

Beyond Today's Technology: Keys to Global Competitiveness

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The U.S. Industry: Model or Target?

Sometime in the early part of the next century, the U.S. pork production industry will look back at 1995 and remember it as a watershed year. So will many other nations. This was the first year since 1952 that the U.S. pork industry became, once again, a net exporter of its products. Even though the U.S. share of the global pork market is still very small indeed, the U.S. industry has given the international pork production community a wake-up call.

It is fair to say the world industry has shifted its attention to the U.S. as an emerging leader in innovation, technology and future global marketing. However, in this new light, the U.S. industry is being examined with a growing sense of awe and fear, and strategically, as both a model and a target.

All things being equal, net exports for the U.S. industry means increased demand. Between the impact of net export sales and the "discovery" in the U.S. fast food market of bacon as a condiment, just about everyone in U.S. business is now very keenly aware of the importance increased demand has on prices received at the farm and throughout the chain. However, will 1995, in the light of 2005, be viewed as a missed opportunity or the beginning of long-term, sustained, wealth creation for the U.S. industry?

Innovation or the Mutual Suicide Pact?

The answer to this question will be determined in the way the U.S. pork chain organizes to transform itself from the farm through the final marketer. The character of this transformation will determine future competitiveness. If there is little vision or commitment to innovation, we will remember 1995 as the year we signed a mutual suicide pact.

The mutual suicide pact has several characteristics but can be described as producing more and more of the same while extracting every opportunity for short-run pennies at the expense of building long-run wealth. Economics makes a very basic but key distinction when considering the prospect of increased sales. Are increased sales occurring because the product is becoming cheaper compared to its substitutes, or are customers purchasing more at the same real price levels they faced in the past? The first situation describes a change in quantity demanded, the second situation describes a *change in demand*.

The U.S. chain can become a leading supplier of the *meat-of-choice* world-wide by flooding limited markets with so much pork that it becomes a cheaper substitute for beef and perhaps even poultry. The demand for pork is not affected by this, only the quantity people decide to buy at lower and lower prices. This path is characterized by each chain participant, from producer to packer and on through processor and distributor, *primarily attempting to lower the cost of what they are already*

doing. This is not innovation, it is the application of scale. As new technology is employed, economies of scale are exploited and input supplier's margins are squeezed thinner and thinner, and we pursue the path of "more of the same" only at lower cost and potentially much lower price.

As we think about the future of the business, creating and sustaining domestic and global demand will be critical to long-run success. While "taking the cost out" will provide tremendous initial in-roads, it is unlikely, in and of itself, to sustain global market share or create a long-term competitive position.

Competitiveness and the Size of the Global Pie

Global competitiveness is a difficult term to define. In 1989, a Canadian agriculture task force defined competitiveness as, "the sustained ability to profitably gain and maintain market share in the domestic and/or export market" (Westgren, R., "The Micro Economics of Competitiveness: Using a Resource Based Model of Firm Strategy"). While simple and straightforward, this definition fails to satisfy since it presumes that global competitiveness is a zero-sum game. The belief that the only way the U.S. or any nation can remain continuously competitive is by taking existing share from other nations or by bidding share out of beef, poultry and other protein markets is a fatal strategic error.

To be competitive in the world market of 2005 and beyond, a nation's industry will need to replace one-dimensional cost effectiveness with innovation. Innovation begins with the proposition that existing suppliers of pork in the world market are not the competition. After a reasonable due diligence in examining their modes and methods, we leave them behind and focus on our real target, consumer preferences. Looking to those with current or declining market share for guidance or benchmarking will take the focus off the consumer and back onto traditional, and most likely dated, strategies. Hoping to displace competitors by simply doing what they already do but cheaper will not create and sustain competitive position.

Integral to competitiveness in the 21st century is innovation. Innovation does not promise incremental acquisition of existing share; it holds forth the prospect that the global "pie" is not fixed in size. Rather, the total effective demand for pork is determined by the responsiveness of market players to the real tastes and preferences of global consumers. Responsiveness to the preferences of a diverse group of domestic and global consumers of pork is the key to both creating additional share and sustaining the right to serve that share. Producing pork products in a financially and environmentally sustainable fashion will also be a deciding factor in long-run global competitiveness.

Differentiation on the Basis of Cost Will Not Be Sufficient

Several pork exporting countries, unable to match the low cost of the U.S. production and distribution system, are differentiating their country's pork offering along the lines of safety, wholesomeness and freshness, humane character of production, absence of genetic alteration either in pork or feed-stuffs used in its production, absence of repartitioning agents, and rapid responsiveness to final customer preferences. Differentiation of our product in a global market primarily on the basis of

cost will not be sufficient to counter these defensive strategies. Most countries would not accept free pork if they thought it posed real safety concerns to consumers.

New thinking in strategy formulation encourages firms to believe that the industry is not simply a given but it can be shaped. To not be constrained exclusively by what the industry is already doing, but to ask, "What would we do if we were starting from scratch?" In the same way, the industry must think beyond its traditional boundaries of production methods, products, packaging, fresh vs. processed sales ratios, and conventional wisdom. Creating wealth in the industry will not be accomplished by doing the traditional things cheaper but by creating a total solution for the real and perceived needs of the customer.

The World Has Already Changed

It has become a cliché to say that we are in a period of great change. However, pondering the changes which are unfolding before us is pivotal to positioning a business for profitability in the next millennium. Before we consider the likely characteristics of successful production operations in the next century, it is crucial to understand the nature of the change within which these operations will compete.

First, it is revealing to recognize that the changes which we are observing today are not the result of recent decisions. Rather, the reshaping which is occurring in our industry has its roots in a fundamental shift which has *already irreversibly occurred* in our world. It is rooted in the mid-1700's in the rise of technology. When a producer asked me at a recent meeting in Moberly, Missouri, "Why can't things go back to the way they used to be?", he was asking for something much more profoundly impossible than for large producers to stop expanding or for new buildings to stop being constructed. Several decades ago our modern world ceased to be fundamentally organized around labor and we gave birth to a knowledge-based society.

The emerging reality of the 21st century for all agricultural industry will be that those businesses which are organized around knowledge rather than tasks will have the opportunity to create wealth. Those operations primarily organized around tasks or formulas will enjoy a smaller and smaller return to their efforts. This reality is not confined to the producer but is already grinding its way through feed dealers, packers, veterinary practices, lenders, drug companies and extension programs. The return to raising pigs, transporting pigs, killing pigs, processing pigs and selling pig meat will shrink while the return to knowledge will grow.

Within the knowledge-based framework described, it is possible to think through the characteristics of firms which will be able to exploit the changing environment to create wealth. As we discuss each of the characteristics there will be both overlap and seeming contradiction. However, the successful firm of the future will have to create wealth within a very challenging environment, requiring the ability to deal with confusion, unanticipated market movements and rapid change.

Food Producers

A post-industrial model of production is now emerging. The focus of this model is to produce a differentiated pork product within a highly controlled, responsive and flexible system of production. While many of the industrial model production methods are used, the system is broader and more complex. As distinct from the industrial paradigm which focuses heavily on low cost commodity production, the post-industrial producer is targeting product characteristics which are multi-dimensional and *directly related to known tastes and preferences of final consumers*.

Within the post-industrial motive, the focus changes from least cost production of lean to ***cost and quality controlled production of food made from pork***. Production in this paradigm broadens the notion of "system" to include the community in which production takes place. Long-term commitments to the community are part of the investment. Attributes of this system of production are high investment, very specific input requirements, trading back some of the efficiency gained by industrial methods in return for quality characteristics demanded by customers, and modeling production and profitability as a means to change. In addition, there is a perceived need to manage within the social and environmental climate within which the production takes place to achieve a win/win relationship with the community.

Multi-goal quality attributes for products include food safety, shelf-life, texture, appearance (including color), taste, water-holding capacity, size of cut, tenderness, etc. In addition, responsiveness to the changing demands of target customers is rapid. Executing effectively within this model requires high management/knowledge and capital requirements and relatively low labor.

Final Consumer-Oriented

The change in pricing today is from pigs to meat. Note that the largest U.S. futures market will no longer price live animals after the closeout of the December 1996 contract. Within five years (sooner in some places), cash markets will change from pricing meat to pricing food. However, for the reward to be there, we must develop an entire pork chain which is knowledge-based. The current packer matrix tells us as much about the kind of pig that minimizes packer fabrication costs as about consumer tastes and preferences. Premiums or discounts for packer throughput costs must not dominate and thereby blur the signal from final consumers regarding tastes and preferences. The same thing can be said for lean premiums. In order to get the plant average up, we have made lean the one-dimensional measure of quality and it is driving our product toward the inedible. In the process, packers are often overpaying for a characteristic which winds up being negated when PSE destroys their ability to market it at a premium price. Premium pricing hogs for discounted meat will not continue.

The McLean Deluxe, a low calorie burger offered by McDonald's, has officially become the McLean Defunct. That glorious beef and seaweed burger which averaged 2-8 sales per location per day has been pronounced dead by McDonald's. It was kept on the menu for as long as it lasted to satisfy the complaints of health-watch groups that accused the fast-food industry of not providing low-fat choices. We would be wise as an industry to recognize the lesson in this. Consumers are not interested in lean meat in isolation of other quality characteristics. They are interested in a constellation

of quality attributes which include taste, safety, appearance, ease of cooking, nutritiousness, value and so on. Creating and producing an animal in response to knowledge about what consumers desire will create a large reward. Anything else will be punished severely in the marketplace.

Interdependent (Relationship Oriented)

Networking is a means to gain access to a set of advantages which a producer or input supplier by themselves could not acquire. It is another name for interdependence. Interdependence is about exchange, association, mutuality and working together to achieve things impossible to the individual. Wherever one person's economic destiny is shared and influenced by another, an opportunity for networking exists.

Interdependence strategies work because they are based in reality. Modern pork production is already a vast network of linkages directly involving most of the agricultural economy and indirectly linked to the entire non-agricultural economy. Having acknowledged that those linkages already exist, the question becomes how to appropriately capitalize on and further develop some of the links to the mutual benefit of the parties involved.

Interdependence acknowledges the reality that no one person or firm has all of the answers or all of the resources necessary for success. Interdependence provides a means to achieve the added efficiency and productivity which comes with specialization. Many of the most successful examples of interdependent associations among producers involve some form of specialization. Examples include producers who have invested together in joint farrowing facilities to obtain high quality pigs for their own nursery and finishing operations. By working together they avoid the disadvantages of purchasing mixed source pigs from auction markets and have eliminated farrowing operations for which they did not have a comparative advantage or interest. Contracting relationships have established multi-site production advantages and the increased efficiency which comes from specialization at each site. A host of other arrangements from input purchasing groups, seedstock user groups, and marketing groups have become popular. Each of these early forms of interdependence focused primarily on lowering cost. The next trend in interdependence will be toward creating value.

Vertical networking or interdependence with packers and input suppliers will be the hallmark of future, successful producers. Coordination will be required to develop and consistently deliver high value-added products to brand-loyal customers.

Sustainable Growth Rate

Many companies and producers have mistakenly assumed that a very short window of opportunity exists to grab a percentage of the future sow base in this country. This has led some to over-extend their financial position in a number of ways. The "I better get big then I'll get better" mentality has led to large scale failure in some high profile production companies. Lack of production and financial control in runaway expansion is a sure prescription for limited wealth generation or worse.

If one over-invests in expansion, a working capital vulnerability occurs such that the firm is at grave risk when unexpected declines in price or increases in cost reduce the operating cushion. This has led some producers and companies to employ high-risk capital and subordinated debt and to treat these like equity. This is a very dangerous approach. Units and complexes which should be monuments to profit are in fact pillars of debt. Packer contracts which guarantee floor prices but extract hefty costs per head sold are being substituted for careful planning and sustainable growth. The result will most likely be a lot of work and little long-term wealth.

Failure to invest in the future will result in declining margins and viability. Those producers who are choosing to “wait and see what happens” before investing any additional capital have probably already made their decision about the future.

Choosing a sustainable growth rate means reinvesting and expanding at a level which does not adversely affect liquidity. This rate will be uniquely determined for each farm and company based on a thorough knowledge of their financial situation. Choosing a rate less than the sustainable one results in slow death to the business. Choosing a rate which is greater than the sustainable rate will result in near term catastrophic failure. The sustainable rate puts the firm in the long-term wealth generating position.

High Productivity/Low Variance Production Systems

Developing a high productivity/low variance production system involves coordinating all the facets of production and enabling them to reach their potential in a synergistic fashion so that overall production is consistently optimized. The production areas that must be coordinated to produce a high output/low variance outcome are: (1) throughput, (2) the health assurance program, (3) the genetics and breeding program, (4) the facilities and buildings, (5) the nutrition technology employed, and (6) personnel.

Throughput. Throughput is primarily a manufacturing term and refers to the amount of finished product generated by a production process in a given period of time. On-farm, throughput refers to volume of production appropriate for the fixed assets that are in place. The first consideration is sow inventory relative to the number of gestation and farrowing spaces that are planned or available. Secondly, mating targets must be established and achieved for each breeding group. Historical records that establish a track record for each month throughout the year are required to establish seasonal targets.

Health Assurance. The health assurance program is of primary importance in promoting high productivity/low variance production. Once sow inventory, mating targets, and mating management are being properly managed, diseases, both primary and secondary, become significant contributors to variation in performance. The health assurance program should address both external and internal biosecurity. It should minimize the opportunity for diseases to enter the herd for the first time (external biosecurity), as well as minimizing the effects of diseases within the herd (internal biosecurity).

Genetics and Breeding Program. The pig genotype that is used must allow the production system to meet its production and financial goals, and allow the system to produce in a high

throughput/low variance manner. The selected genotype must be able to meet the system's goals for reproductive performance, growth, and carcass quality. The genetic source should be able to supply the required numbers of animals in a timely manner, ideally from only one source herd. The genetic source should provide the purchaser with evidence of its commitment to research, development, and long-term genetic improvement in the light of changing customer demand and cost control. Assurance that the product is going to be available on a long-term basis, but with improvements, is needed.

Facilities Employed. Pigs are resilient creatures and can be produced in a variety of facilities and building types. High productivity/low variance production, however, requires standardization of building types within a system. Ideally, the separation of the various phases of production onto different sites can be accomplished. Although our research has shown that there is no advantage to removing pigs from a high-health sow herd, separate-site production allows for the specialization of labor, it encourages all-in, all-out production, and it provides for a depopulation of the building or site between production groups. Separate-site production provides an insurance policy, in that the potential exists for "breaking" the transmission of a disease should an outbreak occur. It promotes higher productive efficiencies without the expense and down-time of repopulation in those herds in which chronic diseases have reached a level at which production is impaired. Buildings must provide a reasonable environment for the people who work in them, and routine maintenance schedules must be observed.

Nutrition. The feeding program in a high productivity/low variance system must be designed to economically optimize the genotype of pig employed, and must allow performance consistent with projections. If feed is mixed on the farm, quality control is in the hands of the manager and the feed mill operator. They must assure that ingredient quality and feed biosecurity meet their requirements.

Location, Location, Location

The U.S. is now beginning to realize its world-wide competitive advantage in the production of high quality food made from pork. All of the necessary ingredients exist in the U.S. to create and sustain this advantage: a developed economy which is capable of long-term, moderate growth without inflation; the land base necessary to utilize manure nutrients effectively; the prospects of long-term, low cost production of major feed grains; a free society and economy which encourages investment and the creation of capital; an educated work force which is highly mobile; and the list could be expanded from there. The U.S. has a comparative world-wide advantage in the production of pork.

Having said this, where does one locate to be a successful long-term player? Those firms which seek out places where the hassle-factor will be low because of lax environmental standards will be disappointed. Standards are low in many places because no challenge to the environment currently exists. When the challenge arrives, the regulation begins. Those producers who are looking for isolation may well discover why few people live in those locations. Choosing the best location, whether it be that place in the neighboring county which makes the most sense or that place in Arizona which seems to work, will be critical to long-term sustainable wealth creation. Site selection is a critical part of long-term feasibility.

Successful production requires long-term access to high quality water supplies. Water rights and potable supplies are shifting in some areas. Careful site evaluation has led some producers to realize the need to develop surface water sources after building construction has begun. The normal lead time for surface water collection is two years.

One-dimensional site-selection criteria will most assuredly lead to surprises and drain wealth as firms attempt to “fix” unexpected problems. Location within an economic distance to low cost grain and competitive packing will give enormous advantages. Trading one of these elements away should only be considered where true, long-term compensating advantages exist. Location in a community which can sustain the families of a highly educated workforce will be crucial. Keeping talented people in isolated locations with poor-quality schools and few life-style amenities is not likely to happen at any price (salary).

Environmentally Sustainable

I use the term environmentally sustainable in its technical sense rather than its agenda-laden political meaning. Pork production systems will not be allowed to pollute the waters of any state. Nor will these systems be allowed to ruin rural communities with noxious odors. Short cuts around technical sustainability to reduce cost are a prescription for failure. Careful site selection, community involvement, and the creation of a win/win social and economic outcome will be the only way to create long-term wealth. Investment in the technology and methods necessary to reasonably protect the community and the environment from the externalities of pork production will be demanded.

Flexibility and the Willingness to Change

Any producer who is threatened by change will not have a comfortable place in the future of this business. The characteristics of the production and investment environment within which producers operate demands a flexible willingness to be creative, adapt and change. Coming changes in technology, especially in the areas of nutrition, customized inputs, manure nutrient management and genetics, will require constant assessment and adjustment to capture margins. Knowledge will be the key to wealth. Sorting which developments will create increased net income for an individual operation will be a full-time concern.

In addition, as the entire chain reinvents itself in a consumer-driven model, truisms, rules of thumb and well established precedents in every major area of production will be rewritten. Already we know that standard forecasting techniques for prices no longer yield their formerly dependable outcomes. Structural changes in the industry are redefining these relationships. We do not have enough history to estimate the new relationships and may very well not be able to for a decade or more ahead since the structural change is really just beginning.

Effective Marketing Plans

The traditional wisdom in the industry for expanding producers has been to accept the average price of the year and remain competitive through cost control. Using futures and options to establish floor prices

or to lock in profits has not been readily accepted. Marketing plans have often been reduced to eliminating sort loss (which is almost never economically optimal) and choosing the best bid of the day where midwest over-capacity for slaughter has allowed it.

A knowledge-based approach to marketing will most likely involve a shift away from a direct focus on price to achieving levels of financial efficiency. Achieving the highest possible price is not only an unrealistic goal but does not guarantee that the production system is financially efficient. As the industry shifts to a consumer driven model, production efficiency may decline as high value food attributes are restored to the meat. Here, a focus on net return rather than either cost minimization or price maximization will yield more wealth. Cost minimization can lead a production system astray since it does not consider the potential increased value of the more costly carcass. Achieving target levels of return on assets (ROA) or return on investment (ROI) are far more revealing with respect to the production of wealth than level of price.