GEORGE MORRIS CENTRE

Canada's Independent Agri-Food Think Tank

A Stepped Approach for Developing and Maintaining a Differentiated Pork Initiative

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Executive Summary

For the purposes of this report, the term *niche* is used to define a production or marketing system that does not follow a standard commodity-based approach to pork production or marketing. In using the term *niche* we are, therefore, not implying that the only market opportunities are small. Niman Ranch is an example of an extremely successful North American niche pork initiative that serves a wide array of markets and handles large volumes of differentiated pork.

The objective of this report is to provide a stepped approach to developing a niche pork initiative. Parts of the material will be equally relevant to those who are looking to establish an initiative from the 'ground up', as well as those who are already part of a niche pork initiative and are simply looking for opportunities to enhance their current operations. The material is aimed in particular at producers who feel they need guidance in assessing the commercial viability of a perceived opportunity and are looking to turn a vision into a reality.

The report unapologetically takes a Value Chain Management approach to assessing how you can work on exploiting an identified market opportunity. VCM involves ascertaining why participants belong to a chain, identifying what value they bring to the chain, and looking for ways to produce and deliver the end product more effectively and efficiently. It is a reiterative process, continually looking for opportunities to improve the overall chain's performance in order to successfully adapt to market conditions and retain competitiveness against increasingly capable competitors.

Before you get to this stage, however, you need to ascertain whether a perceived market opportunity is real and whether you have the basic resources (including geographic) to supply this market. For initiatives such as niche pork in particular, the attributes of an end product emanate from a particular point in the chain – the producer. You, therefore, need to identify which attributes are best suited to a particular market, and how those attributes can be protected, enhanced and delivered to the end market in the most effective and efficient manner possible. Simply getting this far can place you in a powerful competitive position.

Once you are able to identify the current path taken in supplying an end product, the opportunity exists to first better understand the businesses that are involved in producing and delivering an end product to consumers. You will possess added awareness of some of the challenges that they face and how these challenges influence their relationships with others operating along the chain. Assessing the relationships that exist between (and eventually within) the involved businesses and the impact that this has upon the overall supply process, enables you to begin the process of developing more effective relationships, which are the glue that hold value chains together.

Finally, remember that while nothing is guaranteed, failure to plan equates to planning to fail. You need to do your homework. You need to think objectively. Consumers will ultimately determine the success of your venture; though the people you choose to work with greatly influence the extent to which you can consistently satisfy the demands of your target consumers.

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1.0 Establishing Strategic Goals

For the purposes of this material, the term *niche* is used to define a production or marketing system that does not follow a commodity-based approach to production or marketing.

The first part of this material serves as an introduction and 'set the scene' for later discussions.

The first step in developing a new initiative is to establish strategic goals. To accomplish this requires you to evaluate opportunities and challenges from a number of perspectives. Not least through evaluating your strategic alternatives to identify a preferred target market.

In North America generally, consumers demand for tastier pork is increasing. As is the demand for higher quality, more satisfying value-added pork products such as ham. The commodity systems that dominate the pork sectors have been largely been by volume, production and price. Development of the heritage pork sector, particularly the resurgence of breeds such as Berkshire, has however been driven by consumers. Largely led by and increasing demand for alternative differentiated pork that offers distinct superior eating qualities compared to commodity products, the once low profile niche pork movement is gaining momentum.

As with most niche pork markets in the US, the demand for differentiate pork continues to grow in Canada too. However, even though current demand for differentiated pork surpasses supply in many areas, nothing is guaranteed. Only by thoroughly planning a differentiated pork initiative can you hope to minimize the risk of investing in a project that does not return a profit. And not all producers are suited to differentiated pork programs; which is good news for those who are.

Before entering a niche pork venture you will need to identify the most suitable approach for you. The commodity market is largely supplied through a standard arrangement where ownership of the hog is lost at the packing plant. A schematic diagram for this structure would look like:

Producer (loss of ownership) → Processor → Wholesale → Retailer→ Consumer

A benefit of niche pork production is that, with lower volumes, opportunities exist to gain a larger portion of the consumer dollar through determining whether you wish to rescind ownership of the hog at a different point along the chain compared to standard commodity production, as mapped above. The later in the process from production to consumption you lose ownership of the hog, the greater the potential for profit. However you also face the potential of experiencing greater risks compared to selling live hogs directly to a processor.

Therefore, you may wish to adopt an approach that is not too dissimilar to the one described above, in that you rescind ownership at the processor, or you may wish to adopt one of the three approaches described overleaf.

1. Special Attributes for Production and/or Marketing
   Objective: *Develop a brand or name to acquire market recognition of a key issue*
   Production – {loss of ownership}-> Market to Packer →Processing→ Wholesale → Consumer
   Production with a focus on special attributes or limitations: such as specific genetics, humane production or antibiotic free. Examples of this approach include Niman Ranch, 100% Berkshire Pork.

2. Retailed or Repurchased Ownership
   Objective: Development of Brand or Name Recognition key issue
   Production {loss of ownership}→Processing {regain ownership} →Wholesale → Consumer
   An alternative is to engage a processor to contract kill on your behalf. The benefits of the above arrangement are that you may only need to purchase specific cuts from the processor, to which you can then add greater value.
   Examples of initiatives utilizing this approach include Organic Valley– CROPP Pork Pool, whose target markets include grocery chains and restaurants.

3. Direct Marketing
   Production → Processing → Consumer
   Production may be conventional or special (antibiotic, humane or organic)
   Examples of initiatives that use this approach include Eden Farms.

Ultimately however the structural form around which you establish your original chain can be changed. Do not get trapped into believing that the commercial structure and marketing arrangements around which you form your chain will be set in concrete from the moment you begin. Place greater emphasis on understanding your target market, how you can retain your long-term competitiveness through identifying your strengths and weaknesses compared to competitors, and what resources you require to get started.

Most importantly, remember that are at least 12 factors that will likely have greater influence on your long-term success that the initial structure of your chain. These include:

1. Work with partners that possess a clear attainable vision and common goals
2. Ensure appropriate chain champions and captains exist along the entire chain
3. Create and maintain a culture that supports cooperation and learning
4. Establish and enforce roles, responsibility, and accountability
5. Motivate participants to continually improve
6. Build and maintain effective relationships
7. Implement effective communication strategies
8. Create, share and protect value appropriately
9. Start small and expand steadily
10. Get the product right every time
11. Possess capabilities to form, strengthen and manage chains effectively
12. Experiencing things together in order to build commitment

1.1 Identifying Market Opportunities

1.1.1 Identifying a Target Market According to Consumer Demographics

In a later section you will be seeking to identify specific market requirements. For the moment however, this section is designed to help you paint a picture of what your target market looks like; then begin the process of identifying the type of resources required to access them; and ultimately decide whether the opportunity you foresee in the market presents a sound commercial opportunity.

a) Is your target market more likely to be male or female?

b) What would you estimate their age to be?

c) What type of education level have they attained?

d) What type of profession are they in?

e) What do you think the income range is?

f) In what region of Canada or the U.S. do they live?

How confident are you in the accuracy of your responses? *(Please check only one.)*

- ☐ Extremely confident
- ☐ Somewhat confident
- ☐ Somewhat unconfident
- ☐ Extremely unconfident

1.1.2 Understanding Your Customers By Their Desired Product Attribute

This section is designed to help you understand who your target market really is and what information you currently know about them. This will help you to identify gaps in your information and provide some indication of where marketing research can be of service.

a) How frequently does the end user purchase your product?

b) Why do they use your product?

c) Where do they use your product?

d) How often do they use your product?

e) How do they use your product? (i.e., What do they do with?)

How confident are you in the accuracy of your responses?
(Please check only one.)

- ☐ Extremely confident
- ☐ Somewhat confident
- ☐ Somewhat unconfident
- ☐ Extremely unconfident

1.1.3 Understanding Your Product

This section is designed to help you understand what your product's place is in the market and why. This will help to identify gaps in your information and provide some indication of where marketing research can be of service. It begins the process of understanding how consumers may perceive your product, and how you can maximize its appeal to the target market.

a) What are your product's greatest strengths?

b) What are your product's greatest weaknesses?

c) How is your physical product different from comparable products produced by your competition?

d) Beyond just physical characteristics, what makes your product different from your competitors? Is there anything intangible that sets your product apart?

e) What specific needs does your product address for the end user?

How confident are you in the accuracy of your responses?
(Please check only one.)

- ☐ Extremely confident
- ☐ Somewhat confident
- ☐ Somewhat unconfident
- ☐ Extremely unconfident

1.1.4 Understanding the Marketplace

This section is designed to help you understand how your product fares against your competitors' products in the market. As you answer these questions, please think about how your competitors' products are sold to the end user (e.g., grocery stores versus farmers markets, etc), how they promote their products and how they price their products.

a) Who is your competition?

b) What competitive advantages do you have over your competition?

c) What competitive advantages does your competition have over you?

d) How loyal are your competitors' customers to their product?

d) How do you know this information about your competition?

How confident are you in the accuracy of your responses?
(Please check only one.)

- ☐ Extremely confident
- ☐ Somewhat confident
- ☐ Somewhat unconfident
- ☐ Extremely unconfident

1.1.5 Understanding Your Partners

This section is designed to help you understand your potential value chain partners' businesses better. Not necessarily your *specific* partners, moreover the *type* of partner that you may need to deal with to access your chosen market. This will help to identify gaps in your information and provide some indication of where marketing research can be of service to strengthen your competitiveness.

a) What value do your partners add to the production of the end product purchased by consumers?

b) How is the value they add different from the value that their competitors add?

c) How satisfied are their customers with the products and services they have been providing?

d) What are the three biggest marketing problems your partners face today, in terms of meeting consumers needs?

e) What value can you create by helping to solve your partners' problems?

How confident are you in the accuracy of your responses?
(Please check only one.)

- ☐ Extremely confident
- ☐ Somewhat confident
- ☐ Somewhat unconfident
- ☐ Extremely unconfident

1.2 Differentiating Your Product

Once the target market has been determined, your competitors identified, and potential substitutes to your products weighted for their strengths and weakness, you need to determine how you will differentiate your product in the market. How will you distinguish yourself from your competitors and substitute products by providing a product that an identified group is likely to prefer over your competitors. In essence, you are creating your 'niche'. Niche markets need not be small. The word niche simply means defined. You are defining your future market.

Once you have established your strategic goals, you need to analyze the resources and the competencies necessary to differentiate your product successfully. Not all of the necessary resources may be available to you. Your strategy may well therefore entail a plan for acquiring those missing resources through purchase, lease or partnership. For niche initiatives more so than commodity, what may set you apart from your competitors (particularly in the eyes of your customers) is your knowledge and access to information. These are the intangible factors surrounding your business. Overall however you will need to assess exactly what resources and competencies you require regarding breed, infrastructure, knowledge, finances, and geography in order to secure your target market.

1.2.1 Breed

A number of breed characteristics need to be considered when developing a differentiated product. For example, what is the reproductive performance of the breed, do they have preferred processing and consumer attributes, such as ultimate pH, colour, tenderness, etc., does this breed producer a leaner or a 'fattier' end product and is the breed susceptible to diseases or syndromes such as the Porcine Stress Syndrome (PSS).

In the United States, all heritage pork comes from pure and crossbred livestock. Heritage pork includes the following breeds: Berkshire, Tammorth, Red Wattle, Duroc, Gloucester Old Spot, Yorkshire and Large Black. It has been determined that breeds which are good for reproductive crossbred efforts performance wise, are Yorkshire, Large White, and Landrace. However, when crossed with Berkshires, the first cross does not measure up to purebred Berkshires in meat quality. While processing yields are higher and the costs of production are lower, there is a discernable difference in the quality of the meat derived from purebred versus crossbred Berkshire hogs.

Studies have shown that Berkshires have the best in processing and consumer preference including: ultimate pH, color, tenderness, drip loss and cooking loss. It is the fattest breed with the least amount of lean carcass. Compared to commodity pork, the leanness of a Berkshire carcass averages 6-7% less: 47-48% compared to 53-55%.

There are also drawbacks with altering the genetic characteristics of certain hog breeds. Genes controlling leanness have been linked to a gene for stress susceptibility (Halothene gene). Pigs with this gene display Porcine Stress Syndrome (PSS) when facing normal stress. PSS creates

high levels of post-mortem lactic acid while the carcass is still hot, which leads to pale, soft and exudative meat. Exudation, both while fresh and under cooking, leads to dry, tough meat.

1.2.2 Knowledge

Knowing your breed and how it performs is a very necessary factor in undertaking a successful differentiated marketing initiative. Not only will this help you to successfully differentiate your product in the market, it will also give you the information required to determine costs of production and whether your endeavours are financially sound.

One challenge with pork processing in general is there is not a significant difference between the best yielding hog and a low yielding hog, especially compared to beef. Knowledge of the meat and fat yield of carcasses is needed when labeling high quality pork products by breed. Many of the highest pork quality breeds are fatter and produce less saleable product than commodity crossbred pigs. Carcass premiums for quality must be combined with lean meat yield to evaluate total economic returns between production systems.

Feed conversion rates for Berkshire pigs are estimated to be 20% below that of commodity pigs. Higher feed costs and slower growth rates of Berkshire pigs limits the size of the potential market due to increased production costs. The lower conversation rates are partly due to Berkshire hogs developing higher levels of fat (externally and internally) compared to muscle development and during their lifecycle compared to commodity pigs.

As well, purebreds are said to be more susceptible to health issues such as mange and normal diseases. Observation and verbal discussions with Berkshire producers would strongly suggest that reproductive efficiency is a major problem with Berkshire. The number of pigs/sow/year is very low compared to commercial production using Yorkshire or Large White/Landrace genetics. Berkshires also breed fewer times per year compared to commodity pigs. The result is a reproduction rate of around 14-15 pigs/sow/year for purebred Berkshires; and 4-7 pigs/sow/year less than crossbreeds. This is low compared to the 22-26 pigs/sow/year expected for commodity pigs

1.2.3 Monetary

The monetary aspect of breeding purebred pigs, such as Berkshires, is important when establishing strategic goals. As with other niche products such as organic, pasture raised, or antibiotic free, the supply produced is relatively small. This is due to two reasons: production costs are higher and it is difficult to project profits based on large supply (or sometime even achieve large supply).

However, studies have suggested that the extra returns associated with purebred animals, such as Berkshires, Durocs and possibly Chester Whites, must be considered against their higher cost of production. Purebred pigs will often produce well below the 18-22 pigs per annum that good crossbred Berkshires sows often realize. Successfully producing purebred breeds also requires

adherence to intensive management skills, unique marketing and extra documentation in order to succeed.

According to the small niche pork processor SiouxPreme, a Berkshire pig costs between 25 to 35 percent more to raise than a commodity hog.The overall cost of processing Berkshire hogs is not significantly greater than that of processing commodity hogs. While some added costs will likely apply, through having to handle Berkshire hogs differently and ensure both adequate segregation and traceability to counter concerns surrounding false claims, the added costs are not expected to be significant.

The cost of acquiring hogs typically comprises 70% of the cost of a slaughter-processing company, and is higher for niche hogs. For a large, well-capitalized multi-plant operation employing two shifts, the kill and cut costs range from $10-$12 per hog. Smaller plant costs are in the mid-teens. Custom slaughter operations charge approximately $25 per pig broken into sub-primals. Many packing plants have a scheme to pay the producer for the edible items that are not taken, usually at the lower end of commodity prices. Custom operations keep the byproducts which are worth, depending whether the pig is skinned or not, between $3-$8 per head.

All of these costs need to be taken into consideration. While the prices received from the sale of Berkshire can be four times that of commodity pork, basing an initiative solely on the expectation that you can secure a premium of that proportion, not because of specific consistent quality but because of its breed, is anything but a sound business approach. You WILL face competition at some point, which may well limit your opportunity to retain margins.

1.2.4 Geography

When analyzing your geographic location, you need to consider both the access to market players and access to inputs required for production. What is your location to market players such as processors, retailers, other competitors, input suppliers, and what access do you have to funding, business development experts and promotional mediums?

Producers in Southwestern Ontario have good access to market players. The location of many production, processing, and value-adding operations are situated relatively close to the GTA market and have well-developed supply routes. The GTA also offers a large diversified and well educated population that is reasonably affluent.

Furthermore, there is a relatively undeveloped niche pork industry. This provides a market that is ready for innovation in fresh and processed pork products, and with little competition.

Premium suppliers of both the foodservice and retail sectors are readily available. In particular, for retail, there is Pusateri's, Whole Foods, and specialty butchers and for foodservice there is Royal York Hotel, Canoe, Reds, Wineries.

Funding opportunities are offered by PAVE, ACAAF, CORD, and AMI programs. The objective of programs such as these is to stimulate marketing innovation. As well, the GTA area provides

access to an array of informed business development experts and market researchers, which are necessary to provide insight and support to the development of initiatives

Finally, a high concentration of media outlets and potential promotional mediums exist in the region, including:

- Production of many of the most watched food and cooking television shows
- Text media publishing – daily, monthly and quarterly publications
- Radio – widespread program formats targeted to general and specific audiences

1.3 Identifying Opportunities

The last step in establishing strategic goals is to identify opportunities that exist, based on the analysis of the above factors. Identifying opportunities is important for value creation. It is then necessary to identify the factors that are critical to achieving those opportunities, both tangible (i.e. macro quality factors) and intangible (i.e. branding and positioning).

There are many benefits that a cluster of pork production parties can provide Ontario producers by stimulating innovation opportunities covers the realms of economic, marketing, and business management. The sources of these benefits stem from the GTA being the home of organizations involved in researching factors related to innovations in meat genetics, nutrition, production, processing, and marketing activities. These benefits include:

- Pork producers, experienced in supplying domestic and export markets
- Researchers in genetics and pork production
- Centers of academic excellent in economics and marketing
- Feed mills experienced in developing differentiated feed formulas and rations
- Centers of veterinary research and knowledge creation
- Designers and fabricators of pork housing and production facilities
- Processors interested in securing new markets
- Value-added processors situated in the GTA region
- Ontario Pork Marketing Board: supportive of innovative marketing initiatives
- Consumer research and tracking

After the strategic goals are established, the process of designing the chain can begin.

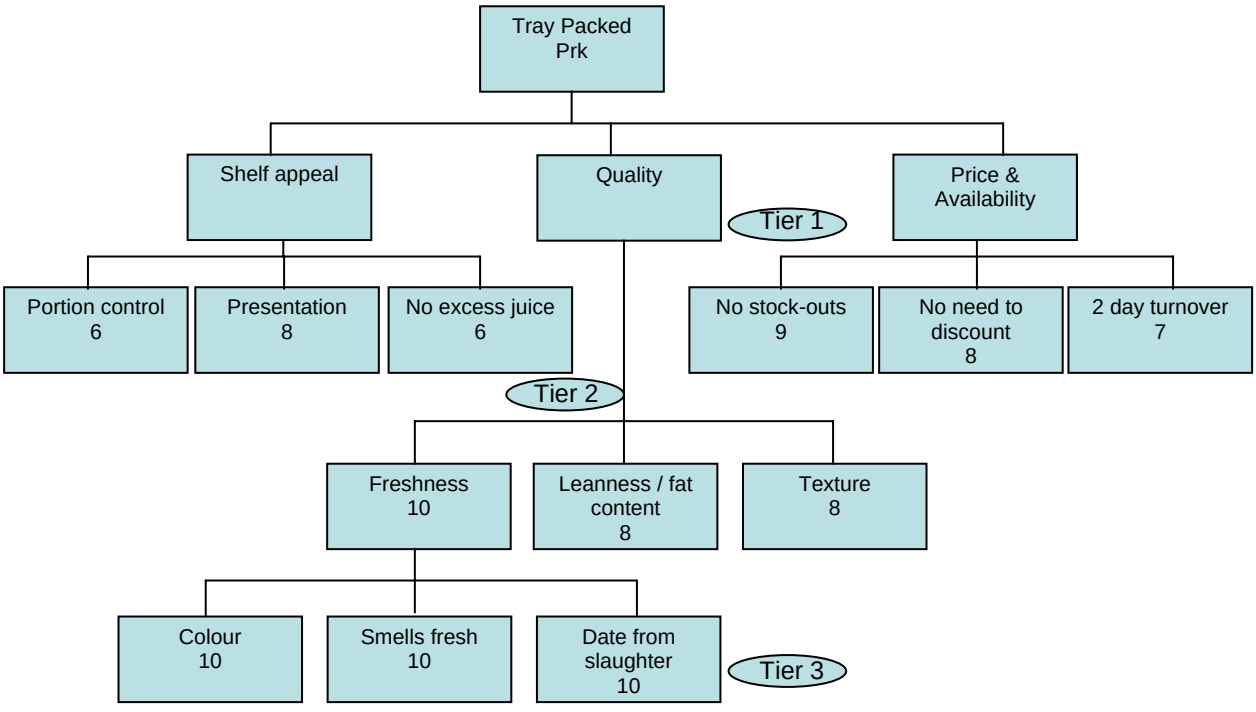
2.0 Designing The Chain

2.1 Understand Customer and Consumer Needs

In designing the chain, it is necessary to precisely understand customer and consumer needs. Only then will you be able to design a chain that encompasses the strategic and operational requirements necessary to secure your target market.

An effective way of understanding your customer and consumer needs is to draw a Critical to Satisfaction Tree (CST) for the product that you are going to produce; or might already produce if looking to improve your operations to remain competitive. This is best achieved by talking with your customer. The aim is to provide clear insights on where to focus your resources to improve long-term performance, reduce waste, and strengthen your business relationships.

The figure below provides an example of a critical to satisfaction tree. You will notice that different levels of the tree are labeled 'tiers'. Tiers are used to enable customers and suppliers identify specific requirements, demands or needs that must be met to address a particular issue that can be addressed. While this tree is designed for a retail situation, it can easily be modified to better suit the foodservice sector.



The three groups of factors that together form tier one revolve around different aspects of purchase behaviour. Shelf appeal describes that factors that would encourage consumers to make an initial purchase of your product. Quality describes factors that will impact the likelihood of th customer making a repeat purchase. Price and availability describes factors surrounding how you

can meet the needs of a retailer to supply a consistent product to consumers. All three are imperative to retaining consumer loyalty.
You will also notice that all the boxes below the Tier 1 level are numbered. The higher the number the more important they are to the customer and/or consumer. Consistently failing to adhere to an "8, 9 or 10" will almost certainly result in loss of a customer. It is to these areas that you therefore need to focus your greatest efforts. Anything below a "3" is desirable, though more sugar on the cake than a strategic imperative. You therefore don't want to expend any great investment on addressing these areas.

Once you have completed the CST, you will be able to list factors that need addressing. By listing factors according to their order of importance, and the ease to which various issues can be addressed, you can place yourself in the enviable position of being able to invest resources in the most effective way possible to retain customer loyalty over the long-term.

Addressing and prioritizing critical to satisfaction issues can be done using the following table:

Critical Issue	Importance (score)	Cause	Potential Effect	Resources Required to Address	Time Needed to Address	Priority

In this way, through utilizing a CST and the above table, you can quickly and effectively identify the areas of business where investments will return you the highest benefit. It is a structured approach to identifying the most important customer needs, and creating a foundation upon which you can successfully communicate with you customers, identify preferences in order to meet specific market demands, and identify how customers will monitor your performance. Most importantly it provides a structured means to strengthen long-term relationships through continually satisfying customer and consumer requirements.

By using this system, you can also to prioritize factors according to their expected cost and ease of achievement. For example, the most valued traits of Berkshire pork sought by informed customers includes: colour – with darker colour indicating higher pH ; greater muscle firmness – leads to higher water holding; increased tenderness; marbling; and, average to above average intramuscular fat. However not everyone will rate the same level of importance against each factor. Using the CST enables you to identify precisely what combination of factors appeal the most to certain customers, which in turn helps maximize your value creating opportunities through grading and delivering carcasses/cuts according to certain customer requirements.

Focus group research can be used to understand consumer needs. In 2002, focus group research was conducted in Midwestern US to gain marketing insight into pasture-raised products. The research found that consumers preferred the term pasture-raised; consumers shop for food in a variety of places, but convenience is key to regular visits; coupons and other incentives lead consumers to try new products; consumers buy meat and poultry according to how it looks; and that healthy is important, but not at the expense of taste. Again, a CST helps to identify exactly which potential attributes are necessary to capture the greatest value.

Finally, to understand your customer needs by their desired product attributes, you should ascertain answers to the following questions:

- How frequently does the end user purchase your product?
- Why do they use your product?
- Where do they use your product?
- How often do they use your product?
- How do they use your product (i.e. what do they do with it)?

Increasing frequency of purchase is a more effective way of maximizing profitability than expending the breadth of your market: with one market assessment stating that 50 percent of your customers are likely to account for 80 percent of your sales. Therefore, focus your resources on accessing your most loyal customer and consumer group.

2.2 Identify What is Necessary to Achieve This Outcome

This step requires mapping the chain to identify the links necessary to make an initiative work. A value chain encompasses the entire series of activities: from on farm production, through to processing, distribution, and the retailing of a final product to the consumer. It is a strategic alliance undertaken between independent business organizations.

Value chain management involves ascertaining why someone belongs to the chain that currently exists, identifying what value they bring to the chain, and looking for ways to produce and deliver the end product more effectively and efficiently. It is a reiterating process, continually looking for opportunities to improve the overall chain's performance in order to successfully adapt to market conditions and retain competitiveness against increasingly capable competitors.

The ten principles of VCM are:

1. Focus on customers and consumers
2. Choose the correct compatible partners
3. Have a culture that supports cooperation and learning
4. Identify and share important information effectively
5. Identify and implement correct processes
6. Foster empowerment through excellent leadership
7. Ensure logistics suit chain structure and product type
8. Proactively manage relationships
9. Ensure governance system reflects strategy
10. Continually adjust to changing circumstances

With the attributes of an end product often emanating from a particular point in the chain, identifying which attributes suit a particular market, and how those attributes can be protected, enhanced and delivered to the end market in the most effective and efficient manner possible, can place you in a powerful competitive position.

The first stage of preparing to adopt value chain management principles is mapping the chain. The purpose behind 'mapping the chain' is to identify the path taken by your product (and other ingredients) as they are processed and delivered as a final product to a specific market. This allows you to familiarize yourself with the businesses involved in producing a final product purchased by consumers, and identify the major operations undertaken during that process.

Once you are able to identify the current path taken in supplying an end product, the opportunity exists to first better understand the businesses that are involved in producing and delivering an end product to consumers. You will possess added awareness of some of the challenges that they face and how these challenges influence their relationships with others operating along the chain. Assessing the relationships that exist between (and eventually within) the involved businesses and the impact that this has upon the overall supply process, enables you to begin the process of developing more effective relationships, which are the glue that hold value chains together.

You are then in a position to map a new and enhanced value chain, including the necessary partners. This is particularly important when developing new products and markets. Identifying the target market's demands, and the challenges involved in meeting those demands, helps develop the roles, responsibilities and accountabilities of each member of the alliance (as required to ensure the alliance's long-term success) into an effective governance structure. Once all the 'parts are in place', next step is translating market demands into an economic value that can be shared amongst the members of the alliance.

From this point onwards, the objective of value chain management is to identify ways to improve the overall chain's operations and, in doing so, maximize your competitive advantage; not least by reducing the level of risk facing your business. Companies can strategically imbed themselves into the value chain. Though never forget that attention must continuously be given to both strategic and operational factors in order to make this happen successfully.

The table below provides an example of how to map your current chain.

Input Suppliers	Producers	Processors	Distributors	Retailers	Consumers
• List the key firms	• List the key firms	• List the key firms	• List the key firms	• List the key firms	• List the key firms

Ultimately, the critical success factors upon which the success of any differentiated pork initiative will depend closely follow the six principles of value chain management developed by Collins and Dunne (2002). They are:

- Focus on Customers and Consumers;
- Create Share, Realize and Protect Value;
- Get the Product Right – Every Time;
- Ensure Effective and Efficient Logistics / Distribution;
- Ensure an Effective Information and Communications Strategy Is In Place;
- Build and Maintain Effective Relationships.

2.3 Structure – Inc. Infrastructure

What does the ideal chain structure look like to get your product (in this case differentiated pork) to the end market? Who should be involved? How many steps need to occur to get your product to market in the best quality possible?

These are all factors that you will need to consider when deciding on the structure of your chain. Never forget that the shorter the chain, the less links involved in its operation, the easier it will be to manage. Also keep in mind that each step or link in the chain will be looking for a margin. For smaller volume niche products in particular, the less complicated the chain, the more viable it will likely be.

In terms of actually structural requirements, always look to the simplest and most direct approach possible. For instance, rather than investing in sophisticated information and communication software, engage a student to design a secure website that anyone of the chain can access through any computer with simply a password known only to the partners.

2.3.1 Identify resources required to achieve the vision

Identifying the resources that are required to achieve this vision, including when they are required, what form they will be required in and whether or not they are corporate, legal or trademark resources is important in designing the chain.

The table below gives an example of how to organize the resources that are required:

Resource Required	Availability	When Required	Form Required	Cost (if tangible)	Legal Issues/ Requirements	Challenges to Acquiring Resource

2.3.2 Scanning the Gaps

After you have mapped out your chain and determined what resources are required, you should scan your plan for gaps. What resources are required but currently are not available. These resources could be either knowledge resources (e.g. business, production, marketing, etc.) or physical resources (i.e. infrastructure, production capacity, breeding herd). Once you have identified the gaps, you need to determine how you will fill these gaps.

How will you acquire the resources that you require, but that are not currently available? It could be as simple as putting in an order to a supplier, or perhaps more complicated because a need exists to upgrade your business management skills.

When scanning the gaps, you should be aware of and identify the missing competencies in your chain. When doing so you should also determine what information is missing that is necessary to build your chain. Once you have identified the missing competencies and information, you will need to formulate a plan on how you will accommodate for the missing competencies and information.

Do not however get hung-up on addressing all your perceived gaps right now. The most important factor in your development is the identification of potential gaps, not that they require bridging immediately. As you move forward and develop agreements with organizations that will assist you realize your commercial objectives, you may well find that they have capabilities (or access to resources) necessary to fill gaps identified earlier in your strategic planning process.

3.0 Building the Chain

Once the strategic goals (the motivation behind the chain's formation) have been identified, and the structure of the chain has been designed to adequately reflect market demands and determinants, the next stage of the process is to establish precisely how the chain will operate. Essentially it is a process of prescribing the systems that need to be in place to support the chain's operation.

3.1 Identifying Partners

3.1.1 Assessing the suitability of potential partners

The first part of establishing a chain system is to evaluate the suitability of potential partners. You should already know the type of participant(s) you require; e.g. primary processors, secondary processors, chilled transport, distributors, retailers, foodservice, etc.. Deciding to invite an organization to work with you will rely on your assessment of factors surrounding a number of areas. Keep in mind that inviting any one organization or person to participate in your initiative does not automatically mean that they are a formal part of your chain. For instance, a retailer may remain the target of your operations rather than a formal member, and a processor might be contracted to perform a service and therefore does not take ownership of the hog.

You will need to identify the relative importance of each factor to your particular situation. You do this by establishing potential scores for each factor, or group of factors; against which you will rank each potential participant. Following this approach provides a structured through relatively straightforward process to compare options and does not take an enormous time to complete.

A suggested assessment table could look something like the example shown below. The list of factors is not exhaustive by any means:

Area of operation / business	Specific factor	Score Range	Score	Reasons / notes
Experience				
	Marketing niche pork	Out of ?		
	Clientele	Out of ?		
	Years in business	Out of ?		
	Working as a chain	Out of ?		
	Production knowledge	Out of ?		
	Processing knowledge	Out of ?		
	Market knowledge	Out of ?		
		Possible max	Actual score	Ranking of importance:
Business approach				
	View of future industry	Out of ?		
	Knowledge of consumer demand			
	Vision for commercial opportunities	Out of ?		
	Belief in opportunities	Out of ?		

	Passion	Out of ?		
	Purchase policy	Out of ?		
	Preparedness to undertake identified role	Out of ?		
	Desire/drive to learn			
	Willingness to accept accountability	Out of ?		
	Perceived value of partnerships			
		Possible max	Actual score	Ranking of importance:
Communication				
	Ability to communicate	Out of ?		
	History of communicating with suppliers	Out of ?		
	History of communicating with customers	Out of ?		
	Prepared to share info on margins	Out of ?		
	Prepared to share info on prices	Out of ?		
	Prepared to introduce to clients	Out of ?		
	Prepared to attend meetings	Out of ?		
	Prepared to contribute to business plan	Out of ?		
		Possible max	Actual score	Ranking of importance:
Commitment				
	Prepared to invest in partnership	Out of ?		
	Prepared to invest in new infrastructure	Out of ?		
	Prepared to invest in marketing	Out of ?		
	Prepared to invest in trials and promotions	Out of ?		
	Extent of exclusivity offered	Out of ?		
	Extent of exclusivity expected	Out of ?		
		Possible max	Actual score	Ranking of importance:
Miscellaneous				
	Industry reputation	Out of ?		
	Personal chemistry	Out of ?		
	Preparedness for meeting	Out of ?		
		Possible max	Actual score	Ranking of importance:
Total Scores		Possible max	Actual score	Ranking

Taking this approach is not a foolproof way of identifying the most suitable participants, though it does bring some rigour to the process of partner selection.

3.2 Fostering commitment

The commitment of any one member is a difficult issue to gauge empirically, particularly ahead of a chain's formation and operation, though is critical to the success of a value chain. A proven way to help foster commitment within a chain is to exhibit a desire to understand your future customers and suppliers needs, along with:

- the reasons lying behind those needs;
- how those needs relate to specific business risks facing your customers and suppliers;
- how you can mitigate those risks on an ongoing basis;

Assessing your customer(s) needs and risks, than evaluating how you can provide value through mitigating those needs and risks can be achieved and documented through the following tables. An added benefit of this process is that it helps to ensure that your customers and suppliers clearly understand your needs and risks, which can significantly lessen your own risks. It can also enhance your management capabilities, further reducing the potential for failure.

3.2.1 Understanding Each Others' Needs

While certain needs may be specific to a certain situation, customer needs will likely include the following. It is almost inevitable that the greatest risks faced by your customer(s) will directly correlate to these needs and, in turn, the needs of their immediate customer. At least in part, it is likely that they will also correlate to the *Critical to Satisfaction Tree* completed earlier. A short list of possible customer(s) needs include:

- consistently achieving certain margins;
- being price competitive;
- assurance of supply;
- assurance of quality;
- assurance of cycle time;
- assurance of delivery;

Producer	Marketer	Distributor	Retail	Foodservice
Need #1				
Need #2				
Need #3				

While certain risks may be specific to a certain situation, customer risks will likely include the following. The purpose of clearly identifying risks pertinent to the members of your embryonic chain is to assist you develop a series of processes that together ensure you can mitigate your customer(s) risks on a consistent basis and, in doing so, foster their long term commitment to your initiative. While not exhaustive, the above needs could translate into the following risks:

- fluctuating prices;
- differing supply volumes;
- inconsistent quality;
- undependable deliveries;
- assurance of delivery;

Producer	Marketer	Distributor	Retail	Foodservice
Risk #1				
Risk #2				
Risk #3				

3.3 Process mapping

3.3.1 Why Map Processes?

Process mapping and improvement is supported by a large and increasingly complicated array of subject matter. For the purposes of these steps and to minimize possible confusion, reference to process improvement is limited to highlighting high-level activities that can be easily performed by anyone. The role of identifying the processes required to achieve consistent quality outcomes is relatively undeveloped in agriculture and agri-food compared to other industries. Process improvement is in fact a risk management tool that has generally been overlooked by the agriculture and agri-food industry. It provides a clear opportunity to improve performance compared to competitors.

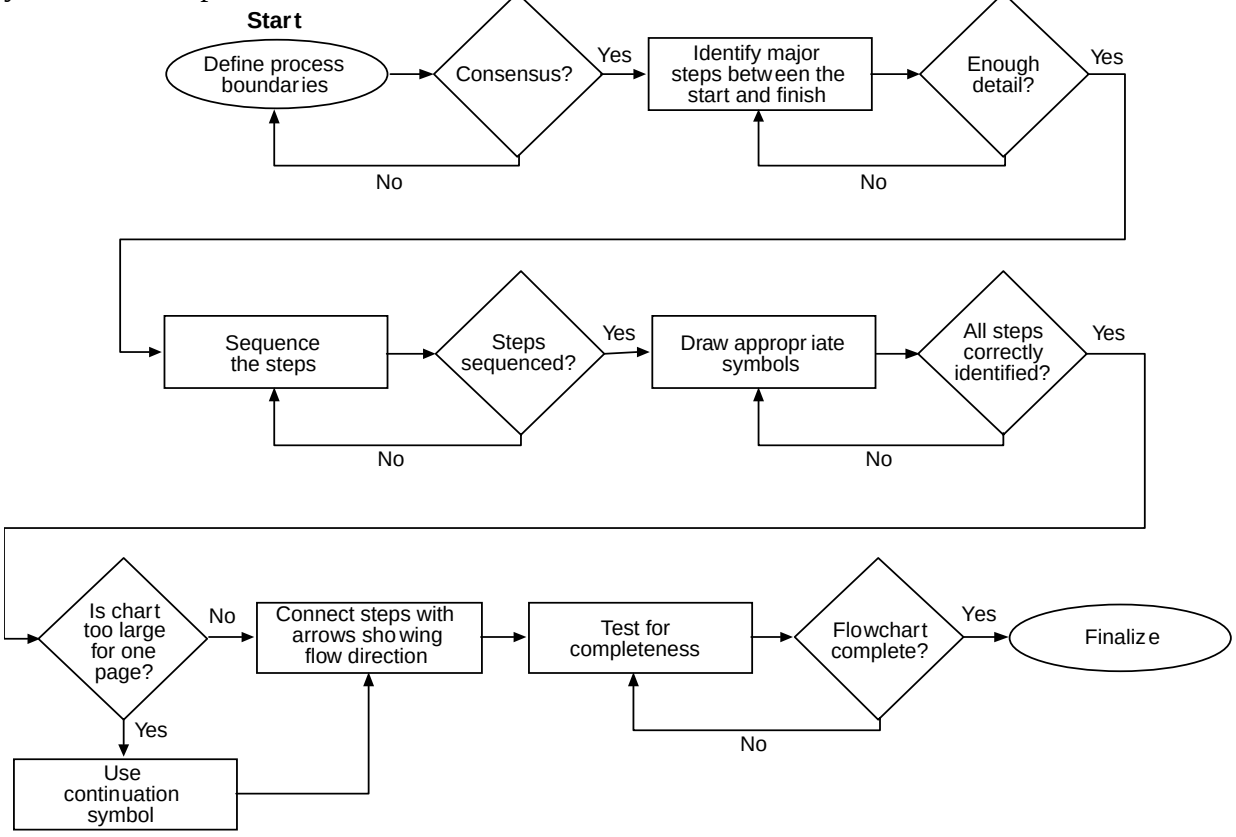
Quality, and therefore value, is what the customer says it is. The importance of quality systems to value chain management is that achieving a consistent level of quality relies on having the correct processes in place. The purpose of mapping the processes that occur along the chain is to first identify precisely where activities occur, record their relationship to the end market and therefore whether (or not) they create value, who performs those roles and to identify constraints along the value chain. This in turn enables a series of performance measures to be established, leading to an enforceable system for apportioning responsibilities and accountabilities to the relevant people. This provides a system for monitoring operations occurring along the chain to assess their effectiveness compared to set objectives. It also also provides an opportunity to assess people's commitment to the chain, and identify recuring quality issues.

Identifying and implementing processes suited to meeting previously identified customer demands reduces costs through minimizing wastage or costly use of unnecessary resources, and enhances the overall value of a production system. The model followed by much of agriculture in particular is looking to sift through products produced by processes that have not been well thought through. This brings unnecessary costs and negative implications into play, particularly for suppliers of differentiated goods to discerning markets, where market retention relies on supplying consistent volumes of consistently high quality products. With the cost of rectifying a quality problem estimated to increase by a factor ten (10) at each link in the chain, the earlier that a problem is identified and rectified, the better.

The ten steps of mapping and measuring your value chain processes are listed below. The information required to begin this process comes from the Critical to Satisfaction, Risk and Need Analysis activities performed previously. As you progress through the identification of activities and processes, to ultimately identify the causes of quality issues and procedures for addressing those issues effectively, you will have established a plan of action that is quantifiable and leads to operations that adequately reflect your strategic objectives. Besides each step are references to illustrations and models that follow on from here. These activities should be performed as a group comprising knowledgeable participants from along the entire chain: not just senior managers, shop floor employees too.

1. Ensure customer and supplier requirements are adequately understood;
2. Map and measure the processes occurring along your value chain – *what is it, where does it occur, does sufficient information exist to describe it adequately, how can sought outcomes be measured and shared with other members of the company and/or chain?*;
3. Identify areas of waste – *does it add value? Is it necessary?*;
4. Identify sources of variation or process yield – *herringbone model to assist in identifying root causes of problems;*
5. Identify and manage process risks – *potential Failure Modes and Effects Analysis Model;*
6. Determine best in class performance – *establish benchmark criteria;*
7. Agree on your objectives - *what will success look like?;*
8. Establish a plan of action – *project plan, with timelines, roles and objectives;*
9. Make resources available to work on the plan and encourage people to stay committed to the plan – *grids with payment and penalties, contractual requirements;*
10. Realize the improved business results – *and look for continual improvements;*

Below is an example of how to map processes. You will not be able to adequately map processes in one session. It is also a learning activity. With each reiteration of your map you will learn more about the entire system. Most likely you will immediately begin to identify opportunities to improve. Keep in mind that the next step is to identify ways to measure performance. All you need to get started is different coloured pens, paper and representatives of the chain. Map physical flows of product in one colour, the 'virtual' flow of information in another.



3.3.2 Mapping Processes In The Chain

- It may take a number of sessions to complete a full and accurate process map
- Other items to consider when generating the map
  - □ How far the product travels
  - □ How long it waits
  - □ How often it is handled
- How many steps add value – A value added process step…
  - □ Physically changes the product or service
  - □ Done right the 1st time
  - □ The customer is willing to pay for the outcome of the process step
- All non value-added steps are waste!
- What is the value added content as a % of the total process steps
- Are there any obvious improvement opportunities
- Finally – validate the map by 'walking the process' from end back to start

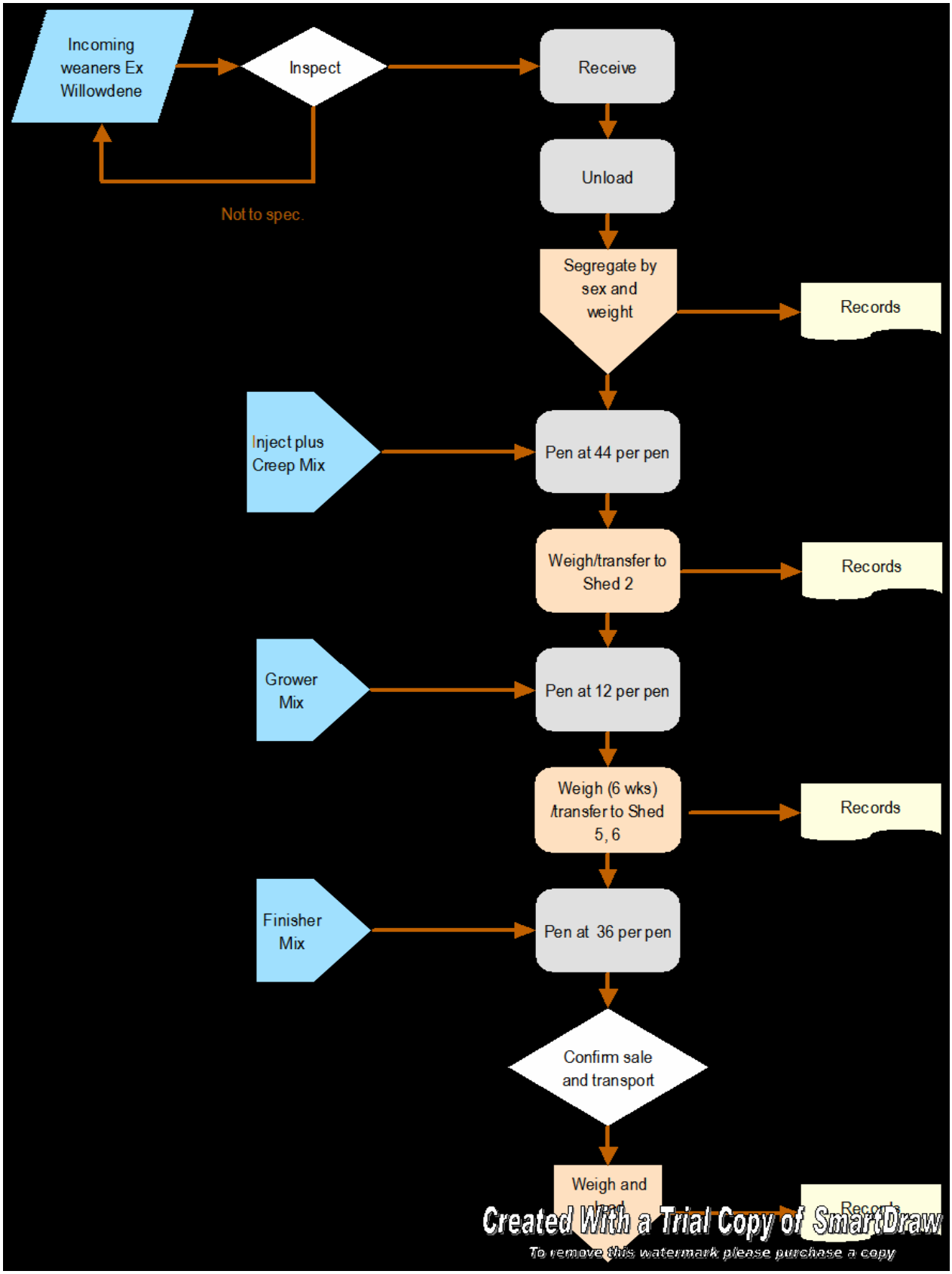
3.3.3 Measuring Process Performance

- Next, for each process step you need to identify whether that step adds value
- In order to do this the step must physically change or alter the product – then we can label that step a value added (VA) step
- Some processes that add no value (such as loading raw material) may be necessary in order to complete a VA step. These we call Necessary non value added steps (NNVA)
- The remaining steps are therefore Non value added. Whenever possible they should be challenged…..
  - □ Can they be removed, replaced or combined with other steps?
  - □ Please note that inspection, test, verification, validation etc, in they eyes of the customer are Non Value Added steps!

3.3.4 Identifying Waste

- Waste is all work that is not value-added. A value added process step is defined as;
  - □ Physically changing the product or service
  - □ Is done 'right-first-time'
  - □ The customer is willing to pay for the outcome of the process step
- Where might we have waste?
  - □ Clutter and mess
  - □ Machinery breakdowns
  - □ Under utilized employees
  - □ Transportation
  - □ Wasted movement
  - □ Making more than we can sell = inventory
  - □ Making it better than it needs to be = over processing
  - □ Poor quality

Below is a copy of an initial process map for a hog operation. Internal records would be compiled according to identified needs. External records, such as sales or purchase sheets, would be presented on a specification sheet, which is described later on.


Incoming weaners Ex Willowdene
Inspect
Receive
Unload
Not to spec.
Segregate by sex and weight
Records
Inject plus Creep Mix
Pen at 44 per pen
Weigh/transfer to Shed 2
Records
Grower Mix
Pen at 12 per pen
Weigh (6 wks) /transfer to Shed 5, 6
Records
Finisher Mix
Pen at 36 per pen
Confirm sale and transport
Weigh and
Records
Created With a Trial Copy of SmartDraw
To remove this watermark please purchase a copy

3.3.4 Specification sheets

Specification sheets are, in essence, a monitoring tool that can be used for benchmarking purposes. They enable the outcome of activities to be quickly and effectively recorded against a series of projected measurements. In doing so, they also act as a traceability tool. Specification sheets assist in identifying variations, which can then be tracked back to the route cause through use of a herringbone diagram.

Specification sheets need not be cumbersome and should only contain information pertinent to the customers' perception of quality and therefore value, along with its source. An example of a rudimentary specification sheet is below. A more refined specification sheet will reflect grading and pricing grids, which feature further on.

A good idea is to develop the sheet an excel format. This allows it to be modified as the initiative progresses and for the results to be automatically recorded, then later recovered, in a database.

Ontario Certified Berkshire	
Specification for packing and shipping	**Spec # 12345**
Prepared by …….	**Approved by ……**
Issue #	**Dated**
Useful headings ….	
Purpose	
Applies to	
Specification details	
Measurement / grading methods	
Inquiries	

3.3.5 Identifying and managing process risks

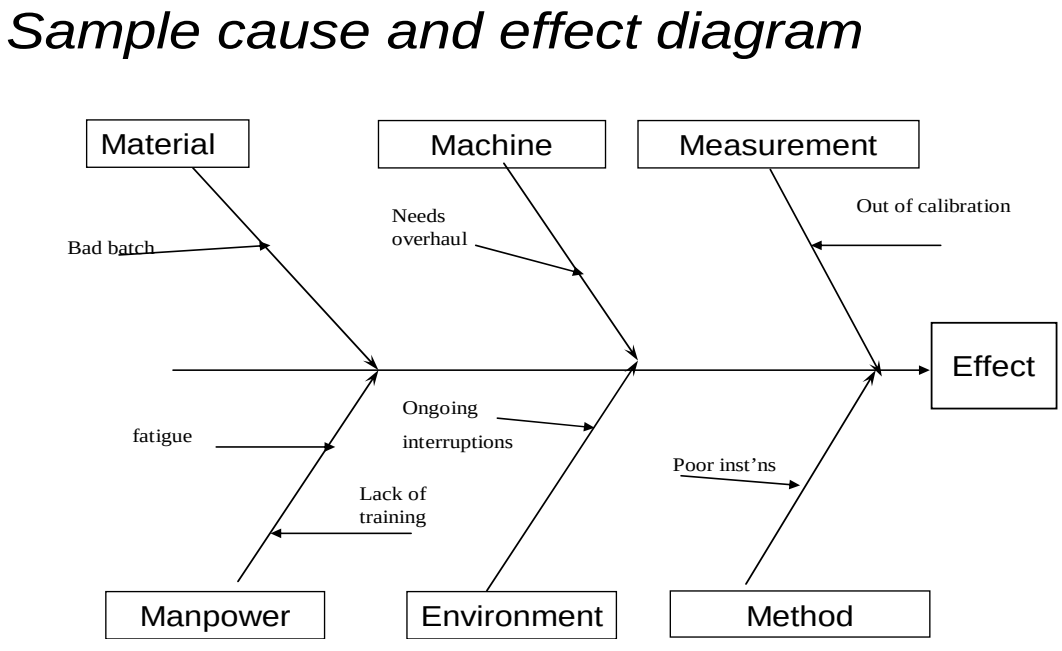
Correctly assessing the level of risk related to certain practices and the relationship between end quality in terms of the inputs, process and outputs, in order to minimize variances in the quality of outputs (from the customer/consumer perspective) is a risk management approach that is often overlooked by producers and the wider agri-food industry. Yet is it a highly effective way of mitigating risks, particularly in such a dynamic environment as agriculture and agri-food, where the efficient production of consistent high quality products is paramount to success.

In process management, variation outside of pre-agreed quality parameters is considered to be the result of poorly designed or managed processes. Before processes can be controlled, the cause of a specific failure needs to be identified. Guiding discussions in order to track undesired outcomes back to their route cause is the purpose of the herringbone model. Once the cause of quality issues have been identified, the next step is to design and implement procedures to minimize the likelihood of those 'failure(s)' occurring again. In so doing, quality can be maintained more effectively and often produced as less cost than if making decisions without adequate insights. If you wish to use a more extensive analysis to identify the cause(s) of poor or inconsistent quality, you may wish to look at implementing Statistical Process Control (SPC) experiments. Describing SPC in detail falls outside the realms of this material.

3.3.6 Cause and Effect Wishbone

The wishbone model is a relatively procedure for identifying the root cause of quality issues. To implement in a brain-storming session, follow the procedures described below:

- On a large sheet of paper, draw out the 'head of the fish' and 6 'bones'
- The bones are labeled; manpower, machinery, method, material, measurement and environment
- The idea being that each is category is a potential cause of the effect or problem
- With the team members, invite them to identify as many potential sub causes as possible
- With each sub cause the facilitator should ask 'why' a number of times and note the answer
- After discussion, commonly over a number of meetings interspersed with research to gauge the validity of suggested scenarios, you can identify the likely root cause of quality issues



Once your cause and effect discussions have shone light on potential causes of quality issues, you need to design a process for quantifying whether they actually are the root causes of quality issues. To provide meaningful outcomes, the process of analyzing the relationships between potential causes and effects needs to be soundly structured. It therefore needs a framework to guide your decisions and record outcomes. While this process does not need to be as complex or rigorous as (SPC), it is a worthwhile process for quantifying the extent to which different factors influence the extent of quality issues.

The table featured below provides as example of a method for recording changes to inputs and processes, and gauging their relationship to outputs. It can be used without a significant investment in resources. If hosted online it can be accessed by all the involved parties, wherever they are situated along the chain. Most importantly, through showing commitment to continually improving and taking responsibility for improving the quality and consistency of products, this approach provides a tangible way for building trust, accountability and team spirit amongst the chain participants.

Date	Specification measured	Parameters of specification sought		Change in material inputs	Change in process	How outcome is to checked	How often outcome is checked	Recording outcomes		
		Lower	Upper					Outside lower spec	Within spec	outside upper spec

3.3.7 Failure Mode and Effects FMEA

Once the suspected causes of quality issues have been identified and tested against outcomes and inputs, you will be able to design a potential Failure Mode and Effects Analysis. This provides you with is essentially a series of Good Manufacturing Principles. A number of niche pork producers have used this approach to great effect.

The FMEA helps to identify every possible failure that might occur in process or final product. It provides a way of quickly identifying what may have occurred to result in any particular quality-related issue. The FMEA is also used to rank & prioritize the possible causes of failures as well as develop and implement preventative actions, with responsible persons assigned to carry out these actions. This is the framework used by Murrellen Pork, a successful niche pork initiative.

What comes in and out of the process.	What do we do, step by step	What can go wrong	How important are these	How must it be done	Where is this controlled, by whom and how	How do you correct it	What records are kept
Receipt and management of weaners							
	Empty and clean feeders	1. Inadequate cleaning 2. Lid drop	2.7 4.8	All meal & dung removed Lid prop secured	Operator Operator	Reclean/Retrain Retrain	
Effluent	Dung out and hose boxes	Faulty drainage	0.6	Rfer to effluent collection (Weaners)	Observe effluent drain	Use effluent procedures	
Weaners	Load	Incorrect handling	6.0	Hind leg or belly	MPMS injury analysis	Retrain operator	
	Travel to Murrellen	1. Inclement weather 2. Erratic driving	5.4 0.9	Protection as appropriate Smooth driving maximised	Protection≤ 5°C Injuries at arrival	Tarpaulin Retrain	
Data to MPMS[1]	Weigh	Incorrect record	1.2	Records accurate	MPMS weight analysis	Investigate/ Retrain	
Creep meal							
	Adjust ventilation spacers	3. Incorrect ventilation	7.5	Settings correct	Observation of climate stress	Rectify/ Retrain	
		4.					
Pork shed							
	Hose and leave to soak	5. Inadequate soak time	1.2	Minimum 1 hour	Operator		
	Rehose						
Sanitizer	Sanitise with Microcide and Taktic	6. Incorrect solution strength	0.6	To spec. on sanitizer trolley	Operator		
	Replace feeder faceplates						

[1] MPMS = Murrellen Piggery Management System – computer based data collection and analysis programmes

What comes in and out of the process.	What do we do, step by step	What can go wrong	How important are these	How must it be done	Where is this controlled, by whom and how	How do you correct it	What records are kept
Preparation and handling of hogs for transport to Processor							

Each possible potential failure is given a ranking (between 1 and 10) to show its importance to producing consistent quality pork. To each potential failure is then assigned a preventive action and who is responsible for ensuring first the action, then corrective action if a failure happens to occur. While more complex FMEA models exist, similar to SPC, it is not necessary to go to this stage in most situations concerning 'reasonably' low volumes. Similar models should be developed for transportation, processing and handling along the entire route to consumer.

3.3.8 Roles, Responsibilities and Accountabilities

One of the most important and beneficial aspects of the FMEA is that it assigns specific roles and procedures to specific people. This establishes roles, responsibilities and accountabilities in easily definable terms. When correctly implemented, this provides a clear means for identifying the type of information that needs to be shared along the chain to enforce correct procedures and continually improve the efficiency and effectiveness of operations; along with who needs to receive that information, in what form they need to receive it, and when.

It is also a valuable tool for identifying additional training required by employees – on either an individual or group basis and within either a business or chain format. A trained staff is a supportive staff, which leads to a culture of innovation and team spirit. The FMEA approach is therefore a powerful tool for focusing chain participants on combining resources to attain a targeted consistent quality. And, in so doing, establishing pre-determined accountabilities along the chain. Will only fifteen percent or less of activities performed along the chain adding value to the consumers' perception of quality in a final product, identifying and following set procedures allows the most effective use of resources. This leads to heightened efficiency.

Historic Improvement Opportunities to Improve Chain Performance
Here is an example of 10 opportunities that were found for improving the quality and value of red meat produced by value chains. They come from a series of studies analyzing opportunities to improve the efficiency and effectiveness of UK chains that were already considered to be at the leading edge of industry developments.

1. Reduce product variability
2. Better manage the problem of carcass balance
3. Improve product quality
4. Streamline administration
5. Reduce handling and movement
6. Improve layout
7. Optimize the use of equipment and inputs
8. Reduce the number of physical faults
9. Improve staff productivity
10. Reduce damage and theft

All of the potential benefits ultimately provide the opportunity to reduce costs. Through enabling the participants to improve the quality of products from consumers' perspective, they commonly lead to opportunities to increase revenue too. The result, more financially secure companies that can increase their profitability, invest more funds into innovation and product development, or reduce the end price of products in order to capture a greater share of the market.

3.4 Quality assurance

Increasingly consumers are looking for signals on which products to purchase. They want assurance on the consistency and safety of products. Consumers will perceive information concerning any assurance to carry additional value if provided by a third-party who has no commercial involvement in the initiative.

For the purposes of this report, the practice of establishing the basis for successful differentiation through quality assurance, then encouraging participants to commit to processes that support the successful production and marketing of verified products, is split into three parts. They are:

1. Verification procedures
2. Grading practices
3. Pricing structures

3.4.1 Verification

Verification, grading and pricing form an interlinked process for returning financial value from the market. Firstly by creating the opportunity to add value (verification of processes); Secondly by ensuring consistency of the pork sold under a marketing 'brand' in order to fulfill consumer expectations and capture added value; Thirdly, by sharing value amongst the chain participants to encourage their continued commitment to procedures that result in the production of a consistent high quality product.

Verification is essentially a process used to justify why a specific product should command a certain value in the market. It usually involves the engagement of a third party to show that products are produced according to specific processes which are necessary to achieve the involved organizations strategic objectives: such as certified organic or antibiotic free. The practices being verified must therefore reflect target market demands, be auditable by a third party, and be rigidly enforced. If not, the role of the verification system in maintaining long-term value will be severely compromised. Verification need only be applied to those systems that a most important to creating value and maintaining food safety. Doing otherwise will make the system too cumbersome (and expensive) to manage. This will most likely lessen the commitment of participants to adhering to the system – in turn undermining its value to the initiative.

3.4.2 Grading

Grading and pricing structures have two overarching purposes. The first is to provide a tangible means for signally market demands back to producers and encourages them to produce products that the market values. It accomplishes this through rewarding producers (through premiums) for products that reflect market demands, and penalizing them (through discounting) for products that fail to meet market demands. The second is to encourage producers to adhere to practices that reduce costs along the chain. This is most effectively achieved through consistency, which in turn reduces waste: hence, having the correct processes in place to achieve consistent quality is a vital component of maintaining a cost effective value chain.

The complexity of the grading and pricing structure that best suits your specific purposes will in-part depend upon whether you are marketing entire or half carcasses to butchers, or supplying individual cuts to customers through utilizing a secondary processor.

Murrellen Pork http://www.murrellenpork.co.nz/ is an excellent example of a niche pork initiative that has combined these three factors to facilitate the production and marketing of high quality differentiated pork, then communicate assurances surrounding the processes that lie behind their brand to consumers interested in delving deeper into their production methods.

3.4.3 Pricing

Murrellen uses New Zealand Pork's Pork Quality Improvement Process (PQIP) to verify the quality of the pork and that they follow audited practices to produce guaranteed quality pork. Carcasses are graded against criteria that reflect the needs and demands of their customers: including back fat, weight, and pH. Pricing structures then share the resulting financial benefits along the chain. The ability to secure value from the Murrellen brand is therefore an outcome of processes that are themselves only enabled by the involvement of committed participants. It is systems of management by design to continual improve and maintain end product value.

The Murrellen grid is straightforward and brilliant by in its simplicity. The next grid is far more complex. It is based on an actual grid, though in not used for pork. It has been designed to provide value chain members with clear signals on market requirements.

Through acknowledging that at times everyone (particularly producers) will at times face the need to recoup added production related cost that occur beyond their control, yet are necessary to consistently meet market requirements, it goes beyond the typical 'commodity' perspective. It is based on a premise that encouraging chain members to adhere to practices that may not be associated with commodity production, though necessary to produce a higher quality product, requires a model that chain members can use to communicate in order to share risk by identifying, then passing on, costs incurred along the chain in order to meet market demand.

Simultaneously, coordinating activities along the chain leads to cost savings, which allows for a greater share of the end selling price to be flowed to producers.

The concept behind this grid utilizes the principles of base price, input risk, process rewards, and product quality rewards to determine a blended producer price. Most importantly, it uses a system of weighted values to reflect the importance of the various input variables to the value chain. This calculation determines a new base price and enables the addition of various premiums that are specific to the attributes of the end product produced by the value chain working in coordination. A grid that fits the described concept could look something like that shown below. The actual numbers and weightings would be based on factors determinant to a particular situation and risks associated with a particular production method:

	pork base price $/kg	**Blended energy Price/tonne**	**Fertiliser N_2 cost**	**Fuel Cost Cents/L**	**Vet medicine /sow[2]**	**Total**
Wted Av (A)	1.79	185	603.89	65.78	20.00	
Model Coff (B)	0.646	0.001	0.0011	0.00173	0.00827	
A x B Weighted value in cents per lb	1.9057	0.185	0.6643	0.1138	0.1654	2.74

Base Price **1.79/kg** (**reflects input risk** - total of all weighted values)
Carcass weight **90kgs**
Base Carcass value[3] $246.48

Hog Premium[4] $16 (**reflects process** – per hog payment)
Producer Bonus[5] $25 (**reflects quality** – per hog payment)
New Hog Value **$287.48** (**reflects overall value** – new price is 44% over the floor price of $161.10 @ $1.79/kg)

The key components of this grid include;

1. Frequency of calculation. This would be decided by the chain members. Under normal circumstances base price is altered weekly. The grid could allow for weekly change in the base price and quarterly change in the input values. These values are the non base price values and include in this example, energy cost, fertilizer cost, fuel cost and fixed cost.
2. Weighting of values. The various weighted values for the input costs reflect the most important or perhaps the most variable aspects of production cost risk. The calculation of weighting can reflect the relative importance of each variable in production or reflect

[2] The grid can be used to reflect a once-off cost associated with hog production: e.g. to cover the costs of administering the Circle Virus vaccine.
[3] If hog meets average quality expectations; if not, the $1.79/kg floor price equates to a $161.10 carcass, which provides room for discounts due to quality issues.
[4] The premium is based on adherence to protocols, such as no antibiotic usage, certified purebred breeding stock, etc.
[5] This is where you add premiums according to how the carcass index and other quality parameters (e.g. pH) reflect above or below the 100 index base price.

production incentives. This example contains a negative value for fixed costs – this could be interpreted as an incentive to minimize on farm capitalization and lower fixed costs or as a disincentive to high fixed costs. In this case the lower the fixed costs the lower the negative impact on the final base price calculation. In the example here the weighting values used indicate that the value chain is providing the greatest price risk protection on fuel, followed by fertilizer, followed by feed energy cost.

3. Determining the premiums, bonus levels and attributes.
    i. In this example the "hog premium" is used to reward producers for carrying out **processes** on the farm that are important to the value chain brand. These would be specific to the attributes that the value chain has identified as being an advantage or a level of differentiation for the value chain members. These can include such things as; environmental farm plans (environmental sustainability as a product attribute), nutrient management planning (planned and sustainable nutrient use), on farm quality assurance programs, hormone and/or antibiotic free production, non GM feed inputs, no animal byproducts in the diet, etc. The level of payment for these attributes becomes a negotiated value based on the cost to the producer to carry out these processes on the farm or a share of the retail value of these processes or a combination of both.
    ii. This example also provides a method of rewarding producers for **quality** attributes of the hog they provide. Quality would again include those attributes which are important to the particular value chain, and could include; an individual animal index value based on retail cutability or a customized pH grid index value. This portion of the grid would reflect the importance of various quality attributes and would be determined by a similar method as the process driven hog premium.
4. At the same time, penalties (discounts) will apply to carcasses not meeting specified requirements. Particularly carcasses that cannot be sold under the 'brand' because they lack quality factors that are deemed critical to maintaining the brand's integrity.

3.5 Performance scorecard

An area of management often not given sufficient attention in agricultural initiatives is monitoring supplier (and possible customer) performance in order to maintain the integrity of the production and marketing initiative itself. Objectively assessing the performance of chain participants is a vital part of successfully governing chains and fostering commitment working together to attain a shared goal. All successful initiatives have implemented a system for assessing performance in order to prune the partnership of unwanted participants, who can ultimately break the initiative through discouraging adherence to pre-agreed arrangements.

Likely not looking unlike the sheet used to assess the suitability of potential members, though only featuring perhaps ten of the most important of parameters for assessing performance, a possible performance scorecard for producers could follow the example presented below; which is comprised of factors that successful chains are known to have used. Many of the exact factors stated in your own scorecard will likely reflect these or similar features, along with the strategic objectives and operational necessities identified earlier in this step-by-step approach to establishing and managing a niche pork initiative.

Name	Results	Comments / score	Weighting	Benchmark to average
% animals supplied to target volume				
% animals meeting quality specs				
% animals exceeding average grade				
% loads where animals meet below average specs				
% of deliveries according to plan				
Adherence to process protocol				
Communication efficiency				
Submission of data / records				
# chain meetings missed				
Geographical location				
Total score / weighting				

Adopting an objective and measurable approach to evaluating member performance is of vital importance to maintaining chain unity. Particularly amongst those members who contribute the greatest value to the chain's long-term success. It does this in three main ways.

Firstly by providing a system for identifying areas of strength and weakness amongst the participants, guide decisions on which resources are most appropriate for improving performance. Along with why and at which level of the chain they should be investment for greatest effectiveness.

Secondly, beyond any grid pricing system, it ensures that any added financial rewards (such as debentures or added volume) are shared in a manner commensurate to the value that individual members bring to the overall alliance. This helps foster continued commitment amongst the participants that contribute the most to the alliance's long-term success.

Thirdly, it assists in objectively identifying members who may inhibit the chain from attaining its strategic objectives and continually improve overall performance. Such members may need to be expelled from the chain in order to protect the long-term interests of the initiative. Furthermore, by providing a basis of justifiable cause for expulsion that can be shared with others, the process also limits the possibility that an expulsion will cause derision amongst the remaining members.

4.0 Making it Happen

4.1 Project Planning

For any project, having timelines and targets in place is a crucial aspect of management. So is affording responsibility to specific individuals or teams to agree on, then meet, set targets. In particular, you need to identify who needs to undertake what tasks, along with when the tasks must be undertaken, in which order, why, and what will be the estimated benefits.

The chart shown below is taken from a successful value chain initiative that saw an overall reduction in value chain costs, improvement in quality, and increase in producer returns. This was achieved by first identifying problems that had occurred along the chain through using procedures very similar to those described in Section 3. It resulted in a series of suggestions for how issues raised during the value chain analysis could be addressed those problems through a well-planned series of tasks.

While this example relates to tinned pineapples, the concept would be exactly the same in pork. It is used here because of its successful application and clear description of how operations occurring at different links in the chain needed to be coordinated to achieve an ultimate outcome that benefited all the parties.

	Ease	Timing	Team							
			Retailer	*Transp Out*	*Canner*	*Transp In*	*Growers*	*Pallet Supply*	*Carton Supply*	*Can Supply*
Customer Integration		ST/LT	✓	✓	✓			✓		
Align consumer demand project 10 to 8 days SOH @ Retailers DCs	2	ST	✓	✓	✓					
Smoothing material flow (all product) transport / primary freight / packaging	5	LT	✓		✓			✓		
Consumer trends (alignment Canner/retailer)	2	ST	✓		✓			✓		
Internal Integration		JDI/LT	✓		✓		✓			
Avoid shift work with supply modification / analysis	3	JDI			✓					
Cost benefit of unsweetened from concentrate	2	JDI			✓					
Nitrate management	2	JDI			✓					
SKU rationalisation	4	JDI/ST	✓		✓		✓			
Align fruit intake to sales demand	4	LT			✓		✓			
Remove nightshift requirement / asset utilisation	3	LT			✓					
Rationalise of process lines	5	LT			✓					
Reduction of on-the-job training of seasonal staff	3	LT			✓					
Reducing premium paid for casual labour	3	LT			✓					
Remove inefficiency in low volume period	3	MT			✓					
Grower Integration		JDI/LT			✓	✓	✓			
Increase sugar levels through quality based payment system (QBPS)	4	JDI/LT			✓		✓			
Review grower rationalisation	5	LT			✓	✓	✓			
Feasibility study of sourcing supply options aligned to customer requirements	4	LT			✓	✓	✓			
Packaging Integration		JDI/LT			✓			✓	✓	✓
Five day carton inventory project	2	JDI/ST			✓				✓	
Electronic Receipting	3	JDI/ST			✓				✓	
PLI (Product, leadership & Innovation) Generic carton cost feasibility project: reduce SKUs	3	MT/LT			✓			✓	✓	
Can guage project (all products)	2	ST			✓					✓
Tin Coating	2	MT			✓					✓
PLI - Product, Leadership & Innovation	3	MT/LT			✓			✓		✓
EDI - Receipting	3	JDI/ST			✓					✓
Forecast Accuracy	4	LT			✓					✓
Enablers		JDI/ST			✓					
Develop & Communicate Short - Long Term Strategy for Pineapples	3	JDI/ST			✓					
Continued costing and profit potential	3	ST			✓					
Confirm targets & current state	2	JDI/ST			✓					
Develop & Communicate Short - Long Term Strategy for Pineapples	3	JDI/ST			✓					

JDI = Up to 3 months
ST = Up to 6 months
MT = Up to 18 months
LT = Up to 5 years

4.2 Implementation

Devising a plan for who needs to undertake which tasks for what reason in order to achieve outcomes that will benefit the entire chain need not be an arduous task. However it will require careful discussion and thought. To ensure adequate accountability ensues throughout the chain, you will need to include timelines and responsibilities, and get everyone to sign off on the arrangements.

	Ease	*Timing*	*Team*					
Objective								

4.3 Scheduling Supply

One of the most important factors in any differentiation initiative is ensuring consistency of supply and preventing any nasty surprises from occurring in terms of unexpected volume: whether that is too much (which will likely force you to reduce prices to encourage greater purchase occasions amongst target consumers), or too much (which will lead to dissatisfied customers and commercial opportunities the your competitors can pounce upon).

The schedules must be completed immediately pigs are weaned. This will help you plan promotions effectively and capture the greatest value from your activities. Knowing that you will have a supply spike four months out will help you plan promotions, so you do not have to reduce price to sell excess product. Similarly, knowing that you will be short of product four months out helps you plan contingencies, if necessary, or simply reduce promotions for whatever period of time over which you will experience a lesser than desired volume.

You therefore need a supply schedule that is completed weekly by all the producers. The schedule should feature both target volumes and actual volumes. Target volumes are necessary to plan long-term marketing and promotion activities. Actual volumes are necessary to prevent dissatisfaction from occurring amongst your target customers. A number of successful chains use this particular approach to great effectiveness in order to mitigate risks that can easily. Hosting the schedule on a secure internet site makes it easily accessible to all the participants, whilst simultaneously protecting commercial sensitive information out of the reach of competitors.

Below is a suggested and quite straightforward framework for a schedule. To be effective in assisting in the planning of marketing and promotional activities, it must be compiled on a weekly basis. Each producer will have two columns under their name. The first column will feature the number of pigs born (or weaned) in any specific week and the expected week of slaughter. This column remains the same from the moment the numbers are entered and provides a benchmark to assess performance. The second column will be adjusted time progresses, particular during the latter stages of growth, and is intended to show the exact number of hogs that any producer expects to have available in any week. The *Expected Total* will automatically update as each producer adjusts their second column. Individual producers would solely have access to their information, thereby reducing the risk of an incorrect number being entered into the database.

Date born	Scheduled marketing date	Producer #1		Producer #2		Producer #3		Original target #	Actual expected #	Difference #
May 1, 07	Jan 1, 08	100		80		60		240		

The schedule could be expanded to include a record of which producers pigs met quality requirements and average days to slaughter. Over time, tracking this type of information would allow all the producers to see the most successful of the group at a glance and, likely, encourage the less successful producers to ask for advice in order to increase their (and the group overall) performance.

4.4 Governance

4.4.1 Governance – Crucial Factor in Chain Management

Everything described to this point has been about establishing the systems that can together enable the chain to be managed successfully. This includes the ability to quickly identify potential areas of concern and address such effectively if they arise. The final area that this material addresses is governance. The basis upon which your initiative should be governed has been established through the series of protocols and performance expectations limitations that you have devised.

The way that the chain is managed (governed) is now critical. Ultimately, factors that determine a successful governance structure can be condensed into an easily digestible format. To this end please see Appendix A, which lists characteristics commonly associated with the governance practices occurring in successful marketing initiatives.

The most important factor in governance is that one person needs to take the overall lead and ultimately be accountable for ensuring the chain adheres to pre-agreed performance criteria. That leader will need to be completely impartial and NEVER allow decisions to be based on who it concerns, particularly in terms of quality. All successful chains have strong leaders who hold everyone (including themselves) to account. The same systems and protocols need to be adhered to, regardless of whose hogs are in question. Only by following this approach will an embryonic initiative develop into a successful chain that survives the rigour of the commercial environment.

4.4.2 Contracts

The exact type of contract used by differentiated marketing initiatives varies greatly. In general however they will stipulate:

- Period of time over which the contract extends;
- The type of genetics to be used;
- Production practices to be adhered to;
- Quality requirements;
- Pricing determinants;
- If appropriate, the relationship between the contracted agent and the conditions under which they can use the brand or trademark associated with the initiative;
- Where the agent can market their hogs;
- Terms under which the contract may be annulled;

Contracts may incorporate a conflict resolution clause stating on what premise a third party arbitrator might be called upon to resolve a conflict that the group is unable to settle by itself.

It is also possible that the contract will outline a process for dissolving the initiative should the parties decide that they cannot continue working together. Given that many chains pass through a pretty tumultuous period during the early stages of their development, having disengagement criteria in place can actually encourage the participants to work all that much harder and be committed to the initiative, simply because they know that no nasty surprises await them should they be forced to concede defeat.

4.4.3 Continuous improvement

A chain will need to constantly adapt to its surroundings, including competitors. Success will inevitably lead to competition from others seeking to emulate you. You will therefore need to work tirelessly to continually improve the effectiveness and efficiency of your operations. The good news is that the processes that will have put in place form an excellent series of benchmarking procedures. These will enable you to continuously monitor your performance and guide you in identifying areas of weakness that need to be addressed in order to maintain your competitiveness.

Finally, simply achieving consistency in terms of meeting your customers' requirements for quality, volume and delivery will place you ahead of many of your competitors. You can be successful. You will be successful given the correct attitude, a willingness to learn and adapt, the necessary resources, along with enthusiastic customers and consumers.

Appendix A

Governance

Governance systems are a critical aspect of successfully managing a value chain and ensuring its sustainability, not least through maintaining financial equity along the chain. Experience shows that the following factors are imperative to ensuring that a chain's governance systems are suited to enabling it to optimize its potential success.

- Identify an economically viable proposition
  - Clear and justifiable
  - Market driven
- Effective leadership
  - Guides and motivates personnel
  - Capable of enforcing governance
- Commitment garnered through support from the following situated to critical points along the chain
  - Senior management
  - Middle management
  - Shop floor
- Written goals
  - Specific
  - Informed
  - Time orientated
  - Measurable
- Procedures and processes
  - Designed to foster continual improvement
  - Suited to meeting market requirements every time
  - Maximizes quality while minimizing costs
- Metrics used to measure to monitor performance
  - Quality
  - Demand – forecasts vs. actual
  - Delivery time
  - Order fulfillment
  - Information flow
  - Supply commitment
  - Financial

An effective governance system results in 'softer' factors that are fundamental to the sustainability of the chain through strengthening the relationships between, and commitment of, partners situated along the chain. These include:

- Trust
  - Crucial to address opportunistic tendencies
- Respect
  - Gained through actions taken and knowledge shared
- Transparency
  - Developed through information exchanged
- Motivation
  - Enabled through appreciation, accountability and responsibility at a team level