly 40% (Figure 1).

In this presentation I will cover three categories of opportunities for the potato industry. First, I will discuss potential new markets in terms of locations and variety life cycles. Second, I will address four types of emerging new business models. Third, I will talk about new technology including the resurgence of genetically-modified potatoes.

NEW MARKETS

Locations

Europeans eat more potatoes than people in other parts of the world (Figure 2). According to the International Potato Center (CIP) people in all regions of the world are expected to eat more potatoes by the year 2020. People in Europe are expected to be eating nearly 80 kg (176 lb) per person. People in Oceania (Australia, New Zealand) and North America will be eating about 100 or more pounds per person.

The most rapid growth in percentage terms will be in developing countries. The CIP model forecasts that annual growth in potato consumption will be less than one-half percent in developed countries but nearly three percent in developing countries. The two most heavily populated countries in the world -- India and China -- are expected to increase annual potato consumption 2.8% and 3.8%, respectively.

Quick service restaurants (QSRs) have helped make frozen potato consumption popular in both developed and developing countries. As a result both China and India have been importing frozen fries.

Varieties

New potato varieties provide another area of new market growth. When a new variety is successful in the marketplace a new opportunity is created. Like other commercial products, potato varieties follow a product life cycle (PLC) with four distinct stages: introduction, growth, maturity and decline.

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The introduction stage may take several years in order for the new variety to be recognized and accepted by different links in the market chain. The growth stage occurs when the variety becomes increasingly popular, but eventually the maturity stage is reached when growth slows and stops. The fourth stage is when the market for that variety actually shrinks.

Both seed potato growers and commercial potato growers can find it profitable to grow varieties that are in the growth stages of the product life cycle. When the market for a variety begins to mature and decline it may be time to switch to other varieties.

In 2005 Idaho growers planted 53 different potato varieties. The six most popular, in terms of 2005 plantings were: (1) Russet Burbank, (2) Ranger Russet, (3) Norkotah, (4) Western Russet, (5) Frito-Lay and (6) Shepody. U.S. growers planted 284 potato varieties in 2005. The U.S. top six were: (1) Russet Burbank, (2) Russet Norkotah, (3) Frito-Lay, (4) Ranger Russet, (5) Norland and (6) Shepody.

The Russet Burbank has had a tall and long life cycle. It has been grown since 1874, but is in the decline stage of the product life cycle. Following a pattern of recent years, Russet Burbank plantings declined 10% with the 2005 crop. Russet Norkotah is a much younger variety, dating back to 1987, but Russet Norkotah plantings declined 12% in 2005. Ranger Russet, which was introduced in 1991, declined 9%.

Russet Burbank, Russet Norkotah and Ranger Russet are all russet varieties. One russet that increased with 2005 plantings is Umatilla (introduced in 1998) which jumped up 10%. Non-russet varieties that increased in 2005 include the Red Norland, introduced in 1957 and up 1% and Yukon Gold, introduced in 1981 and up 5%.

Plant Variety Protection (PVP) allows private ownership of potato varieties, something that was not available when most popular U.S. varieties were introduced. Property rights will become increasingly important with new varieties.

At the end of 2005 there were a total of 200 potato PVP applications on record in the U.S. Forty percent of the applications were from U.S. entities and most of the rest were from Europe. The top five U.S. applicants were: Frito-Lay, Monsanto, Idaho, Wisconsin and Colorado. The state applicants represented a mix of public entities, including universities, some of which licensed potato variety property rights to others.

New proprietary varieties will provide the potato industry with opportunities to market higher-value products branded by variety all the way to the consumer. Yukon Gold is a public variety that has captured consumer interest in a new type of potato. In a similar way, private varieties that offer consumers something new and exciting will follow and consumers will ask for them by variety name.

NEW BUSINESS MODELS

Global farming

Potato farms have been getting bigger for decades. Not long ago growers looked for expansion opportunities in their own county and perhaps a neighboring county. Next, some growers expanded in other states. In the future some U.S. potato growers will look for opportunities to grow potatoes in other countries.

Some U.S. farmers have already become international potato growers. They have gone not only to Mexico and Canada, but also to South America, Europe, Russia and the Middle East to grow potatoes. Many had the opportunity to expand overseas because of their good relationship with potato processors. As the major processors became global operations they pulled some of their U.S. growers with them. I think these opportunities will increase because of the expertise of U.S. potato growers.

Supply management

Another exciting change is the cooperative movement that allows growers to manage potato supplies. Begun in Idaho in 2005 with United Fresh Potato Growers of Idaho, the cooperative movement under the United banner has expanded to other states and Canadian provinces.

Since open-market potato prices are very sensitive to changes in supply, the United effort, if successful, can improve grower profits. The opportunity to control potato supplies can come at three times: planting, harvest and storage. United programs were instrumental in getting growers to reduce potato plantings in 2005. In the future the cooperative may choose to reduce harvested acres if plantings are too high and/or control the amount marketed out of storage.

Market chain management

Consumer concerns about food safety have caused firms in the agricultural marketing chain to develop programs that document product flow. The livestock industry has responded to concerns about mad cow disease with traceability programs that can verify where cattle were born, weaned, fed and slaughtered. Some firms will use their market chain management programs to develop brands for which consumers might be willing to pay a price premium.

Market chain management programs are also coming to crop agriculture. Some involve third-party evaluations of practices that are viewed as healthier for the environment and for consumers. As the giant food retailers such as Wal-Mart and giant foodservice firms such as McDonald's implement such programs, there will be opportunities to join their teams of preferred suppliers.

Property rights

In addition to proprietary varieties, there will be other opportunities in the area of intellectual property rights. Some of the firms that develop market chain management programs might make them proprietary. Growers who become part of such programs may have access to potato production and storage technology that will not be available to those outside the project.

This has already happened to some degree with processors. Only growers with Frito-Lay contracts have access to the company's private varieties. Processors in general have an incentive to share their technology and ideas only with their growers to give them a competitive advantage. I think that alliances will be formed further up the marketing chain so that some day McDonald's or Wal-Mart will be in alliance with groups of growers that have exclusive rights to use proprietary technology and varieties.

NEW TECHNOLOGY

Technico

Although genetically-modified potatoes were a market failure, potato technology is not at a standstill. One global agribusiness – Technico, headquartered in Australia -- is using its patented Technituber technology to change the way seed potatoes are produced and marketed. Technico has developed technology to compress seed potato generations and provide parent seed stocks at a lower cost. The firm has production operations around the world including India and China.

Genetically-modified potatoes

I think that genetically-modified potatoes will make a comeback. A powerful non-government organization (NGO) Greenpeace was instrumental in convincing quick service restaurants to stop serving GM potatoes in the 1990s. I see some other NGOs stepping in and offsetting some of the Greenpeace power.

A powerful drive to accept GM crops comes from developing countries where people are hungry and starving. On the continent of Africa, one NGO – Africa Bio -- is having an impact. Africa Bio's mission statement says that it is "a non-political, non-profit biotechnology association for the safe, ethical and responsible research, development and application of biotechnology."

In Asia a similar NGO is operating under the name of Malaysian Biotechnology Information Centre (MABIC). Also in Asia the governments of India and China have taken a pro-GM stance in order to feed large masses of people.

In South America illegal plantings have led to wider GM acceptance. GM crops were legal in Argentina at a time when they were illegal in neighboring Brazil. Farmers in Brazil became concerned that they could not compete with farmers in Argentina who had

access to GM technology. A black market developed for GM seed in Brazil and farmers began to illegally plant GM crops.

With weak enforcement the GM plantings in Brazil expanded and could no longer be controlled. Then the government changed the law. What had been illegal – GM crops – became legal because the government could not stop the acceptance of the new technology. I think this pattern will be repeated in other parts of the world.

The European Union's anti-GM stance is slowly changing. I think that economics will lead to European acceptance. If the rest of the world can use cost-saving GM technology and European farmers cannot, they will be at a competitive disadvantage. European taxpayers who already provide huge subsidies to farmers will be forced to pay even more if European agriculture becomes less competitive. I think that both the European farmers and taxpayers will eventually choose to compete and use the new technology.

Genetically-modified potatoes will be back. The question is when? I think acceptance will follow a product life cycle model like with new potato varieties. Researchers have found that the introduction phase for some new technologies like automobiles and cell phones lasted about 15 years. If GM potatoes follow that pattern, the growth phase will begin by the end of this decade.

Potato Sprouts

One of the new technologies nominated for the 2005 European Potato Congress Innovation Award was a potato sprout project led by Bill Campbell in Alaska and José Dias in Brazil. Campbell shipped potato sprouts to Dias who planted them for seed potato production. One month after leaving Alaska the sprouts had produced a crop with 90% stand.

One advantage of the sprout technology is that it reduces or prevents the spreading of soil-borne diseases. Another advantage is that the seed can be double cropped – one crop from the sprouts that are removed and one crop from the remaining tubers. A third advantage is reduced cost of transport.

CONCLUSION

The world potato industry is on a growth trend. Opportunities for potato producers lie in the areas of new markets, new business models and new technology. The Idaho potato industry has many bright, innovative people who will compete quite well in this environment of new opportunities.

Figure 1. World Potato Consumption

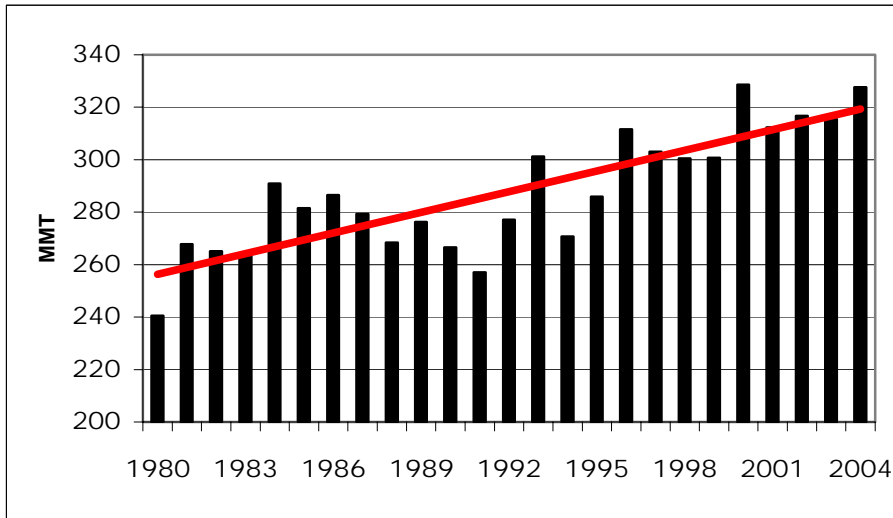


Figure 2. Regional Potato Consumption

