

CHANGING PRODUCTION REQUIREMENTS

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ABSTRACT

In the past the pork industry has responded to economic and market pressures by reducing the cost of pork in real terms and providing a wide range of quality products. Over the next decade we will see an increasing focus on meeting consumer demands in the areas of food safety, animal welfare and the environment, mirroring the trends that have been seen in Europe over the last 15 years. This will necessitate some changes to production practices and the development of credible “farm to plate” quality assurance schemes. Such changes will best be applied by business structures which involve integration, cooperation, or alliances between producers, processors and the retail level. This will result in the development of dedicated supply chains with defined production and quality standards, supplying branded, added value or convenience products to the consumer. Business models which result in a value chain, where participants work together to maximize the profit in the chain, will replace the traditional, antagonistic relationships between producer, processor and retailer.

INTRODUCTION

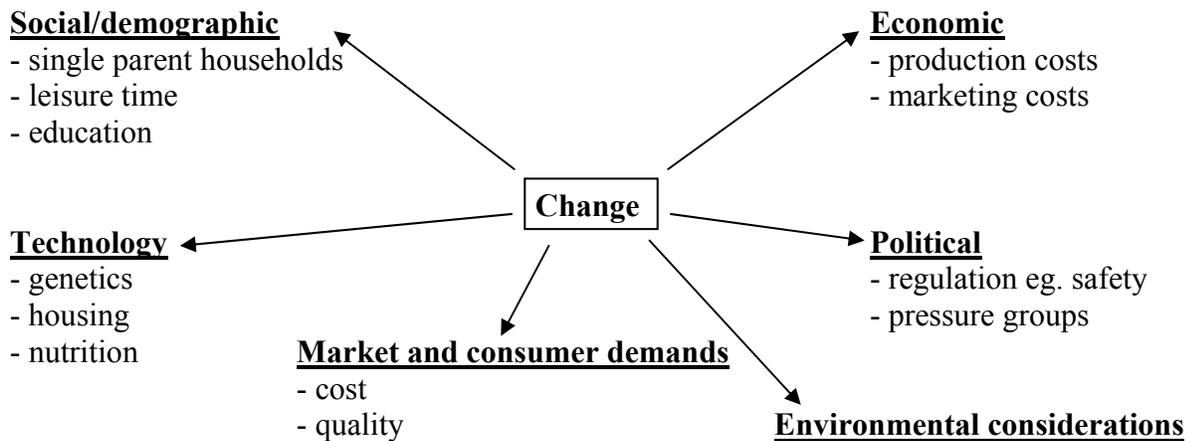
The pork production and processing industries have responded to a wide range of internal and external influences and pressures during their move from the immediate post-war period to the modern, intensive and efficient systems we see today. Although these changes have primarily been cost and volume driven and pork has effectively been a commodity market, the pressures for change are now increasingly related to factors such as product quality, food safety and environmental impact. At the same time, rationalization and concentration in the worldwide industry, including the development of integrated systems, has occurred. These structural changes may be seen as a threat to independent producers, indeed the development of large scale production systems has certainly hastened the demise of traditional family farms in many countries. In this paper I will look at the factors that drive change in the pork industry and focus particularly on the areas of consumer demands and structural change. I will consider how these will influence *how* we produce pigs and *who* will produce the pigs.

DRIVERS OF CHANGE

All businesses are influenced by a wide range of factors ranging from economic to political (Fig 1). Management of the business makes decisions on how to respond to these influences which affect how their products are produced, their cost of production and their attractiveness to potential customers. The importance of the many factors changes over time and will not be the same in different countries or in different market segments within the same country. For

example, animal welfare is not an issue in poorer countries, where cost of food is the major driver. However, in affluent societies, there may be a market for organic pork sold at a large premium.

Figure 1: Drivers of change in the global pork industry



Companies that respond correctly to these drivers succeed and grow, those that don't may fail. There are countless examples of once-successful companies that fell by the wayside because they did not adapt to a changing environment. In an increasingly global economy, if a domestic company does not meet consumer demand then a company from overseas will. How does all this affect the pork industry and help us identify what we should be doing? A brief look at where we have come from will start to answer this question.

HISTORICAL PERSPECTIVE

After a long period of food shortages during World War II, for many countries increasing the availability of food was a priority during the late 1940's and right through the 1950's. Governments encouraged agriculture to apply technology, increase output and reduce cost to the consumer. In most western countries, this process of continuous improvement continued without question until the 1980's. The choice and quality of food products available increased while the price dropped. The proportion of disposable income spent on food fell dramatically which meant that consumers became more demanding and quality oriented. Prior to the 1980's, few people had questioned the way in which food had been produced and the impact of intensification on food safety, the environment or animal welfare. But, at about that time, the beginnings of what we now call "consumer issues" or "consumer concerns" were surfacing in Europe and have had major consequences for the pork production industry there.

Structurally, the pork industry in both Europe and North America had also changed in the 30-40 years after the war. Farm size increased and the number of producers went down. In most cases this happened in a gradual way, but in the early 80's, the USA saw the start of a massive structural upheaval brought about because traditional US hog producers had failed to keep up with technological developments. The integrators, often poultry integrators, saw the opportunity to leapfrog 30 years in terms of genetics, housing and nutrition, slashing production costs. Now, only twenty years later, integrators account for about 30% of US hog slaughterings. This process has not happened so rapidly in Europe and Canada because producers kept up with improvements in technology more successfully. However, it is still going on and because the change is not as rapid, many producers have failed to recognize how it will impact their business. In Canada, large scale production companies and integrated systems like Maple Leaf, are successful not only due to their ability to reduce production costs but because they are able to address market demands more effectively, for example through added value, convenience or branded products.

In the next 10 years, my view is that the two most important considerations in the Canadian industry will be the impact of consumer demands in both domestic and export markets and how the industry will be structured to meet that demand, in particular the role of the independent producer. With regard to consumer issues there are many lessons we can learn from Europe, similarly the USA has valuable models for the survival of independent producers and the Danish industry can also provide useful information.

CONSUMER ISSUES IN EUROPE

Background and relevance to Canada

In Europe, consumers have become more discerning and more concerned about the food that they eat, creating the need for reassurance about the systems which produce food. Concern has been heightened by a series of "food scares" both in Britain – Salmonella in eggs, BSE, E Coli 0157 – and in other countries such as Denmark which had an outbreak of Salmonella food poisoning caused by pork in the early 90's. Most consumers have very little knowledge of farming or food production practices – in many industrialized nations only 1.5% of the population works in agriculture. This has added to the "fear factor" and fuelled a belief that intensive livestock are produced under horrific conditions and fed large amounts of antibiotics and hormones. The media, particularly the tabloid press, has exploited these concerns ruthlessly, especially in Britain, but also in Denmark and Germany. National governments and the EU have introduced ever tighter legislation in the areas of food safety, animal welfare and the environment especially from about 1990 onwards. At the same time participants in the food chain – primary producers, food processors and retailers – have introduced Quality Assurance systems to provide the reassurance customers have demanded. Some of these have been driven forwards by the retailers, others by the production and processing sectors.

Many of the areas relating to pig production that have seen great change in Europe over the last 10-15 years such as sow housing, welfare standards, the use of antibiotic growth promoters, Salmonella control and traceability, are now emerging as issues in North America.

As a recent immigrant from Britain I can see similarities between the situation in Canada now and that in Europe in the mid 80's to early 90's. Many in the industry believe it is inevitable that we move in the same direction with regard to production practices and quality assurance. If so, can we learn some valuable lessons from the experience in Europe? Canada, as a world exporter of pork also has to consider whether, in order to export pork to Europe, it will have to be produced under European conditions. Also, key competitors in other markets, such as the Danes, have a highly sophisticated quality assurance program. If Canada does not develop equivalent systems, will it be excluded from certain markets?

How change has occurred

Changes to production methods have come about in a number of ways:

Legislation: In countries such as Britain, Germany, Denmark and Sweden, pressure groups such as animal welfare organizations have successfully campaigned for, and got, legislation to ban the use of sow stalls. Some of these groups, such as Britain's Compassion in World Farming have huge budgets and are very influential.

Retailer demands: Retailers are seen as the conscience of their customers in that they make decisions about food standards on the customer's behalf. The consumer does not expect to purchase food from the retailer that makes them ill and there is a great deal of trust placed in Europe's major retailers. When this was threatened by food scares, retailers responded extremely quickly, and publicly, to allay those fears. Similarly, consumers expect the pork or chicken they buy to have been produced under humane conditions. Changing expectations in terms of production conditions have led retailers to, in turn, demand change from primary producers. Some producers view the retailer's approach as dictatorial but then the word "customer" is missing from many farmers' vocabularies.

Consumer pressure: The dynamics of consumer attitudes, perceptions and buying preferences is complex. "Consumers" are not one body, but can be categorized according to their degree of concern about farming practices and how it influences their buying decisions. A small percentage of consumers is vocal in relaying their concerns to retailers and politicians, having a proportionately greater influence on the process of change. In order to make rational decisions about how to respond to perceived consumer concerns, participants in the food chain must fully understand consumer psychology. This requires detailed consumer research on a continuing basis to identify trends in attitude, beliefs and knowledge. It may be expensive to satisfy the perceived demands of 10% of consumers if 90% are unwilling to pay for enhanced welfare or product quality.

QUALITY ASSURANCE SCHEMES

European Quality Assurance Schemes

I have already noted that systems of Quality Assurance grew in response to consumer demands and concerns. Many European countries have QA schemes for pork, either industry

wide as in Denmark, Britain and the Netherlands, branded meat quality programs such as “Land-juwel” or EGO in Germany or very specific standards for the production of products such as Parma hams in Italy. Depending on the need, these include elements relating to production methods, transport, lairage, slaughtering and meat processing.

1. In Britain the first pig industry scheme was the Scottish Pig Industry Initiative which started in the late 80's as a means of differentiating Scottish pork – this still operates today. A similar scheme was established for England and Wales in the early 90's, although it has undergone a series of name and organizational changes. Assured British Pigs and associated schemes for transport and processing now cover all areas of the chain from the farm through to processing methods. In the mid 90's the farm assurance scheme was fairly basic and the major retailers developed their own production standards for suppliers. The Farm Assured British Pigs scheme, as it was then, responded by creating new standards which embraced almost all the areas where the retailers wanted change. This effectively created a set of unified baseline standards and removed the need for retailers to pursue their own schemes other than for specialist products such as “outdoor reared” pork. In 1994, the Royal Society for the Protection of Animals (RSPCA) launched its own QA scheme, Freedom Food, with enhanced welfare standards, with pork and other livestock products sold with the Freedom Food logo by most major retailers. There are now 3000 farmer members in the scheme, 500 of them pig producers. All the British schemes are audited by national certification bodies.
2. Denmark, as Europe's largest pork exporter, has had quality control systems in place for many years, mainly related to product quality. Due to the integrated nature of the industry, once standards are defined, they are applied rigidly by everyone. In the late 80's, as food safety concerns increased, they launched their “Microbiological Action Plan” and then in 1992 the Meat Safety Assurance Scheme which was specifically for the important UK bacon market. This was revised and extended to include the Salmonella Control Program and pig welfare component, becoming the Danish Quality Guarantee in 1996. The system now included almost every aspect of the food chain but lacked detailed farm assurance standards. At this time, the British scheme had just become much more comprehensive and the Danes came under pressure from British producers and retailers to meet the same farm standards. In 1999, by which time the UK had phased out sow stalls, this pressure reached the point where Denmark had to respond. It developed a new set of farm standards embodied in the “Contract for UK Production”, broadly equivalent to the British ones including the requirement for group sow housing. Denmark also has specific quality standards for other important export markets such as Germany and Japan.
3. The Netherlands evolved its own QA scheme over the same period as in Britain and Denmark. Called IKB – Integrated Chain Control – it was developed in the mid 80's and introduced fully in 1992. It covers production standards, meat safety, traceability and product quality. Processors representing 97% of total capacity are members and 90% of all pigs slaughtered are covered by the scheme. The Netherlands had 28.8% of the UK bacon market (136,669 tonnes) in 2000 and the Danes 21.2% or 100,129 tonnes. While the Danes target the premium end of the market, the Dutch primarily sell on price.

However, this is changing, so that Quality Control is becoming a more important tool in adding value and ensuring consistent quality.

Features of a good QA system

A recent report by Britain's Farm Animal Welfare Council, a government advisory body, on the animal welfare implications of farm assurance schemes¹ said that "the basic tenets of Farm Assurance are credibility, transparency and traceability". It also noted that "methods of audit and assessment are critical to the consumer's trust" and that the body carrying out these functions should be both competent and independent. The British and Danish schemes are accredited under two European Standards and use independent evaluators. Independent accreditation is therefore the first requirement of a good scheme. Second, clearly defined audit procedures are required. This starts with clear, unambiguous standards, but at the same time over-prescriptive standards are undesirable as they stifle creativity and create antipathy amongst producers. In order to deliver the transparency and rigor of inspection which lead to credibility a scheme should have independent on-farm assessors, independent auditing of the system and random checking. It should also have well-defined procedures for non-compliance, for example suspension or removal from the scheme.

Integrated schemes – "from farm to plate" – deliver comprehensive reassurance to consumers for pork and other food items. They also avoid the confusion of several schemes within the food chain and allow an identifying mark to be used at the point of sale.

Lessons from Europe

The process of developing QA schemes and changing production practices in order to satisfy retailer and consumer demands in Europe has not been a smooth one because of the differing views and interests of the food chain participants. Here are some of the lessons I think we have learned:

1. Understand consumer attitudes in detail – what they know about production practices and which aspects concern them – and take this into account when developing QA schemes.
2. Work together with processors and retailers on standards. Find out what they want now and are likely to want in future. Agree upon standards and time scales so that everyone can support them and, if necessary, defend them, especially from animal welfare pressure groups.
3. Be pro-active with your food chain partners in developing QA systems and improving standards, otherwise change may be forced upon you.
4. Phase in agreed changes over a period of time so that producers know in advance what is required, especially if this involves changes to facilities.
5. Move towards using group housing for sows if building a new barn or remodeling – this will increase marketing opportunities in future. There is enough experience to draw on in

Europe to ensure that group systems are neither more expensive or less productive than stalls.

6. Use the scheme to identify the product to consumers and increase confidence by use of a “quality mark” – link this to advertising and promotion.
7. Don’t expect a premium for the product. Industry integrated schemes set the baseline for product quality
8. Sell the benefits of the system effectively to producers who often don’t understand the market beyond the farm gate – better liaison between producers, processors and retailers helps in this respect.
9. Don’t give the consumer too much detail about production practices unless they ask specifically. I know I mentioned transparency but people do not want to know about tail docking and castration – they need broad reassurance that gives them a nice warm feeling about eating pork.

How the CQA Scheme should develop

The CQA scheme primarily addresses food safety issues which is the primary area of concern for Canadian consumers and those in export markets such as Japan. However, it has some shortcomings even within its limited area of coverage (mainly that validation is too infrequent and it is not independently audited) that needs to be rectified. To stay ahead of future demand, the scheme should gradually be extended to other aspects of production and further down the pork chain, covering areas such as:

- Treatment of sick, injured and disadvantaged pigs
- Other welfare-related areas: housing, feed and water, management
- Environmental management
- Transport standards
- Lairage and slaughter
- Traceability

If the industry reads the market (ie the consumer) correctly and is pro-active both in the area of production systems and customer reassurance, many of the mistakes which have been made in Europe can be avoided. Improved Quality Assurance will also be of huge benefit in export markets.

STRUCTURAL CHANGE - INTEGRATION, COOPERATION AND VALUE CHAINS

Despite its technical efficiency, the pig production sector has long been extremely weak in the area of marketing. Pigs, like other primary agricultural products, are a commodity, with price driven by supply and demand and the producer being a weak seller. When prices are high, the

processor suffers, when they are low the producer suffers but rarely does the retailer suffer. Producers compete with each other and the smaller and less efficient ones are swallowed up by those that are bigger and more efficient. Similarly with the processors – they compete for pigs when they are short, driving up prices, in order to maintain their throughput and of course some fail to survive. This economic nonsense is perpetuated by existing structures within the industry, notably the marketing boards and groups. It is an antagonistic “no-one wins” situation that is going to change rapidly in the next 10 years.

What are the structures that will emerge?

1. Vertical integration – where production, processing and retail product are all carried out by the same company eg. Smithfield in the USA.
2. Vertical coordination – where production and processing is in separate ownership but closely linked by a long term arrangement.
3. Alliances between producer groups and a processor – again a long term arrangement.

The structures that have developed are based on two maxims:

- There’s only one profit in producing a pig!
- Each sector of the pork chain can add value to the other.

Vertically integrated companies have, in theory, the biggest advantage in this respect - they get the whole margin from farm to retail level and they can focus on adding value to and increasing profit throughout the pork chain not just in one sector.

These new business structures create value chains where the different parts of the pork chain work together to maximize the profit in the whole chain. This requires openness about costs and margins between the participants. Members of the chain work together to service an end market, either retail or export. To meet market requirements and maximize the margin from doing so requires very good communication between the parties involved. It may also mean changes to production methods, for example part of the requirement for a specific market could be the use of a Duroc boar or implementation of a Salmonella control and monitoring scheme. Such changes are made purely to meet this market and any increased costs involved can then be recovered and distributed fairly to the appropriate level in the chain.

One of the biggest advantages of a value chain is that the participants can not only share the overall margin more equitably but they can also work together to reduce price risk. The use of “window contracts” protects producers from receiving a price below the cost of production and protect the processor from paying too much when the open market is short of pigs. Both parties benefit but the average price paid or received is the same as the market over the long term.

Another outcome of dedicated supply chains is that they can produce a branded retail product to a determined set of standards with full traceability. It is likely that these systems will develop their own quality assurance systems with standards well above the baseline provided by the national scheme.

Producers will in future lose the option of being totally independent in the way that many are now because the current structure of much of the industry is unsustainable. One option is to become part of a vertically coordinated system such as the Maple Leaf Signature Program. This long term contract provides protection from low prices but requires the producer to use Maple Leaf's feed and breeding stock to achieve consistency in the end product. This type of arrangement will be attractive to some producers and will certainly provide security even though a small amount of independence is lost.

Another alternative is for independent producers to get together and form an alliance with a processor which allows them to focus on providing the quality of carcass that the processor requires. The producer group can also employ specialist management to help improve efficiency and reduce costs, for example by central purchasing of inputs such as feed. There are many examples of such groups in the USA where competition from the integrators is much greater. Producers had to get organized and increase efficiency to survive and also to gain some marketing power. In Alberta, I work with a group called Rocky Mountain Pork which has 13 independent producers with over 10,000 sows. RMP's management company hold an exclusive long term contract with Olymel in Red Deer which is based on cost of production. This "window" contract is for a minimum of 5 years and up to 10 years. Group management focuses on two areas:

- Improving the quality of hogs supplied in order to add value to both the producer and Olymel
- Providing a range of management and technical services aimed at reducing cost of production.

This value chain arrangement will eventually extend to Olymel's customers and the group aims to grow to 25,000 sows over the next 3 years. It provides a model for similar groups in other parts of the country.

CONCLUSIONS

During the current decade, I believe the two biggest changes we will see in Canada are related to meeting consumer requirements or concerns and major changes in the relationships between those involved in the pork chain. Producers will need to respond to the consumer, which will inevitably require some change in production practices. It will also need much more robust Quality Assurance Schemes to provide consumers with reassurance about the food they eat. These changes will increasingly be delivered by a more coordinated and integrated production chain, either through vertical integration, vertical coordination or alliances between producer groups, processors and possibly retailers. Coordination or cooperation not only results in reduced cost throughout the chain and greater competitiveness, but is more responsive to the market. Value chains, or dedicated supply chains will increasingly apply well defined production standards backed up by credible quality assurance to meet changing consumer requirements.