TRENDS IN THE IRISH BEEF MARKET DURING THE 1990S - IDENTIFICATION AND ANALYSIS OF CHANGE DRIVERS

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ABSTRACT

This paper provides a brief review of the Irish beef market during the 1990s. It sets out to identify the key factors influencing beef consumption during this period and reviews industry/government response to consumer needs. A number of factors influencing beef consumption are identified, including: price, safety, eating quality and health. In addition to price competitiveness, industry/government response has focused on safety and quality systems. Safety emerged as an important factor during the 1990s and various traceability, quality assurance schemes and supply chain partnerships were established to reassure the consumer. By the end of the decade such systems are a pre-requisite to market entry and increasingly the focus is on using these systems to develop and deliver product attributes demanded by target markets, improve quality and reduce costs. Increasingly, customers along the supply chain are focusing on supplier processes rather than product and thus less effort will be on product testing and more attention will be given to process auditing. In this way a customer can engage in a more strategic approach to purchasing. It is argued that future system development will evolve from a control/inspection orientation to systems focused on quality management and improvement that support competitiveness.

Key words: Irish beef consumption, price, food safety, quality, supply chain.

Section 1: Introduction

The Irish Meat and Beef Market

In the period 1992 to 1995 average per capita consumption of all meats rose from 87.3kg to 90.2 kg. An increase in poultry meat consumption from 24.1 kg to 30.4 kg was offset by falling consumption of beef & veal and mutton & lamb (15.6% and 11.4% respectively). Table 1 presents Irish annual per capita meat consumption from 1992 to 2002.

Table 1: Annual Meat Consumption in Ireland 1992 - 2002 (kg per head)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Beef and veal	17.3	16.9	15.8	14.6	13	16.7	18.1	17.1	16.4	17.1	17.5
Sheep meat	8.4	8.2	8.3	7.4	6.7	8.3	8.8	9.0	8.0	4.7	5.2
Pig meat	36.9	35.7	35.9	37.8	37.8	38.2	40.7	41.4	39.6	39.3	38.3
Poultry meat	24.1	25.1	27.4	30.4	31.5	31.4	29.8	30.8	33.4	30.5	30.5
Total	87.3	86.3	87.8	90.2	89	94.6	97.4	98.3	97.4	91.6	91.5
Beef & Veal market share (%)	19.8	19.6	18	16.1	14.6	17.7	18.5	17.4	16.8	18.7	19.1

Source: CSO Meat Supply Balance, 1997-2004

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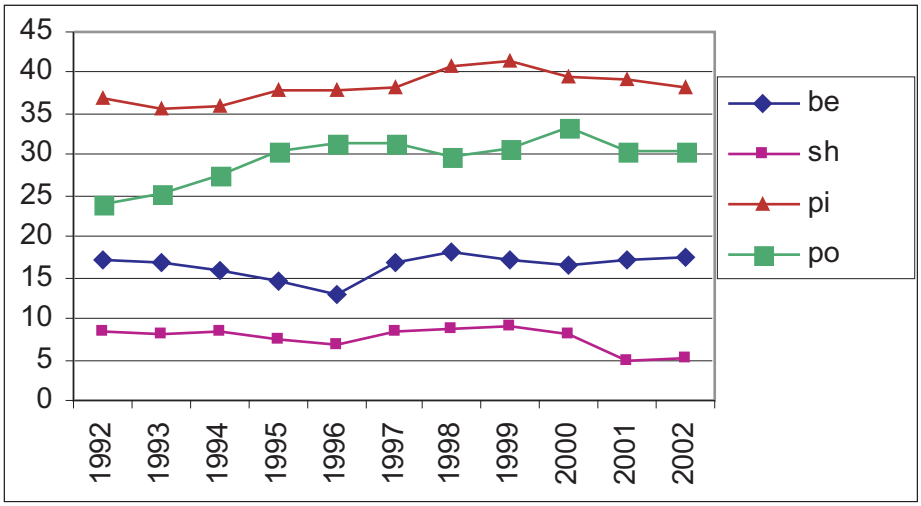
The popularity of beef declined further in 1996 with the announcement in the UK House of Commons of a possible link between bovine BSE (Bovine Spongyform Encephalopathy) and nvCJD (new variant Creutzfeld Jacob Disease) in humans. In 1996 beef accounted for 14 percent of total meat consumption, compared to 20 percent four years earlier. In 1997 consumption patterns altered considerably. Beef consumption rose by 28.5% and accounted for 17.6% of total meat consumption. In the period 1996 to 2002 average per capita consumption of all meats peaked at 98.3kg in 1999. Interestingly, during the 1990s per capita consumption of beef peaked (18.1 kg) two years after the 1996-BSE scare and as proportion of total meat consumption it was higher than 1995 levels (18.5% and 16.1% respectively). Indeed by 2002 beef as a proportion of total meat consumption was close to 1992 levels (19.1% and 19.8% respectively). Figure 1 illustrates these consumption trends. Numerous factors combined to influence consumption. The next section considers these factors.

Figure 1: Per capita consumption meat products 1992/2000

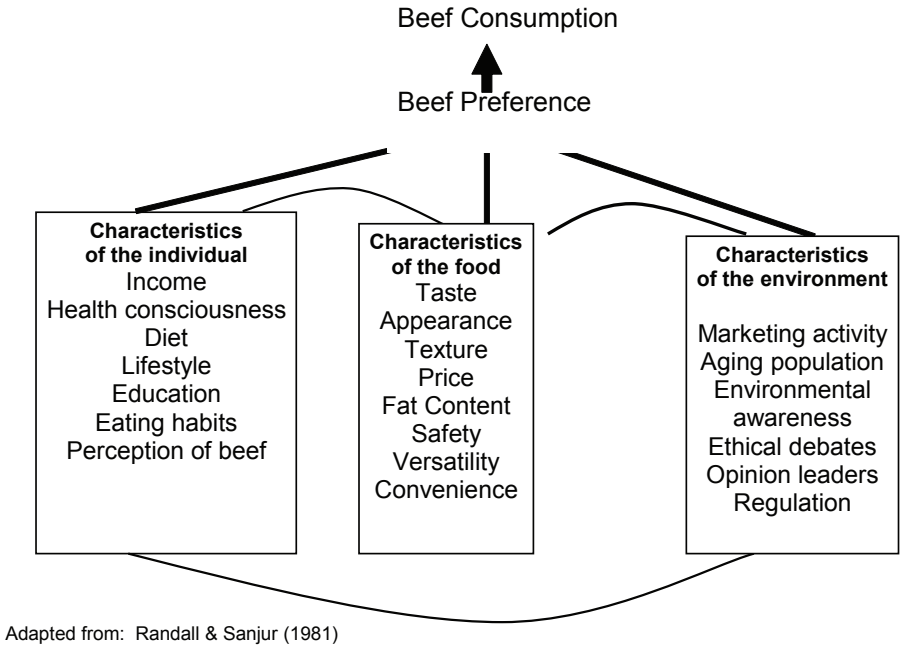


Source: CSO Meat Supply Balance, 1997-2001

Drivers of change – meat consumption

Numerous factors may influence meat consumption including price, quality (in particular consistency), taste, perceived healthiness, versatility and convenience, consumer income, family influences and lifestyles (McCarthy and O'Reilly, 1999). In many of these areas the beef industry appeared rather uncompetitive compared to white meats sectors during the late 1980s and early 1990s (Cotter, et al. 2001). Given that during the early 1990s a growing segment of the market perceived red meat as a relatively unhealthy expensive product that lacked versatility and convenience. However more recently the consumption of beef in the Irish market has recovered as industry/government sought to address consumer concerns, price competitiveness improved and beef was presented as a 'healthy product'. Figure 2 illustrates the interaction of various categories of factors that influence beef consumption.

Figure 2: Factors influencing beef consumption



Adapted from: Randall & Sanjur (1981)

Income and Price Changes

Irish incomes increased dramatically during the 1990s, particularly due to a greater proportion of females in the workforce. Dual income households tend to have greater discretionary income to spend on luxury products. For beef this has been beneficial and Spitters et al (1998) conclude: "Many consumers prefer beef for specific sensory reasons like taste and tenderness, and good beef enjoys the status of a luxury food " (p. 36)

Ritson and Hutchins (1991) identified beef, pork and chicken as food products that gained from income increases in the UK. However, the price of the product also needs to be taken into consideration and in the context of the Irish market the retail price of beef has dropped considerably during the second half of the 1990s. The retail price of round steak in February 1995 was 6.962p/kg compared to 5.564p/kg in 1998. Using a simple Laspeyres index with 1995 as the base year the decrease in retail prices can be further illustrated: as presented in table 2.

Table 2: Retail Price Index for Selected Beef Products on the Irish Market

Year	Round Steak Price Index	Sirloin Steak Price Index	Rib Steak Price Index	Brisket Pot Price Index
1995	100	100	100	100
1996	92.60	94.10	93.45	97.99
1997	89.97	92.82	86.85	93.69
1998	87.87	91.74	86.90	94.54
1999	89.28	93.84	83.85	92.46

Source: Data for index calculation: Central Statistics Office, Ireland

It is clear that the price factor has influenced consumption behaviour in Ireland for example there was a drop of almost 10% in the price of beef products between 1995 and 1997 while consumption increased by almost 15%.

However, the relationship between these economic factors and beef consumption should be interpreted with some caution. Bansbank (1995) noted in his longitudinal study of EU meat consumption trends that the percent contribution of price and income to change in beef and veal consumption had reduced from 95% for the period 1955-1979 to 68% for the period 1975-1995. Bansback finds that the non-price/income issues of increasing importance were health, lack of convenience and quality.

Dieting, Health issues and Safety issues

The European population is ageing and this has implications in relation to diet. This has direct implications for beef consumption as the older generation have reduced red meat intake. In addition, the younger generation, in many cases, are also eating less beef and display a preference for chicken. McIntyre (1998) found that while Irish adolescents enjoyed beef almost 80% of those surveyed had a preference for chicken. The Irish adolescents were also concerned about animal welfare issues and more than one in three were eating less beef as a result of these concerns. The recent popularity of the Atkins Diet has counteracted this to some extent and has positively contributed to beef consumption. The industry has responded to this trend, for example the supermarket chain Tesco began labelling its own-label food with the glycemic index (GI), this shows carbohydrate levels and benefits consumers who wish to monitor their sugar levels (Bord Bia, 2005).

Safety issues and beef have come into clear focus over the last number of years with the number of food scares associated with beef increasing, in particular the 1996 BSE scare and issues relating to hormones. Cowan (1997) found that over 70% of Irish consumers were very concerned about hormones and BSE when purchasing beef while 68% of consumers were very concerned about antibiotics when purchasing pork. McCarthy and Barton (1998) found that, a year after the BSE crisis, 43% of Irish consumers still expressed concern about BSE. They also noted that those expressing concern in relation to BSE tended to eat beef less frequently. These safety concerns are not just an Irish consumer phenomena. Cowan (1997) found that for 5 EU countries over 50% of consumers were very concerned about BSE.

Henson and Northen (1998) found that the beef safety issues of greatest concern to Irish consumers were hormones, salmonella and other bacteria, antibiotics and BSE. They also found that 40% of respondents had reduced their intake of beef in the previous five years (the survey was conducted in March 1997). McCarthy and Barton (1998) linked reduced consumption of beef to concern about BSE and suggested that it was the reason why a number of customers ceased to eat beef or eliminated certain cuts from their diet. They found that the risk perception for specific beef cuts was significantly associated to behavioural change. More recently McCarthy et al. (2003) explored the impact of attitudes and beliefs on beef consumption. They found that health, eating enjoyment and safety were the most important determinants of attitudes. Their findings highlighted the importance of health and suggest that promotion of health benefits and eating enjoyment would increase consumption. In response to new positive information about health (the positive role of Conjugated Linoleic Acid (CLA)), 65% of their respondents reported that they would increase consumption. However, these respondents were

those that had already a positive attitude toward beef, thus underlying the influence of attitudes on behavioural response and the usefulness of such variables in market segmentation. In addition, McCarthy et al. (2003) found that the views of other people also influenced behavioural intention towards beef consumption. In fact advice from doctors and dieticians also informed consumer assessment of beef. Thus information and education are also important factors influencing beef consumption.

Information and Education

Higher levels of education and easier access to information have increased consumer awareness of environmental, food production, food safety and health factors. The development of traceability systems in the meat sector is a response to consumer concerns about animal welfare issues, veterinary practices, feed inputs, etc.

Consumer use of information and trust in supply chain actors is of particular importance in the meat market. O'Keeffe & McCarthy (2001) found that Irish consumer trust in supply chain actors differed with greater trust in safety information[3] from government compared to processors or retailers. Kafka and v. Alvensleben (1998) study of German consumers suggest that the underlying confidence in the system and individuals' attitudes and beliefs are closely related. The lower the confidence the less likely the consumer will have confidence in information from external bodies. This is supported by a study of Irish beef consumers that found a greater distrust of quality labelling associated with growing concern. Irish consumers who lacked confidence in the government also had the poorest perception of meat safety and those with greater levels of concerns about meat made most use of written information (labels, quality marks and information brochures) (McCarthy, 2000).

Eating Habits

Irish eating habits are changing. This in part is due to the increased number of women in the workforce, smaller family size and increased income. Households are experiencing greater demands on their time. This is reflected in their shopping behaviour with a movement towards 'one stop shopping', increased eating out and decreased time spent on meal preparation. Spitters et al (1998) suggest that there is a greater tendency to eat outside the home on a regular basis and this of benefit to the beef sector as "beef is .. perceived in many cases as a luxury product, it is a favourite on restaurant menus". One of the key outcomes of the time pressured environment is the selection of products that take less time to prepare. This is having an interesting impact on the beef sector as many beef products are quick to prepare such a steak and mince, while others require longer cooking time, such as roasting joints and poorer quality cuts (slow cook). This has resulted in a shift in demand for specific beef cuts.

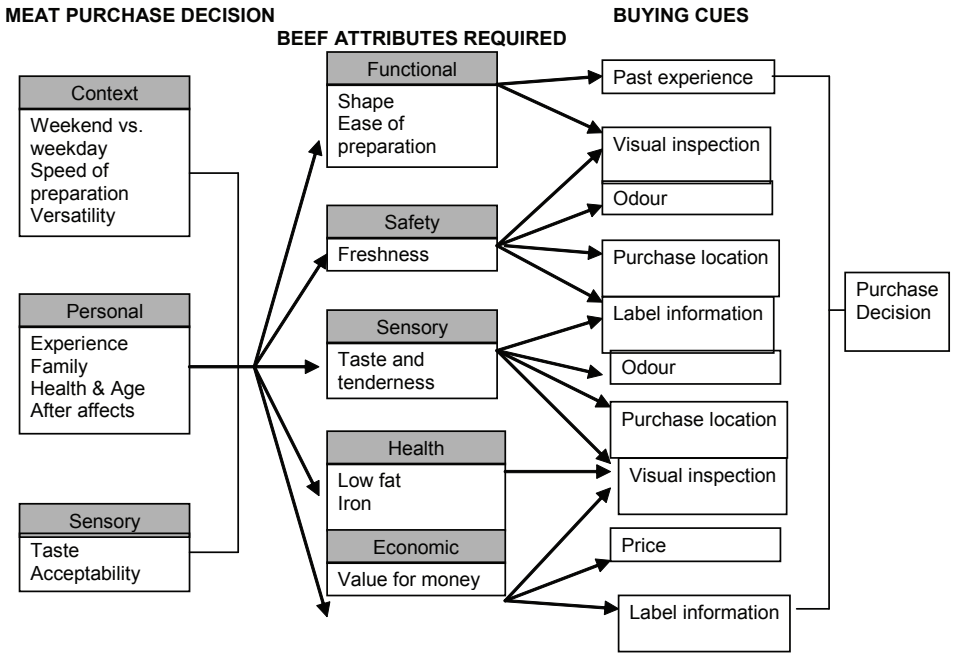
Product Characteristics and Beef Consumption

Grunert et al. (1996) found that the main quality factors for beef were taste, tenderness, freshness and leanness. In the Irish context McCarthy and O'Reilly (1999) identified eating quality, fat content and freshness as the most important quality attributes. Consumers minimise perceived risks and maximise the quality of the product they purchase through the use of a number of information and quality cues. Henson and Northen (1998) found that Irish consum-

[3] Trust in safety information ranged from: 20%-32% for retailers (depending on whether it related to bacteriological or technological hazards); 16%-24% for processors and 29%-56% for government.

ers believe that perceived freshness, country of origin, knowledge of animal feed and brand/ quality labels are the most helpful safety indicators, while McCarthy and Barton (1998) found that quality and known source of origin were the two most important safety indicators informing customer choice of beef. Furthermore, McCarthy and O'Reilly (1999) noted that a visual inspection of colour, fat and texture, a careful selection of purchase location (known source and store hygiene), the use of label information, price information and finally the odour of the meat were all important quality cues for Irish consumers. Thus it is not surprising that producers and retailers alike pay attention to the physical appearance of beef. Figure 3 illustrates the customer context, desired product attributes and buying cues used during the purchase decision.

Figure 3 Consumer use of buying cues



The factors influencing beef consumption, the product attributes desired and customer evaluation of product offering inform the industry as to appropriate marketing strategies. These strategies should target specific market segments with a product range that is presented, promoted and priced inline with their requirements. The next section considers industry and government response to consumer needs.

Section 2: Industry and Government Response

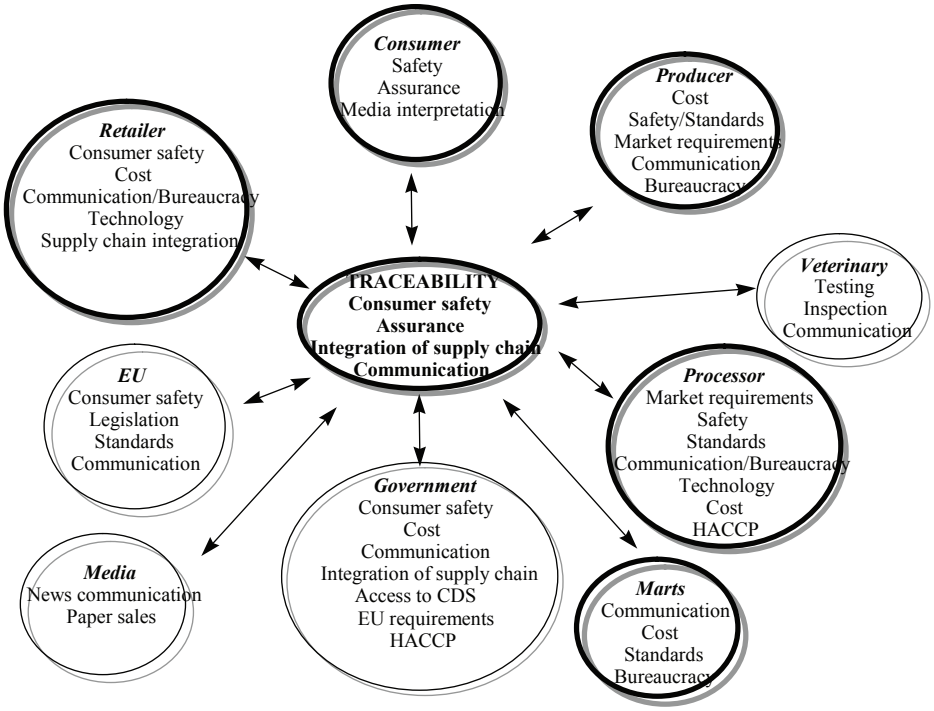
Food Safety and Quality - Surveillance Systems

If one looks back to the beginning of the 1990's food safety was but one of many issues of importance in the beef sector. By 1991, CBF (now Bord Bia – the Irish Food Board) initiated the Beef Quality Assurance (QA) Scheme to support the competitiveness of Irish beef on EU markets where "image, quality and food safety continue to increase in importance and are critical to the future success of the meat industry" (Moore, 1996). While safety was one of the many

reasons for the development of the QA Scheme it was not the only reason, production levels, stocks and policy factors were also important, but by the end of the decade food safety was of paramount importance to consumers and as a result to the industry. By 1996, food safety had become a central part of quality assurance schemes "the [CBF QA] scheme must have focus and design and should have two objectives (i) food safety; (ii) customer satisfaction" (Moore, 1996 p. 2). The BSE crisis also drew further attention to production systems and consumers become even more concerned about how food was produced and processed (Weiers 1996).

Surveillance and traceability systems have been developed during the 1990's in response to consumer concerns. In particular, the traceability of beef through the CMMS – Computerised cattle Movement Monitoring Scheme – and the updated Bord Bia quality assurance scheme go a long way to guaranteeing the safety of Irish beef. This system also provides the basis to supply guarantees about animal welfare and veterinary practices as well as addressing environmental considerations. Timon and O'Reilly (1998) identified the main issues of concern to stakeholders with regard to traceability (highlighting 'principle' stakeholders) and illustrated the complexities involved, as presented in figure 5.

Figure 4. Stakeholder Issues with regard to Traceability



They noted that the key issues with regard to traceability are clear-cut, however, "it is their implementation that is complicated, primarily due the number of levels within the chain and the numbers of producers supplying the chain. In fact, many of the key issues are common to the main stakeholders, e.g. consumer safety, standards, communication, reliability and cost."

It is commonly accepted that food safety and animal welfare are two of the most important consumer concerns (NDP (2000); The Beef Task Force (1999); Agri-food 2010 (2000)). In response to these concerns the Irish government and the food industry have taken a number of steps to strengthen their position. These include the implementation of a number of EU directives and the development of specific national legalisation (Agi-food 2010). This highlights Becker's (2000: 158) observation that public policy is now becoming involved in efficient consumer response (ECR) processes which "means taking the needs of the consumer as the overall objective of quality policy. It ensures that the needs of the consumer are efficiently met by the supply side". In response to food safety concerns a variety of programmes have emerged to guarantee the safety of food against technological and bacteriological hazards. All of the major retail multiples have initiated programmes that require much greater coordination along the supply chain specifying farm practices, transportation systems and processing practices. These schemes address many of the consumer's ethical as well as safety concerns. Product labelling now clearly indicates origin and increasingly other information is provided such as quality marks, specific production systems and breed. Labels, brands and quality marks could play a greater role and further assist the customer in product assessment at point of purchase.

At a national level we can see the importance of food safety and quality with the government committing resources to initiatives that enhance "food safety and quality at primary level" (NDP 2000-2006). Within this plan they have also prioritised the beef sector. The Beef Task Force (1999) recommended that payment on quality at production level should be rigorously adopted to ensure that the quality requirements in target markets are met and that partnership agreements should be reached between processors and producers. Since food safety issues span the entire supply chain and also fall under the remit of public health, various supply chain partnerships have been established and a significant number of government support agencies have been involved in the re-structuring and developing the Irish beef industry. Some agencies, such as Bord Bia, have been instrumental in the campaign to regain consumer confidence in the safety of Irish beef. The key focus of the Bord Bia strategy is to ensure that Irish beef products meet specific market needs. This process is ongoing and in some cases involves a change in feeding and, to some extent, new breeding regimes. This means that primary producers have to become much more market orientated in their business activities. Effectively, this means the establishment of supply chain partnerships involving producers, processors and retailers to ensure a co-ordinated response to market demand.

Future requirements

Given traceability, more proactive systems may be employed along the supply chain. Indeed traceability alone does not guarantee anything nor do it contribute anything other than tracking to ensure that due diligence has been adhered to. However, traceability systems do provide a useful information infrastructure that can be used in a proactive way to assess performance (e.g. feed, breed, animal type, age), develop products with specific attributes for target markets and, in particular, reassure consumers of credence attributes (e.g. production practices, feed used, environmental practises). More importantly they are the first step to building a truly interactive supply chain, various stakeholder along the chain are now used to sharing information and have a greater understanding of each other's activities. This is the first step towards working together to add value and reduce cost, through firstly building on the exchange of transactional data through to the exchange of management information (e.g. customer service measurement, quality measurement, inventory levels, delivery routing and scheduling) and ultimately to a level where partners could share more strategic information (e.g. development and

refinement of capabilities and opportunities, profit–based customer service analysis) and begin to act in a synergistic manner (Storer, 2000).

Both the role and complexity of traceability systems has changed during the 1990s. At the beginning of the decade product traceability was often a product differentiator whereas by the end of the decade it was a prerequisite. We see some evidence of the development of quality management systems from inspection to quality control (clear procedures, traceability, product testing) to quality assurance (consistency of processes, process audits) and finally approaching quality management (e.g. improved training and commitment, self-inspection, teamwork, use of key performance metrics, codification of knowledge and continuous improvement) in the beef industry.

Concluding Comments

As is clear from the above discussion, beef safety and quality have emerged as two key issues during the 1990s. The supply chain systems put in place during the 1990s have, in that main, supported product traceability and have been control focused. These and associated promotional strategies have done much to restore confidence in Irish beef. It is likely that this approach will evolve into quality management systems that focus on both cost reduction and value creation and thus support competitiveness. Increasingly, buyers will focus on supplier processes rather than on the product and thus less effort will be on product testing and more attention will be given process auditing. This approach may strengthen confidence in each stage and also enhance communication and coordination resulting in improved supply chain competitiveness. We can also see the emergence of the infrastructure necessary to support a movement away from a transactional economy towards a supply chain management approach.

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