final report

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UAE market and supply chain review of centralized value add processing operations

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Executive summary

A market visit in June 2014 to the United Arab Emirates (UAE) was completed to review current case ready pack formats and centralised meat operations and supermarket layouts for fresh meat. It was evident how Australian Beef and Lamb are already well regarded and supported throughout, being trusted and known as clean, safe and high quality. A lot of the recent beef growth for Brand Australian has been on the back of the Brazilian market shutdown due to BSE in late 2012, which although Brazil has since returned, they haven't recovered to the pre-existing volumes due to the underlying concern of locals.

The two main areas that have been targeted in the following pages, 1) is where is the UAE market heading in relation to retail case ready meat and 2) where can Meat and Livestock Australia (MLA) look at supporting to continually grow Australia's market share of red meat into the UAE.

In Dubai, large super and hypermarkets are continually being built and getting the large volume of the retail food shoppers budget. It seems inevitable that to meet this growth, centralisation of Case Ready packaged meats will be the next emerging trend, as the retailers seek to lock in controls of quality and consistency and reducing the need for skilled labour as well as creating more valuable floor space in these large constructions – a common approach adopted in other global markets.

Dubai with the announcement of World Expo 2020 has recovered from the GFC and is once again booming with significant infrastructure and diversity growth happening as it heads to 2020. This gives further opportunity to the Australian beef and lamb market, as tourism and local population are increasing rapidly to keep up with the growth. With tourism and even minor items like the code share of Emirates with Qantas, Dubai has become a major hub for stop overs and transit for many into Europe. The large portion of the well financed Expats that are managing/supervising a lot of the current growth, will also be likely hyper and supermarket shoppers at the quality end of the ledger and are very comfortable with buying meat case ready.

This report therefore is to gain an understanding of the existing and emerging supply chain and to present the opportunity for MLA to consider how best to facilitating the development of UAE's capability to design, schedule and produce and/or import case ready meat in partnership with Australian red meat exporters.

Market Background and Retail Environment

Dubai, once a sleepy port for trade for Middle East and India, has boomed due to the oil resources over the last 30 years. According to the census conducted by the Statistics Centre of Dubai, the population of the emirate was 1,771,000 as of 2009, which included 1,370,000 males and 401,000 females. The region covers 497.1 square miles (1,287.5 km2). The population density is 408.18/km^2 – more than eight times that of the entire country. In 2012, Dubai was the 22nd most expensive city in the world and the most expensive in the Middle East, with Dubai's hotel rooms only behind Geneva as the most expensive in the world.

As of 2013, only 10-15% of the population of the emirate was made up of Arab UAE nationals, with the rest comprising expatriates. Approximately 85% of the expatriate population (and 71% of the emirate's total population) was Asian, chiefly Indian (51%) and Pakistani (16%); other significant groups include Bangladeshis (9%), Filipinos (3%) and a sizable community of Somalis numbering around 30,000, as well as other communities of various nationalities. A quarter of the population reportedly traces their origins to Iran. In addition, 16% of the population (or 288,000 persons) living in collective labour accommodation were not identified by ethnicity or nationality, but were thought to be primarily Asian. There are over 100,000 British expatriates in Dubai, by far the largest group of Western expatriates in the city. The median age in the emirate was about 27 years. The crude birth rate, as of 2005, was 13.6%, while the crude death rate was about 1%.

In November 2013, the United Arab Emirates won the right to host the World Expo in Dubai in 2020. This will be the first time that the World Expo is staged in the Middle East, North Africa and South Asia (MENASA). Since the first Great Fair of 1851, World Expos have continued to be one of the largest and most enduring global mega-events. Lasting six months, World Expos attract millions of visitors who explore and discover pavilions, exhibits and cultural events staged by hundreds of participants including nations, international organisations and businesses.

Dubai's World Expo is held under the theme of Connecting Minds, Creating the Future, echoing the powerful spirit of partnership and co-operation that has driven the UAE's success in pioneering new paths of development and innovation. Through this theme, Dubai Expo 2020 will serve as a catalyst, connecting minds from around the world and inspiring participants to mobilise around shared challenges, during a World Expo of unprecedented global scope, under the sub-themes of: Mobility, Sustainability & Opportunity.

Dubai Expo 2020 is expected to attract 25 million visitors, 70 per cent of which will be from overseas. This will be the first Expo in which the majority of visitors stem from beyond a nation's borders. Running from 20 October 2020 through 10 April 2021, the Expo will launch the country's Golden Jubilee celebration and serve as a springboard from which to inaugurate a progressive and sustainable vision for the coming decades. (http://en.wikipedia.org/wiki/Dubai)

With this continual growth in the local population, tradition is being slowly consumed albeit to a point by

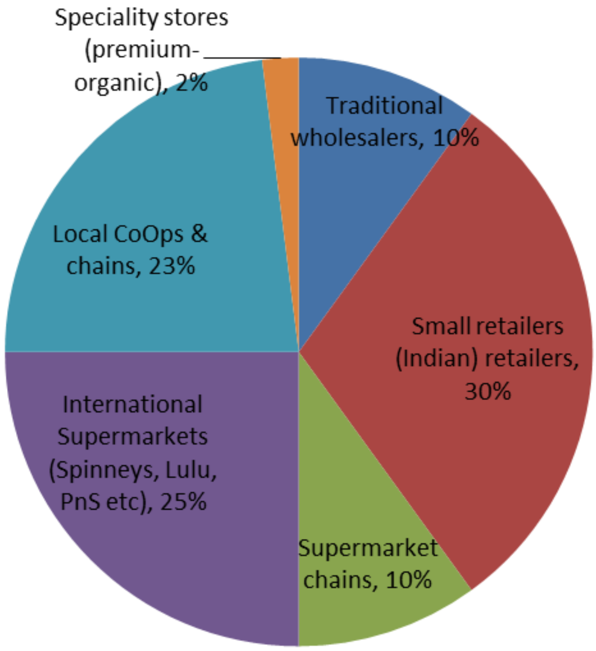
- A cosmopolitan population
- a travelled population,
- an educated population
- informed choice
- value offers in new foodstuffs
- fast food acceptance
- women working
- pace of life
- rising cost of labour
- strong marketing campaigns to a receptive market

This is especially noticeable with a large portion of the current Emirati generation of 20-35 year olds, who a good portion will be without doubt part of UAE's next expansion. The role of the segment in food purchasing and lifestyle will no doubt impact shopping behaviour, merchandising and no doubt, rise for retail case ready foods, including red meat.

Due to above, there is a greater acceptance of a western culture diet, as it is becoming more common and growing as it is seen to be more 'worldly and fashionable'. Of course on top of this there is a large expat base that is growing due to the rapid growth of the emirate, there is exceptional opportunity to continually grow meat supply as consumption will only increase.

The change in food distribution over the last four decades is remarkable. From the traditional Souk, Halaga or open market of the 1970's where food was mainly dry grocery, fruit was imported through a few large family traders and meat was local slaughter. Suggested segmentation that was observed were:

a) **Traditional wholesalers**, but in significant decline
b) **Small retailers** which are mainly Indian owned and managed with some of these changed into **small chains** to gain more buying strength
c) **Supermarket chains of international appearance but often traditional operating process.**
d) **Supermarkets of international operating standards** – Spinneys, Lulu, Choithrams, Park and Shop.
e) **Local 'Coops' and Supermarket chains** –these are a very important segment but operate still traditionally with plenty of negotiation and less operational finesse!
f) **Speciality Stores,** -these are a relatively new development and some are exceptionally good, especially in meat and organics.



Estimated Consumer spend – store outlets in UAE

The driving force can be seen as the large and medium sized Supermarket chains.

An alternative market split is via channel and this is listed below where examples the importers and processors have been included:

- Hyper/super – International style – Spinneys/ Choithrams/ Carrefour / Geant/ADC
- Hyper/super – Local / Coop – Union / Emirates /Sharjah Coop / Aswaaq
- Hyper /super - Indian owned/managed – KM Trading / Lals / Safestway
- Independent supermarket – West Zone/ Sunrise /Easy
- New High quality meat shops – Prime Gourmet (Country Hills)
- Importers high level – Admiral / Baraket/ Country Hills / Al Tayeb / Al Fab
- Importers low level – Farmland
- Processors - Baraket / Farm Fresh / Freshly Frozen Foods / Country Hills

The table following provides a breakup of outlets by outlet.

Table 1. A list of the current active stores:

UAE MAIN HYPER AND SUPERMARKETS LIST

Sl #	Group Name	OUTLETS	
1	LULU	42	Modern Hyper
2	SPINNEYS / WAITROSE	32	Modern Super
3	GEANT / Le Marche	9	Modern Super
4	CHOITHRAMS	26	Modern Super

5	CARREFOUR	18	Modern Hyper
6	CARREFOUR EXPRESS	24	Neighbourhood store
7	ABU DHABI CO OP / SPAR	16	Modern Super
8	UNION CO OP	12	Traditional Hyper
9	SHARJAH CO OP	18	Traditional Super
10	SUNRISE / DEALS	16	Local Super
11	ASWAAQ	7	Traditional Super
12	SAFA / KM TRADING	15	Indian Super
13	AL MAYA / SHOP&SAVE	22	Indian Super
14	EMIRATES CO OP	8	Traditional Hyper
15	PANDA	1	Modern Hyper
16	E MART / EASY MART	7	Indian Super
17	PARK n SHOP	4	Modern Super
18	SHANKAR / SAFEWAY / GIANT	6	Indian Super
19	GRAND	8	Indian Super
20	WEST ZONE	25	Indian small chain
21	ABELA	4	Local Super
22	FAMILY	5	Indian Super
23	FATHIMA	8	Indian super
24	SAFEER	18	Indian super
25	MEGAMART (Auh Co op)	4	Modern Super
26	AL AIN CO OP	14	Local Hyper
27	NESTO	3	Indian Super
28	ISTANBUL	6	Indian N’hood
29	MELLINIUM	11	Indian N’hood
30	RAMLAH	4	Indian N’hood
31	BLUE MART	5	Indian N’hood
32	FRESH MORE	12	Indian N’hood
33	THALAL	60	Indian N’hood
34	MADEENA	50	Indian N’hood
35	THOMSON	5	Indian N’hood
36	SHAKLAN	4	Indian N’hood
37	BAQAR MOHIBI	5	Local Super
38	PLUS POINT / FRESH N MORE	4	Indian N’hood
39	CRAMEL	2	Indian N’hood
40	MANAMA	16	Indian N’hood
41	RAK NATIONAL MAKT	6	Local Super
42	SAJITHA	12	Indian N’hood

Widespread presence for Australian meat was noted with large displays and is perceived as being high quality and consistent, by viewing displays it appears to be very close to the biggest by volume being sold through the retail supermarkets, the main competitor seems to be Indian/Pakistani, with the latter two more target specific in the smaller neighbourhood stores for locals and the large Indian population. Beyond this on display there was local, Brazilian, NZ, US and European, assumption by visually seeing displays is very close to that order in volume.

Methodology Used in Fieldwork

Field work, data and insights collection from a number of clients has been used to sift and remove any emotional rumour that goes around the market regarding any new development and to understand first hand the current supply chain and capability for centralised meat packaging and retailing case ready meat.

However, as the research is based on projected plans, there is little data available, so it was a matter of identifying as reliably as possible what the investment plans of companies might be towards ‘case ready’ developments for red meat.

A number of key stakeholders were interviewed and willing to discuss their plans across the value chain with key findings sanitised to respect commercial confidentiality and only themes presented in this report. Further, the openness was also a sign that packers/ retailers were searching for information, guidance and experience in what has happened in other markets and welcomed the interest from MLA for the commissioned project. Even though a lot of the Hypers and Supers are European and senior management is European, they don’t have a lot of experience in building and setting up Case Ready Centralised facilities. Only 1 or 2 interviewees were clear in their plans and perhaps represent an opportunity for the Australian industry to be available and advise operators on the best route forward with an offset of more support for Australian Red Meat.

Noticeably through many of the market visits, we observed very closely the quality of butchery presentation and if yield documentation was used. This was to judge market readiness, for the developing case ready format, from a production perspective and the current value added product range that whilst needs to align to consumer demand, is commonly used in USA and Europe to add value to secondary cuts and “block” trimmings that are consolidated at a centralised case ready facility.

We reviewed closely the issues surrounding the recent historical introduction of case ready meat packs in the GCC market. The definition of case ready is also stated as there are many valid interpretation.

A visit to the Municipality was organised as they are the governing body, making the decisions on the rules for criteria such as labelling and shelf life – which was a hot topic at every visit, due to a lot of confusion on the interpretations for procurement and display merchandising.

Definitions used

Case Ready/Pre-packed - defined as a product that is packaged with the ability for consumer to be able to ‘grab and go’ with no interaction with a sales person or butcher – we will also break this further into 2 sections as a central packaged or in house (back/front of store) packaged.
To simplify terminology we are using a number of packaging variants, note days quoted below are common at retail, assuming they are under good handling techniques with controlled conditions – 1 - 4 degrees C

MAP – Modified Atmosphere Packaging – a controlled atmosphere is exchanged or modified into the pack (gas flush) to give extra shelf life for both retailer and consumer – common appearance is plastic tray with clear perimeter sealed lid (top barrier film). The base pack can also be on foam.

Typically, 20% carbon dioxide : 80% Oxygen – ratio of 2:1 meat to gas (headspace between meat and film lid). Shelf life expectations are approx - Mince - 8 days, Fresh meat - 10 days, and added value prepared meats – 14 days.

Vacuum pack – product in either bag/pouch or thermoformed with atmosphere removed – 'vac packed'. The benefits are superior product shelf life for both the retailer and consumer, as well as quality benefits i.e. wet age. One of the downsides is with no oxygen, the meat doesn't 'bloom' and show the nice typical red colour, meat is darker and is considered more to the spectrum of purple, can be case ready or the common transportation of product from distances. Mince 20 days, fresh meat 28 days, or primals 70 + days (from day of pack). These are dates for goods stored at 0-3 degrees C.

Foam tray overwrapped – the most common (both in Aus/UAE) case ready instore produced method of packaging – due to low machinery costs, less skill and knowledge required and the ability to do many sizes without having die changes, cheaper expanded polystyrene material packaging. It's the more common/traditional look and presentation to achieve red meat colour, with meat "proud of the tray" - but short shelf life, total = mince 3 days, fresh meat 5 days.

Meat cabinet – area of meat display, broken into 2 areas, either 'over the counter' service (meat displayed behind glass) in a traditional manner and served by a butcher, or in a case where consumer can 'grab and go', convenience shop. On display, there were numerous overlaps, with case ready meat kept behind glass being both labelled and not labelled. For this project if the consumer could not 'grab and go' and had to be served by the butcher, it was considered as butchery serviced and not case ready (irrespective of pack format).

Bloom – cherry red colour of meat when there is sufficient oxygen present in the pack (oxymyoglobin state).

Current Market Status

Identified during the market visits, case ready meat is already widespread in the UAE, not necessarily by percentage of volume, but it's cabinet presence is available in some form at most retail outlets. Case ready on some foods has already been a huge success, taking for example in produce, 'consumer prepacks of bananas' (i.e. 6 fingers @750gm), launched only 9 years ago in the UAE, are now the single biggest stock keeping unit (sku) in some retail chains, proving that pre-packed grab and go ready products can work. In saying this, there is very little centrally prepared case ready meats but there does appear to be a huge opportunity and more importantly keen interest from the retailers for both the product and supply chain model. It is noted that some of the vacuum packed primals e.g. lamb legs, shoulders, beef rib eyes, tenderloins and striploins were commonly on display in the retailers serve over counters, with price labels on them, which could be sold whole or sliced on demand with consumer only taking what they need, observation was this product is not perceived by the locals as case ready, as it's not considered a natural fresh presentation.

The most common form of case ready presently displayed is meat packed on foam trays and overwrapped, typically packed at the back or front of store. This format is also the cheapest and easiest form of case ready to do onsite. It was noted at the major Hyper/supers that there were some really good displays of instore case ready packed meat.

Using Australia as a comparison, this (focussing on foam overwrapped) is still the most common form of in house case ready presentation, as an example the majority of Woolworth's stores in 2014 that have instore butchers use this method, although this is looking at changing over the next few years to more of a total European model where potentially 95+% of meat they sell will be centrally prepared in either tray lid or thermoform MAP or Darfresh vacuum skin packs.

The foam overwrapped instore method relies on the retailers having multisite skills of tradesman which are diminishing around the world, it also has very little shrinkage and yield control versus a central operation and when it comes to shelf life this is significantly reduced. Commonly with fresh meat at retail, shelf life (excluding mince which is usually 24 hours) for product cut and packed at the back/or even front of store and labelled with a 5 day best before, adhering to a reduced to clear (dumps and clearances) on day 3, this closely mimics the current model widespread in the UAE. Although to do foam overwrapped packaging centrally, would be challenging in the UAE.

This current packaging in the UAE has grown due to what was witnessed as a couple of main reasons,
1. It is common form of retail presentation throughout the western world and therefore easily copied
2. Locally due to the rule, once a pack (vac bag/primal) is opened the balance has to be cut and sold, tray overwrapping or window presentation is how the remainder of a primal is sold.

Expanding point 2 above, the main reasons for this rule could include – culturally the consumer has always wanted to watch the butcher cut the meat in front of them, their thinking this is the freshest, even though the carcase may have hung for 10 days, or the Cryovac bag they open is 60 days+ old, the consumer doesn't know this and therefore they don't seem to have concern. As the majority of the consumers are coming from a history of having to buy fresh from slaughter and consume straight away as refrigeration wasn't available, this is what was understood and trusted. A common theme is that especially locals will only buy meat that is pre-packaged up to only 3 days, beyond this they believe it is too old, no matter how it is packed, this is also enforced by the municipality.

Witnessed during the market visit was a local shopper sorting through removing the top packets of striploin steak, that were 2 days old with a Ausmeat colour of 1/1b, then selecting the fresh pack from underneath that was cut that day old but had a colour of 4 (which in Australia would be classified as unacceptable "dark cutter"), I asked her why she selected this and was informed that the pack was fresher so it was better, she only selected by the packed on date. When asked, she didn't know anything about meat colour, fat colour, marbling etc as quality indicators.

One major concern noted in desire to avoid shrinkage and loss at store level, there seems to be a lot of re-packaging, disguising old meat with marinades and crumbs but also alarmingly country substitution, that is selling Brazilian beef as Australian, it was clearly evident on a couple of occasions this was happening in the prepacked area, of course this doesn't help with gaining consumer trust but also the quality and traceability concerns and damage it could do to the Australian brand. It is recommended that an integrity program and protocol be closely monitored by MLA and Australian brand owners – a value chain design with a central processing site would be easier to control than multiple in-store outlets. Further, advancements in Smart packaging integrity systems could assist with information and product tracking.

During the series of meetings, the major selling points and benefits to the UAE retailers (which were understood and articulated) for driving change and moving to centralised packaging supply chain included:

- Cost reduction
  Case ready gives the ability to de-skill the workforce therefore optimise labour and production costs. It also limits the potential loss of sales due to skilled labour not being available for multi sites. Management time, from every area including the actual meat team to payroll etc is also directly reduced/leveraged at store level.
- Trust
  One facility, substitution and reworking is eliminated
- Yields and raw materials
  Consistent control and measures from purchasing, storage, product quality and presentation, yields can be monitored and focussed more closely due to bigger batches and one point of processing, therefore increasing returns. By products can also be value added easier at a central facility.
- Shelf life
  Longer on show, more on show, from open to close of trade, directly linked with reducing shrinkage.
- Range
  Ability to introduce new product innovation, products with ingredients etc that can be controlled both in consistency of presentation but also quality.
- Floor space
  Removing or reducing the butcher shop preparation areas instantly increase valuable floor space which is significant cost saving as well as sales increase potential in the large hyper/supers.

If the direction for the format selected by the retailers is to go with MAP and follow lead of Spinneys for example, the big hurdle (which they still have) is getting consumers to :

1) Understand packaging to increase shelf life
2) The benefits it can provide and
3) Getting consumers to change their selection from focussing solely on the packed on date, and trusting the best before date – the packed on date needs to be removed for this to work successfully. This has been achieved in most markets around the world already. It will take some forcing and municipality support.

The challenge for Australian red meat exporters is to partner with companies wanting centrally prepared and packed meat and to explore cutting lines of sub primals and the value proposition to deliver knife ready products that would suit automatic slicing and production scheduling demands that are an increased complexity to trading carcasses and bulk primals. Likewise, there remains an opportunity for collaborative product development initiatives between Australian meat exporters and brand owners and UAE importers and case ready facilities to add value to the "block trimmings" being consolidated at the central meat plant.

Results & Discussions

On the breakdown of the major retailers in UAE, there are already companies either already producing case ready, getting ready to or considering doing case ready. With most not quite sure of how and where to start, as well as a lot of confusion with the Municipality shelf life rules and their strictness on having a packed on date as well as a short use by/best before date.

It was quite evident there is little interest for independent companies to build case ready plants targeting retail due to high risk to build a facility and supply retail especially align to just one, as comments were made on, risk to align to one retailer as if it doesn't work the retailer could walk away, the high risk of being claimed for markdowns/shrinkage, the high risk of unrealistic payment terms and not being paid at all, as well as concerns how their meat will be handled through the retailers cold chain system. With these points in mind, it looks as though retailers will be doing their own product centrally in the future – there is opportunity for someone to target the ever growing food service and fast food chain supply, with maybe a few case ready products to go to all retailers, instead of retailer centric.

As discussed, this sanitised report has removed a more detailed commentary of selected companies (Spinneys, Abu Dhabi Co-op, Choithrams, Baraket, Lulu, Country Hills, Admiral and Aswaaq) and their present / future mode of operation regarding perceived interest and knowledge for case ready and centralised meat operations in UAE presence/adoption. The reader is directed to liaise directly with MLA for more details.

The major UAE retailers in 2014 overall had limited experience in the case ready processing field, especially from starting from the ground up and are concerned about the overall acceptance and profitability in case ready. It would be an opportunity for MLA and/or Australian Red Meat exporters and brand owners to get closer and provide some experience and direction to help them avoid costly mistakes. There is also the other consideration to look at and that's the importers, most of the retailers buy solely from 2 or 3 main importers and do not deal direct with Australia. A link to the Australian suppliers and retailers, keeping the wholesalers on board at least for now needs to be considered by MLA Global Marketing team.

<u>Municipality</u> - After meeting with the Municipality, the rule/decision making body for the region, they seem to be the sticking point for a lot of uncertainty with the retailers on merchandising rules. It was continually commented that the municipality had a strict 3 day shelf life rule and would not move from that however, following our meeting with them, it was understood that whilst they do have a 3 day rule it appears it is simply there to control the retailers, that possibly they don't have confidence with systems and processes in place to guarantee an extension beyond this, a typical conservative safe than sorry system. Both the municipality as well as the retailers seem to have limited expertise and knowledge on packaging and shelf life validation, it was also evident that a lot of retailers didn't seem to have a (noticeable anyway) HACCP or similar system in place, with some poor practices in place.

The municipality actually mentioned they recently had some training of their internal regulators in the area of food safety/handling/transport/refrigeration but believes more importantly there is a distinct lack of understanding and knowledge on shelf life and microbial growth throughout the UAE. They feel a targeted training system right to retail level would benefit the knowledge and acceptance. It is envisaged MLA's food safety program (Ian Jensen) and processing team (Michael Lee) would be well equipped to drive necessary dialogue on behalf of Australian red meat industry with Municipality if deemed appropriate.

Summary and Recommendations

Until more recent, western refrigeration and packaging innovation were not previously common in the UAE, however its increased adoption has certainly contributed to the growth in the general meat consumption and supply chain infrastructure capability. With the shutdown of Brazil, the continuous rapid expansion of Dubai since the GFC hiccup as it now heads to World Expo 2020, as well as the focus by MLA on growing the market, there has been significant growth in the last few years and will continue growing into the future.

The major retailers are at different points of decision making but they are unanimous that Case Ready Centralised packing is in the future, with most looking at following the lead of Spinneys in some format. With this in mind, it is recommended the initial opportunity for MLA would be to work closer with the end user retailer, to assist with strategy and design, whether it be helping link contacts on packaging and machinery, giving advice on shelf life and continually pushing the consistency of the Australian product.

Training

There definitely is an opportunity to provide some information and training to the retailers to better educate the benefits of Australia's meat, even introducing to Dubai via media of meat and packaging innovations? Quality guarantee standards of Australian beef with the MSA system along with POS material are other potential options. There is definitely a gap in the knowledge and understanding of Microbial and shelf life standards/requirements, particularly the microbial flora that changes under MAP red meat compared to aerobic storage and MLA should consider an opportunity to work with both the municipality as well as the retailers. Continual training for cutting skills to retailers and new product innovation (especially to add value to "block trimmings" at case ready operations) as well as packing and presentation would be initial focus.

Product

An opportunity arises for Australia to maybe help reduce some of the forced waste, that is when a large primal is opened for a customer the balance has to be sold, this is forcing more product to be on show than required to demand therefore increasing discount and clearance and also unfortunately substitution and rework. Potentially some consideration for smaller portioned primals, especially on higher value cuts like Wagyu and large grain fed primals to help limit this. The big problem for this message is most of the retailers by through wholesale and not direct from Australian plants. There needs to be some careful stepping when working the business model for direct with retail, creating a link to work collaboratively including the wholesalers would be an initial step.

Lack of innovative products on show at most retailers.

There was a lack of Australian goat for sale, not sure if India and Pakistan is too competitive but maybe an opportunity. There was also no cooked or fermented, air dried Australian red meat on display.

Process
An opportunity to provide some simple templates for yields and bill of material costings tools, so the retailers get an idea of expected revenue from a primal would be well received by the market. This too could present an opportunity for MSA cut/cook pathway and value adding secondary cuts.

The one real big ticket item to be targeted should be removing the Packed On date from case ready packs, a large portion of consumers purchase by this only and will always select the freshest no matter what the quality, that is, they don't consider the best before/use by. Removal of this would be a huge step to supporting a successful case ready program. There has to be trust placed in a controlled system that verifies a safe and wholesome product for the life of the item, this can be achieved and controlled with a centrally prepared product. Providing guidance to the municipality on what the rest of the western world typical standards are would be the initial starting point.

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